A Report on Third Party Evaluation of Plantations & works carried out under CAMPA during 2017-2018 to 2019-2020 of 55 Forest Divisions of Rajasthan State

Comprehensive Report

Submitted to:

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Monitoring & Evaluation,
Office of the Principal Chief Conservator of Forest (HoFF),
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(18 August 2022)

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The assignment of Third Party Evaluation of Project titled **– "Evaluation study of Plantations and Construction of Soil & Water Conservation Structures and Buildings executed under CAMPA during 2017-2018 to 2019-2020"** has been assigned to CDECS by Additional Principal Chief Conservator of Forest, Monitoring & Evaluation, Office of the Principal Chief Conservator of Forest (HoFF), Aranya Bhawan, Jhalana Dungari, Jaipur for evaluation of survival rate on randomly selected sites as well as for qualitative and quantitative assessment of various activities of the project and identification of areas for improvement. Under the planned Third Party evaluation, systematic stocktaking and verification of physical outputs/ performance/ achievements and identification of process adherence and quality consciousness at various levels of project implementation have been undertaken. The Third Party evaluation study has been carried out in 55 Forest Divisions at the sample work sites/ assets and plantation sites in the sample Project Ranges undertaken under CAMPA during the years 2017-2018, 2018-19 & 2019-20 in the project. CDECS would like to acknowledge the support and contribution of the Additional Principal Chief Conservator of Forest, Monitoring & Evaluation, Office of the Principal Chief Conservator of Forest (HoFF), Government of Rajasthan for providing us an opportunity to take up this study.

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We sincerely thank the committed & sensitive team of CDECS who made excellent efforts all the way to complete this Evaluation covering all the 55 Forest Divisions in time.

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18 August, 2022
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Abbreviations

ACF	Assistant Conservator of Forest
ANR	Assisted Natural Regeneration
APCCF	Additional Principal Chief Conservator of Forest
CAMPA	Compensatory Afforestation Fund Management and Planning Authority
CBD	Contour Bunding
CDECS	Centre For Development Communication & Studies
CG	Community Group
DCF	Deputy Conservator of Forest
DLT	Drainage Line Treatment
DFL	Degraded Forest Land
ECD	Earthen Check Dam
EPA	Entry Point Activities
GIS	Geographical Information System
GPS	Global Positioning System
HOFF	Head of Forest Forces
IEC	Information Education & Communication
IGA	Income Generating Activities
LSCD	Loose Stone Check Dam
MIS	Management Information System
NGO	Non Governmental Organization
NFL	Non-Forest Land
NTFP	Non Timber Forest Produce
PCCF	Principal Chief Conservator of Forests
PCT	Percolation Tank
RO	Range Officer
RTR	Ranthambore Tiger Reserve
SHGs	Self Help Groups
SMC	Soil & Moisture Conservation
SPP	Silvipastoral Plantation
STR	Sariska Tiger Reserve
VFPMC	Village Forest Protection & Management Committee
VLW	Village Level Worker
WHS	Water Harvesting Structure

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Executive Summary

Chapter - 1
Executive Summary

1.1 Background

Nature is the cradle of human civilization. Forest - an important environmental resource is under constant threat because of growing population – both human and livestock. The ever increasing dependency on forests and forests produce has further led to a deterioration of the situation.

In the State of Rajasthan 'Forests' is an important consideration and life line for defining the economy and the climate. The Government of Rajasthan is committed towards conservation and development of forests in consonance with the socio, ecological, and economic imperatives of the State. This commitment finds support in the "Rajasthan State Forest Policy 2010 (draft)", which stipulates increasing forest cover in which the Forest Department sets the target of more than 20% of vegetal cover to achieve and declares to take action.

In order to achieve the above stated target with sustainable forest management, people's participation is indispensable. Although, capacity development of the forest department is continuously undertaken, it is very significant to conduct afforestation and plantation related activities through the participatory scheme of Joint Forest Management ("JFM") i.e. through VFPMC /EDC (Village Forest Planning and Management Committee / Eco-development Committee) .

1.2 Project & Area

The State CAMPA formulates Annual Plan of Operation (APOs) every year to carry out its operations in the forestry sector. The activities of CAMPA include compensatory afforestation, plantations under Net Present Value scheme, maintenance of permanent nurseries, forest protection, natural forest management, biodiversity conservation, wildlife management, research, capacity building, strengthening and development of infrastructure for forest protection and management, information technology and communication, forest research, working plan works, awareness generation, and other allied activities etc.

Afforestation and several other forestry related works have been carried out by Rajasthan CAMPA under compensatory afforestation and other schemes through the assistance of Ministry of Environment, Forest & Climate Change, and Government of India in 283 ranges of 55 Forest Divisions distributed in all 33 districts of Rajasthan.

1.3 The Evaluation Study

The Third Party Evaluation of "Evaluation study of Plantations and Construction of Soil & Water Conservation Structures and Buildings executed under CAMPA during 2017-2018 to 2019-2020" is taken up by the CDECS as per the project M&E requirement. As part of project Monitoring & Evaluation, Third Party evaluation / Study is to be conducted for evaluation of survival rate of plants on randomly selected sites (20% of all the Plantation sites) as well as for qualitative and quantitative assessment of various activities of the project and identification of areas for improvement. Under the Third Party evaluation, systematic stock taking and verification of physical outputs/ performance/ achievements and identification of process adherence and quality consciousness at various levels of project implementation would be undertaken. The third party will evaluate the CAMPA works undertaken as per Annual Plan of Operations (APO) of 2017-18 to 2019-20. The results and analysis derived from the assessment would enable the project to further improve the processes and strict adherence to the laid down guidelines.

1.4 The Objectives

The objectives of the Post-project evaluation study are:

- Evaluation of survival rate including growth of plants and their impact on vegetal cover.
- To assess adherence to the procedures for construction, plantation and any other proceedings for asset creation in conformity with the guidelines and procedures laid down under the project or defined by the government.
- Stock taking of various assets created under the project in terms of quantity and quality.
- To check the documentation, record keeping, reports relating to assets created at Divisional level.
- To assess the overall impact of the various activities of the project.
- To identify and suggest areas for improvement and actions to be taken.

1.5 The Methodology of Third Party Evaluation Study

This 3rd Party Evaluation study have been conducted for evaluation of survival rate on randomly selected plantation sites as well as for qualitative and quantitative assessment of various activities of the project and identification of areas for improvement. Under the Third Party evaluation study, systematic stock taking and verification of physical outputs/ performance/ achievements and identification of process adherence and quality consciousness at various levels of project implementation would be undertaken. The results and analysis derived from the assessment would enable the project to further improve the processes and strict adherence to the laid down guidelines for the "Third Party Evaluation study of Plantations and Construction of Soil & Water Conservation Structures and Buildings executed under CAMPA during 2017-2018 to 2019-2020".

The quantitative and qualitative tools have been used for the Third Party Evaluation study of CAMPA assisted Project activities in all the sample districts i.e. 7 Forest circles/ Sambhag, 55 Sub Divisions (covering 283 Ranges) of the state.

1.6 Sampling & Sample size

The Third Party Evaluation study will be undertaken in 7 Forest Circles/ Sambhag, 55 Sub Divisions (covering 283 Ranges) of CAMPA assisted Project activities of Rajasthan. The scope of work for the Evaluating Agency involves the following:

a) The selection of sites has been done randomly by the office of A.P.C.C.F. (M&E) O/o of PCCF (HoFF) using stratified random sampling method. While selecting the sites it has been ensured that at least one site in each Range is selected for evaluation of survival rate. Division-wise lists of selected sites were enclosed in separate envelopes and sealed. The sealed envelopes were handed over to the Evaluation agency 'CDECS Jaipur. The sealed envelopes were opened at respective Forest Division headquarter in the Office of Deputy Conservator of Forests in the presence of Deputy Conservator of Forests or his representative of the Division.

b) Criteria for site selection:

- 20% sites of plantations of each Division have been randomly selected for evaluation.
- Plantation / afforestation Sites selected for evaluation were 100% and 10% evaluated based on odd and even criteria on the selected sample lists division-wise.
- 20% sites of Anicuts in each division shall be evaluated in the same manner.
- 20% construction of Chowkis/ office-cum-residences/Rescue Centers/Boundary Pillars/Rescue wards shall also be evaluated in the same manner.

Coverage under Plantation & Afforestation

In total, 111 plantation sites were covered in 40 Forest divisions under Third Party Evaluation of CAMPA Fund afforestation and plantation activities of the year 2017-18, 2018-19 & 2019-20. As per the TOR, the sample sites of 100 percent and 10 percent were provided by the Office of PCCF (HoFF). Also, the sample sites of boundary wall, boundary pillars, rescue wards, Forest Chowki and Range Office cum residence buildings and SMC works sites were selected randomly by the department and given signed copy in the sealed envelope to the evaluation agency. The sample sites of plantation were selected for evaluation (both for 10% area of plantation and 100 % plantations as per the official orders and TOR).

Out of 40 Forest Divisions, sample sites of ANR, DFL and NFL were evaluated based on the scientific sampling method. The sample sites of 10% covered were 40 in number and 100% sample sites were 71 in number.

Under coverage in the 40 Forest divisions the total coverage of sample area under plantations sites were 5451.88 hectares in 85 Forests ranges. The percentage of coverage of sample area under Third Party Evaluation of plantation works carried out during year 2017-18, 2018-19, 2019-

20 is 21.96 percent (Total Plantation area under plantation during year 2017-18, 2018-19, 2019-20 is 24823.12 Hectares).

1.7 Key Findings & Conclusions

1.7.1 Overall Review of Physical progress on CAMPA Fund

- The physical target of 24823.12 ha plantation was achieved against the allotted target of 24823.12 ha resulting in 100% achievement of plantation targets during the CAMPA Fund project period of 3 years (2017-18 to 2019-20).
- There has been visible impact of the expenditures under CAMPA Fund in the forest sites in terms of Improving the quality of Degraded Forest Lands (DFL), improving and increasing the forest cover in the Non-Forest Lands (NFL), providing better facilities and improving the habitat of wildlife as a result the sighting of various animals were reported, and improving the health of the forest area where works and activities were undertaken with the help of CAMPA fund.

1.7.2 Afforestation, Plantation, Growth & Survival

- During third party evaluation, 111 sample sites were visited to assess the survival rates of the planted species. The survival rates of the planted species vary from 2.19% (Gopalpura) to 82.0% (Papad). At 77.5% sample plantation sites (86 sites out of 111), the survival rates of the planted species range from 41-60 % across the sample units.
- Regarding year-wise survival percentage of the plants, in the year 2017-18, the same was reported in the range of 0-20% & 21-40% at each of the 02 sample sites, at 28 sample sites the survival percentage of the plants was in the range of 41-60% and at 04 sample sites the survival percentage of the plants was in the range of 61-80%. In the year 2018-19, at 03 sample sites the survival percentage of the plants was in the range of 0-20%, survival percentages of the plants was in the range of 41-60% at 34 sample sites, at 07 sample sites the survival percentage of the plants was in the range of 61-80% and at 01 site the survival percentage of the plants was in the range of 81-90%. In the year 2019-20, the survival percentage of the plants was in the range of 0-20% & 21-40% at each of the 01 sample site, the survival percentage of the plants was in the range of 41-60% at 24 sample sites and at 04 sample sites the survival percentage of the plants was in the range of 61-80%. In total, the survival percentage of the plants was in the range of 0-20 % at 06 sample sites, 21-40% at 03 sample sites, 41-60% at 86 sample sites, 61-80% at 15 sample sites and 81-90% at 1 sample site.
- The total area of all the selected and evaluated 111 sites of plantations of 85 Ranges of 55 Divisions was 5451.88 ha. The overall ranking of evaluated 5451.88 ha plantations was with average survival percentage of 48.44%.
- In terms of physical area, the ranking of plantations was excellent (9) of 50 ha plantations having survival percentage between 80 and 90, very good (8) of 411.84 ha plantation having survival percentage between 70 and 80%, good (7) of 520 ha plantation having survival percentage between 60 and 70%, average (6) of 1166.57 ha

plantation having survival % between 50 and 60%, poor (5) of 2972.11 ha plantation having survival percentage between 40 and 50% and very Poor (4) of 331.36 ha plantation having survival percentage less than 40%.

- Regarding ranking of plantation sites, the survival percentage was excellent (between 80 and 90%) with ranking of 50 ha plantation area of 1 site, Very Good (Between 70 and 80%) with 8 ranking of 411.84 ha plantation areas of 8 sites, good (Between 60 and 70%) with 7 ranking of 520 ha plantation areas of 8 sites, average (Between 50 and 60%) with 6 ranking of 1166.57 ha plantation areas of 27 sites, poor (Between 40 and 50%) with 5 ranking of 2972.11 ha plantation areas of 58 sites and very poor (less than 40 %) with 4 & below ranking of 331.36 ha plantation areas of 9 sites.
- At Kabri Khal (Newai range, Tonk district) site the guarding & security of the site had been completely withdrawn and expenditure on plantation site had not been reported since two-three years. The pucca Cattle guard hut was completely damaged at the site. Illegal mining by humans was reported at the site. The site Incharge was also involved in illegal mining and had been suspended. The site (Kabri khal) was a complete failure with only 5.22 percent survival rate.
- There has been instance that seedlings transported for plantation were not planted and the seedlings remained lying in open. This is the one of the reasons for low survival percentage as numbers of seedlings were not planted (Santokpur site of Alwar division).
- At the Tai B site (Chittorgarh Davison), growth of survived plants was poor. The reason behind poor growth & survival of planted seedling was that fire broke down at the plantation site on 7 April 2022. Due to which 70 percent of the planted seedlings were damaged.
- At Bhagega site (Sikar Division), the growth of planted seedlings was low. The reason for low survival was the damage caused due to fire at the plantation site. 99 percent planted seedlings were completely damaged due to fire. Regeneration of planted seedlings was reported at the site.
- The better survival of plantation site where grazing at the site was minimum due to strict vigilance of women Site In charge (Smt. Choti Devi) at Khirkhadi Site of Sawai Madhopur division.

1.7.3 Factors affecting Growth & survival (Biotic and Abiotic)

- Widely growth of termite & attack by pest obstruct the growth of planted seedlings in almost all the plantation sites.
- Grazing by stray animals, cattle's & destruction by Neelgai, Chinkara, Wild boar, Rabbit & Rat were reported at the plantation site. In Bikaner division at Mahajan site, destruction by rats was quite visible at the plantation site as there were holes all around in the ground.

- Wild animals viz. Neelgai and village animals ate the branches and leaves of plants. The growth and survival of plants was affected due to grazing by Neelgai and village animals (Sheep, Goats, Cows, Bulls and Buffaloes etc.).
- Due to non provision of watering in the plantation models survival and growth of plants were affected and mortality was reported higher.
- Ditch fencing was damaged at many places. At some places, the locals made route from ditch fencing to plantation site for cattle grazing. Village and wild animals grazed almost all planted species. Loose stone wall fencing was damaged at many places. The stones of loose stone fencing were removed from many places and route to plantation site was made by the locals.
- Low rainfall was reported at the plantation site during last 2 to 3 years. This affected the survival & growth of planted species. Also, the survival was reported moderate to low.
- Also, the soil quality obstructs the growth of planted seedling. The soil was rocky & sandy at many plantation sites. The chances of survival of seedlings in rocky area are low.
- The destruction to planted seedlings by termite was observed during third party evaluation process. It needs proper treatment so that the huge investment on plantation can be meaningful in improving the forest cover.
- The canopy of Juliflora reported certainly affecting the survival and growth of plantations in the area. Also, at the sample sites it has occurrence of Juiflora affecting the plantation sites due to fast recurrence and converge.

1.7.4 Impact on Vegetal Cover

- There has been reported increase and improvement in vegetal cover at the sample plantation sites viz. DFL, NFL & ANR. The vegetation abundance has been reported fairly higher in ANR model as compared to NFL & DFL models.
- The plantation and soil & moisture conservation activities at the plantation sites have certainly added value in terms of increase in the vegetal cover namely, trees (Plash, Ronz, Neem, Mahuva, Tendu, Baheda, Sagwan, kher, Neem, Ronj, Sheesham, Baans (Bamboo), Churel etc.) shrubs (Ber, Lentana, Ber, Juliflora, Hingot, Jaal, Bui & Kheep), herbs (Neem giloi, satavari, Peelvan, Googal, Bazardanti) and natural grasses (Lapla, Bharut & Dhaman) etc.

1.7.5 Protection & Management

- The boundary wall supported under CAMPA fund was reported boon for the forest divisions as it helped in demarcating the forest land and boundaries and protected from encroachment.
- With construction of boundary wall at the plantation sites, reserved forest areas, the result was reported positive in terms of protection of forest areas from grazing. Also,

the evaluation team has witnessed the growth of various trees and shrubs as a result forest density has been reported improved.

- The boundary pillars constructed under CAMPA fund helped in demarcating the forest land and boundaries and protected from encroachment.
- It has been reported that the plantation and afforestation sites require proper protection, watering and proper guarding in order to have better achievement.
- During visit to the project sites for third party evaluation it was reported that the plantation sites boundaries were constructed as per norms i.e. loose stone wall, Ditch fencing and barbed wire fencing etc. It was also observed at the sample sites that the fencing on the boundaries has been damaged. Also, the plantation sites have withdrawn the cattle guards who were placed during execution phase. The plantation sites were reported open and the village animals were reported entering into the plantation sites for grazing.
- Ditch fencing was reported at 83 sample sites. The length of ditch fencing varies from 230 rmt. (Chirana-Navalgarh) to 2800 rmt. (Mishrawas-Shahpura). Like-wise, loose stone wall fencing was reported at 83 sample sites. The length of loose stone wall fencing varies from 86 rmt. (Chirani II Khetri) to 5650 rmt. (Borda- Kishanganj). Also, other types of fencing were reported at 22 sample plantation sites. Other types of fencing at plantation sites include barbed wire, pucca wall & dola fencing.
- The plantation sites after 5-6 years (ANR Plantation) were left totally on the mercy of cattle guards. It has been reported that the sites have full pressure of grazing by the local live stocks and cattle. The whole investments were nullified and the site conditions became alarming.

1.7.6 Extent and composition of sowing

- The sowing was reported at 104 plantation sites. At 07 plantation sites sowing was not reported (04 sites at IGNP Jaisalmer) 01 site each in Pratapgarh, RTR Sawai Madhopur & 01 Sikar). As per practice of department, seeds were sown along trenches/ earthen bunds & on fencing. The Seeds sown were Kumtha, Katkaranj, Ratanjot, Ronj, Chhela, Khair and Desi Babool etc.
- Regarding status of sowing, the same was reported excellent at 02 plantation sites followed by good at 66 plantation sites, average at 23 plantation sites & poor at 13 plantation sites. Hence, at majority of sample sites the result of seed sowing was good.

1.7.7 Maintenance & Other Silvi-cultural operations

- As a part of maintenance, the sites used to be visited on regular basis to keep watching regarding protection aspects. Also, loose stone fencing, ditch fencing & barbed wire fencing was fully effective in controlling the biotic pressure was reported at 34 plantation sites followed by partially effective at 67 plantation sites & at 10 plantation sites the fencing was not at all effective in controlling the biotic pressure.

- Hoeing and weeding, cut back (Bair & Juliflora), removal of weeds & removal of dead, dying diseased and decaying trees was reported at 31 plantation sites, whereas post plantation operations such as pruning & thinning was reported at 32 plantation sites. As a part of maintenance, casualty replacement of plants was also done for the second and third year at the rate of 10% of total plantation in the sample site. Mortality in the plantation is replaced in the second and third year by miscellaneous species.
- The pruning and hoeing should be actually done at least in the first 3-4 years in order to have better growth and development of plants planted.
- The cut back operation and stocking of roots were done at the ANR sites but the result was not appealing. Also, it has been reported that the cut back operation and stocking of roots was not readily practiced at every ANR site.

1.7.8 Soil & Moisture Conservation works (SMC Works)

- Activities related to development of Soil & Moisture Conservation structures (SMC) is the key element of CAMPA Fund which is pre-requisite for the afforestation and plantation activities. Various SMC structures were constructed namely, SMC Structures - Anicut type - II & Anicut Type-III, Gabion, Earthen Check dam, PCT, V-ditch, CBD & WHS.
- The works of SMC can be appreciated undertaken at the plantation sites which were largely found useful and relevant. Continuous Contour trenches were reported at 102 plantation sites, whereas at 09 plantation sites the same was not reported. The length of CCT varies from 120 rmt. (Kachrauli) to 26400 rmt. (Mundiya B I). V ditch was reported at 08 plantation sites. The length of V ditch varies from 950 rmt. (Ladpura) to 47000 rmt. (Kadili). SGT reported at 10 plantation sites. The length of SGT varies from 150 rmt. (Kachroli) to 7945 rmt. (Kabri Khal). Deep CCT was reported at 08 plantation sites. The length of Deep CCT varies from 30 rmt. (Kachroli) to 4588 rmt. (Dubali). Contour Dykes were reported at 04 plantation sites. The length of Contour Dykes varies from 840 rmt. (Nand) to 5000 rmt. (Dolatpura).
- Mulching was reported at 04 plantation sites. The length of Mulching varies from 8000 rmt. (Junapatrasar B) to 41905 rmt. (SDS 35-38 RD JJW C).PCT/ Nadi were reported at 16 plantation sites. The area of PCT/ Nadi varies from 159 cu.m. (Nand) to 5774 cu.m. (Mishrawas).Farm pond/ WHS were reported at 7 plantation sites. LSCD were reported at 36 plantation sites. The area of LSCD varies from 75 cu.m. (Bagwara) to 3040 cu.m (Peepalda Samel). Earthen Check dams were reported at 36 plantation sites. The area of earthen check dam varies from 58.5 cu.m. (Kachroli) to 807.77 cu.m (Karwad Jat). These initiatives were reported useful for site.

1.7.9 Various assets created under the project in terms of Quantity & Quality

- Out of total selected & evaluated 218 sample sites of assets in 137 ranges of 51 divisions, the ranking was excellent (9) at 06 sites, very good (8) at 21 sites, good (7) at 63 sites, average (6) at 102 sites, poor (5) at 19 sites & very poor (4) at 7 sites.

- The construction of boundary wall was reported an instrumental initiative in protecting forest and forest land from encroachment. It has been reported in Dholpur division that the boundary wall has protected the forest land from hand of local influential who had captured forest land and used for agriculture. Also, in Jhunjhunu forest division, in Jhunjhunu city about 10 hectares of land was encroached by the influential people and was used for agriculture. The same was removed by the department after construction of boundary wall. On the land the Black bug sanctuary has been developed.
- In total, 73 Pakki diwar 4ft. (37748 meters) had been evaluated. Out of which 52 were average, 20 were good & 01 was poor in quality of construction. Regarding rating of quality of construction 29 pakki diwar was rated 6, 14 rated 5 followed by 24 rated 7, 03 rated 8 & 4 each. Regarding rating of quality of construction, 50 pakki diwar 4ft. rated average, 22 rated good & 1 rated poor.
- In wildlife forest area, 48 Pakki diwar 6ft. (29466 meters) had been evaluated, out of which 41 were average, 6 were good & 01 was poor in terms of construction quality. Regarding ranking of quality of construction 01 pakki diwar was ranked 9 followed by 03 ranked 8, 10 ranked 7, 22 ranked 6, 8 ranked 5 & 04 ranked 4 29.
- Pillars were evaluated at 32 sites (Nos. 1603). Out of 32 sample sites, 23 were average, 5 were good & 04 were poor in quality of construction. Regarding rating of quality of construction 06 pillars site were rated 7 followed by 11 pillars site rated 6, 8 pillars site rated 5, 04 pillars site rated 4 & 3 pillars site rated 3
- 18 Anicut II & III had been evaluated, out of which 14 were average, 3 were good & 01 was poor in quality of construction. Regarding rating of quality of construction 01 rated 9 followed by 02 rated 8, 06 were rated 7, 6 rated 6, 2 rated 5 & 01 rated 4.
- 17 Forest Chowki/ Van Rakshak Chowki had been evaluated. In terms of rating of quality of construction, 06 forest chowkis were rated 8 & 7 each followed by 04 forest chowki is rated 6, & 01 rated 5. Regarding quality of workmanship, 11 were average & 06 were good Further, 01 rated 9 followed by 04 rated 8, 08 forest chowkis were rated 7 & 04 rated 6 in quality of workmanship.
- The boundary wall, anicut and forest chowki at some places were found having minor settlement and cracks or need maintenance. It should be addressed as per the requirements. Otherwise, the whole investment will become unusable after some time. Therefore, it is recommended to have a provision of budget for operation and maintenance.

1.7.10 Assessment of documentation & record keeping

- As far as availability of records at the plantation sites during the third party evaluation is concerned, availability of measurement book was reported at all the 111 plantation sites followed by availability of plantation journal at 106 plantation sites, KML file of

plantation at 86 plantation sites, plantation card at 57 plantation sites, micro-plan at 33 plantation sites & survey map/ treatment map at 98 plantation sites.

1.7.11 Logistics/ Monitoring & Supervision

- Certainly, lack of adequate staffs made it difficult to ensure the commitment and proper completion of works. Also, the limited facility of mobility at range level affected the required supervision and monitoring of activities and works executed under CAMPA.
- It has also been reported that due to limited power of transfers at office of forest division, the functionaries do not follow the instruction/ directions. This is again called non-completion of work as per the required standards and norms.

1.8 Recommendations & Suggestions

1.8.1 Afforestation, Growth & Survival

- The percentage of replacement of causality occurred in the first 02 years of plantation may increase until the protection of plantation sites may be for 5 years so that the causality can be reduced and more care can be given. It would result into improved vegetal cover.
- The plantation sites experience extreme hot and cold during the year in different seasons. The watering of the plantations may be allowed for initial years in order to bear the extreme temperature crisis. In ANR, NFL and DFL plantation models, the provision of watering may be given at least 3-4 watering every year in the beginning at least for 3 years may be between November – June or as required as per site condition. Provisions for watering in ANR sites may be included for first 3 years. The ANR plantation model need to be revised based on the real time and site specific requirements.
- The protection from destruction by rats, porcupine (sevli), termite and Roze (Neelgai) may be planned in order to have proper growth and development of plantation sites plants.
- The trees species planted at the plantation sites may be taken up after complete assessment of the site – its topography, existing vegetation, species of trees etc. in order to have better productivity and survival.
- The provision for 24 hours site guards may be made so that the destruction during night can be taken care. It means provision for 02 guards should be made at every site. In addition, the site guards were paid six days in a week and on the remaining one day they are given leave.
- As per the interaction with forest officials, PRIs, local functionaries and VFPMC members, they were of the opinion that Site Chowkidar should be placed for 8-10 years at the plantation sites in order to have better results and maximum results of

the whole investment made on plantation with hardly 10-15% requirement of additional budget in the next 3-4 years.

- There is greater need to stop the grazing by creating proper fencing. The fencing wall should be of proper height looking to the site condition rather than the existing State norms of fencing. At some sites, stakeholders opined for raising the height of fencing wall from 1.2 meters to 1.5 meters as it will give better result and will improve site conditions.
- It is high time to revise the plantation models of ANR and DFL looking to the outcome/ result of afforestations and plantations. It has been reported that at some sites it becomes a problem to execute the model. Similarly, the case may be for other models, too. Based on interactions with various Division and Range level officials, it has been reported to revise unit size of plantation for ANR and DFL models. It may be a unit of 5 to 20 hectares. This certainly will improve the coverage and undertake the plantation work smoothly and without much delay. This will improve the vegetal cover and survival percentage of plantations.
- The plantation model need to be revised now and it should be site specific rather than one model for the whole State. The component of plantation, protection and development of SMC structures need to be site specific. Also, the plantation activities should ensure that plants planted at site should be of more than one year and should pass through all the seasons namely, summer, winter and rainy seasons. In a span of one complete year time the plants at nursery will ensure hardening, adaptive, resistance to larger extent.
- DPR (Detailed Project Report) should be prepared as per model chosen for the site.
- The local species at the plantation sites should be preferred in order to have better response of the plantation activities. Site specific seedlings should be planted (as per topography & soil condition) at the plantation site.

1.8.2 Strengthening formation & Functioning of Institution

- Forest Division office under the Leadership of DCF who may have expertise in CAMPA Fund project components should review and support the various activities undertaken beyond the afforestation/ plantation & SMC works namely, Institution building i.e. VFPMC and capacity building. A regular review and facilitative support will be instrumental in understanding the local problems, and then it will be possible to provide required & timely support irrespective of financial releases.
- The sample project Forest Divisions did excellent job in fulfillment of their responsibility of undertaking plantation activities with the help of VFPMC at the project sites. However, the real requirement is towards creating a system and institutions at village level, which should really undertake their responsibilities properly. In the whole CAMPA Fund supported project, the role of VFPMC is pivotal. Hence, there is stronger need to activate the VFPMC which should come forward to take active role in protection and management of forest related initiatives and plantations.

- The Forest Divisions/ Range Offices engaged under the CAMPA fund related works/ activities had done their job but there is strong need to work as per mandate of the CAMPA Fund and ensure that the village level institutions should have enough capacity to take-up the responsibility rather than working ornamentally. The performance may gauge on the milestones achieved in quality manner.
- At VFPMC level, the mechanism of operation and maintenance was not reported for assets created under CAMPA fund project at the SMC sites.
- The Forest Division should perform its role as per the whole plan of action associated with CAMPA fund. It is also true that stakeholders at Forest Division/ Range should also understand their importance and develop better coordination with project team and should understand their role in the project rather than completing the project activities anyhow.
- There should be provision of movement of range officials/ beat level stakeholders may be in terms of providing vehicles, POL, automation of range offices with computers and filling up the vacant posts of guards and providing travel claims timely etc. The Guards posted need to be made regular at the sites. The incentives/ travelling allowances etc. should be given in time because the success of plan implementation is likely to depend on individual initiative, too.
- The records of works need to be maintained at the range level in addition to MB and total sanctions, expenditure should be reported along with completion date, and GPS location of the works sites (longitude and latitude).
- As per the Government norms and rules, the records and reports were maintained at Forest Divisions and Range offices level as a part of administrative formalities. However, a project report of CAMPA fund project works/ activities was not shared showing the year-wise or consolidated physical, financial, visible changes, what worked, what did not work, challenges, weaknesses of the project activities, strengths & results of whole investment etc. The report can be made at division/ range level, which certainly helps the State level stakeholders/ outsiders/ community to see the investments and outcomes of the project. In addition, it will also help the forest department officials at division/ range levels really appreciate their success and internalize their failures/ weaknesses.

1.8.3 Records & Documentations

- Every Forest Division/ Range should have stock of the works with details such as physical and financial targets, completion date, GPS locations, Numbers etc. rather than locating everything with MB and financial reports.
- There should be proper system of record keeping so that the various works undertaken in the jurisdiction of range offices can be traced even after the transfer / retirement of officials/ functionaries.

1.8.4 Soil & Water Conservation and Improvement in Soil & Moisture Content

- The initial level planning for water conservation structures namely, Contour bunding (CBD), Check dam, trenches, Farm Pond, LB with Gabian, contour trenches, V-Ditch, PCT, WHS, contour bunds and Nadi etc. with required plan and estimate definitely would help in creating better and more effective structures - may be for right use and for adequate water conservation.
- The timely and proper maintenance of Soil and water conservation structures should be taken up under the project namely, Anicut, Gabian and PCT etc. in order to keep them functional for longer time period.
- Numbering of SMC works and works details namely, name of work, year of construction, project fund, expenditures and sanctions etc. need to be taken up in order to locate the works at the site.

1.8.5 Development of Nursery

- The nursery development may take into consideration the long-term perspective and sustainability of requirement of nursery as catalytic role for Forestry development.
- The nursery should cater the local needs in terms of meeting the local demands under existing circumstances.
- The plants lying at nurseries-may be of 3-4 years can be taken to plantation sites rather than increasing the burden of replacement of poly bags every year and maintenance.
- The expenditures in the particular nursery should be based on the requirements rather than taking the activities as per the provisions in the budget. It will help in developing the nurseries as per the need. This will help in proper functioning of the nursery.

1.8.6 Community Mobilization – Awareness camps & Meetings

- The visit to the sample plantation sites and project villages to assess various activities executed under the CAMPA fund reflects that the community mobilization might be better. Hence, it is recommended to plan the activities related to community mobilization and awareness in an effective manner with details such as who will be participants and how they will be informed in advance. The project must give more meaning in terms of community level dialogue, positive associations and affiliation of community members.
- VFPMC meetings should be organized regularly. This will ensure involvement/ participation of VFPMC members in various other activities. The role of VFPMC members should be recognized by the local forest functionaries, too.
- The strong community mobilization capsule definitely has powerful influence on individual and VFPMC members. However, the requirement is to plan and undertake community mobilization task professionally in the right spirit for the right cause & at the right time.

- The intervention of forestry development work namely, plantation, construction of SMC works capacity building trainings etc. should be taken up in holistic way so that the forest development and development of people should also be ensured in terms of social and economic development. Then only the association of people and real 'People's Participation' can be ensured. This can be the essence for future activities and initiatives, which will be supported by the local stakeholders.
- The involvement of local people both men and women in the process of forest development should be made right from the stage of planning, designing, implementation and monitoring and evaluation of various activities and initiatives at VFPMC level.

1.8.7 Capacity Building Training

- The role of capacity building inputs is instrumental in shaping the right skill at right time. It was been reported that various capacity-building trainings were undertaken for Forest Division, Range and VFPMC officials under the project. The training was mainly on the project background, objectives and purposes. The activities under the project were discussed. The roles of various level institutions were discussed. It would be good if the capacity building training would be planned in terms of inputs, processes, outputs and outcomes. This would help in understanding the real purpose of each and every activity related to training and capacity building.
- The forest department functionaries/officials executing the project at Naka & Site level should be oriented about the technicality of the various SMC structures and its importance that which SMC structures should be constructed at which sites. It has been experienced during evaluation of the sites that forest guard was not acquainted with the SMC structure and its technicality.
- At different points of time, different training and capacity building inputs may be required which need to be planned accordingly rather than same capsule every time. In addition, there should be training modules for them on the required subject/ theme.
- The functionaries namely, guard, cattle guard should be given training of various Water & Soil conservation structures, planning and preparedness in a systematic manner.
- Training and Capacity building module may be developed at Forest Division level - may be for each of the training and outcome may be reviewed periodically.
- The Quality of records needs to be improved specially meetings records of VFPMC. It was also observed that active participation of members in VFPMC meeting is the real need, which has to be thought-off urgently. Only Chairman & a few EC members of VFPMC were found active. There is strong need to work for institutional building and mobilizing local institutions.

- The VFPMC meetings need to be planned properly and should be treated as essence of the project. The fix date, adequate time suiting to the community/ EC members and deciding venue of meeting are some important elements. In addition, the meeting agenda need to be prepared for every meeting of VFPMC.

1.8.8 Ensuring Quality of works – Monitoring & Supervision

- The Forest Division/ Range should play an important role in ensuring quality of works under the CAMPA fund project. The role of Forest Division is required in ensuring quality works in capacity building trainings, besides plantation and Afforestation activities and construction of boundary walls, boundary pillars, rescue wards and office buildings etc. The monthly review meeting at the Forest Division level may be organized with the whole team to discuss on the various inputs, processes and outputs as well as strengths and challenges.
- The project has component of monitoring and supervision. However, it needs to be taken up properly and regularly in required direction in order to strengthen the project activities.
- It has been reported that the monitoring, supervision and guidance by DCFs/ACFs at field level was lagging periodically in order to ensure quality interventions. The plantation journal bearing the page for officials to note their observations in the column does not bear the note that to what extent the directions were followed at the site. The condition of the construction sites require more concentration of supervision and monitoring in order to ensure the design and quality of construction.
- It has been observed at almost all the construction sites at the various sample ranges that the works were carried out as per the estimates and drawings and budgetary provisions in the estimates. The real demands of the site were not assessed. Therefore, at some places it does not look a very useful initiative. Hence, it is recommended to undertake the work at sites as per the existing conditions and requirements. It needs to customize as per real situation.
- Wherever possible, monitoring should be done on real time basis using advanced GIS applications and mobile Apps by the Department Monitoring Unit involving the VFPMCs.

1.8.9 Policy Issues

- There should be some periodic reporting format from Range office to Forest Division in order to develop more stake of the Forest Division in overall management of CAMPA fund.
- Transparency board should be installed at the VFPMC village, which gives details of overall project of CAMPA fund project & members of VFPMC etc.
- The protection in terms of cattle guards may be extended to 3-5 more years in order to have better results. In other way, it can be said that the whole investment may be guarded/protected for 3-5 years more in order to have better results.

- The plantation sites should have transparency board. In addition, construction sites (boundary walls and pillars) & SMC structures should bear numbers and the transparency board should be installed/ painted so that one can get information about the year of activity and under which project/ programme it has been constructed/ made and should also bear estimated cost and expenditures.
- Protection & Guarding at the site need to be proper and should be undertaken as per the present circumstances so that the same could be beneficial.
- There should be provision for protection & guarding of forest for five years in order to have good result of seedlings planted.
- Seed sowing should be promoted at the plantation sites. It should be sown properly not haphazardly. Plant grown from seed sown has more chances of survival than the planted seedling. There should be provision of thinning of plants grown from seed sown.
- It has also been observed that the MB contains the copy and rate of the estimate, even the article was not taken in the work completed. Hence, it is recommended to use the estimates as model and book the materials quantity and numbers used in the construction in the MB in actual basis.
- The interventions of ANR should also be extended upto 8-10 years like NFL and DFL sites in order to have better results.
- It is well reported that forest required more of protection and care in comparison to afforestation and plantation.
- It has been reported that due to not having adequate provisions in the plantation budget, the functionaries at range level were less interested in undertaking plantation activities. Therefore, it is recommended that the plantation budget should be sanctioned as per the real requirement of the site rather than working on the model estimate.
- In order to have better performance of plantation and ensure quality in the construction activities, there should be roaster system for monitoring, supervision followed by the DCF/ACF/RO. This will allow the visit of stakeholders periodically and ensure the quality of interventions. Also, it will help in reviewing the adherence of the instructions given time to time for the improvement. It will ensure better sustenance of the plantation sites. It will also help in having information about the site with the Range office/Beat level stakeholders/ functionaries.

Chapter - 2

Introduction, Background, Purpose and Scope of Evaluation

2.1 Introduction & Background of State of Rajasthan

Rajasthan is the largest Indian state with 10.4% of India's geographical area, but with a population of around 6.85 crores, it accounts for only 5.66% (an increase from 5.49% in 2001) of India's total population as per the 2011 census. The state is sparsely populated, with an overall density of only 200 persons per km^2 in 2011 (an increase from 165 persons per km^2 in 2001) as against a national average of 382 per km^2. However, the population density in the state varies widely from as low as 13 persons per km^2 in Jaisalmer district to as high as 471 persons per km^2 in Jaipur district. The high variation in density is due to the presence of the large, inhospitable Thar Desert.

It lies between 23° 30' to 30°11' North Latitudes and 69°29' to 78°17' East Longitudes. It shares its western boundary with Pakistan and is bounded by the Indian States, viz. by

Source : ISFR -2021 Rajasthan

Punjab State in the north, Haryana and Uttar Pradesh States in the northeast, Madhya Pradesh State in the southeast and south and Gujarat State in the south (Map of Rajasthan).

The geographical area of the state is 34.22 million ha which is 10.41% of country's geographical area. There is mark difference in the physiographic features of the state. The Aravallis, one of the oldest mountain systems, divides the state into two unequal parts. The Aravallis cover over 30% of the state. A vast expanse of and semi-arid tract lies in the west of the Aravallis, The Vindhyan hill system, another important hill range in the south-east of the state, drains into Chambal and Banas rivers. Ravine formation is a very serious problem in the fragile sedimentary tracts of these rivers.

Rajasthan is the driest state in India. Two thirds of its geographical area is covered by Thar Desert, and the state has only 1.16% of surface water in India. The average rainfall in Rajasthan is 531 mm against the national average of 1,200 mm. In the absence of surface water, reliance on ground water is excessive, and water table is depleting at an alarming rate in most of the area except in canal command area. Due to the severe climatic conditions mentioned above, the forest & tree cover of Rajasthan State is only 7.11% (forest cover is 4.87%, and tree cover is 2.55% respectively), which is far below the national average of 23.4%, and the open forest cover out of the total forest is as high as 71.8%. Furthermore, the state faces a major challenge of desertification due to recurrent drought and increasing human and livestock pressures. Especially in western Rajasthan, desertification is causing wind erosion and deposition, followed by the water erosion, as well as water logging and salinity. More than 60% area of western Rajasthan is affected by the desertification and requires intensive management to contain desertification.

Reflecting these severe conditions mentioned above, the Government of Rajasthan announced state specific forest policy called "Draft Rajasthan State Forest Policy 2010", in which the Forest Department sets the target of more than 20% of vegetal cover to achieve and declares to take actions for combating desertification. According to the State Forest Policy, additional 45000, square km of afforestation and pasture development is the gap to bridge in reasonable time frame.

In order to achieve the above-mentioned target with sustainable forest management, people's participation is indispensable. Forest guards in the State are forced to look after 10 to 15km^2 area as against the ideal norm of 5 to 7 km^2, which is unrealistic for the sustainable forest management only by the effort of the Rajasthan Forest Department. Although capacity development of the forest department is continuously undertaken, it is very significant to conduct afforestation activities through the participatory scheme of Joint Forest Management ("JFM").

2.1.1 Physiography

The physiography of Rajasthan is the product of long years of erosion and depositional processes. The present landforms and drainage systems have been greatly influenced and determined by the geological formations and structures.

2.1.2 Administrative Divisions and Districts

Administratively, Rajasthan State is divided into 7 Divisions. Each Division is divided into Districts resulting in 33 Districts in Rajasthan State (table-3). These Districts are further divided into Sub-Divisions consisting of Tehsils, Sub-Tehsils and Villages.

Table-2.1: Administrative Divisions and Districts in Rajasthan State

S.No.	Division	Districts
1.	Ajmer	Ajmer, Bhilwara, Nagaur, Tonk
2.	Bharatpur	Bharatpur, Dholpur, Karauli, Sawai Madhopur
3.	Bikaner	Bikaner, Churu, Sri Ganganagar, Hanumangarh
4.	Jaipur	Jaipur, Alwar, Dausa, Jhunjhunu, Sikar
5.	Jodhpur	Jodhpur, Barmer, Jaisalmer, Jalore, Pali, Sirohi
6.	Kota	Kota, Baran, Bundi, Jhalawar
7.	Udaipur	Udaipur, Banswara, Chittorgarh, Dungarpur, Rajsamand, Pratapgarh

2.1.3 Topography

The physical variations in Rajasthan State are more than any other State of India. It has regions of rolling sand dunes in the west, lofty rocks of Aravalli Ranges in the middle and fertile plains in the east. The extensive topography of this State includes rolling sand dunes, rocky terrain, wetlands, barren tracts, land filled with thorny scrubs, river-drained plains, plateaus, ravines and wooded regions.

In a more broad way the topography of Rajasthan can be divided in the following regions-(i) the Aravalli or Hilly regions, (ii) the Thar and other arid regions, (iii) the Plateaus including Vindhaya and the Malwa, (iv) the Fertile plains including the Mewar, (v) the Forest Regions and (vi) the Water bodies including Rivers and Salt Lakes.

The Thar Desert or the Great Indian Desert encompasses about 70% of total landmass of Rajasthan and hence this State is identified as the "Desert State of India". The Rajasthan desert which forms a major portion of the Thar Desert is the biggest desert in India and encompasses the districts of Jaisalmer, Barmer, Bikaner and Jodhpur.

Important rivers of State are Luni, Chambal, Banas, Banganga, Sabarmati, Mahi and West Banas, etc. The Luni river system that rises from the western slopes of Aravalli Ranges (near Ajmer) flows through the semi-arid transitional plains into the Rann of Kutch and Arabian Sea, while the Banas and other streams, rising from the eastern slopes of the Aravalli Ranges, join the Chambal. The rivers of the State are rainfed and identified by 14 major basins divided into 59 sub-basins.

2.1.4 Climatic conditions

In accordance of varying topography, Rajasthan has varying climate. The climate of Rajasthan can be broadly classified into four distinct seasons, viz. (i) Pre-monsoon season,

which is the hot season and extends from April to June, (ii) Monsoon season that occurs in the month of June in the eastern region and mid- July in the western arid regions, (iii) Post monsoon season that commences from mid-September and continues till November and (iv) Winter season that extends from December to March, January being the coldest month of the year. The desert becomes very hot (50° C) during the summer and very cold (0° C) during winter. The average annual rainfall is less than 25 cm. Days are hot and the nights are cold. Sandy wind storms during summer and frost during winter are the usual phenomenon of the desert.

2.1.5 Soil Variance

The soil of Rajasthan alters with its wide-ranging topography and the availability of water. The varied kind of soils available in Rajasthan are mostly sandy, saline, alkaline and chalky (calcareous). Clay, loamy, black soil and nitrogenous soils are also found.

2.1.6 Status of Forests and Wildlife

The area under forest in the Rajasthan State recorded is 32,737 sq.km, which is 9.57% of its total geographical area. The reserved, protected and unclassed forests are 38.11%, 55.64% and 6.25% respectively. But the forest cover in Rajasthan State is 16654.98 sq.km, which is 4.87% of its geographical area (ISFR 2021: Rajasthan State).

Rajasthan is the abode of certain flora and fauna that are particularly endemic to arid regions and are specially adapted biologically to survive in the dry and waterless regions of the State. Owing to the varied topography one can find an assortment of flora and fauna and avifauna in Rajasthan.

The main tree species found in Rajasthan are *A. Tortilis, A. Senegal, Prosopis Cineraria, Acacia Nilotica, P. Juliflora*, *Zizyphus Mauritiana, Salvadora Oleoides, Azadirachta Indica, Butea Monosperma and Tectonagrandis, etc*. Numerous species of herbs and shrubs that have medicinal values are also found in this State.

The fauna of Rajasthan consists of 23 species of Lizards and 25 species of Serpents including the Spiny Tail Lizards and the Russel's Vipers. Other wildlife species include Antelopes, Indian Gazelles or Chinkaras, endangered Great Indian Bustard, Black Bucks, the Nilgai or the Bluebull, Wild Cats, Silver Foxes and so on. There are about 450 species of avifauna including various migratory birds. For the wildlife conservation, Rajasthan State is managing about 5 National Parks and 23 wildlife sanctuaries.

2.2 About CAMPA

The Compensatory Afforestation Fund and Compensatory Afforestation Fund Management and Planning Authority (CAMPA) were established in 2004, after Supreme Court's orders in 2001.

The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) Act seeks to mitigate the impact of diversion of forest land for non-forest purposes by making sure through a well-defined institutional mechanism, that the funds are released and utilized quickly, efficiently and transparently. The CAMPA law is applicable to States, Union Territories, and the Centre as well.

Objectives of CAMPA

The objectives of the CAMPA Law are stated below:

- To promote afforestation and development activities in order to compensate for forest land that is intended to be diverted to non-forest uses.
- To law down effective guidelines for the State.
- To facilitate necessary assistance in terms of scientific, technological and other requisites that may be required by the authority responsible for the State CAMPA.
- To recommend measures based on strategic planning to the authorities of the State CAMPA.
- To resolve issues that arises between inter-state or Centre-State.

State CAMPA

The authority or the instrumenting body that is responsible for accelerating activities for preservation of natural forests, effective management and monitoring of wildlife, infrastructure development in the sector and other allied works in the State is known as the State CAMPA.

CAMPA Fund

In simple terms, it can be called as the compensation in monetary values that has to be deposited along with the net value of the land under the CAMPA law by the authorities who are diverting the forest lands for non-forest purposes so as to raise the forest. This is done along with compensating the use of forest-land with the equivalent non-forest land that has to be taken up for afforestation. Authorities that divert the land have to bear the cost of Compensatory Afforestation.

A **Few facts about the CAMPA fund**

- The Supreme Court of India in 2002 (TN Godhavarman Vs Union of India case) had ordered the creation of CAMPA fund.
- CAMPA was established in 2004 to manage the Compensatory Afforestation Fund (CAF) and it acts as the custodian of the CAMPA fund.

- After the CAG report of 2013 where it was mentioned that CAMPA funds are going unutilized, CAF Act, 2016 came into force on 30th September 2018
- National Compensatory Afforestation Fund under the Public Account of India and State Compensatory Afforestation Fund under the Public Account of each state was created
- The State Funds will receive 90% of the payments while the National Fund will receive the remaining 10%.
- All states except Nagaland have set up state CAMPAs following this notification, as of November 2019.

Compensatory Afforestation Fund

- The CAF Act was passed by the center in 2016 and the related rules were notified in 2018.
- The CAF Act was enacted to manage the funds collected for compensatory afforestation which till then was managed by ad hoc Compensatory Afforestation Fund Management and Planning Authority (CAMPA).
  - Compensatory afforestation means that every time forest land is diverted for non-forest purposes such as mining or industry, the user agency pays for planting forests over an equal area of non-forest land, or when such land is not available, twice the area of degraded forest land.
- As per the rules, 90% of the CAF money is to be given to the states while 10% is to be retained by the Centre.
- The funds can be used for the treatment of catchment areas, assisted natural generation, forest management, wildlife protection and management, relocation of villages from protected areas, managing human-wildlife conflicts, training and awareness generation, supply of wood saving devices, and allied activities.

2.2.1 About State CAMPA: Rajasthan

The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) Rajasthan was constituted vide Govt. of India Notification No. S.O. 4856 (E) dated 14.09.2018 with an objective of conservation, protection, regeneration and management of existing natural forests, wildlife and their habitat and raising site-specific compensatory afforestation, penal compensatory afforestation etc.

The State CAMPA formulates Annual Plan of Operation (APOs) every year to carry out its operations in the forestry sector. The activities of CAMPA include compensatory afforestation, plantations under Net Present Value scheme, maintenance of permanent nurseries, forest protection, natural forest management, biodiversity conservation, wildlife management, research, capacity building, strengthening and development of infrastructure

for forest protection and management, information technology and communication, forest research, working plan works, awareness generation, and other allied activities etc.

Afforestation and several other forestry related works have been carried out by Rajasthan CAMPA under compensatory afforestation and other schemes through the assistance of Ministry of Environment, Forest & Climate Change, and Government of India in 283 ranges of 55 Forest Divisions distributed in all 33 districts of Rajasthan.

Under CAMPA, several activities have been taken up for compensatory afforestation, preservation & development of natural forests, afforestation of degraded forest areas, forest protection, management of wildlife, capacity building, research & development, infrastructure development and other allied activities from 2010-11 till now.

2.2.2 CAMPA Initiatives - Backdrop

More often than not, forest lands are diverted to non-forest purposes which are, of course, development activities such as irrigation, hydropower, mining, construction of industrial units, roads, railways, canal and urban expansion etc. No doubt, these activities assume great significance in a country like India, protecting and growing forest are equally or more important. While it is somewhat difficult to draw a line between the two indicating up to which point the nation can afford to address the development activities at the cost of forest, resilience of the forest is the bare minimum requirement that should be maintained to allow for its regeneration. However, several instances suggest especially in the Indian context that in many cases nothing of this sort is obeyed which is why plans/trees stop regenerating. This is what one call 'de-development', a process that has a stultifying effect on the growth of desertification in a arid state like Rajasthan. Besides, desertification, salinization of ground water and loss of soil nutrient are ecological risk especially in the western part of the state of Rajasthan.

It is distressing to note that a total of 11,467.83 Hectares (114.68 sq.km) of forest lands was diverted in 22 states between 01 January 2019 and 06 November, 2019 in order to implement 932 development projects. It is against the backdrop of destruction of vast areas of forest land the constitution of India under its realm has made a provision of "Compensatory Afforestation". It is institutionalized as a part of the compensatory Afforestation Fund Act, 2016. The Ministry of Environment and Forest, New Delhi notified on 23rd April, 2004 describing the institution, management and function of the CAMPA (Compensatory Afforestation Fund Management Act) committee, The Act was passed by Rajya Sabha on 28th July, 2016. The compensatory afforestation forest fund (CAF) is created by the money paid by those developers who have razed forest land for their development projects. The objective is that such destroyed land must be made good by means of regenerating forest elsewhere on non-forest lands.

The land for the afforestation should be in the non-forest land equivalent to the forest land which is destroyed. The land should be identified in proximity to a reserved forest or a protected forest. In case it is not available in the same district, compensatory afforestation must be undertaken anywhere else in the same state/Union territory. Even if it is not

available within the state/ UTs, CA has to be carried out elsewhere outside the state, but the extent of plantation site should be twice the extent of the land diverted for non-forest use. However, one has to bear in mind that new plantations may fulfill the objective of tree cover but they cannot compensate for the actual loss of the ecosystem services provided by a full grown forest.

Despite all tall talks, several evidences suggest that the afforestation programme under CAMPA is far away from meeting its objectives although the central government spent around Rs 59,000 crore between 2009 and 2020. True, there may be some instances that may speak of its better implementation that has yielded positive results. But then in the overall context one may be inclined to examine its impact against the backdrop of India's commitment to international environmental laws, like the United Nations conventions on climate change and land degradation. It may be worthwhile to remind us that India has pledged to absorb between 2.5 and 3 billion tonnes of CO_2 by 2030 by planting trees. The country has also committed to foresting more than 26 million hectares of degraded land.

It is against this backdrop, the present exercise is undertaken to evaluate how CAMPA is implemented in the state of Rajasthan, progress being made and difficulties being faced during the years 2017-18, 2018-19 & 2019-20.

2.2.3 PROJECT OBJECTIVES

State CAMPA has following main objectives:

(a) conservation, protection, regeneration and management of existing natural forests;

(b) conservation, protection and management of wildlife and its habitat within and outside protected areas including the consolidation of the protected areas;

(c) compensatory afforestation;

(d) environmental services, which include:

(i) **provision of goods** such as wood, non-timber forest products, fuel, fodder and water, and provision of services such as grazing, tourism, wildlife protection and life support;

(ii) **regulating services** such as climate regulation, disease control, flood moderation, detoxification, carbon sequestration and health of soils, air and water regimes;

(iii) **non-material benefits** obtained from ecosystems, spiritual recreational, aesthetic, inspirational, educational and symbolic; and

(iv) **supporting such other services** necessary for the production of ecosystem services, biodiversity, nutrient cycling and primary production.

(e) Research, training and capacity building

2.2.4 CAMPA has the following major components:

S.No.	Major Component	Brief Description
1	Afforestation	The following afforestation works are being undertaken in forest divisions: (a) Non Forest Land (NFL) (b) Degraded Forest Land (DFL) (c) Assisted Natural Regeneration (ANR) (d) Rescue wards
2	Construction of Buildings	a. Forest Chowki b. Office cum Residence c. Rescue Centres
3	Soil & Moisture Conservation Structures (SMC)	(a) Anicut type-II (b) Anicut type –III
4	Construction of Boundary wall	(a) Construction of 4 feet high stone masonry wall in forest areas (b) Construction of 6 feet high stone masonry wall in wild life areas
5	Construction of Boundary Pillars	-

2. 3 The Evaluation Study

The Third Party Evaluation of "Evaluation study of Plantations and Construction of Soil & Water Conservation Structures and Buildings executed under CAMPA during 2017-2018 to 2019-2020" is taken up by the CDECS as per the project M&E requirement. As part of project Monitoring & Evaluation, Third Party evaluation / Study is to be conducted for evaluation of survival rate of plants on randomly selected sites (20% of all the Plantation sites) as well as for qualitative and quantitative assessment of various activities of the project and identification of areas for improvement. Under the Third Party evaluation, systematic stock taking and verification of physical outputs/ performance/ achievements and identification of process adherence and quality consciousness at various levels of project implementation would be undertaken. The third party will evaluate the CAMPA works undertaken as per Annual Plan of Operations (APO) of 2017-18 to 2019-20. The results and analysis derived from the assessment would enable the project to further improve the processes and strict adherence to the laid down guidelines.

2.4 The Objectives of Third Party Evaluation Study

The objectives of the Post-project evaluation/ Study are:

- Evaluation of survival rate including growth of plants and their impact on vegetal cover.
- To assess adherence to the procedures for construction, plantation and any other proceedings for asset creation in conformity with the guidelines and procedures laid down under the project or defined by the government.
- Stock taking of various assets created under the project in terms of quantity and quality.
- To check the documentation, record keeping, reports relating to assets created at Divisional level.
- To assess the overall impact of the various activities of the project.
- To identify and suggest areas for improvement and actions to be taken.

The Scope of Work under Evaluation Study

- Field verification and validation of plantations and quality of work done.
- Field verification and validation of Water Conservation Structures and eco-restoration closures.
- Field verification of various buildings/walls/assets constructed under the Project.
- Verification and comparison of related documents such as micro plan, plantation journal, plantation card, design and estimate for soil & water conservation structures and construction of wall/ buildings, store register and other necessary supporting documents in relation to the field situation and periodical progress reports submitted.
- Assessment of the procedures/norms of procurement, construction, plantation, payment and any other proceedings for asset creation in relation to the guidelines and procedures laid down under the project or defined by the government.
- Suggested Improvements.
- Compliance of official circulars/orders by the implementing authorities.

2.5 Overview of Physical & Financial Progress under CAMPA Activities during the Year 2017-18, 2018-19 & 2019-20

2.5.1 Physical Targets

2.5.1.1 Plantations

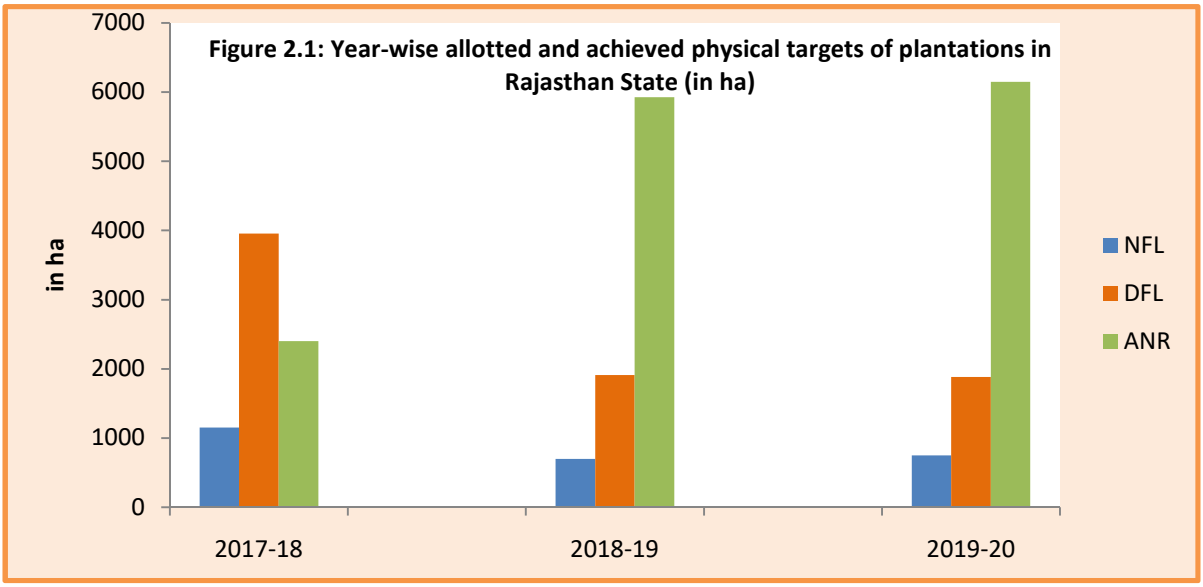
The Division-wise and year-wise allotment and achievement of physical targets of afforestation/ plantations (in ha) during the years 2017-18 to 2019-20, under State CAMPA Funded Project is presented hereunder,

Abstract of year-wise allotted and achievement of physical targets of plantations (in ha) during the years 2017-18 to 2019-20, under State CAMPA Project in Rajasthan State were as given in table 2.2 and figure 2.1.

Table 2.2: Consolidated information of Plantations carried out (in ha.) during three years -. 2017-18, 2018-19 & 2019-20

Year	Model of Plantation in ha.			Total
	NFL	DFL	ANR	
2017-18	1150.80	3955.97	2400.00	7506.77
2018-19	696.88	1909.68	5927.00	8533.56
2019-20	747.75	1885.04	6150.00	8782.79
Total	**2595.43**	**7750.69**	**14477.00**	**24823.12**

Note: Source of Data - Office of PCCF (HoFF), Government of Rajasthan



It is evident from the table and figure that during the project period of 3 years (2017-18 to 2019- 20), physical target of 24823.12 ha plantation was achieved against the allotted target of 24823.12 ha resulting in 100% achievement of plantation targets.

2.5.1.2 Asset Works

The Division-wise and year-wise allotted and achieved physical targets of construction activities (Soil and Moisture Conservation Works and other Construction Works) during the years 2017-18 to 2019-20 under State CAMPA Fund Project in Rajasthan are obtained from Office of PCCF (HoFF), Government of Rajasthan.

Abstract of year-wise allotted and achieved physical targets of construction activities (Soil and Moisture Conservation Works and other Construction Works) during the years 2017-18 to 2019-20 under State CAMPA Project in Rajasthan State were as given in table2.3.

Table 2.3: Year-wise Soil and Moisture conservation works and other construction works done during 2017-18 to 2019-20

Year	Construction Activities								
	Anicut II (No.)	Anicut III (No.)	4 Ft. wall (m)	6 Ft. wall (m)	Forest Guard Chowki (No.)	Range Office-cum-residence (No.)	Rescue Centre (No.)	Rescue Ward (No.)	Boundary Pillars (No.)
2017-18	-	-	73224.15	51382.50	16	3	17	5	1038
2018-19	-	-	77167.72	78228.00	26	7	1	9	6431
2019-20	44	37	80026.00	83255.00	18	8	-	-	6876
Total	**44**	**37**	**230417.87**	**212865.50**	**60**	**18**	**18**	**14**	**14345**

Note: Source of Data - Office of PCCF (HoFF), Government of Rajasthan

It is evident from the above table that during the project period of 3 years (2017-18 to 2019- 20), physical targets of 44 No. of Anicut II, 37 No. of Anicut III, 230417.87 meters 4 ft. wall, 212865.50 meters 6ft. wall, 60 No. of Forest Guard Chowki, 18 No. of Range Office cum Residence & Rescue Centre each, 14 No. of Rescue Ward & 14345 No. of Boundary Pillars activities were achieved against their targets. It shows 100% achievement of construction activities/ assets/SMC structures/Boundary wall etc, against the allotment.

Chapter - 3

The Methodology, Sampling & Approach

3.1 The Methodology

Under 3rd Party Evaluation study for various forestry works under CAMPA Project Activities, the Methodologies and approaches are an important aspect. As it has been said **'well begun is half done'**, this proverb reminds us about the wonderful beginning of the assignment which certainly will lead us to achieve better in terms of quality and quantity. But as far as Evaluation study is concerned, it is a stage which will help the project to drive in more planned and controlled way to reach the destination with all zeal and enthusiasm of what has been planned in the beginning. Thus, Third Party Evaluation study at this stage i.e. after 2-5 years of project implementation is a stage where lot more care is required to assess the success, achievements, procedures, problems & sustainability etc. This may be related to procedural, human, policy and may be execution, which will certainly need to be assessed if the planned rate, numbers and quantity are affected in the project.

The whole purpose is to assess the intervention of the State Forest Department, Rajasthan relating to implementation of various activities of forest protection, management and development by the funds received from CAMPA Fund. The various forestry works have been undertaken in 283 ranges of 55 Forest Divisions including protected areas in all the 33 districts of Rajasthan.

In accordance with the project proposal and logical framework, the Third Party Evaluation study of various activities under the project has been taken-up to assess what the project has achieved against agreed outputs and to guide further the project in terms of its focus, direction and staffing within the current policy and socio-economic environment. It should be emphasized that this follows the CAMPA Project activities.

The Third Party Evaluation of CAMPA assisted Project activities was largely focused on the assessment of achievements, strengths, weaknesses and largely the speed, direction and quality of interventions under the project.

This evaluation is an independent process that concentrates primarily on identifying problems encountered by the project, both in its design and its implementation to date and especially on the development of recommendations for improvements and modifications that could make the project more effective in attaining its stated objectives and outcomes.

In the evaluation, we have applied the evaluation criteria of relevance, effectiveness, efficiency, quality and level of satisfaction, usage and usefulness in the given situation. Under the assignment of Third party evaluation, the project design has been analyzed in the light of current situation against the project inputs, output & outcome vis-à-vis the objectives. In addition, under the planned Third Party evaluation, systematic stocktaking and verification of physical outputs/ performance/ achievements and identification of

process adherence and quality consciousness at various levels of project implementation would be undertaken. The results and analysis derived from the assessment would enable the project to improve further the processes and strict adherence to the laid down objectives and guidelines.

The basic design logic that will be used in the Third party evaluation can be summarized hereunder,

- Status of plantations, afforestation, survival, soil & water conservation structures undertaken at Non Forest Land (NFL), Degrated Forest Land (DFL) and Assisted Natural Regeneration (ANR).
- To what extent the plan of action has been adhered to in terms of procedure, construction, plantation and asset creation in conformity with the guidelines etc. laid down in the project.
- Field verification and validation of plantations and nurseries and quality of work done.
- Field verification and validation of Water Conservation Structures namely Anicut –I and Anicut –II) and buildings constructed namely, Rescue wards, Forest Chowki, Range Office cum Residence.
- Field verification and assessment of quantity, quality and usefulness of construction of building walls (4 feet and 6 feet walls) and boundary pillars under the CAMPA Fund.
- Verification of related documents such as micro plan, plantation journal, plantation card, design and estimate for SMC and building construction.
- Assessment of the procedures/ norms of procurement, construction, plantation, payment and any other proceedings for asset creation namely, rescue wards, boundary wall construction and construction of boundary pillars in relation to the guidelines and procedures laid down by the department.
- Stocktaking of the various Assets created under the project in terms of quality, quantity and usefulness.
- Assessment of the overall impact of the various packages of the project in terms of Identification of Strengths, Weaknesses, Opportunities and Threats.
- Analysis of cause of success and low performance.
- Identification of constraints or barriers to effective execution of the project in order to suggest areas for improvements and actions need to be taken.
- Suggesting Solutions in order to overcome barriers and also to address root causes & threats.

Five Criteria for Evaluation Study

The Evaluation Study will focus on five evaluation criteria:

- Relevance,
- Effectiveness,
- Efficiency,
- Sustainability and,
- Impact

Each criterion is associated with a number of key evaluation questions that are to be addressed and explored.

3.2 The Methodology of Third Party Evaluation Study

This 3rd Party Evaluation study has been conducted for evaluation of survival rate on randomly selected plantation sites as well as for qualitative and quantitative assessment of various activities of the project and identification of areas for improvement. Under the Third Party evaluation study, systematic stock taking and verification of physical outputs/ performance/ achievements and identification of process adherence and quality consciousness at various levels of project implementation would be undertaken. The results and analysis derived from the assessment would enable the project to further improve the processes and strict adherence to the laid down guidelines for the "Third Party Evaluation study of Plantations and Construction of Soil & Water Conservation Structures and Buildings executed under CAMPA during 2017-2018 to 2019-2020".

The quantitative and qualitative tools have been used for the Third Party Evaluation study of CAMPA assisted Project activities in all the sample districts i.e. 7 Forest circles/ Sambhags, 55 Forest Divisions (covering 283 Ranges) of the state.

The methods, tools and techniques to be used in the Third Party Evaluation study of CAMPA assisted Project activities are stated hereunder:

Methods	▪ Quantitative: Empirical, Assessing the individual construction work, plantation and afforestation's works, water conservation structures, and Agro forestry activities. ▪ Nursery works, Agro-forestry, Trainings & capacity building initiatives ▪ Statistical ▪ Qualitative: Following standard procedures in execution, construction, trainings, GIS /GPS based monitoring, Use of monitoring tools, norms in construction, way of initiating construction works for Water conservations, WHS, civil work, etc.
Techniques for collecting information	▪ Examining records, literature related to afforestation, nursery works, trainings & civil construction designs and their application at site ▪ Observing/inspecting the sites of afforestation and construction activities –Anicut type II & III. ▪ Quality, Standards and specifications ▪ Interaction with the State officials, Division & Range officials, ▪ Using secondary data & information ▪ Listening to or interrogating informants: o Open interviews. ▪ Visual Aids

	■ Examining records of Forest Divisions
Tools	■ Questionnaire for assessing the survival rates of plantations & quality of works as per standards and norms. ■ Checklist for discussion with key stakeholders ■ Questionnaires, interview schedule, check lists, ■ (In total 07 different tools have been developed/ provided by the department)
Techniques for analysis	■ Computer based data processing ■ Statistical methods ■ Transforming qualitative information into quantitative data. ■ Photo & picture analysis

3.3 Evaluation Design & Approach

Qualitative Approach	Quantitative Approach
Key Purpose: To provide qualitative information to the study and develop achievement & correction plan by substantiating quantitative information	**Key Purpose**: To substantiate the Evaluation by putting quantify values to the project indicators.
1. In depth interviews with Divisions & Range level officials In-depth interviews with various management units namely, Divisions and Ranges. The in-depth guidelines will be semi-structure questionnaire.	**2. Secondary data collection on indicators** Some indicators of the CAMPA assisted Project activities Phase-1 will pertain to understanding of Project Memorandum and M&E framework under the project. The baseline data, reports namely, monthly reports, quarterly reports and related documents will be consulted and analysed.
3. In-depth Discussions with partner Field level partners /NGOs and consultants To gain understanding of the system, process and outcome of the various initiatives namely, capacity building and skill development trainings, value additions, linkage with banks/ financial institutions, undertaking nursery training and plantation activities, etc. This has also given an insight into the effectiveness of the micro plans	**4. Assessment of Vegetal indicators** It pertains to measurement of afforestation, agro-forestry, forest regeneration, growth and vegetal cover.

prepared and its extent of execution.	
5. Field visits for quality assessments of survival rate of Plantations, in-situ soil & moisture (SMC) works and other assets created To assess the quality of works undertaken namely, Water conservation structures created namely, Anicut type II & III. ▪ In situ soil and water conservation works like CBD, Check dams, LB with gabions) ▪ Plants distribution ▪ Afforestation & Plantation works/ survival ▪ Construction of Building (Forest Chowki, Office cum Residence & Rescue Centres), boundary wall & boundary pillars.	**6. Field visits to ensure the type and number of assets created** Field verification and validation of plantations and nurseries and quality of work done. Field verification and validation of Water Conservation Structures, constructed building, boundary wall & boundary pillars. To assess the number of Water conservation structures created namely, Anicut II & III . GPS coordinates of the sites and assets verified during Third Party Evaluation.
7. Field level monitoring, reporting and documentations To an extent the field level Quality monitoring, reporting and documentations taken up – survey map/ treatment map, micro-plan, plantation journal, plantation card, site estimate, transparency board. Compliance of official circulars/order by the implementing agencies.	**8. Field level monitoring, reporting and documentations** To an extent the quantity of field level monitoring, reporting and documentations taken up – survey map/ treatment map, micro-plan, plantation journal, plantation card, site estimate, transparency board. To an extent the compliance of official circulars/order by the forest divisions under the project to ensure proper execution at sufficient level. Verification and comparison of related documents such as micro plan, plantation journal, plantation card, design and estimate for SMC and structure construction, store register and other necessary supporting documents in relation to the field situation and periodical progress reports submitted.

3.3.1 Approach of Field level evaluation of plantation sites

a) Finding the plantation site as per record and reaching along with forest functionaries and incharge of site
b) Meeting with Stake Holders
c) Checking of records
d) Signing of pre-panchnama
e) Move around the boundaries as per records and interaction with site incharge
f) Measurement of planted area (Preparation of KML file).
g) Counting of species-wise planted live/dead plants.
h) Measurement of height and girth of planted live plants.
i) Counting of plants of natural regeneration.
j) Estimation of plants of seed sowing.
k) Assessment of SMC works.
l) Re-survey of plantation site after completion of counting
m) Recording of field observations in assessment formats
n) Getting signature on formats to have consensus on the evaluation findings
o) Filling the post evaluation panchnamma and getting signatures

3.4 Sampling & Sample size

The Third Party Evaluation study will be undertaken in 7 Forest Circles/ Sambhags, 55 Forest Divisions (covering 283 Ranges) of CAMPA assisted Project activities of Rajasthan. The scope of work for the Evaluating Agency involves the following:

c) The selection of sites has been done randomly by the office of A.P.C.C.F. (M&E) O/o of PCCF (HoFF) using stratified random sampling method. Division-wise list of selected sites were enclosed in separate envelopes and sealed. The sealed envelopes were handed over to the Evaluation agency 'CDECS Jaipur'. The sealed envelopes were opened at respective Forest Division headquarter in the Office of Deputy Conservator of Forests in the presence of Deputy Conservator of Forests or his representative of the Division.

d) Criteria for site selection:

- 20% sites of plantations of each Division have been randomly selected for evaluation.
- Plantation / afforestation Sites selected for evaluation were 100% and 10% evaluated based on odd and even criteria on the selected sample lists division-wise.
- 20% sites of Anicuts in each division shall be evaluated in the same manner.
- 20% construction of Chowkis/ office-cum-residences/Rescue Centers/Boundary Pillars/Rescue wards shall also be evaluated in the same manner.

3.5 The Approach

The Evaluation Study has also followed the SWOT Analysis in order to assess the Strengths, Weaknesses, Opportunities and Threats and come out with the suggestions and recommendations to set the whole tune for successful completion of the project in-terms of achieving its set goals and objectives in the light of the present situations and circumstances.

This Third Party Evaluation study has been conducted for evaluation of survival rate on randomly selected plantation sites as well as for qualitative and quantitative assessment of various activities of the project and identification of areas for improvement. Under the Third Party evaluation study, systematic stock taking and verification of physical outputs/ performance/ achievements and identification of process adherence and quality consciousness at various levels of project implementation have been undertaken. The results and analysis derived from the assessment have enabled the project to further improve the processes and have strict adherence to the laid down guidelines for the Third Party Evaluation / study of CAMPA Project works/activities undertaken during the year 2017-18, 2018-19 and 2019-20.

Strengths, Weaknesses, Opportunities and Threats

STRENGTHS	**WEAKNESSES**
▪ **In terms of teams and management structure** ▪ **Process, procedures and management** ▪ **Inputs** ▪ **Afforestation/ Plantations, Forest protection,** ▪ **Management & development** ▪ **Outcomes & Achievements** ▪ **Community mobilization** ▪ **Water conservation Structures and their benefits – immediate and long terms** ▪ **Documentation, Records and reporting**	▪ **System and processes** ▪ **Management** ▪ **Poor Execution & Achievements** ▪ **Trainings & Capacity building** ▪ **Designs and interventions** ▪ **Quality of execution, water conservation structures, afforestation (NFL/DFL/ANR), construction of buildings –forest Chowki, Range office cum Residence, Rescue centres, SMC structures (Anicut II & Anicut III),Boundary wall and boundary pillars** ▪ **Records, documents and reports**
OPPORTUNITIES	**THREATS**
▪ **Existing system – how beneficial and what is beneficial** ▪ **Consolidate and use the system strengthening measures** ▪ **Community involvement** ▪ **Monitoring system** ▪ **Team for execution** ▪ **Support system**	▪ **Areas, processes, system and activities need to be strengthened** ▪ **Factors and processes affecting the project and its quality execution** ▪ **Procedures and actions, norms and standards** ▪ **Physical structures for soil and water conservations & regular maintenance** ▪ **Community behaviour & practices** ▪ **Participation & ownership**

OBJECTIVES Vs. AREAS OF ASSESSMENT/ STUDY

The Key Objectives of External evaluation/ Study are:

S.No.	Objectives	Areas of Assessment/ study
1.	To evaluate the survival rate including growth of plants and their impact on vegetal cover.	▪ Spot/ Field verification and validation of Afforestations/ plantations and nurseries and quality of work done along with GPS locations. ▪ Survival rate of plantations under various models including growth and impact of plantation and, ▪ Improvement in vegetal cover.
2.	To assess adherence to the procedures, construction, plantation and any other proceedings for asset creation in conformity with the guidelines and procedures laid down under the project or defined by the government.	▪ Assessment of the procedures/norms of procurement, construction, plantation, payment and any other proceedings for asset creation in relation to the guidelines and procedures laid down under the project or defined by the government. ▪ In situ soil and water conservation works like CBD, Check dams, LB with gabions) ▪ SMC Structures -Anicut type-II & Anicut Type-III, Farm pond, PCT, WHS ▪ Creation of new /development of existing Nurseries ▪ Development of existing nurseries ▪ Construction of Forest chowki, Range Office cum Residence and Rescue Centres ▪ Constriction of boundary walls - Construction of 4 feet high stone masonry wall in forest areas & Construction of 6 feet high stone masonry wall in wild life areas ▪ Construction of Boundary Pillars
3.	To take the stock of various assets created under the project in terms of quantity and quality.	• Field verification and validation along with GPS locations of Water Conservation Structures, closures, and assets created under CAMPA Project fund. • Verifications of the various assets created under project namely, construction activities/ structures, Water conservation structures etc.
4.	To check the process and	• Field verification of Quality, quantity and

	assets created in the Forest Divisions.	usefulness of buildings and boundary walls constructed. • Verification of related documents such as micro plan, plantation journal, plantation card, Estimates, design and estimate for SMC and building construction, and other necessary supporting documents in relation to the field situation and periodical progress reports submitted. The records / documentation were checked at plantation/ afforestations/ works site, ranges and Divisions were, • Survey map / treatment map. • Micro-plan • Plantation journal • Plantation card • Site estimate • Transparency board • VFPMC / EDC's records • Various Trainings & capacity building's as mentioned TOR.
5.	To assess the overall impact of the various packages of the project.	• Impact of afforestation and plantations made under various models namely, NFL, DFL and ANT. • Review the benefits and outcome of the various activities undertaken - Plantations, creation of new nurseries & development of existing nurseries), soil and moistures conservation (SMC structures - contour bunding, check dams, Farm ponds, Gabion, PCT, WHS, Anicuts type II & III), records of VFPMC.
6.	To identify and suggest areas for improvement and actions to be taken.	• To identify the areas of the project which need improvement? • Recommendations for improvements.

THE METHODOLOGY OF THE STUDY

The Third party evaluation has been taken up as per various circulars and guidelines of the Forest Department. Based on prevailing circulars and guidelines the Organization has developed detailed methodology to evaluate Status of plantations, afforestation, survival, soil & water conservation structures, construction of buildings, SMC works and Boundary walls and pillars as per the implementation plan and other activities.

A combination of quantitative and qualitative research techniques (plurality of tools and techniques) has been used for the Third Party Evaluation of CAMPA Fund activities executed in the State i.e. activities and works of the year 2017-18, 2018-19 and 2019-20 to draw the holistic picture of the issues and the problems and finally to ensure the successful completion of the project as per set aims and objectives.

The Methodological devices make a study organized, systematic and scientific - rational. The selection of methods also expresses the research aptitude of the researcher and his/ her objectivity towards the whole exercise of study. By using this objectivity, i.e. inter-subjective agreement, social researcher establishes the relationship between (1) ideas and ideas, (2) ideas and experiences, and (3) experiences and experiences. This 'triple synthesis' is necessary for making evaluative and assessment studies particular. In the study, we have constructed the triple syntheses in case of both the qualitative and the quantitative assessment. Since our purpose is to undertake third Party Evaluation of CAMPA Fund Project activities, our evaluation-team has discussed in detail the nature of tools of data collection. The works/ activities sites have been visited by the team members and related data collected with the help of observation and questionnaires/ schedules. The secondary data related to process of activities undertaken, civil constructions and overall management procedures have been collected from those documents which have been prepared by relevant authorities. Since the main effort of evaluation team is 'to make data rational', the conversations with the project officials/ functionaries VFPMC/ EDC, along with villagers in 'informal' space have also been given importance. The efforts of the team have also been associated with providing status of methods through the elements of flexibility, consistence and coherence so that evaluations would not lack direction. The quantitative and qualitative tools have been used for the Third Party Evaluation study of CAMPA fund works/ activities in all the sample Forest Divisions i.e. 55 Forest Divisions (covering 283 Ranges) of the state.

The coverage/ spread of sample Forest Divisions/ sites in the State is given in the State map below,

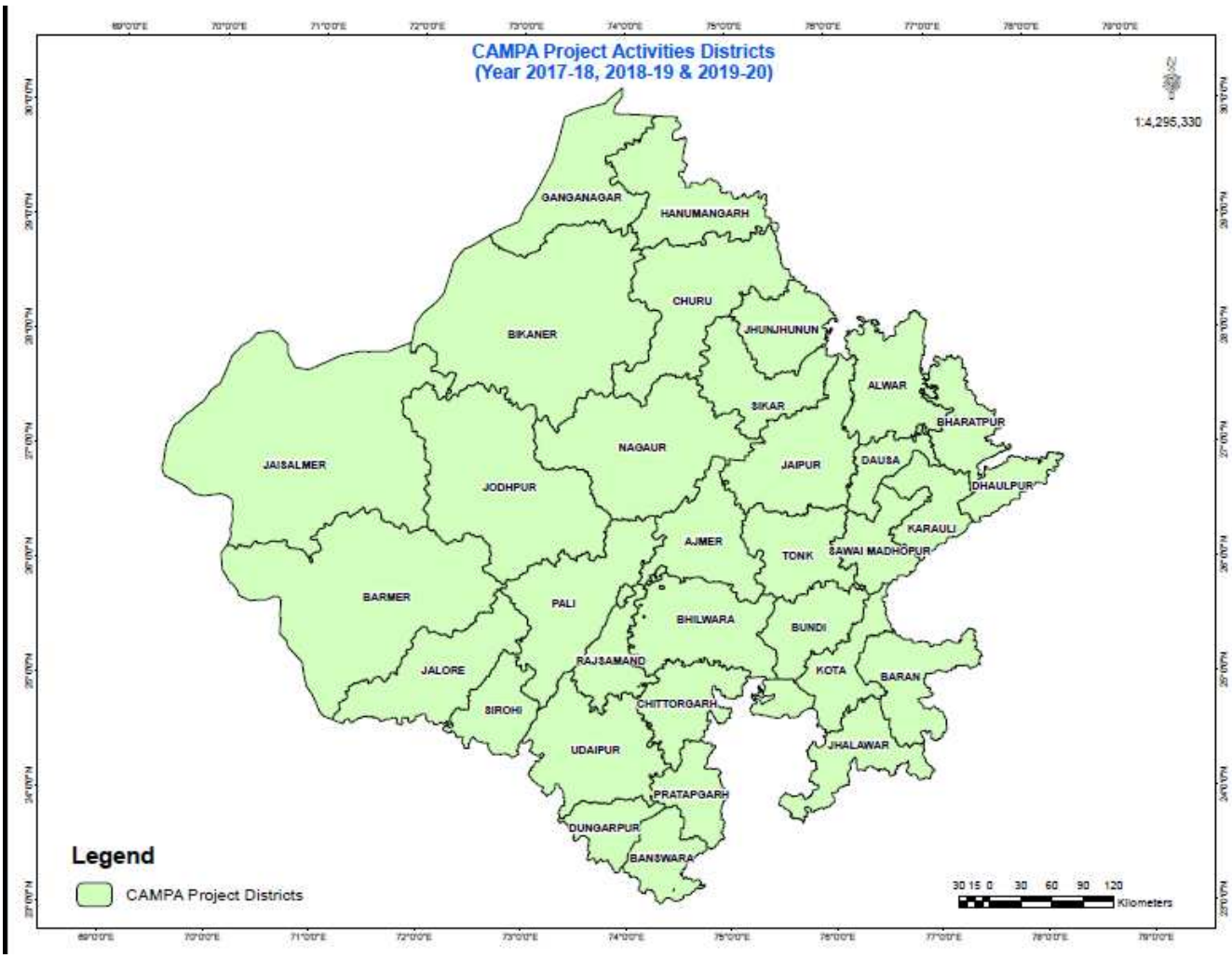

CAMPA Project Activities Districts
(Year 2017-18, 2018-19 & 2019-20)
1:4,295,330
GANGANAGAR
HANUMANGARH
CHURU
BIKANER
JHUNJHUNUN
ALWAR
SIKAR
BHARATPUR
NAGAUR
JAISALMER
JAIPUR
DAUSA
JODHPUR
DHAULPUR
KARAULI
AJMER
TONK
SAWAI MADHOPUR
BARMER
PALI
BHILWARA
BUNDI
RAJSAMAND
JALORE
KOTA
BARAN
SIROHI
CHITTORGARH
UDAIPUR
JHALAWAR
PRATAPGARH
DUNGARPUR
BANSWARA
Legend
CAMPA Project Districts
30 15 0 30 60 90 120
Kilometers

Table 3.1: Samples covered for Assessment of Plantations survival

Sr. No.	Administrative Division (Sambhag)	Forest Division	Sample Range	Sample Plantation Area (Ha)	Covered Sample Site	10% Sample site	100% Sample site
1	Ajmer	Ajmer	1	50	1	0	1
2		Bhilwara	2	200	4	2	2
3		Nagaur	1	50	1	0	1
4		Tonk	1	100	2	0	2
5	Bharatpur	Bharatpur	1	50	1	0	1
6		Dholpur	3	175	4	2	2
7		Karauli	2	72.29	3	2	1
8		S. Madhopur	1	75	2	1	1
9		RTR I S. Madhopur	1	2.12	1	0	1
10	Bikaner	Bikaner	2	63.86	2	1	1
11		Bikaner IGNP II	1	52.25	1	0	1
12	Jaipur	Alwar	6	300	6	3	3
13		Alwar STR	1	85.44	1	0	1
14		Jaipur	2	148.86	4	2	2
15		Jaipur North	2	150	3	1	2
16		Jaipur WL	2	54.17	2	1	1
17		Jhunjhunu	3	350	7	3	4
18		Sikar	3	102.62	3	0	3
19		Dausa	2	150	3	1	2
20	Jodhpur	Barmer	3	200	3	1	2
21		Jaisalmer	1	220	1	0	1
22		Jaisalmer IGNP I	1	200	4	1	3
23		Jalore	2	150	3	1	2
24		Jodhpur	1	35.24	1	0	1
25		Pali	3	150	3	1	2
26		Sirohi	1	50	1	0	1
27	Kota	Jhalawar	2	50.92	2	1	1
28		Kota	3	150	3	1	2
29		Kota MNP	3	136.4	3	1	2
30		Baran	5	491.45	8	4	4
31		Bundi	3	227.51	4	2	2
32	Udaipur	Banswara	2	110	2	1	1
33		Udaipur North	2	215.69	3	1	2
34		Udaipur	2	106	2	1	1
35		Dungarpur	2	112.8	3	0	3
36		Chittorgarh	3	200	4	2	2
37		Chittorgarh WL	1	50	1	0	1
38		Rajsamand	1	50	1	0	1
39		Rajsamand WL	3	150.62	3	1	2
40		Pratapgarh	4	163.64	5	2	3
	Total		**85**	**5451.88**	**111**	**40**	**71**

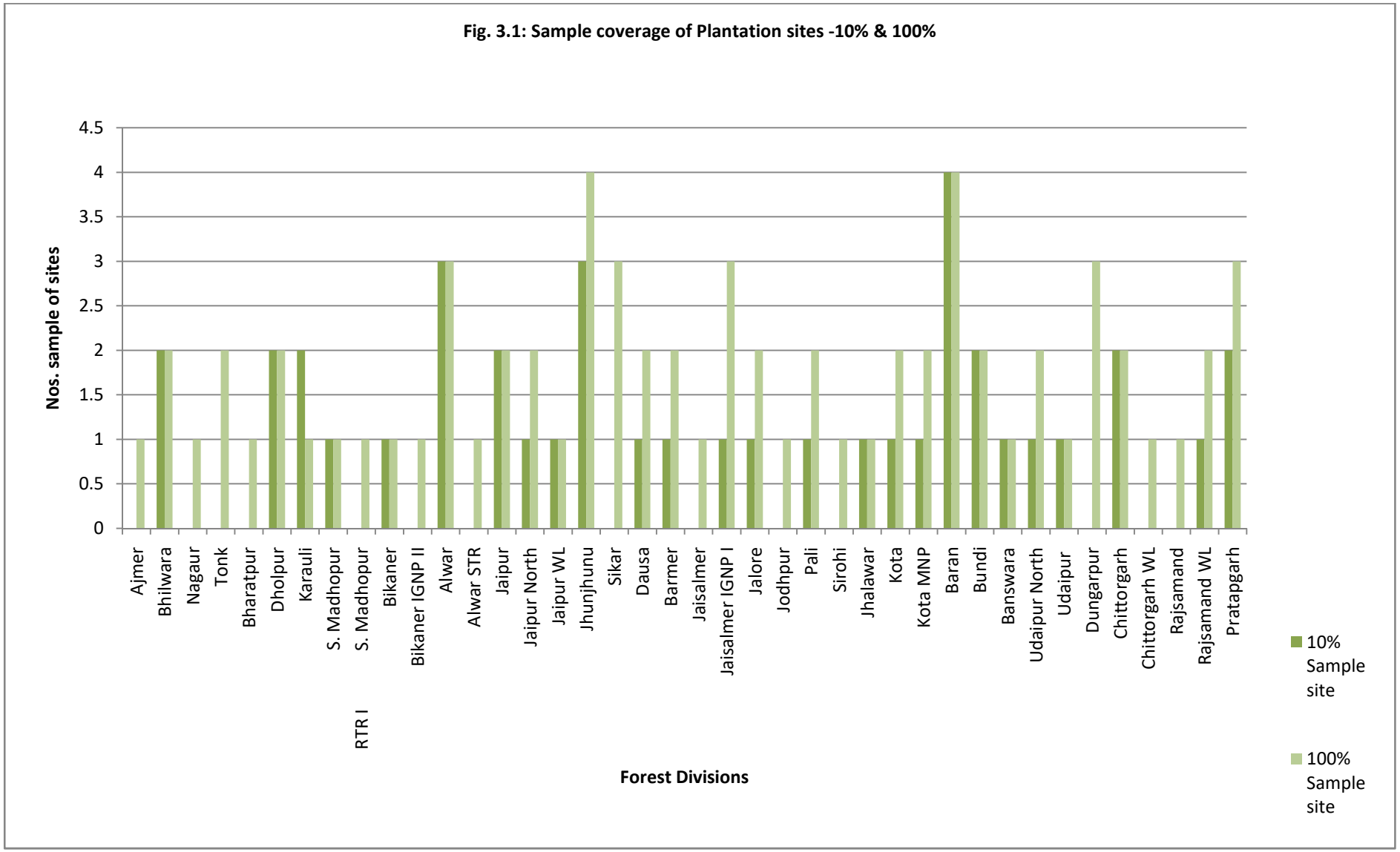


Fig. 3.1: Sample coverage of Plantation sites -10% & 100%
Nos. sample of sites
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Ajmer
Bhilwara
Nagaur
Tonk
Bharatpur
Dholpur
Karauli
S. Madhopur
S. Madhopur
RTR I
Bikaner
Bikaner IGNP II
Alwar
Alwar STR
Jaipur
Jaipur North
Jaipur WL
Jhunjhunu
Sikar
Dausa
Barmer
Jaisalmer
Jaisalmer IGNP I
Jalore
Jodhpur
Pali
Sirohi
Jhalawar
Kota
Kota MNP
Baran
Bundi
Banswara
Udaipur North
Udaipur
Dungarpur
Chittorgarh
Chittorgarh WL
Rajsamand
Rajsamand WL
Pratapgarh
Forest Divisions
10% Sample site
100% Sample site

In total, 111 plantation sites were covered in 40 Forest divisions under Third Party Evaluation of CAMPA Fund afforestation and plantation activities of the year 2017-18, 2018-19 & 2019-20. As per the TOR, the sample sites of 100 percent and 10 percent were provided by the Office of PCCF (HoFF). Also, the sample sites of boundary wall, boundary pillars, rescue wards, Forest Choke and Range Office cum residence buildings and SMC works sites were selected randomly by the department and given signed copy in the sealed envelope to the evaluation agency. The sample sites of plantation selected for evaluation were evaluated based on sampling method i.e. 10% area of plantation and 100 % as per the official orders and TOR.

Out of 55 Forest divisons, 40 Forest Divisions sample sites of ANR, DFL and NFL were evaluated based on the scientific sampling method. The sample sites of 10% covered were 40 in number and 100% sample sites were 71 in number (table 3.1 & figure 3.1).

Under coverage in the 40 sample Forest divisions, the total coverage of sample area under plantations sites were 5451.88 hectares spread in 85 Forest ranges. The percentage of coverage of sample area under Third Party Evaluation of plantation works carried out during year 2017-18, 2018-19, 2019-20 is 21.96 percent (Total Plantation area under plantation during year 2017-18, 2018-19, 2019-20 is 24823.12 Hectares).

Table 3.2: Samples Covered for Assessment of Assets

Sr. No.	Administrative Division (Sambhag)	Forest Division	Range	Anicut	Boundary Pillars	Forest Chowki	Nursery	Pakki Diwar 4 Ft.	Pakki Diwar 6 Ft.	Range office Cum Residence	Rescue Centre	Road side plantation	Total
1	Ajmer	Ajmer	3		1	1		2			1		5
2		Bhilwara	2					2					2
3		Nagaur	3					2			1		3
4		Tonk	3			1	1	3					5
5	Bharatpur	Bharatpur	3		1		1	4					6
6		WL Bharatpur	1	1		1			2				4
7		Dholpur	2		1			2					3
8		Karoli	3		2			3					5
9		Karoli RTR II	4	1	1				5		2		9
10		S.Madhopur	3		1			3					4
11		WL Chambal Ghadiyal	2			1			1				2
12		RTR I S. Madhopur	6	4		1			5				10
13	Bikaner	Bikaner IGNP II	1					1					1
14		WL Bikaner	1			1			1				2
15		Chhattargarh	1		1								1
16		Chhattargarh IGNP I	1			1							1
17		Churu	2					2					2
18		Ganganagar	3		1			1			1		3
19		Hanumangarh	3		3			2			2		7

Sr. No.	Administrative Division (Sambhag)	Forest Division	Range	Anicut	Boundary Pillars	Forest Chowki	Nursery	Pakki Diwar 4 Ft.	Pakki Diwar 6 Ft.	Range office Cum Residence	Rescue Centre	Road side plantation	Total
20	Jodhpur	Barmer	4					3			1		4
21		Jaisalmer	3			1				1	1	1	4
22		Jaisalmer IGNP II	1		1								1
23		Jaisalmer WL	1			1							1
24		Jalore	2			1		3					4
25		Jodhpur WL	1						2				2
26		Mount Abu WL	3	2					2				4
27		Sirohi	2		2		1	2					5
28	Kota	Baran	3		2							1	3
29		Bundi	2		1	1		2					4
30		Jhalawar	2		1		1	1			1		4
31		Kota	1					2					2
32		Kota WL	4	2					3		1		6
33		Mukundra WL	4	1		1			1	1			4
34	Jaipur	Alwar	1					1					1
35		STR Alwar	4						9				9
36		Dausa	2		1			2					3
37		Jaipur	1					3					3
38		Jaipur North	4				1	5	1				7
39		Jaipur Zoo	2			1		1	6				8
40		WL Jaipur	3						4				4
41		Jhunjhunu	3	3		1		1					5
42		Sikar	5		3		1	4	1			1	10
43	Udaipur	Banswara	5		2			4			1		7
44		Chittorgarh	6		1	1	1	4				2	9
45		Chittorgarh WL	3			1	1		3				5
46		Dungarpur	3		2			2		1			5
47		Rajsamand	1					1					1
48		Rajsamand WL	6	4	1			1	1	1			8
49		Udaipur	4		2			2					4
50		Udaipur North	2				1	2					3
51		Udaipur WL	2		1	1			1				3
	Total		**137**	**18**	**32**	**17**	**9**	**73**	**48**	**4**	**12**	**5**	**218**

Data Collection & Field Level evaluation

The collected data were tabulated in quantitative terms by giving standardized weightage to the responses generated from the field. The weightage includes availability counting one mark and non-availability counting 0 mark. This was necessary to eliminate any biases in data collection and compilation considering a large number of researchers involved in the study. It is pertinent to mention that in some cases data were given qualitative value assignment based on evaluator's assessment from his/her experience particularly, where information availability was poor or it was hard to quantify. In such cases assessments have been based on the judgment of the experts and triangulated to eliminate individual biases in value assignment. The processes of data collection, compilation, and quantification were made as objective as possible using objectively verifiable criteria and indicators.

The Report

As per the terms of reference, the draft report covering 55 Forest Divisions (Alwar, STR-Sariska, Jaipur, Jaipur (North), Jaipur Zoo, Sikar, Jhunjhunu, Wildlife Jaipur, Dausa, Bhilwara, Nagaur, Tonk, Ajmer, Banswara, Udaipur, Udaipur (North), Pratapgarh, Dungarpur, Chittorgarh, Rajsamand, Rajsamand WL, Udaipur WL, WL Chittorgarh, Jhalawar, Baran, Kota, Bundi, MNP Kota, WL Kota, Barmer, Jalore, WL Jodhpur, Jodhpur, Sirohi, Mount Abu, WL Jaisalmer, Jaisalmer IGNP, Jaisalmer, Pali, Bharatpur, Dholpur, Karauli, Karauli RTR-II, WL Bharatpur, Sawai Madhopur, WL Chambal Ghadiyal, WL Tiger Project (RTR), Churu, WL Bikaner, Bikaner, Hanumangarh, Bikaner IGNP II, Sri Ganganagar, Chhattargarh IGNP and Chhattargarh) is prepared and submitted to the department.

The report has been finalized by incorporating the comments and suggestions on the draft report given by the Office of PCCF (HOFF) vide letter No. 2008 dated 16.08.2022.

Chapter - 4

Assessment of Afforestation & Soil Moisture Conservation

The Third Party Evaluation study of Plantations and Construction of Soil & Water Conservation Structures and Buildings executed under CAMPA during 2017-2018 to 2019-20 in Rajasthan has been undertaken in 53 Forest Divisions covering 283 Forest Ranges distributed across 33 districts of State. Afforestation and several other forestry related works have been carried out by Rajasthan CAMPA under compensatory afforestation and other schemes through the assistance of Ministry of Environment, Forest & Climate Change, and Government of India in the 55 Forest Divisions.

This third party evaluation study has been commissioned for this purpose to evaluate the CAMPA works undertaken as per Annual Plan of Operations (APO) of 2017-18 to 2019-20. The project was in operation covering 05 key components of the project namely, Afforestation, construction of buildings, soil & moisture conservation structures (SMC), construction of boundary walls and construction of pillars.

Largely, the overall execution of CAMPA Fund works/ activities was executed in a planned manner as per the project design for afforestation of forest, forest protection, management and development. The results and analysis derived from the assessment would enable the project to further improve the processes and strict adherence to the laid down objectives and guidelines.

In the 3rd Party Evaluation study, the data have been collected based on the terms of reference (TOR) provided by Forest Department, Government of Rajasthan. The data analysis and findings of Evaluation study have been presented under the following sections on various components namely, afforestation, SMC structures, construction of buildings, construction of boundary walls and boundary pillars.

Gafantalai plantation site

Formation of block for counting

4.1 Assessment of Survival rate including growth of plants and impact on vegetal cover

The data have been collected at afforestation and plantation sample sites which were selected for Third Party Evaluation of CAMPA Fund works and actvities. The aim has been to assess the

Strengths, **W**eaknesses, **O**pportunities and **T**hreats and accordingly efforts have been made to come out with the suggestions and recommendations to set the whole tune for successful completion of the project. It has also been tried to assess the success of the project in-terms of achieving its set goals and objectives in the light of the present situations and circumstances.

The major focus of the analysis is to analyse the data gathered during study in terms of the survival of the afforestation, plantations, SMC works, Building construcuion and construction of boundary wall and pillars done in various years (2017-18 to 2019-20), in terms of executing the CAMPA fund activities.

For the purpose of Third Party Evaluation of CAMPA fund, the data have been collected

based on the terms of reference (TOR) provided by Additional Principal Chief Conservator of Forest, Monitoring & Evaluation, Office of the Principal Chief Conservator of Forest (HoFF), Government of Rajasthan. In response to the TOR, the data have been collected on 7 various tools approved by the department. The data analysis and findings of the evaluation have been presented under the following sections.

4.1.1 Survival Rate & Growth

One of the important components of the CAMPA fund is to enhance the vegetal coverage by adopting various plantation models as per the suitability of plantation sites looking to the vegetal coverage of the district. Under different plantation models, plantation activities were taken up in the project districts with active participation of Village Forest Protection & Management Committee (VFPMC) and the local communities. It is clear that the visible results of the afforestation work can be achieved in considerable time period of 5-6 years period. The benefits of afforestation work to the community are somehow or other quite significant. However, targets for enhancing forest cover and restoration of degraded forest areas have been achieved satisfactorily under various models of afforestation outlined in the CAMPA

It has been reported that the plantation sites in the project districts were selected on the basis of project criteria for vegetal coverage under the project. Also, the species selection and plantation activities namely, nursery raising, advance action, fencing etc. were undertaken as per the guidelines and directions under CAMPA

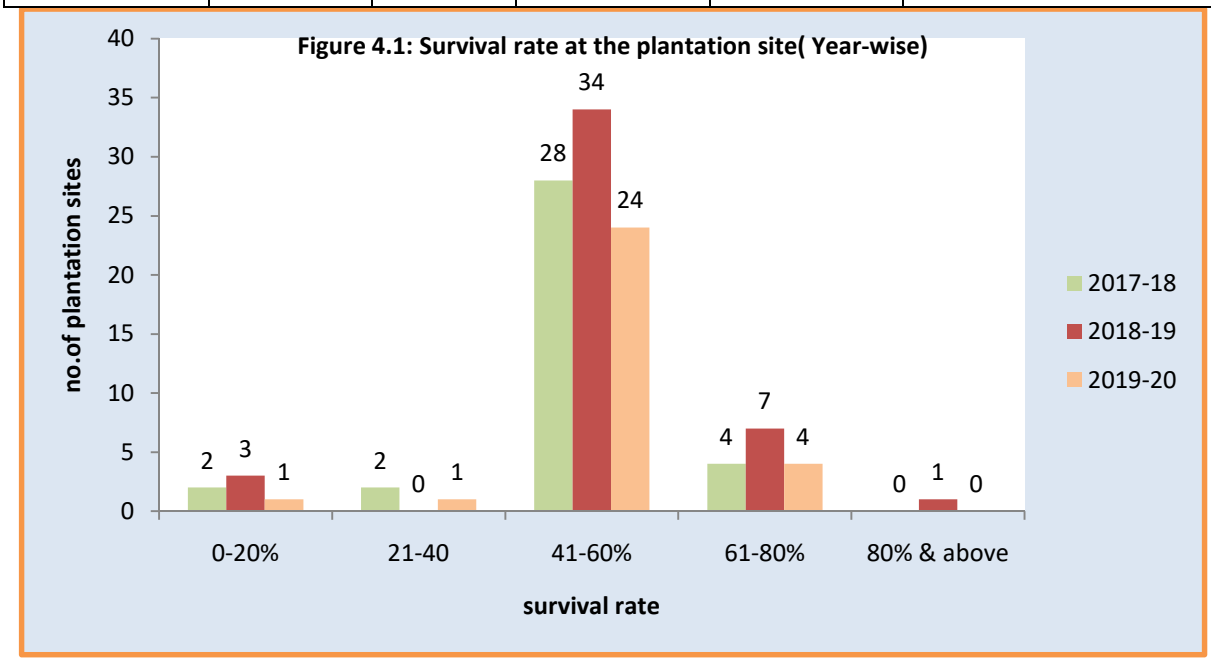
Assessment of survival rate including growth rate

The table 4.1 & figure 4.1 show the survival percentage of plants in the sample sites (year-wise). In the year 2017-18, the survival percentage of the plants was in the range of 0-20%, & 21-40% at each of the 02 sample sites, at 28 sample sites the survival percentage of the plants was in the range of 41-60% and at 04 sample sites the survival percentage of the plants was in the range of 61-80%. In the year 2018-19, at 03 sample sites the survival percentage of the plants was in the range of 0-20%, survival percentage of the plants was in the range of 41-60% at 34 sample sites, at 07 sample sites the survival percentage of the plants was in the range of 61-80% and at 01 site the survival percentage of the plants was in the range of 81-90%. In the year 2019-20, the survival percentage of the plants was in the range of 0-20% & 21-40% at each of the 01 sample site, the survival percentage of the plants was in the range of 41-60% at 24 sample sites and at 04 sample sites the survival percentage of the plants was in the range of 61-80%. In total, the survival percentage of the

plants was in the range of 0-20 % at 06 sample sites, 21-40% at 03 sample sites, 41-60% at 86 sample sites, 61-80% at 15 sample sites and 81-90% at 1 sample site.

Table 4.1: Survival rate of planted species at the plantation sites (Year-wise)

Year	0-20%	21-40	41-60%	61-80%	80% & above
2017-18	2	2	28	4	0
2018-19	3	0	34	7	1
2019-20	1	1	24	4	0
Total	6	3	86	15	1



The survival percentages of the plants at sample sites are stated in the table 4.2. During third party evaluation 111 sample sites were visited to assess the survival rates of the planted species. The survival rates of the planted species vary from 2.19% (Gopalpura) to 82.0% (Papad). At 77.5% sample plantation sites (86 sites out of 111), the survival rates of the planted species range from 41-60 % across the sample units

Table 4.2: Status of Survival % (Site-wise, range-wise & division-wise)

Sl.no	Division	Plantation						
		Range	Site	Model	Year	Area (ha)	Survival %	Rank
1	Ajmer	Pushkar	Nand	ANR	2018-19	50	40.6	5
2	Alwar	Kishangarhwas	Chor Basai	DFL	2017-18	50	48.8	5
3		Thanagazi	Gadh Basai	ANR	2017-18	50	46.0	5
4		Rajgarh	Dolatpura	ANR	2018-19	50	48.0	5
5		Tijara	Gwalda	DFL	2018-19	50	51.2	6
6		Laxmangarh	Santokpur	DFL	2018-19	50	7.3	4
7		Bahror	Dhindhor	DFL	2019-20	50	46.3	5

8	Alwar STR	Tahala	Nadoli	NFL	2017-18	85.44	45.0	5
9	Banswara	Ghatol	Jagmer Jogimal	ANR	2017-18	50	48.2	5
10		Sajjangarh	Andeshwar	ANR	2018-19	60	42.1	5
11	Baran	Shahbad	Baseli-B	DFL	2017-18	30	59.3	6
12		Kishanganj	Borda	DFL	2017-18	130	46.3	5
13		Nahargarh	Kadili	DFL	2017-18	120	50.5	6
14		Shahbad	Dabar-D	NFL	2017-18	23.45	54.7	6
15		Anta	Mundiya B I	NFL	2018-19	66	51.3	6
16		Kelwara	Sukha Sameli- A	ANR	2018-19	50	59.2	6
17		Shahbad	Mundiya Sehjana II	ANR	2018-19	50	58.0	6
18		Anta	Kanada	NFL	2019-20	22	56.4	6
19	Barmer	Sivana	Kusip	ANR	2017-18	100	41.5	5
20		Barmer	Junapatarasar-B	DFL	2018-19	50	57.2	6
21		Barmer	Gafan Talai	DFL	2018-19	50	77.5	8
22	Bharatpur	Bayana	Ghodi Khoj Hathodi	ANR	2018-19	50	41.7	5
23	Bhilwara	Mandalgarh	Saimala	DFL	2017-18	50	41.7	5
24		Mandalgarh	Kharcha ki Nadi	ANR	2017-18	50	41.4	5
25		Jahajpur	Bahadurpura	ANR	2018-19	50	48.9	5
26		Mandalgarh	Ladpura	DFL	2019-20	50	44.4	5
27	Bikaner	Lunkaransar	Mahajan-D	DFL	2018-19	38.43	16.0	4
28		Nokha	Nokha	DFL	2019-20	25.43	46.1	5
29	Bikaner IGNP II	750 RD unit II	SDS Agneu	NFL	2018-19	52.25	55.0	6
30	Bundi	K. Patan	Gopalpura	NFL	2017-18	27.51	2.19	4
31		Hindoli	Maliyon ki jhopdiya	DFL	2017-18	100	46.57143	5
32		Hindoli	Dholi Chabutri B	ANR	2018-19	50	41.23	5
33		Nainwa	Topa Dhardhadi-F	ANR	2019-20	50	48.4	5
34	Chittorgarh	Chittorgarh	Hasala-E	ANR	2017-18	50	42.5	5
35		Chittorgarh	Siyalkund	ANR	2018-19	50	45.0	5
36		Nimbahera	Tai-B	DFL	2019-20	50	21.5	4
37		Begu	Jogniyamata Haribadliya	ANR	2019-20	50	43.0	5
38	Chittorgarh WL	Dhariyavad	Nangliya	ANR	2018-19	50	41.8	5
39	Dausa	Sikrai	Achalpura	ANR	2017-18	50	53.5	6

40		Dausa	Sonadi	ANR	2018-19	50	50.6	6
41		Sikrai	Fraspura	ANR	2019-20	50	60.3	7
42	Dholpur	Sarmathura	Thane Ka Pura-II ANR	ANR	2017-18	50	33.2	4
43		Sarmathura	Dhore Ka Dada	ANR	2019-20	50	53.0	6
44		Vanvihar	Meenakhuri	ANR	2019-20	50	44.7	5
45		Badi	Kala Patpara	DFL	2018-19	25	64.1	7
46	Dungarpur	Dungarpur	Palwada	NFL	2017-18	12.8	6.4	4
47		Dungarpur	Vankhand Ranijhula S.No. 2 Ananpura	ANR	2018-19	50	43.4	5
48		Simalwara	Charwada Rataghata	ANR	2019-20	50	42.1	5
49	Jaipur	Amer	Bagwara	ANR	2017-18	45	55.2	6
50		Amer	Dabla	ANR	2018-19	50	74.6	8
51		Bassi	Langadiyawas	DFL	2018-19	3.86	55.5	6
52		Kanota	Dubali	ANR	2018-19	50	78.7	8
53	Jaipur North	Shahpura	Manoharpur	ANR	2017-18	50	59.5	6
54		Shahpura	Mishrawas	ANR	2018-19	50	45.1	5
55		Kotputali	Gudha Buchara	ANR	2018-19	50	67.2	7
56	Jaipur WL	Raisar	Dantali	NFL	2019-20	4.17	76.3	8
57		Jamwa Ramgarh	Papad	ANR	2018-19	50	82.0	9
58	Jaisalmer	Dabla	Chhod I	DFL	2017-18	55	60.8	7
59	Jaisalmer IGNP II	Mohangarh	SDS 20-23 RDJJW Sadrau	NFL	2017-18	100	70.5	8
60		II 1438 RD Mohangarh	SDS 10-13 RD	NFL	2017-18	25	50.7	6
61		II 1438 RD Mohangarh	SDS Mandau Barani 13RDJJW	NFL	2018-19	25	61.6	7
62		II 1438 RD Mohangarh	SDS 35-38 RDJJWC	NFL	2019-20	50	77.5	8
63	Jalore	Raniwara	Baretha	ANR	2018-19	50	59.6	6
64		Jasvantpura	Siroshi Pahadpura	DFL	2019-20	50	42.5	5
65		Jasvantpura	Veri Datlawas	ANR	2019-20	50	52.0	6
66	Jhalawar	Khanpur	Sojpur	NFL	2017-18	23.25	59.70286	6
67		Jhalawar	Barubeh	NFL	2019-20	27.67	75.9	8
68	Jhunjhunu	Khetri	Chirani II	DFL	2017-18	50	60.7	7
69		Udaipurwati	Indra colony Kankria	DFL	2017-18	50	56.9	6
70		Udaipurwati	Bagora	ANR	2017-18	50	54.3	6

71		Udaipurwati	Kot	ANR	2018-19	50	46.0	5
72		Udaipurwati	Kakrana	DFL	2018-19	50	62.7	7
73		Udaipurwati	Chhapoli III	DFL	2019-20	50	45.5	5
74		Navalgarh	Chirana	ANR	2019-20	50	45.5	5
75	Jodhpur	Bhopalgarh	Devnagar	DFL	2017-18	35.24	41.3	5
76	Karauli	Masalpur	Sahanpur	ANR	2019-20	55	42.7	5
77		Hindon	Kachroli	DFL	2019-20	3	44.3	5
78		Hindon	Karwad Jat	DFL	2017-18	14.29	44.3	5
79	Kota	Sultanpur	Peepalda Samel	ANR	2018-19	50	9.3	4
80		Mandana	Mandana-I	ANR	2018-19	50	44.4	5
81		Modak	Rakba Pahad	ANR	2019-20	50	46.4	5
82	Kota MNP	Jawahar sagar	Dhonk ki kui	DFL	2017-18	36.4	46.0	5
83		Dara	Kalya Khal MJSA II	ANR	2017-18	50	44.2	5
84		Kolipura	Kanya Talab	ANR	2019-20	50	50.9	6
85	Nagaur	Kuchaman	Kuchaman (Bhairuji Mandir)	ANR	2018-19	50	48.3	5
86	Pali	Sojat	Rundiya	ANR	2019-20	50	63.5	7
87		Sumerpur	Rojara	ANR	2018-19	50	41.5	5
88		Sendara	Dholiya	ANR	2018-19	50	43.5	5
89	Pratapgarh	Chhoti Sadri	Santokpuria	ANR	2017-18	50	55.7	6
90		Peepalkhoot	Bakhtod	ANR	2018-19	50	42.4	5
91		Dhariyavad	Ghatela	NFL	2019-20	10	46.8	5
92		Devgarh	Jhantla C	DFL	2019-20	3.64	50.4	6
93		Chhoti Sadri	Janjal (Hamel Mahadev)	ANR	2019-20	50	41.0	5
94	Rajsamand	Kumbhalgarh	Uparthala Jaitaran	ANR	2017-18	50	45.2	5
95	Rajsamand WL	Desuri	Satimata-B	ANR	2018-19	50	43.7	5
96		Bhim	Koyatalai	DFL	2018-19	50.62	43.5	5
97		Devgarh	Devpura	ANR	2019-20	50	42.2	5
98	RTR I Sawai Madhopur	Indergarh	Kanchan Dham	NFL	2018-19	2.12	53.7	6
99	Sawai Madhopur	Bonli	Khirkhadi	ANR	2019-20	50	49.0	5
100		Bonli	Shilki dungari	ANR	2018-19	25	41.8	5
101	Sikar	Srimadhopur	Ajeetgarh	DFL	2017-18	50	44.9	5

102		Neemka thana	Bhagega I	NFL	2017-18	2.62	28.8	4
103		Patan	Jetpura	ANR	2018-19	50	44.4	5
104	Sirohi	Pindwara	Pahadkala No. 30 Ubari Pani Sabela	ANR	2018-19	50	44.0	5
105	Tonk	Deoli	Devnarayanji	DFL	2017-18	50	45.7	5
106		Tonk	Newai pahad kabri khal	ANR	2019-20	50	5.2	4
107	Udaipur	Udaipur west	Rodaji Bawji	DFL	2018-19	56	47.2	5
108		Salumbar	Jhallara	ANR	2018-19	50	55.4	6
109	Udaipur-North	Gogunda	Naal mokhi	ANR	2019-20	40	46.8	5
110		Udaipur east	Banadiya	NFL	2018-19	95.69	41.9	5
111		Udaipur east	Amberi	ANR	2017-18	80	76.5	8

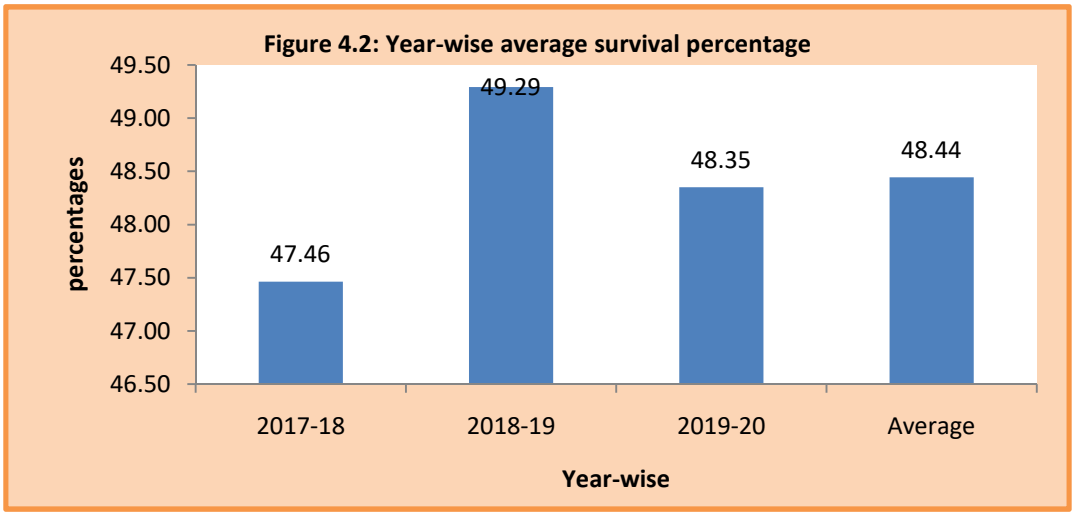
Ranking of Plantations

i. Total area of all the selected and evaluated 111 sites of plantations of 85 Ranges of 55 Divisions was 5451.88 ha.

ii The overall ranking of evaluated 5451.88 ha plantations was poor (5) with average survival percentage of 48.44% (table 4.3 & figure 4.2).

Table 4.3: Year-wise survival % of plantations

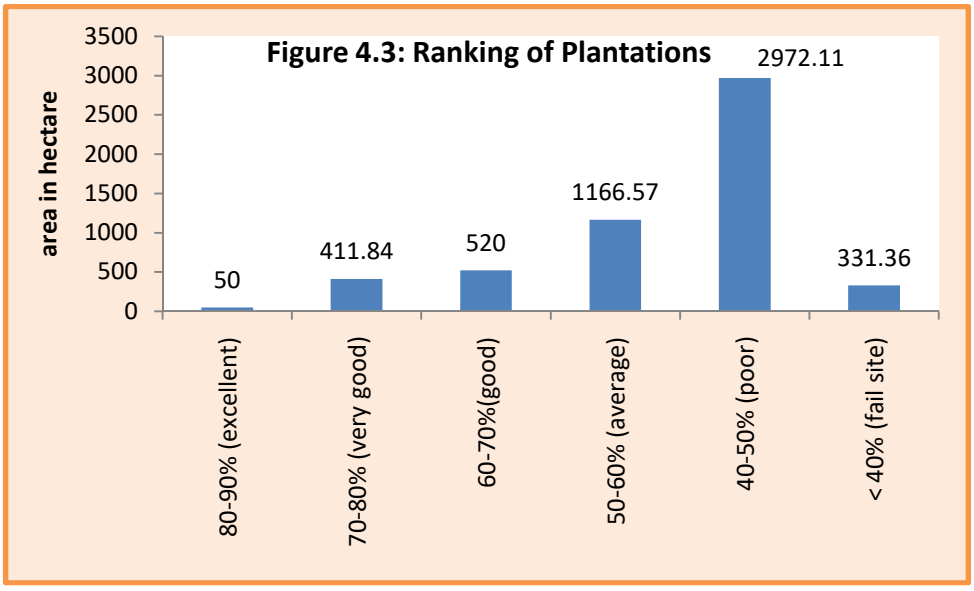
Year-wise	Survival %	Rank
2017-18	47.46	5
2018-19	49.29	5
2019-20	48.35	5
Average	48.44	5



In terms of physical area, *the ranking of plantations (figure-* 4.3*) was:*

- Excellent (9) of 50 ha plantations having survival % between 80 and 90

- Very Good (8) of 411.84 ha plantation having survival % between 70 and 80%
- Good (7) of 520 ha plantation having survival % between 60 and 70%
- Average (6) of 1166.57 ha plantation having survival % between 50 and 60%
- Poor (5) of 2972.11 ha plantation having survival % between 40 and 50%
- Very Poor (4) of 331.36 ha plantation having survival % less than 40%



The survival percentage was Excellent (between 80 and 90%) with ranking of 50 ha plantation area of 1 site (table 4.4).

Table 4.4: Plantation site having survival percentage between 80-90%

Sl.no.	Division	Plantation						
		Range	Site	Model	Year	Area (ha)	Survival %	Rank
1	Jaipur WL	Jamwa Ramgarh	Papad	ANR	2018-19	50	82.0	9

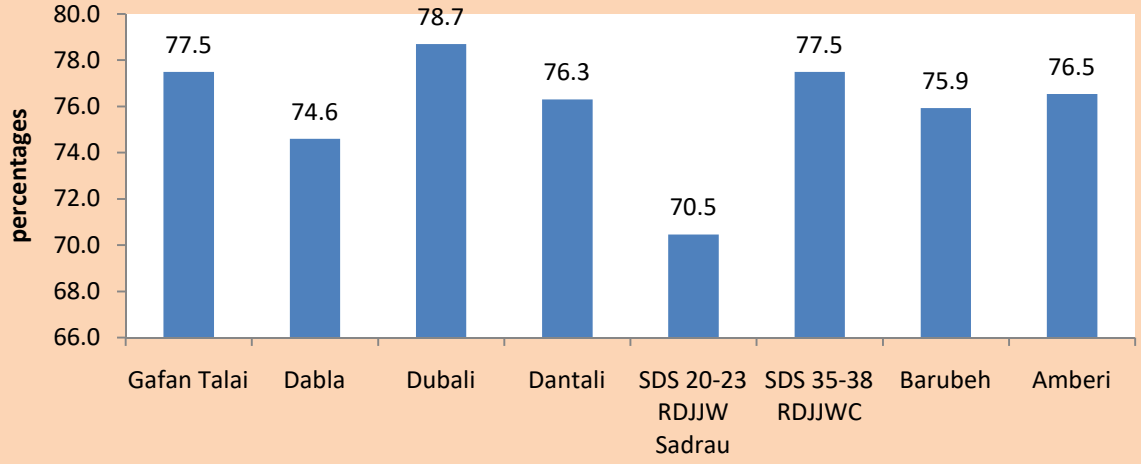
The survival percentage was Very Good (Between 70 and 80%) with 8 ranking of 411.84 ha plantation areas of 8 sites of 8 Ranges of 6 **Divisions (table 4.5 and figure 4.4).**

Table 4.5: Plantation site having survival percentage between 70-80%

Sl.no.	Division	Plantation						
		Range	Site	Model	Year	Area (ha)	Survival %	Rank
1	Barmer	Barmer	Gafan Talai	DFL	2018-19	50	77.5	8
2	Jaipur	Amer	Dabla	ANR	2018-19	50	74.6	8
3	Jaipur	Kanota	Dubali	ANR	2018-19	50	78.7	8

4	Jaipur WL	Raisar	Dantali	NFL	2019-20	4.17	76.3	8
5	Jaisalmer IGNPII	Mohangarh	SDS 20-23 RDJJW Sadrau	NFL	2017-18	100	70.5	8
6	Jaisalmer IGNPII	II 1438 RD Mohangarh	SDS 35-38 RDJJWC	NFL	2019-20	50	77.5	8
7	Jhalawar	Jhalawar	Barubeh	NFL	2019-20	27.67	75.9	8
8	Udaipur North	Udaipur east	Amberi	ANR	2017-18	80	76.5	8

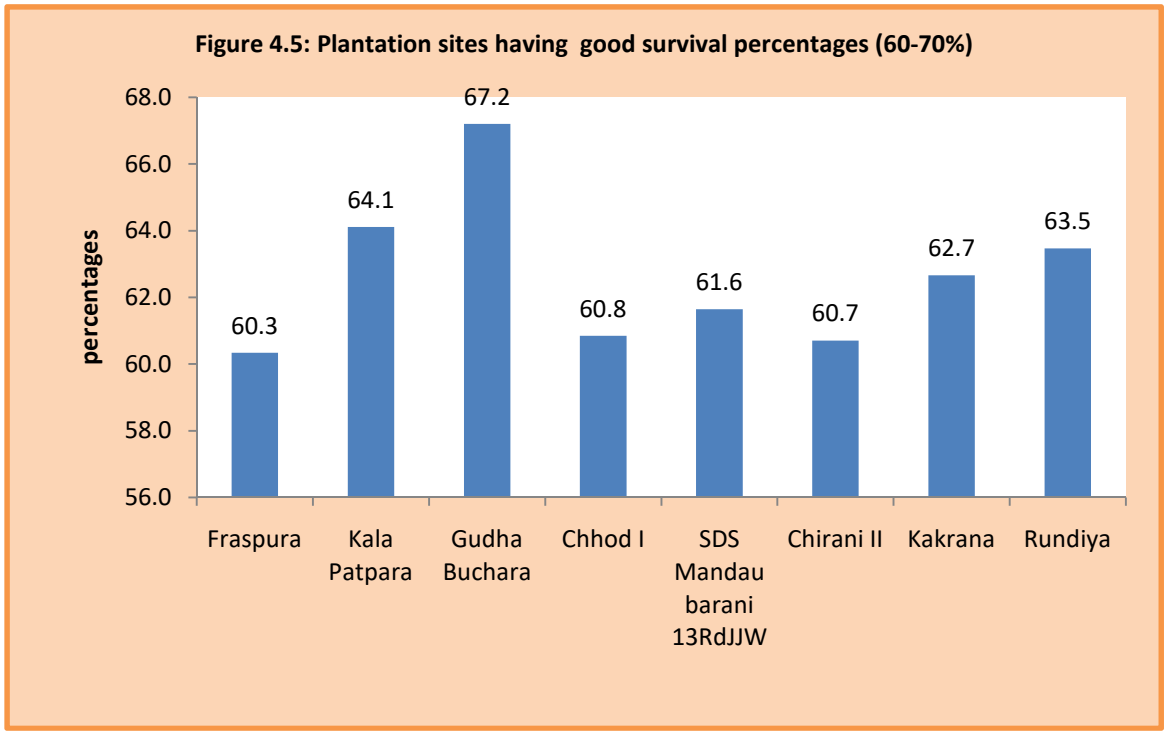
Figure 4.4: Plantation sites having very good survival percentages (70-80%)



The survival percentage was good (Between 60 and 70%) with 7 ranking of 520 ha plantation areas of 8 sites of 8 Ranges of 7 Divisions (table 4.6 and figure 4.5).

Table 4.6: Plantation site having survival percentage between 60-70%

Sl.no.	Division	Plantation						
		Range	Site	Model	Year	Area (ha)	Survival %	Rank
1	Dausa	Sikrai	Fraspura	ANR	2019-20	50	60.3	7
2	Dholpur	Badi	Kala Patpara	DFL	2018-19	25	64.1	7
3	Jaipur	Kotputali	Gudha Buchara	ANR	2018-19	50	67.2	7
4	Jaisalmer	Dabla	Chhod I	DFL	2017-18	55	60.8	7
5	Jaisalmer IGNPII	II 1438 RD Mohangarh	SDS Mandau Barani 13RDJJW	NFL	2018-19	25	61.6	7
6	Jhunjhun	Khetri	Chirani II	DFL	2017-18	50	60.7	7
7	Jhunjhunu	Udaipurwati	Kakrana	DFL	2018-19	50	62.7	7
8	Pali	Sojat	Rundiya	ANR	2019-20	50	63.5	7

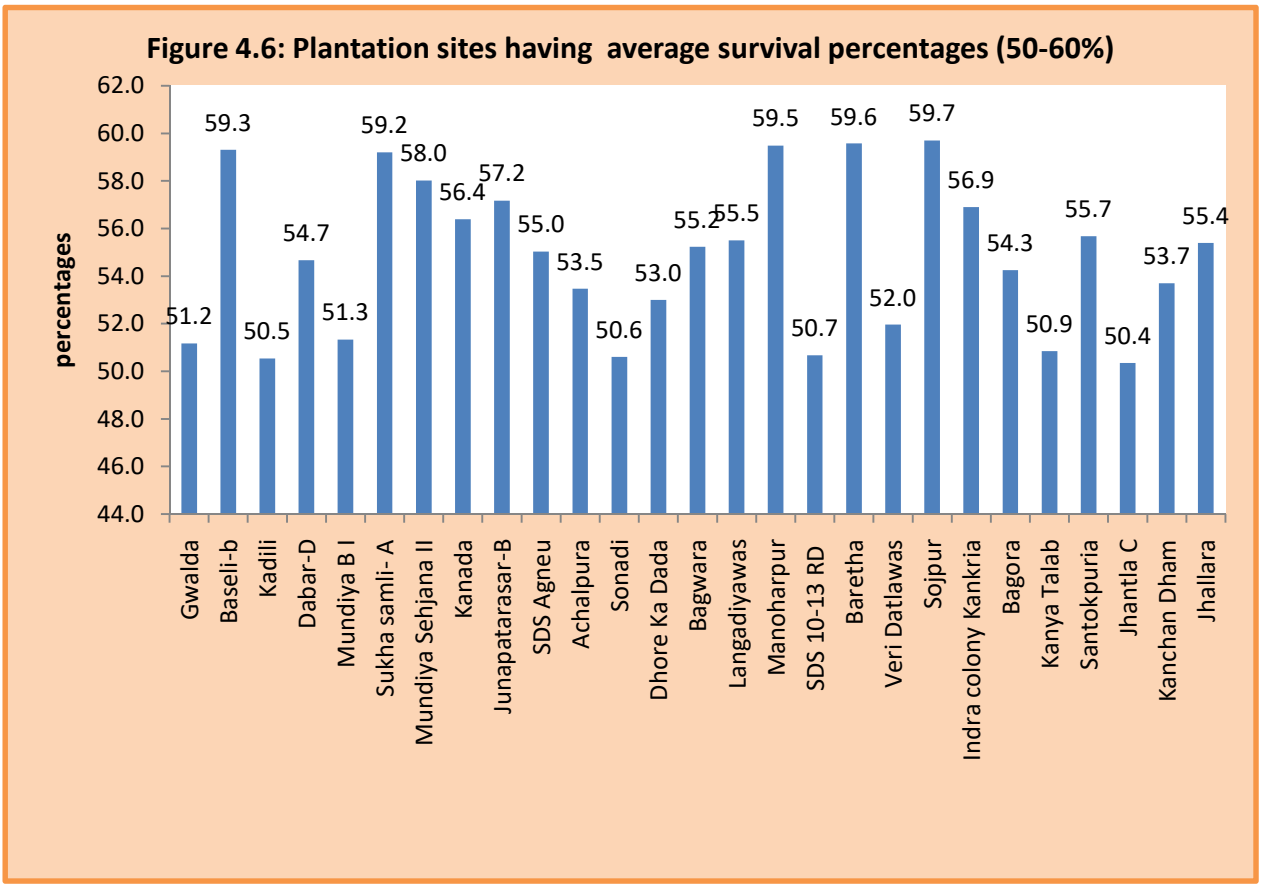


The survival percentage was average (Between 50 and 60%) with 6 ranking of 1166.57 ha plantation areas of 27 sites of 23 Ranges of 14 **Divisions (table 4.7 and figure 4.6).**

Table 4.7: Plantation site having survival percentage between 50-60%

Sl.no	Division	Plantation						
		Range	Site	Model	Year	Area (ha)	Survival %	Rank
1	Alwar	Tijara	Gwalda	DFL	2018-19	50	51.2	6
2	Baran	Shahbad	Baseli-B	DFL	2017-18	30	59.3	6
3	Baran	Nahargarh	Kadili	DFL	2017-18	120	50.5	6
4	Baran	Shahbad	Dabar-D	NFL	2017-18	23.45	54.7	6
5	Baran	Anta	Mundiya B I	NFL	2018-19	66	51.3	6
6	Baran	Kelwara	Sukha Sameli- A	ANR	2018-19	50	59.2	6
7	Baran	Shahbad	Mundiya Sehjana II	ANR	2018-19	50	58.0	6
8	Baran	Anta	Kanada	NFL	2019-20	22	56.4	6
9	Barmer	Barmer	Junapatarasar-B	DFL	2018-19	50	57.2	6
10	Bikaner IGNP II	750 RD unit II	SDS Agneu	NFL	2018-19	52.25	55.0	6
11	Dausa	Sikrai	Achalpura	ANR	2017-18	50	53.5	6
12	Dausa	Dausa	Sonadi	ANR	2018-19	50	50.6	6
13	Dholpur	Sarmathura	Dhore Ka Dada	ANR	2019-20	50	53.0	6
14	Jaipur	Amer	Bagwara	ANR	2017-18	45	55.2	6
15	Jaipur	Bassi	Langadiyawas	DFL	2018-19	3.86	55.5	6
16	Jaipur	Shahpura	Manoharpur	ANR	2017-18	50	59.5	6
17	Jaisalmer IGNPII	II 1438 RD Mohangarh	SDS 10-13 RD	NFL	2017-18	25	50.7	6
18	Jalore	Raniwara	Baretha	ANR	2018-19	50	59.6	6
19	Jalore	Jasvantpura	Veri Datlawas	ANR	2019-20	50	52.0	6
20	Jhalawar	Khanpur	Sojpur	NFL	2017-18	23.25	59.70286	6
21	Jhunjhunu	Udaipurwati	Indra colony	DFL	2017-	50	56.9	6

			Kankria		18			
22	Jhunjhunu	Udaipurwati	Bagora	ANR	2017-18	50	54.3	6
23	Kota MNP	Kolipura	Kanya Talab	ANR	2019-20	50	50.9	6
24	Pratapgarh	Chhoti Sadri	Santokpuria	ANR	2017-18	50	55.7	6
25	Pratapgarh	Devgarh	Jhantla C	DFL	2019-20	3.64	50.4	6
26	RTR I S. Madhopur	Indergarh	Kanchan Dham	NFL	2018-19	2.12	53.7	6
27	Udaipur	Salumbar	Jhallara	ANR	2018-19	50	55.4	6



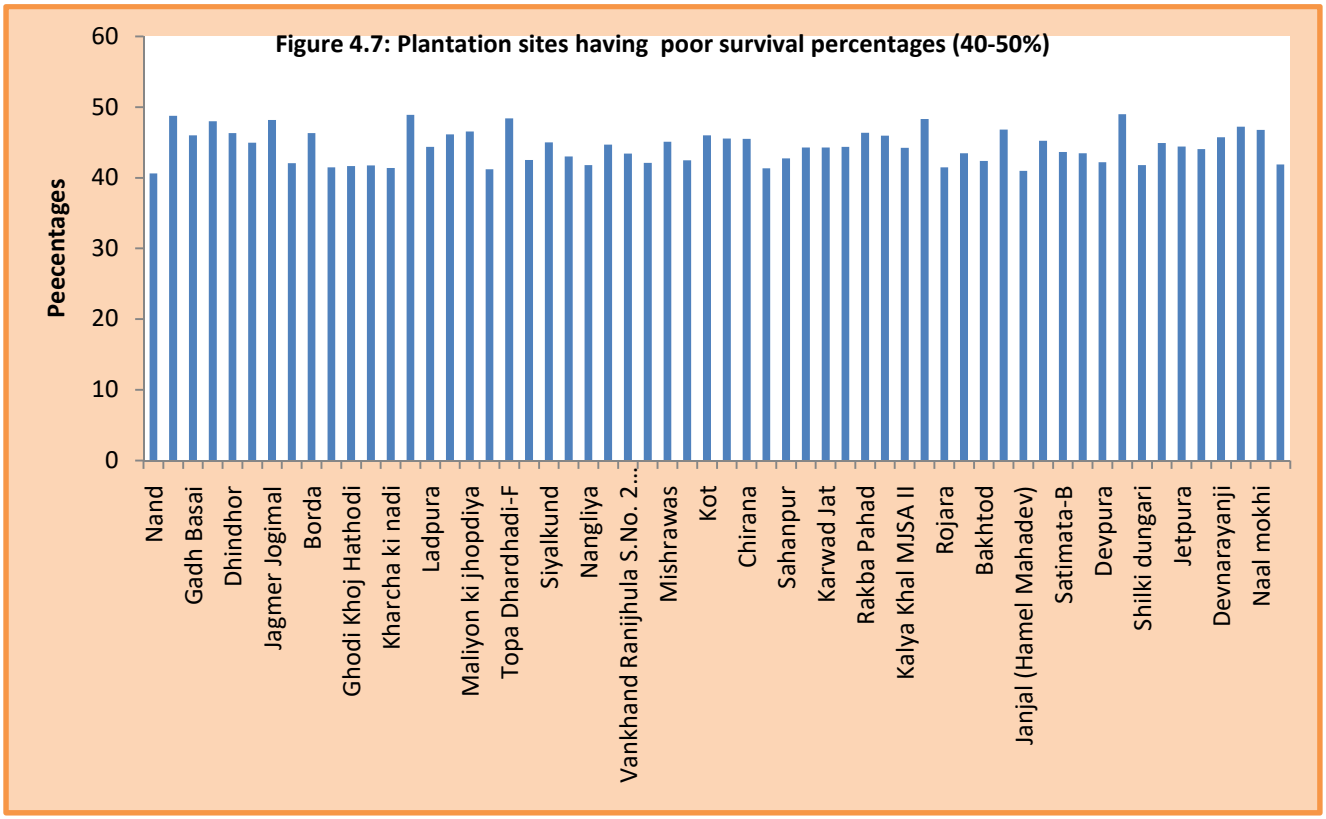
The survival percentage was poor (Between 40 and 50%) with 5 ranking of 2972.11 ha plantation areas of 58 sites of 50 Ranges of 32 **Divisions (table 4.8 and figure 4.7)**

Table 4.8: Plantation sites having survival percentage between 40-50%

Sl.no.	Division	Plantation						
		Range	Site	Model	Year	Area (ha)	Survival %	Rank
1	Ajmer	Pushkar	Nand	ANR	2018-19	50	40.6	5
2	Alwar	Kishangarhwas	Chor Basai	DFL	2017-18	50	48.8	5

3	Alwar	Thanagazi	Gadh Basai	ANR	2017-18	50	46.0	5
4	Alwar	Rajgarh	Dolatpura	ANR	2018-19	50	48.0	5
5	Alwar	Bahror	Dhindhor	DFL	2019-20	50	46.3	5
6	Alwar STR	Tahala	Nadoli	NFL	2017-18	85.44	45.0	5
7	Banswara	Ghatol	Jagmer Jogimal	ANR	2017-18	50	48.2	5
8	Banswara	Sajjangarh	Andeshwar	ANR	2018-19	60	42.1	5
9	Baran	Kishanganj	Borda	DFL	2017-18	130	46.3	5
10	Barmer	Sivana	Kusip	ANR	2017-18	100	41.5	5
11	Bharatpur	Bayana	Ghodi Khoj Hathodi	ANR	2018-19	50	41.7	5
12	Bhilwara	Mandalgarh	Saimala	DFL	2017-18	50	41.7	5
13	Bhilwara	Mandalgarh	Kharcha ki nadi	ANR	2017-18	50	41.4	5
14	Bhilwara	Jahajpur	Bahadurpura	ANR	2018-19	50	48.9	5
15	Bhilwara	Mandalgarh	Ladpura	DFL	2019-20	50	44.4	5
16	Bikaner	Nokha	Nokha	DFL	2019-20	25.43	46.1	5
17	Bundi	Hindoli	Maliyon ki jhopdiya	DFL	2017-18	100	46.571 43	5
18	Bundi	Hindoli	Dholi Chabutri B	ANR	2018-19	50	41.23	5
19	Bundi	Nainwa	Topa Dhardhadi-F	ANR	2019-20	50	48.4	5
20	Chittorgarh	Chittorgarh	Hasala-E	ANR	2017-18	50	42.5	5
21	Chittorgarh	Chittorgarh	Siyalkund	ANR	2018-19	50	45.0	5
22	Chittorgarh	Begu	Jogniyamata Haribadliya	ANR	2019-20	50	43.0	5
23	Chittorgarh WL	Dhariyavad	Nangliya	ANR	2018-19	50	41.8	5
24	Dholpur	Vanvihar	Meenakhuri	ANR	2019-20	50	44.7	5
25	Dungarpur	Dungarpur	Vankhand Ranijhula S.No. 2 Ananpura	ANR	2018-19	50	43.4	5
26	Dungarpur	Simalwara	Charwada Rataghata	ANR	2019-20	50	42.1	5
27	Jaipur	Shahpura	Mishrawas	ANR	2018-19	50	45.1	5
28	Jalore	Jasvantpura	Siroshi Pahadpura	DFL	2019-20	50	42.5	5
29	Jhunjhunu	Udaipurwati	Kot	ANR	2018-19	50	46.0	5
30	Jhunjhunu	Udaipurwati	Chhapoli III	DFL	2019-20	50	45.5	5
31	Jhunjhunu	Navalgarh	Chirana	ANR	2019-20	50	45.5	5
32	Jodhpur	Bhopalgarh	Devnagar	DFL	2017-18	35.24	41.3	5
33	Karauli	Masalpur	Sahanpur	ANR	2019-20	55	42.7	5

34	Karauli	Hindon	Kachroli	DFL	2019-20	3	44.3	5
35	Karauli	Hindon	Karwad Jat	DFL	2017-18	14.29	44.3	5
36	Kota	Mandana	Mandana-I	ANR	2018-19	50	44.4	5
37	Kota	Modak	Rakba Pahad	ANR	2019-20	50	46.4	5
38	Kota MNP	Jawahar sagar	Dhonk ki kui	DFL	2017-18	36.4	46.0	5
39	Kota MNP	Dara	Kalya Khal MJSA II	ANR	2017-18	50	44.2	5
40	Nagaur	Kuchaman	Kuchaman (Bhairuji Mandir)	ANR	2018-19	50	48.3	5
41	Pali	Sumerpur	Rojara	ANR	2018-19	50	41.5	5
42	Pali	Sendara	Dholiya	ANR	2018-19	50	43.5	5
43	Pratapgarh	Peepalkhoot	Bakhtod	ANR	2018-19	50	42.4	5
44	Pratapgarh	Dhariyavad	Ghatela	NFL	2019-20	10	46.8	5
45	Pratapgarh	Chhoti Sadri	Janjal (Hamel Mahadev)	ANR	2019-20	50	41.0	5
46	Rajsamand	Kumbhalgarh	Uparthala Jaitaran	ANR	2017-18	50	45.2	5
47	Rajsamand WL	Desuri	Satimata-B	ANR	2018-19	50	43.7	5
48	Rajsamand WL	Bhim	Koyatalai	DFL	2018-19	50.6	43.5	5
49	Rajsamand WL	Devgarh	Devpura	ANR	2019-20	50	42.2	5
50	Sawai Madhopur	Bonli	Khirkhadi	ANR	2019-20	50	49.0	5
51	Sawai Madhopur	Bonli	Shilki dungari	ANR	2018-19	25	41.8	5
52	Sikar	Srimadhopur	Ajeetgarh	DFL	2017-18	50	44.9	5
53	Sikar	Patan	Jetpura	ANR	2018-19	50	44.4	5
54	Sirohi	Pindwara	Pahadkala No. 30 Ubari Pani Sabela	ANR	2018-19	50	44.0	5
55	Tonk	Deoli	Devnarayanji	DFL	2017-18	50	45.7	5
56	Udaipur	Udaipur west	Rodaji Bawji	DFL	2018-19	56	47.2	5
57	Udaipur North	Gogunda	Naal mokhi	ANR	2019-20	40	46.79	5
58	Udaipur North	Udaipur east	Banadiya	NFL	2018-19	95.69	41.90	5



The survival percentage was very poor (less than 40 %) with 4 & below ranking of 331.36 ha plantation areas of 9 sites of 9 ranges of 9 **Divisions (table 4.9 and figure 4.8).**

Table 4.9: Plantation sites having survival percentage less than 40%

Sl.no	Division	Plantation						
		Range	Site	Model	Year	Area (ha)	Survival %	Rank
1	Alwar	Laxmangarh	Santokpur	DFL	2018-19	50	7.3	4
2	Bikaner	Lunkaransar	Mahajan-D	DFL	2018-19	38.43	16.0	4
3	Bundi	K. Patan	Gopalpura	NFL	2017-18	27.51	2.19	4
4	Chittorgarh	Nimbahera	Tai-B	DFL	2019-20	50	21.5	4
5	Dholpur	Sarmathura	Thane Ka Pura-II ANR	ANR	2017-18	50	33.2	4
6	Dungarpur	Dungarpur	Palwada	NFL	2017-18	12.8	6.4	4
7	Kota	Sultanpur	Peepalda Samel	ANR	2018-19	50	9.3	4
8	Sikar	Neemka thana	Bhagega I	NFL	2017-18	2.62	28.8	4
9	Tonk	Tonk	Newai pahad kabri khal	ANR	2019-20	50	5.2	4

Figure 4.8: Plantation sites having less than 40 percent survival

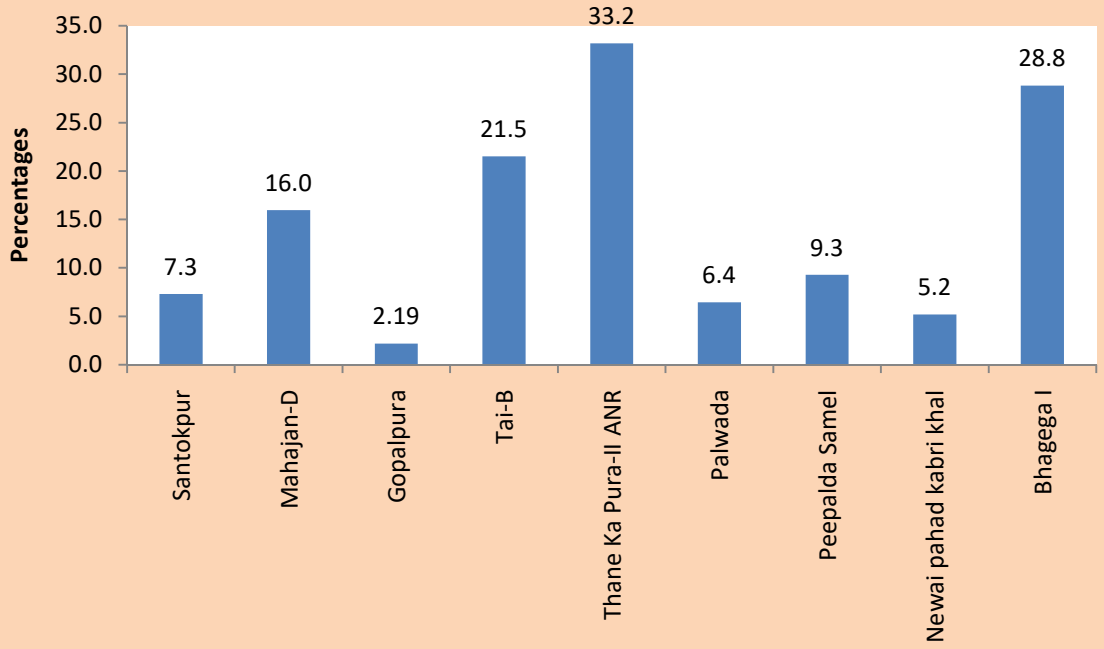


Table 4.10: Survival & Growth of Plants

Sr.no	Name of Forest Division	Name of Range	Name of Model	Name of Site	Latitude	Longitute	VFPMC/EDC	Plantation Year	Area in Ha	Total Planted Plants	Sample size	Survival plants	Survival %
1	Ajmer	Pushkar	ANR	Nand	26.2927	74.2847	Nand	2018-19	50	10000	10000	4060	40.60
2	Alwar	Kishangarhwas	DFL	Chor Basai	27.75432	76.80459	Dongra	2017-18	50	35000	35000	17072	48.78
3		Thanagazi	ANR	Gadh Basai	27.39926	76.22795	Gadh Basai	2017-18	50	10500	1050	483	46.00
4		Rajgarh	ANR	Dolatpura	27.23048	76.55165	Kundroli	2018-19	50	10000	10000	4798	47.98
5		Tijara	DFL	Gwalda	28.1174	76.86504	Milakputhur	2018-19	50	35000	3500	1791	51.17
6		Laxmangarh	DFL	Santokpur	27.24362	76.87655	Jatwada	2018-19	50	20000	20000	1462	7.31
7		Bahror	DFL	Dhindhor	27.8676	76.20324	Gadoz Dhindhor	2019-20	50	25000	2500	1158	46.32
8	Alwar STR	Tahala	NFL	Nadoli	27.26055	76.40627	Rajdoli	2017-18	85.44	55000	55000	24723	44.95
9	Banswara	Ghatol	ANR	Jagmer Jogimal	23.42.417	74.29.296	Mahuwal pada	2017-18	50	10100	10100	4807	47.59
10		Sajjangarh	ANR	Andeshwar	23.29375	74.33864	Andeshwar	2018-19	60	12000	1200	505	42.08
11	Baran	Shahbad	DFL	Baseli-b	25.1646	77.33057	Baseli	2017-18	30	21000	21000	12456	59.31
12		Kishanganj	DFL	Borda	25.07587	76.84065	Borda	2017-18	130	81000	8100	3752	46.32
13		Nahargarh	DFL	Kadili	24.92963	76.69668	Jalwana	2017-18	120	84000	84000	42452	50.54
14		Shahbad	NFL	Dabar-D	25.18944	77.2918	Basdi	2017-18	23.45	21000	2100	1148	54.67
15		Anta	NFL	Mundiya B I	25.31832	76.55357	Mundiya	2018-19	66	72548	72548	37242	51.33
16		Kelwara	ANR	Sukha samli- A	25.21712	76.90648	Sukha samli	2018-19	50	10000	1000	592	59.20
17		Shahbad	ANR	Mundiya Sehjana II	25.12921	77°226154	Purampur	2018-19	50	10000	10000	5802	58.02
18		Anta	NFL	Kanada	25.22403	76°204226	Kanada	2019-20	22	22400	2240	1263	56.38
19	Barmer	Sivana	ANR	Kusip	25.69839	72.38756		2017-18	100	20000	20000	8300	41.50
20		Barmer	DFL	Junapatarasar-B	25.64037	71.19968		2018-19	50	25000	2500	1430	57.20
21		Barmer	DFL	Gafan Talai	25.88918	70.65487	Gafan Talai	2018-19	50	25000	25000	19375	77.50
22	Bharatpur	Bayana	ANR	Ghodi Khoj Hathodi	27.01906	77.0942	Hathodi	2018-19	50	10000	10000	4165	41.65
23	Bhilwara	Mandalgarh	DFL	Saimala	25.05033	75.20278	Aarole	2017-18	50	35000	35000	14607	41.73
24		Mandalgarh	ANR	Kharcha ki nadi	25.0657	75.20382	Aarole	2017-18	50	10200	1020	422	41.37
25		Jahajpur	ANR	Bahadurpura	25.46727	75.11114	Katariya kheda	2018-19	50	10000	10000	4890	48.90
26		Mandalgarh	DFL	Ladpura	25.11831	75.13447	Ladpura	2019-20	50	32000	3200	1420	44.38
27	Bikaner	Lunkaransar	DFL	Mahajan-D	28.72027	73.81568	Mahajan	2018-19	38.43	19460	19460	3107	15.97
28		Nokha	DFL	Nokha	27.59561	73.41459	Nokha	2019-20	25.43	17800	1780	821	46.12
29	Bikaner IGNP II	750 RD unit II	NFL	SDS Agneu	28.11176	72.77317	Agneu	2018-19	52.25	31350	31350	17253	55.03

30	Bundi	K. Patan	NFL	Gopalpura	27.75432	76.80459		2017-18	27.51	13755	13755	301	2.19
31		Hindoli	DFL	Maliyon ki jhopdiya	25.67653	75.52153	Maliyon ki jhopdiya	2017-18	100	70000	7000	3260	46.57
32		Hindoli	ANR	Dholi Chabutri B	25.70566	75.45888	Umar	2018-19	50	10000	10000	4123	41.23
33		Nainwa	ANR	Topa Dhardhadi-F	25.73055	75.67236	Topa Dhardhadi	2019-20	50	10000	1000	484	48.40
34	Chittorgarh	Chittorgarh	ANR	Hasala-E	24.08029	74.73306	Hasala-E	2017-18	50	10000	10000	4250	42.50
35		Chittorgarh	ANR	Siyalkund	24.78688	74.7274	Hasala	2018-19	50	10000	1000	450	45.00
36		Nimbahera	DFL	Tai-B	24.88727	74.62639	Mohmadpura	2019-20	50	10000	10000	2150	21.50
37		Begu	ANR	Jogniyamata Haribadliya	25.09175	75.20193	Dharlavumar	2019-20	50	10000	1000	430	43.00
38	Chittorgarh WL	Dhariyavad	ANR	Nangliya	24.15511	74.49878	Chittodiya	2018-19	50	10000	10000	4097	40.97
39	Dausa	Sikrai	ANR	Achalpura	26.88639	76.61358	Sarundala	2017-18	50	10000	10000	5347	53.47
40		Bandikui	ANR	Sonadi	27.06731	76.67851	Sonadi	2018-19	50	10000	1000	506	50.60
41		Sikrai	ANR	Fraspura	26.85518	76.61642	Fraspura	2019-20	50	10000	10000	6034	60.34
42	Dholpur	Sarmathura	ANR	Thane Ka Pura-II ANR	26.49246	77.4814	Mindipura	2017-18	50	10000	10000	3319	33.19
43		Sarmathura	ANR	Dhore Ka Dada	26.48728	77.27027	Chandravali	2019-20	50	10000	1000	530	53.00
44		Vanvihar	ANR	Meenakhuri	26.47648	77.54427	Sone ka gurja	2019-20	50	10000	10000	4470	44.70
45		Badi	DFL	Kala Patpara	26°41'44"	77°23'21"	Basrai	2018-19	25	27500	2750	1763	64.11
46	Dungarpur	Dungarpur	NFL	Palwada	23.96231	73.59393	Bandari	2017-18	12.8	3000	3000	193	6.43
47		Dungarpur	ANR	Vankhand Ranijhula S.No. 2 Ananpura	23.67814	73.68452	Anpura	2018-19	50	10000	10000	4342	43.42
48		Simalwara	ANR	Charwada Rataghata	23.66265	73.677	Anpura	2019-20	50	10000	10000	4213	42.13
49	Jaipur	Amer	ANR	Bagwara	27.08248	75.85906	Bagwara	2017-18	45	9000	9000	4971	55.23
50		Amer	ANR	Dabla	27.002	75.4437		2018-19	50	10000	1000	746	74.60
51		Bassi	DFL	Langadiyawas	26.94596	75.94065	Langadiyawas	2018-19	3.86	1600	1600	888	55.50
52		Kanota	ANR	Dubali	26.455	76.818	Dubali	2018-19	50	10000	1000	787	78.70
53	Jaipur North	Shahpura	ANR	Manoharpur	27.30293	75.93144	Pratappura	2017-18	50	10000	10000	5949	59.49
54		Shahpura	ANR	Mishrawas	27°322495	75°993692	Kumbhawas	2018-19	50	10000	1000	451	45.10
55		Kotputali	ANR	Gudha Buchara	27.54079	75.9629	Buchara	2018-19	50	10000	10000	6720	67.20
56	Jaipur WL	Raisar	NFL	Dantali	27.1209	76.15649	Dantali	2019-20	4.17	3000	3000	2289	76.30
57		Jamwa Ramgarh	ANR	Papad	26.95289	76.02764	Papad	2018-19	50	10000	1000	820	82.00

58	Jaisalmer	Dabla	DFL	Chhod I	26°44'31"	71°8'48"	Peeru ki Dhani	2017-18	220	154000	154000	93700	60.84
59	Jaisalmer IGNP II	II 1438 RD Mohangarh	NFL	SDS 20-23 RDJJW Sadrau	27.39423	71.15981	Gamno ki dhani	2017-18	100	60000	60000	42272	70.45
60		II 1438 RD Mohangarh	NFL	SDS 10-13 RD	27.24086	71.2159	Kanod minor	2017-18	25	15000	1500	760	50.67
61		II 1438 RD Mohangarh	NFL	SDS Mandau barani 13RdJJW	27.3611	71.15948	Gamno ki dhani	2018-19	25	15000	15000	9247	61.65
62		II 1438 RD Mohangarh	NFL	SDS 35-38 RDJJWC	27.40969	71.19249	30 RDJJW	2019-20	50	30000	30000	23250	77.50
63	Jalore	Raniwara	ANR	Varetha	24.89812	72.24508	Varetha	2018-19	50	11000	11000	6553	59.57
64		Jasvantpura	DFL	Siroshi Pahadpura	24.92344	72.37369	Manoharji was	2019-20	50	35000	3500	1487	42.49
65		Jasvantpura	ANR	Veri Datlawas	24.85605	72.3732	Datlawas	2019-20	50	10000	10000	5196	51.96
66	Jhalawar	Khanpur	NFL	Sojpur	24.66241	76.43574	Sojpur	2017-18	23.25	35000	35000	20896	59.70
67		Jhalawar	NFL	Barubeh	24.25109	76.47595	Barubeh	2019-20	27.67	29700	2970	2255	75.93
68	Jhunjhunu	Khetri	DFL	Chirani II	28.01446	75.84942	Chirani	2017-18	50	20000	20000	12140	60.70
69		Udaipurwati	DFL	Indra colony Kankria	27°48'24"	75°40'37"	Kankaria	2017-18	50	30000	3000	1707	56.90
70		Udaipurwati	ANR	Bagora	27.72515	75.49126	Gat	2017-18	50	10000	10000	5425	54.25
71		Udaipurwati	ANR	Kot	27°41'3"	75°27'23"	Kot	2018-19	50	10000	1000	460	46.00
72		Udaipurwati	DFL	Kakrana	27.87691	75.68232	Kakrana	2018-19	50	30000	30000	18800	62.67
73		Udaipurwati	DFL	Chhapoli III	27°43'59"	75°31'15"	Chhapoli	2019-20	50	30000	3000	1366	45.53
74		Navalgarh	ANR	Chirana	27.69986	75.40632	Golyana	2019-20	50	10000	10000	4552	45.52
75	Jodhpur	Bhopalgarh	DFL	Devnagar	26.60061	73.61125	Devnagar	2017-18	35.24	7048	7048	2913	41.33
76	Karauli	Masalpur	ANR	Sahanpur	26.57044	77.23917		2019-20	55	11000	1100	470	42.73
77		Hindon	DFL	Kachroli	26.67131	77.02439	Singhan	2019-20	3	2100	700	310	44.29
78		Hindon	DFL	Karwad Jat	26°44'8.9"	77°7'9.2"	Bad khura	2017-18	14.29	10000	10000	4427	44.27
79	Kota	Sultanpur	ANR	Peepalda Samel	25.51169	76.28049	Peepalda Samel	2018-19	50	10000	10000	928	9.28
80		Mandana	ANR	Mandana-I	24.56483	75.58364	Mandana	2018-19	50	10000	1000	444	44.40
81		Modak	ANR	Rakba Pahad	24.42234	76.02355	Jamunia	2019-20	50	10000	10000	4635	46.35
82	Kota MNP	Jawahar sagar	DFL	Dhonk ki kui	25.01381	75.32208	Gudha	2017-18	36.4	18200	18200	8364	45.96
83		Dara	ANR	Kalya Khal MJSA II	24.80518	76.10875	Simali	2017-18	50	10000	1000	446	44.60
84		Kolipura	ANR	Kanya Talab	24.95295	75.63506	Kolipura	2019-20	50	10000	10000	5085	50.85
85	Nagaur	Kuchaman	ANR	Kuchaman	27.12394	74.82678	Trisangiya	2018-19	50	10000	10000	4830	48.30
86	Pali	Sojat	ANR	Rundiya	26.146	73.423	Rundiya	2019-20	50	10000	10000	6347	63.47
87		Sumerpur	ANR	Rojara	25.144	73.55	Rojara	2018-19	50	10000	1000	415	41.50

88		Sendara	ANR	Dholiya	26.154	74.113	Dholiya	2018-19	50	10000	10000	4347	43.47
89	Pratapgarh	Chhoti Sadri	ANR	Santokpuria	24.22939	74.72482	Udapura	2017-18	50	10000	10000	5568	55.68
90		Peepalkhoot	ANR	Bakhtod	23.74997	74.61409	Bakhtod	2018-19	50	10000	1000	424	42.40
91		Dhariyavad	NFL	Ghatela	23.95966	74.42269	Aad	2019-20	10	11000	11000	5150	46.82
92		Devgarh	DFL	Jhantla C	24.23013	74.72416	Kundaliya	2019-20	3.64	2000	2000	1007	50.35
93		Chhoti Sadri	ANR	Janjal (Hamel Mahadev)	24.37742	74.61273	Rajpura Choki	2019-20	50	10000	10000	4100	41.00
94	Rajsamand	Kumbhalgarh	ANR	Uparthala Jaitaran	25.05735	73.49618	Jairatan	2017-18	50	10000	10000	4523	45.23
95	Rajsamand WL	Desuri	ANR	Satimata-B	25.29914	73.61014		2018-19	50	10000	10000	4366	43.66
96		Bhim	DFL	Koyatalai	25.73246	74.01052	Heera ka para	2018-19	50.62	35000	3500	1522	43.49
97		Devgarh	ANR	Devpura	25.54776	74.03282	Madariya	2019-20	50	10000	10000	4221	42.21
98	RTR I S. Madhopur	Indergarh	NFL	Kanchan Dham	25.32087	75.57032	Gandali	2018-19	2.12	1000	1000	537	53.70
99	S. Madhopur	Bonli	ANR	Khirkhadi	26.34741	76.24012	Khirkhadi	2019-20	50	10000	10000	4900	49.00
100		Bonli	ANR	Shilki dungari	26.3308	76.21043	Golyana	2018-19	25	5000	500	209	41.80
101	Sikar	Srimadhopur	DFL	Ajeetgarh	27.42756	75.82762	Ajeetgarh	2017-18	50	10000	10000	4493	44.93
102		Neemka thana	NFL	Bhagega I	27°47.830	75°50.349	Bhagega	2017-18	2.62	2882	2882	831	28.83
103		Patan	ANR	Jetpura	25.65046	75.94351	Jetpura	2018-19	50	10000	10000	4444	44.44
104	Sirohi	Pindwara	ANR	Pahadkala No. 30 Ubari Pani Sabela	24.79702	73.14242	Sabela	2018-19	50	10000	10000	4404	44.04
105	Tonk	Deoli	DFL	Devnarayanji	25.75468	75.6046	Sitapura	2017-18	50	35000	35000	16006	45.73
106		Tonk	ANR	Newai pahad kabri khal	26.21081	75.54049	Niwai gramin	2019-20	50	10000	10000	522	5.22
107	Udaipur	Udaipur west	DFL	Rodaji Bawji	24.50366	73.58204	Popalti	2018-19	56	39200	39200	18521	47.25
108		Salumbar	ANR	Jhallara	24.04482	74.08711	Nokhli	2018-19	50	10000	1000	554	55.40
109	Udaipur-North	Gogunda	ANR	Naal mokhi	24.71451	73.49312	Naal	2019-20	40	8050	8050	3767	46.80
110		Udaipur-East	NFL	Banadiya	24°38.569	73°33.847	Banadiya	2018-19	95.69	4785	4785	2005	41.90
111		Udaipur east	ANR	Amberi	24.6673	73.73187	Amberi	2017-18	80	10000	10000	7654	76.54

Comparison of Area of Plantations with KML files

Year- wise plantation areas calculated in the field from the KML files and the areas charged in the APO were as given in table 4.11- and figure 4.9.

Table 4.11: Year-wise plantation area calculated in the field from the KML files & the areas charged in the APO

Year of Plantation	Area (ha) charged in the APO	Area (ha) calculated from KML Files	Less area (ha) charged in the APO
2017-18	1896.0	1896.0	0
2018-19	2150.0	2150.0	0
2019-20	1240.9	1240.9	0
Total	5286.9	5286.9	0

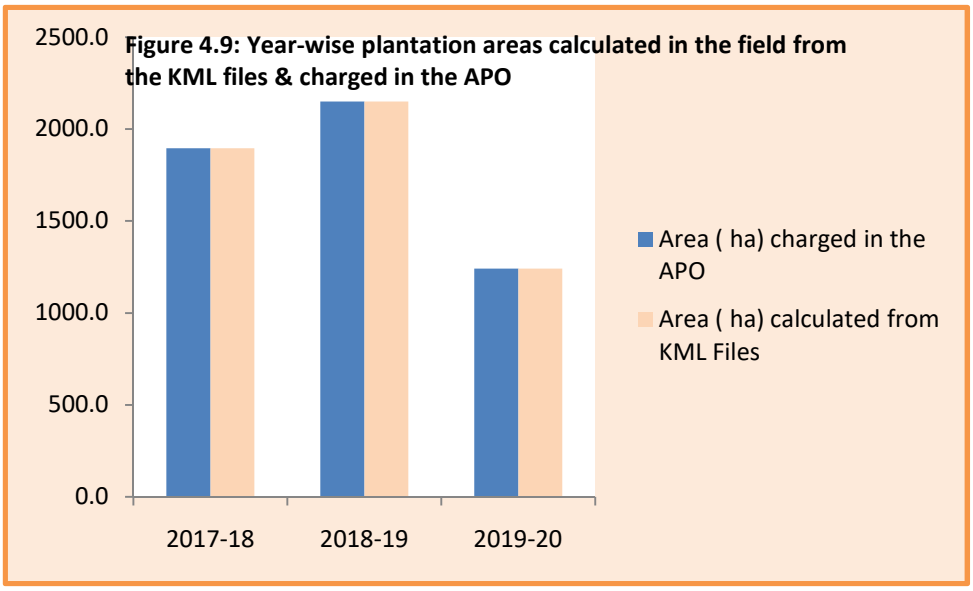


Figure 4.9: Year-wise plantation areas calculated in the field from the KML files & charged in the APO

It is evident from table 4.11 and figure 4.9 that no excess area was charged in the APOs.

Confidence Level of the Sample on Overall Projection to the Population/ Universe

The confidence level of the sample studied under Third Party Evaluation Study to assess the survival percentage has been calculated in order to project the sample result of survival on the overall populations.

Statistical Methods Used

Half width of 95% Confidence Limit method has been used to calculate the confidence level of the sample survival percentage of plants in the plantation sites on overall populations. The Upper and Lower level of 95% Confidence Limit has been calculated. If the half width of 95% Confidence Limit is 0 then it can be said that the confidence level is close to the sample result.

The point estimate, i.e., the best estimate of the proportion of the survival of plants with the survival of plants against the planted calculated for 55 forest divisions. The 95% confidence interval computed for each forest division.

95% confidence interval = effect size ± 1.96 x standard error of the effect size

Thus, we are 95% confident that the true proportion of survival of plants is between 38% and 60%. There is few forest divisions where the survival rate of plants against the one survived against plantation is lower compared to other divisions. Overall survival is closely 40% in all the divisions.

Table 4.12: Showing the Confidence level of sample result to overall Populations

Sr.no	Name of Forest Division	Name of Range	Name of Model	Name of Site	Plantation Year	Area in Ha	Total Planted Plants	Sample	Sample size(n)	Survival plants	Sample	Survival %	Sample mean (p)	(1-p)	p (1-p)/n	Square root(margin error)	95% Confidence limit		Half width of 95% CI
																	Upper limit	Lower limit	
1	Ajmer	Pushkar	ANR	Nand	2018-19	50	10000	100	10000	4060	4060	40.60	0.406	0.594	0.00002411640	0.004911	41.56	39.64	1.0
2	Alwar	Kishangarhwas	DFL	Chor Basai	2017-18	50	35000	100	35000	17072	17072	48.78	0.488	0.512	0.00000713858	0.002672	49.30	48.25	0.5
3		Thanagazi	ANR	Gadh Basai	2017-18	50	10500	10	1050	483	483	46.00	0.460	0.540	0.00023657143	0.015381	49.01	42.99	3.0
4		Rajgarh	ANR	Dolatpura	2018-19	50	10000	100	10000	4798	4798	47.98	0.480	0.520	0.00002495920	0.004996	48.96	47.00	1.0
5		Tijara	DFL	Gwalda	2018-19	50	35000	10	3500	1791	1791	51.17	0.512	0.488	0.00007138936	0.008449	52.83	49.52	1.7
6		Laxmangarh	DFL	Santokpur	2018-19	50	20000	100	20000	1462	1462	7.31	0.073	0.927	0.00000338782	0.001841	7.67	6.95	0.4
7		Bahror	DFL	Dhindhor	2019-20	50	25000	10	2500	1158	1158	46.32	0.463	0.537	0.00009945830	0.009973	48.27	44.37	2.0
8	Alwar STR	Tahala	NFL	Nadoli	2017-18	85.44	55000	100	55000	24723	24723	44.95	0.450	0.550	0.00000449910	0.002121	45.37	44.54	0.4
9	Banswara	Ghatol	ANR	Jagmer Jogimal	2017-18	50	10100	100	10100	4807	4807	47.59	0.476	0.524	0.00002469516	0.004969	48.57	46.62	1.0
10		Sajjangarh	ANR	Andeshwar	2018-19	60	12000	10	1200	505	505	42.08	0.421	0.579	0.00020311053	0.014252	44.88	39.29	2.8
11	Baran	Shahbad	DFL	Baseli-b	2017-18	30	21000	100	21000	12456	12456	59.31	0.593	0.407	0.00001149164	0.00339	59.98	58.65	0.7
12		Kishanganj	DFL	Borda	2017-18	130	81000	10	8100	3752	3752	46.32	0.463	0.537	0.00003069710	0.00554	47.41	45.24	1.1
13		Nahargarh	DFL	Kadili	2017-18	120	84000	100	84000	42452	42452	50.54	0.505	0.495	0.00000297585	0.001725	50.88	50.20	0.3
14		Shahbad	NFL	Dabar-D	2017-18	23.45	21000	10	2100	1148	1148	54.67	0.547	0.453	0.00011801058	0.010863	56.80	52.54	2.1

15		Anta	NFL	Mundiya B I	2018-19	66	72548	100	72548	37242	37242	51.33	0.513	0.487	0.00000344354	0.001856	51.70	50.97	0.4
16		Kelwara	ANR	Sukha samli-A	2018-19	50	10000	10	1000	592	592	59.20	0.592	0.408	0.00024153600	0.015541	62.25	56.15	3.0
17		Shahbad	ANR	Mundiya Sehjana II	2018-19	50	10000	100	10000	5802	5802	58.02	0.580	0.420	0.00002435680	0.004935	58.99	57.05	1.0
18		Anta	NFL	Kanada	2019-20	22	22400	10	2240	1263	1263	56.38	0.564	0.436	0.00010978774	0.010478	58.44	54.33	2.1
19	Barmer	Sivana	ANR	Kusip	2017-18	100	20000	100	20000	8300	8300	41.50	0.415	0.585	0.00001213875	0.003484	42.18	40.82	0.7
20		Barmer	DFL	Junapatarasar-B	2018-19	50	25000	10	2500	1430	1430	57.20	0.572	0.428	0.00009792640	0.009896	59.14	55.26	1.9
21		Barmer	DFL	Gafan Talai	2018-19	50	25000	100	25000	19375	19375	77.50	0.775	0.225	0.00000697500	0.002641	78.02	76.98	0.5
22	Bharatpur	Bayana	ANR	Ghodi Khoj Hathodi	2018-19	50	10000	100	10000	4165	4165	41.65	0.417	0.584	0.00002430278	0.00493	42.62	40.68	1.0
23	Bhilwara	Mandalgarh	DFL	Saimala	2017-18	50	35000	100	35000	14607	14607	41.73	0.417	0.583	0.00000694765	0.002636	42.25	41.22	0.5
24		Mandalgarh	ANR	Kharcha ki nadi	2017-18	50	10200	10	1020	422	422	41.37	0.414	0.586	0.00023780070	0.015421	44.40	38.35	3.0
25		Jahajpur	ANR	Bahadurpura	2018-19	50	10000	100	10000	4890	4890	48.90	0.489	0.511	0.00002498790	0.004999	49.88	47.92	1.0
26		Mandalgarh	DFL	Ladpura	2019-20	50	32000	10	3200	1420	1420	44.38	0.444	0.556	0.00007713623	0.008783	46.10	42.65	1.7
27	Bikaner	Lunkaransar	DFL	Mahajan-D	2018-19	38.43	19460	100	19460	3107	3107	15.97	0.160	0.840	0.00000689462	0.002626	16.48	15.45	0.5
28		Nokha	DFL	Nokha	2019-20	25.43	17800	10	1780	821	821	46.12	0.461	0.539	0.00013960525	0.011815	48.44	43.81	2.3
29	Bikaner IGNP II	750 RD unit II	NFL	SDS Agneu	2018-19	52.25	31350	100	31350	17253	17253	55.03	0.550	0.450	0.00000789366	0.00281	55.58	54.48	0.6
30	Bundi	K. Patan	NFL	Gopalpura	2017-18	27.51	13755	100	13755	301	301	2.19	0.022	0.978	0.00000155610	0.001247	2.43	1.94	0.2
31		Hindoli	DFL	Maliyon ki jhopdiya	2017-18	100	70000	10	7000	3260	3260	46.57	0.466	0.534	0.00003554636	0.005962	47.74	45.40	1.2

32		Hindoli	ANR	Dholi Chabutri B	2018-19	50	10000	100	10000	4123	4123	41.23	0.412	0.588	0.00002423087	0.004922	42.19	40.27	1.0
33		Nainwa	ANR	Topa Dhardhadi-F	2019-20	50	10000	10	1000	484	484	48.40	0.484	0.516	0.00024974400	0.015803	51.50	45.30	3.1
34	Chittorgarh	Chittorgarh	ANR	Hasala-E	2017-18	50	10000	100	10000	4250	4250	42.50	0.425	0.575	0.00002443750	0.004943	43.47	41.53	1.0
35		Chittorgarh	ANR	Siyalkund	2018-19	50	10000	10	1000	450	450	45.00	0.450	0.550	0.00024750000	0.015732	48.08	41.92	3.1
36		Nimbahera	DFL	Tai-B	2019-20	50	10000	100	10000	2150	2150	21.50	0.215	0.785	0.00001687750	0.004108	22.31	20.69	0.8
37		Begu	ANR	Jogniyamata Haribadliya	2019-20	50	10000	10	1000	430	430	43.00	0.430	0.570	0.00024510000	0.015656	46.07	39.93	3.1
38	Chittorgarh WL	Dhariyavad	ANR	Nangliya	2018-19	50	10000	100	10000	4097	4097	40.97	0.410	0.590	0.00002418459	0.004918	41.93	40.01	1.0
39	Dausa	Sikrai	ANR	Achalpura	2017-18	50	10000	100	10000	5347	5347	53.47	0.535	0.465	0.00002487959	0.004988	54.45	52.49	1.0
40		Bandikui	ANR	Sonadi	2018-19	50	10000	10	1000	506	506	50.60	0.506	0.494	0.00024996400	0.01581	53.70	47.50	3.1
41		Sikrai	ANR	Fraspura	2019-20	50	10000	100	10000	6034	6034	60.34	0.603	0.397	0.00002393084	0.004892	61.30	59.38	1.0
42	Dholpur	Sarmathura	ANR	Thane Ka Pura-II ANR	2017-18	50	10000	100	10000	3319	3319	33.19	0.332	0.668	0.00002217424	0.004709	34.11	32.27	0.9
43		Sarmathura	ANR	Dhore Ka Dada	2019-20	50	10000	10	1000	530	530	53.00	0.530	0.470	0.00024910000	0.015783	56.09	49.91	3.1
44		Vanvihar	ANR	Meenakhuri	2019-20	50	10000	100	10000	4470	4470	44.70	0.447	0.553	0.00002471910	0.004972	45.67	43.73	1.0
45		Badi	DFL	Kala Patpara	2018-19	25	27500	10	2750	1763	1763	64.11	0.641	0.359	0.00008367031	0.009147	65.90	62.32	1.8
46	Dungarpur	Dungarpur	NFL	Palwada	2017-18	12.8	3000	100	3000	193	193	6.43	0.064	0.936	0.00002006485	0.004479	7.31	5.56	0.9

47		Dungarpur	ANR	Vankhand Ranijhula S.No. 2 Ananpura	2018-19	50	10000	100	10000	4342	4342	43.42	0.434	0.566	0.00002456704	0.004957	44.39	42.45	1.0
48		Simalwara	ANR	Charwada Rataghata	2019-20	50	10000	100	10000	4213	4213	42.13	0.421	0.579	0.00002438063	0.004938	43.10	41.16	1.0
49	Jaipur	Amer	ANR	Bagwara	2017-18	45	9000	100	9000	4971	4971	55.23	0.552	0.448	0.00002747347	0.005242	56.26	54.21	1.0
50		Amer	ANR	Dabla	2018-19	50	10000	10	1000	746	746	74.60	0.746	0.254	0.00018948400	0.013765	77.30	71.90	2.7
51		Bassi	DFL	Langadiyawas	2018-19	3.86	1600	100	1600	888	888	55.50	0.555	0.445	0.00015435938	0.012424	57.94	53.06	2.4
52		Kanota	ANR	Dubali	2018-19	50	10000	10	1000	787	787	78.70	0.787	0.213	0.00016763100	0.012947	81.24	76.16	2.5
53	Jaipur North	Shahpura	ANR	Manoharpur	2017-18	50	10000	100	10000	5949	5949	59.49	0.595	0.405	0.00002409940	0.004909	60.45	58.53	1.0
54		Shahpura	ANR	Mishrawas	2018-19	50	10000	10	1000	451	451	45.10	0.451	0.549	0.00024759900	0.015735	48.18	42.02	3.1
55		Kotputali	ANR	Gudha Buchara	2018-19	50	10000	100	10000	6720	6720	67.20	0.672	0.328	0.00002204160	0.004695	68.12	66.28	0.9
56	Jaipur WL	Raisar	NFL	Dantali	2019-20	4.17	3000	100	3000	2289	2289	76.30	0.763	0.237	0.00006027700	0.007764	77.82	74.78	1.5
57		Jamwa Ramgarh	ANR	Papad	2018-19	50	10000	10	1000	820	820	82.00	0.820	0.180	0.00014760000	0.012149	84.38	79.62	2.4
58	Jaisalmer	Dabla	DFL	Chhod I	2017-18	220	154000	100	154000	93700	93700	60.84	0.608	0.392	0.00000154702	0.001244	61.09	60.60	0.2
59	Jaisalmer IGNP II	II 1438 RD Mohangarh	NFL	SDS 20-23 RDJJW Sadrau	2017-18	100	60000	100	60000	42272	42272	70.45	0.705	0.295	0.00000346944	0.001863	70.82	70.09	0.4
60		II 1438 RD Mohangarh	NFL	SDS 10-13 RD	2017-18	25	15000	10	1500	760	760	50.67	0.507	0.493	0.00016663704	0.012909	53.20	48.14	2.5

61		II 1438 RD Mohangarh	NFL	SDS Mandaubarani 13RDJJW	2018-19	25	15000	100	15000	9247	9247	61.65	0.616	0.384	0.00001576237	0.00397	62.42	60.87	0.8
62		II 1438 RD Mohangarh	NFL	SDS 35-38 RDJJWC	2019-20	50	30000	100	30000	23250	23250	77.50	0.775	0.225	0.00000581250	0.002411	77.97	77.03	0.5
63	Jalore	Raniwara	ANR	Varetha	2018-19	50	11000	100	11000	6553	6553	59.57	0.596	0.404	0.00002189421	0.004679	60.49	58.66	0.9
64		Jasvantpura	DFL	Siroshi Pahadpura	2019-20	50	35000	10	3500	1487	1487	42.49	0.425	0.575	0.00006981530	0.008356	44.12	40.85	1.6
65		Jasvantpura	ANR	Veri Datlawas	2019-20	50	10000	100	10000	5196	5196	51.96	0.520	0.480	0.00002496158	0.004996	52.94	50.98	1.0
66	Jhalawar	Khanpur	NFL	Sojpur	2017-18	23.25	35000	100	35000	20896	20896	59.70	0.597	0.403	0.00000687387	0.002622	60.22	59.19	0.5
67		Jhalawar	NFL	Barubeh	2019-20	27.67	29700	10	2970	2255	2255	75.93	0.759	0.241	0.00006154365	0.007845	77.46	74.39	1.5
68	Jhunjhunu	Khetri	DFL	Chirani II	2017-18	50	20000	100	20000	12140	12140	60.70	0.607	0.393	0.00001192755	0.003454	61.38	60.02	0.7
69		Udaipurwati	DFL	Indra colony Kankria	2017-18	50	30000	10	3000	1707	1707	56.90	0.569	0.431	0.00008174633	0.009041	58.67	55.13	1.8
70		Udaipurwati	ANR	Bagora	2017-18	50	10000	100	10000	5425	5425	54.25	0.543	0.458	0.00002481938	0.004982	55.23	53.27	1.0
71		Udaipurwati	ANR	Kot	2018-19	50	10000	10	1000	460	460	46.00	0.460	0.540	0.00024840000	0.015761	49.09	42.91	3.1
72		Udaipurwati	DFL	Kakrana	2018-19	50	30000	100	30000	18800	18800	62.67	0.627	0.373	0.00000779852	0.002793	63.21	62.12	0.5
73		Udaipurwati	DFL	Chhapoli III	2019-20	50	30000	10	3000	1366	1366	45.53	0.455	0.545	0.00008266830	0.009092	47.32	43.75	1.8
74		Navalgarh	ANR	Chirana	2019-20	50	10000	100	10000	4552	4552	45.52	0.455	0.545	0.00002479930	0.00498	46.50	44.54	1.0
75	Jodhpur	Bhopalgarh	DFL	Devnagar	2017-18	35.24	7048	100	7048	2913	2913	41.33	0.413	0.587	0.00003440474	0.005866	42.48	40.18	1.1

76	Karauli	Masalpur	ANR	Sahanpur	2019-20	55	11000	10	1100	470	470	42.73	0.427	0.573	0.00022246431	0.014915	45.65	39.80	2.9
77		Hindon	DFL	Kachroli	2019-20	3	2100	10	700	310	310	44.29	0.443	0.557	0.00035247813	0.018774	47.97	40.61	3.7
78		Hindon	DFL	Karwad Jat	2017-18	14.29	10000	100	10000	4427	4427	44.27	0.443	0.557	0.00002467167	0.004967	45.24	43.30	1.0
79	Kota	Sultanpur	ANR	Peepalda Samel	2018-19	50	10000	100	10000	928	928	9.28	0.093	0.907	0.00000841882	0.002902	9.85	8.71	0.6
80		Mandana	ANR	Mandana-I	2018-19	50	10000	10	1000	444	444	44.40	0.444	0.556	0.00024686400	0.015712	47.48	41.32	3.1
81		Modak	ANR	Rakba Pahad	2019-20	50	10000	100	10000	4635	4635	46.35	0.464	0.537	0.00002486678	0.004987	47.33	45.37	1.0
82	Kota MNP	Jawahar sagar	DFL	Dhonk ki kui	2017-18	36.4	18200	100	18200	8364	8364	45.96	0.460	0.540	0.00001364641	0.003694	46.68	45.23	0.7
83		Dara	ANR	Kalya Khal MJSA II	2017-18	50	10000	10	1000	446	446	44.60	0.446	0.554	0.00024708400	0.015719	47.68	41.52	3.1
84		Kolipura	ANR	Kanya Talab	2019-20	50	10000	100	10000	5085	5085	50.85	0.509	0.492	0.00002499278	0.004999	51.83	49.87	1.0
85	Nagaur	Kuchaman	ANR	Kuchaman	2018-19	50	10000	100	10000	4830	4830	48.30	0.483	0.517	0.00002497110	0.004997	49.28	47.32	1.0
86	Pali	Sojat	ANR	Rundiya	2019-20	50	10000	100	10000	6347	6347	63.47	0.635	0.365	0.00002318559	0.004815	64.41	62.53	0.9
87		Sumerpur	ANR	Rojara	2018-19	50	10000	10	1000	415	415	41.50	0.415	0.585	0.00024277500	0.015581	44.55	38.45	3.1
88		Sendara	ANR	Dholiya	2018-19	50	10000	100	10000	4347	4347	43.47	0.435	0.565	0.00002457359	0.004957	44.44	42.50	1.0
89	Pratapgarh	Chhoti Sadri	ANR	Santokpuria	2017-18	50	10000	100	10000	5568	5568	55.68	0.557	0.443	0.00002467738	0.004968	56.65	54.71	1.0
90		Peepalkhoot	ANR	Bakhtod	2018-19	50	10000	10	1000	424	424	42.40	0.424	0.576	0.00024422400	0.015628	45.46	39.34	3.1
91		Dhariyavad	NFL	Ghatela	2019-20	10	11000	100	11000	5150	5150	46.82	0.468	0.532	0.00002263524	0.004758	47.75	45.89	0.9
92		Devgarh	DFL	Jhantla C	2019-20	3.64	2000	10	2000	1007	1007	50.35	0.504	0.497	0.00012499388	0.01118	52.54	48.16	2.2

93		Chhoti Sadri	ANR	Janjal (Hamel Mahadev)	2019-20	50	10000	100	10000	4100	4100	41.00	0.410	0.590	0.00002419000	0.004918	41.96	40.04	1.0
94	Rajsamand	Kumbhalgarh	ANR	Uparthala Jaitaran	2017-18	50	10000	100	10000	4523	4523	45.23	0.452	0.548	0.00002477247	0.004977	46.21	44.25	1.0
95	Rajsamand WL	Desuri	ANR	Satimata-B	2018-19	50	10000	100	10000	4366	4366	43.66	0.437	0.563	0.00002459804	0.00496	44.63	42.69	1.0
96		Bhim	DFL	Koyatalai	2018-19	50.62	35000	10	3500	1522	1522	43.49	0.435	0.565	0.00007021612	0.00838	45.13	41.84	1.6
97		Devgarh	ANR	Devpura	2019-20	50	10000	100	10000	4221	4221	42.21	0.422	0.578	0.00002439316	0.004939	43.18	41.24	1.0
98	RTR I S. Madhopur	Indergarh	NFL	Kanchan Dham	2018-19	2.12	1000	100	1000	537	537	53.70	0.537	0.463	0.00024863100	0.015768	56.79	50.61	3.1
99	S. Madhopur	Bonli	ANR	Khirkhadi	2019-20	50	10000	100	10000	4900	4900	49.00	0.490	0.510	0.00002499000	0.004999	49.98	48.02	1.0
100		Bonli	ANR	Shilki dungari	2018-19	25	5000	10	500	209	209	41.80	0.418	0.582	0.00048655200	0.022058	46.12	37.48	4.3
101	Sikar	Srimadhopur	DFL	Ajeetgarh	2017-18	50	10000	100	10000	4493	4493	44.93	0.449	0.551	0.00002474295	0.004974	45.90	43.96	1.0
102		Neemka thana	NFL	Bhagega I	2017-18	2.62	2882	100	2882	831	831	28.83	0.288	0.712	0.00007120078	0.008438	30.49	27.18	1.7
103		Patan	ANR	Jetpura	2018-19	50	10000	100	10000	4444	4444	44.44	0.444	0.556	0.00002469086	0.004969	45.41	43.47	1.0
104	Sirohi	Pindwara	ANR	Pahadkala No. 30 Ubari Pani Sabela	2018-19	50	10000	100	10000	4404	4404	44.04	0.440	0.560	0.00002464478	0.004964	45.01	43.07	1.0
105	Tonk	Deoli	DFL	Devnarayanji	2017-18	50	35000	100	35000	16006	16006	45.73	0.457	0.543	0.00000709080	0.002663	46.25	45.21	0.5
106		Tonk	ANR	Newai pahad kabri khal	2019-20	50	10000	100	10000	522	522	5.22	0.052	0.948	0.00000494752	0.002224	5.66	4.78	0.4
107	Udaipur	Udaipur west	DFL	Rodaji Bawji	2018-19	56	39200	100	39200	18521	18521	47.25	0.472	0.528	0.00000635822	0.002522	47.74	46.75	0.5

108		Salumbar	ANR	Jhallara	2018-19	50	10000	10	1000	554	554	55.40	0.554	0.446	0.00024708400	0.015719	58.48	52.32	3.1
109	Udaipur-North	Gogunda	ANR	Naal mokhi	2019-20	40	8050	100	8050	3767	3767	46.80	0.468	0.532	0.00003092830	0.005561	47.89	45.71	1.1
110		Udaipur-East	NFL	Banadiya	2018-19	95.69	4785	10	4785	2005	2005	41.90	0.419	0.581	0.00005087605	0.007133	43.30	40.50	1.4
111		Udaipur east	ANR	Amberi	2017-18	80	10000	100	10000	7654	7654	76.54	0.765	0.235	0.00001795628	0.004237	77.37	75.71	0.8

Field verification & validation of plantations Survival

The field verification of plantations at the sample plantation sites was done. It includes verification of per hectare plantations norms as per the given models, spacing and assessment of the claimed plantations in evaluation of 100 percent sites.

For the purpose of undertaking field verifications of the plantations, the plantation journal and plantation cards have been consulted.

While undertaking field level assessment of plantations, the plants growth in terms of height and collar girth has been measured to know the variations in the growth of the plants. The table given below shows the findings related to validation and verifications of planted plants, average norms of plantations have been followed or not and largely to assess the survival rate of the planted plants.

Table 4.13: Sample Plants Species Height & Collar Girth											
Name of Forest Division	Name of Range	Name of Model	Name of Site	Plantation Year	Area in Ha	Total Planted Plants	Average plants planted per hectare	Followed norms (plantation undertaken as per model)	Name of species	Average height (Cm)	Average collar girth (mm)
Ajmer	Pushkar	ANR	Nand	2018-19	50	10000	200	Yes	Holoptelea integrifolia (Churel)	95	72
									Acacia leucopholea (Ronj)	92	68
									Acacia nilotica (Desi babool)	121	74
									Zizyphus mauritiana (Ber)	90	65
									Azadirachta indica (Neem)	95	70
Alwar	Kishangarhwas	DFL	Chor Basai	2017-18	50	35000	700	Yes	Acacia nilotica (Desi babool)	255	232
									Dalbergia sissoo (Shisham)	285	225
									Zizyphus mauritiana (Ber)	190	128
									Acacia tortilis (Totalis)	256	245
	Thanagazi	ANR	Gadh Basai	2017-18	50	10500	210	Yes	Holoptelea integrifolia (Churel)	60	20
									Acacia leucopholea (Ronj)	60	20
									Acacia nilotica (Desi babool)	120	80
									Acacia senegal (Kumtha)	65	30
									Azadirachta indica (Neem)	60	20
									Butea monosperma (Chila)	82	32
	Rajgarh	ANR	Dolatpura	2018-19	50	10000	200	Yes	Acacia leucopholea (Ronj)	98	72
									Holoptelea integrifolia (Churel)	99	84
									Acacia nilotica (Desi babool)	104	74
									Dalbergia sissoo (Shisham)	90	65
									Azadirachta indica (Neem)	90	65
									Pongamia pinnata (Karanj)	130	102
									Ficus religiosa (Pipal))	90	65
									Bombax ceiba (Semal)	90	65
	Tijara	DFL	Gwalda	2018-19	50	35000	700	Yes	Acacia tortilis (Totalis)	195	109
									Dalbergia sissoo (Shisham)	90	65
									Holoptelea integrifolia (Churel)	92	65
									Azadirachta indica (Neem)	85	60

									Acacia leucopholea (Ronj)	105	65
									Acacia nilotica (Desi babool)	184	101
									Acacia catechu (Khair)	90	65
	Laxmangarh	DFL	Santokpur	2018-19	50	20000	400	Yes	Acacia nilotica (Desi babool)	110	42
									Zizyphus mauritiana (Ber)	45	18
									Holoptelea integrifolia (Churel)	60	38
									Pithecellobium dulce (Jangal Jalebi)	80	46
									Acacia catechu (Khair)	60	28
									Acacia senegal (Kumtha)	68	32
									Dalbergia sissoo (Shisham)	60	26
									Albizia lebbeck (Kala Siras)	64	28
									Acacia leucopholea (Ronj)	50	24
									Azadirachta indica (Neem)	40	18
	Bahror	DFL	Dhindhor	2019-20	50	25000	500	Yes	Acacia nilotica (Desi babool)	86	75
									Acacia leucopholea (Ronj)	122	110
									Acacia tortilis (Totalis)	86	76
									Holoptelea integrifolia (Churel)	76	65
									Acacia catechu (Khair)	133	115
Alwar STR	Tahala	NFL	Nadoli	2017-18	85.44	55000	644	Yes	Acacia nilotica (Desi babool)	292	180
									Acacia leucopholea (Ronj)	275	150
									Butea monosperma (Chila)	120	110
									Acacia senegal (Kumtha)	110	110
									Acacia catechu (Khair)	85	100
									Holoptelea integrifolia (Churel)	127	120
									Zizyphus mauritiana (Ber)	158	110
Banswara	Ghatol	ANR	Jagmer Jogimal	2017-18	50	10100	202	Yes	Tectona grandis (Sagwan)	168	118
									Acacia catechu (Khair)	90	65
									Emblica officinalis (Amla)	124	75
									Azadirachta indica (Neem)	122	74

									Terminalia bellirica (Baheda)	102	76
									Ficus racemosa (Hawan)	116	82
									Holoptelea integrifolia (Churel)	126	87
									Wrightia tinctoria (Khirani)	122	88
									Terminalia arjuna (Arjun)	117	81
									Zizyphus mauritiana (Ber)	90	65
	Sajjangarh	ANR	Andeshwar	2018-19	60	12000	200	Yes	Acacia catechu (Khair)	90	65
									Emblica officinalis (Amla)	113	85
									Zizyphus mauritiana (Ber)	95	68
									Acacia leucopholea (Ronj)	90	65
									Holoptelea integrifolia (Churel)	96	70
									Dendrocalamus strictus (Baans)	153	81
									Tectona grandis (Sagwan)	143	79
Baran	Shahbad	DFL	Baseli-b	2017-18	30	21000	700	Yes	Zizyphus mauritiana (Ber)	200	50
									Tectona grandis (Sagwan)	110	50
									Holoptelea integrifolia (Churel)	130	40
									Pongamia pinnata (Karanj)	140	50
									Pithecellobium dulce (Jangal Jalebi)	210	40
									Azadirachta indica (Neem)	230	60
									Dalbergia sissoo (Shisham)	150	60
									Acacia catechu (Khair)	70	25
	Kishanganj	DFL	Borda	2017-18	130	81000	623	Yes	Pithecellobium dulce (Jangal Jalebi)	60	78
									Tectona grandis (Sagwan)	40	70
									Acacia catechu (Khair)	50	85
									Azadirachta indica (Neem)	48	82
									Dalbergia sissoo (Shisham)	85	105
									Aegle marmelos (Bilpatra*)*	75	98
									Pongamia pinnata (Karanj)	65	110
									Holoptelea integrifolia (Churel)	72	115
	Nahargarh	DFL	Kadili	2017-18	120	84000	700	Yes	Karonda	35	70
									Azadirachta indica (Neem)	18	45

									*Anthocephalus kadamba (*Kadamba)	45	75
									Tamarindus indica (Imli)	65	80
									Pongamia pinnata (Karanj)	50	85
									*Cassia sp. (*Cassiashyama)	55	95
									Acacia leucopholea (Ronj)	58	105
									Holoptelea integrifolia (Churel)	62	85
									Acacia nilotica (Desi babool)	162	150
	Shahbad	NFL	Dabar-D	2017-18	23.45	21000	896	Yes	*Butea monosperma* (Palash)	120	70
									Acacia nilotica (Desi babool)	190	85
									Zizyphus mauritiana (Ber)	185	88
									Holoptelea integrifolia (Churel)	72	65
									Pithecellobium dulce (Jangal Jalebi)	80	60
									Karonda	41	40
									Acacia leucopholea (Ronj)	90	55
	Anta	NFL	Mundiya B I	2018-19	66	72548	1099	Yes	Ficus religiosa (Pipal)	51	105
									Pongamia pinnata (Karanj)	62	115
									Dalbergia sissoo (Shisham)	82	110
									*Syzygium cumini (*Jamun)	56	100
									Bombax ceiba (Semal)	52	90
									Azadirachta indica (Neem)	50	88
									Holoptelea integrifolia (Churel)	65	105
									Acacia nilotica (Desi babool)	68	100
									Terminalia arjuna (Arjun)	51	80
									Bauhinia racemesa (Kachnar)	38	75
									Acacia catechu (Khair)	81	110
									Hingot	82	105
									Zizyphus mauritiana (Ber)	72	120
									Ailanthus excelsa (Ardu)	49	130
	Kelwara	ANR	Sukha samli- A	2018-19	50	10000	200	Yes	*Bombax ceiba* (Semal)	90	80
									Terminalia arjuna (Arjun)	96	65
									Ficus religiosa (Pipal)	45	70

									Holoptelea integrifolia (Churel)	75	65
									Pithecellobium dulce (Jangal Jalebi)	150	75
									*Anthocephalus kadamba (*Kadamba)	78	65
									Terminalia bellirica (Baheda)	95	55
									Acacia catechu (Khair)	38	50
									Azadirachta indica (Neem)	35	45
									Acacia nilotica (Desi babool)	70	65
	Shahbad	ANR	Mundiya Sehjana II	2018-19	50	10000	200	Yes	Tectona grandis (Sagwan)	60	65
									Holoptelea integrifolia (Churel)	70	65
									Karonda	37	40
									Pithecellobium dulce (Jangal Jalebi)	75	60
									Azadirachta indica (Neem)	80	70
									Pongamia pinnata (Karanj)	55	50
									Acacia catechu (Khair)	20	40
									Zizyphus mauritiana (Ber)	52	50
	Anta	NFL	Kanada	2019-20	22	22400	1018	Yes	Holoptelea integrifolia (Churel)	72	105
									Dalbergia sissoo (Shisham)	81	110
									Pongamia pinnata (Karanj)	75	125
									Acacia nilotica (Desi babool)	78	110
									Azadirachta indica (Neem)	38	75
									Zizyphus mauritiana (Ber)	88	100
									*Madhuca longifolia (*Mahua*)*	38	105
									*Syzygium cumini (*Jamun)	56	125
									Hingot	82	110
Barmer	Sivana	ANR	Kusip	2017-18	100	20000	200	Yes	Tecomella undulata (Rohida)	90	65
									Prosopis juliflora (Khejri)	90	65
									Salvadora persica (Jaal)	90	65
									Zizyphus mauritiana (Ber)	90	65
									Azadirachta indica (Neem)	150	65

									Acacia tortilis (Totalis)	140	65
									Acacia senegal (Kumtha)	90	65
	Barmer	DFL	Junapatarasar-B	2018-19	50	25000	500	Yes	Acacia tortilis (Totalis)	115	85
									Cordia sinensis (Gundi)	90	65
									Tecomella undulata (Rohida)	90	65
									Acacia senegal (Kumtha)	90	65
									Zizyphus mauritiana (Ber)	90	65
	Barmer	DFL	Gafan Talai	2018-19	50	25000	500	Yes	Acacia tortilis (Totalis)	161	126
									Salvadora persica (Jaal)	90	65
									Prosopis juliflora (Khejri)	90	65
									Tecomella undulata (Rohida)	90	65
									Zizyphus mauritiana (Ber)	90	65
									Azadirachta indica (Neem)	90	65
Bharatpur	Bayana	ANR	Ghodi Khoj Hathodi	2018-19	50	10000	200	Yes	Acacia nilotica (Desi babool)	90.0	65.0
									Acacia tortilis (Totalis)	90.9	65.0
									Acacia leucopholea (Ronj)	95.9	65.0
									Holoptelea integrifolia (Churel)	99.3	65.0
Bhilwara	Mandalgarh	DFL	Saimala	2017-18	50	35000	700	Yes	Acacia leucopholea (Ronj)	105	70
									Acacia nilotica (Desi babool)	65	65
									Pithecellobium dulce (Jangal Jalebi)	75	55
									Emblica officinalis (Amla)	110	65
									Holoptelea integrifolia (Churel)	70	68
									Zizyphus mauritiana (Ber)	85	60
									Terminalia bellirica (Baheda)	80	63
									Acacia catechu (Khair)	77	58
	Mandalgarh	ANR	Kharcha ki nadi	2017-18	50	10200	204	Yes	Acacia leucopholea (Ronj)	90	70
									Acacia nilotica (Desi babool)	85	68
									Holoptelea integrifolia (Churel)	80	67
									Zizyphus mauritiana (Ber)	83	65
									Acacia catechu (Khair)	77	68

	Jahajpur	ANR	Bahadurpura	2018-19	50	10000	200	Yes	Acacia nilotica (Desi babool)	165	125
									Acacia leucopholea (Ronj)	170	123
									Zizyphus mauritiana (Ber)	90	65
									Holoptelea integrifolia (Churel)	135	102
									Azadirachta indica (Neem)	155	98
									Dalbergia sissoo (Shisham)	130	85
	Mandalgarh	DFL	Ladpura	2019-20	50	32000	640	Yes	Zizyphus mauritiana (Ber)	85	63
									Acacia leucopholea (Ronj)	90	67
									Acacia nilotica (Desi babool)	92	65
									Acacia catechu (Khair)	82	67
									Emblica officinalis (Amla)	87	60
									Terminalia arjuna (Arjun)	80	65
Bikaner	Lunkaransar	DFL	Mahajan-D	2018-19	38.43	19460	506	Yes	Acacia tortilis (Totalis)	112	110
									Zizyphus mauritiana (Ber)	90	74
									Prosopis juliflora (Khejri)	74	60
									Acacia senegal (Kumtha)	78	35
									Azadirachta indica (Neem)	65	60
									Salvadora persica (Jaal)	118	120
									Tecomella undulata (Rohida)	55	18
	Nokha	DFL	Nokha	2019-20	25.43	17800	700	Yes	Zizyphus mauritiana (Ber)	160	100
									Tecomella undulata (Rohida)	80	80
									Prosopis juliflora (Khejri)	48	70
									Acacia senegal (Kumtha)	53	55
Bikaner IGNP II	750 RD unit II	NFL	SDS Agneu	2018-19	52.25	31350	600	Yes	Acacia tortilis (Totalis)	180	150
									Zizyphus mauritiana (Ber)	85	110
									Tecomella undulata (Rohida)	53	70
									Prosopis juliflora (Khejri)	58	80
									Acacia leucopholea (Ronj)	39	80
Bundi	K. Patan	NFL	Gopalpura	2017-18	27.51	13755	500	Yes	Acacia nilotica (Desi babool)	82	70
									Zizyphus mauritiana (Ber)	62	68
									Holoptelea integrifolia (Churel)	36	80
									Pithecellobium dulce (Jangal Jalebi)	44	78
									Pongamia pinnata (Karanj)	62	74

									Prosopis juliflora (Khejri)	56	74
	Hindoli	DFL	Maliyon ki jhopdiya	2017-18	100	70000	700	Yes	Acacia nilotica (Desi babool)	268	280
									Acacia leucopholea (Ronj)	227	210
									Pithecellobium dulce (Jangal Jalebi)	178	140
									Zizyphus mauritiana (Ber)	50	90
	Hindoli	ANR	Dholi Chabutri B	2018-19	50	10000	200	Yes	Acacia nilotica (Desi babool)	140	150
									Holoptelea integrifolia (Churel)	40	10
									Pithecellobium dulce (Jangal Jalebi)	73	130
									Zizyphus mauritiana (Ber)	60	100
									Acacia leucopholea (Ronj)	52	70
									Azadirachta indica (Neem)	14	5
	Nainwa	ANR	Topa Dhardhadi-F	2019-20	50	10000	200	Yes	Pithecellobium dulce (Jangal Jalebi)	120	100
									Holoptelea integrifolia (Churel)	105	90
									Acacia nilotica (Desi babool)	123	120
									Zizyphus mauritiana (Ber)	81	110
									Tamarindus indica (Imli)	53	90
									Azadirachta indica (Neem)	47	80
Chittorgarh	Chittorgarh	ANR	Hasala-E	2017-18	50	10000	200	Yes	Zizyphus mauritiana (Ber)	90	65
									Acacia leucopholea (Ronj)	90	65
									Acacia nilotica (Desi babool)	90	65
									Dendrocalamus strictus (Baans)	103	65
									Emblica officinalis (Amla)	95	74
									Holoptelea integrifolia (Churel)	92	78
									Pongamia pinnata (Karanj)	90	65
									Acacia catechu (Khair)	90	65
	Chittorgarh	ANR	Siyalkund	2018-19	50	10000	200	Yes	*Cassia fistula (*Amaltas)	90	65
									Acacia nilotica (Desi babool)	93	68
									Dendrocalamus strictus (Baans)	102	66
									Emblica officinalis (Amla)	90	65

									Holoptelea integrifolia (Churel)	92	70
									Zizyphus mauritiana (Ber)	90	65
	Nimbahera	DFL	Tai-B	2019-20	50	10000	200	Yes	Holoptelea integrifolia (Churel)	93	70
									Cordia sinensis (Gundi)	90	65
									*Cassia fistula (*Amaltas)	90	65
									Annona squamosa (Sitafal)	90	65
									Pithecellobium dulce (Jangal Jalebi)	90	65
									Wrightia tinctoria (Khirani)	92	67
									Terminalia arjuna (Arjun)	95	70
									Zizyphus mauritiana (Ber)	90	65
	Begu	ANR	Jogniyamata Haribadliya	2019-20	50	10000	200	Yes	Acacia catechu (Khair)	92	68
									Zizyphus mauritiana (Ber)	90	65
									*Bauhinia sp. (*Kachnar*)*	90	65
									Terminalia bellirica (Baheda)	93	70
									Holoptelea integrifolia (Churel)	100	65
									Pongamia pinnata (Karanj)	90	65
									Azadirachta indica (Neem)	95	71
Chittorgarh WL	Dhariyavad	ANR	Nangliya	2018-19	50	10000	200	Yes	Acacia catechu (Khair)	90	65
									Dendrocalamus strictus (Baans)	112	85
									Emblica officinalis (Amla)	91	65
									Tectona grandis (Sagwan)	136	107
									Azadirachta indica (Neem)	90	65
									Zizyphus mauritiana (Ber)	96	70
									Holoptelea integrifolia (Churel)	100	74
Dausa	Sikrai	ANR	Achalpura	2017-18	50	10000	200	Yes	Dalbergia sissoo (Shisham)	90	70
									Acacia tortilis (Totalis)	150	150
									Holoptelea integrifolia (Churel)	90	60
									Zizyphus mauritiana (Ber)	90	70
									Acacia senegal (Kumtha)	120	80
	Bandikui	ANR	Sonadi	2018-19	50	10000	200	Yes	Holoptelea integrifolia (Churel)	120	80
									Acacia nilotica (Desi babool)	150	100

									Acacia tortilis (Totalis)	150	100
									Prosopis juliflora (Khejri)	120	100
									Dalbergia sissoo (Shisham)	120	100
	Sikrai	ANR	Fraspura	2019-20	50	10000	200	Yes	Dalbergia sissoo (Shisham)	90	60
									Holoptelea integrifolia (Churel)	70	60
									Acacia tortilis (Totalis)	130	100
									Acacia senegal (Kumtha)	100	80
									Acacia nilotica (Desi babool)	130	10
									Zizyphus mauritiana (Ber)	90	70
Dholpur	Sarmathura	ANR	Thane Ka Pura-II ANR	2017-18	50	10000	200	Yes	Acacia nilotica (Desi babool)	90	65
									Anogeissus pendula (Dhok)	90	65
	Sarmathura	ANR	Dhore Ka Dada	2019-20	50	10000	200	Yes	Acacia nilotica (Desi babool)	90	65
									Acacia catechu (Khair)	90	65
									Acacia leucopholea (Ronj)	90	65
									Zizyphus mauritiana (Ber)	90	65
									Holoptelea integrifolia (Churel)	90	65
									Azadirachta indica (Neem)	90	65
									Dalbergia sissoo (Shisham)	90	65
	Vanvihar	ANR	Meenakhuri	2019-20	50	10000	200	Yes	Acacia nilotica (Desi babool)	118	99
									Pithecellobium dulce (Jangal Jalebi)	94	65
									Acacia leucopholea (Ronj)	98	65
									Holoptelea integrifolia (Churel)	98	99
	Badi	DFL	Kala Patpara	2018-19	25	27500	1100	Yes	Acacia nilotica (Desi babool)	100	69
									Acacia catechu (Khair)	101	69
									Acacia senegal (Kumtha)	107	70
									Acacia leucopholea (Ronj)	102	87
									Zizyphus mauritiana (Ber)	90	81
Dungarpur	Dungarpur	NFL	Palwada	2017-18	12.8	3000	234	Yes	Holoptelea integrifolia (Churel)	102	92
									Tectona grandis (Sagwan)	110	96
	Dungarpur	ANR	Vankhand Ranijhula S.No.	2018-19	50	10000	200	Yes	Tectona grandis (Sagwan)	98	68
									Azadirachta indica (Neem)	112	82

			2 Ananpura						Wrightia tinctoria (Khirani)	136	82
									Emblica officinalis (Amla)	86	72
									Sadad	120	85
									Terminalia arjuna (Arjun)	76	58
									Holoptelea integrifolia (Churel)	86	72
									Beda	120	90
									Albizia lebbeck (Kala Siras)	112	88
									Garar	115	85
									Bombax ceiba (Semal)	96	82
									Pongamia pinnata (Karanj)	102	86
									Dalbergia sissoo (Shisham)	96	76
									Tamarindus indica (Imli)	78	68
									Sapindus sp. (Aritha)	86	78
									Ficus religiosa (Pipal)	90	68
									Aegle marmelos (Bilpatra*)*	105	75
	Simalwara	ANR	Charwada Rataghata	2019-20	50	10000	200	Yes	Tectona grandis (Sagwan)	122	112
									Emblica officinalis (Amla)	110	94
									Holoptelea integrifolia (Churel)	120	96
									Zizyphus mauritiana (Ber)	116	82
									Azadirachta indica (Neem)	96	92
									Acacia catechu (Khair)	106	88
									Terminalia bellarica (Baheda)	90	78
									Aleurites molucana (Hawan)	98	82
									Acacia leucopholea (Ronj)	112	92
Jaipur	Amer	ANR	Bagwara	2017-18	45	9000	200	Yes	Acacia tortilis (Totalis)	183	209
									Zizyphus mauritiana (Ber)	135	65
									Dalbergia sissoo (Shisham)	182	107
									Ailanthus excelsa (Ardu)	90	65
									Acacia nilotica (Desi babool)	177	172
	Amer	ANR	Dabla	2018-19	50	10000	200	Yes	Acacia nilotica (Desi babool)	150	145
									Acacia catechu (Khair)	150	122
									Dalbergia sissoo (Shisham)	139	112

									Zizyphus mauritiana (Ber)	146	154
									Acacia senegal (Kumtha)	150	122
									Acacia leucopholea (Ronj)	131	136
									Acacia tortilis (Totalis)	141	169
									Holoptelea integrifolia (Churel)	115	138
	Bassi	DFL	Langadiyawas	2018-19	3.86	1600	415	Yes	Acacia tortilis (Totalis)	350	200
									Acacia senegal (Kumtha)	165	145
									Acacia nilotica (Desi babool)	260	100
									Salvadora persica (Jaal)	135	110
									Holoptelea integrifolia (Churel)	130	100
									Acacia leucopholea (Ronj)	250	180
									Azadirachta indica (Neem)	300	120
									Zizyphus mauritiana (Ber)	130	110
									Prosopis juliflora (Khejri)	140	100
	Kanota	ANR	Dubali	2018-19	50	10000	200	Yes	Acacia tortilis (Totalis)	182	155
									Acacia senegal (Kumtha)	139	125
									Holoptelea integrifolia (Churel)	95	85
									Acacia nilotica (Desi babool)	137	115
									Zizyphus mauritiana (Ber)	96	78
									Dalbergia sissoo (Shisham)	108	82
Jaipur North	Shahpura	ANR	Manoharpur	2017-18	50	10000	200	Yes	Acacia tortilis (Totalis)	400	250
									Acacia senegal (Kumtha)	120	100
									Holoptelea integrifolia (Churel)	120	50
									Zizyphus mauritiana (Ber)	200	120
									Acacia leucopholea (Ronj)	270	170
									Acacia nilotica (Desi babool)	300	200
									Azadirachta indica (Neem)	300	100
									Commiphora sp. (Guggal)	165	115
	Shahpura	ANR	Mishrawas	2018-19	50	10000	200	Yes	Acacia tortilis (Totalis)	150	150
									Holoptelea integrifolia (Churel)	70	40
									Acacia nilotica (Desi babool)	150	160
									Acacia leucopholea (Ronj)	90	80
									Zizyphus mauritiana (Ber)	120	130

									Azadirachta indica (Neem)	120	130
									Dalbergia sissoo (Shisham)	120	130
									Acacia senegal (Kumtha)	140	120
	Kotputali	ANR	Gudha Buchara	2018-19	50	10000	200	Yes	Acacia tortilis (Totalis)	280	250
									Holoptelea integrifolia (Churel)	115	60
									Dalbergia sissoo (Shisham)	170	220
									Albizia lebbeck (Kala Siras)	140	80
									Azadirachta indica (Neem)	140	80
									Acacia nilotica (Desi babool)	220	180
									Zizyphus mauritiana (Ber)	140	80
									Tecomella undulata (Rohida)	140	80
Jaipur WL	Raisar	NFL	Dantali	2019-20	4.17	3000	719	Yes	Holoptelea integrifolia (Churel)	90	40
									Dalbergia sissoo (Shisham)	100	40
									Acacia nilotica (Desi babool)	180	80
									Zizyphus mauritiana (Ber)	90	30
									Acacia leucopholea (Ronj)	60	30
									Azadirachta indica (Neem)	60	30
	Jamwa Ramgarh	ANR	Papad	2018-19	50	10000	200	Yes	Acacia tortilis (Totalis)	240	50
									Holoptelea integrifolia (Churel)	90	15
									Acacia senegal (Kumtha)	210	20
									Dalbergia sissoo (Shisham)	90	30
									Ratanjot	90	20
									Ficus religiosa (Pipal))	60	20
									Azadirachta indica (Neem)	60	20
Jaisalmer	Dabla	DFL	Chhod I	2017-18	220	154000	700	Yes	Acacia tortilis (Totalis)	164	185
									Tecomella undulata (Rohida)	85	80
									Zizyphus mauritiana (Ber)	104	98
									Acacia senegal (Kumtha)	152	150
									Salvadora persica (Jaal)	95	120
									Commiphora sp. (Guggal)	57	60

Jaisalmer IGNP II	II 1438 RD Mohangarh	NFL	SDS 20-23 RDJJW Sadrau	2017-18	100	60000	600	Yes	Acacia tortilis (Totalis)	212	126
									Tecomella undulata (Rohida)	115	122
									Prosopis juliflora (Khejri)	90	65
	II 1438 RD Mohangarh	NFL	SDS 10-13 RD	2017-18	25	15000	600	Yes	Acacia tortilis (Totalis)	111	117
									Tecomella undulata (Rohida)	95	70
									Acacia senegal (Kumtha)	90	65
									Prosopis juliflora (Khejri)	90	65
									Zizyphus mauritiana (Ber)	93	65
									Fras	90	68
									Azadirachta indica (Neem)	90	70
	II 1438 RD Mohangarh	NFL	SDS Mandau barani 13RdJJW	2018-19	25	15000	600	Yes	Acacia tortilis (Totalis)	271	132
									Tecomella undulata (Rohida)	212	99
									Prosopis juliflora (Khejri)	90	65
									Acacia senegal (Kumtha)	90	67
									Zizyphus mauritiana (Ber)	135	65
	II 1438 RD Mohangarh	NFL	SDS 35-38 RDJJWC	2019-20	50	30000	600	Yes	Acacia tortilis (Totalis)	119	81
									Acacia senegal (Kumtha)	90	65
									Tecomella undulata (Rohida)	100	83
									Zizyphus mauritiana (Ber)	90	65
Jalore	Raniwara	ANR	Varetha	2018-19	50	11000	220	Yes	Acacia senegal (Kumtha)	90	65
									Acacia tortilis (Totalis)	135	102
									Acacia leucopholea (Ronj)	110	90
									Zizyphus mauritiana (Ber)	90	70
	Jasvantpura	DFL	Siroshi Pahadpura	2019-20	50	35000	700	Yes	Acacia tortilis (Totalis)	121	135
									Acacia senegal (Kumtha)	161	92
									Zizyphus mauritiana (Ber)	119	72
									Acacia leucopholea (Ronj)	135	92

	Jasvantpura	ANR	Veri Datlawas	2019-20	50	10000	200	Yes	Acacia senegal (Kumtha)	131	105
									Acacia leucopholea (Ronj)	118	81
									Zizyphus mauritiana (Ber)	106	75
									Pongamia pinnata (Karanj)	115	74
									Acacia tortilis (Totalis)	179	99
									Azadirachta indica (Neem)	120	65
									Albizzia lebbeck (Siras)	101	65
									Holoptelea integrifolia (Churel)	90	65
									Delonix regia (Gulmohar)	105	65
Jhalawar	Khanpur	NFL	Sojpur	2017-18	23.25	35000	1505	Yes	Acacia nilotica (Desi babool)	89	32
									Azadirachta indica (Neem)	10	8
									Acacia leucopholea (Ronj)	56	7
									Acacia catechu (Khair)	91	40
									Dalbergia sissoo (Shisham)	23	6
									Zizyphus mauritiana (Ber)	157	50
									Pithecellobium dulce (Jangal Jalebi)	60	50
									Hingot	75	68
	Jhalawar	NFL	Barubeh	2019-20	27.67	29700	1073	Yes	Acacia leucopholea (Ronj)	98	67
									Acacia nilotica (Desi babool)	118	68
									Holoptelea integrifolia (Churel)	55	40
									Azadirachta indica (Neem)	43	25
									Pongamia pinnata (Karanj)	118	67
									Zizyphus mauritiana (Ber)	91	51
									Pithecellobium dulce (Jangal Jalebi)	53	66
Jhunjhunu	Khetri	DFL	Chirani II	2017-18	50	20000	400	Yes	Zizyphus mauritiana (Ber)	100	74
									Acacia leucopholea (Ronj)	125	91
									Holoptelea integrifolia (Churel)	98	65
									Azadirachta indica (Neem)	99	65
									Acacia tortilis (Totalis)	173	115
	Udaipurwati	DFL	Indra colony Kankria	2017-18	50	30000	600	Yes	Dalbergia sissoo (Shisham)	145	85

									Jheenjha	110	75
									Acacia nilotica (Desi babool)	147	78
									Zizyphus mauritiana (Ber)	152	86
									Acacia leucopholea (Ronj)	120	26
									Prosopis juliflora (Khejri)	155	83
									Holoptelea integrifolia (Churel)	25	22
									Azadirachta indica (Neem)	137	65
									Acacia tortilis (Totalis)	120	76
	Udaipurwati	ANR	Bagora	2017-18	50	10000	200	Yes	Acacia leucopholea (Ronj)	96	67
									Holoptelea integrifolia (Churel)	96	68
									Dalbergia sissoo (Shisham)	99	69
									Acacia nilotica (Desi babool)	94	69
									Zizyphus mauritiana (Ber)	93	68
									Prosopis juliflora (Khejri)	95	69
									Tecomella undulata (Rohida)	95	67
									Azadirachta indica (Neem)	90	65
	Udaipurwati	ANR	Kot	2018-19	50	10000	200	Yes	Acacia leucopholea (Ronj)	220	115
									Holoptelea integrifolia (Churel)	201	151
									Azadirachta indica (Neem)	403	240
									Acacia nilotica (Desi babool)	214	150
	Udaipurwati	DFL	Kakrana	2018-19	50	30000	600	Yes	Acacia leucopholea (Ronj)	144	97
									Acacia nilotica (Desi babool)	149	86
									Zizyphus mauritiana (Ber)	98	72
									Acacia tortilis (Totalis)	159	108
	Udaipurwati	DFL	Chhapoli III	2019-20	50	30000	600	Yes	Acacia leucopholea (Ronj)	215	150
									Acacia nilotica (Desi babool)	218	150
									Holoptelea integrifolia (Churel)	70	37
									Zizyphus mauritiana (Ber)	135	80
									Jhinjha	130	76
	Navalgarh	ANR	Chirana	2019-20	50	10000	200	Yes	*Azadirachta indica (Neem)*	109	75
									Holoptelea integrifolia (Churel)	105	76
									Acacia leucopholea (Ronj)	110	78
									Zizyphus mauritiana (Ber)	99	65

Jodhpur	Bhopalgarh	DFL	Devnagar	2017-18	35.24	7048	200	Yes	Acacia senegal (Kumtha)	91	65
									Acacia tortilis (Totalis)	122	84
									Acacia nilotica (Desi babool)	106	75
									Zizyphus mauritiana (Ber)	90	65
Karauli	Masalpur	ANR	Sahanpur	2019-20	55	11000	200	Yes	Acacia nilotica (Desi babool)	90	65
									Holoptelea integrifolia (Churel)	102	65
									Zizyphus mauritiana (Ber)	90	65
	Hindon	DFL	Kachroli	2019-20	3	2100	700	Yes	Holoptelea integrifolia (Churel)	100.0	80.0
									Pongamia pinnata (Karanj)	120.0	92.5
									Acacia nilotica (Desi babool)	130.0	115.0
									Azadirachta indica (Neem)	120.0	127.5
									Dalbergia sissoo (Shisham)	101.3	142.5
	Hindon	DFL	Karwad Jat	2017-18	14.29	10000	700	Yes	Acacia tortilis (Totalis)	174	96
									Holoptelea integrifolia (Churel)	138	102
									Acacia leucopholea (Ronj)	94	65
									Zizyphus mauritiana (Ber)	90	65
									Azadirachta indica (Neem)	105	75
									Acacia senegal (Kumtha)	108	71
									Acacia nilotica (Desi babool)	175	85
Kota	Sultanpur	ANR	Peepalda Samel	2018-19	50	10000	200	Yes	Acacia nilotica (Desi babool)	140	82
									Azadirachta indica (Neem)	78	55
									Holoptelea integrifolia (Churel)	88	62
	Mandana	ANR	Mandana-I	2018-19	50	10000	200	Yes	Zizyphus mauritiana (Ber)	62	70
									Holoptelea integrifolia (Churel)	58	75
									Acacia leucopholea (Ronj)	78	85
									Acacia catechu (Khair)	45	68
	Modak	ANR	Rakba Pahad	2019-20	50	10000	200	Yes	Holoptelea integrifolia (Churel)	120	120
									Acacia leucopholea (Ronj)	125	145
									Pithecellobium dulce (Jangal Jalebi)	95	100
									Acacia nilotica (Desi babool)	91	105
									Zizyphus mauritiana (Ber)	115	130
Kota MNP	Jawahar sagar	DFL	Dhonk ki kui	2017-18	36.4	18200	500	Yes	Acacia catechu (Khair)	117	73

									Acacia leucopholea (Ronj)	88	47
									Emblica officinalis (Amla)	86	55
									Holoptelea integrifolia (Churel)	108	106
									Zizyphus mauritiana (Ber)	137	51
									Aegle marmelos (Bilpatra*)*	61	46
									Pongamia pinnata (Karanj)	86	41
	Dara	ANR	Kalya Khal MJSA II	2017-18	50	10000	200	Yes	Zizyphus mauritiana (Ber)	91	41
									Prosopis juliflora (Khejri)	90	36
									Acacia leucopholea (Ronj)	72	24
									Acacia nilotica (Desi babool)	105	47
									Acacia catechu (Khair)	60	34
									Bombax ceiba (Semal)	94	48
									Holoptelea integrifolia (Churel)	113	51
	Kolipura	ANR	Kanya Talab	2019-20	50	10000	200	Yes	Acacia leucopholea (Ronj)	95	63
									Zizyphus mauritiana (Ber)	78	65
									Emblica officinalis (Amla)	52	42
									Acacia nilotica (Desi babool)	93	55
									Albizia lebbeck (Kala Siras)	52	42
									Holoptelea integrifolia (Churel)	43	39
									Tamarindus indica (Imli)	48	38
									Pongamia pinnata (Karanj)	58	41
									Pithecellobium dulce (Jangal Jalebi)	88	53
									Azadirachta indica (Neem)	49	35
									Acacia senegal (Kumtha)	50	37
Nagaur	Kuchaman	ANR	Kuchaman	2018-19	50	10000	200	Yes	Acacia tortilis (Totalis)	149	91
Pali	Sojat	ANR	Rundiya	2019-20	50	10000	200	Yes	Acacia nilotica (Desi babool)	111	75
									Zizyphus mauritiana (Ber)	107	72
									Acacia leucopholea (Ronj)	106	70
									Acacia senegal (Kumtha)	105	71
									Azadirachta indica (Neem)	90	65
	Sumerpur	ANR	Rojara	2018-19	50	10000	200	Yes	Zizyphus mauritiana (Ber)	90	65

									Acacia leucopholea (Ronj)	95	68
									Acacia nilotica (Desi babool)	94	66
									Acacia senegal (Kumtha)	92	67
	Sendara	ANR	Dholiya	2018-19	50	10000	200	Yes	Acacia nilotica (Desi babool)	201	120
									Zizyphus mauritiana (Ber)	172	101
									Acacia catechu (Khair)	180	80
									Pithecellobium dulce (Jangal Jalebi)	138	85
									Holoptelea integrifolia (Churel)	175	160
									Acacia leucopholea (Ronj)	155	113
									Tecomella undulata (Rohida)	90	65
Pratapgarh	Chhoti Sadri	ANR	Santokpuria	2017-18	50	10000	200	Yes	Acacia catechu (Khair)	90	65
									Emblica officinalis (Amla)	180	85
									Dendrocalamus strictus (Baans)	135	88
									Holoptelea integrifolia (Churel)	104	85
									Zizyphus mauritiana (Ber)	115	65
									Pongamia pinnata (Karanj)	103	76
									Tectona grandis (Sagwan)	90	65
									Acacia leucopholea (Ronj)	90	65
									Azadirachta indica (Neem)	90	65
	Peepalkhoot	ANR	Bakhtod	2018-19	50	10000	200	Yes	Dendrocalamus strictus (Baans)	195	105
									Tectona grandis (Sagwan)	165	105
									Azadirachta indica (Neem)	90	65
									Emblica officinalis (Amla)	90	65
									Holoptelea integrifolia (Churel)	90	65
									Acacia catechu (Khair)	90	65
									Pongamia pinnata (Karanj)	90	65
	Dhariyavad	NFL	Ghatela	2019-20	10	11000	1100	Yes	Dendrocalamus strictus (Baans)	176	120
									Emblica officinalis (Amla)	110	87
									Holoptelea integrifolia (Churel)	90	65
									Azadirachta indica (Neem)	90	65
									Albizia lebbeck (Kala Siras)	90	65
									Terminalia bellirica (Baheda)	90	65

									Terminalia arjuna (Arjun)	90	65
									Tectona grandis (Sagwan)	90	65
	Devgarh	DFL	Jhantla C	2019-20	3.64	2000	549	Yes	Emblica officinalis (Amla)	165	105
									Karonda	90	65
									Aegle marmelos (Bilpatra*)*	90	65
									*Cassia fistula (*Amaltas)	90	65
	Chhoti Sadri	ANR	Janjal (Hamel Mahadev)	2019-20	50	10000	200	Yes	Acacia catechu (Khair)	90	65
									Emblica officinalis (Amla)	101	75
									Dendrocalamus strictus (Baans)	114	65
									Holoptelea integrifolia (Churel)	90	65
									Azadirachta indica (Neem)	90	65
									Pongamia pinnata (Karanj)	90	65
									Pithecellobium dulce (Jangal Jalebi)	90	65
									Karonda	90	65
									Tectona grandis (Sagwan)	90	65
									Zizyphus mauritiana (Ber)	90	65
									Albizia lebbeck (Kala Siras)	90	65
Rajsamand	Kumbhalgarh	ANR	Uparthala Jaitaran	2017-18	50	10000	200	Yes	Acacia catechu (Khair)	95	65
									Dendrocalamus strictus (Baans)	107	67
									Tectona grandis (Sagwan)	95	65
									Annona squamosa (Sitafal)	90	65
									*Mangifera indica (*Mango*)*	90	65
									Pongamia pinnata (Karanj)	92	67
									Holoptelea integrifolia (Churel)	93	65
									Emblica officinalis (Amla)	92	65
									Zizyphus mauritiana (Ber)	94	68
									Ailanthus excelsa (Ardu)	90	65
									Ficus racemosa (Hawan)	91	67
									Albizia lebbeck (Kala Siras)	90	66
									Dalbergia sissoo (Shisham)	92	67

Rajsamand WL	Desuri	ANR	Satimata-B	2018-19	50	10000	200	Yes	Zizyphus mauritiana (Ber)	99	65
									Acacia leucopholea (Ronj)	90	65
									Acacia catechu (Khair)	90	65
									Cordia sinensis (Gundi)	94	65
									Holoptelea integrifolia (Churel)	90	65
									Dendrocalamus strictus (Baans)	108	65
	Bhim	DFL	Koyatalai	2018-19	50.62	35000	691	Yes	Acacia nilotica (Desi babool)	92	68
									Holoptelea integrifolia (Churel)	85	60
									Zizyphus mauritiana (Ber)	90	63
									Emblica officinalis (Amla)	82	62
									Acacia leucopholea (Ronj)	92	68
									Cordia sinensis (Gundi)	90	66
									Pithecellobium dulce (Jangal Jalebi)	85	65
									Acacia catechu (Khair)	88	65
									Azadirachta indica (Neem)	90	68
									Tamarindus indica (Imli)	83	65
									Dhok	82	62
									Acacia senegal (Kumtha)	86	63
	Devgarh	ANR	Devpura	2019-20	50	10000	200	Yes	Zizyphus mauritiana (Ber)	76	10
									Azadirachta indica (Neem)	18	8
									Acacia nilotica (Desi babool)	56	16
									Dendrocalamus strictus (Baans)	72	9
									Holoptelea integrifolia (Churel)	62	14
									Pongamia pinnata (Karanj)	43	10
									Dalbergia sissoo (Shisham)	53	12
RTR I S. Madhopur	Indergarh	NFL	Kanchan Dham	2018-19	2.12	1000	472	Yes	Dalbergia sissoo (Shisham)	127	82
									Holoptelea integrifolia (Churel)	130	93
									Azadirachta indica (Neem)	113	180
									Ficus religiosa (Pipal))	135	195
									Ficus benghalensis (Vad)	165	195
									Tamarindus indica (Imli)	135	105

									*Syzygium cumini (*Jamun)	165	225
									Gulmohar	195	195
									Acacia nilotica (Desi babool)	150	120
									Emblica officinalis (Amla)	165	165
S. Madhopur	Bonli	ANR	Khirkhadi	2019-20	50	10000	200	Yes	Acacia tortilis (Totalis)	185	69
									Holoptelea integrifolia (Churel)	90	65
									Ailanthus excelsa (Ardu)	0	0
									Zizyphus mauritiana (Ber)	90	65
	Bonli	ANR	Shilki dungari	2018-19	25	5000	200	Yes	Acacia tortilis (Totalis)	90	65
									Acacia nilotica (Desi babool)	90	65
									Holoptelea integrifolia (Churel)	90	65
									Butea monosperma (Chila)	90	65
Sikar	Srimadhopur	DFL	Ajeetgarh	2017-18	50	10000	200	Yes	Holoptelea integrifolia (Churel)	119	94
									Zizyphus mauritiana (Ber)	90	65
									Acacia nilotica (Desi babool)	115	87
									Acacia tortilis (Totalis)	165	116
									Azadirachta indica (Neem)	122	92
									Ficus benghalensis (Vad)	85	65
									Ficus religiosa (Pipal)	90	68
	Neemka thana	NFL	Bhagega I	2017-18	2.62	2882	1100	Yes	Dalbergia sissoo (Shisham)	175	54
									Acacia nilotica (Desi babool)	110	55
									Acacia tortilis (Totalis)	115	48
									Zizyphus mauritiana (Ber)	95	35
	Patan	ANR	Jetpura	2018-19	50	10000	200	Yes	Acacia nilotica (Desi babool)	118	81
									Acacia leucopholea (Ronj)	90	66
									Zizyphus mauritiana (Ber)	93	65
									Holoptelea integrifolia (Churel)	90	65
									Azadirachta indica (Neem)	90	65
Sirohi	Pindwara	ANR	Pahadkala No. 30 Ubari Pani Sabela	2018-19	50	10000	200	Yes	Acacia catechu (Khair)	92	88
									Dendrocalamus strictus (Baans)	110	76
									Pongamia pinnata (Karanj)	112	98

									Zizyphus mauritiana (Ber)	96	88
									Pithecellobium dulce (Jangal Jalebi)	94	88
									*Cassia fistula (*Amaltas)	116	94
									*Syzygium cumini (*Jamun)	88	78
									Azadirachta indica (Neem)	90	76
									Emblica officinalis (Amla)	80	76
Tonk	Deoli	DFL	Devnarayanji	2017-18	50	35000	700	Yes	Acacia tortilis (Totalis)	190	160
									Ailanthus excelsa (Ardu)	155	105
									Acacia leucopholea (Ronj)	110	105
									Dalbergia sissoo (Shisham)	130	85
									Holoptelea integrifolia (Churel)	90	63
									Zizyphus mauritiana (Ber)	120	105
									Azadirachta indica (Neem)	125	70
	Tonk	ANR	Newai pahad kabri khal	2019-20	50	10000	200	Yes	*Azadirachta indica (Neem)*	90	85
									Holoptelea integrifolia (Churel)	92	90
									Acacia tortilis (Totalis)	93	90
									Ailanthus excelsa (Ardu)	98	93
									Zizyphus mauritiana (Ber)	95	90
									Acacia catechu (Khair)	95	70
									Ficus religiosa (Pipal))	94	80
Udaipur	Udaipur west	DFL	Rodaji Bawji	2018-19	56	39200	700	Yes	Dendrocalamus strictus (Baans)	500	150
									Emblica officinalis (Amla)	72	60
									Acacia catechu (Khair)	110	80
									Holoptelea integrifolia (Churel)	120	110
									Zizyphus mauritiana (Ber)	210	140
									Wrightia tinctoria (Khirani)	105	110
									Ficus racemosa (Hawan)	56	130
									*Butea monosperma (*Palash)	71	120
									Terminalia arjuna (Arjun)	81	100
									Terminalia bellirica (Baheda)	181	140
									Albizia lebbeck (Kala Siras)	111	110
									*Madhuca longifolia (*Mahua*)*	51	80

									Acacia tortilis (Totalis)	350	90
									Pongamia pinnata (Karanj)	290	150
	Salumbar	ANR	Jhallara	2018-19	50	10000	200	Yes	Tectona grandis (Sagwan)	147	133
									Emblica officinalis (Amla)	135	110
									Dendrocalamus strictus (Baans)	167	42
									*Syzygium cumini (*Jamun)	177	40
									Acacia catechu (Khair)	95	55
									Pongamia pinnata (Karanj)	185	50
									Holoptelea integrifolia (Churel)	182	110
									Azadirachta indica (Neem)	168	100
Udaipur-North	Gogunda	ANR	Naal mokhi	2019-20	40	8050	201	Yes	Dendrocalamus strictus (Baans)	275	175
									Emblica officinalis (Amla)	116	180
									Acacia catechu (Khair)	110	120
									*Syzygium cumini (*Jamun)	175	155
									Mango	180	140
									*Madhuca longifolia (*Mahua*)*	160	140
									Holoptelea integrifolia (Churel)	115	120
									Ficus racemosa (Hawan)	80	70
									*Cassia fistula (*Amaltas)	95	80
									Pongamia pinnata (Karanj)	120	140
									Wrightia tinctoria (Khirani)	140	90
									Spethodia	60	40
									Aegle marmelos (Bilpatra*)*	115	70
									Azadirachta indica (Neem)	90	40
	Udaipur-East	NFL	Banadiya	2018-19	95.69	4785	50	Yes	Dendrocalamus strictus (Baans)	88	72
									Pongamia pinnata (Karanj)	110	88
									Holoptelea integrifolia (Churel)	78	92
									Wrightia tinctoria (Khirani)	92	86
									*Syzygium cumini (*Jamun)	96	84
									*Butea monosperma (*Palash)	110	96
									*Cassia fistula (*Amaltas)	90	84
									Emblica officinalis (Amla)	120	94
									Acacia catechu (Khair)	90	86

									Acacia leucopholea (Ronj)	110	88
									Terminalia bellirica (Baheda)	94	82
									Zizyphus mauritiana (Ber)	110	86
									Tectona grandis (Sagwan)	122	98
									Bombax ceiba (Semal)	96	86
	Udaipur east	ANR	Amberi	2017-18	80	10000	125	Yes	Peltafarm	280	180
									Gulmohar	220	180
									*Bauhinia sp. (*Kachnar*)*	190	140
									*Cassia sp. (*Cassiashyama)	225	160
									Spethodia	90	60
									Neem chameli	180	70
									*Cassia fistula (*Amaltas)	280	180
									Wrightia tinctoria (Khirani)	220	110
									Holoptelea integrifolia (Churel)	275	200
									Azadirachta indica (Neem)	120	75
									Aegle marmelos (Bilpatra*)*	275	250
									Emblica officinalis (Amla)	170	90
									Acacia catechu (Khair)	160	90
									Terminalia arjuna (Arjun)	80	60

4.1.2 Factors affecting Growth & survival (Biotic and Abiotic)

During assessing the survival of plants at the sample sites, the destruction of the plants was observed. The destructions were reported both by biotic and abiotic causal agents. It was by animals and pests namely, Roze (Neelgai), Wild Boar, porcupine, rat and termite etc. At the sample sites, it has been observed that the plantations were grazed by the domestic and stray animals namely, cows, oxen, bulls, goats and sheep etc.

The sample plantation sites also received extreme seasonal temperature variations. During summer some sites received extreme high temperature may be +45^{0}C. Also, low rainfall, scarcity of water & soil quality affects the survival of planted seedling.

The details of destructions and protections and guarding are stated in the table 4.14 given below.

Table 4.14: Obstacles in growth

S.No	Name of Site	Obstacles in growth
1	Nand	Neelgai, village & stray animals, rat, termite, soil quality & scarcity of water
2	Chor Basai	Neelgai, village & stray animals, rat, porcupine, termite, attack by pest & scarcity of water
3	Gadh Basai	Neelgai, village & stray animals, porcupine, termite, attack by pest & scarcity of water
4	Dolatpura	Neelgai, wild boar, village & stray animals, porcupine, termite, attack by pest & scarcity of water
5	Gwalda	Neelgai, village & stray animals, porcupine, termite, attack by pest & scarcity of water
6	Santokpur	Neelgai, wild boar, village & stray animals, porcupine, termite, attack by pest & scarcity of water
7	Dhindhor	Neelgai, & stray animals, porcupine, termite, attack by pest & scarcity of water
8	Nadoli	Neelgai, wild boar, village & stray animals, porcupine, termite, attack by pest, low rainfall & scarcity of water
9	Jagmer Jogimal	Neelgai, wild boar, village & stray animals, porcupine, termite & scarcity of water
10	Andeshwar	Neelgai, village & stray animals, rat, termite, soil quality & scarcity of water
11	Baseli B	Neelgai, village & stray animals, termite & attack by pest

S.No	Name of Site	Obstacles in growth
12	Borda	Neelgai, village & stray animals, termite & attack by pest
13	Kadili	Neelgai, village & stray animals, destruction by human, termite & attack by pest
14	Dabar-D	Neelgai, village & stray animals, termite & attack by pest
15	Mundiya B I	Neelgai, village & stray animals, termite & attack by pest
16	Sukha Sameli- A	Neelgai, village & stray animals, destruction by human, termite & attack by pest
17	Mundiya Sehjana II	Neelgai, village & stray animals, termite & attack by pest
18	Kanada	Neelgai, village & stray animals, termite & attack by pest
19	Kusip	Neelgai, Chinkara, rabbit, rat, porcupine, village & stray animals, soil quality , scarcity of water & termite
20	Junapatarasar-B	Neelgai, Chinkara, rabbit, rat, porcupine, village & stray animals, soil quality , scarcity of water & termite
21	Gafan Talai	Neelgai, Chinkara, rabbit, rat, porcupine, village & stray animals, soil quality , scarcity of water & termite
22	Ghodi Khoj Hathodi	Neelgai, wild boar, porcupine, village & stray animals, destruction by human, soil quality, scarcity of water, termite & attack by pest
23	Saimala II	Neelgai, wild boar, porcupine, village & stray animals, soil quality, scarcity of water, termite & attack by pest
24	Kharcha ki nadi	Neelgai, wild boar, porcupine, village & stray animals, soil quality, scarcity of water, termite & attack by pest
25	Bahadurpura	Neelgai, wild boar, porcupine, village & stray animals, soil quality, scarcity of water, termite & attack by pest
26	Ladpura	Neelgai, wild boar, porcupine, village & stray animals, soil quality, scarcity of water, termite & attack by pest
27	Mahajan-D	Neelgai, rat,village & stray animals, soil quality, scarcity of water & termite
28	Nokha	Neelgai, rat,village & stray animals, soil quality, scarcity of water & termite
29	SDS Agneu	Neelgai, rabbit,village & stray animals, soil quality, scarcity of water & termite
30	Gopalpura	Neelgai, wild boar, porcupine, village & stray animals, soil quality, scarcity of water, heavy growth of Juliflora, termite & attack by pest
31	Maliyon ki jhopdiya	Neelgai, porcupine, village & stray animals, scarcity of water, termite & attack by pest
32	Dholi Chabutri B	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, termite & attack by pest
33	Topa Dhardhadi-F	Neelgai, wild boar, porcupine, village & stray animals, soil quality, scarcity of water, termite & attack by pest
34	Hasala-E	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, termite & attack by pest
35	Siyalkund	Neelgai, wild boar, rabbit, village & stray animals, scarcity of water, termite & attack by pest
36	Tai-B	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, termite & attack by pest
37	Jogniyamata	Neelgai, wild boar, porcupine, village & stray animals, scarcity of

S.No	Name of Site	Obstacles in growth
	Haribadliya	water, termite & attack by pest
38	Nangliya	Neelgai, wild boar, rabbit, village & stray animals, scarcity of water, termite & attack by pest
39	Achalpura	Neelgai, wild boar, porcupine, village & stray animals, soil quality, scarcity of water, termite & attack by pest
40	Sonadi	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, termite & attack by pest
41	Fraspura	Neelgai, wild boar, porcupine, village & stray animals, soil quality, destruction by human, scarcity of water, termite & attack by pest
42	Thane Ka Pura-II	Neelgai, wild boar, porcupine, village & stray animals, soil quality, scarcity of water, termite & attack by pest
43	Dhore Ka Dada	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, termite & attack by pest
44	Meenakhuri	Neelgai, wild boar, village & stray animals, scarcity of water, termite
45	Kala Patpara	Neelgai, porcupine, village & stray animals, heavy rainfall & termite
46	Palwada	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, soil quality, termite & attack by pest
47	Vankhand Ranijhula S.No. 2 Ananpura	Neelgai, wild boar, rat, porcupine, village & stray animals, scarcity of water, soil quality, termite & attack by pest
48	Charwada Rataghata	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, termite & attack by pest
49	Bagwara	Neelgai, rat, porcupine, village & stray animals, scarcity of water, soil quality, termite & attack by pest
50	Dabla	Neelgai, rat, porcupine, village & stray animals, scarcity of water, soil quality, termite & attack by pest
51	Langadiyawas	Neelgai, rat, porcupine, village & stray animals, scarcity of water, soil quality, termite & attack by pest
52	Dubali	Neelgai, rat, porcupine, village & stray animals, scarcity of water, soil quality, termite & attack by pest
53	Manoharpur	Neelgai, rat, porcupine, village & stray animals, scarcity of water, soil quality, termite & attack by pest
54	Mishrawas	Neelgai, rat, porcupine, village & stray animals, scarcity of water, soil quality, termite & attack by pest
55	Gudha Buchara	Neelgai, rat, porcupine, village & stray animals, scarcity of water, soil quality& termite
56	Dantali	Neelgai, rabbit, wild boar, village & stray animals, scarcity of water &termite
57	Papad	Neelgai, rat, porcupine, village & stray animals, scarcity of water, soil quality& termite
58	Chhod I	Neelgai, Chinkara,, village & stray animals, scarcity of water, soil quality& termite
59	SDS 20-23 RDJJW Sadrau	Rat, village & stray animals, scarcity of water, soil quality& termite
60	SDS 10-13 RD	Rat, village & stray animals, scarcity of water, soil quality& termite
61	SDS Mandau Barani 13 RD JJW	Rat, village & stray animals, scarcity of water, soil quality& termite

S.No	Name of Site	Obstacles in growth
62	SDS 35-38 RDJJWC	Rat, village & stray animals, scarcity of water, soil quality& termite
63	Baretha	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, termite & attack by pest
64	Siroshi Pahadpura	Neelgai, rat, porcupine, village & stray animals, scarcity of water, soil quality& termite
65	Veri Datlawas	Neelgai, porcupine, village & stray animals, scarcity of water & termite
66	Sojpur	Neelgai, rat, rabbit, village & stray animals, scarcity of water & termite
67	Barubeh	Neelgai, rat, village & stray animals, scarcity of water & termite
68	Chirani II	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, termite & attack by pest
69	Indra colony Kankria	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, termite & attack by pest
70	Bagora	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, termite & attack by pest
71	Kot	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, termite & attack by pest
72	Kakrana	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, termite & attack by pest
73	Chhapoli III	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, termite & attack by pest
74	Chirana	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, termite & attack by pest
75	Devnagar	Neelgai, dear, rabbit, village & stray animals, scarcity of water, termite & attack by pest
76	Sahanpur	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, termite & attack by pest
77	Kachroli	Neelgai, porcupine, village & stray animals, scarcity of water, termite & attack by pest
78	Karwad Jat	Neelgai, wild boar, rat, porcupine, village & stray animals, scarcity of water, termite & attack by pest
79	Peepalda Samel	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, termite & attack by pest
80	Mandana-I	Neelgai, wild boar, deer, village & stray animals, scarcity of water, termite & attack by pest
81	Rakba Pahad	Neelgai, wild boar, village & stray animals, scarcity of water, termite & attack by pest
82	Dhonk ki kui	Neelgai, rat, porcupine, village & stray animals, scarcity of water, termite & attack by pest
83	Kalya Khal MJSA II	Neelgai, rat, porcupine, village & stray animals, scarcity of water, termite & attack by pest
84	Kanya Talab	Neelgai, rat, porcupine, village & stray animals, scarcity of water, termite & attack by pest
85	Kuchaman	Neelgai, rat, porcupine, village & stray animals, scarcity of water, termite & attack by pest
86	Rundiya	Neelgai, wild boar, porcupine, village & stray animals, scarcity of

S.No	Name of Site	Obstacles in growth
		water, soil quality, termite & attack by pest
87	Rojara	Neelgai, rat, wild boar, porcupine, village & stray animals, scarcity of water, soil quality, termite & attack by pest
88	Dholiya	Neelgai, Reech, porcupine, village & stray animals, scarcity of water, soil quality, termite & attack by pest
89	Santokpuria	Neelgai, wild boar, rat, rabbit, village & stray animals, scarcity of water, termite & attack by pest
90	Bakhtod	Neelgai, porcupine, village & stray animals, scarcity of water, termite & attack by pest
91	Ghatela	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, soil quality, termite & attack by pest
92	Jhantla C	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, soil quality, termite & attack by pest
93	Janjal (Hamel Mahadev)	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, , termite & attack by pest
94	Uparthala Jaitaran	Neelgai, wild boar, village & stray animals, scarcity of water, , termite & attack by pest
95	Satimata-B	Neelgai, rabbit, wild boar, porcupine, village & stray animals, scarcity of water, low rainfall , termite & attack by pest
96	Koyatalai	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, termite & attack by pest
97	Devpura	Neelgai, wild boar, porcupine, village & stray animals, scarcity of water, low rainfall , termite & attack by pest
98	Kanchan Dham	Neelgai, wild boar, rat, porcupine, village & stray animals, scarcity of water, termite & attack by pest
99	Khirkhadi	Neelgai, wild boar, rat, porcupine, village & stray animals, scarcity of water, soil quality, termite & attack by pest
100	Shilki Dungari	Neelgai, wild boar, rat, porcupine, village & stray animals, scarcity of water, termite & attack by pest
101	Ajeetgarh	Neelgai, rabbit, wild boar, rat, porcupine, village & stray animals, scarcity of water, low rainfall, termite & attack by pest
102	Bhagega I	Neelgai, rat, porcupine, village & stray animals, scarcity of water, termite & attack by pest
103	Jetpura	Neelgai, wild boar, village & stray animals, scarcity of water, termite & attack by pest
104	Pahadkala No. 30 Ubari Pani Sabela	Neelgai, porcupine, village & stray animals, scarcity of water, soil quality, termite & attack by pest
105	Devnarayanji	Neelgai, village & stray animals, scarcity of water, soil quality, termite & attack by pest
106	Newai pahad kabri khal	Neelgai, village & stray animals, scarcity of water, soil quality, termite & attack by pest
107	Radaji Bawji	Neelgai, rat, village & stray animals, scarcity of water, termite & attack by pest
108	Jhallara	Neelgai, porcupine, village & stray animals, scarcity of water, termite & attack by pest
109	Naal mokhi	Neelgai, village & stray animals, termite & attack by pest
110	Banadiya	Neelgai, rabbit,porcupine, village & stray animals, scarcity of water,

S.No	Name of Site	Obstacles in growth
		termite & attack by pest
111	Amberi	Neelgai, rabbit,porcupine, village & stray animals, scarcity of water, termite & attack by pest

Overall Comments

- Widely growth of termite & attack by pest obstruct the growth of planted seedling in almost all the plantation sites.

- Grazing by stray animals, cattle's & destruction by Neelgai, Chinkara, Wild boar, Rabbit & Rat was reported at the plantation site. In Bikaner division at Mahajan site, destruction by rat was quite visible at the plantation site as there were holes all around in the ground.
- Wild animals viz. Neelgai and village animals ate the branches and leaves of plants. The growth and survival of plants was affected due to grazing by Neelgai and village animals (Sheep, Goats, Cows, Bulls and Buffaloes etc.).
- Watering of plants was not reported at the sample sites. The survival and growth of plants was affected due to non- watering of plants.
- Ditch fencing was damaged at many places. At some places, the locals made route from ditch fencing to plantation site for cattle grazing. Village and wild animals grazed almost all planted species. Loose stone wall fencing was damaged at many places. The stones of loose stone fencing were removed from many places and route to plantation site was made by the locals.
- Grazing by wild and village animals was reported at the site. In addition, termites obstruct growth of planted species at the site.

- Low rainfall was reported at the plantation site during last 2 to 3 years. This affects the survival & growth of planted species.
- Soil quality obstructs the growth of planted seedling. The soil was rocky & sandy at many plantation sites. The chances of survival of seedlings in rocky & sandy soil are low.

Impact on Vegetal cover

The plantation and soil & moisture conservation activities at the plantation sites have certainly added value in terms of increase in the vegetal cover namely, trees (Plash, Ronz, Neem, Mahuva, Tendu, Baheda, Sagwan, kher, Neem, Ronj, Shesham, Baans, Churel etc.) shrubs (Ber, Lentana, Ber, Juliflora, Hingot, Jaal, Bui & Kheep), herbs (Neem giloi, satavari, Peelvan, Googal, Bazardanti) and natural grasses (Lapla, Bharut & Dhaman) etc. The third party evaluation team experienced the increase in vegetation due to forest closure and construction of soil and moisture conservation structures. In addition to plantation works undertaken on thanwalas, the sowing of seeds on contour, ditch fencing, across the boundary and around thawlas has shown satisfactory to good and very good results at some of the sample sites covered for evaluation.

For the purpose, the impacts of vegetal cover were estimated with the help of observing plant abundance. The most common way to measure cover is the visual estimation method.

There has been reported increase and improvement in vegetal cover at the sample plantation sites viz. DFL, NFL & ANR. The vegetation abundance has been reported fairly higher in ANR mdoels as compared to NFL & DFL models.

Table 4.15: Maintenance/increase in Extent of Vegetation and Forest Cover

Division	Range	Model	Name of site	Improvement of forest density in the area	Trees species	Shrubs species	Herbs species	Grasses species
Ajmer	Pushkar	ANR	Nand	Yes	Dhok, Kumtha, Salar	Juliflora, Thor, Dasar	Googal	Lapla, Bharut
Alwar	Kishangarhwas	DFL	Chor Basai	Yes	Dhok, Kumtha	Ker, Ber		Lapla, Kans, Dub
	Thanagazi	ANR	Gadh Basai	Yes	Papad, Ronz, Desi Babool	Ber, Dasar		Lapla
	Rajgarh	ANR	Dolatpura	Yes	Ronj, Khejri, Dhok, Churel	Ber, Khatuna, Jatkhed, Bans		Lapla
	Tijara	DFL	Gwalda	Yes	Juliflora	Ber, Jal, Ker		Lapla
	Laxmangarh	DFL	Santokpur	Yes	Churel, Gular, Totlis	Ker, Ber		Lapla, Dhaman
	Bahror	DFL	Dhindhor	Yes	Neem, Desi Babool, Kher, Juliflora	Ker	Adoosa	Lapla
Alwar STR	Tahala	NFL	Nadoli	Yes	Chhila, Goya, Gurjan, Churel, Ronj, Desi Babool	Ber,	Adoosa	Lapla
Banswara	Ghatol	ANR	Jagmer Jogimal	Yes	Sagwan, Kher, Neem, Havan, Bahera, Bans, Churel, Khirani, Arjun, Amla	Lentana, Juliflora	Arjun, Baheda, Amla	Karad, Lapla
	Sajjangarh	ANR	Andeshwar	Yes	Sagwan, Kher, Neem, Ronj, Shesham, Bans, Churel	Pokad, Koj,	Amla, Neem	Bhedi

Baran	Shahbad	DFL	Baseli-b	Yes	Palas, Hingot, Gunjan, Dhok, Bad, Neem, Desi Babool	Ber, Karonda	Dhudhi, Choreta Kureta	Lapla
	Kishanganj	DFL	Borda	Yes	Palas, Sagwan, Tendu, Gunjan, Baheda, Arjun	Ber	Kureta, Arjun	Lapla
	Nahargarh	DFL	Kadili	Yes	Palas, Gunjan, Tendu, Deshi Desi Babool, Neem, Arjun	Ber, Karonda, Kureta	Gudmar, Gokhroo	Lapla
	Shahbad	NFL	Dabar-D	Yes	Plas, Gurjan, Dhok	Ber, Hingot	Charot Kavreta	Lapla, Fulera
	Anta	NFL	Mundiya B I	Yes	Pipal, Hingot, Desi Desi Babool, Neem	Ber	Satavari	Lapla, Fulera
	Kelwara	ANR	Sukha samli- A	Yes	Arjun, Tendu, Sagwan, Semal, Palas	Ber	Neem, Arjun	Lapla
	Shahbad	ANR	Mundiya Sehjana II	Yes	Palas, Gunjan, Black Dhok, Kadam, Deshi Desi Babool, Neem, Kher	Ber, Gutten, Karonda	Kalamegh, Ashwagandha, Neem, Kachnar	Lapla, Fulera
	Anta	NFL	Kanada	Yes	Neem, Desi Babool, Pipal	Ber, Hingot	Ashwagandha	Lapla
Barmer	Sivana	ANR	Kusip	Yes	Jaal,Desi Desi Babool, Kumtha	Juliflora, Ker, Kheep		Lapla, Saniya,
	Barmer	DFL	Junapatarasar-B	Yes	Kumtha, Jaal, Khejri, Rohida	Khip, Bui, Bolia		Bharut, Kuri
	Barmer	DFL	Gafan Talai	Yes	Jaal, Khejri	Ker, Kheep, Bui		Sevan, Dhaman, Bharut, Siniya,
Bharatpur	Bayana	ANR	Ghodi Khoj Hathodi	Yes	Totlis, Dhok, Desi Babool	Ker, Hisjal, Hingot	Satavari	

Bhilwara	Mandalgarh	DFL	Saimala	Yes	Plas, Ronj, Neem, Mahuva, Tendu, Baheda, Sadra	Lentana, Ber		Gandel, Kuvada
	Mandalgarh	ANR	Kharcha ki nadi	Yes	Plas, Ronj, Neem, Mahuva	Lentana, Ber		Gandel
	Jahajpur	ANR	Bahadurpura	Yes	Dhok, Ronj, Desi Babool, Neem	Satyanasi, Ber	Parrys Lipfern	Lapla
	Mandalgarh	DFL	Ladpura	Yes	Dhok, Ronj, Kher	Ber, Lentana		Lapla
Bikaner	Lunkaransar	DFL	Mahajan-D	Yes	Khejri, Bonli	Khip, Ber, , Bui		Bharut, Siniya
	Nokha	DFL	Nokha	Yes	Totlis, Khejri, Kumtha	Ber, Kher		Dhaman
Bikaner IGNP II	750 RD unit II	NFL	SDS Agneu	Yes	Desi Desi Babool, Khejri, Totlis, Rohida	Ber, Ker		Lapla
Bundi	K. Patan	NFL	Gopalpura	Yes	Hingot, Neem, Ronj, Desi Babool	Ber, Ker		Lapla
	Hindoli	DFL	Maliyon ki jhopdiya	Yes	Churel, Hingot, Ronj, Palas, Neem	Ber, Ker		Lapla
	Hindoli	ANR	Dholi Chabutri B	Yes	Hingot, Neem, Ronj, Ardoo, Desi Babool	Ber, Ker	Gokhroo	Lapla, Buari
	Nainwa	ANR	Topa Dhardhadi-F	Yes	Hingot, Neem, Ronj, Desi Babool	Ber, Ker	Gokhroo	Lapla
Chittorgarh	Chittorgarh	ANR	Hasala-E	Yes	Dhok, Khair, Salar, Gurjan, Dak, Khakhra, Tendu	Khakhun, Kerunda	Tulsi,Gugal	Lapla, Buhari
	Chittorgarh	ANR	Siyalkund	Yes	Dhok, Tendu, Amaltas	Kerondi, Khakhun		Lapla
	Nimbahera	DFL	Tai-B	Yes	Tendu, Rose, Godal, Dhok, Salar	Leltana, Karonde	Neem	Lapla
	Begu	ANR	Jogniyamata Haribadliya	Yes	Dhok, Tendu, Dak, Baheda, Dhavda	Leltana, Ber		Lapla, Dhaman
Chittorgarh WL	Dhariyavad	ANR	Nangliya	Yes	Sagwan, Gedal, Salar, Palas	Lentana,	Amla, Harsingar	Karad, Lapla

Dausa	Sikrai	ANR	Achalpura	Yes	Kumtha, Seasham, Totlis, Juliflora	Ber, Dhok		Lapla
	Bandikui	ANR	Sonadi	Yes	Totlis, Desi Babool, Peelu, Churel	Ber, Kair, Kakeda		Doob, Daab
	Sikrai	ANR	Fraspura	Yes	Totlis, Kumtha, Seasham, Churel	Ber		Lapla
Dholpur	Sarmathura	ANR	Thane Ka Pura-II	Yes	Goyakher, Desi Babool, Juliflora, Khair	Ber	Satavari, Neem	Lapla
	Sarmathura	ANR	Dhore Ka Dada	Yes	Ronj, Khair, Churel, Dhok	Ber, Ker	Narkanta	Lapla
	Vanvihar	ANR	Meenakhuri	Yes	Dhok, Desi Babool, Ronj	Karonda, Ber	Satavari	Lapla
	Badi	DFL	Kala Patpara	Yes	Dhok, Bribera, Khair	Ber		Jarga, Lapla
Dungarpur	Dungarpur	NFL	Palwada	Yes	Churel, Dhok, Neelgiri, Ronj	Ber	Amla	Lapla,
	Dungarpur	ANR	Vankhand Ranijhula S.No. 2 Ananpura	Yes	Sagwan, Tendu	Kadya, Lentana, Ber	Amla, Neem	Lapla,
	Simalwara	ANR	Charwada Rataghata	Yes	Tendu, Sagwan, Ronj, Baheda, Dhok	Ber,Juliflora	Baheda	Lapla,
Jaipur	Amer	ANR	Bagwara	Yes	Khejri, Seesham, Churel, Papadi, Kumtha, Neem, Dhok, Chhela, Desi Babool, Totlis	Ber, Juliflora	Chirmi Bel, Satawar, Chapren	Dhamanghas, Lapla, Dob
	Amer	ANR	Dabla	Yes	Dhok, Kher, Desi Babool, Khejri, Kakoda, Neem	Ber, Ker, Juliflora	Neem Giloi, Satavari, Peelvan	Bharur, Lapla
	Bassi	DFL	Langadiyawas	Yes	Totlis, Juliflora, Kheri, Khejri, Neem	Ber		Lapla

	Kanota	ANR	Dubali	Yes	Dhok, Kakoda, Khejri, Juliflora	Ber, Kheef, Ker, Kakoda		Lapla, Dub, Dhaman
Jaipur North	Shahpura	ANR	Manoharpur	Yes	Salar, Dhok, Juliflora, Totlis	Ber, Dasar, Pani/Moonj	Adusa	Lapla, Dub, Dhaman
	Shahpura	ANR	Mishrawas	Yes	Ronj, Papad, Totlis, Desi Babool, Khejri, Neem, Googal, Seesham, Peepal	Ber, Dasar, Kheep, Bui	Googal, Bazardanti	Kuncha, Dhaman
	Kotputali	ANR	Gudha Buchara	Yes	Totlis, Churel, Kumtha, Seasam, Peepal	Ber, Juliflora	Kheef	Munja, Dhaman
Jaipur WL	Raisar	NFL	Dantali	Yes	Churel, Seasham, Desi Desi Babool, Ber, Ronj, Neem	Ber	Daser, Bazardanti	Dhaman
	Jamwa Ramgarh	ANR	Papad	Yes	Totlis, Chhalil, Seesham, Kheri, Churel, Desi Desi Babool, Neem, Ratanjot	Ber	Dakbel	Bharut, Dhaman
Jaisalmer	Dabla	DFL	Chhod I	Yes	Kumtha, Jal, Rohida, Totalis, Khejri	Kher, Akra		Savan, Dhaman
Jaisalmer IGNP II	II 1438 RD Mohangarh	NFL	SDS 20-23 RDJJW Sadrau	Yes	Khejri, Rohida	Totlis		Sevan
	II 1438 RD Mohangarh	NFL	SDS 10-13 RD	Yes	Khejri, Rohida	Ker		Khip, Gathia
	II 1438 RD Mohangarh	NFL	SDS Mandau barani 13RdJJW	Yes	Khejri, Rohida	Ker		Sevan, Gathia, Dhaman, Bharut, Tumba
	II 1438 RD Mohangarh	NFL	SDS 35-38 RDJJWC	Yes	Khejri, Rohida	Ker		Sevan
Jalore	Raniwara	ANR	Varetha	Yes	Kumtha, Ronj, Jaal, Khair	, Ber, Juliflora	Gugal, Thor	Lapla

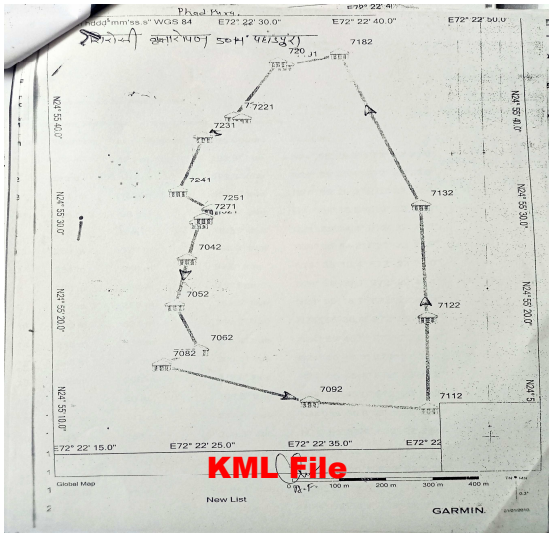
	Jasvantpura	DFL	Siroshi Pahadpura	Yes	Desi Babool, Khejri	Ber, Kakeda, Khinp	Gugal, Amla,	Lapla, Bharut, Karad
	Jasvantpura	ANR	Veri Datlawas	Yes	Totlis, Kumtha, Dhok, Neem	Ber, Chhal, Khinp	Amla,	Lapla, Karad
Jhalawar	Khanpur	NFL	Sojpur	Yes	Ronj, Desi Babool, Kumtha, Dhok, Hingot	Ber, Karonda,	Hingot	Lapla
	Jhalawar	NFL	Barubeh	Yes	Tendu, Dhok, Khirani	Ber, Karonda,	Safed Moosali	Karad, Lapla
Jhunjhunu	Khetri	DFL	Chirani II	Yes	Jal, Kumtha, Ronj, Desi Babool	Ber, Dasar, Juliflora		Lapla
	Udaipurwati	DFL	Indra colony Kankria	Yes	Jal,Desi Babool, Juliflora	Dasar	Adoosa	Lapla
	Udaipurwati	ANR	Bagora	Yes	Ronj, Dhok, Churel, Juliflora	Ber, Karonda, Dansar	Dudhi	Lapla
	Udaipurwati	ANR	Kot	Yes	Juliflora, Neem, Dhok, Kher	Gagren, Dasar		Lapla
	Udaipurwati	DFL	Kakrana	Yes	Jal, Totlis, Desi Babool	Ber		Lapla
	Udaipurwati	DFL	Chhapoli III	Yes	Juliflora, Dhok	Gagren, Dasar	Adoosa	Lapla
	Navalgarh	ANR	Chirana	Yes	Salar, Gundi	Dasar	Adoosa	Lapla
Jodhpur	Bhopalgarh	DFL	Devnagar	Yes	Desi Babool	Ber, Ker, Jal		Lapla
Karauli	Masalpur	ANR	Sahanpur	Yes	Dhok, Ronj	Ber, Jharber	Satavari, Kachedi	Dhaman, Lapla
	Hindon	DFL	Kachroli	Yes	Ber, Kumtha, Desi Babool	Ker		Lapla
	Hindon	DFL	Karwad Jat	Yes	Dhok, Churel, Ronj	Ker	Gokhroo	Lapla
Kota	Sultanpur	ANR	Peepalda Samel	Yes	Desi Babool, Churel,Neem, Ronj	Ber		Lapla
	Mandana	ANR	Mandana-I	Yes	Tendu, Palas, Ronj, Churel	Ber		Lapla
	Modak	ANR	Rakba Pahad	Yes	Tendu, Palas, Ronj, Churel	Ber, Karonda		Lapla

Kota MNP	Jawahar sagar	DFL	Dhonk ki kui	Yes	Khakhra, Kher, Khejra, Dhok, Neem	Ber	Satavari	Lapla, Karad, Dhaman
	Dara	ANR	Kalya Khal MJSA II	Yes	Ronj, Dhok, Kher, Desi Babool	Ber, Juliflora	Satavari	Lapla
	Kolipura	ANR	Kanya Talab	Yes	Dhok, Plas, Tendu, Ronj, Kumtha, Neem, Desi Babool	Ber, Kali Siyali	Neem, Tulsi, Asvgandha	Lapla
Nagaur	Kuchaman	ANR	Kuchaman	Yes	Totlis, Khejri	Ber, Juliflora, Kheef, Munja,		Dhamasa, Dhaman
Pali	Sojat	ANR	Rundiya	Yes	Desi Babool, Kumtha	Ber, Ker, Jal	Bajardanti	Lapla
	Sumerpur	ANR	Rojara	Yes	Kumtha, Khejri, Ronj	Juliflora		Lapla, Bharut
	Sendara	ANR	Dholiya	Yes	Kumtha, Salar, Dhok, Palas	Ber, Catch, Prangan	Google	Dhaman, Lapla
Pratapgarh	Chhoti Sadri	ANR	Santokpuria	Yes	Tendu, Palas, Khejri	Lentana, Ber		Lapla, Buari,Gunderi
	Peepalkhoot	ANR	Bakhtod	Yes	Sagwan, Palas, Desi Babool, Neem	Lentana		Lapla, Gunderi
	Dhariyavad	NFL	Ghatela	Yes	Sagwan, Palas, Churel, Neem	Lentana		Lapla
	Devgarh	DFL	Jhantla C	Yes	Sagwan, Palas, Baans	Lentana, Karithia		Lapla, Gunderi
	Chhoti Sadri	ANR	Janjal (Hamel Mahadev)	Yes	Palas, Tendu, Karpata	Lentana		Lapla, Buari
Rajsamand	Kumbhalgarh	ANR	Uparthala Jaitaran	Yes	Dhok, Khirani, Palas, Siras, Aam	Ber, Dhok	Kher, Aam, Jamun, Amla, Sitafal	Lapla, Dhaman
Rajsamand WL	Desuri	ANR	Satimata-B	Yes	Dhok, Salar, Desi Babool,	Dansar, Thor, Gunjal, Ber, Jagan	Neem, Amla, Kher, Gundi	Lapla, Karad, Buari, Dub
	Bhim	DFL	Koyatalai	Yes	Godal, Neem, Salar,Desi Babool	Kakeda, Ghaghan, Ber, Negad	Bazardanti, Thor,	Lapla, Dhaman, Dub, Karad

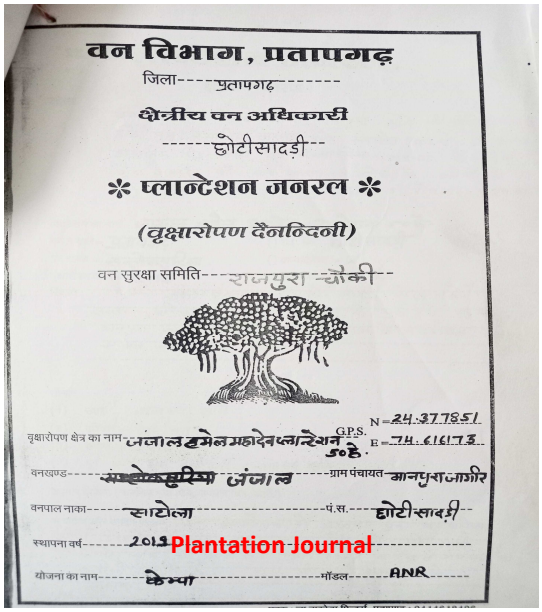
	Devgarh	ANR	Devpura	Yes	Dhok, Kumtha, Ronj, Ajmoria, Juliflora	Ber, Dasar, Dhandhan		Bharut, Buari
RTR I S. Madhopur	Indergarh	NFL	Kanchan Dham	Yes	Neem, Shisham, Pipal	Ber, Thor		Lapla
S. Madhopur	Bonli	ANR	Khirkhadi	Yes	Totlis	Akada, Kakeda, Utkatevi	Gokharu,	Bharut, Lapla
	Bonli	ANR	Shilki dungari	Yes	Chhila, Desi Babool, Ronj	Ber, Baru, Utkateli, Kakeda, Jal		Bharut, Lapla
Sikar	Srimadhopur	DFL	Ajeetgarh	Yes	Totlis, Ronj, Desi Babool	Ber		Lapla, Dub
	Neemka thana	NFL	Bhagega I	Yes	Ronj, Desi Babool, Khejri	Ber		Kuncha
	Patan	ANR	Jetpura	Yes	Khejri, Desi Babool, Ronj	Ber		Lapla
Sirohi	Pindwara	ANR	Pahadkala No. 30 Ubari Pani Sabela	Yes	Bargad, Tendu, Salar, Palas	Ker, Dhok	Neem, Amla, Khajur	Lapla, Sevan
Tonk	Deoli	DFL	Devnarayanji	Yes	Ronj	Juliflora Hingot		Lapla
	Tonk	ANR	Newai pahad kabri khal	Yes	Totlis, Kumtha, Ardu, Khejri, Kher	Ber,		Munjha
Udaipur	Udaipur west	DFL	Rodaji Bawji	Yes	Ronj, Khejri, Baheda, Neem, Semal	Ber	Kala Siras, Arjun	Lapla
	Salumbar	ANR	Jhallara	Yes	Ronj, Kachnar, Kher	Lantana, Juliflora		Lapla, Karad
Udaipur-North	Gogunda	ANR	Naal mokhi	Yes	Ronj, Palas, Sagwan	Ber, Juliflora		Lapla
	Udaipur-East	NFL	Banadiya	Yes	Ronj, Palas, Sagwan, Semal	Ber, Juliflora		Lapla
	Udaipur east	ANR	Amberi	Yes	Ronj, Palas, Semalsagwan	Ber, Juliflora		Lapla

4.1.3 Adherence to Norms, operation guidelines, directions and estimates in plantation works/ activities

The CAMPA fund projects are very rich in terms of documents, preparation of operation guidelines, directions and estimates available at State level made available to Forest Divisions & Range offices to be followed for execution of the project activities. Based on the available guidelines and estimates the district prepared the plan, which was sanctioned by the State as per the annual budget. The State office has also developed operational guidelines for execution of various plantation models namely, ANR, NFL and DFL. The model estimates for plantations also cover the estimates for plantations & SMC works. The guidelines for various models issued by the State fixed per day labour cost as per the minimum wage act.



The State has also issued guidelines for various construction activities namely, construction of Forest Chowki, Office cum residence, rescue wards, Boundary wall and boundary pillars.



As far as availability of records at the plantation

sites during the third party evaluation is concerned, availability of measurement book was reported at all the 111 plantation sites followed by availability of plantation journal at 106 plantation sites, KML file of plantation at 86 plantation sites, plantation card at 57 plantation sites, microplan at 33 plantation sites & survey map/ treatment map at 98 plantation sites.

Table 4.16: Adherence to Norms, Directions and Guidelines

Name of Forest Division	Name of Range	Name of Model	Name of Site	Availability of survey map/ treatment map	Preparation & availability of micro-plan for the VFPMC	Availability of Plantation Journal	Availability of Plantation card	KML file of plantation	MB
Ajmer	Pushkar	ANR	Nand	Yes	No	Yes	No	No	Yes
Alwar	Kishangarhwas	DFL	Chor Basai	Yes	No	Yes	No	No	Yes
	Thanagazi	ANR	Gadh Basai	Yes	No	Yes	Yes	Yes	Yes
	Rajgarh	ANR	Dolatpura	Yes	No	Yes	Yes	Yes	Yes
	Tijara	DFL	Gwalda	No	No	Yes	No	No	Yes
	Laxmangarh	DFL	Santokpur	Yes	No	Yes	Yes	Yes	Yes
	Bahror	DFL	Dhindhor	No	No	Yes	No	No	Yes
Alwar STR	Tahala	NFL	Nadoli	Yes	No	Yes	No	Yes	Yes
Banswara	Ghatol	ANR	Jagmer Jogimal	Yes	No	Yes	No	No	Yes
	Sajjangarh	ANR	Andeshwar	Yes	No	Yes	Yes	Yes	Yes
Baran	Shahbad	DFL	Baseli-B	Yes	No	Yes	No	Yes	Yes
	Kishanganj	DFL	Borda	Yes	Yes	Yes	No	Yes	Yes
	Nahargarh	DFL	Kadili	Yes	No	Yes	No	Yes	Yes
	Shahbad	NFL	Dabar-D	Yes	No	Yes	No	Yes	Yes
	Anta	NFL	Mundiya B I	Yes	Yes	Yes	No	Yes	Yes
	Kelwara	ANR	Sukha samli- A	Yes	Yes	Yes	No	Yes	Yes
	Shahbad	ANR	Mundiya Sehjana II	Yes	No	Yes	No	Yes	Yes
	Anta	NFL	Kanada	Yes	Yes	Yes	No	Yes	Yes
Barmer	Sivana	ANR	Kusip	Yes	No	Yes	No	Yes	Yes
	Barmer	DFL	Junapatarasar-B	Yes	No	Yes	No	Yes	Yes
	Barmer	DFL	Gafan Talai	Yes	No	Yes	No	Yes	Yes
Bharat	Bayana	ANR	Ghodi	No	Yes	Yes	No	No	Yes

Name of Forest Division	Name of Range	Name of Model	Name of Site	Availability of survey map/ treatment map	Preparation & availability of micro-plan for the VFPMC	Availability of Plantation Journal	Availability of Plantation card	KML file of plantation	MB
pur			Khoj Hathodi						
Bhilwara	Mandalgarh	DFL	Saimala	Yes	Yes	Yes	Yes	Yes	Yes
	Mandalgarh	ANR	Kharcha ki nadi	Yes	Yes	Yes	Yes	Yes	Yes
	Jahajpur	ANR	Bahadurpura	Yes	Yes	Yes	Yes	Yes	Yes
	Mandalgarh	DFL	Ladpura	Yes	Yes	Yes	Yes	Yes	Yes
Bikaner	Lunkaransar	DFL	Mahajan-D	No	No	Yes	No	No	Yes
	Nokha	DFL	Nokha	Yes	Yes	Yes	No	Yes	Yes
Bikaner IGNP II	750 RD unit II	NFL	SDS Agneu	Yes	Yes	Yes	Yes	Yes	Yes
Bundi	K. Patan	NFL	Gopalpura	No	No	No	No	No	Yes
	Hindoli	DFL	Maliyon ki jhopdiya	No	Yes	Yes	Yes	Yes	Yes
	Hindoli	ANR	Dholi Chabutri B	No	Yes	Yes	Yes	No	Yes
	Nainwa	ANR	Topa Dhardhadi-F	Yes	Yes	Yes	Yes	Yes	Yes
Chittorgarh	Chittorgarh	ANR	Hasala-E	Yes	No	Yes	Yes	Yes	Yes
	Chittorgarh	ANR	Siyalkund	Yes	No	Yes	Yes	Yes	Yes
	Nimbahera	DFL	Tai-B	Yes	No	Yes	Yes	Yes	Yes
	Begu	ANR	Jogniyamata Haribadliya	Yes	Yes	Yes	No	Yes	Yes
Chittorgarh WL	Dhariyavad	ANR	Nangliya	Yes	No	Yes	No	Yes	Yes
Dausa	Sikrai	ANR	Achalpura	Yes	Yes	Yes	No	Yes	Yes
	Dausa	ANR	Sonadi	Yes	No	Yes	No	Yes	Yes
	Sikrai	ANR	Fraspura	Yes	Yes	Yes	Yes	Yes	Yes
Dholpur	Sarmathura	ANR	Thane Ka Pura-II ANR	Yes	No	Yes	No	Yes	Yes

Name of Forest Division	Name of Range	Name of Model	Name of Site	Availability of survey map/ treatment map	Preparation & availability of micro-plan for the VFPMC	Availability of Plantation Journal	Availability of Plantation card	KML file of plantation	MB
	Sarmathura	ANR	Dhore Ka Dada	Yes	No	Yes	No	Yes	Yes
	Vanvihar	ANR	Meenakhuri	No	Yes	Yes	No	No	Yes
	Badi	DFL	Kala Patpara	No	No	No	No	No	Yes
Dungarpur	Dungarpur	NFL	Palwada	No	No	No	No	No	Yes
	Dungarpur	ANR	Vankhand Ranijhula S.No. 2 Ananpura	No	No	Yes	No	Yes	Yes
	Simalwara	ANR	Charwada Rataghata	No	No	No	No	No	Yes
Jaipur	Amer	ANR	Bagwara	Yes	No	Yes	No	No	Yes
	Amer	ANR	Dabla	Yes	No	Yes	No	Yes	Yes
	Bassi	DFL	Langadiyawas	Yes	No	Yes	No	No	Yes
	Kanota	ANR	Dubali	Yes	No	Yes	Yes	Yes	Yes
Jaipur North	Shahpura	ANR	Manoharpur	Yes	No	Yes	No	Yes	Yes
	Shahpura	ANR	Mishrawas	Yes	No	Yes	No	Yes	Yes
	Kotputali	ANR	Gudha Buchara	Yes	No	Yes	Yes	No	Yes
Jaipur WL	Raisar	NFL	Dantali	Yes	Yes	Yes	Yes	Yes	Yes
	Jamwa Ramgarh	ANR	Papad	Yes	Yes	Yes	No	Yes	Yes
Jaisalmer	Dabla	DFL	Chhod I	Yes	No	Yes	Yes	Yes	Yes
Jaisalmer IGNP II	Mohangarh	NFL	SDS 20-23 RDJJW Sadrau	Yes	No	Yes	No	Yes	Yes
	II 1438 RD Mohangarh	NFL	SDS 10-13 RD	Yes	No	Yes	No	Yes	Yes
	II 1438 RD Mohangarh	NFL	SDS Mandaubarani 13RdJJW	Yes	No	Yes	No	Yes	Yes
	II 1438 RD Mohanga	NFL	SDS 35-38 RDJJWC	Yes	No	Yes	No	Yes	Yes

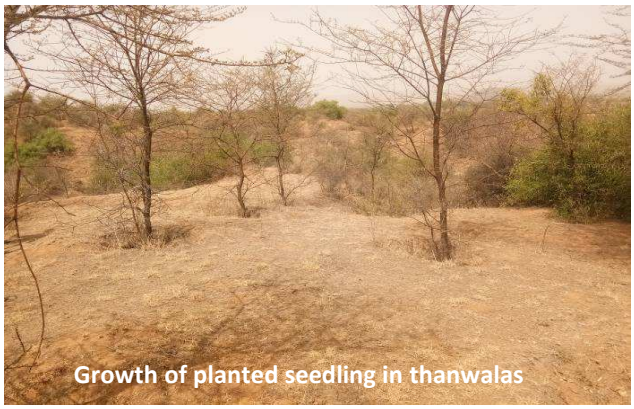
Name of Forest Division	Name of Range	Name of Model	Name of Site	Availability of survey map/ treatment map	Preparation & availability of micro-plan for the VFPMC	Availability of Plantation Journal	Availability of Plantation card	KML file of plantation	MB
	rh								
Jalore	Raniwara	ANR	Baretha	Yes	No	Yes	Yes	Yes	Yes
	Jasvantpura	DFL	Siroshi Pahadpura	Yes	No	Yes	No	No	Yes
	Jasvantpura	ANR	Veri Datlawas	Yes	Yes	Yes	No	No	Yes
Jhalawar	Khanpur	NFL	Sojpur	Yes	No	Yes	Yes	Yes	Yes
	Jhalawar	NFL	Barubeh	Yes	Yes	Yes	Yes	Yes	Yes
Jhunjhunu	Khetri	DFL	Chirani II	Yes	No	Yes	Yes	Yes	Yes
	Udaipurwati	DFL	Indra colony Kankria	Yes	No	Yes	Yes	Yes	Yes
	Udaipurwati	ANR	Bagora	Yes	No	Yes	Yes	Yes	Yes
	Udaipurwati	ANR	Kot	Yes	No	Yes	Yes	Yes	Yes
	Udaipurwati	DFL	Kakrana	Yes	No	Yes	Yes	Yes	Yes
	Udaipurwati	DFL	Chhapoli III	Yes	No	Yes	Yes	Yes	Yes
	Navalgarh	ANR	Chirana	Yes	Yes	Yes	Yes	Yes	Yes
Jodhpur	Bhopalgarh	DFL	Devnagar	Yes	No	Yes	No	Yes	Yes
Karauli	Masalpur	ANR	Sahanpur	Yes	Yes	Yes	Yes	No	Yes
	Hindon	DFL	Kachroli	Yes	No	Yes	Yes	Yes	Yes
	Hindon	DFL	Karwad Jat	Yes	No	Yes	Yes	Yes	Yes
Kota	Sultanpur	ANR	Peepalda Samel	Yes	No	Yes	Yes	Yes	Yes
	Mandana	ANR	Mandana-I	Yes	Yes	Yes	Yes	Yes	Yes
	Modak	ANR	Rakba Pahad	Yes	Yes	Yes	Yes	Yes	Yes
Kota MNP	Jawahar sagar	DFL	Dhonk ki kui	Yes	Yes	Yes	Yes	Yes	Yes
	Dara	ANR	Kalya Khal MJSA II	Yes	No	Yes	Yes	Yes	Yes
	Kolipura	ANR	Kanya Talab	Yes	Yes	Yes	No	Yes	Yes
Nagaur	Kuchaman	ANR	Kuchaman (Bhairuji	Yes	Yes	Yes	Yes	Yes	Yes

Name of Forest Division	Name of Range	Name of Model	Name of Site	Availability of survey map/ treatment map	Preparation & availability of micro-plan for the VFPMC	Availability of Plantation Journal	Availability of Plantation card	KML file of plantation	MB
			Mandir)						
Pali	Sojat	ANR	Rundiya	Yes	Yes	Yes	Yes	Yes	Yes
	Sumerpur	ANR	Rojara	Yes	No	Yes	Yes	Yes	Yes
	Sendara	ANR	Dholiya	Yes	No	Yes	Yes	Yes	Yes
Pratapgarh	Chhoti Sadri	ANR	Santokpuria	Yes	No	Yes	Yes	Yes	Yes
	Peepalkhoot	ANR	Bakhtod	Yes	No	Yes	Yes	Yes	Yes
	Dhariyavad	NFL	Ghatela Khasra 1/2	Yes	No	Yes	Yes	Yes	Yes
	Devgarh	DFL	Jhantla C	Yes	No	Yes	Yes	No	Yes
	Chhoti Sadri	ANR	Janjal (Hamel Mahadev)	Yes	Yes	Yes	Yes	Yes	Yes
Rajsamand	Kumbhalgarh	ANR	Uparthala Jaitaran	Yes	No	Yes	Yes	Yes	Yes
Rajsamand WL	Desuri	ANR	Satimata-B	Yes	No	Yes	Yes	Yes	Yes
	Bhim	DFL	Koyatalai	Yes	No	Yes	Yes	Yes	Yes
	Devgarh	ANR	Devpura	Yes	No	Yes	Yes	Yes	Yes
RTR I S. Madhopur	Indergarh	NFL	Kanchan Dham	No	No	No	No	No	Yes
S. Madhopur	Bonli	ANR	Khirkhadi	Yes	Yes	Yes	Yes	Yes	Yes
	Bonli	ANR	Shilki dungari	Yes	No	Yes	Yes	Yes	Yes
Sikar	Srimadhopur	DFL	Ajeetgarh	Yes	No	Yes	Yes	Yes	Yes
	Neemkathana	NFL	Bhagega I	Yes	No	Yes	Yes	No	Yes
	Patan	ANR	Jetpura	Yes	No	Yes	No	Yes	Yes
Sirohi	Pindwara	ANR	Pahadkala No. 30 Ubari Pani Sabela	Yes	No	Yes	No	No	Yes
Tonk	Deoli	DFL	Devnarayanji	Yes	Yes	Yes	No	No	Yes
	Newai	ANR	Newai pahad	Yes	No	Yes	No	No	Yes

Name of Forest Division	Name of Range	Name of Model	Name of Site	Availability of survey map/ treatment map	Preparation & availability of micro-plan for the VFPMC	Availability of Plantation Journal	Availability of Plantation card	KML file of plantation	MB
			kabri khal						
Udaipur	Udaipur west	DFL	Radaji Bawji	Yes	No	Yes	No	Yes	Yes
	Salumbar	ANR	Jhallara	Yes	No	Yes	Yes	Yes	Yes
Udaipur-North	Gogunda	ANR	Naal mokhi	Yes	No	Yes	No	Yes	Yes
	Udaipur east	NFL	Banadiya	Yes	No	Yes	Yes	Yes	Yes
	Udaipur east	ANR	Amberi	Yes	No	Yes	No	Yes	Yes

4.1.4 Protection & Management

The plantation area has been reported protected properly during the execution phase by closing the boundary of the plantation sites in order to ensure proper health of forests and plantations undertaken under CAMPA. The protection and management measures include both scientific and traditional measures in order to maintain the health of plants & care of the area. The site specific measures have been taken at large at the sample sites.



Also, it has been taken care that the species of trees selected for plantation in the sites should survive in the existing physical conditions and climate. The tree species planted in the area were Desi Babool, Shisham, Karanj, Baans, Tortilis, Khair, Aanwla, Bamboo, Bair, Kumtha & Churail. The species have also been reported planted which require very less water. Also, these plants can survive even in the extreme climate both during summer and winter.

During visit to the project sites for third party evaluation it was reported that the plantation sites boundaries were constructed as per norms i.e. loose stone wall, Ditch fencing and barbed wire fencing

etc. It was also observed at the sample sites that the fencing on the boundaries has been damaged. Also, the plantation sites have withdrawn the cattle guards who were placed during execution phase. The plantation sites were reported open and the village animals were reported entering into the plantation sites for grazing.

Table 4.17: Species Planted at Plantation sites

S.No	Name of Site	Species Planted
1	Nand	Desi Babool, Ronj, Churel,Ber,Neem & Tortilis
2	Chor Basai	Desi Babool, Shisham, Shahtut, Karanj, Ber, SahJan & Tortilis
3	Gadh Basai	Desi Babool, Ronj, Churel,Ber, & Kumtha
4	Dolatpura	Desi Babool, Ronj, Churel, Shisham,Neem,Karanj, Semal & Peepal
5	Gwalda	Shisham, Shahjan, Churel, Neem & Tortilis
6	Santokpur	Desi Babool, Ronj, Churel,Ber, Jangal Jalebi, Khair, Kumtha, Shisham & Kala Siras
7	Dhindhor	Desi Babool, Ronj, Churel,Ber,Shisham & Tortilis
8	Nadoli	Desi Babool, Ronj, Churel,Ber, Cheela, Khair & Kumtha
9	Jagmer Jogimal	Sagwan,Hawan, Khirani, Arjun, Baheda, Anwla,Churel,Ber,Neem & Khair
10	Andeshwar	Sagwan,Ronj,Baans, Baheda, Anwla,Churel,Ber,Neem & Khair
11	Baseli-b	Sagwan,Ronj, Jangal Jalebi, Karanj, Shisham,Neem & Khair
12	Borda	Sagwan, Jangal Jalebi, Karanj, Shisham,Neem , Belpatra, Churel& Khair
13	Kadili	Karonda, Kadamba, Imli, Karanj, Desi Babool, Ronj, Neem & Churel
14	Dabar-D	Karonda, Palash, Ber, Desi Babool, Ronj, Jangal Jalebi & Churel
15	Mundiya B I	Peepal, Karanj, Shisham, Semal,Neem , Desi Babool, Churel, Arjun, Kachnar, Hingot, Ardu, Ber, Anwla& Khair
16	Sukha samli- A	Sagwan, Desi Babool, Arjun, Vad, Peepal, Churel, Jangal Jalebi, Mahua,Kadamba, Karanj, Baheda, Neem & Khair
17	Mundiya Sehjana II	Karonda, Sagwan, Ber, Jangal Jalebi, Neem, Karanj, Khair& Churel
18	Kanada	Desi Babool, Churel,Ber, Shisham, Karanj, Neem, Hingot and Khair
19	Kusip	Rohida, Khejri, Jaal, Tortilis, Neem, Ber and Kumtha
20	Junapatarasar-B	Rohida, Khejri, Jaal, Tortilis, Neem, Ber and Kumtha
21	Gafan Talai	Rohida, Khejri, Jaal, Tortilis, Neem & Ber
22	Ghodi Khoj Hathodi	Desi Babool, Churel, Ronj, Khejri & Tortilis
23	Saimala	Desi Babool, Churel, Ronj, Ber, Khair, Jangal Jalebi, Anwla & Baheda
24	Kharcha ki nadi	Desi Babool, Churel, Ronj, Ber, Khair, Jangal Jalebi, Anwla & Baheda
25	Bahadurpura	Desi Babool, Churel, Ronj, Ber, Neem & Shisham
26	Ladpura	Desi Babool, Ronj, Ber, Anwla & Khair
27	Mahajan-D	Rohida, Neem, Ber, Kumtha, Jaal, Khejri & Tortilis
28	Nokha	Rohida, Ronj, Ber, Kumtha, Jaal, Khejri & Tortilis
29	SDS Agneu	Rohida, Ronj, Ber, Kumtha, Khejri & Tortilis
30	Gopalpura	Desi Babool, Churel, Ber, Khejri, Jangal Jalebi & Karanj
31	Maliyon ki jhopdiya	Desi Babool, Bair, Ronj, Jangal Jalebi, Churail, Neem & Amaltas

S.No	Name of Site	Species Planted
32	Dholi Chabutri B	Desi Babool, Bair, Ronj, Jangal Jalebi, Churail & Neem
33	Topa Dhardhadi-F	Desi Babool, Bair, Imli, Jangal Jalebi, Churail, Neem, Shisham & Anwla
34	Hasala-E	Desi Babool, Bair, Ronj, Baans, Anwla, Churail, Khair & Karanj
35	Siyalkund	Desi Babool, Bair, Baans, Anwla, Churail, Khair, Amaltas, Neem, Baheda, Imli, Jangal Jalebi & Karanj
36	Tai-B	Gundi,Bair, Baans, Sitaphal,Churail, Amaltas, Jangal Jalebi & Khirni
37	Jogniyamata Haribadliya	Bair, Kachnar,Baheda , Churail, Neem, Gular, Vad, Peepal, Khair, & Karanj
38	Nangliya	Khair, Baans, Anwla, Sagwan, Neem, Bair & Churail
39	Achalpura	Desi Babool, Tortilis, Churail, Shisham, Ronj, Bair, Kumtha & Anwla
40	Sonadi	Desi Babool, Tortilis, Churail, Shisham, & Khejri
41	Fraspura	Desi Babool, Tortilis, Churail, Kumtha, Shisham, & Bair
42	Thane Ka Pura-II	Desi Babool,Dhonk
43	Dhore Ka Dada	Desi Babool, Khair, Ronj, Churail, Neem, Shisham, Belpatra, Bargad, Peepal, Gular, Sitaphal& Bair
44	Meenakhuri	Desi Babool, Jangal Jalebi, Ronj & Churail
45	Kala Patpara	Desi Babool, Khair, Kumtha,Ronj & Bair
46	Palwada	Churail, Sagwan, Khirani, Ronj, Khair, Anwla & Sitaphal
47	Vankhand Ranijhula S.No. 2 Ananpura	Churail, Sagwan, Baans, Neem, Khirani, Anwla, Arjun, Kala Siras,Semal, Sitaphal, Karanj, Sitaphal, Imli, Hawan, Guggal & Belpatra
48	Charwada Rataghata	Churail, Sagwan, Bair, Neem, Khair, Anwla, Ronj & Hawan
49	Bagwara	Desi Babool, Tortilis, Shisham, Ardu & Bair
50	Dabla	Desi Babool, Tortilis, Shisham, Khair, Kumtha, Ronj, Churail,Peepal& Bair
51	Langadiyawas	Desi Babool, Tortilis, Jaal , Churail, Ronj, Neem, Khejri& Bair
52	Dubali	Desi Babool, Tortilis, Shisham, Kumtha, Churail, & Bair
53	Manoharpur	Desi Babool, Tortilis, Ronj, Kumtha, Churail, & Bair
54	Mishrawas	Desi Babool, Tortilis, Ronj, Kumtha, Churail, Neem, Shisham & Bair
55	Gudha Buchara	Tortilis, Kala Siras, Desi babool, Rohida, Churail, Neem & Shisham
56	Dantali	Desi Babool, Ronj, Churail, Neem, Shisham & Bair
57	Papad	Tortilis, Ratanjot, Kumtha, Churail, Neem, Shisham & Peepal
58	Chhod I	Tortilis, , Rohida, Bair, Kumtha Jaal, Guggal& Rohida
59	SDS 20-23 RDJJW Sadrau	Tortilis, Rohida & Khejri
60	SDS 10-13 RD	Tortilis, Rohida,Kumtha, Bair, Fras, Neem & Khejri
61	SDS Mandau Barani 13 RD JJW	Tortilis, Rohida, Kumtha, Bair & Khejri
62	SDS 35-38 RDJJWC	Tortilis, Kumtha, Rohida, Bair & Khejri
63	Baretha	Tortilis, Kumtha, Ronj & Bair
64	Siroshi Pahadpura	Tortilis, Kumtha, Ronj & Bair
65	Veri Datlawas	Tortilis, Kumtha, Ronj, Karanj, Neem, Siras, Churail, Gulmohar & Bair

S.No	Name of Site	Species Planted
66	Sojpur	Desi Babool, Ronj, Khair, Neem, Shisham, Jangal Jalebi, Hingot & Bair
67	Barubeh	Desi Babool, Ronj, Khair, Churail, Neem, Shisham, Jangal Jalebi, Karanj & Bair
68	Chirani II	Desi Babool, Ronj, Khair, Churail, Neem, Bargad, Peepal, Tortilis& Bair
69	Indra colony Kankria	Desi Babool, Ronj, Rohida, Churail , Shisham, Jheenjha, Khejri, Neem, Tortilis& Bair
70	Bagora	Desi Babool, Ronj, Rohida, Churail , Shisham, Khejri& Bair
71	Kot	Desi Babool, Ronj, Churail & Neem
72	Kakrana	Desi Babool, Ronj, Churail ,Tortilis & Bair
73	Chhapoli III	Desi Babool, Ronj, Churail ,Jheenjha & Bair
74	Chirana	Neem, Ronj, Churail & Bair
75	Devnagar	Tortilis, Kumtha, Desi Babool & Bair
76	Sahanpur	Jamun, Ronj, Bair, Desi Babool, Churail,Shisham & Hingot
77	Kachroli	Jamun, Lisoda, Churail, Karanj, Bair, Desi Babool. Baans, Neem, Shisham & Siras
78	Karwad Jat	Tortilis, Kumtha, Churail, Ronj, Neem, Desi Babool & Bair
79	Peepalda Samel	Churail, Neem & Desi Babool
80	Mandana-I	Churail, Ronj, Khair & Bair
81	Rakba Pahad	Churail, Ronj, Jangal Jalebi, Desi Babool & Bair
82	Dhonk ki kui	Churail, Ronj, Khair, Anwla, Bailpatra, Karanj & Bair
83	Kalya Khal MJSA II	Khejri, Ronj, Khair, Desi Babool, Churail, Semal & Bair
84	Kanya Talab	Churail, Ronj, Jangal Jalebi, Desi Babool, Anwla, Kala Siras, Imli, Karanj, Neem, Kumtha & Bair
85	Kuchaman	Desi Babool, Tortilis,Ronj, Neem, Khejri, Churail & Bair
86	Rundiya	Desi Babool, Bair, Ronj, Neem & Kumtha
87	Rojara	Desi Babool, Bair, Ronj, Gundi & Kumtha
88	Dholiya	Desi Babool, Bair, Khair Jangal Jalebi, Churail, Ronj & Rohida
89	Santokpuria	Anwla, Bair, Khair, Churail, Ronj, Baaans, Karanj, Sagwan & Neem
90	Bakhtod	Baans, Sagwan, Neem, Anwla, Churail, Khair & Karanj
91	Ghatela	Baans, Sagwan, Neem, Kala Siras, Hawan, Baheda, Arjun, Anwla, Churail, Bair & Karanj
92	Jhantla C	Kumtha, Anwla, Karonda, Belpatra, Tulsi, Gwarpatha, Ashvagandha, Kalmegh, Amaltas
93	Janjal (Hamel Mahadev)	Baans, Sagwan, Neem, Kala Siras, Karonda, Karanj, Ronj,Jangal Jalebi Anwla, Churail, Bair & Karanj
94	Uparthala Jaitaran	Baans, Khair, Sagwan, Sitaphal, Mango, Ardu, Kala Siras, Hawan, Karanj, Shisham,Anwla, Churail, Bair & Karanj
95	Satimata-B	Ronj, Khair, Gundi, Churail, Bair, Dhaman & Baans
96	Koyatalai	Desi Babool, Ronj, Khair, Gundi, Churail, Anwla,Jangal Jalebi, Bair, Imli,Dhok, Kumtha, Neem & Kala Siras
97	Devpura	Desi Babool, Shisham, Khair, Baans, Churail, Anwla,Jangal Jalebi, Bair, Imli,Dhok, Karanj, Kachnar & Kala Siras
98	Kanchan Dham	Shisham, Churail, Neem, Peepal, Vad, Imli, Jamun, Gulmohar, Desi

S.No	Name of Site	Species Planted
		Babool, & Khair
99	Khirkhadi	Tortilis, Churail, Ardu & Bair
100	Shilki Dungari	Tortilis, Desi Babool, Churail & Cheela
101	Ajeetgarh	Bair, Churail, Desi Babool &Tortilis
102	Bhagega I	Bair, Shisham, Desi Babool &Tortilis
103	Jetpura	Bair, Ronj, Desi Babool &Churail
104	Pahadkala No. 30 Ubari Pani Sabela	Khair, Baans, Karanj, Churail, Mahuaa, Bair, Jangal Jalebi, Amaltas, Sitaphal, Jamun, Neem & Anwla
105	Devnarayanji	Tortilis, Ardu, Ronj, Shisham, Churail, Bair & Neem
106	Newai pahad kabri khal	Tortilis, Neem, Ardu, Kala Siras, Churail, Bair, Peepal, Vad, Khair, Khejri, Desi Babool & Karanj
107	Rodaji Bawji	Baans, Anwla, Khair, Churail, Bair, Khirani, Hawan, Palash, Arjun, Baheda, Kala Siras, Mahua, Tortilis & Karanj
108	Jhallara	Sagwan, Anwla, Baans, Jamun, Baheda, Khair, Karanj, Churail, Mahua, Neem, Kala Siras,&Belpatra
109	Naal mokhi	Baans, Anwla, Khair, Jamun, Mango, Mahua, Churail, Hawan, Amaltas, Karanj, Khirani, Semal, Belpatra & Neem
110	Banadiya	Baans, Karanj, Churail, Khirani, Jamun, Palash, Amaltash, Anwla, Khair, Ronj, Baheda, Bair & Sagwan
111	Amberi	Gulmohar, Arjun, Khair, Guggal, Anwla, Belpatra, Neem, Churail, Khirani, Gultara, Kaner, Amaltas, Jakrenda, Bogenvilliya, Kaser Adusa, Kachnar & K. Shyama

The table given below shows various types of fencing reported at the plantation sites for protection of planted species. Ditch fencing was reported at 83 sample sites. The length of ditch fencing varies from 230 rmt. (Chirana-Navalgarh) to 2800 rmt.

(Mishrawas-Shahpura). Like-wise, loose stone wall fencing was reported at 83 sample sites. The length of loose stone wall fencing varies from 86 rmt.(Chirani II Khetri) to 5650 rmt. (Borda- Kishanganj). Also, other types of fencing were reported at 22 sample plantation sites. Other types of fencing at plantation sites include barbed wire, pucca wall & dola fencing.

Table 4.18: Types of Fencing at the plantation sites

Name of Forest Division	Name of Range	Name of Model	Name of Site	Types of fencing (Rmt)		
				Loose stone wall	Ditch fencing	Others
Ajmer	Pushkar	ANR	Nand	1215	1320	
Alwar	Kishangarhwas	DFL	Chor Basai	1700	2100	
	Thanagazi	ANR	Gadh Basai	100	2800	
	Rajgarh	ANR	Dolatpura	1000	2000	
	Tijara	DFL	Gwalda	-	3000	
	Laxmangarh	DFL	Santokpur	2500	1000	
	Bahror	DFL	Dhindhor	1650	1640	3500 (barbed wire)
Alwar STR	Tahala	NFL	Nadoli	1900	6979	
Banswara	Ghatol	ANR	Jagmer Jogimal	250	3110	
	Sajjangarh	ANR	Andeshwar	2700	-	
Baran	Shahbad	DFL	Baseli-b	-	2230	
	Kishanganj	DFL	Borda	5650		
	Nahargarh	DFL	Kadili	500	7700	
	Shahbad	NFL	Dabar-D	-	2300	
	Anta	NFL	Mundiya B I	-	4770	
	Kelwara	ANR	Sukha Semali-A	3060		
	Shahbad	ANR	Mundiya Sehjana II	3200		
	Anta	NFL	Kanada	-	4250	
Barmer	Sivana	ANR	Kusip		4096	
	Barmer	DFL	Junapatarasar-B			3041(barbed wire)
	Barmer	DFL	Gafan Talai			3070(barbed wire)
Bharatpur	Bayana	ANR	Ghodi Khoj Hathodi	1171	3000	
Bhilwara	Mandalgarh	DFL	Saimala	3100		
	Mandalgarh	ANR	Kharcha ki nadi	3743		
	Jahajpur	ANR	Bahadurpura	2735	525	
	Mandalgarh	DFL	Ladpura	3085		

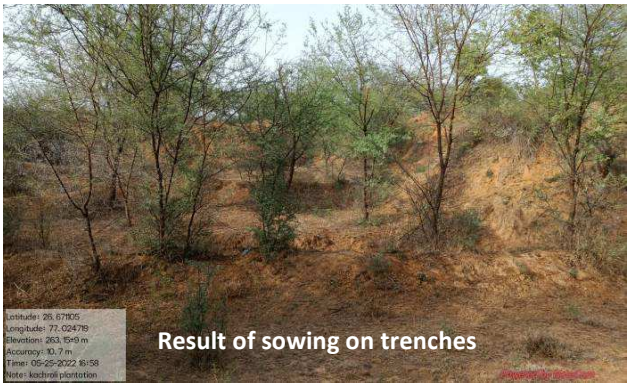
Name of Forest Division	Name of Range	Name of Model	Name of Site	Types of fencing (Rmt)		
				Loose stone wall	Ditch fencing	Others
Bikaner	Lunkaransar	DFL	Mahajan-D	-	-	9225(barbed wire)
	Nokha	DFL	Nokha			1594(barbed wire) 576 (pucca masonry wall)
Bikaner IGNP II	750 RD unit II	NFL	SDS Agneu			11808(barbed wire)
Bundi	K. Patan	NFL	Gopalpura		2835	
	Hindoli	DFL	Maliyon ki jhopdiya		5700	
	Hindoli	ANR	Dholi Chabutri B		2900	
	Nainwa	ANR	Topa Dhardhadi-F		3170	
Chittorgarh	Chittorgarh	ANR	Hasala-E	2807	285	
	Chittorgarh	ANR	Siyalkund	1105	1440	
	Nimbahera	DFL	Tai-B	1700	1300	
	Begu	ANR	Jogniyamata Haribadliya	2700		
Chittorgarh WL	Dhariyavad	ANR	Nangliya	700	2630	
Dausa	Sikrai	ANR	Achalpura	355	2898	
	Dausa	ANR	Sonadi		3900	
	Sikrai	ANR	Fraspura	1427	1630	
Dholpur	Sarmathura	ANR	Thane Ka Pura-II ANR	875	-	1254 (dola fencing)
	Sarmathura	ANR	Dhore Ka Dada	2256		900 (dola fencing)
	Vanvihar	ANR	Meenakhuri	860	1690	1000 (dola fencing)
	Badi	DFL	Kala Patpara			Ddola fencing
Dungarpur	Dungarpur	NFL	Palwada	2715	1264	
	Dungarpur	ANR	Vankhand Ranijhula S.No. 2 Ananpura	2168	777	
	Simalwara	ANR	Charwada Rataghata	3720	-	

Name of Forest Division	Name of Range	Name of Model	Name of Site	Types of fencing (Rmt)		
				Loose stone wall	Ditch fencing	Others
Jaipur	Amer	ANR	Bagwara	-	4195	
	Amer	ANR	Dabla	2132	1240	
	Bassi	DFL	Langadiyawas		400	
	Kanota	ANR	Dubali	-	2236	277(pucca masonry wall
Jaipur North	Shahpura	ANR	Manoharpur		1500	500 (Barbed wire)
	Shahpura	ANR	Mishrawas		2800	
	Kotputali	ANR	Gudha Buchara		2810	
Jaipur WL	Raisar	NFL	Dantali		430	-
	Jamwa Ramgarh	ANR	Papad	860	2370	
Jaisalmer	Dabla	DFL	Chhod I			6530 (Barbed wire)
Jaisalmer IGNP II	Mohangarh	NFL	SDS 20-23 RDJJW Sadrau			4200 (Barbed wire)
	II 1438 RD Mohangarh	NFL	SDS 10-13 RD			2080 (Barbed wire)
	II 1438 RD Mohangarh	NFL	SDS Mandau barani 13RDJJW			1660 (Barbed wire)
	II 1438 RD Mohangarh	NFL	SDS 35-38 RDJJWC			2900 (Barbed wire)
Jalore	Raniwara	ANR	Baretha		2100	-
	Jasvantpura	DFL	Siroshi Pahadpura	382	1350	450 (Barbed wire)
	Jasvantpura	ANR	Veri Datlawas	1380	405	450 (Barbed wire)
Jhalawar	Khanpur	NFL	Sojpur	625	3050	
	Jhalawar	NFL	Barubeh	-	3200	
Jhunjhunu	Khetri	DFL	Chirani II	86	2136	_
	Udaipurwati	DFL	Indra colony Kankria		3290	
	Udaipurwati	ANR	Bagora	938	1433	
	Udaipurwati	ANR	Kot	2820	574	-
	Udaipurwati	DFL	Kakrana	2140	575	1080 (Barbed wire)

Name of Forest Division	Name of Range	Name of Model	Name of Site	Types of fencing (Rmt)		
				Loose stone wall	Ditch fencing	Others
	Udaipurwati	DFL	Chhapoli III	726	3150	
	Navalgarh	ANR	Chirana	2474	230	148 (Barbed wire)
Jodhpur	Bhopalgarh	DFL	Devnagar	2900	1970	
Karauli	Masalpur	ANR	Sahanpur	3430		
	Hindon	DFL	Kachroli		265	
	Hindon	DFL	Karwad Jat		1300	
Kota	Sultanpur	ANR	Peepalda Samel		2800	
	Mandana	ANR	Mandana-I	3126		
	Modak	ANR	Rakba Pahad	2288		
Kota MNP	Jawahar sagar	DFL	Dhonk ki kui	2615	1955	
	Dara	ANR	Kalya Khal MJSA II	2966		
	Kolipura	ANR	Kanya Talab	3000		-
Nagaur	Kuchaman	ANR	Kuchaman	220	2000	400 (Barbed wire)
Pali	Sojat	ANR	Rundiya	2219	1175	
	Sumerpur	ANR	Rojara	2100	850	
	Sendara	ANR	Dholiya	3500		
Pratapgarh	Chhoti Sadri	ANR	Santokpuria		3400	-
	Peepalkhoot	ANR	Bakhtod	2520	1000	
	Dhariyavad	NFL	Ghatela		600	500 (pucca masonry wall)
	Devgarh	DFL	Jhantla C	430	580	-
	Chhoti Sadri	ANR	Janjal (Hamel Mahadev)	745	2477	-
Rajsamand	Kumbhalgarh	ANR	Uparthala Jaitaran	4000		-
Rajsamand WL	Desuri	ANR	Satimata-B	1225	1573	
	Bhim	DFL	Koyatalai	4054		
	Devgarh	ANR	Devpura	3931		
RTR I S. Madhopur	Indergarh	NFL	Kanchan Dham		447	
S. Madhopur	Bonli	ANR	Khirkhadi		3250	

Name of Forest Division	Name of Range	Name of Model	Name of Site	Types of fencing (Rmt)		
				Loose stone wall	Ditch fencing	Others
	Bonli	ANR	Shilki Dungari		1698	
Sikar	Srimadhopur	DFL	Ajeetgarh	1000	1490	780 (Barbed wire)
	Neemka thana	NFL	Bhagega I			684(Barbed wire)
	Patan	ANR	Jetpura	2505	805	
Sirohi	Pindwara	ANR	Pahadkala No. 30 Ubari Pani Sabela	2857		-
Tonk	Deoli	DFL	Devnarayanji		3825	
	Newai	ANR	Newai pahad kabri khal		3000	-
Udaipur	Udaipur west	DFL	Rodaji Bawji	4000		
	Salumbar	ANR	Jhallara	3100		
Udaipur-North	Gogunda	ANR	Naal Mokhi	2100		
	Udaipur east	NFL	Banadiya	4240		
	Udaipur east	ANR	Amberi			798 (Barbed wire) 366 (Pucca stone fencing)

4.1.5 Extent and composition of sowing



The table given below shows extent and composition of sowing at the sample sites. The sowing was reported at 104 plantation sites. At 07 plantation sites sowing was not reported (04 sites at IGNP Jaisalmer) 01 site each in Pratapgarh, RTR Sawaimadhopur & 01 Sikar). As per practice of department, seeds were sown along trenches/ earthen bunds &fencing on three rows. Seeds sown were Kumtha, Katkaranj, Ratanjot, Ronj, Chhela, Khair, Desi Babool& Ardu etc. Regarding status of sowing, the same was reported excellent at 02 plantation sites followed by good at 66 plantation sites , average at 23 plantation sites & poor at 13 plantation sites. Hence, at majority of sample sites the result of seed sowing was good. Seed sowing should be promoted at the plantation sites. It should be sown properly may be on rows with norms and standard rather than shown haphazardly. Plants grown from seeds sown had more chance of survival than the planted seedlings.

Table 4.19: Extent and composition of sowing

S.No	Name of Site	Seed Sown	Status
1	Nand	Kumtha	Average
2	Chor Basai	Kumtha, Trotlis, Ronj, Ber, Churel	Good
3	Gadh Basai	Ronj, Kumtha, Desi Babool, Chhila	Good
4	Dolatpura	Kumtha, Katkaranj, Desi Babool, Chhila & Ronj	Good
5	Gwalda	Totlis, Ronj, Kumtha & Desi Babool	Good
6	Santokpur	Kumtha, Desi Babool, Ber & Ronj	Poor
7	Dhindhor	Ber, Ronj, Desi Babool	Good
8	Nadoli	Ronj & Kumtha	Good
9	Jagmer Jogimal	Kumtha, Khair, Baheda, Ratanjot, Ronj & Neem	Good
10	Andeshwar	Ratanjot, Kumtha, Khair & Neem	Good
11	Baseli-B	Kumtha, Desi Babool, & Khair	Good
12	Borda	Katkaranj, Khair & Ronj	Good
13	Kadili	Desi Babool Khair & Ronj	Good
14	Dabar-D	Desi Babool Khair & Ronj	Good
15	Mundiya B I	Hingot, Khair & Ber	Good
16	Sukha Sameli- A	Khair & Ronj	Good
17	Mundiya Sehjana II	Desi Babool, Khair & Ber	Good

S.No	Name of Site	Seed Sown	Status
18	Kanada	Desi Babool, Khair & Neem	Good
19	Kusip	Kumtha & Ber	Poor
20	Junapatarasar-B	Kumtha & Sevan Grass	Poor
21	Gafan Talai	Kumtha	Average
22	Ghodi Khoj Hathodi	Kumtha, Desi Babool, Ronj & Totlis	Average
23	Saimala	Kumtha, Khair & Neem	Poor
24	Kharcha ki nadi	Kumtha, Khair, Ronj & Desi Babool	Good
25	Bahadurpura	Kumtha, Churel, Palas & Ronj	Good
26	Ladpura	Neem, Ronj, Khair & Kumtha	Poor
27	Mahajan-D	Totlis, Kumtha & Khejri	Poor
28	Nokha	Kumtha & Khejri	Good
29	SDS Agneu	Totlis & Khejri	Good
30	Gopalpura	Kumtha	Poor
31	Maliyon ki jhopdiya	Neem, Ronj, Katkaranj & Churel	Good
32	Dholi Chabutri B	Kumtha, Ardu & Ronj	Average
33	Topa Dhardhadi-F	Kumtha, Desi Babool, Ardu & Ronj	Average
34	Hasala-E	Kumtha, Ratanjot, Katkaranj & Khair	Average
35	Siyalkund	Kumtha, Ratanjot, Katkaranj & Khair	Good
36	Tai-B	Ronj, Ratanjot, Khair & Ardu	Average
37	Jogniyamata Haribadliya	Kumtha, Ratanjot, Khair, Baheda & Ardu	Good
38	Nangliya	Kumtha, Katkaranj & Khair	Poor
39	Achalpura	Totlis, Kumtha & Churel	Average
40	Sonadi	Totlis & Kumtha	Average
41	Fraspura	Totlis & Kumtha	Average
42	Thane Ka Pura-II	Desi Babool, Kumtha, Ronj & Khair	Good
43	Dhore Ka Dada	Desi Babool, Kumtha, Ronj, Churel & Khair	Good
44	Meenakhuri	Desi Babool, Kumtha, Ronj, Churel & Ber	Good
45	Kala Patpara	Kumtha	Good
46	Palwada	Kumtha & Ratanjot	Poor
47	Vankhand Ranijhula S.No. 2 Ananpura	Kumtha, Ronj & Khair	Good
48	Charwada Rataghata	Khair, Kumtha & Ratanjot	Good
49	Bagwara	Kumtha, Ronj, Katkaranj, Ratanjot & Khair	Average
50	Dabla	Kumtha & Ronj	Average
51	Langadiyawas	Kumtha & Khair	Average
52	Dubali	Ronj, Khair & Kumtha	Poor
53	Manoharpur	Kumtha & Ronj	Good
54	Mishrawas	Kumtha & Ronj	Average
55	Gudha Buchara	Kumtha & Khair	Good
56	Dantali	Kumtha & Ronj	Good
57	Papad	Kumtha & Ronj	Good
58	Chhod I	Kumtha	Good
59	SDS 20-23 RDJJW Sadrau	Plantation Site was Sand Dunes Area, Hence Seed Sowing was Not Reported	

S.No	Name of Site	Seed Sown	Status
60	SDS 10-13 RD	Plantation Site was Sand Dunes Area, Hence Seed Sowing was Not Reported	
61	SDS Mandau Barani 13 RD JJW	Plantation Site was Sand Dunes Area, Hence Seed Sowing was Not Reported	
62	SDS 35-38 RDJJWC	Plantation Site was Sand Dunes Area, Hence Seed Sowing was Not Reported	
63	Baretha	Kumtha	Good
64	Siroshi Pahadpura	Kumtha	Average
65	Veri Datlawas	Kumtha	Average
66	Sojpur	Ratanjot, Kumtha, Khair & Katkaranj	Good
67	Barubeh	Kumtha, Khair Ronj & Katkaranj	Good
68	Chirani II	Kumtha	Excellent
69	Indra colony Kankria	Kumtha, Ronj & Desi Babool	Good
70	Bagora	Kumtha	Good
71	Kot	Kumtha, Desi Babool & Ronj	Good
72	Kakrana	Kumtha	Good
73	Chhapoli III	Kumtha, Ronj, Ber & Desi Babool	Good
74	Chirana	Kumtha, Ber & Desi Babool	Good
75	Devnagar	Kumtha	Average
76	Sahanpur	Desi Babool, Kumtha, Khair, Chhila, Churel, Katkaranj & Ardu	Good
77	Kachroli	Totlis, Ronj , Desi Babool, Kumtha, Khair & Ber	Good
78	Karwad Jat	Kumtha, Ronj & Neem	Good
79	Peepalda Samel	Desi Babool, Khair, Churel & Ronj	Average
80	Mandana-I	Kumtha & Ronj	Good
81	Rakba Pahad	Kumtha, Khair & Ronj	Average
82	Dhonk ki kui	Kumtha, Khair & Ronj	Poor
83	Kalya Khal MJSA II	Kumtha, & Ronj	Good
84	Kanya Talab	Kumtha, Ber & Ronj	Good
85	Kuchaman	Kumtha, Totlis & Katkaranj	Good
86	Rundiya	Kumtha, Katkaranj & Ronj	Good
87	Rojara	Kumtha & Khair	Good
88	Dholiya	Kumtha	Good
89	Santokpuria	Neem, Katkaranj, Ratanjot, Khair & Ronj	Good
90	Bakhtod	Neem, Katkaranj, Ratanjot, Khair Hawan & Ronj	Good
91	Ghatela	Katkaranj, Ratanjot, Khair & Kumtha	Poor
92	Jhantla C	Not Reported	
93	Janjal (Hamel Mahadev)	Neem, Katkaranj, Ratanjot, Khair Kumtha & Ronj	Excellent
94	Uparthala Jaitaran	Khair, Kumtha, Ratanjot, Ronj & Neem	Average
95	Satimata-B	Khair, Kumtha, Desi Babool & Neem	Good
96	Koyatalai	Kumtha, Desi Babool & Ronj	Average
97	Devpura	Khair, Kumtha, Ronj, Ratanjot & Ardu	Good
98	Kanchan Dham	Not Reported	
99	Khirkhadi	Totlis, Kumtha, Katkaranj, & Ber	Good

S.No	Name of Site	Seed Sown	Status
100	Shilki Dungari	Desi Babool, Kumtha & Chhila	Good
101	Ajeetgarh	Khejri & Kumtha	Average
102	Bhagega I	Not Reported, Moonja were Grown on Earthen Check Dam	
103	Jetpura	Neem, Chhila, Desi Babool, & Kumtha	Good
104	Pahadkala No. 30 Ubari Pani Sabela	Kumtha, Khair & Ronj	Average
105	Devnarayanji	Kumtha, Desi Babool & Ardu	Good
106	Newai pahad kabri khal	Kumtha, Desi Babool & Khair	Poor
107	Rodaji Bawji	Khair, Katkaranj & Ratanjot	Good
108	Jhallara	Kumtha, Katkaranj & Ratanjot	Good
109	Naal mokhi	Khair, Kumtha, Khakhra, Baheda & Mahuwa	Good
110	Banadiya	Neem, Khirani, Khakhra & Ratanjot	Good
111	Amberi	Khair, Neem, Khakhra	Good

4.1.6 Silvi-cultural operations

As a part of maintenance, the site used to be visited on regular basis to keep watching regarding protection aspects. Also, loose stone fencing, ditch fencing & barbed wire fencing being fully effective in controlling the biotic pressure was reported at 34 plantation sites followed by partially effective at 67 plantation sites & at 10 plantation sites the fencing was not at all effective in controlling the biotic pressure. However, hoeing and weeding, cut back (Bair & Juliflora), removal of weeds & removal of dead, dying diseased and decaying trees was reported at 31 plantation sites, whereas post plantation operation such as pruning & thinning was reported at 32 plantation site. As a part of maintenance, casualty replacement of plants was also done for the second and third year at the rate of 10% of total plantation in this site. Mortality in the plantation is replaced in the second and third year by miscellaneous species.

Table 4.20: Maintenance & Other Silvi-cultural operations carried out as per record

S.No	Name of Site	Status of fencing	Hoeing/ Weeding/ cut back/ removal of weeds	Post plantation operations	Casualty Replacement
1	Nand	Fully Effective	Yes	Yes	Totlis
2	Chor Basai	Partially Effective	No	No	Desi Babool, Churel & Ronj
3	Gadh Basai	Partially Effective	No	No	Desi Babool, Churel, Ronj & Ber
4	Dolatpura	Partially Effective	No	No	Shisham, Karanj, Peepal & Semal
5	Gwalda	Partially Effective	No	No	Totlis & Desi Babool
6	Santokpur	Partially Effective	No	No	Desi Babool, Churel, Ronj & Ber
7	Dhindhor	Partially Effective	No	No	Desi Babool, Totlis & Ronj

S.No	Name of Site	Status of fencing	Hoeing/ Weeding/ cut back/ removal of weeds	Post plantation operations	Casualty Replacement
8	Nadoli	Partially Effective	No	No	Desi Babool, Churel, Ronj & Khair
9	Jagmer Jogimal	Partially Effective	Yes	No	Sagwan, Khair & Amla
10	Andeshwar	Not Effective	No	No	Churel, Bamboo & Khair
11	Baseli-b	Fully Effective	Yes	Yes	Neem, Shisham, Khair, Jangal Jalebi & Karanj
12	Borda	Partially Effective	Yes	Yes	Sagwan, Jangal Jalebi, Khair, Churel & Karanj
13	Kadili	Partially Effective	Yes	Yes	Desi Babool, Kesia Shyama & Churel
14	Dabar-D	Fully Effective	Yes	Yes	Desi Babool, Ber, Rpnj & Palash
15	Mundiya B I	Fully Effective	Yes	Yes	Desi Babool, Ber, Khair, Hingot, Neem & Ardu
16	Sukha samli- A	Fully Effective	Yes	Yes	Churel, Jangal Jalebi & Arjun
17	Mundiya Sehjana II	Fully Effective	Yes	Yes	Neem, Karanj, Khair & Ber
18	Kanada	Partially Effective	Yes	Yes	Desi Babool, Mahuwa, Kranj, Khair & Hingot
19	Kusip	Partially Effective	Yes	Yes	Rohida, Khejri Jal, Ber & Totlis
20	Junapatarasar-B	Fully Effective	No	No	Totlis, Rohida, Ber & Kumtha
21	Gafan Talai	Fully Effective	No	No	Totlis, Rohida, Ber & Jal
22	Ghodi Khoj Hathodi	Partially Effective	No	No	Ber, Khair, Churel, Ronj & Desi Babool
23	Saimala	Fully Effective	No	Yes	Ber, Khair, Churel, Baheda & Desi Babool
24	Kharcha ki nadi	Fully Effective	Yes	Yes	Desi Babool,Ber, Khair, Churel, & Baheda
25	Bahadurpura	Partially Effective	Yes	Yes	Shisham & Neem
26	Ladpura	Partially Effective	Yes	Yes	Arjun & Churel
27	Mahajan-D	Partially Effective	No	No	Ber, Khair, Totlis & Khejri
28	Nokha	Partially	No	No	Ber, Totlis & Khejri

S.No	Name of Site	Status of fencing	Hoeing/ Weeding/ cut back/ removal of weeds	Post plantation operations	Casualty Replacement
		Effective			
29	SDS Agneu	Partially Effective	No	No	Ber, Khair, Totlis & Khejri
30	Gopalpura	Not Effective	No	No	Desi Babool, Ber, Jangal Jalebi, & Khejri
31	Maliyon ki jhopdiya	Partially Effective	No	No	Ronj, Neem, Desi Babool & Churel
32	Dholi Chabutri B	Partially Effective	No	No	Desi Babool, Neem, Jangal Jalebi & Churel
33	Topa Dhardhadi-F	Partially Effective	No	No	Desi Babool, Neem, Jangal Jalebi & Churel
34	Hasala-E	Partially Effective	No	No	Desi Babool, Amla, Ber & Churel
35	Siyalkund	Partially Effective	No	No	Desi Babool, Amla, Ber & Churel
36	Tai-B	Partially Effective	No	No	Amaltas, Sitafal, Churel & Ber
37	Jogniyamata Haribadliya	Partially Effective	No	No	Khair, Ber & Churel
38	Nangliya	Fully Effective	No	Yes	Bamboo, Amla, Churel, & Ber
39	Achalpura	Partially Effective	Yes	Yes	Shisham, Totlis & Churel
40	Sonadi	Partially Effective	Yes	Yes	Shisham, Totlis & Churel
41	Fraspura	Partially Effective	Yes	Yes	Shisham, Totlis & Churel
42	Thane Ka Pura-II	Not Effective	No	No	Desi Babool, Ber, Dhok & Khair
43	Dhore Ka Dada	Partially Effective	No	No	Desi Babool, Ronj, Neem, Ber & Churel
44	Meenakhuri	Partially Effective	No	No	Desi Babool, Ronj, Jangal Jalebi & Churel
45	Kala Patpara	Not Effective	No	No	Desi Babool, Ber, Ronj & Khair
46	Palwada	Partially Effective	No	No	Sagwan, Amla & Churel
47	Vankhand Ranijhula S.No. 2 Ananpura	Partially Effective	No	No	Sagwan, Bamboo, Churel & Khirani
48	Charwada Rataghata	Partially Effective	No	No	Shisham, Bamboo, Semal& Siras
49	Bagwara	Partially	No	Yes	Ber, Neem, Totlis,

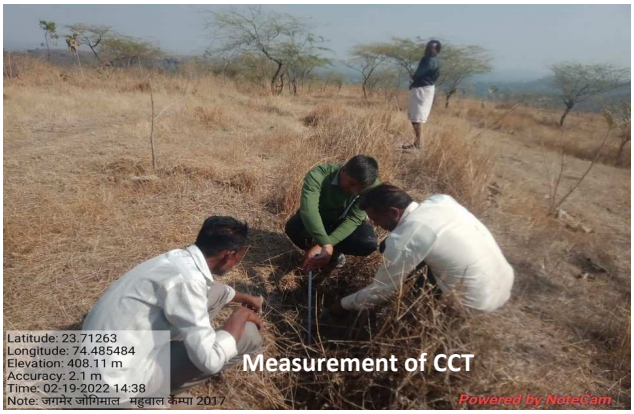
S.No	Name of Site	Status of fencing	Hoeing/ Weeding/ cut back/ removal of weeds	Post plantation operations	Casualty Replacement
		Effective			Churel & Desi Babool
50	Dabla	Fully Effective	No	Yes	Totlis, Churel & Desi Babool
51	Langadiyawas	Partially Effective	Yes	Yes	Khejri, Totlis, Desi Babool, Ronj & Neem
52	Dubali	Partially Effective	No	No	Desi Babool, Churel & Totlis
53	Manoharpur	Fully Effective	Yes	Yes	Ber, Ronj, Totlis, Churel & Desi Babool
54	Mishrawas	Partially Effective	No	No	Desi Babool, Ronj, Churel & Totlis
55	Gudha Buchara	Fully Effective	No	No	Ber, Neem, Totlis, Churel & Desi Babool
56	Dantali	Fully Effective	No	No	Ber, Ronj, Churel & Desi Babool
57	Papad	Partially Effective	Yes	Yes	Shisham, Churel & Totlis
58	Chhod I	Partially Effective	No	No	Ber, Neem, Totlis & Kumtha
59	SDS 20-23 RDJJW Sadrau	Fully Effective	No	No	Rohida, Khejri & Totlis
60	SDS 10-13 RD	Fully Effective	No	No	Rohida, Khejri & Totlis
61	SDS Mandau Barani 13 RD JJW	Fully Effective	No	No	Rohida, Khejri & Totlis
62	SDS 35-38 RDJJWC	Fully Effective	No	No	Rohida, Khejri & Totlis
63	Baretha	Not Effective	No	No	Ber, Ronj, Totlis & Kumtha
64	Siroshi Pahadpura	Partially Effective	No	No	Ber, Totlis, Ronj & Kumtha
65	Veri Datlawas	Partially Effective	No	No	Ber, Totlis, Ronj & Kumtha
66	Sojpur	Partially Effective	Yes	No	Ber, Ronj, Khair & Desi Babool
67	Barubeh	Fully Effective	No	Yes	Desi Babool, Ronj & Churel
68	Chirani II	Fully Effective	No	No	Desi Babool, Ronj, Totlis & Ber
69	Indra colony Kankria	Partially Effective	No	No	Ber, Desi Babool, Ronj & Churel
70	Bagora	Partially Effective	No	No	Ber, Desi Babool, Ronj & Churel
71	Kot	Partially	No	No	Ber, Desi Babool,

S.No	Name of Site	Status of fencing	Hoeing/ Weeding/ cut back/ removal of weeds	Post plantation operations	Casualty Replacement
		Effective			Amla & Churel
72	Kakrana	Fully Effective	No	No	Desi Babool, Ronj, Totlis & Churel
73	Chhapoli III	Partially Effective	No	No	Ber, Desi Babool, Ronj & Churel
74	Chirana	Fully Effective	No	No	Ronj, Amla, Neem, Ber & Churel
75	Devnagar	Partially Effective	Yes	Yes	Totlis
76	Sahanpur	Partially Effective	No	No	Desi Babool, Ronj, Neem & Churel
77	Kachroli	Partially Effective	No	No	Karanj, Desi Babool, Neem & Churel
78	Karwad Jat	Partially Effective	No	No	Ronj, Totlis, Kumtha, Neem & Churel
79	Peepalda Samel	Partially Effective	No	No	Desi Babool, Neem & Churel
80	Mandana-I	Fully Effective	Yes	Yes	Ber, Ronj, Khair & Churel
81	Rakba Pahad	Partially Effective	Yes	Yes	Amla, Ber & Desi Babool
82	Dhonk ki kui	Fully Effective	No	No	Ronj, Amla, Ber & Khair
83	Kalya Khal MJSA II	Not Effective	Yes	No	Desi Babool, Ronj, Neem, Ber & Khair
84	Kanya Talab	Fully Effective	Yes	No	Ronj, Amla, Ber & Desi Babool
85	Kuchaman	Fully Effective	Yes	Yes	Totlis
86	Rundiya	Fully Effective	No	No	Desi Babool, Ronj & Kumtha
87	Rojara	Partially Effective	No	No	Desi Babool, Ronj & Kumtha
88	Dholiya	Partially Effective	No	No	Desi Babool, Ber, Khair, Ronj & Churel
89	Santokpuria	Partially Effective	No	No	Sagwan, Ronj, Churel & Ber
90	Bakhtod	Not Effective	No	No	Sagwan, Neem, Amla & Bamboo
91	Ghatela	Fully Effective	No	No	Bamboo, Amla, Churel, Neem & Ber
92	Jhantla C	Partially Effective	No	No	Amla, Alovera & Amaltas
93	Janjal (Hamel Mahadev)	Partially Effective	No	No	Neem, Bamboo, Churel, Karanj,

S.No	Name of Site	Status of fencing	Hoeing/ Weeding/ cut back/ removal of weeds	Post plantation operations	Casualty Replacement
					Ronj & Ber
94	Uparthala Jaitaran	Partially Effective	No	No	Bamboo, Churel, Khair & Sagwan
95	Satimata-B	Partially Effective	No	No	Ronj, Khair, Ber & Sagwan
96	Koyatalai	Fully Effective	No	No	Churel, Desi Babool, Ronj, Amla & Ber
97	Devpura	Partially Effective	Yes	Yes	Churel, Ber & Desi Babool
98	Kanchan Dham	Partially Effective	No	No	Shisham, Neem, Kumtha & Churel
99	Khirkhadi	Not Effective	No	No	Ber, Khair, Churel & Totlis
100	Shilki Dungari	Partially Effective	No	No	Desi Babool, Totlis & Churel
101	Ajeetgarh	Fully Effective	No	No	Churel, Desi Babool, & Totlis
102	Bhagega I	Not Effective	No	No	Ber, Desi Babool, & Totlis
103	Jetpura	Partially Effective	Yes	Yes	Churel, Ber, Ronj & Desi Babool
104	Pahadkala No. 30 Ubari Pani Sabela	Fully Effective	No	No	Bamboo, Amla, Neem & Karanj
105	Devnarayanji	Fully Effective	Yes	Yes	Churel, Desi Babool, Ber & Neem
106	Newai pahad kabri khal	Not Effective	No	No	Khair
107	Rodaji Bawji	Partially Effective	No	No	Churel, Amla, Ber & Palash
108	Jhallara	Partially Effective	No	No	Churel, Neem, Bamboo & Sagwan
109	Naal mokhi	Partially Effective	No	No	Churel, Amla & Ber
110	Banadiya	Partially Effective	No	No	Churel, Karanj, Bamboo & Sagwan
111	Amberi	Fully Effective	Yes	Yes	Churel, Neem, Bogenvilliya & Gultara

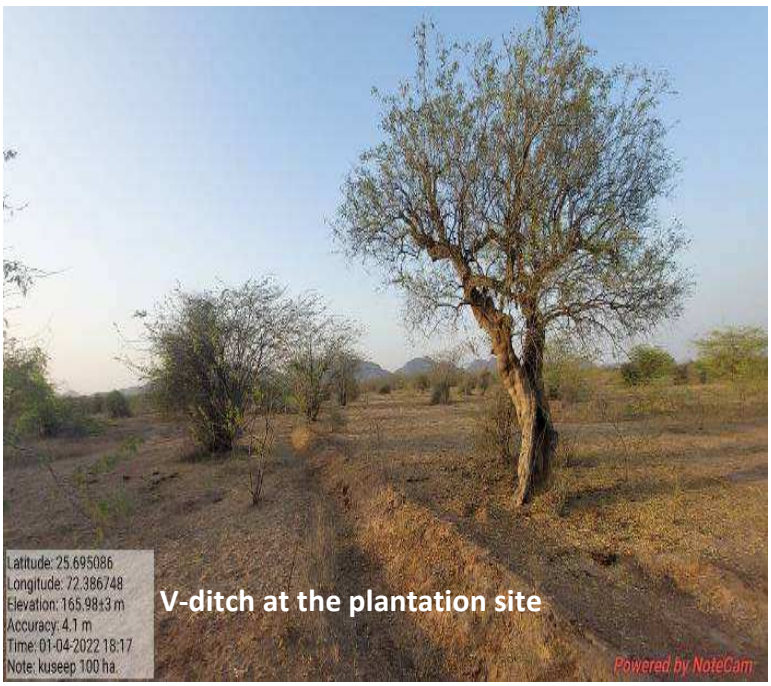
4.1.7 Irrigation/ watering of Plants

It has been reported that there was provision of irrigation/ watering of plants in the canal area in Jaisalmer district and Chattargarh IGNP divisions. However, hoeing and weeding was reported at all the 111 sample sites.



4.1.8 Soil & Moisture Conservation works (SMC Works)

Actvities related to development of Soil & Moisture Conservation structures (SMC) is the key element of CAMPA Fund which is pre-requisite for the afforestation and plantation activities. Various SMC structures were constructed namely, SMC Structures - Anicut type - II & Anicut Type-III, Gabion, Earthen Check dam, PCT, V-ditch, CBD & WHS.



The table given below shows status of SMC structures at the plantation sites.

Continuous Contour trenches were reported at 102 plantation sites, whereas at 09 plantation sites the same was not reported. The length of CCT varies from 120 rmt. (Kachrauli) to 26400 rmt. (Mundiya B I).

V-ditch was reported at 08 plantation sites. The length of V ditch varies from 950 rmt. (Ladpura) to 47000 rmt. (Kadili).

SGT was reported at 10 plantation sites. The length of SGT varies from 150 rmt. (Kachroli) to 7945 rmt. (Kabri Khal).

Deep CCT was reported at 08 plantation sites. The length of Deep CCT varies from 30 rmt. (Kachroli) to 4588 rmt. (Dubali).

Contour Dykes was reported at 04 plantation sites. The length of Contour Dykes varies from 840 rmt. (Nand) to 5000 rmt. (Dolatpura).

Mulching was reported at 04 plantation sites. The length of Mulching varies from 8000 rmt. (Junapatrasar B) to 41905 rmt. (SDS 35-38 RD JJW C).

PCT/ Nadi was reported at 16 plantation sites. The area of PCT/ Nadi varies from 159 cu.m. (Nand) to 5774 cu.m. (Mishrawas).

Farm pond/ WHS were reported at 7 plantation sites. LSCD was reported at 36 plantation sites. The area of LSCD varies from 75 cu.m. (Bagwara) to 3040 cu.m (Peepalda Samel).

Earthen Checkdam was reported at 36 plantation sites. The area of earthen checkdam varies from 58.5 cu.m. (Kachroli) to 807.77 cu.m (Karwad Jat). The status of SMC structures at the plantation sites were detailed in the table here under.

Table 4.21: Status of SMC Structures at the Plantation sites

S.No	Name of Site	SMC Structures									
		CCT (Rmt.)	V-Ditch (Rmt)	SGT (Rmt.)	Deep CCT (Rmt.)	Contour Dykes (Rmt.)	Mulching (Rmt)	PCT/Nadi (Cu.m)	Farm Pond (Cu.m)	Loose stone Checkdam (Cu.m)	Earthen checkdams (Cu.m)
1	Nand	3200		4800	1000	840		159		400	
2	Chor Basai	7000									2390
3	Gadh Basai	12000								200	1750
4	Dolatpura	10000				5000				500	
5	Gwalda	15000									2600
6	Santokpur	7000								160	
7	Dhindhor	14850								670	
8	Nadoli	3400						1760			
9	Jagmer Jogimal	15000									
10	Andeshwar	9500									
11	Baseli-b	2000	7000								
12	Borda	39000									
13	Kadili	5000	47000							1404	400
14	Dabar-D	2000	9000								
15	Mundiya B I	26400									2025
16	Sukha samli- A	11000							2 (no.)		
17	Mundiya Sehjana II	12750							383.67		
18	Kanada	8800								330	1000
19	Kusip		15000						4 WHS		
20	Junapatarasar-B	12700					8000		1 Tanka	610	489.51
21	Gafan Talai	90000 Furrow	12162						1 Tanka		
22	Ghodi Khoj Hathodi	11500		6150							2500
23	Saimala	15000									
24	Kharcha ki nadi	20000									

Table 4.21: Status of SMC Structures at the Plantation sites

S.No	Name of Site	SMC Structures									
		CCT (Rmt.)	V-Ditch (Rmt)	SGT (Rmt.)	Deep CCT (Rmt.)	Contour Dykes (Rmt.)	Mulching (Rmt)	PCT/Nadi (Cu.m)	Farm Pond (Cu.m)	Loose stone Checkdam (Cu.m)	Earthen checkdams (Cu.m)
25	Bahadurpura	8000									
26	Ladpura	15000	950								
27	Mahajan-D								102.375 whs		
28	Nokha	25000 Furrow							1 whs		
29	SDS Agneu	20000							160.056		
30	Gopalpura	11000									
31	Maliyon ki jhopdiya	30000									
32	Dholi Chabutri B	10000									
33	Topa Dhardhadi-F	4000		5000	1000						1014.99
34	Hasala-E	20000						759			
35	Siyalkund	5700	550 Ring trench								
36	Tai-B	6000								148.18	
37	Jogniyamata Haribadliya	7000								106	
38	Nangliya	10000								200	
39	Achalpura	12600								248.24	4867.27
40	Sonadi	10000									4514
41	Fraspura	3849								508	10279.68
42	Thane Ka Pura-II	20000									3200
43	Dhore Ka Dada	10000								350	
44	Meenakhuri	20000						2000		455	830
45	Kala Patpara	Yes									
46	Palwada										

Table 4.21: Status of SMC Structures at the Plantation sites

S.No	Name of Site	SMC Structures									
		CCT (Rmt.)	V-Ditch (Rmt)	SGT (Rmt.)	Deep CCT (Rmt.)	Contour Dykes (Rmt.)	Mulching (Rmt)	PCT/Nadi (Cu.m)	Farm Pond (Cu.m)	Loose stone Checkdam (Cu.m)	Earthen checkdams (Cu.m)
47	Vankhand Ranijhula S.No. 2 Ananpura	10000								230	
48	Charwada Rataghata	10000									2 (no.)
49	Bagwara	13500						1458.28		75.53	5340.59
50	Dabla	6500									
51	Langadiyawas	300									167.1
52	Dubali	3521			4588						6185
53	Manoharpur	20000								811	3275
54	Mishrawas	20000						5774			4338
55	Gudha Buchara	20000						716			5432
56	Dantali	700									
57	Papad	20000								225	2500
58	Chhod I	11304	54000					612			
59	SDS 20-23 RDJJW Sadrau						28465				
60	SDS 10-13 RD	25353									
61	SDS Mandau Barani 13 RD JJW						20360				
62	SDS 35-38 RDJJWC						41905				
63	Baretha	2140						1836			1420
64	Siroshi Pahadpura	7500									1500
65	Veri Datlawas	3000									
66	Sojpur	7500									1500
67	Barubeh	3000									
68	Chirani II	15000						600			
69	Indra colony Kankria	10790									

Table 4.21: Status of SMC Structures at the Plantation sites

S.No	Name of Site	SMC Structures									
		CCT (Rmt.)	V-Ditch (Rmt)	SGT (Rmt.)	Deep CCT (Rmt.)	Contour Dykes (Rmt.)	Mulching (Rmt)	PCT/Nadi (Cu.m)	Farm Pond (Cu.m)	Loose stone Checkdam (Cu.m)	Earthen checkdams (Cu.m)
70	Bagora	10000								400	
71	Kot	2700								565	
72	Kakrana	3350									2132
73	Chhapoli III	6910									
74	Chirana	8000				1500				612.92	
75	Devnagar	4500						1117.8 MPT			940
76	Sahanpur	11350									
77	Kachroli	120		150	30						58.5
78	Karwad Jat	2600									807.77
79	Peepalda Samel	7000								3040	
80	Mandana-I	10000									
81	Rakba Pahad	10000									
82	Dhonk ki kui	10920									
83	Kalya Khal MJSA II	20000									1550
84	Kanya Talab	18000									
85	Kuchaman	4000		5000	1000			519		111	4005
86	Rundiya	9897						952			
87	Rojara	20000									
88	Dholiya	20000								500	
89	Santokpuria	20000						368			
90	Bakhtod	10000								176	
91	Ghatela	4000									
92	Jhantla C									156.46	
93	Janjal (Hamel Mahadev)	4000		4000	1000						

Table 4.21: Status of SMC Structures at the Plantation sites

S.No	Name of Site	SMC Structures									
		CCT (Rmt.)	V-Ditch (Rmt)	SGT (Rmt.)	Deep CCT (Rmt.)	Contour Dykes (Rmt.)	Mulching (Rmt)	PCT/Nadi (Cu.m)	Farm Pond (Cu.m)	Loose stone Checkdam (Cu.m)	Earthen checkdams (Cu.m)
94	Uparthala Jaitaran	2000								305	
95	Satimata-B	4000		7220							
96	Koyatalai	10000								225	
97	Devpura	7500									
98	Kanchan Dham										
99	Khirkhadi	10000									3000
100	Shilki Dungari	2000									1500
101	Ajeetgarh	8000						2300.85			2078
102	Bhagega I										572.80
103	Jetpura	16415								1015	
104	Pahadkala No. 30 Ubari Pani Sabela	990		900	1000					1400	
105	Devnarayanji	12000									
106	Newai pahad kabri khal	4400		7945				5275.28			4753.62
107	Rodaji Bawji	16800								437	
108	Jhallara	8265								Yes	
109	Naal mokhi	3200		3700	800					318	
110	Banadiya	38276				1435				1136	
111	Amberi	8000					18 Gabion			533	

Chapter - 5

Evaluation of Assets – Range Office cum residence building, Boundary wall, Pillars & Nurseries

5.1 Report of Evaluation of asset created under CAMPA

Under the CAMPA scheme, in addition to plantations various support activities have also been carried out for management of wildlife, betterment, protection and development of forests, enhancement of forest cover and infrastructure development.

The sample sites of works and assets created under CAMPA were selected at APCCF (M&E), Office of PCCF (HoFF) level amongst the works/ assets created during the period 2017-18 , 2018-19 and 2019-20. After reaching the sample sites selected work, photography along with the GPS coordinates have been carried out for 73 Pakki diwar 4 ft. of 32 forest divisions, 48 Pakki diwar 6 ft. of 17 forest divisions, 32 pillars of 22 forest divisions, 17 Forest Chowkis of 17 forest divisions, 12 Rescue Centres of 10 divisions, 18 Anicuts II & III of 08 forest divisions, 05 roadside plantations of 04 forest divisions, 04 range office cum residence of 04 forest divisions & 09 nursery of 09 forest divisions. All sites have been visited and GPS enabled photos have been taken for all along with the condition of sites also. In total, 218 assets were evaluated by the third party team. Various aspects have been checked such as documents during development of asset, maintenance of records during evaluation. Present condition of assets and its uses were also recorded.

Findings of the Evaluation Team

The details of the report of evaluation of assets created under CAMPA of 51 Forest Divisions are given in table 5.1.

Table 5.1: Evaluation of Assets created under CAMPA

1	**Name of Division : Ajmer**			
	Name of Range	**Name of Structure**	**Site**	**Year of Construction**
	Ajmer	Rescue Centre	Pushkar	2017-18
	Ajmer	Pakki Diwar 4 ft (480m)	Madar Pahad forest area	2018-19
	Kishangarh	Pakki Diwar 4 ft (450m)	Samariya Harda	2019-20
	Beawar	Forest Chowki	Van Rakshak Chowki, Naka Beawar	2019-20
	Kishangarh	Pillars (24 Nos.)	Dangra	2019-20
2	**Name of Division : Alwar**			
	Tijara	Pakki Diwar 4 ft (500m)	Kahrali	2017-18
3	**Name of Division : Baran**			
	Atru	Pillars (90 Nos.)	Govindpura Bid Ghas	2018-19
	Kisanganj	Pillars (Nos.50)	Karvari	2019-20

	Kelwara	Roadside plantation	Kelwara Se Uni Pahadi	2019-20
4	**Name of Division : Barmer**			
	Barmer	Pakki Diwar 4 Ft.(475m)	Barmer Hilli Kua no. 3	2017-18
	Dhorimanna	Rescue Centre	Dhorimana	2017-18
	Chouhatan	Pakki Diwar 4 Ft.(340m)	Chouhatan Nursery	2018-19
	Sivana	Pakki Diwar 4 ft(500m)	Kajri Samdari	2019-20
5	**Name of Division : Banswara**			
	Kusalgarh	Pakki Diwar 4 ft(1320m)	Amliyamal	2017-18
	Ghatol	Pakki Diwar 4 ft(500m)	Jagmer Jogimal	2017-18
	Banswara	Rescue Centre	Verteniary hospital	2017-18
	Bagidora	Pakki Diwar 4 ft(500m)	Nandormata	2018-19
	Bagidora	Boundary pillars (50 Nos.)	Rakho	2018-19
	Banswara	Pakki Diwar 4 ft(500m)	Sawaimata Bhapor	2019-20
	Garhi	Boundary pillars (1000 Nos.)	Amjiya	2019-20
6	**Name of Division : Bharatpur**			
	Deeg	Pakki Diwar 4 ft(3040 m)	Gharwari Se Chak Gharwari	2017-18
	Kaman	Pakki Diwar 4 ft(450m)	Swarn Shanti Parwat Sunhera	2018-19
	Bayana	Pakki Diwar 4 ft(450m)	Khareri Bagrain ke Pas Jogipura(45	2018-19
	Bayana	Boundary Pillars (Nos.100)	Bayana Vankhand Samraya	2018-19
	Kaman	Pakki Diwar 4 ft(250m)	Tyra B	2019-20
	Bayana	Nursery	Bayana	2019-20
7	**Name of Division : Bharatpur WL**			
	Bandh Baretha	Pakki Diwar 6 ft (2500m)	Naka Kot	2018-19
	Bandh Baretha	Anicut Type III	Sukha Sheela	2018-19
	Bandh Baretha	Pakki Diwar 6 ft (500m)	Tarbeejpur	2019-20
	Bandh Baretha	Forest Chowki	Van Rakshak Chowki Kot	2019-20
8	**Name of Division : Bhilwara**			
	Jahazpur	Pakki Diwar 4 ft (500m)	Jeev Rekha	2017-18
	Mandalgarh	Pakki Diwar 4 ft (500m)	Bijlimariya Handpump ke pas	2019-20
9	**Name of Division : Bikaner IGNP II**			
	29 RD Bhoorasar	Pakki Diwar 4 ft (500m)	Bikendri	2017-18
10	**Name of Division : Bikaner WL**			
	Jodbeed Gadhwala	Pakki Diwar 6	Jodbeed Gadhwala	2017-18

		ft(1940)	Conservation Reserve Kotri	
	Jodbeed Gadhwala	Forest Chowki	Jodbeed Gadhwala	2019-20
11	**Name of Division : Bundi**			
	Dabi	Pillars (Nos.100)	Guwar	2018-19
	Bundi	Pakki Diwar 4 ft (500 m)	Talab Gaon Vankhand Borkhandi	2019-20
	Dabi	Pakki Diwar 4 ft (320m)	Kheda Vankhand Dasaaliya B	2019-20
	Bundi	Forest Chowki	Gudhanathawat	2019-20
12	**Name of Division : Chhattargarh I**			
	Beriyawali	Forest Chowki	Beriyawali	2018-19
13	**Name of Division : Chhattargarh**			
	Beriawali	Pillars(Nos.100)	21KJD	2019-20
14	**Name of Division : Chittorgarh WL**			
	Dhariyawad	Pakki Diwar 6 ft (600m)	Dabela	2017-18
	Bassi	Pakki Diwar 6 ft(100m)	Javadiya Juna	2018-19
	Badi Sadri	Pakki Diwar 6 ft(280m)	Kankariya Chorh	2019-20
	Badi Sadri	Forest Chowki	Badi Sadri	2019-20
	Badi Sadri	Nursery	Jakham	2019-20
15	**Name of Division : Chittorgarh**			
	Vijaypur	Pakki Diwar 4 ft (600m	Vijaypur	2017-18
	Nimbaheda	Pakki Diwar 4 ft (500m)	Charliya	2017-18
	Kapasan	Pakki Diwar 4 ft (55m)	Jojaro ka kheda	2018-19
	Nimbaheda	Forest Chowki	Arnoda	2018-19
	Nimbaheda	Boundary Pillars (Nos.60)	Kotmagra	2018-19
	Rawatbhata	Pakki Diwar 4 ft (250m)	Khedli	2019-20
	Javda	Roadside plantation	Rajpura to Sopuriya	2019-20
	Borav	Roadside plantation	Meghniwas to Sanga ki badi	2019-20
	Rawatbhata	Nursery	Nursery Eklingpura	2019-20
16	**Name of Division : Churu**			
	Rajgarh	Pakki Diwar 4 ft (500m)	Vankhand Sankhu Part B	2017-18
	Sujangarh	Pakki Diwar 4 ft (464 m)	Gopalpura 'A' Van shetra	2019-20
17	**Name of Division : Dausa**			
	Dausa	Pakki Diwar 4 ft (500m)	Thumadi	2018-19
	Mahuwa	Pakki Diwar 4 ft(460m)	Samaspur	2018-19
	Mahuwa	Pillar Nos.25)	Patoli Gangwana	2018-19
18	**Name of Division : Dholpur**			

	Dholpur	Pakki Diwar 4 ft (500m)	Near to Government ITI	2017-18
	Dholpur	Pillars (Nos.62)	Bhurakheda A	2018-19
	Badi	Pakki Diwar 4 ft (500m)	Sikara	2019-20
19	**Name of Division : Dungarpur**			
	Bichiwara	Range office cum residence	Bichiwara	2017-18
	Aantri	Pakki Diwar 4 ft (400m)	Naramangra	2018-19
	Aantri	Boundary Pillars (Nos.9)	Beedlalgari	2018-19
	Aantri	Pakki Diwar 4 ft(200m)	Naramangra	2019-20
	Aaspur	Boundary Pillars (No.25)	Vankhand Kyavadi	2019-20
20	**Name of Division : Ganganagar**			
	Anoopgarh	Pakki Diwar 4 ft (370m)	Nursery Banda	2018-19
	Biradhwal	Boundary Pillars (No.100)	Biradhwal	2018-19
	Riasinghnagar	Rescue Centre	Riasinghnagar	2019-20
21	**Name of Division : Hanumangarh**			
	Nohar	Rescue Centre	Range Campus	2017-18
	Rawatsar	Pakki Diwar 4 ft(200m)	Rawatsar Pallu	2017-18
	Rawatsar	Pillars(Nos.19)	1 JBD	2018-19
	Rawatsar	Pakki Diwar 4 ft(300m)	BP 29 DWD	2019-20
	Pilibanga	Rescue Centre	Rescue Centre, Pilibanga	2019-20
	Rawatsar	Pillars(Nos.17)	1 JBD, Hardaswali	2019-20
	Rawatsar	Pillars(Nos.20)	Sirasar	2019-20
22	**Name of Division : Jaipur WL**			
	Jamua Ramgarh	Pakki Diwar 6 ft (389m)	Deepola	2017-18
	Jamua Ramgarh	Pakki Diwar 6 ft(300m)	Booj	2018-19
	Raisar	Pakki Diwar 6 ft (460m)	Mehangi	2019-20
	Ajabgarh	Pakki Diwar 6 ft (460m)	Narayani Petrol pump se Safeda ka Bag Naka Gola Ka Bas	2019-20
23	**Name of Division : Jaipur North**			
	Achrol	Pakki Diwar 4 ft (200m)	Dheerawas	2017-18
	Shahpura	Pakki Diwar 6 ft (500m)	Sanjay Van	2017-18
	Chomu	Pakki Diwar 4 ft (200m)	Jatiji Ka temple	2018-19
	Paota	Pakki Diwar 4 ft(400m)	Beelwari	2018-19
	Chomu	Pakki Diwar 4 (85m)	Samod Van Khand	2019-20

	Paota	Pakki Diwar 4 ft (200m)	Papdi Van Khand Badi line 43 A	2019-20
	Chomu	Nursery	Nursey Hadota	2019-20
24	**Name of Division : Jaipur Zoo**			
	Jaipur Pradeshik	Pakki Diwar 4 ft (248m)	Ballupura mode to ILD	2017-18
	Office campus	Forest Chowki	Jaipur Zoo	2017-18
	Jaipur Pradeshik	Pakki Diwar 6 ft (185m)	Kusth Ashram	2018-19
	Jaipur Pradeshik	Pakki Diwar 6 ft (47m)	Jaisinghpura khor	2018-19
	Jaipur Pradeshik	Pakki Diwar 6 ft (320m)	Amargarh Shakti Colony to nahar singh baba road	2018-19
	Nahargarh Biological Park Jaipur	Pakki Diwar 6 ft (25m)	Near Pappu Ghar	2019-20
	Jaipur Pradeshik	Pakki Diwar 6 ft (22m)	Rishi Gallav nagar	2019-20
	Jaipur Pradeshik	Pakki Diwar 6 ft (1000m)	Muhana	2017-18
25	**Name of Division : DCF Jaipur**			
	Amer	Pakki Diwar 4 ft(500m)S	Vijay Nagar-II	2017-18
	Amer	Pakki Diwar 4 ft(130m)	Gopali Neendar	2018-19
	Amer	Pakki Diwar 4 ft(200m)	Sarwa Mod Delhi Byepass	2019-20
26	**Name of Division :Jalore**			
	Jalore	Pakki Diwar 4 ft(500m)	Hateemtai Jod	2017-18
	Jaswantpura	Forest Chowki	Sundhamata	2017-18
	Jalore	Pakki Diwar 4 ft(250m)	Nursery Sayla	2018-19
	Jalore	Pakki Diwar 4 ft(500m)	Keswara A	2019-20
27	**Name of Division :Jhalawar**			
	Jhalawar	Pakki Diwar 4 ft(1000m)	Lohiyajhir	2017-18
	Jhalawar	Rescue Centre	Gindaur	2017-18
	Manoharthana	Boundary Pillar(Nos.43)	Manoharthana	2018-19
	Jhalawar	Nursery	Jhir	2019-20
28	**Name of Division :Jhunjhunu**			
	Jhunjhunu	Pakki Diwar 4 ft (2250m)	Beed Jhunjhunu	2017-18
	Udaipurwati	Anicut Type II	Nadi Nirman (PT) Unchha Papada Nala	2019-20
	Nawalgarh	Anicut Type II	Nadi Nirman Rampura	2019-20
	Jhunjhunu	Anicut Type III	Nari nirman near Bijli pole-4	2019-20
	Jhunjhunu	Forest Chowki	Beed Jhunjhunu	2019-20
29	**Name of Division :Jodhpur WL**			

	Van Jeev Jodhpur	Pakki Diwar 6 ft(1500m)	Machia Van Khand	2017-18
	Machia	Pakki Diwar 6 ft(1275m)	Machia Van Khand	2018-19
30	**Name of Division :Jaisalmer WL**			
	Van Jeev Jaisalmer	Forest Chowki	RKVY Chowki Sudasari	2018-19
31	**Name of Division : DDPJaisalmer**			
	Lathi	Rescue Ward	Nursery Lathi	2018-19
	Dabla	Forest Chowki	Van Rakshak Chowki Unda	2019-20
	Pokaran	Range office cum Residence	Pokaran	2019-20
	Dabla	Roadside plantation	NH 15 to Basanpeer South	2019-20
32	**Name of Division : Jaisalmer IGNP II**			
	Nachna	Pillars(Nos.50)	Chak 7AWD & Nachna Barani	2018-19
33	**Name of Division : Karauli**			
	Masalpur	Pakki Diwar 4 ft(500m)	Suar wala se Kadere wala jharna Vankhand Gubreda	2017-18
	Karauli	Pakki Diwar 4 ft(500m)	Pustakalaya se Tal ke Nale ke Chor tak	2018-19
	Karauli	Pakki Diwar 4 ft(500m)	Kalyani ki Pator se Dhaypura tal tak	2019-20
	Masalpur	Pillar (Nos.34)	Goder	2019-20
	Gudhachandraji	Pillar (Nos.25)	Mora Dunger no. 10A	2019-20
34	**Name of Division : RTR II Karauli**			
	Nainiyaki	Pakki Diwar 6 ft(500m)	Gorehar	2017-18
	Mandrayal	Pakki Diwar 6 ft(500m)	Bhumia ka sthan, Doylepur	2017-18
	Kaila devi	Rescue Centre	Karauli	2017-18
	Kaila devi	Pakki Diwar 6 ft(500m)	Cheer ki Narauli	2018-19
	Nainiyaki	Pakki Diwar 6 ft(500m)	Guvadi C	2018-19
	Nainiyaki	Pillar (No.1)	Dangra Patar/ Baler	2018-19
	Karanpur	Pakki Diwar 6 ft(500m)	Karanpur Torke II	2019-20
	Nainiyaki	Anicut Type III	Gaupat Type II	2019-20
	Kaila devi	Rescue Centre		2019-20
35	**Name of Division : Kota**			
	Ladpura	Pakki Diwar 4 Ft.(500m)	NH 12 Jhalawar road plantation Retiya II Nala to Suryanagar	2017-18
	Ladpura	Pakki Diwar 4 Ft.(55m)	Purana Bhadana	2018-19
36	**Name of Division : Kota WL**			
	Bhainsroadgarh	Pakki Diwar 6 ft(600m)	Gram Padajhar Saddledam	2017-18
	Ramgarh WL	Pakki Diwar 6	Rameshwar Mahadev	2018-19

		ft(500m)	Aakoda road	
	Shergarh	Pakki Diwar 6 ft(2570m)	Barapati Se Badora	2019-20
	Bhainsrorgarh	Anicut Type II	Dand ki khal Jhunjhala	2019-20
	Ramgarh Bundi	Anicut Type III	Guman Bavri Khal	2019-20
	Kota Zoo	Rescue Centre	Kota Zoo	2019-20
37	**Name of Division : Kota MNP**			
	Gagaron	Forest Chowki	Rajpura	2017-18
	Borawas	Range office cum residence	Visthapan Mandal Office	2018-19
	Kolipura	Anicut III	Sambhar Leva	2018-19
	Jawahar Sagar	Pakki Diwar 6 Ft.(1500m)	Patti Khan ke pas	2019-20
38	**Name of Division : Nagaur**			
	Parbatsar	Pakki Diwar 4 ft(385m)	Manglana Makrana	2017-18
	Merta	Rescue ward	Range Office Merta Campus	2018-19
	Kuchaman	Pakki Diwar 4 ft(443 m)	Kabara Ka Naka, West area, Kuchaman 'A'	2019-20
39	**Name of Division : WL Mount Abu**			
	Anadara	Pakki Diwar 6 ft(500 m)	Telpi to Patolia	2018-19
	Taleti	Pakki Diwar 6 ft(500 m)	Reshma Devi Ke Ghar se Phoolabai Ka Khera	2019-20
	Taleti	Anicut Type II	Vagnala	2019-20
	Abu Parwat	Anicut Type III	Aza Mata	2019-20
40	**Name of Division : Rajsamand**			
	Nathdwara	Pakki Diwar 4 ft(350)	Ganesh Tekri near temple Circle Part -B	2017-18
41	**Name of Division : Rajsamand WL**			
	Nathdwara	Pakki Diwar 4 ft(1350)	Bandariya Magra Nathdwara	2018-19
	Sadri	Anicut II	Ruparmata Bijapur	2018-19
	Sadri	Anicut III	Thakardi Bijapur	2018-19
	Desuri	Pakki Diwar 4 ft(1000)	GopelaSumer	2019-20
	Bheem	Anicut II	Borba	2019-20
	Devgarh	Anicut III	Goram ghat	2019-20
	Bheem	Range office cum residence	Bheem	2019-20
	Kumbhalgarh	Boundary pillars Nos.200)	Bagor Part C	2019-20
42	**Name of Division : Sariska Tiger Project**			
	Alwar Buffer	Pakki Diwar 6 ft(100m)	Gorakhnath Ashram to Military Area	2017-18
	Akbarpur	Pakki Diwar 6 ft(400m)	Chawal Pauz to Unda Nalla	2017-18
	Sariska	Pakki Diwar 6 ft(475m)	Vankhand Raipurabal Pathan ki bani Se Pabudan ka Bandha	2017-18
	Reception Sariska	Pakki Diwar 6	Sariska Parishar	2017-18

		ft(163m)	boundary wall	
	Tehala	Pakki Diwar 6 ft(200m)	Ghevar Chowki ke pas	2018-19
	Akbarpur	Pakki Diwar 6 ft(1197m)	Chhela Anicut Kalikhol	2018-19
	Sariska	Pakki Diwar 6 ft(350m)	Burja Kharifa B	2019-20
	Tehala	Pakki Diwar 6 ft(500m)	Boretha	2019-20
	Alwar Buffer	Pakki Diwar 6 ft(500m)	Nidani B	2019-20
43	**Name of Division : Sikar**			
	Danta	Pakki Diwar 4 ft(50m)	Nimbera Tambakupura	2017-18
	Patan	Roadside Plantation	Ladikabas Sanwalpura Tavran	2017-18
	Neem Ka Thana	Pakki Diwar 4 ft(240m)	Raipur Jagir	2017-18
	Shrimadhopur	Pakki Diwar 4 ft(300m)	Khiroti (Burja ki dhani)	2018-19
	Patan	Boundary pillars(Nos.15)	Raila	2018-19
	Danta	Pakki Diwar 4 ft(100m)	Khatiwas	2019-20
	Sikar	Pakki Diwar 6 ft(1000m)	Sakambari Conservation (Khori Brahman)	2019-20
	Sikar	Boundary pillars(Nos.10)	Antari	2019-20
	Patan	Boundary pillars(Nos.8)	Van khand Patan	2019-20
	Shrimadhopur	Nursery	Reengas	2019-20
44	**Name of Division : Sirohi**			
	Pindwara	Boundary pillars(Nos.23)	Piece rate Wages Pranali, Ghasbeed	2017-18
	Pindwara	Pakki Diwar 4 ft(500m)	Ghasbeed Pindwara Nichli Odan	2018-19
	Pindwara	Pakki Diwar 4 ft(600m)	Dharla Viroli Ghasbeed	2019-20
	Pindwara	Boundary pillars(Nos.53)	Dharla Viroli Vankhand	2019-20
	Sirohi	Nursery	Arathwara	2019-20
45	**Name of Division : Sawai Madhopur**			
	Sawai Madhopur	Pakki Diwar 4 ft(325m)	Bhagwatgarh	2017-18
	Gangapur City	Pakki Diwar 4 ft(500m)	Sintholi	2018-19
	Bonli	Pakki Diwar 4 ft(580m)	Bonli Campus	2019-20
	Gangapur City	Boundary pillars(Nos.15)	Narayanpur Tatvada Main	2019-20
46	**Name of Division : RTR I Sawai Madhopur**			
	Falodi	Pakki Diwar 6 ft (500m)	Seldar Nalla se Neemli Khurd	2017-18

	Falodi	Forest Chowki	Bhairupura Tiraha Vankhand Chowki	2017-18
	Sawai Madhopur	Pakki Diwar 6 ft (763m)	Mayapur Ki Dungari se Bandha Mansarovar	2018-19
	Falodi	Pakki Diwar 6 ft (235m)	Handpump se Pani ke Khel tak Bhatpura-I	2018-19
	Khandar	Pakki Diwar 6 ft (235m)	Banpur	2018-19
	Talara	Pakki Diwar 6 ft	Nadi Baloli Se Heeraman Baba Harkesh Gujar Ke Samne tak	2018-19
	Kundera	Anicut Type II	Bhadlao Dwar ke pas	2018-19
	Talara	Anicut Type III	Sangam nai range ke pas	2018-19
	Indragarh	Anicut Type II	Peer ji Nala naka Anicut II	2019-20
	Sawai Madhopur	Anicut Type III	Gular ka Nala	2019-20
47	**Name of Division : Chambal WL Ghadiyal**			
	Mandrayal	Pakki Diwar 6 ft(500m)	Sahed	2017-18
	Keshavraipatan	Forest Chowki	Bandhakhedali	2018-19
48	**Name of Division : Tonk**			
	Tonk	Pakki Diwar 4 ft(273)	Narayan Mata Mandir	2017-18
	Newai	Pakki Diwar, 4ft.(500m)	Kucchi Basti se Narayan Kua	2018-19
	Malpura	Forest Chowki	Van Rakshak Chowki Nursery Tordi	2018-19
	Newai	Pakki Diwar, 4ft.(500m)	Vankhand Nohta (Chowki ke pas)	2019-20
	Newai	Nursery	Sanjayvan	2019-20
49	**Name of Division : Udaipur North**			
	Udaipur East	Pakki Diwar 4 ft(1500m)	Kaler	2017-18
	Udaipur East	Pakki Diwar 4 ft(260m)	Segara	2019-20
	Kukawas	Nursery	Kukawas	2019-20
50	**Name of Division : Udaipur**			
	Udaipur West	Pakki Diwar 4 ft (1800m)	Hoda	2017-18
	Kherwara	Pillar (Nos.25)	Raiyana	2018-19
	Kurbad	Pakki Diwar 4 ft (600m)	Vasu	2019-20
	Sarada	Pillar (Nos.100)	Baluwa Dhan ka wara	2019-20
51	**Name of Division : Udaipur WL**			
	Jaisamand	Pakki Diwar 6 ft(150m)	Jaisamand station to Dhimda Phatak	2018-19
	Panarva	Forest Chowki	Birothi	2018-19
	Panarva	Pillar (Nos.50)	Vankhand Ambasa	2019-20

Ranking of Assets Evaluated

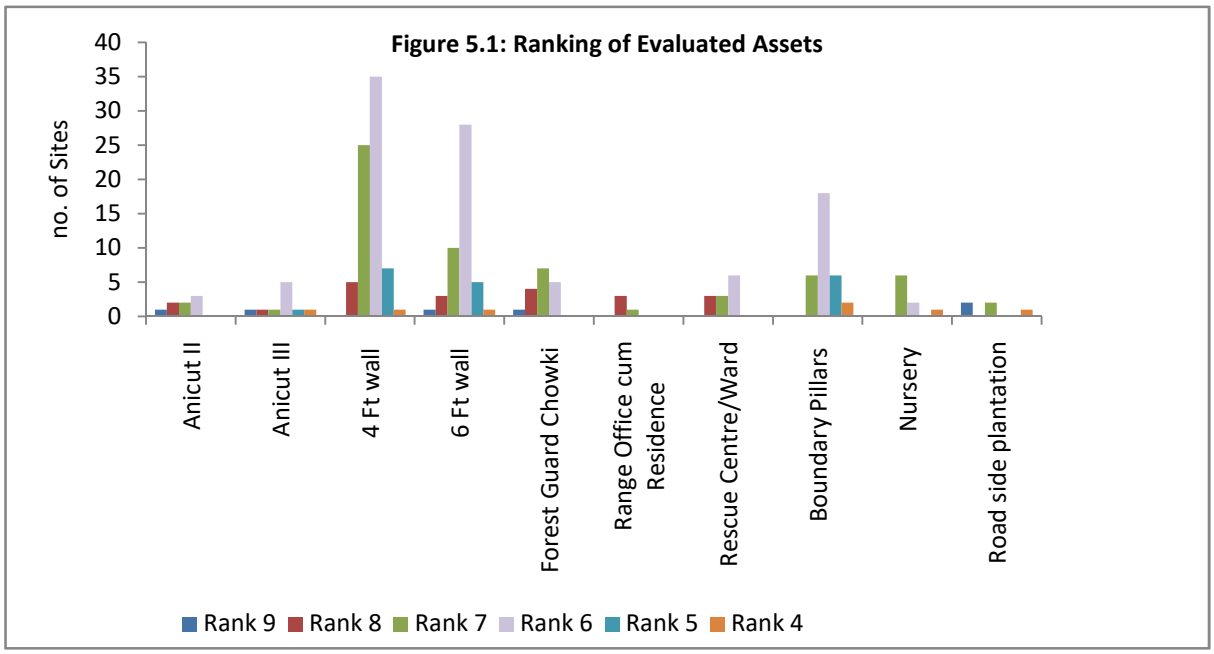


Table 5.2: Ranking of Evaluated Assets

Asset- wise No. of sites having ranking between 9 and 4							
Assets	**9**	**8**	**7**	**6**	**5**	**4**	**Total**
Anicut II	1	2	2	3			8
Anicut III	1	1	1	5	1	1	10
4 Ft wall		5	25	35	7	1	73
6 Ft wall	1	3	10	28	5	1	48
Forest Guard Chowki	1	4	7	5			17
Range Office cum Residence		3	1				4
Rescue Centre/Ward		3	3	6			12
Boundary Pillars			6	18	6	2	32
Nursery			6	2		1	9
Road side plantation	2		2			1	5
Total	**6**	**21**	**63**	**102**	**19**	**7**	**218**

Out of total selected & evaluated 218 sites of assets of 137 ranges of 51 divisions, the ranking (table 5.2 & figure 5.1) was:

- Excellent (9) of 06 sites
- Very good (8) of 21 sites
- Good (7) of 63 sites
- Average (6) of 102 sites
- Poor (5) of 19 sites
- Very poor (4) of 7 sites

5.2 Assessment of Boundary Wall (Pakki Diwar 4 ft.)

The details of the report of evaluation of Pakki diwar 4 ft. created under CAMPA of 32 Forest Divisions are given in table 5.3.

Table 5.3: Evaluation of Pakki Diwar 4 Ft.

Sl. No.	Name of Divisions	Items	Name of the site	Quality of Construction	Rating of quality of construction	Crack in the structre	Rating of settlement in structure	Quality of workmanship	Rating of quality of workmanship
1.	Ajmer	Pakki Diwar 4 ft	Madar Pahar forest area	Average	6	No	No	Average	6
2.	Ajmer	Pakki Diwar 4 ft	Samariya Harda	Average	6	No	No	Average	6
3.	Alwar	Pakki Diwar 4 ft	Kahrali	Average	5	No	No	Average	5
4.	Banswara	Pakki Diwar 4 ft	Amliyamal	Good	7	No	No	Good	7
5.	Banswara	Pakki Diwar 4 ft	Jagmer Jogimal	Good	7	No	No	Good	7
6.	Banswara	Pakki Diwar 4 ft	Nandormata	Good	7	No	No	Good	7
7.	Banswara	Pakki Diwar 4 ft	Sawaimata, Bhapor	Good	7	No	No	Good	7
8.	Barmer	Pakki diwar 4 Ft.	Barmer Hilly Kua no.3	Average	5	Yes	Yes	Average	5
9.	Barmer	Pakki diwar 4 Ft.	Chouhatan Nursery	Good	7	No	No	Good	8
10.	Barmer	Pakki diwar 4 Ft.	Kajri Samdari	Good	8	No	No	Good	8
11.	Bharatpur	Pakki Diwar 4 ft	Gharwari Se Chak Gharwari	Average	6	No	No	Average	6
12.	Bharatpur	Pakki Diwar 4 ft	Swarn Shanti Parwat Sunhera	Average	6	No	No	Average	6
13.	Bharatpur	Pakki Diwar 4 ft	Khareri Bagrain ke Pas	Average	6	No	No	Average	6

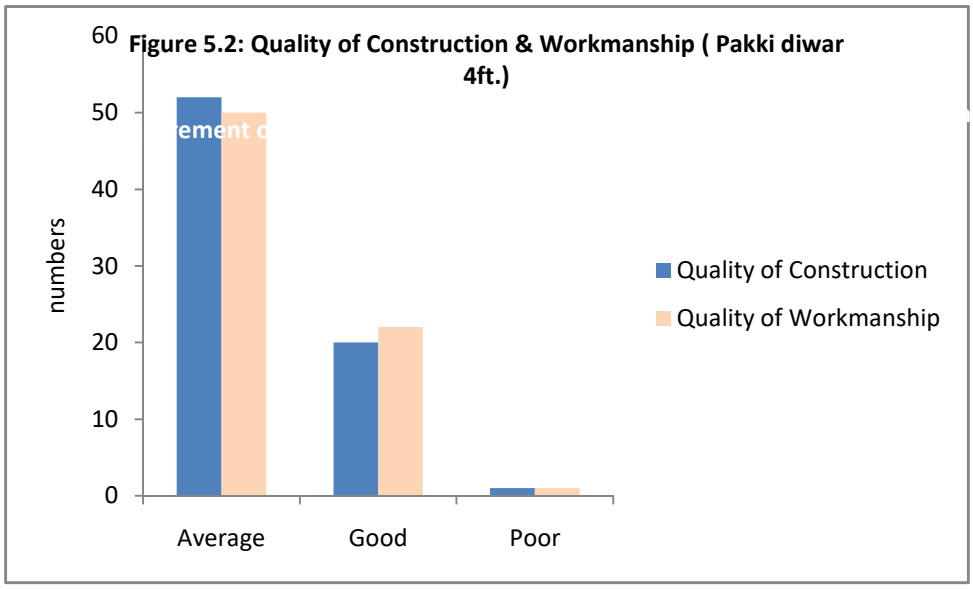
			Jogipura						
14.	Bharatpur	Pakki Diwar 4 ft	Tyra B	Average	6	No	No	Average	6
15.	Bikaner IGNP II	Pakki Diwar 4 ft	Bikendri	Average	7	No	No	Average	6
16.	Bhilwara	Pakki Diwar 4 ft	Jeev Rekha	Good	7	No	No	Good	6
17.	Bhilwara	Pakki Diwar 4 ft	Bijlimariya handpump	Good	7	No	No	Good	7
18.	Bundi	Pakki Diwar 4 ft	Talab Gaon	Average	6	No	No	Average	6
19.	Bundi	Pakki Diwar 4 ft	Dasaliya B	Average	5	No	No	Average	5
20.	Chittorgarh	Pakki Diwar 4 ft	Vijaypur	Average	5	No	No	Average	5
21.	Chittorgarh	Pakki Diwar 4 ft	Charliya	Average	6	No	No	Average	6
22.	Chittorgarh	Pakki Diwar 4 ft	Jojro ka kheda	Average	6	No	No	Average	6
23.	Chittorgarh	Pakki Diwar 4 ft	Kherli	Average	6	No	No	Average	6
24.	Churu	Pakki Diwar 4 ft	Vankhand Sankhu Part B	Average	6	No	No	Average	6
25.	Churu	Pakki Diwar 4 ft	Gopalpura 'A' Van shetra	Average	5	No	No	Average	5
26.	Dausa	Pakki Diwar 4 ft	Thumadi	Average	5	No	No	Average	5
27.	Dausa	Pakki Diwar 4 ft	Samaspur	Average	6	No	No	Average	6
28.	Dholpur	Pakki Diwar 4 ft	Near to Government ITI	Average	6	No	No	Average	6
29.	Dholpur	Pakki Diwar 4 ft	Sikara	Average	6	No	No	Average	6
30.	Dungarpur	Pakki Diwar 4 ft	Naramangra	Average	6	No	No	Average	6
31.	Dungarpur	Pakki Diwar 4 ft	Naramangra	Average	6	No	No	Average	6
32.	Ganganagar	Pakki Diwar 4 ft	Nursery Banda	Average	7	No	No	Average	7
33.	DCF Jaipur	Pakki Diwar 4 ft	Vijay Nagar II	Good	7	No	No	Good	7
34.	DCF Jaipur	Pakki Diwar 4 ft	Gopali Neendar	Good	7	No	No	Good	7

35.	DCF Jaipur	Pakki Diwar 4 ft	Sarwa Mod	Average	5	No	No	Average	5
36.	Jaipur North	Pakki Diwar 4 ft	Dheera was	Average	4	No	No	Average	5
37.	Jaipur North	Pakki Diwar 4 ft	Jatiji ka temple	Average	7	No	No	Good	7
38.	Jaipur North	Pakki Diwar 4 ft	Beelwar i	Average	7	No	No	Average	6
39.	Jaipur North	Pakki Diwar 4 ft	Samod Van Khand	Good	7	No	No	Good	8
40.	Jaipur North	Pakki Diwar 4 ft	Papdi Van Khand Badi line	Average	6	No	No	Average	6
41.	Jaipur Zoo	Pakki Diwar 4 ft	Ballupur a mod to ILD	Good	7	No	No	Good	7
42.	Jalore	Pakki Diwar 4 ft	Hateem tai Jod	Average	6	No	No	Average	6
43.	Jalore	Pakki Diwar 4 ft	Sundha mata	Average	6	No	No	Average	6
44.	Jalore	Pakki Diwar 4 ft	Keswara A	Average	6	No	No	Average	6
45.	Jhalawar	Pakki Diwar 4 ft	Lohiyajh ir	Average	7	No	No	Average	7
46.	Jhunjhun u	Pakki Diwar 4 ft	Beed Jhunjhu nu	Good	7	No	No	Good	7
47.	Hanuma ngarh	Pakki Diwar 4 ft	Rawatsa r Pallu	Average	5	No	No	Average	5
48.	Hanuma ngarh	Pakki Diwar 4 ft	BP 29 DWD, Rawatsa r	Average	4	No	No	Average	4
49.	Kota	Pakki Diwar 4 ft	NH 12 Jhalawar road plantatio n Retiya II Nala to Suryanag ar	Average	5	No	No	Average	5

50.	Kota	Pakki Diwar 4 ft	Purana Bhadana	Average	5	No	No	Average	5
51.	Karauli	Pakki Diwar 4 ft	Suar wala se Kadere wala jharna Vankhand Gubreda	Average	7	No	No	Average	7
52.	Karauli	Pakki Diwar 4 ft	Pustakalaya se Tal ke Nale ke Chor tak	Average	7	No	No	Average	7
53.	Karauli	Pakki Diwar 4 ft	Kalyani ki Pator se Dhaypura tal tak	Average	5	No	No	Average	7
54.	Nagaur	Pakki Diwar 4 ft	Mangla na Makrana	Good	8	No	No	Good	8
55.	Nagaur	Pakki Diwar 4 ft	Kabara Ka Naka, West area, Kuchaman 'A'	Average	7	No	No	Average	7
56.	Rajsamand	PakkiDiwar 4 ft	Ganesh Tekri near temple Circle Part -B	Average	6	No	No	Average	6
57.	Rajsamand WL	PakkiDiwar 4 ft	Bandariya Magra Nathdwara	Average	7	No	No	Average	6
58.	Sawai Madhopur	Pakki Diwar 4 ft	Bhagwatgarh	Good	7	No	No	Good	7
59.	Sawai Madhopur	Pakki Diwar 4 ft	Sintholi	Good	8	No	No	Good	8
60.	Sawai Madhopur	Pakki Diwar 4 ft	Bonli Campus	Good	7	No	No	Good	7

61.	Sikar	PakkiDiwar 4 ft	Tambakupura Nimeda	Average	6	No	No	Average	6
62.	Sikar	PakkiDiwar 4 ft	Raipur Jagir	Average	6	No	No	Average	6
63.	Sikar	PakkiDiwar 4 ft	Khiroti (Burja ki dhani)	Average	5	Yes	-	Average	5
64.	Sikar	PakkiDiwar 4 ft	Khatiwas	Average	6	No	No	Average	6
65.	Sirohi	Pakki Diwar 4 ft	Ghasbeed Pindwara Nichli Odan	Poor	4	No	Yes	Poor	4
66.	Sirohi	Pakki Diwar 4 ft	Dharla Viroli Ghasbeed	Average	6	No	Yes	Average	6
67.	Tonk	Pakki Diwar 4 ft	Narayan Mata Mandir	Good	6	No	No	Good	8
68.	Tonk	Pakki Diwar 4 ft	Kucchi basti se Narayan Kua	Good	5	No	No	Good	7
69.	Tonk	Pakki Diwar 4 ft	Vankhand Nohta (Chowki ke pas)	Average	5	Yes	Yes	Good	5
70.	Udaipur North	PakkiDiwar 4 ft	Kaler	Average	6	No	No	Average	5
71.	Udaipur North	PakkiDiwar 4 ft	Segra	Average	6	No	No	Average	6
72.	Udaipur	PakkiDiwar 4 ft	Hoda	Average	6	No	No	Average	6
73.	Udaipur	PakkiDiwar 4 ft	Vasu	Good	7	No	No	Good	7

In total, 73 Pakki diwar 4ft. (37748 meters) had been evaluated, out of which 52 were average, 20 were good & 01 was poor in quality of construction. Regarding rating of quality of construction 29 pakki diwar was rated 6, 14 rated 5 followed by 24 rated 7, 03 rated 8 & 4 each. Regarding rating of quality of construction, 50 pakki diwar 4ft. rated average, followed by 22 rated good & 1 rated poor (figure 5.2).



5.3 Assessment of Boundary Wall (Pakki Diwar 6 ft.)

The details of report of evaluation of Pakki diwar 6 ft. created under CAMPA of 17 Forest Division are given in table 5.4.

Table 5.4: Evaluation of Pakki Diwar 6 Ft.

Sl. No.	Name of Division (s)	Items	Name of the site	Quality of Construction	Rating of quality of construction	Crack in the structre	Rating of settlement in structure	Quality of workmanship	Rating of quality of workmanship
1	Sariska Tiger Project	PakkiDiwar 6 ft	Gorakhnath Ashram to Military area	Average	5	No	No	Average	6
2		Pakki Diwar 6 ft	Chawal Pauz to Unda Nalla	Average	4	No	No	Average	4
3		Pakki Diwar 6 ft	Vankhand Raipurabal Pathan ki bani Se Pabudan ka Bandha	Average	6	No	No	Average	6
4		Pakki Diwar 6 ft	Sarishka Parishar	Average	4	No	No	Average	4
5		Pakki Diwar 6 ft	Ghevar Chowki ke pas	Average	6	No	No	Average	6
6		Pakki Diwar 6 ft	Chhela Anicut Kalikhol	Average	5	No	No	Average	6
7		Pakki Diwar 6 ft	Burza Kharifa B	Average	6	No	No	Average	6
8		Pakki Diwar 6 ft	Boretha	Average	6	No	No	Average	6
9		Pakki Diwar 6 ft	Nidani B	Average	6	No	No	Average	6
10	Chambal WL Ghadiyal	Pakki Diwar 6 ft	Sahed	Average	5	No	No	Average	5
11	Bharatpur WL	Pakki Diwar 6 ft	Naka Kot	Average	6	No	No	Average	6
12		Pakki Diwar 6 ft	Tarbeejpur	Average	6	No	No	Average	6

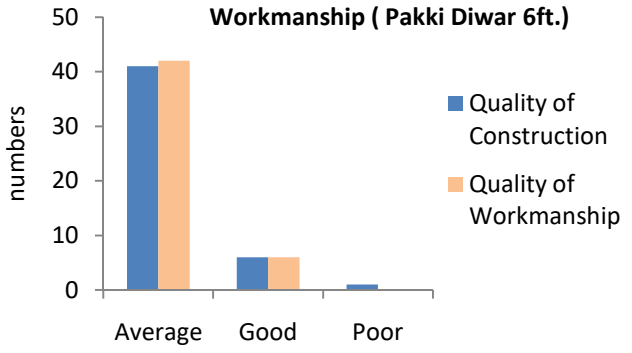
13	Bikaner WL	Pakki Diwar 6 ft	Jodbeed Gadhwala Conservation Reserve Kotri	Average	6	No	No	Average	6
14	Chittorgarh WL	Pakki Diwar 6 ft	Dabela	Average	6	No	No	Average	6
15		Pakki Diwar 6 ft	Javadiya Juna	Average	7	No	No	Average	7
16		Pakki Diwar 6 ft	Kakariya Chorh	Average	7	No	No	Average	7
17	Jaipur North	Pakki Diwar 6 ft	Sanjay Van	Average	7	No	No	Average	6
18	Jaipur Zoo	Pakki Diwar 6 ft	Kusth Ashram	Average	6	No	No	Average	6
19		Pakki Diwar 6 ft	Jaisinghpura khor	Average	7	No	No	Average	7
20		Pakki Diwar 6 ft	Amargarh Shakti colony to nahar singh baba road	Average	5	No	No	Average	5
21		Pakki Diwar 6 ft	Near Pappu Ghar	Average	7	No	No	Average	7
22		Pakki Diwar 6 ft	Rishi Gallav Nagar	Average	7	No	No	Average	7
23		Pakki Diwar 6 ft	Muhana	Average	6	No	No	Average	6
24	Jodhpur WL	Pakki Diwar 6 ft	Machia Van khand	Poor	4	Yes	No	Average	4
25		Pakki Diwar 6 ft	Machia Van khand	Average	5	No	No	Average	6
26	Jaipur WL	Pakki Diwar 6 ft	Deepola	Average	4	No	No	Average	4
27		Pakki Diwar 6 ft	Booj	Average	5	No	No	Average	5
28		Pakki Diwar 6 ft	Mehangi	Good	8	No	No	Good	8

29		Pakki Diwar 6 ft	Narayani Petrol pump se Safeda ka Bag Naka Gola Ka Bas	Average	6	No	No	Average	7
30	Kota WL	Pakki Diwar 6 ft	Gram Padajhar Saddledam	Average	6	No	No	Average	6
31		Pakki Diwar 6 ft	Rameshwar Mahadev Akoda road	Average	5	No	No	Average	5
32		Pakki Diwar 6 ft	Barapati to Badora	Good	7	No	No	Good	7
33	Kota MNP	Pakki Diwar 6 ft	Patti khan ke pas	Good	8	No	No	Good	8
34	Rajsamand WL	Pakki Diwar 6 ft	Gopela Sumer	Average	7	No	No	Average	6
35	RTR I Sawai Madhopur	Pakki Diwar 6 ft	Seldar Nalla se Neemli Khurd	Average	6	No	No	Average	6
36		Pakki Diwar 6 ft	Mayapur Ki Dungari se Bandha Mansarovar	Average	6	No	No	Average	6
37		Pakki Diwar 6 ft	Handpump se Pani ke Khel tak Bhatpura-I	Average	6	No	No	Average	6
38		Pakki Diwar 6 ft	Banpur	Average	6	No	No	Average	6
39		Pakki Diwar 6 ft	Nadi Baloli Se Heeraman Baba Harkesh Gujar Ke Samne tak	Average	6	No	No	Average	6
40	RTR II Karauli	Pakki Diwar 6 ft	Gorehar	Average	6	No	No	Average	6

41		Pakki Diwar 6 ft	Bhumiya Ka Sthan, Doylepur	Average	6	No	No	Average	6
42		Pakki Diwar 6 ft	Cheer Ki Naroli	Good	7	No	No	Good	7
43		Pakki Diwar 6 ft	Guvadi C	Average	6	No	No	Average	6
44		Pakki Diwar 6 ft	Karanpur Torke	Average	5	No	No	Average	5
45	Sikar	Pakki Diwar 6 ft	Sakambari Conservation (Khori Brahman)	Average	6	No	No	Average	7
46	Udaipur WL	Pakki Diwar 6 ft	Jaisamand station to Dhimda Phatak	Good	9	No	No	Good	9
47	Mount Abu WL	Pakki Diwar 6 ft	Telpi to Patolia	Good	8	No	No	Good	8
48		Pakki Diwar 6 ft	Reshma Devi Ke Ghar se Phoolabai Ka Khera	Average	7	No	No	Average	7

In total, 48 Pakki diwar 6ft. (29466 meters) had been evaluated. Out of which 41 were average, 6 were good & 01 was poor in quality of construction. Regarding rating of quality of construction 01 pakki diwar was rated 9 followed by 03 rated 8, 10 rated 7, 22 rated 6, 8 rated 5 & 04 rated 4. Regarding rating of quality of construction, 42 pakki diwar 6ft. rated average & 6 rated good (figure 5.3).

Figure 5.3: Quality of Construction & Workmanship (Pakki Diwar 6ft.)



5.4 Assessment of Boundary Pillars

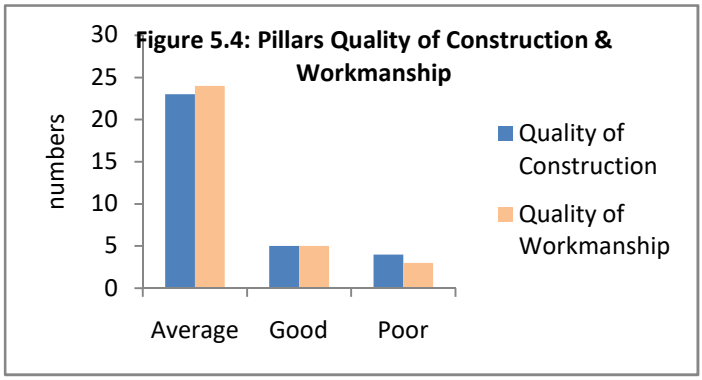
The details of the report of evaluation of Pillars created under CAMPA in 22 Forest Divisions are given in table 5.5.

Table 5.5: Evaluation of Pillars

Sl. No.	Name of Divisions	Items	Name of the site	Quality of Construction	Rating of quality of construction	Crack in the structre	Rating of settlement in structure	Quality of workmanship	Rating of quality of workmanship
1	Ajmer	Pillar	Dangda	Good	7	No	No	Good	7
2	Banswara	Pillars	Rakho	Poor	3	No	No	Poor	3
3		Pillars	Aamjiya	Good	7	No	No	Good	7
4	Bharatpur	Pillars	Bayana Vankhand Samraya	Poor	4	No	No	Poor	4
5	Hanumangarh	Pillar (19 Nos.)	1 JBD	Average	4	No	No	Average	4
6		Pillar (17 Nos.)	1 JBD Hardaswali	Average	4	No	No	Average	4
7		Pillar (20 Nos.)	Seerasar	Average	4	No	No	Average	4
8	Baran	Pillars	Govindpura Bid Ghas	Poor	2	No	No	Average	4
9		Pillars	Karvari	Average	5	No	No	Average	5
10	Bundi	Pillar	Guwar	Average	5	No	No	Average	5
11	Chhattargarh	Pillar (86Nos.)	1 KJD	Poor	3	No	No	Poor	4
12	Chittorgarh	Pillars	Kotmagra	Average	5	No	No	Average	5
13	Dausa	Pillar	Patoli Gagwana	Average	6	No	No	Average	6
14	Dholpur	Pillar	Bhurakheda A	Average	6	No	No	Average	6
15	Dungarpur	Pillars	Beedlalgari	Average	5	No	No	Average	5
16		Pillars	Vankhand Kyavadi	Average	6	No	No	Average	6
17	Ganganagar	Pillar (100 Nos.)	Biradhwad	Average	5	No	No	Average	5
18	Jaisalmer IGNP II	Pillars	Chak 7 AWD & Nachna Barani	Average	6	-	-	Average	6
19	Jhalawar	Pillar	Bijlimariya handpump ke pas	Good	7	No	No	Good	7
20	Karauli	Pillar	Goder	Average	7	-	-	Average	6
21		Pillar	Mora Dunger	Average	5	-	-	Average	5

			no. 10A						
22	RTR II Karauli	Pillar	Dangra Patar/Baler	Average	6	No	No	Average	6
23	Rajsamand WL	Pillars	Bagor Part C	Average	6	No	No	Average	6
24	Sawai Madhopur	Pillars	Narayanpur Tatvada Main	Average	5	No	No	Average	5
25	Sikar	Pillars	Raila	Average	6	No	No	Average	6
26		Pillars	Antari	Average	6	No	No	Average	6
27		Pillars	Patan	Average	6	No	No	Average	6
28	Sirohi	Pillar	Piece rate Wages Pranali, Ghasbeed	Average	5	No	No	Average	5
29		Pillars	Dharla Viroli Vankhand	Average	6	No	No	Average	6
30	Udaipur	Pillar	Raiyana	Average	6	No	No	Average	6
31		Pillar	Baluwa Dhak ka wara	Good	7	No	No	Good	7
32	Udaipur WL	Pillar	Ambasa	Good	7	No	No	Good	7

In total, Pillars were evaluated at 32 sites (Nos. 1603), out of which 23 were average, 5 were good & 04 were poor in quality of construction. Regarding rating of quality of construction 06 pillars were rated 7 followed by 11 rated 6, 8 rated 5, 04 rated 4 & 3 rated 3. Regarding quality of construction, 24 pillars were average followed by 5 good & 3 poor. Further, 5 pillars were rated 7 followed by 12 pillars rated 6, 8 pillars rated 5, 6 pillars rated 4 & 1 rated 3 (figure 5.4).



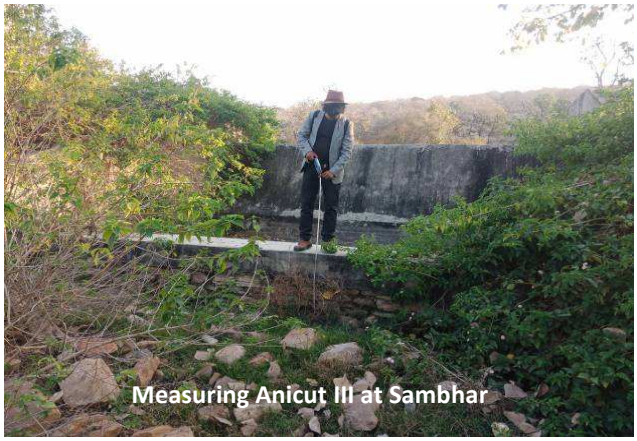
5.5 Assessment of Anicut Type II & Type III

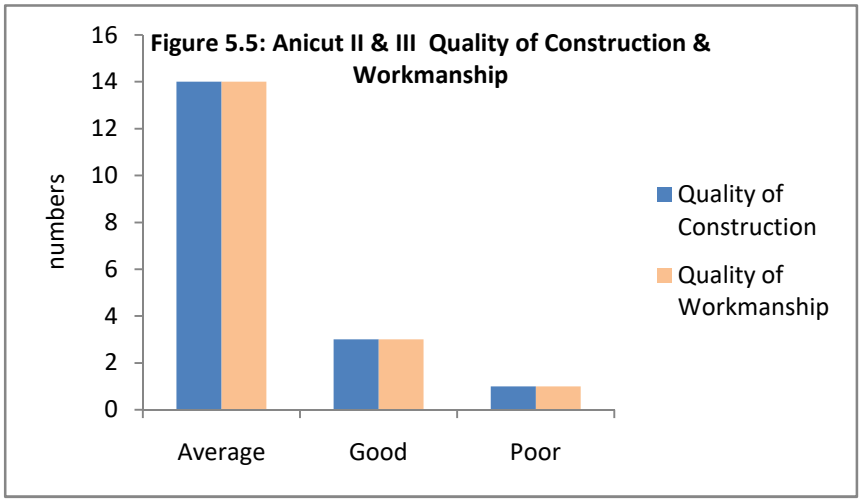
The details of the report of evaluation of Anicut II & III created under CAMPA of 8 Forest Divisions are given in table 5.6

Table 5.6: Evaluation of Anicut II & III

Sl. No.	Name of Divisions	Items	Name of the site	Rating of Site Selection	Rating of Quality of Construction	Quality of Construction	Crack in the structre	Rating of settlement in structure	Quality of workmanship	Rating of quality of workmanship
1	Kota MNP	Anicut III	Sambhar Leva	9	8	Good	No	No	Good	8
2	Bharatpur WL	Anicut III with Gazzlar	Sukha Sheela	8	7	Average	No	No	Average	6
3	Jhunjhunu	Anicut Type II	Uccha Paada	9	9	Good	No	No	Good	9
4		Anicut Type II	Rampura	6	6	Average	Yes	No	Average	6
5		Anicut Type III	Near electricity pole 4	6	6	Average	No	No	Average	6
6	Kota WL	Anicut II	Danda ki Khal Jhunjhala	6	6	Average	No	No	Average	6
7		Anicut III	Guman Bawri	6	5	Average	No	No	Average	5
8	Rajsamand WL	Anicut II	Rupar mata Bijapur	6	8	Good	No	No	Good	8
9		Anicut III	Thakardi	6	7	Average	No	No	Average	7
10		Anicut II	Borwa	6	7	Average	No	No	Average	7
11		Anicut III	Goramghat	6	7	Average	No	No	Average	5
12	RTR I Sawai Madhopur	Anicut II	Bhadlao Dwarkepas	6	6	Average	No	No	Average	6
13		Anicut III	Sangam nai rangekepas	4	4	Poor	Yes	Yes	Poor	4

14		Anicut II	Peer ji Nala naka Anicu t II	5	5	Average	No	No	Average	5
15		Anicut III	Gular ka Nala	6	6	Average	No	No	Average	6
16	RTR II Karauli	Anicut III	Gaup at	6	6	Average	No	No	Average	6
17	Mount Abu WL	Anicut II	Vagn ala	7	7	Average	No	No	Average	7
18		Anicut III	Aza Mata	7	7	Average	No	No	Average	7





In total 18 Anicuts II & III had been evaluated, out of which 14 were average, 3 were good & 01 was poor in quality of construction. Regarding rating of quality of construction 01 rated 9 followed by 02 rated 8, 06 were rated 7, 6 rated 6, 2 rated 5 & 01 rated 4. Regarding quality of construction, 14 were average, 3 were good & 01 was poor. Further, 01 rated 9 followed by 02 rated 8, 04 were rated 7, 7 rated 6, 3 rated 5 & 01 rated 4 (figure 5.5).

5.6 Assessment of Van Rakshak Chowki

The details of the report of evaluation of Van Rakshak Chowki/ Forest Chowki of 17 Forest Divisions are given in table 5.7.

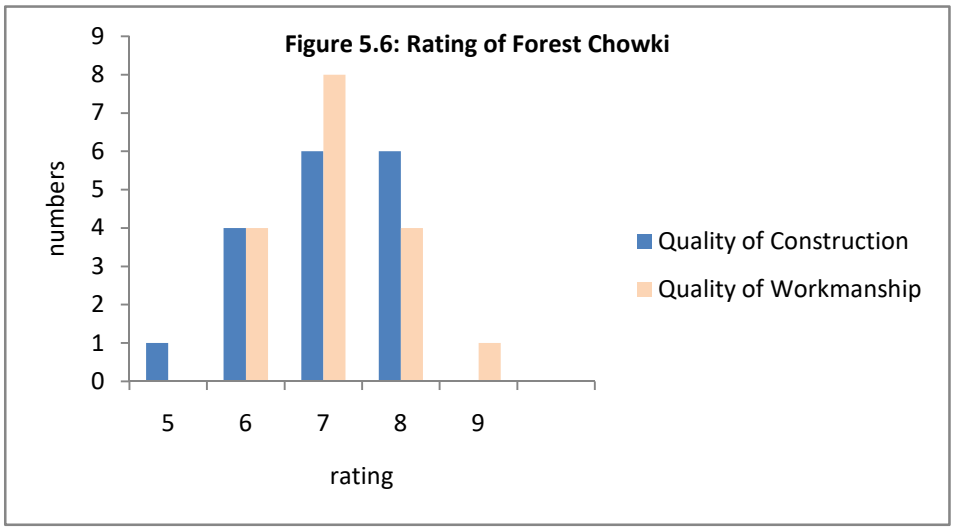
Measuring Forest Chowki at Bandha Khedali

Table 5.7: Evaluation of Van Rakshak Chowki/ Forest Chowki

Sl. No.	Name of Divisions	Items	Name of the site	Rating of Site Selection	Rating of Quality of Construction	Rating of leakage in roof	Crack in the structure	Rating of settlement in structure	Quality of workmanship	Rating of quality of workmanship
1	Ajmer	Van Rakshak Chowki	Beawar	7	7	8	No	No	Average	7
2	Bharatpur WL	Forest Chowki	Kot	7	8	7	No	No	Good	8
3	Bundi	Forest Chowki	Gudha nathawat	5	5	5	No	No	Average	6
4	Bikaner WL	Forest Chowki	Jodbeed Gadhwala	6	6	6	No	No	Average	6
5	Chhattargarh I	Forest Chowki	Beriyawali	7	8	7	No	No	Average	7
6	Chambal WL Ghadiyal	Forest Chowki	Bandha khedali	7	6	No	No	No	Average	6
7	Chittorgarh WL	Forest Chowki	Badi Sadri	7	7	7	No	No	Average	7

8	Chittor garh	Forest Chowki	Arnoda	Good	7	7	No	No	Good	7
9	Jaipur Zoo	Forest Chowki	Jaipur Zoo	7	8	8	No	No	Good	8
10	Jalore	Forest Chowki	Sundha mata	7	6	No	Yes	No	Average	6
11	DDP Jaisal mer	Forest Guard Chowki Unda	Dabla	7	7	7	No	No	Average	7
12	Jhunjh unu	Forest Chowki	Beed Jhunjh unu	7	8	8	No	No	Good	8
13	Kota MNP	Forest Chowki Rajpura	Gagaro n	8	6	8	No	No	Average	7
14	RTR I Sawai Madho pur	Forest Chowki	Bairup ura Tiraha Van khand Chowki	Good	8	No	No	No	Good	8
15	Tonk	Van Raksha k Chowki Nursery Tordi	Van Raksha k Chowki	8	8	8	No	No	Good	9
16	WL Jaisal mer	Forest Chowki	RKVY Chowki Sudasa ri	9	7	10	No	No	Average	7
17	Udaip ur WL	Forest Chowki	Birothi	7	7	7	No	No	Average	7

In total 17 Forest Chowkis/ Van Rakshak Chowkis had been evaluated. Out of which 06 forest chowkis were rated 8 & 7 each followed by 04 forest chowkis were rated 6, & 01 rated 5 in quality of construction. Regarding quality of workmanship, 11 were average & 06 were good Further,



01 rated 9 followed by 04 rated 8, 08 forest chowkis were rated 7 & 04 rated 6 in quality of workmanship (figure 5.6).

5.7 Assessment of Rescue Centre

The details of the report of Evaluation of Rescue Centre of 10 Forest Divisions are given in table 5.8.

Table 5.8: Evaluation of Rescue Centre

Sl. No.	Name of Divisions	Items	Name of the site	Rating of Site Selection	Rating of Quality of Construction	Rating of leakage in roof	Crack in the structure	Rating of settlement in structure	Quality of workmanship	Rating of quality of workmanship
1	Ajmer	Rescue Centre	Pushkar	6	6	6	No	No	Average	6
2	Banswara	Resue Centre	Veterinary Hospital	7	5	7	No	No	Average	5
3	Barmer	Rescue Centre	Dhorimana	7	8	7	No	No	Average	7
4	DDP Jaisalmer	Rescue Centre	Nursery Lathi	7	7	-	No	No	Average	7
5	Ganganagar	Rescue Centre	Raisinghnagar	7	7	7	No	No	Average	7
6	Hanumangarh	Rescue Centre	Range Campus, Nohar	7	8	8	No	No	Average	7
7	Hanumangarh	Rescue Centre	Pilibanga	6	6	6	No	No	Average	6
8	Jhalawar	Rescue Centre	Nursery Lathi	7	7	-	No	No	Average	7
9	Kota WL	Rescue Centre	Sambhar Leva	9	8	-	No	No	Good	8
10	Nagaur	Rescue ward	Range Office Merta Campus	7	6	6	No	No	Average	5
11	RTR II Karauli	Rescue Centre	Karauli	6	6	6	No	No	Average	6
12	RTR II Karauli	Rescue Centre	Karauli						Purchase of equipment	7

Rescue Centre, Pilibanga

Measurement of Rescue Ward

5.8 Assessment of Range Office cum Residence

The details of the report of evaluation of Range Office cum Residence of 04 Forest Divisions are as given in table 5.9.

Table 5.9: Evaluation of Range Office cum Residence

Sl. No.	Name of Divisions	Items	Name of the site	Rating of Site Selection	Rating of Quality of Construction	Rating of leakage in roof	Crack in the structure	Rating of settlement in structure	Quality of workmanship	Rating of quality of workmanship
1	DDP Jaisalmer	Range Office cum residence	Pokaran	8	8	8	No	No	Average	8
2	Kota MNP	Range Office cum residence Mandal office	Visthapan	7	8	7	No	No	Good	8
3	Rajsamand WL	Range Office cum residence	Bheem	8	8	7	No	No	Good	7
4	Dungarpur	Range office cum residence	Bichhiwara	7	7	7	No	No	Average	7

5.9 Assessment of Nursery

The details of the report of evaluation of nursery of 09 Forest Divisions are given in table 5.10.

Table 5.10: Evaluation of Nursery

Sl. No.	Name of Divisions	Name of the site	GPS	Category	Facilities available	Work undertaken under CAMPA	Expenditure incurred (in Rs.)
1	Bharatpur	Nursery at Bayana	26. 89884 N and 77.284388 E	Development of existing	kutcha bed- 70 & pucca bed- 18).	construction of 6 pucca bed	Rs.11509.96
2	Jaipur North	Hadota	27.198234 N 75.719928 E.	Development of existing	kuccha bed, boring, water sprinkler, composting unit, polythene bag & etc.	raise nursery plant (50000)	2.78 lacs
3	Chittorgarh	Eklingpura	24.8117596 N and 75.7051349 E	Development of existing	Pucca & kuccha beds, composting unit, polythene bag & etc.	Construction of pakki diwar (22RMT.)	47586
4	Chittorgarh WL	Pugtala Jakham	24.067479 N 76.568472 E.	Development of existing	kuccha & pucca bed, boring, water sprinkler, composting unit, polythene	construction of five sprinklers & five water points	Rs.84572

					bag & etc.		
5	Jhalawar	Jhir Nursery	24.572926 N and 76.14882 E.	Development of existing	kuccha & pucca bed, well, tubewell, water sprinkler, composting unit, polythene bag & etc.	construction of water tank with capacity of 30000 litres & submersible pump.	Rs. 195799
6	Sirohi	Arathwada	25°3'58"N and 75°57'50"E.	Development of existing	kuccha & pucca bed, well, tubewell, composting unit, polythene bag & etc.	construction of 5 pucca bed (10m X 1mX 45cm).	1.50 lacs.
7	Udaipur North	Range office Kukawas	24.517927 N and 73.060619 E	Development of existing	16 pucca beds & 49 Kutcha bed	Pipeline repair & upgradation.	Rs. 47140
8	Sikar	Reengas	27352756 N and 75.595902 E.	Development of existing	kutcha bed- 182 & pucca bed- 31	upkeep & maintenance of plant	11510
9	Tonk	Sanjay Van nursery, Newai				No expenditure had been incurred under CAMPA in the year 2019-20	

5.10. Assessment of Roadside Plantations

The details of the report of evaluation of roadside plantations of 05 Forest Divisions are given in table 5.11.

Table 5.11: Evaluation of Roadside Plantations

Sl. No.	Name of Divisions	GPS	Name of the site	Year	Area	Name of Species	Fencing	Total seedling planted	Total survived plants	Survival %
	Baran	25°08.653"N 76°55.736" E	Kelwara to Uni Pahadi	2019-20	4 hac	Mahuwa, Karanj, Bargad, Sheesham, Arjun, Peepal, Gular, Semal, Kachnar, Gulmohar, Neem & Jamun .	Barbed wire	3320	2107	63.46
	Chittorgarh	24.794135 N and 75.325862 E	Roadside Plantation Rajpura Chouraha to Sopuriya	2019-20	10.2 RKM	Kesia Shyama, Gulmohar, Neem, Kuchnar, Siras, Karanj, Chudail & Semal.	Loose stone tree guard	1275	1188	93.17
	Chittorgarh	24.953775 N and 75.330187 E	Meghniwas to Sanga ki Badi	2019-20	13.2 RKM	Neem, Karanj, Katchnar, Kesia Shyama, Shisham, Aawla, Jamun & Peepal.	Loose stone tree guard	1680	1670	99.44
	Sikar	27.648402 N and 75.931895 E.	Ladikabas Sanwalpura Tavran	2017-18	8.4 RKM	Neem, Bad, Churail, Ardu, Ronj, Khejri, Desi babool& Peepal		840	268	31.9

	Jaisalmer	26°53'55" N and 71°4'30	Roadside Plantation NH 15 to Basanpeer South	2019-20	17.2 RKM	Totalis, Neem, Rohida & Khijadi.		4008	2712	67.66

Kelwara to Uni Pahadi roadside plantation Site

Growth of planted seedling at the Road site, Patan, Sikar

5.11 Ranking of Plantations and Construction Activities

In total, 111 sites of plantations of 85 Ranges of 55 Divisions & 218 sites of construction activities of 137 Ranges of 51 Divisions were selected by the O/o Principal Chief Conservator of Forests (PCCF), Head of Forest Force (HoFF), Jaipur, Rajasthan State by using stratified random sampling for the present Third Party Evaluation study.

All the selected sites of plantations & construction activities were evaluated by the evaluators of CDECS Jaipur. The site-wise results of evaluation were as given in the table 5.12.

Table 5.12: Ranking of Plantations and Construction Activities
(Excellent-9, Very good-8, Good-7, Average-6, Poor-5 & Very Poor-4)

Division	Plantation							Construction Activities	Name of Structure	Site	Year	Rank
	Range	Site	Model	Year	Area (ha)	Survival %	Rank	Range				
Ajmer	Pushkar	Nand	ANR	2018-19	50	40.6	5	Ajmer	Rescue Centre	Pushkar	2017-18	6
								Ajmer	Pakki Diwar 4ft (480m)	Madar Pahad forest area	2018-19	6
								Kishangarh	Pakki Diwar 4ft (450m)	Samariya Harda	2019-20	6
								Kishangarh	Pillars (24 Nos.)	Dangra	2019-20	7
								Beawar	Forest Chowki	Van Rakshak Chowki, Naka Beawar	2019-20	7
Alwar	Kishangarhwas	Chor Basai	DFL	2017-18	50	48.8	5	Tijara	Pakki Diwar 4 ft(500m)	Kahrali	2017-18	5
	Thanagazi	Gadh Basai	ANR	2017-18	50	46.0	5					
	Rajgarh	Dolatpura	ANR	2018-19	50	48.0	5					
	Tijara	Gwalda	DFL	2018-19	50	51.2	6					
	Laxmangarh	Santokpur	DFL	2018-19	50	7.3	4					
	Bahror	Dhindhor	DFL	2019-20	50	46.3	5					
Alwar STR	Tahala	Nadoli	NFL	2017-18	85.44	45.0	5	Alwar Buffer	Pakki Diwar 6 ft(100m)	Gorakhnath Ashram to Military Area	2017-18	6
								Alwar Buffer	Pakki Diwar 6 ft(500m)	Nidani B	2019-20	6
								Akbarpur	Pakki Diwar 6	Chawal Pauz to	2017-	6

									ft(400m)	Unda Nalla	18	
								Akbarpur	Pakki Diwar 6 ft(1197m)	Chhela Anicut Kalikhol	2018-19	6
								Sariska	Pakki Diwar 6 ft(475m)	Vankhand Raipurabal Pathan ki bani Se Pabudan ka Bandha	2017-18	6
								Reception Sariska	Pakki Diwar 6 ft(163m)	Sariska Parishar boundary wall	2017-18	6
								Sariska	Pakki Diwar 6 ft(350m)	Burja Kharifa B	2019-20	6
								Tehala	Pakki Diwar 6 ft(200m)	Ghevar Chowki ke pas	2018-19	6
								Tehala	Pakki Diwar 6 ft(500m)	Boretha	2019-20	6
Banswara	Ghatol	Jagmer Jogimal	ANR	2017-18	50	48.2	5	Kusalgarh	Pakki Diwar 4 ft(1320m)	Amliyamal	2017-18	7
	Sajjangarh	Andeshwar	ANR	2018-19	60	42.1	5	Ghatol	Pakki Diwar 4 ft(500m)	Jagmer Jogimal	2017-18	7
								Banswara	Rescue Centre	Verteniary hospital	2017-18	6
								Bagidora	Pakki Diwar 4 ft(500m)	Nandormata	2018-19	7
								Bagidora	Boundary pillars (50 Nos.)	Rakho	2018-19	4
								Banswara	Pakki Diwar 4 ft(500m)	Sawaimata Bhapor	2019-20	7
								Garhi	Boundary pillars (1000 Nos.)	Amjiya	2019-20	7
Baran	Shahbad	Baseli-b	DFL	2017-18	30	59.3	6	Atru	Pillars (90 Nos.)	Govindpura Bid Ghas	2018-19	4
	Kishanganj	Borda	DFL	2017-18	130	46.3	5	Kisanganj	Pillars (Nos.50)	Karvari	2019-20	5

	Nahargarh	Kadili	DFL	2017-18	120	50.5	6	Kelwara	Roadside plantation	Kelwara Se Uni Pahadi	2019-20	7
	Shahbad	Dabar-D	NFL	2017-18	23.45	54.7	6					
	Anta	Mundiya B I	NFL	2018-19	66	51.3	6					
	Kelwara	Sukha samli- A	ANR	2018-19	50	59.2	6					
	Shahbad	Mundiya Sehjana II	ANR	2018-19	50	58.0	6					
	Anta	Kanada	NFL	2019-20	22	56.4	6					
Barmer	Sivana	Kusip	ANR	2017-18	100	41.5	5	Barmer	Pakki Diwar 4 Ft.(475m)	Barmer Hilli Kua no. 3	2017-18	5
	Barmer	Junapatarasar-B	DFL	2018-19	50	57.2	6	Dhorimanna	Rescue Centre	Dhorimana	2017-18	8
	Barmer	Gafan Talai	DFL	2018-19	50	77.5	8	Chouhatan	Pakki Diwar 4 Ft.(340m)	Chouhatan Nursery	2018-19	7
								Sivana	Pakki Diwar 4 ft(500m)	Kajri Samdari	2019-20	8
Bharatpur	Bayana	Ghodi Khoj Hathodi	ANR	2018-19	50	41.7	5	Deeg	Pakki Diwar 4 ft(3040 m)	Gharwari Se Chak Gharwari	2017-18	6
								Kaman	Pakki Diwar 4 ft(450m)	Swarn Shanti Parwat Sunhera	2018-19	6
								Bayana	Pakki Diwar 4 ft(450m)	Khareri Bagrain ke Pas Jogipura(45	2018-19	6
								Bayana	Boundary Pillars (Nos.100)	Bayana Vankhand Samraya	2018-19	6
								Kaman	Pakki Diwar 4 ft(250m)	Tyra B	2019-20	
								Bayana	Nursery	Bayana	2019-20	7
Bharatpur WL								Bandh Baretha	Pakki Diwar 6 ft (2500m)	Naka Kot	2018-19	6

								Bandh Baretha	Anicut Type III	Sukha Sheela	2018-19	6
								Bandh Baretha	Pakki Diwar 6 ft (500m)	Tarbeejpur	2019-20	6
								Bandh Baretha	Forest Chowki	Van Rakshak Chowki Kot	2019-20	8
Bhilwara	Mandalgarh	Saimala	DFL	2017-18	50	41.7	5	Jahazpur	Pakki Diwar 4 ft (500m)	Jeev Rekha	2017-18	7
	Mandalgarh	Kharcha ki nadi	ANR	2017-18	50	41.4	5	Mandalgarh	Pakki Diwar 4 ft (500m)	Bijlimariya Handpump ke pas	2019-20	7
	Jahajpur	Bahadurpura	ANR	2018-19	50	48.9	5					
	Mandalgarh	Ladpura	DFL	2019-20	50	44.4	5					
Bikaner	Lunkaransar	Mahajan-D	DFL	2018-19	38.43	16.0	4					
	Nokha	Nokha	DFL	2019-20	25.43	46.1	5					
Bikaner IGNP II	750 RD unit II	SDS Agneu	NFL	2018-19	52.25	55.0	6	29 RD Bhoorasar	Pakki Diwar 4 ft (500m)	Bikendri	2017-18	7
Bikaner WL								Jodbeed Gadhwala	Pakki Diwar 6 ft(1940)	Jodbeed Gadhwala Conservation Reserve Kotri	2017-18	6
								Jodbeed Gadhwala	Forest Chowki	Jodbeed Gadhwala	2019-20	6
Chhattargarh I								Beriyawali	Forest Chowki	Beriyawali	2018-19	8
Chhattargarh								Beriawali	Pillars(Nos.100)	21KJD	2019-20	
Bundi	K. Patan	Gopalpura	NFL	2017-18	27.51	2.19	4	Dabi	Pillars (Nos.100)	Guwar	2018-19	5
	Hindoli	Maliyon ki jhopdiya	DFL	2017-18	100	46.57	5	Dabi	Pakki Diwar 4 ft (320m)	Kheda Vankhand Dasaaliya B	2019-20	6

	Hindoli	Dholi Chabutri B	ANR	2018-19	50	41.23	5	Bundi	Pakki Diwar 4 ft (500 m)	Talab Gaon Vankhand Borkhandi	2019-20	6
	Nainwa	Topa Dhardhadi-F	ANR	2019-20	50	48.4	5	Bundi	Forest Chowki	Gudhanathawat	2019-20	6
Chittorgarh	Chittorgarh	Hasala-E	ANR	2017-18	50	42.5	5	Vijaypur	Pakki Diwar 4 ft (600m	Vijaypur	2017-18	5
	Chittorgarh	Siyalkund	ANR	2018-19	50	45.0	5	Nimbaheda	Pakki Diwar 4 ft (500m)	Charliya	2017-18	6
	Nimbahera	Tai-B	DFL	2019-20	50	21.5	4	Nimbaheda	Forest Chowki	Arnoda	2018-19	7
	Begu	Jogniyamata Haribadliya	ANR	2019-20	50	43.0	5	Nimbaheda	Boundary Pillars (Nos.60)	Kotmagra	2018-19	5
								Kapasan	Pakki Diwar 4 ft (55m)	Jojaro ka kheda	2018-19	6
								Rawatbhata	Pakki Diwar 4 ft (250m)	Khedli	2019-20	6
								Rawatbhata	Nursery	Nursery Eklingpura	2019-20	6
								Borav	Roadside plantation	Meghniwas to Sanga ki badi	2019-20	10
								Javda	Roadside plantation	Rajpura to Sopuriya	2019-20	10
Chittorgarh WL	Dhariyavad	Nangliya	ANR	2018-19	50	41.8	5	Dhariyawad	Pakki Diwar 6 ft (600m)	Dabela	2017-18	6
								Bassi	Pakki Diwar 6 ft(100m)	Javadiya Juna	2018-19	7
								Badi Sadri	Pakki Diwar 6 ft(280m)	Kankariya Chorh	2019-20	7
								Badi Sadri	Forest Chowki	Badi Sadri	2019-20	7
								Badi Sadri	Nursery	Jakham	2019-20	7
Churu								Rajgarh	Pakki Diwar 4 ft (500m)	Vankhand Sankhu Part B	2017-18	6

								Sujangarh	Pakki Diwar 4 ft (464 m)	Gopalpura 'A' Van shetra	2019-20	5
Dausa	Sikrai	Achalpura	ANR	2017-18	50	53.5	6	Dausa	Pakki Diwar 4 ft (500m)	Thumadi	2018-19	5
	Dausa	Sonadi	ANR	2018-19	50	50.6	6	Mahuwa	Pakki Diwar 4 ft(460m)	Samaspur	2018-19	6
	Sikrai	Fraspura	ANR	2019-20	50	60.3	7	Mahuwa	Pillar Nos.25)	Patoli Gangwana	2018-19	6
Dholpur	Sarmathura	Thane Ka Pura-II ANR	ANR	2017-18	50	33.2	4	Dholpur	Pakki Diwar 4 ft (500m)	Near to Government ITI	2017-18	6
	Sarmathura	Dhore Ka Dada	ANR	2019-20	50	53.0	6	Dholpur	Pillars (Nos.62)	Bhurakheda A	2018-19	6
	Vanvihar	Meenakhuri	ANR	2019-20	50	44.7	5	Badi	Pakki Diwar 4 ft (500m)	Sikara	2019-20	6
	Badi	Kala Patpara	DFL	2018-19	25	64.1	7					
Dungarpur	Dungarpur	Palwada	NFL	2017-18	12.8	6.4	4	Bichiwara	Range office cum residence	Bichiwara	2017-18	7
	Dungarpur	Vankhand Ranijhula S.No. 2 Ananpura	ANR	2018-19	50	43.4	5	Aantri	Pakki Diwar 4 ft (400m)	Naramangra	2018-19	6
	Simalwara	Charwada Rataghata	ANR	2019-20	50	42.1	5	Aantri	Boundary Pillars (Nos.9)	Beedlalgari	2018-19	5
								Aantri	Pakki Diwar 4 ft(200m)	Naramangra	2019-20	6
								Aaspur	Boundary Pillars (No.25)	Vankhand Kyavadi	2019-20	6
Ganganagar								Anoopgarh	Pakki Diwar 4 ft (370m)	Nursery Banda	2018-19	7
								Biradhwal	Boundary Pillars (No.100)	Biradhwal	2018-19	5
								Riasinghnagar	Rescue Centre	Riasinghnagar	2019-20	7
Hanumangarh								Nohar	Rescue	Range Campus	2017-	8

									Centre		18	
								Rawatsar	Pakki Diwar 4 ft(200m)	Rawatsar Pallu	2017-18	6
								Rawatsar	Pillars(Nos.19)	1 JBD	2018-19	6
								Rawatsar	Pakki Diwar 4 ft(300m)	BP 29 DWD	2019-20	6
								Pilibanga	Rescue Centre	Rescue Centre, Pilibanga	2019-20	6
								Rawatsar	Pillars(Nos.17)	1 JBD, Hardaswali	2019-20	6
								Rawatsar	Pillars(Nos.20)	Sirasar	2019-20	6
Jaipur	Amer	Bagwara	ANR	2017-18	45	55.2	6	Amer	Pakki Diwar 4 ft(500m)S	Vijay Nagar-II	2017-18	7
	Amer	Dabla	ANR	2018-19	50	74.6	8	Amer	Pakki Diwar 4 ft(130m)	Gopali Neendar	2018-19	7
	Bassi	Langadiyawas	DFL	2018-19	3.86	55.5	6	Amer	Pakki Diwar 4 ft(200m)	Sarwa Mod Delhi Byepass	2019-20	6
	Kanota	Dubali	ANR	2018-19	50	78.7	8					
Jaipur North	Shahpura	Manoharpur	ANR	2017-18	50	59.5	6	Achrol	Pakki Diwar 4 ft (200m)	Dheerawas	2017-18	5
	Shahpura	Mishrawas	ANR	2018-19	50	45.1	5	Shahpura	Pakki Diwar 6 ft (500m)	Sanjay Van	2017-18	6
	Kotputali	Gudha Buchara	ANR	2018-19	50	67.2	7	Chomu	Pakki Diwar 4 ft (200m)	Jatiji Ka temple	2018-19	7
								Paota	Pakki Diwar 4 ft(400m)	Beelwari	2018-19	6
								Chomu	Pakki Diwar 4 (85m)	Samod Van Khand	2019-20	8
								Paota	Pakki Diwar 4 ft (200m)	Papdi Van Khand Badi line 43 A	2019-20	6
								Chomu	Nursery	Nursey Hadota	2019-20	7

Jaipur WL	Raisar	Dantali	NFL	2019-20	4.17	76.3	8	Jamua Ramgarh	Pakki Diwar 6 ft (389m)	Deepola	2017-18	5
	Jamwa Ramgarh	Papad	ANR	2018-19	50	82.0	9	Jamua Ramgarh	Pakki Diwar 6 ft(300m)	Booj	2018-19	5
								Raisar	Pakki Diwar 6 ft (460m)	Mehangi	2019-20	8
								Ajabgarh	Pakki Diwar 6 ft (460m)	Narayani Petrol pump se Safeda ka Bag Naka Gola Ka Bas	2019-20	6
Jaipur Zoo								Jaipur Pradeshik	Pakki Diwar 4 ft (248m)	Ballupura mode to ILD	2017-18	7
								Office campus	Forest Chowki	Jaipur Zoo	2017-18	8
								Jaipur Pradeshik	Pakki Diwar 6 ft (185m)	Kusth Ashram	2018-19	6
								Jaipur Pradeshik	Pakki Diwar 6 ft (47m)	Jaisinghpura khor	2018-19	7
								Jaipur Pradeshik	Pakki Diwar 6 ft (320m)	Amargarh Shakti Colony to nahar singh baba road	2018-19	5
								Nahargarh Biological Park Jaipur	Pakki Diwar 6 ft (25m)	Near Pappu Ghar	2019-20	7
								Jaipur Pradeshik	Pakki Diwar 6 ft (22m)	Rishi Gallav nagar	2019-20	7
								Jaipur Pradeshik	Pakki Diwar 6 ft (1000m)	Muhana	2017-18	6
Jaisalmer	Dabla	Chhod I	DFL	2017-18	55	60.8	7	Lathi	Rescue Ward	Nursery Lathi	2018-19	7
								Dabla	Forest Chowki	Van Rakshak Chowki Unda	2019-20	7
								Dabla	Roadside plantation	NH 15 to Basanpeer South	2019-20	7

								Pokaran	Range office cum Residence	Pokaran	2019-20	8
Jaisalmer WL								Van Jeev Jaisalmer	Forest Chowki	RKVY Chowki Sudasari	2018-19	7
Jaisalmer IGNP II	Mohangarh	SDS 20-23 RDJJW Sadrau	NFL	2017-18	100	70.5	8	Nachna	Pillars(Nos.50)	Chak 7AWD & Nachna Barani	2018-19	6
	II 1438 RD Mohangarh	SDS 10-13 RD	NFL	2017-18	25	50.7	6					
	II 1438 RD Mohangarh	SDS Mandau barani 13RdJJW	NFL	2018-19	25	61.6	7					
	II 1438 RD Mohangarh	SDS 35-38 RDJJWC	NFL	2019-20	50	77.5	8					
Jalore	Raniwara	Baretha	ANR	2018-19	50	59.6	6	Jalore	Pakki Diwar 4 ft(500m)	Hateemtai Jod	2017-18	6
	Jasvantpura	Siroshi Pahadpura	DFL	2019-20	50	42.5	5	Jalore	Pakki Diwar 4 ft(250m)	Nursery Sayla	2018-19	6
	Jasvantpura	Veri Datlawas	ANR	2019-20	50	52.0	6	Jalore	Pakki Diwar 4 ft(500m)	Keswara A	2019-20	6
								Jaswantpura	Forest Chowki	Sundhamata	2017-18	6
Jhalawar	Khanpur	Sojpur	NFL	2017-18	23.25	59.7	6	Jhalawar	Pakki Diwar 4 ft(1000m)	Lohiyajhir	2017-18	7
	Jhalawar	Barubeh	NFL	2019-20	27.67	75.9	8	Jhalawar	Rescue Centre	Gindaur	2017-18	7
								Manoharthana	Boundary Pillar(Nos.43)	Manoharthana	2018-19	7
								Jhalawar	Nursery	Jhir	2019-20	7
Jhunjhunu	Khetri	Chirani II	DFL	2017-18	50	60.7	7	Jhunjhunu	Pakki Diwar 4 ft (2250m)	Beed Jhunjhunu	2017-18	7
	Udaipurwati	Indra colony Kankria	DFL	2017-18	50	56.9	6	Udaipurwati	Anicut Type II	Nadi Nirman (PT) Unchha Papada Nala	2019-20	8
	Udaipurwati	Bagora	ANR	2017-18	50	54.3	6	Nawalgarh	Anicut Type II	Nadi Nirman Rampura	2019-20	9

	Udaipurwati	Kot	ANR	2018-19	50	46.0	5	Jhunjhunu	Anicut Type III	Nari nirman near Bijli pole-4	2019-20	6
	Udaipurwati	Kakrana	DFL	2018-19	50	62.7	7	Jhunjhunu	Forest Chowki	Beed Jhunjhunu	2019-20	6
	Udaipurwati	Chhapoli III	DFL	2019-20	50	45.5	5					
	Navalgarh	Chirana	ANR	2019-20	50	45.5	5					
Jodhpur	Bhopalgarh	Devnagar	DFL	2017-18	35.24	41.3	5					
Jodhpur WL								Van Jeev Jodhpur	Pakki Diwar 6 ft(1500m)	Machia Van Khand	2017-18	4
								Machia	Pakki Diwar 6 ft(1275m)	Machia Van Khand	2018-19	5
Karauli	Masalpur	Sahanpur	ANR	2019-20	55	42.7	5	Masalpur	Pakki Diwar 4 ft(500m)	Suar wala se Kadere wala jharna Vankhand Gubreda	2017-18	7
	Hindon	Kachroli	DFL	2019-20	3	44.3	5	Masalpur	Pillar (Nos.34)	Goder	2019-20	7
	Hindon	Karwad Jat	DFL	2017-18	14.29	44.3	5	Karauli	Pakki Diwar 4 ft(500m)	Pustakalaya se Tal ke Nale ke Chor tak	2018-19	7
								Karauli	Pakki Diwar 4 ft(500m)	Kalyani ki Pator se Dhaypura tal tak	2019-20	5
								Gudhachandra ji	Pillar (Nos.25)	Mora Dunger no. 10A	2019-20	5
Karauli RTR II								Nainiyaki	Pakki Diwar 6 ft(500m)	Gorehar	2017-18	6
								Mandrayal	Pakki Diwar 6 ft(500m)	Bhumia ka sthan, Doylepur	2017-18	6
								Kaila devi	Rescue Centre	Karauli	2017-18	6
								Kaila devi	Pakki Diwar 6	Cheer ki Narauli	2018-	7

									ft(500m)		19	
								Nainiyaki	Pakki Diwar 6 ft(500m)	Guvadi C	2018-19	6
								Nainiyaki	Pillar (No.1)	Dangra Patar/ Baler	2018-19	6
								Karanpur	Pakki Diwar 6 ft(500m)	Karanpur Torke II	2019-20	6
								Nainiyaki	Anicut Type III	Gaupat Type II	2019-20	6
								Kaila devi	Rescue Centre		2019-20	6
Kota	Sultanpur	Peepalda Samel	ANR	2018-19	50	9.3	4	Ladpura	Pakki Diwar 4 Ft.(500m)	NH 12 Jhalawar road plantation Retiya II Nala to Suryanagar	2017-18	6
	Mandana	Mandana-I	ANR	2018-19	50	44.4	5	Ladpura	Pakki Diwar 4 Ft.(55m)	Purana Bhadana	2018-19	6
	Modak	Rakba Pahad	ANR	2019-20	50	46.4	5					
Kota MNP	Jawahar sagar	Dhonk ki kui	DFL	2017-18	36.4	46.0	5	Gagaron	Forest Chowki	Rajpura	2017-18	7
	Dara	Kalya Khal MJSA II	ANR	2017-18	50	44.2	5	Borawas	Range office cum residence	Visthapan Mandal Office	2018-19	8
	Kolipura	Kanya Talab	ANR	2019-20	50	50.9	6	Kolipura	Anicut III	Sambhar Leva	2018-19	8
								Jawahar Sagar	Pakki Diwar 6 Ft.(1500m)	Patti Khan ke pas	2019-20	8
Kota WL								Bhainsroadgarh	Pakki Diwar 6 ft(600m)	Gram Padajhar Saddledam	2017-18	6
								Ramgarh WL	Pakki Diwar 6 ft(500m)	Rameshwar Mahadev Aakoda road	2018-19	5
								Shergarh	Pakki Diwar 6 ft(2570m)	Barapati Se Badora	2019-20	7
								Bhainsrorgarh	Anicut Type II	Dand ki khal	2019-	6

										Jhunjhala	20	
								Ramgarh Bundi	Anicut Type III	Guman Bavri Khal	2019-20	5
								Kota Zoo	Rescue Centre	Kota Zoo	2019-20	8
Nagaur	Kuchaman	Kuchaman (Bhairuji Mandir)	ANR	2018-19	50	48.3	5	Parbatsar	Pakki Diwar 4 ft(385m)	Manglana Makrana	2017-18	8
								Merta	Rescue ward	Range Office Merta Campus	2018-19	6
								Kuchaman	Pakki Diwar 4 ft(443 m)	Kabara Ka Naka, West area, Kuchaman 'A'	2019-20	7
Pali	Sojat	Rundiya	ANR	2019-20	50	63.5	7					
	Sumerpur	Rojara	ANR	2018-19	50	41.5	5					
	Sendara	Dholiya	ANR	2018-19	50	43.5	5					
Pratapgarh	Chhoti Sadri	Santokpuria	ANR	2017-18	50	55.7	6					
	Peepalkhoot	Bakhtod	ANR	2018-19	50	42.4	5					
	Dhariyavad	Ghatela Khasra 1/2	NFL	2019-20	10	46.8	5					
	Devgarh	Jhantla C	DFL	2019-20	3.64	50.4	6					
	Chhoti Sadri	Janjal (Hamel Mahadev)	ANR	2019-20	50	41.0	5					
Rajsamand	Kumbhalgarh	Uparthala Jaitaran	ANR	2017-18	50	45.2	5	Nathdwara	Pakki Diwar 4 ft(350)	Ganesh Tekri near temple Circle Part -B	2017-18	
Rajsamand WL	Desuri	Satimata-B	ANR	2018-19	50	43.7	5	Nathdwara	Pakki Diwar 4 ft(1350)	Bandariya Magra Nathdwara	2018-19	7
	Bhim	Koyatalai	DFL	2018-	50.6	43.5	5	Sadri	Anicut II	Ruparmata	2018-	8

				19	2					Bijapur	19	
	Devgarh	Devpura	ANR	2019-20	50	42.2	5	Sadri	Anicut III	Thakardi Bijapur	2018-19	9
								Desuri	Pakki Diwar 4 ft(1000)	GopelaSumer	2019-20	7
								Bheem	Anicut II	Borba	2019-20	7
								Devgarh	Anicut III	Goram ghat	2019-20	6
								Bheem	Range office cum residence	Bheem	2019-20	8
								Kumbhalgarh	Boundary pillars Nos.200)	Bagor Part C	2019-20	6
RTR I S. Madhopur	Indergarh	Kanchan Dham	NFL	2018-19	2.12	53.7	6	Falodi	Pakki Diwar 6 ft (500m)	Seldar Nalla se Neemli Khurd	2017-18	6
								Falodi	Forest Chowki	Bhairupura Tiraha Vankhand Chowki	2017-18	8
								Sawai Madhopur	Pakki Diwar 6 ft (763m)	Mayapur Ki Dungari se Bandha Mansarovar	2018-19	7
								Falodi	Pakki Diwar 6 ft (235m)	Handpump se Pani ke Khel tak Bhatpura-I	2018-19	6
								Khandar	Pakki Diwar 6 ft (235m)	Banpur	2018-19	6
								Talara	Pakki Diwar 6 ft	Nadi Baloli Se Heeraman Baba Harkesh Gujar Ke Samne tak	2018-19	6
								Kundera	Anicut Type II	Bhadlao Dwar ke pas	2018-19	6

								Talara	Anicut Type III	Sangam nai range ke pas	2018-19	4
								Indragarh	Anicut Type II	Peer ji Nala naka Anicut II	2019-20	6
								Sawai Madhopur	Anicut Type III	Gular ka Nala	2019-20	6
S. Madhopur	Bonli	Khirkhadi	ANR	2019-20	50	49.0	5	Sawai Madhopur	Pakki Diwar 4 ft(325m)	Bhagwatgarh	2017-18	7
	Bonli	Shilki dungari	ANR	2018-19	25	41.8	5	Gangapur City	Pakki Diwar 4 ft(500m)	Sintholi	2018-19	8
								Bonli	Pakki Diwar 4 ft(580m)	Bonli Campus	2019-20	7
								Gangapur City	Boundary pillars(Nos.15)	Narayanpur Tatvada Main	2019-20	6
Chambal WL Ghadiyal								Mandrayal	Pakki Diwar 6 ft(500m)	Sahed	2017-18	6
								Keshavraipatan	Forest Chowki	Bandhakhedali	2018-19	6
Sikar	Srimadhopur	Ajeetgarh	DFL	2017-18	50	44.9	5	Danta	Pakki Diwar 4 ft(50m)	Nimbera Tambakupura	2017-18	6
	Neemka thana	Bhagega I	NFL	2017-18	2.62	28.8	4	Patan	Roadside Plantation	Ladikabas Sanwalpura Tavran	2017-18	4
	Patan	Jetpura	ANR	2018-19	50	44.4	5	Neem Ka Thana	Pakki Diwar 4 ft(240m)	Raipur Jagir	2017-18	6
								Shrimadhopur	Pakki Diwar 4 ft(300m)	Khiroti (Burja ki dhani)	2018-19	6
								Patan	Boundary pillars(Nos.15)	Raila	2018-19	6
								Danta	Pakki Diwar 4 ft(100m)	Khatiwas	2019-20	6
								Sikar	Pakki Diwar 6 ft(1000m)	Sakambari Conservation (Khori	2019-20	6

										Brahman)		
								Sikar	Boundary pillars(Nos.10)	Antari	2019-20	6
								Patan	Boundary pillars(Nos.8)	Van khand Patan	2019-20	6
								Shrimadhopur	Nursery	Reengas	2019-20	7
Sirohi	Pindwara	Pahadkala No. 30 Ubari Pani Sabela	ANR	2018-19	50	44.0	5	Pindwara	Boundary pillars(Nos.23)	Piece rate Wages Pranali, Ghasbeed	2017-18	6
								Pindwara	Pakki Diwar 4 ft(500m)	Ghasbeed Pindwara Nichli Odan	2018-19	4
								Pindwara	Pakki Diwar 4 ft(600m)	Dharla Viroli Ghasbeed	2019-20	6
								Pindwara	Boundary pillars(Nos.53)	Dharla Viroli Vankhand	2019-20	6
								Sirohi	Nursery	Arathwara	2019-20	7
Mount Abu WL								Anadara	Pakki Diwar 6 ft(500 m)	Telpi to Patolia	2018-19	8
								Taleti	Pakki Diwar 6 ft(500 m)	Reshma Devi Ke Ghar se Phoolabai Ka Khera	2019-20	7
								Taleti	Anicut Type II	Vagnala	2019-20	7
								Abu Parwat	Anicut Type III	Aza Mata	2019-20	7
Tonk	Deoli	Devnarayanji	DFL	2017-18	50	45.7	5	Tonk	Pakki Diwar 4 ft(273)	Narayan Mata Mandir	2017-18	8
	Tonk	Newai pahad kabri khal	ANR	2019-20	50	5.2	4	Newai	Pakki Diwar, 4ft.(500m)	Kucchi Basti se Narayan Kua	2018-19	7
								Malpura	Forest	Van Rakshak	2018-	9

									Chowki	Chowki Nursery Tordi	19	
								Newai	Pakki Diwar, 4ft.(500m)	Vankhand Nohta (Chowki ke pas)	2019-20	6
								Newai	Nursery	Sanjayvan	2019-20	no expenditure
Udaipur	Udaipur west	Rodaji Bawji	DFL	2018-19	56	47.2	5	Udaipur West	Pakki Diwar 4 ft (1800m)	Hoda	2017-18	6
	Salumbar	Jhallara	ANR	2018-19	50	55.4	6	Kherwara	Pillar (Nos.25)	Raiyana	2018-19	6
								Kurbad	Pakki Diwar 4 ft (600m)	Vasu	2019-20	7
								Sarada	Pillar (Nos.100)	Baluwa Dhan ka wara	2019-20	7
Udaipur-North	Gogunda	Naal mokhi	ANR	2019-20	40	46.8	5	Udaipur East	Pakki Diwar 4 ft(1500m)	Kaler	2017-18	6
	Udaipur east	Banadiya	NFL	2018-19	95.69	41.9	5	Udaipur East	Pakki Diwar 4 ft(260m)	Segara	2019-20	6
	Udaipur east	Amberi	ANR	2017-18	80	76.5	8	Kukawas	Nursery	Kukawas	2019-20	6
Udaipur WL								Jaisamand	Pakki Diwar 6 ft(150m)	Jaisamand station to Dhimda Phatak	2018-19	9
								Panarva	Forest Chowki	Birothi	2018-19	7
								Panarva	Pillar (Nos.50)	Vankhand Ambasa	2019-20	7

Chapter - 6

Key Findings, Conclusion, Suggestions & Recommendations

The various activities namely, afforestation & plantation, Soil and Moisture Conservation works (SMC), construction of office buildings, boundary wall and boundary pillars are the key intervention under CAMPA Fund. The CAMPA Fund activities were undertaken in 55 Forest divisions covering 283 ranges across 33 districts of Rajasthan. As per list of ranges given in the TOR, 283 ranges have been mentioned. However, the samples forest divisions for the evaluation study during the Year 2017-18, 2018-19 & 2019-20 under the plantation / afforestation works were 40 covering 85 forest ranges and buildings, asset development and construction of boundary walls and boundary pillars undertaken in 51 forest divisions and 137 forest ranges.

The CAMPA fund is mainly used for afforestation & plantation activities, assisted natural generation, forest management, wildlife protection and management, relocation of villages from protected areas, managing human-wildlife conflicts, training and awareness generation, supply of wood saving devices, and allied activities.

During the process of evaluation, various aspects of the treatment of catchment areas, assisted natural generation, forest management, wildlife protection and management, relocation of villages from protected areas, managing human-wildlife conflicts, training and awareness generation, supply of wood saving devices, and allied activities being implemented were assessed. In some respects encouraging trends of progress were reported and in some other aspects programme was lagging. The findings of assessment under Third Party Evaluation are presented below under the following heads (1) Survival rate of the plants (2) Soil & Moisture Conservation structures (SMC) (3) Forest Management (4) Capacity Building Training & Awareness (5) Wild Life management (6) Allied activities etc.

Outcome and the effectiveness of CAMPA fund project works and activities has been experienced by reviewing the survival and growth of plantations undertaken in the project, functioning of Forest Divisions & Range offices, institution building, initiatives for Soil & Moisture conservations, construction of water harvesting structures, construction of protection /boundary wall, construction of boundary pillars, development of nurseries, capacity building, and trainings etc. both in forest and wildlife areas.

The findings of the Third Party Evaluation study have been reviewed on the following performance indicators namely, Relevance, Efficiency, Effectiveness, Impact, Sustainability, Key innovative initiatives and lessons learnt are stated below on various parameters.

6.1 Strengths & Weaknesses

The key findings in terms of Strengths & Weaknesses are stated hereunder,

Strengths	Weaknesses
1. The CAMPA Fund project activities have supported to save forest at the plantation sites from further degradations and increase the forest cover on new diverted land by the administration in lieu of forest land used for development project purpose in the state. 2. Increase in forest and vegetal cover added value to overall process and system of forestry development. 3. SMC related activities at the afforestation/ plantation sites impacted conservation of soil and water. 4. Developed useful nurseries for the afforestation/ plantation in the forest ranges. Also expanded the volume and quality of infrastructures at nurseries. 5. Increased plantation of local species at the afforestation sites. 6. SMC activities were executed in proper manner including selection of right sites at	1. The forest areas were facing extreme climate conditions in the area. Also, the soil depth is very low and the state experienced variations in temperatures. The temperatures hike during summer up to 45^0C to 48^0C and in winter temperature fell to the minimum 6^0C to 0^0C. 2. The soil cover on rocky area of Alwar, Sirohi, Pratapgarh, Pali, Dungarpur, Bundi, Sikar, RTR, Sawai Madhopur, Jodhpur, Dholpur, STR, Kota, Baran & Jhalawar is low resulting into limited survival of planted plants. 3. The nursery development may take into consideration the long-term perspective and sustainability of requirement of nursery as catalytic role for Forestry development. 4. The planning for development of nursery was not done. It would be good if the project should meet the basic facilities of nurseries namely, water, fencing, development of pucca bed etc. 5. The plantation sites largely drive towards plantation only i.e. completing the activity. The element of 'People' was kept at lower level. People's participation was reported less at the plantation sites. 6. The VFPMCs were considered less important for better protection and management of initiatives under the project. 7. The documents namely, VFPMC records, Plantation journal, plantation cards were lacking required initiatives. Consequently, the results were discrete rather than consolidated. 8. The villagers at plantation sites reported of being affected with Neelgai (Roze) which destroy agriculture crops. 9. Protection & care of plantation/ activities sites being beyond project phase was reported limited or almost nil and it causes nullifying the investments due to heavy grazing by the cattle/local livestock.

majority of places. The quality of construction has been reported from satisfactory to good in most of the cases. 7. The impact of SMC works were visible in most of sites helping in increasing the vegetative cover of the sites. The natural vegetation was better reported than the planting saplings on thanwalas. 8. Contour bunding works were done largely in a proper way. 9. LB with gabion resulted into reduction of soil erosion and checked the water flow velocity. At most of plantation sites, it was reported constructed at proper site and with proper quality. 10. Construction of WHSs at the plantation sites/ near plantation sites helped in checking the soil erosion. 11. The quality of Anicuts type II and III was reported proper and useful.	10. No provisions of operation and maintenance of SMC work have been made. Also, in some cases the site selection for anicut was not very strong resulting in breakage of structure. 11. There wereweak VFPMCs in the area and they were reported active only for execution of activities as the whole plan has been made for taking up forestry and plantation works and the expenditures were made by VFPMC. 12. Monitoring and supervision by Forest Division and Range officials was reported limited and not regular for supporting the execution of works/ activities at sites specially and the plantation and construction activities (boundary wall, Forest Chowki & boundary pillars) and for the purpose of improving the better utilization of fund for quality execution of works/ activities. It was reported due to vacant position of field staffs and lack of availability of vehicle at range level. 13. At the most of the sample sites, micro-plan was not the base document for execution of works. 14. The capacity building, training, research, communication & extension activities were reported at lower scale, which should be at higher scale for executing the project in broader spectrum and with support from local people. 15. Local people/ stakeholders were informed about the project may be with various methods i.e. meetings, trainings, orientations, exposure visit as per the project activity plan. However, their involvements were not much reflected in the outcome of the project activities. 16. Lack of required expertise amongst forest officials/ functionaries to undertake related activities. 17. Low level of proactive initiatives by the local stakeholders/ community people for better utilization and management of CAMPA fund related activities / work for better development of forest cover and improvement of forest related initiatives.

6.2 Key Findings & Conclusions

6.2.1 Overall Review of Physical progress on CAMPA Fund

- The physical target of 24823.12 ha plantation was achieved against the allotted target of 24823.12 ha resulting in 100% achievement of plantation targets during the CAMPA Fund project period of 3 years (2017-18 to 2019-20).
- There has been visible impact of the expenditures under CAMPA Fund in the forest sites in terms of Improving the quality of Degraded Forest Lands (DFL), improving and increasing the forest cover in the Non-Forest Lands (NFL), providing better facilities and improving the habitat of wildlife as a result the sighting of various animals were reported, and improving the health of the forest area where works and activities undertaken from CAMPA fund.

6.2.2 Afforestation, Plantation, Growth & Survival

- During third party evaluation 111 sample sites were visited to assess the survival rates of the planted species. The survival rates of the planted species vary from 2.19% (Gopalpura) to 82.0% (Papad). At 77.5% sample plantation sites (86 sites out of 111), the survival rates of the planted species range from 41-60 % across the sample units.
- Regarding year-wise survival percentage of the plants, in the year 2017-18, the same was reported in the range of 0-20% & 21-40% at each of the 02 sample sites, at 28 sample sites the survival percentage of the plants was in the range of 41-60% and at 04 sample sites the survival percentage of the plants was in the range of 61-80%. In the year 2018-19, at 03 sample sites the survival percentage of the plants was in the range of 0-20%, survival percentages of the plants was in the range of 41-60% at 34 sample sites, at 07 sample sites the survival percentage of the plants was in the range of 61-80% and at 01 site the survival percentage of the plants was in the range of 81-90%. In the year 2019-20, the survival percentage of the plants was in the range of 0-20% & 21-40% at each of the 01 sample site, the survival percentage of the plants was in the range of 41-60% at 24 sample sites and at 04 sample sites the survival percentage of the plants was in the range of 61-80%. In total, the survival percentage of the plants was in the range of 0-20 % at 06 sample sites, 21-40% at 03 sample sites, 41-60% at 86 sample sites, 61-80% at 15 sample sites and 81-90% at 1 sample site.
- The total area of all the selected and evaluated 111 sites of plantations of 85 Ranges of 55 Divisions was 5451.88 ha. The overall ranking of evaluated 5451.88 ha plantations was with average survival percentage of 48.44%.
- In terms of physical area, the ranking of plantations was excellent (9) of 50 ha plantations having survival percentage between 80 and 90, very good (8) of 411.84 ha plantation having survival percentage between 70 and 80%, good (7) of 520 ha plantation having survival percentage between 60 and 70%, average (6) of 1166.57 ha plantation having survival % between 50 and 60%, poor (5) of 2972.11 ha plantation having survival percentage between 40 and 50% and very Poor (4) of 331.36 ha plantation having survival percentage less than 40%.
- Regarding ranking of plantation sites, the survival percentage was excellent (between 80

and 90%) with ranking of 50 ha plantation area of 1 site, Very Good (Between 70 and 80%) with 8 ranking of 411.84 ha plantation areas of 8 sites, good (Between 60 and 70%) with 7 ranking of 520 ha plantation areas of 8 sites, average (Between 50 and 60%) with 6 ranking of 1166.57 ha plantation areas of 27 sites, poor (Between 40 and 50%) with 5 ranking of 2972.11 ha plantation areas of 58 sites and very poor (less than 40 %) with 4 & below ranking of 331.36 ha plantation areas of 9 sites.

- At Kabri Khal (Newai range, Tonk district) site the guarding & security of the site had been completely withdrawn and expenditure on plantation site had not been reported since two-three years. The pucca Cattle guard hut was completely damaged at the site. Illegal mining by humans was reported at the site. The site in-charge was also involved in illegal mining and had been suspended. The site (Kabri khal) was complete failure with only 5.22 percent survival rate.
- There has been instance that seedlings transported for plantation were not planted and the seedlings remained lying in open. This is one of the reasons for low survival percentage as numbers of seedlings were not planted (Santokpur site of Alwar division).
- At the Tai B site (Chittorgarh Davison), growth of survived plants was poor. The reason behind poor growth & survival of planted seedlings was that fire broke out at the plantation site on 7 April 2022. Due to which 70 percent of the planted seedlings were damaged.
- At Bhagega site (Sikar Division), the growth of planted seedlings was low. The reason for low survival was damage due to fire at the plantation site. 99 percent planted seedling were completely damaged due to fire. Regeneration of planted seedlings was reported at the site.
- The better survival of plantation site where grazing was minimum due to strict vigilance of women Site In-charge (Smt. Choti Devi) at Khirkhadi site of Sawai Madhopur division.

6.2.3 Factors affecting Growth & survival (Biotic and Abiotic)

- Widely growth of termite & attack by pest obstruct the growth of planted seedlings in almost all the plantation sites.
- Grazing by stray animals, cattle & destruction by Neelgai, Chinkara, Wild boar, Rabbit & Rat were reported at the plantation site. In Bikaner division at Mahajan site, destruction by rat was quite visible at the plantation site as there were holes all around in the ground.
- Wild animals viz. Neelgai and village animals ate the branches and leaves of plants. The growth and survival of plants was affected due to grazing by Neelgai and village animals (Sheep, Goats, Cows, Bulls and Buffaloes etc.).
- Due to non provision of watering in the plantation models survival and growth of plants were affected and mortality was reported higher.
- Ditch fencing was damaged at many places. At some places, the locals made route from ditch fencing to plantation site for cattle grazing. Village and wild animals grazed almost all planted species. Loose stone wall fencing was damaged at many places. The stones of

loose stone fencing were removed from many places and route to plantation site was made by the locals.

- Low rainfall was reported at the plantation site during last 2 to 3 years. This affects the survival & growth of planted species. Also, the survival was reported moderate to low.
- Also, the soil quality obstructs the growth of planted seedlings. The soil was rocky & sandy at many plantation sites. The chances of survival of seedlings in rocky is low.
- The destruction to planted seedlings by termite was observed during third party evaluation process. It needs proper treatment so that the huge investment on plantation can be meaningful in improving the forest cover.
- The canopy of Juliflora reported certainly affecting the survival and growth of plantations in the area. Also, at the sample sites it has occurrence of Juliflora affecting the plantation sites due to fast recurrence and converge.

6.2.4 Impact on Vegetal Cover

- There has been reported increase and improvement in vegetal cover at the sample plantation sites viz. DFL, NFL & ANR. The vegetation abundance has been reported fairly higher in ANR model as compared to NFL & DFL models.
- The plantation and soil & moisture conservation activities at the plantation sites have certainly added value in terms of increase in the vegetal cover namely, trees (Plash, Ronz, Neem, Mahuva, Tendu, Baheda, Sagwan, kher, Neem, Ronj, Shesham, Baans, Churel etc.) shrubs (Ber, Lentana, Ber, Juliflora, Hingot, Jaal, Bui & Kheep), herbs (Neem giloi, Satavari, Peelvan, Googal, Bazardanti) and natural grasses (Lapla, Bharut & Dhaman) etc.

6.2.5 Protection & Management

- The boundary wall supported under CAMPA fund was reported boon for the forest divisions as it helped in demarcating the forest land and boundaries and protecting from encroachment.
- With construction of boundary wall at the plantation sites, reserved forest areas, the result was reported positive in terms of protection of forest areas from grazing. Also, the evaluation team has witnessed the growth of various trees and shrubs as a result forest density has been reported improved.
- The boundary pillars constructed under CAMPA fund helped in demarcating the forest land and boundaries and protecting from encroachment.
- It has been reported that the plantation and afforestation sites require proper protection, watering and proper guarding in order to have better achievement.
- During visit to the project sites for third party evaluation it was reported that the plantation sites boundaries were constructed as per norms i.e. loose stone wall, Ditch fencing and barbed wire fencing etc. It was also observed at the sample sites that the fencing on the boundaries had been damaged. Also, the plantation sites have withdrawn the cattle guards who were placed during execution phase. The plantation

sites were reported open and the village animals were reported entering into the plantation sites for grazing.

- Ditch fencing was reported at 83 sample sites. The length of ditch fencing varies from 230 rmt. (Chirana-Navalgarh) to 2800 rmt. (Mishrawas-Shahpura). Like-wise, loose stone wall fencing was reported at 83 sample sites. The length of loose stone wall fencing varies from 86 rmt. (Chirani II Khetri) to 5650 rmt. (Borda- Kishanganj). Also, other types of fencing were reported at 22 sample plantation sites. Other types of fencing at plantation sites include barbed wire, pucca wall & dola fencing.
- The plantation sites after 5-6 years (ANR Plantation) were left totally on the mercy of cattle guards. It has been reported that the sites have full pressure of grazing by the local live stocks and cattle. The whole investments were nullified and the site conditions became alarming.

6.2.6 Extent and composition of sowing

- The sowing was reported at 104 plantation sites. At 07 plantation sites sowing was not reported (04 sites at IGNP Jaisalmer) 01 site each in Pratapgarh, RTR Sawai Madhopur & 01 Sikar). As per practice of department, seeds were sown along trenches/ earthen bunds & on fencing. The Seeds sown were Kumtha, Katkaranj, Ratanjot, Ronj, Chhela, Khair and Desi Babool etc.
- Regarding status of sowing, the same was reported excellent at 02 plantation sites followed by good at 66 plantation sites, average at 23 plantation sites & poor at 13 plantation sites. Hence, at majority of sample sites the result of seed sowing was good.

6.2.7 Maintenance & Other Silvi-cultural operations

- As a part of maintenance, the site used to be visited on regular basis to keep watching regarding protection aspects. Also, loose stone fencing, ditch fencing & barbed wire fencing being fully effective in controlling the biotic pressure was reported at 34 plantation sites followed by partially effective at 67 plantation sites & at 10 plantation sites the fencing was not at all effective in controlling the biotic pressure.
- Hoeing and weeding cut back (Bair & Juliflora), removal of weeds & removal of dead, dying diseased and decaying trees was reported at 31 plantation sites, whereas post plantation operation such as pruning & thinning was reported at 32 plantation site. As a part of maintenance, casualty replacement of plants was also done for the second and third year at rate of 10% of total plantation in the sample site. Mortality in the plantation is replaced in the second and third year by miscellaneous species.
- The pruning and hoeing should be actually done at least in the first 3-4 years in order to have better growth and development of plants planted.
- The cut back operation and stocking of roots were done at the ANR sites but the result was not appealing. Also, it has been reported that the cut back operation and stocking of roots was not readily practiced at every ANR sites.

6.2.8 Soil & Moisture Conservation works (SMC Works)

- Activities related to development of Soil & Moisture Conservation structures (SMC) is the key element of CAMPA Fund which is pre-requisite for the afforestation and plantation activities. Various SMC structures were constructed namely, SMC Structures - Anicut type - II & Anicut Type-III, Gabion, Earthen Check dam, PCT, V-ditch, CBD & WHS.
- The works of SMC can be appreciated undertaken at the plantation sites which were largely found useful and relevant. Continuous Contour trenches were reported at 102 plantation sites, whereas at 09 plantation sites the same was not reported. The length of CCT varies from 120 rmt. (Kachrauli) to 26400 rmt. (Mundiya B I). V ditch reported at 08 plantation sites. The length of V ditch varies from 950 rmt. (Ladpura) to 47000 rmt. (Kadili). SGT was reported at 10 plantation sites. The length of SGT varies from 150 rmt. (Kachroli) to 7945 rmt. (Kabri Khal).Deep CCT was reported at 08 plantation sites. The length of Deep CCT varies from 30 rmt. (Kachroli) to 4588 rmt. (Dubali). Contour Dykes were reported at 04 plantation sites. The length of Contour Dykes varies from 840 rmt. (Nand) to 5000 rmt. (Dolatpura).
- Mulching was reported at 04 plantation sites. The length of Mulching varies from 8000 rmt. (Junapatrasar B) to 41905 rmt. (SDS 35-38 RD JJW C). PCT/ Nadi was reported at 16 plantation sites. The area of PCT/ Nadi varies from 159 cu.m. (Nand) to 5774 cu.m. (Mishrawas).Farm pond/ WHS was reported at 7 plantation sites. LSCD was reported at 36 plantation sites. The area of LSCD varies from 75 cu.m. (Bagwara) to 3040 cu.m (Peepalda Samel). Earthen Check dam was reported at 36 plantation sites. The area of earthen check dam varies from 58.5 cu.m. (Kachroli) to 807.77 cu.m (Karwad Jat). These initiatives were reported useful for site.

6.2.9 Various assets created under the project in terms of Quantity & Quality

- Out of total selected & evaluated 218 sample sites of assets in 137 ranges of 51 divisions, the ranking was excellent (9) at 06 sites, very good (8) at 21 sites, good (7) at 63 sites, average (6) at 102 sites, poor (5) at 19 sites & very poor (4) at 7 sites.
- The construction of boundary wall was reported an instrumental initiative in protecting forest and forest land from encroachment. It has been reported in Dholpur division that the boundary wall has protected the forest land and animals were not taken in the forest boundary which was used for agriculture by the nearby farmers. Also, in Jhunjhunu forest division, in Jhunjhunu city about 10 hectares of land was encroached by the influential people and was used for agriculture. The same was removed by the department after construction of boundary wall. On the land the Black bug sanctuary has been developed.
- In total, 73 Pakki diwar 4ft. (37748 meters) had been evaluated, out of which 52 were average, 20 were good & 01 was poor in quality of construction. Regarding rating of quality of construction 29 pakki diwar was rated 6, 14 rated 5 followed by 24 rated 7, 03 rated 8 & 4 each. Regarding rating of quality of construction, 50 pakki diwar 4ft. was rated average, 22 rated good & 1 rated poor.

- In wildlife forest area, 48 Pakki diwar 6ft. (29466 meters) had been evaluated, out of which 41 were average, 6 were good & 01 was poor in terms of construction quality. Regarding ranking of quality of construction 01 pakki diwar was ranked 9 followed by 03 ranked 8, 10 ranked 7, 22 ranked 6, 8 ranked 5 & 04 ranked 4
- Pillars were evaluated at 32 sites (Nos. 1603). Out of 32 sample sites, 23 were average, 5 were good & 04 were poor in quality of construction. Regarding rating of quality of construction 06 pillars sites were rated 7 followed by 11 pillars sites rated 6, 8 pillars sites rated 5, 04 pillars site rated 4 & 3 pillars sites rated 3
- 18 Anicuts II & III had been evaluated. Out of them 14 were average, 3 were good & 01 was poor in quality of construction. Regarding rating of quality of construction 01 rated 9 followed by 02 rated 8, 06 were rated 7, 6 rated 6, 2 rated 5 & 01 rated 4.
- 17 Forest Chowkis/ Van Rakshak Chowkis had been evaluated. In terms of rating of quality of construction, 06 forest chowkis were rated 8 & 7 each followed by 04 forest chowki was rated 6, & 01 rated 5. Regarding quality of workmanship, 11 were average & 06 were good Further, 01 rated 9 followed by 04 rated 8, 08 forest chowkis were rated 7 & 04 rated 6 in quality of workmanship.
- The boundary wall, anicut and forest chowki at some places were found having minor settlement and cracks or need maintenance. It should be addressed as per the requirements. Otherwise, the whole investment will become unusable after some time. Therefore, it is recommended to have a provision of budget for operation and maintenance.

6.2.10 Assessment of documentation & record keeping

- As far as availability of records at the plantation sites during the third party evaluation is concerned, availability of measurement book was reported at all the 111 plantation sites followed by availability of plantation journal at 106 plantation sites, KML file of plantation at 86 plantation sites, plantation card at 57 plantation sites, micro-plan at 33 plantation sites & survey map/ treatment map at 98 plantation sites.

6.2.11 Logistics/ Monitoring & Supervision

- Certainly, due to lack of adequate staffs it was found difficult to ensure the commitment and properly completion of works. Also, the limited facility of mobility at range level affected the required supervision and monitoring of activities and works executed under CAMPA.
- It has been also reported that due to limited power of transfers at office of forest division, the functionaries do not follow the instruction/ directions. This is again called non completion of work as per the required standards and norms.

6.3 Recommendations & Suggestions

6.3.1 Afforestation, Growth & Survival

- The percentage of replacement of causality occurred in the first 02 years of plantation may increase until the protection of plantation sites may be for 5 years so that the casuality can be reduced and more care can be given. It would result into improved vegetal cover.
- The plantation sites experience extreme hot and cold during the year in different seasons. The watering of the plantations may be allowed for initial years in order to bear the extreme temperature crisis. In ANR, NFL and DFL plantation models, the provision of watering may be given at least 3-4 watering every year in the beginning at least for 3 years may between November – June or as required as per site condition. Provisions for watering in ANR sites may be included for first 3 years. The ANR plantation model needs to be revised based on the real time and site specific requirements.
- The protection from destruction by rats, porcupine (sevli), termite and Roze (Neelgai) may be planned in order to have proper growth and development of plantation sites plants.
- The trees species planted at the plantation sites may be taken up after complete assessment of the site – its topography, existing vegetation, species of trees etc. in order to have better productivity and survival.
- The provision for 24 hours site guards may be made so that the destruction during night can be taken care. It means provisions for 02 guards should be made at every site. In addition, the site guards were paid six days in a week and remaining one day is given leave.
- While having interaction with forest officials, PRIs, local functionaries and VFPMC members, they were of the opinion that Site Chowkidar should be placed for 8-10 years at the plantation sites in order to have better results and maximum results of the whole investment made on plantation with hardly 10-15% requirement of additional budget in the next 3-4 years.
- There is greater need to stop the grazing by creating proper fencing. The fencing wall should be of proper height looking to the site condition rather than the existing State norms of fencing. In some sites, stakeholders opined for raising the height of fencing wall from 1.2 meters to 1.5 meters. It will give better result and improve site conditions.
- It is high time to revise the plantation models of ANR and DFL looking to the outcome/ result of afforestations and plantations. It has been reported that at some sites it becomes a problem to execute the model. Similarly, the case may be for other models, too. Based on interactions with various Division and Range level officials, it has been reported to revise unit size of plantation for ANR and DFL models. It may be a unit of 5 to 20 hectares. This certainly will improve the coverage and undertake the plantation work smoothly and without much delay. This will improve the vegetal cover and survival percentage of plantations.
- The plantation model needs to be revised now and it should be site specific rather than one model for the whole State. The component of plantation, protection and development

of SMC structures need to be site specific. Also, the plantation activities should ensure that plants planted at site should be of more than one year and should pass through all the seasons namely, summer, winter and rainy seasons. In a span of one complete year time the plants at nursery will ensure hardening, adaptivity, resistance to larger extent.

- DPR (Detailed Project Report) should be prepared as per model chosen for the site.
- The local species at the plantation sites should be preferred in order to have better response of the plantation activities. Site specific seedlings should be planted (as per topography & soil condition) at the plantation site.

6.3.2 Strengthening formation & Functioning of Institution

- Forest Division office in the Leadership of DCF who may have expertise in CAMPA Fund project components should review and support the various activities undertaken beyond the afforestation/ plantation & SMC works namely, Institution building i.e. VFPMC and capacity building. A regular review and facilitative support will be instrumental in understanding the local problems, and then it will be possible to provide required & timely support irrespective of financial releases.
- The sample project Forest Divisions did excellent job in fulfillment of their responsibility of undertaking plantation activities with the help of VFPMC at the project sites. However, the real requirement is towards creating a system and institutions at village level, which should really undertake its responsibilities properly. In the whole CAMPA Fund supported project, the role of VFPMC is pivotal. Hence, there is stronger need to activate the VFPMC which should come forward to take active role in protection and management of forest related initiatives and plantations.
- The Forest Divisions/ Range Offices engaged under the CAMPA fund related works/ activities had done their job but there is strong need to work as per mandate of the CAMPA Fund and ensure that the village level institutions should have enough capacity to take-up the responsibility rather than working ornamentally. The performance may gauge on the milestones achieved in quality manner.
- At VFPMC level, the mechanism of operation and maintenance was not reported for assets created under CAMPA fund project at the SMC sites.
- The Forest Division should perform its role as per the whole plan of action associated with CAMPA fund. It is also true that stakeholders at Forest Division/ Range should also understand their importance and develop better coordination with project team and should understand their role in the project rather than completing the project activities anyhow.
- There should be provision of movement of range officials/ beat level stakeholders may be in terms of providing vehicles, POL, automation of range offices with computers and filling up the vacant posts of guards and providing travel claims timely etc. The Guards posted need to be made regular at the sites. The incentives/ travelling allowances etc. should be given in time because the success of plan implementation is likely to depend on individual initiative, too.

- The records of works need to be maintained at the range level in addition to MB and total sanctions, expenditure should be reported along with completion date, and GPS location of the works sites (longitude and latitude).
- As per the Government norms and rules, the records and reports were maintained at Forest Divisions and Range offices level as a part of administrative formalities. However, a project report of CAMPA fund project works/ activities were not shared showing the year-wise or consolidated physical, financial, visible changes, what worked, what did not work, challenges, weaknesses of the project activities, strengths & results of whole investment etc. The report can be made at division/ range level, which certainly helps the State level stakeholders/ outsiders/ community to see the investments and outcomes of the project. In addition, it will also help the forest department officials at division/ range levels really appreciate their success and internalize their failures/ weaknesses.

6.3.3 Records & Documentations

- Every Forest Division/ Range should have stock of the works with details such as physical and financial targets, completion date, GPS locations, Numbers etc. rather than locating everything with MB and financial reports.
- There should be proper system of record keeping so that the various works undertaken in the jurisdiction of range offices can be traced even after the transfer / retirement of officials/ functionaries.

6.3.4 Soil & Water Conservation and Improvement in Soil & Moisture Content

- The initial level planning for water conservation structures namely, Contour bunding (CBD), Check dam, trenches, Farm Pond, LB with Gabian, contour trenches, V-Ditch, PCT, WHS, contour bunds and Nadi etc. with required plan and estimate definitely would help in creating better and more effective structures - may be for right use and for adequate water conservation.
- The timely and proper maintenance of Soil and water conservation structures should be taken up under the project namely, Anicut, Gabian and PCT etc. in order to keep them functional for longer time period.
- Numbering of SMC works and works details namely, name of work, year of construction, project fund, expenditures and sanctions etc. need to be taken up in order to locate the works at the site.

6.3.5 Development of Nursery

- The nursery development may take into consideration the long-term perspective and sustainability of requirement of nursery as catalytic role for Forestry development.
- The nursery should cater the local needs in terms of meeting the local demands under existing circumstances.
- The plants lying at nurseries-may be of 3-4 years can be taken to plantation sites rather than increasing the burden of replacement of poly bags every year and maintenance.

- The expenditures in the particular nursery should be based on the requirements rather than taking the activities as per the provisions in the budget. It will help in developing the nurseries as per the need. This will help in proper functioning of the nursery.

6.3.6 Community Mobilization – Awareness camps & Meetings

- The visit to the sample plantation sites and project villages to assess various activities executed under the CAMPA fund reflects that the community mobilization might be better. Hence, it is recommended to plan the activities related to community mobilization and awareness in an effective manner with details such as who will be participants and how they will be informed in advance.
- VFPMC meetings should be organized regularly. This will ensure involvement/ participation of VFPMC members in various other activities. The role of VFPMC members should be recognized by the local forest functionaries, too.
- The strong community mobilization capsule definitely has powerful influence on individual and VFPMC members. However, the requirement is to plan and undertake community mobilization task professionally in the right spirit for the right cause & at the right time.
- The intervention of forestry development work namely, plantation, construction of SMC works capacity building trainings etc. should be taken up in holistic way so that the forest development and development of people should also be ensured in terms of social and economic development. Then only the association of people and real 'People's Participation' can be ensured. This can be the essence for future activities and initiatives, which will be supported by the local stakeholders.
- The involvement of local people both men and women in the process of forest development should be made right from the stage of planning, designing, implementation and monitoring and evaluation of various activities and initiatives at VFPMC level.

6.3.7 Capacity Building Training

- The role of capacity building inputs is instrumental in shaping the right skill at right time. It has been reported that various capacity-building trainings were undertaken for Forest Division, Range and VFPMC officials under the project. The training was mainly on the project background, objectives and purposes. The activities under the project were discussed. The roles of various level institutions were discussed. It would be better if the capacity building training would be planned in terms of inputs, processes, outputs and outcomes. This would help in understanding the real purpose of each and every activity related to training and capacity building.
- The forest department functionaries/officials executing the project at Naka & Site level should be oriented about the technicality of the various SMC structures and its importance that which SMC structures should be constructed at which sites. It has been experienced during evaluation of the sites that forest guard was not acquainted with the SMC structure and its technicality.

- At different points of time, different training and capacity building inputs may be required which need to be planned accordingly rather than same capsule every time. In addition, there should be training modules for them on the required subject/ theme.
- The functionaries namely, guard, cattle guard should be given training of various Water & Soil conservation structures, planning and preparedness in a systematic manner.
- Training and Capacity building module may be developed at Forest Division level may be for each of the training and outcome may be reviewed periodically.
- The Quality of records needs to be improved specially meetings records of VFPMC. It was also observed that active participation of members in VFPMC meeting is the real need, which has to be thought-off urgently. Only Chairman & a few EC members of VFPMC were found active. There is strong need to work for institutional building and mobilizing local institutions.
- The VFPMC meetings need to be planned properly and should be treated as essence of the project. The fix date, adequate time suiting to the community/ EC members and deciding venue of meeting are some important elements. In addition, the meeting agenda need to be prepared for every meeting of VFPMC.

6.3.8 Ensuring Quality of works – Monitoring & Supervision

- The Forest Division/ Range should play an important role in ensuring quality of works under the CAMPA fund project. The role of Forest Division is required in ensuring quality works in capacity building trainings, besides plantation and Afforestation activities and construction of boundary walls, boundary pillars, rescue wards and office buildings etc. The monthly review meeting at the Forest Division level may be organized with the whole team to discuss on the various inputs, processes and outputs as well as strengths and challenges.
- The project has a component of monitoring and supervision. However, it needs to be taken up properly and regularly in required direction in order to strengthen the project activities.
- It has been reported that the monitoring, supervision and guidance by DCFs/ACFs at field level was lagging periodically in order to ensure quality interventions. The plantation journal bearing the page for officials to note their observations in the column do not bear the note that to what extent the directions were followed at the site. The condition of the construction sites require more concentration of supervision and monitoring in order to ensure the design and quality of construction.
- It has been observed at almost all the construction sites at the various sample ranges that, the works were carried out as per the estimates and drawings and budgetary provisions in the estimates. The real demands of the site were not assessed. Therefore, at some places it does not look a very useful initiative. Hence, it is recommended to undertake the work at sites as per the existing conditions and requirements. It needs to customize as per real situation.

- Wherever possible, monitoring should be done on real time basis using advanced GIS applications and mobile Apps by the Department Monitoring Unit involving the VFPMCs.

6.3.9 Policy Issues

- There should be some periodic reporting format from Range office to Forest Division in order to develop more stake of the Forest Division in overall management of CAMPA fund.
- Transparency board should be installed at the VFPMC village, which gives details of overall project of CAMPA fund project & members of VFPMC etc.
- The protection in terms of cattle guards may be extended to 3-5 more years in order to have better results. In other way, it can be said that the whole investment may be guarded/protected for 3-5 years more in order to have better results.
- The plantation sites should have transparency board. In addition, construction sites (boundary walls and pillars) & SMC structures should bear numbers on the transparency board should be installed/ painted so that one can get information about the year of activity and under which project/ programme it has been constructed/ made and should also bear estimated cost and expenditures.
- Protection & Guarding at the site need to be proper and should be undertaken as per the present circumstances so that the same could be beneficial.
- Seed sowing should be promoted at the plantation sites. It should be sown properly not haphazardly. Plant grown from seed sown had more chance of survival than the planted seedling. There should be provision of thinning of plants grown from seed sown.
- It has also been observed that the MB contains the copy and rate of the estimate. Even the article was not taken in the work completed. Hence, it is recommended to use the estimates as model and book the materials quantity and numbers used in the construction in the MB in actual basis.
- The interventions of ANR should also be extended upto 8-10 years like NFL and DFL sites in order to have better results.
- It has been reported that due to not having adequate provisions in the plantation budget, the functionaries at range level were less interested in undertaking plantation activities. Therefore, it is recommended that the plantation budget should be sanctioned as per the real requirement of the site rather than working on the model estimate.
- In order to have better performance of plantation and ensure quality in the construction activities, there should be roaster system for monitoring, supervision followed by the DCF/ACF/RO. This will allow the visit of stakeholders periodically and ensure the quality of interventions. Also, it will help in reviewing the adherence of the instructions given time to time for the improvement. It will ensure better sustenance of the plantation sites. It will also help in having information about the site with the Range office/Beat level stakeholders/ functionaries.

ANNEXURE

Forest Division-wise consolidated report

Ajmer

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Ajmer Forest Division. This Forest Division with 6 Forest Ranges namely Ajmer, Pushkar, Kishangarh, Beawar, Sarwar & Nasirabad has territorial jurisdiction over the entire Ajmer District.

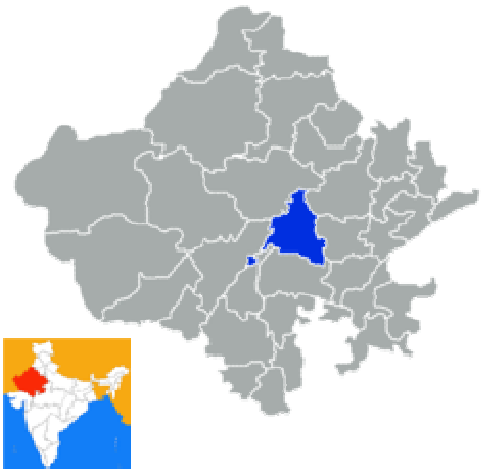


Figure : Location of Ajmer district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Ajmer Forest Division were as given per table for evaluation.

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Pushkar	Nand	2018-19	50	ANR	100%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Ajmer Forest Division were as given in table 2.

Table 2: Asset sample sites for evaluation

orest Range	Name of Site	Year	Physical Target Achieved (100%)	Physical Target Achieved (100%)
Ajmer	Pushkar	2017-18	Rescue Centre	100%
Ajmer	Madar Pahad forest	2018-19	Pakki Diwar 4 ft	480m

	area			
Kishangarh	Samariya Harda	2019-20	Pakki Diwar 4 ft	450m
Beawar	Van Rakshak Chowki, Naka Beawar	2019-20	Forest Chowki	100%
Kishangarh	Dangra	2019-20	Pillars (24 Nos.)	100%
Ajmer	Chamunda Devi/Taragarh/ Ajmer Dumada	2019-20	Roadside Plantation	Works not taken up and surrendered by division as per letter No. F() CAMPA/DCF/2019-20/2110 dated 27.2.2020

3. Results and Evaluation

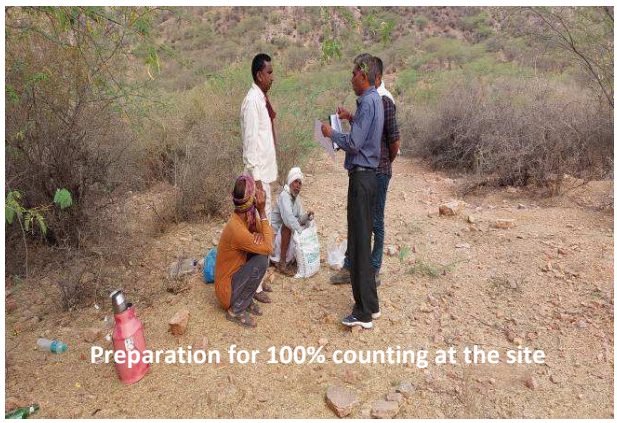
3.1 Plantations Evaluation

Nand plantation Site

3.1.1. Site 1: Nand in Pushkar range:

The selected plantation was carried out on 50 hac. of land at Nand in Pushkar range during the year 2018-19. The activities were done under the Assisted Natural Regeneration (ANR) model. The GPS location of this selected site was 26°29'27" N & 74°28'47"E. The site was a forest land and selected for 100% evaluation. The soil was rocky.

3.1.2. Treatment plan before sowing:


Preparation for 100% counting at the site

The topography of the area was hilly & rocky. Hence, as per availability of soil digging of pit has been made for plantation. Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Growth of planted seedling at the site

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai and rat was reported at the site. Also, widely growth of termite, soil quality and scarcity of water obstruct

the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory

3.1.4. Species Planted: The selected tree species under plantation were five. Seedlings of *Acacia nilotica* (desi babool), *Acacia leucophoelea (*ronj), *Holoptelea integrifolia* (Churel), Terminalia Zizyphus mauritiana (Ber) and others viz. Azadirachta indica (Neem) & Acacia tortilis (Totalis) were planted.

In total 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

Natural vegetation at the site

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row were 4m and 5 m depending upon the condition and location as per site conditions.

Ditch fencing at the site

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned it was proper. The seedlings selected for plantation were Ronj & Desi babool which can survive in harsh & dry climate. The choice of plants were made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was satisfactory.**

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6 Natural Vegetation and Regeneration: Totalis & Dhok were the plants found grown naturally in this area. The growth of the plant was good.

Loose stone fencing at the site

3.1.7 Regeneration through seeds sowing: Seeds of species *Kumatha* were sown in as well as along the trenches and on the thanwlas. **The result of sowing seeds was average.** The result of sowing

was seen on contour trenches, thanwalas & ditch fencing.

3.1.8. Protection Work: The selected ANR model plantation had ditch fencing of 1320 RMT having width at the top-1.50 meters, width at the bottom-0.9 meters & height 1.2 meters. Also, 1215 RMT loose stone fencing was reported at the site.

3.1.9 Soil and Water Conservation Measures: There are 3200 RMT Contour trenches (Width (T+B)-1.7+0.5 meters& depth-.60 meters), 4800 RMT SGT Width (T+B)-1.05+0.5 meters& depth-.60 meters), 1000 RMT deep CCT Width (T+B)-1.5+0.5 meters& depth-.1 meter), 159 cu. meter PCT/ Nadi and 400 cu. meter loose stone checkdam in the form of water harvesting structures present in the entire plantation area.

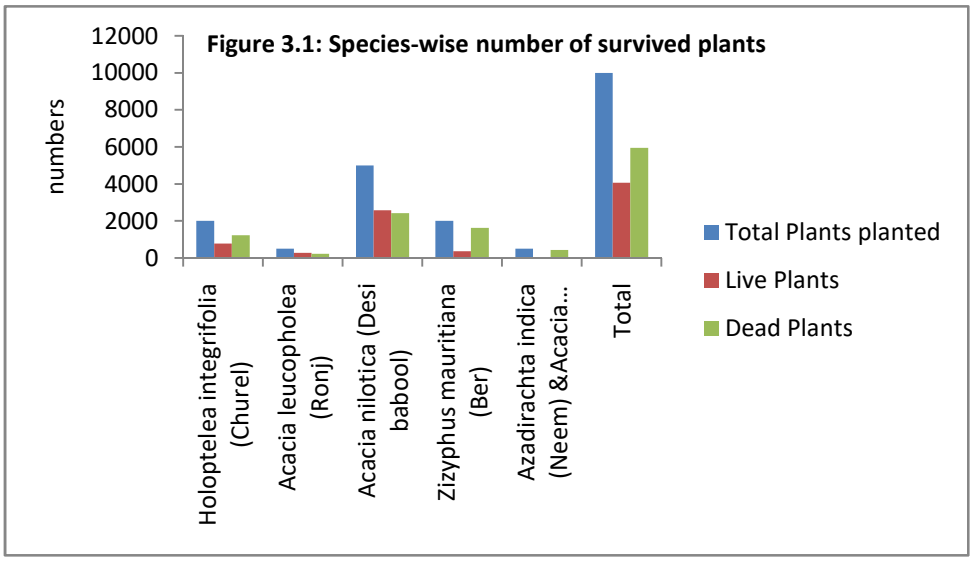
3.1.10 Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 40.60% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising five species were planted in the 50 hectare plantation area.

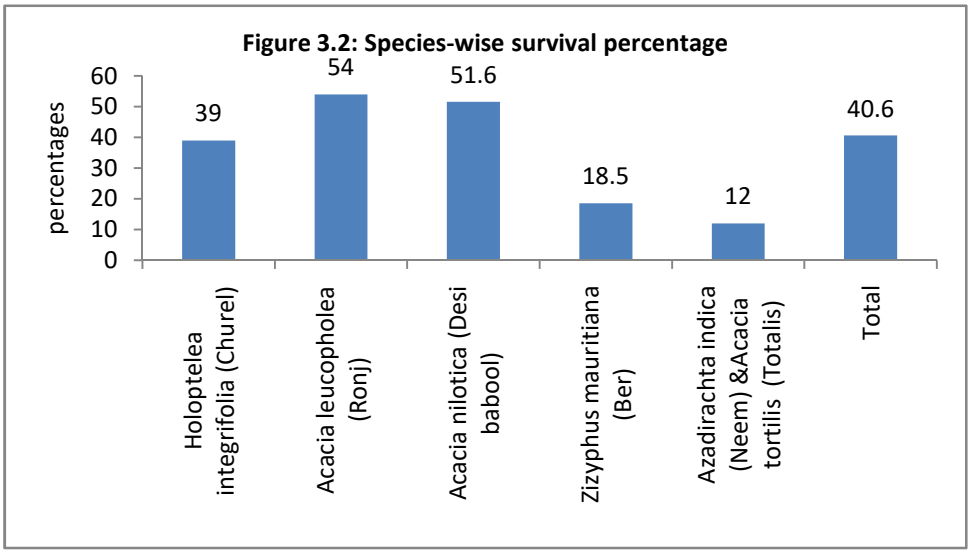
The reason of low survival at the plantation sites are stated here under:

- Heavy grazing by stray animals & cattle and destruction by wild animals' viz. Neel gai & rats hampered the growth of plants (70 percent damage to planted seedlings due to grazing & wild animals).
- Juliflora shrubs were widely grown in the area which hampered the growth of seedlings planted.
- Non- watering to planted seedlings. Largely, plantation was dependent on rain. Due to scanty rainfall, the survival & growth of planted seedlings got affected.

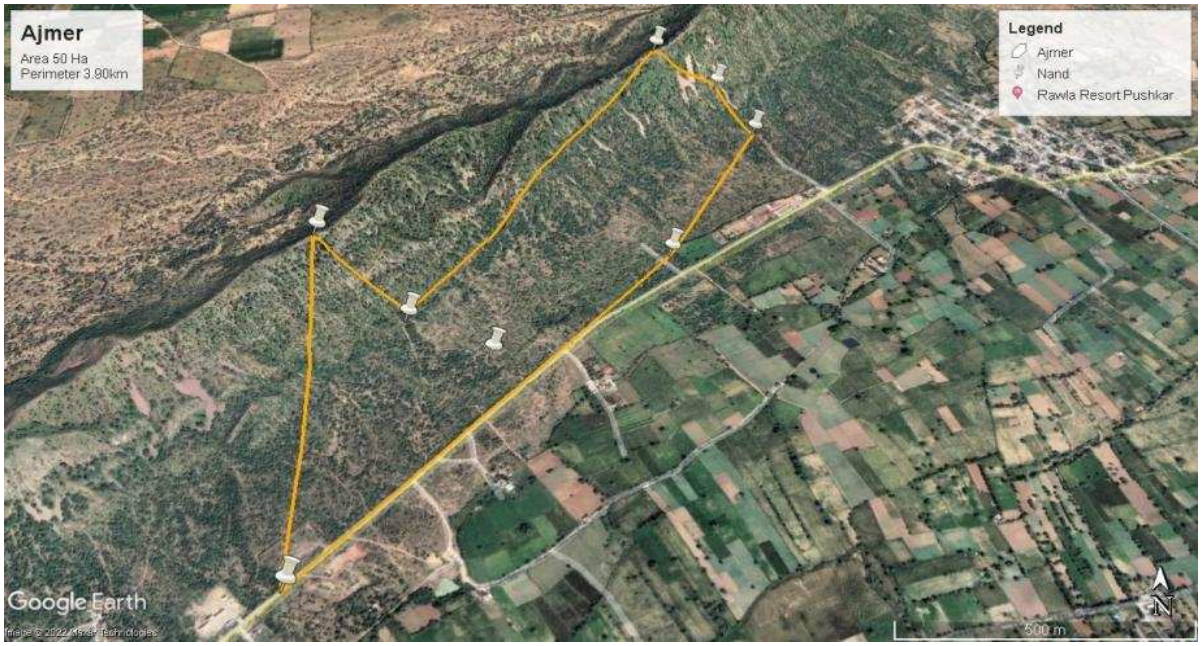
Table 3: Status of Planted Seedlings at the site-Nand Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average Collar (mm)
Holoptelea integrifolia (Churel)	2000	780	1220	39.00	95	72
Acacia leucopholea (Ronj)	500	270	230	54.00	92	68
Acacia nilotica (Desi babool)	5000	2580	2420	51.60	121	74
Zizyphus mauritiana (Ber)	2000	370	1630	18.50	90	65
Azadirachta indica (Neem) &Acacia tortilis (Totalis)	500	60	440	12.00	95	70
Total	10000	4060	5940	40.60	110	72





3.1.11 GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 Hac as per kml map.



3.1.12. Budget and expenditure

Table 4: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18	49824	1068544	566433	1684801	205450	913047	566303	1684800
2018-19	412600	0	0	412600	363474	0	9572	373046
2019-20	177850	0	0	177850	165862	0	11972	177834
2020-21	69543	0	22707	92250	72786	0	10735	83521
2021-22	80789	0	16261	97050	63927	0	8323	72250
Total	790606	1068544	605401	2464551	871499	913047	606905	2391451

4. Results for asset sites

4.1. Site 1- Rescue Centre at Pushkar Ajmer range

Rescue Centre at Pushkar in Ajmer range has been evaluated. The Rescue Centre was constructed in the year 2017-18. The GPS of the site is 26.49047 N and 74.57275 E. Site selection for construction of Rescue Centre was adequate. The construction work of Rescue Centre had been completed. The infrastructure created under CAMPA was useful. Also, the infrastructure during third party evaluation was in use and was properly maintained. Quality of Construction work was average. The expenditure incurred for constructing the Rescue Centre was Rs. 599985 (as per MB) as per the estimated cost of Rs.600,000.

Site 2- Pakki Diwar 4Ft. at Madar Pahar forest area, Ajmer range

At Madar Pahar forest area in Ajmer range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 434.2 m length as per MB. Also, in actual 434.2 m pakki diwar was constructed at the site. The width of the diwar was 0.38 meters & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment. GPS location of this area was 26°29'5" N and 74°40'19" E. The expenditure incurred for constructing this wall was Rs.98334 (as per MB) against the estimated cost of Rs. 1005400.

Record keeping: The documents such as plan and MB were shown to the study team.

Site 3- Pakki Diwar 4Ft. at Samariya Harda, Kishangarh range

At Samariya Harda in Kishangarh range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 413.70 m length as per MB. Also, in actual 415 m pakki diwar was constructed at the site. The width of the diwar was 0.38 meters & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protected forest boundaries. 23 meter Pakki diwar was broken near nursery & 1.5 meter pakki diwar was broken due to nullah. Also, at some places the quality of pakki diwar needs improvement. GPS location of this area was 26°35'19" N and 74°53'0" E. The expenditure incurred for constructing this wall was Rs. 11,73,000 (as per MB) against the estimated cost of Rs. 13,00,000.

Pucca wall 4ft. Samariya Harda

Site 4- Pillars at Dangda, Kishangarh range

At Dangda site in Kishangarh range, the Pillars (24 Nos.) have been evaluated. The pillars were constructed in the year 2019-20. The pillars were 24 in numbers as per MB.

Also in actual 24 pillars were found & evaluated by the third party. The pillars constructed were reported good and useful. The construction of pillars helped in marking forest boundary.

Site 5- Van Rakshak Chowki Naka Beawar, Beawar range

Van Rakshak Chowki at Naka Beawar in Beawar range has been evaluated. The Van Rakshak Chowki was constructed in the year 2019-20. Site selection for construction of Van Rakshak Chowki was adequate. Construction work appeared to be average and useful. The Van Rakshak Chowki created under CAMPA was neither in use nor was properly maintained. GPS location of this area was 26.111034 N and 74.341222 E. The expenditure incurred for constructing the Van Rakshak Chowki was Rs. 4.90 lacs (as per MB) against estimated budget of Rs. 605616.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Ajmer division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Nand	ANR	50	40.60	5

* <5: poor (below 50%), 6: average (50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rank of Item between 0 to 10
1	Pakki Diwar 4 ft	Madar Pahar forest area	Average	6
2	Pakki Diwar 4 ft	Samariya Harda	Average	6
3	Pillar	Dangda	Good	7
4	Rescue Centre	Pushkar	Average	6
5	Van Rakshak Chowki	Beawar	Average	6

Alwar

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Alwar Forest Division. This Forest Division with 6 Forest Ranges namely Behror, Alwar Kishangarhbas, Thanagazi, Laxmangarh & Rajgarh has territorial jurisdiction over the entire Alwar District.

Figure : Location of Alwar district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Alwar Forest Division were given as per table for evaluation.

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Kishangarhbas	Chorbasai	2017-18	50	DFL	100%
Thanagazi	Gadhbasai	2017-18	50	ANR	10%
Rajgarh	Dolatpura	2018-19	50	ANR	100%
Kishangarhbas	Gwalda	2018-19	50	DFL	10%
Lakshmangarh	Santokpur	2018-19	50	DFL	100%
Behror	Dhindhor	2019-20	50	DFL	10%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Alwar Forest Division were as given in table 2.

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Tijara	Kahrali	2017-18	Pakki Diwar 4 ft

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Chorbasai site in Kishangarhbas range -N 27.754315 and E 76.804585

The selected plantation was carried out on 50 hac. of land at Chorbasai in Kishangarhbas range during the year 2017-18. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 100% evaluation. The soil was black& red with morar.

3.1.2. Treatment plan before sowing: The topography of the area was plain & sandy. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 35000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Marking & counting of planted seedlings

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was good. Grazing by stray animals & cattle and destruction by Neel gai, rat and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.1.4. Species Planted: The selected tree species under plantation were 7. Seedlings of Acacia nilotica (Desi babool), Dalbergia sissoo (Shisham), Zizyphus mauritiana (Ber), Morus alba (Shahtut), Pongamia pinnata (Karanj), Moringa olifera Lam.(Sahjan) and Acacia tortilis (Totalis) were planted.

Growth of planted seedling in thanwalas

In total 35000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 400 plants per hectare have been planted. Thus, total number of plants planted was 20000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedling for plantation is concerned it was proper. The seedling selected for plantation was Ber, Totalis, Desi babool, Shisham & Karanj which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was good.**

3.1.5 Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

Measuring collar girth of planted seedling

3.1.6 Natural Vegetation and Regeneration: Dhonk, Kair, Bair, & Kumtha were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7 Regeneration through seeds sowing: Seeds of species *Kumtha, Totalis, Ronj, Bair &Churail* were sown in as well as along the trenches and on the thanwlas. The result of sowing was good. Plants from seed sowing were widely seen on trenches & thanwalas.

Continuous Contour trenches at the site

3.1.8. Protection Work: The selected DFL model plantation had loose stone fencing of 1700 RMT & ditch fencing of 2100 RMT. Present condition of loose stone fencing & ditch fencing was satisfactory. Silting was reported in some parts of ditch fencing.

Natural Vegetation at the site

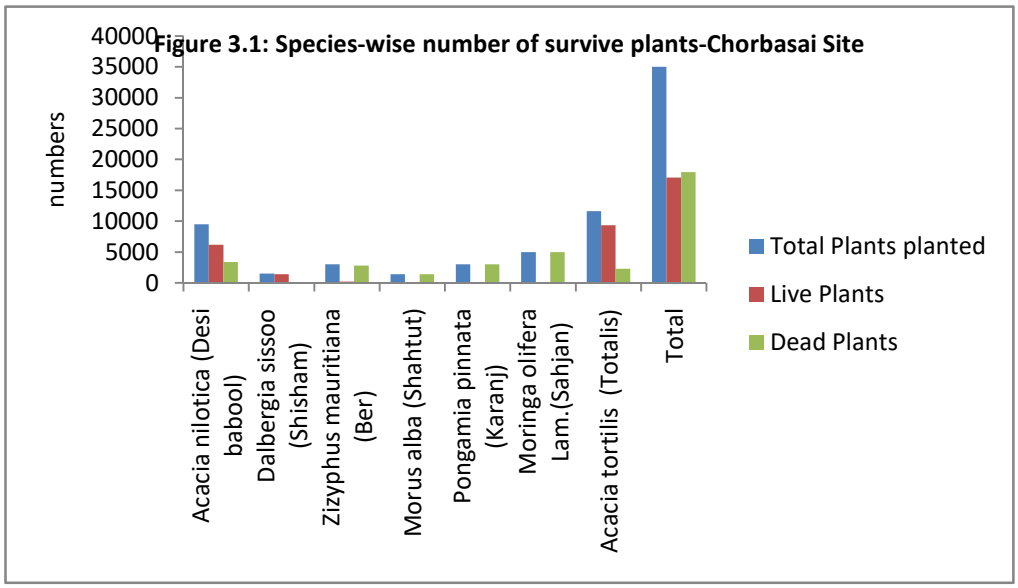
3.1.9 Soil and Water Conservation Measures: There are 7000 RMT (Width & depth -0.45

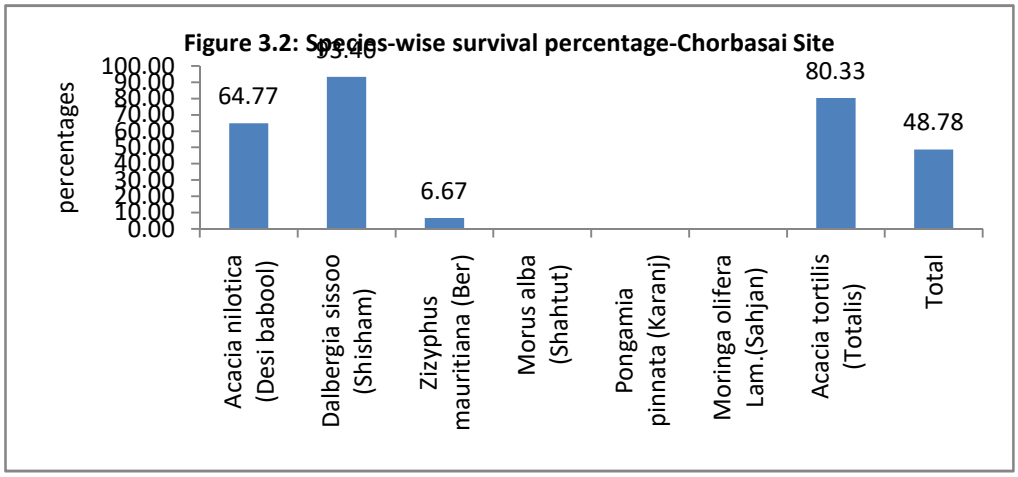
meters) Contour trenches & earthen checkdam (2390 cu.m) in the form of water harvesting structures present in the entire plantation area.

3.1.10. Observations Recorded: Under this model, 700 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 48.77% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was good. A total of 35000 plants comprising seven species were planted in the 50 hectare plantation area.

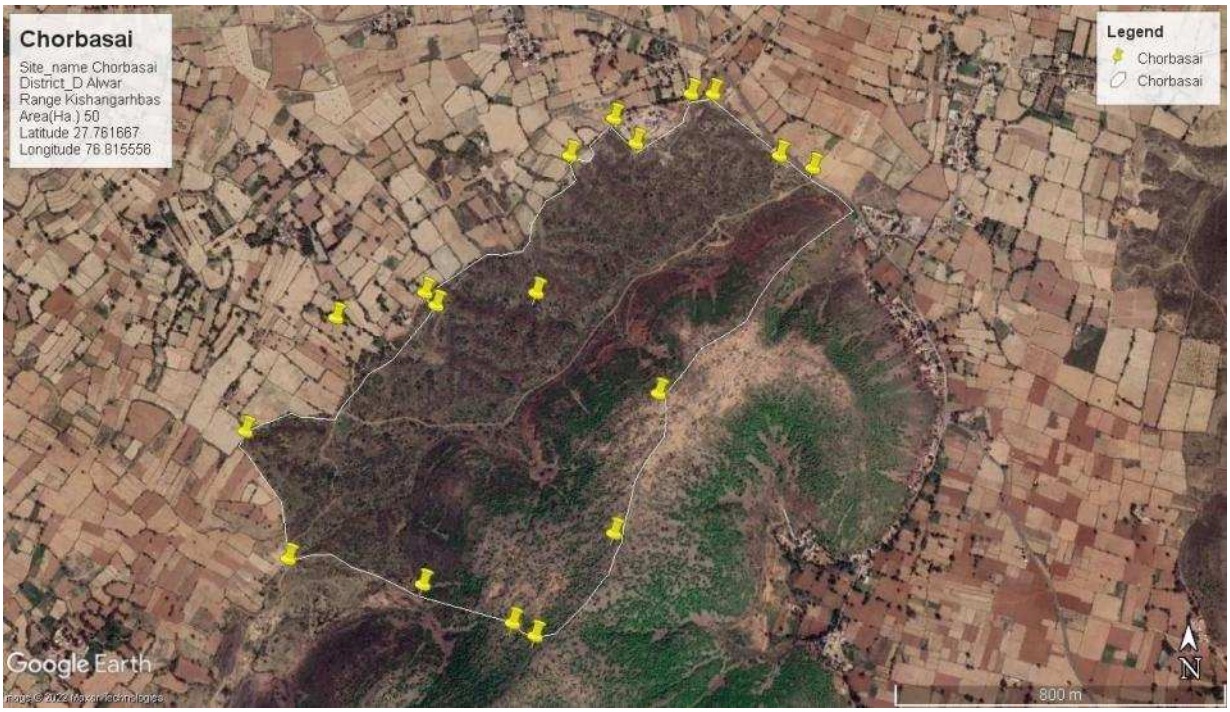
Table 3: Status of Planted Seedlings at the site- Chorbasai Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)
Acacia nilotica (Desi babool)	9500	6153	3347	64.77
Dalbergia sissoo (Shisham)	1500	1401	99	93.40
Zizyphus mauritiana (Ber)	3000	200	2800	6.67
*Morus alba (*Shahtut*)*	1400	0	1400	0.00
Pongamia pinnata (Karanj)	3000	0	3000	0.00
Moringa olifera Lam.(Sahjan)	5000	0	5000	0.00
Acacia tortilis (Totalis)	11600	9318	2282	80.33
Total	35000	17072	17928	48.78





3.1.11. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 50 hec as per kml map.



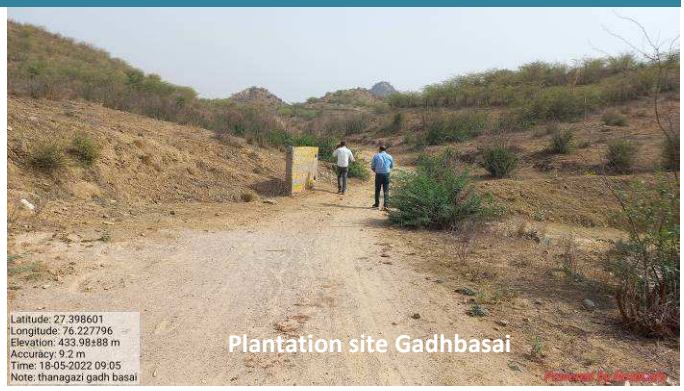
3.1.12. Budget and expenditure

Table 3.1: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2016-17				1497417				
2017-18				188098				
2018-19				479450				
2019-20				233550				
2020-21				258250				
2021-22				271650				
Total				2928415				

3.2.1. Site 2- Gadhbasai site in Thanagazi range -N 27.399256 and E 76.227945

The selected plantation was carried out on 50 hac. of land at Gadbasai in Thanagazi during the year 2017-18. The activities were done under the Assisted Natural **Regeneration** (ANR) model. The site was a forest land and selected for 10% evaluation. The soil was with bolders & sandy area.



3.2.2 Treatment plan before sowing: The topography of the area was hilly/plain & ravines. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Growth of planted seedling at the site

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was average. Grazing by stray animals & cattle and destruction by Neel gai and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.2.4. Species Planted: The selected tree species under plantation were 5. Seedlings of Acacia leucopholea (Ronj), Holoptelea integrifolia (Churel), Acacia nilotica (Desi babool), Zizyphus mauritiana (Ber) and Acacia senegal (Kumtha)) were planted.

Natural Vegetation at the site

In total 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Churail, Ronj & Desi babool which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**

3.2.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.2.6. Natural Vegetation and Regeneration: Papad, Ronj, Kumtha & Desi babool were the plants found grown naturally in this area. The growth of the plant was good.

3.2.7. Regeneration through seeds sowing: Seeds of species Ronj, *Kumatha, Desi babool & Cheela* were sown in as well as along the trenches and on the thanwlas. **The result of sowing seeds was good on trenches.**

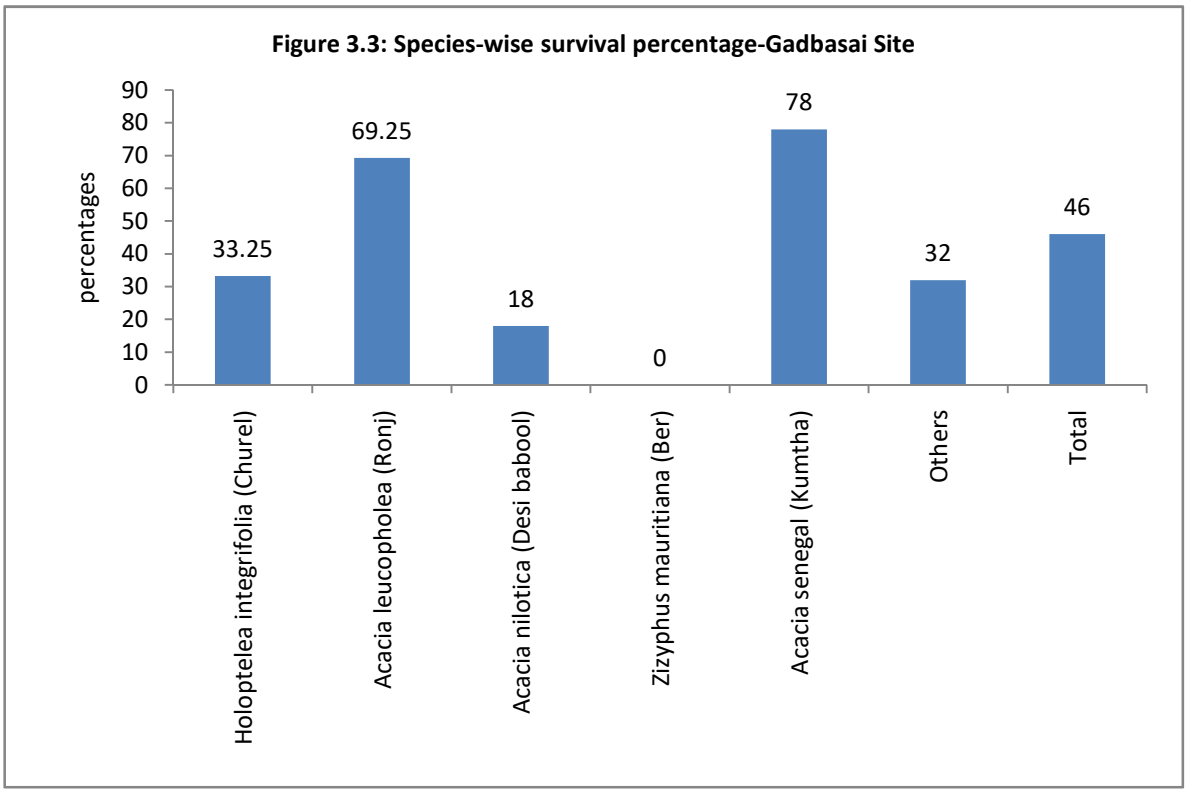
3.2.8. Protection Work: The selected ANR model plantation had loose stone fencing of 100 RMT & ditch fencing of 2800 RMT. Present condition of fencing was average. Both loose stone fencing & ditch fencing was broken at many places.

3.2.9. Soil and Water Conservation Measures: There are 12000 RMT Contour trenches, earthen Checkdam (1750 cu.m) & loose stone Checkdam (200 cu.m) in the form of water harvesting structures present in the entire plantation area.

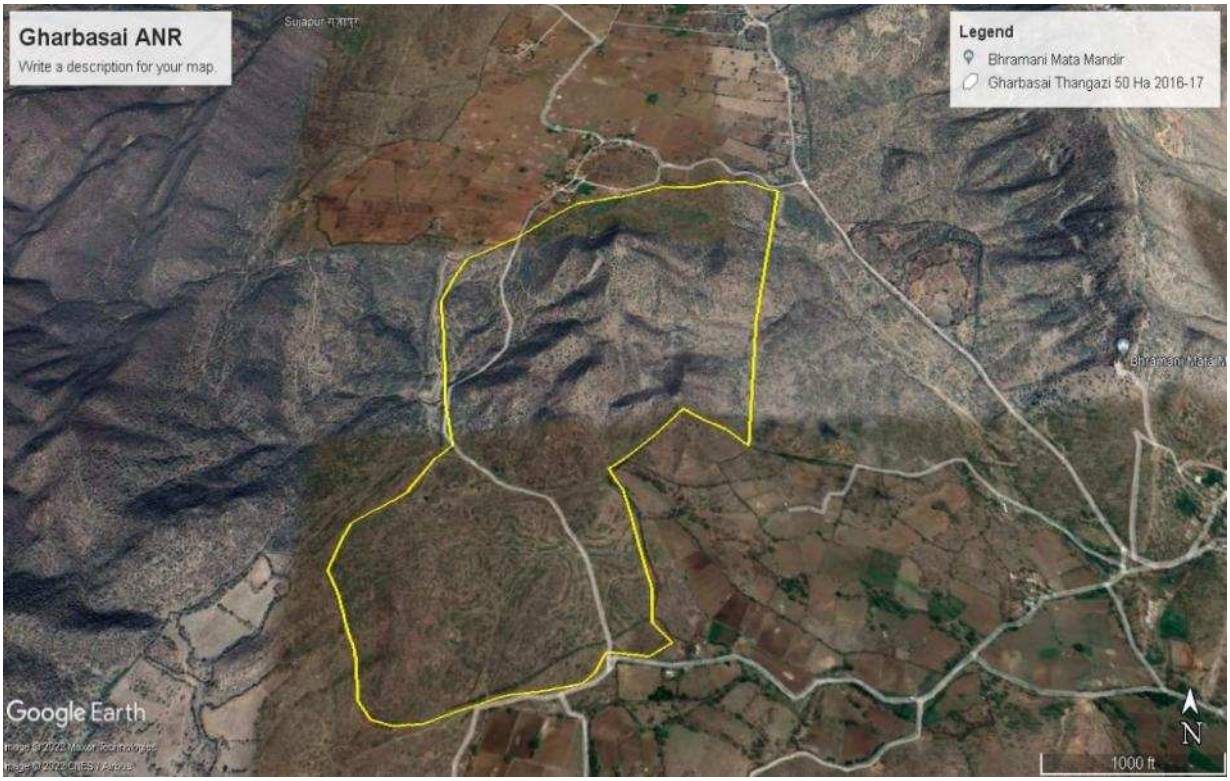
3.2.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 48.5% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising five species were planted in the 50 hectare plantation area.

Table 3.2: Status of Planted Seedling at the site-Gadhbasai Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Holoptelea integrifolia (Churel)	4000	133		33.25	60	20
Acacia leucopholea (Ronj)	4000	277		69.25	60	20
Acacia nilotica (Desi babool)	1000	18		18.00	120	80
Zizyphus mauritiana (Ber)	500	0		0.00	90	30
Acacia senegal (Kumtha)	500	39		78.00	65	30
Others	500	16		32.00	60	20
Total	10500	483	10017	46.00	76	33



3.2.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.



3.2.12. Budget and expenditure

Table 3.3: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2016-17				1543630	269625	524188	511474	1365287
2017-18				405150	237870	46150		284020
2018-19				92250	78909			78909
Total				2041030	586404	570338	511474	1728216

3.3.1. Site 3- Daulatpura site in Rajgarh range -N 27.230483 and E 76.551647

The selected plantation was carried out on 50 hac. of land at Daulatpura in Rajgarh range during the year 2018-19. The activities were done under the Assisted Natural **Regeneration** (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was domat & rocky.

Measuring collar girth of planted seedling

3.3.2. Treatment plan before sowing: The topography of the area was hilly & undulating. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.3.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boar and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average.

Growth of planted seedling in thanwalas

3.3.4. Species Planted: The selected tree species under plantation were 8. Seedlings of Acacia leucopholea (Ronj), Holoptelea integrifolia (Churel), Azadirachta indica (Neem),

Dalbergia sissoo (Shisham), Pongamia pinnata (Karanj), Ficus religiosa (Pipal), Bombax ceiba (Semal) and Acacia nilotica (Desi babool) were planted.

In total 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedling for plantation is concerned it was proper. The seedling selected for plantation was Ronj, Churail & Desi babool which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**

3.3.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.3.6. Natural Vegetation and Regeneration: Peepal**,** Bair, Dhonk, Kumtha, Shisham, Papad & Neem were the plants found grown naturally in this area. The growth of the plant was good.

3.3.7. Regeneration through seeds sowing: Seeds of species *Kumatha, Katkaranj, Desi kikar, Chhela and Ronj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good on trenches.**

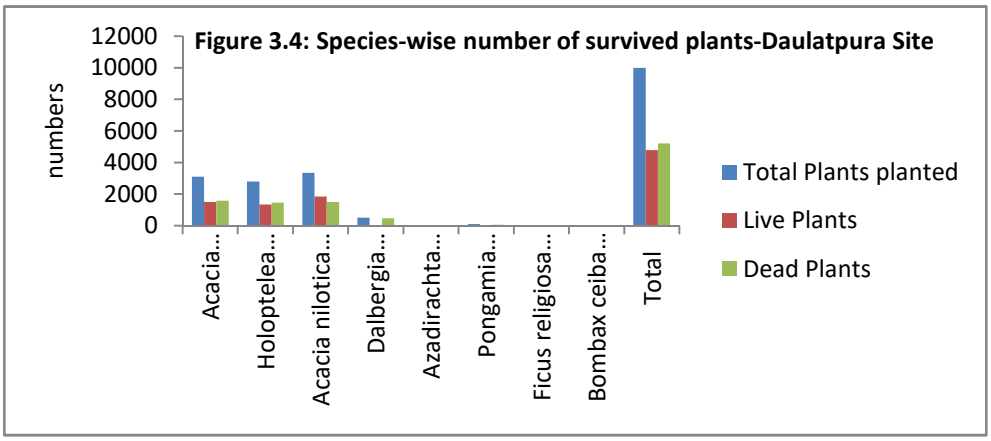
3.3.8. Protection Work: The selected ANR model plantation had loose stone fencing of 1000 RMT & ditch fencing of 2000 RMT. Present condition of loose stone fencing & ditch fencing was average. 120 RMT loose stone fencing was broken.

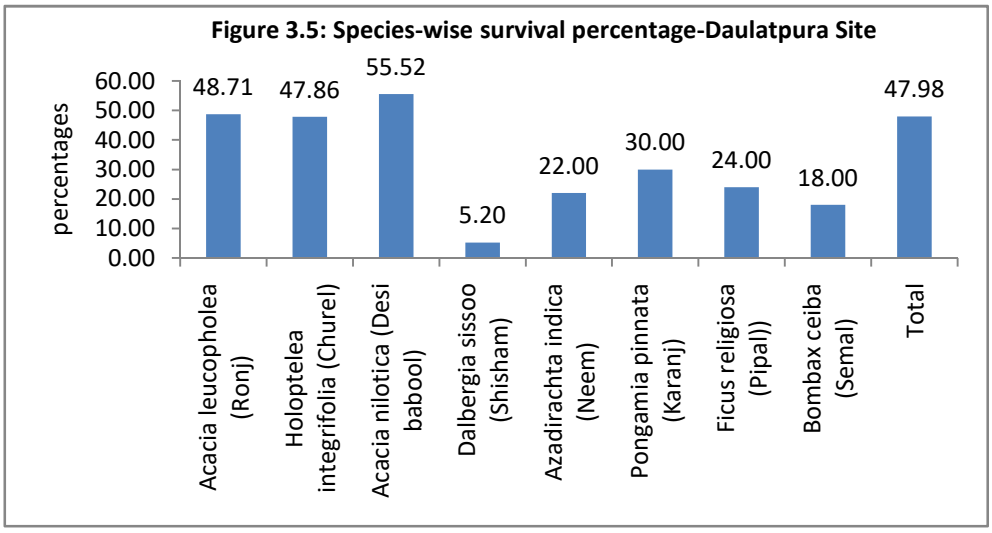
3.3.9. Soil and Water Conservation Measures: There are 10000 RMT Contour trenches, loose stone check dam (500 cu.m) & 5000 RMT Contour Dykes in the form of water harvesting structures present in the entire plantation area.

3.3.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 47.98% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising eight species were planted in the 50 hectare plantation area.

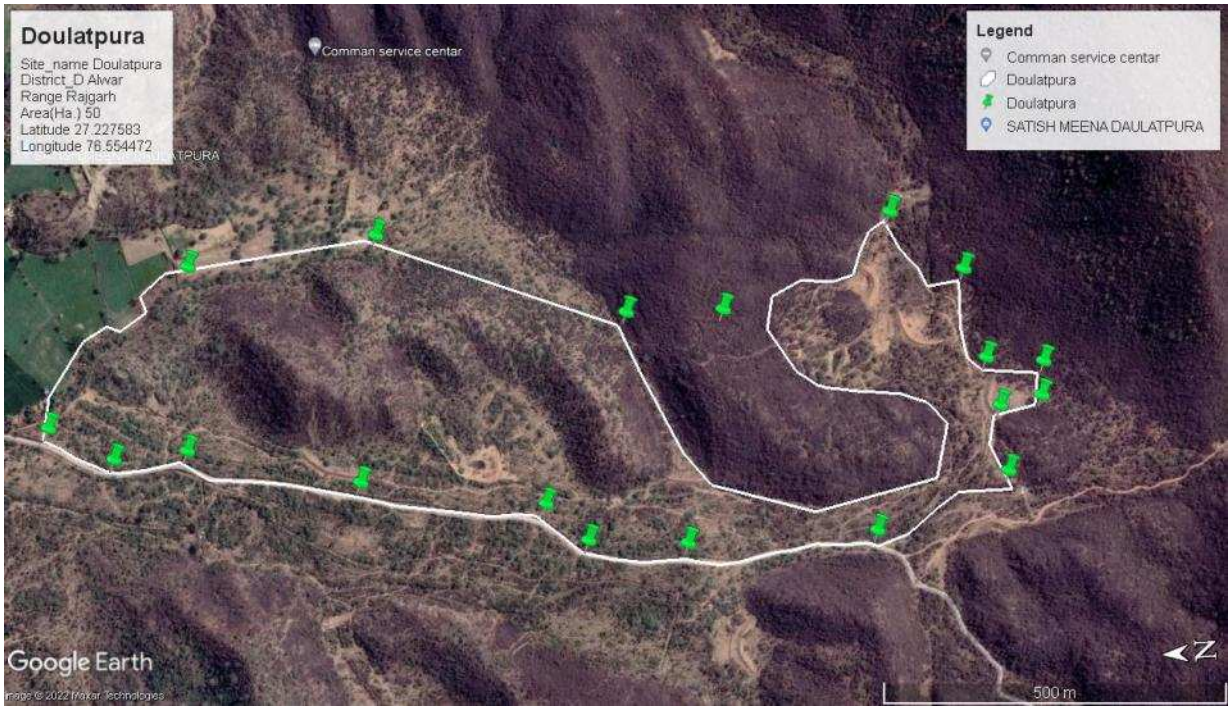
Table 3.4: Status of Planted Seedlings at the site- Daulatpura Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth
Acacia leucopholea (Ronj)	3100	1510	1590	48.71	98	72
Holoptelea integrifolia (Churel)	2800	1340	1460	47.86	99	84
Acacia nilotica (Desi babool)	3350	1860	1490	55.52	104	74
Dalbergia sissoo (Shisham)	500	26	474	5.20	90	65
Azadirachta indica (Neem)	50	11	39	22.00	90	65
Pongamia pinnata (Karanj)	100	30	70	30.00	130	102
Ficus religiosa (Pipal))	50	12	38	24.00	90	65
Bombax ceiba (Semal)	50	9	41	18.00	90	65
Total	10000	4798	5202	47.98	101	76





3.3.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.



3.3.12. Budget and expenditure

Table 3.5: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18				1766000				1668169
2018-19				412600				393870
2019-20				177850				173848
2020-21				92250				89796
2021-22				97050				95922
Total				2545750				2421605

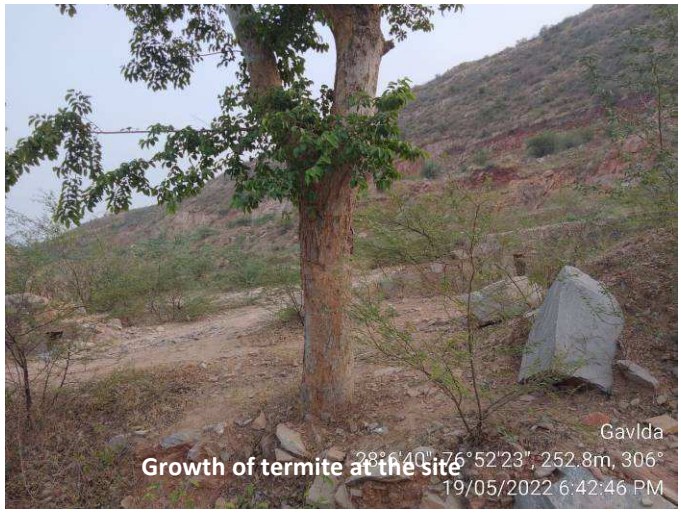
3.4.1. Site 4- Gwalda site in Tijara range -N 28.117403 and E 76.86504

The selected plantation was carried out on 50 hac. of land at Gwalda in Tijara range during the year 2018-19. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 10% evaluation. The soil was rocky, sandy & boulders.

3.4.2. Treatment plan before sowing: The topography of the area was hilly & undulating. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 35000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Growth of planted seedling at the site

3.4.3. Health & Damages of Plantation: The growth of planted seedlings at the site was good. Grazing by stray animals & cattle and destruction by Neel gai and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.



Growth of termite at the site

3.4.4. Species Planted: The selected tree species under plantation were 7. Seedlings of Acacia tortilis (Totalis), Dalbergia sissoo (Shisham), Holoptelea integrifolia (Churel), Azadirachta indica (Neem), Moringa olifera Lam.(Sahjan) were planted.

In total 35000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 700 plants per hectare have been planted. Thus, total number of plants planted was 35000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned it was proper. The seedlings selected for plantation were Ronj, Desi babool & Totalis which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was good.**

3.4.5 Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.4.6.. Natural Vegetation and Regeneration: Ardu, Kumtha, Neeml & Bair were the plants found grown naturally in this area. The growth of the plant was good.

3.4.7. Regeneration through seeds sowing: Seeds of species Totalis, Ronj, *Kumtha & Desi babool* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**

Natural Vegetation at the site

3.4.8. Protection Work: The selected DFL model plantation had ditch fencing of 3000 RMT. Present condition of fencing was average. However, silting was reported in some part of ditch fencing.

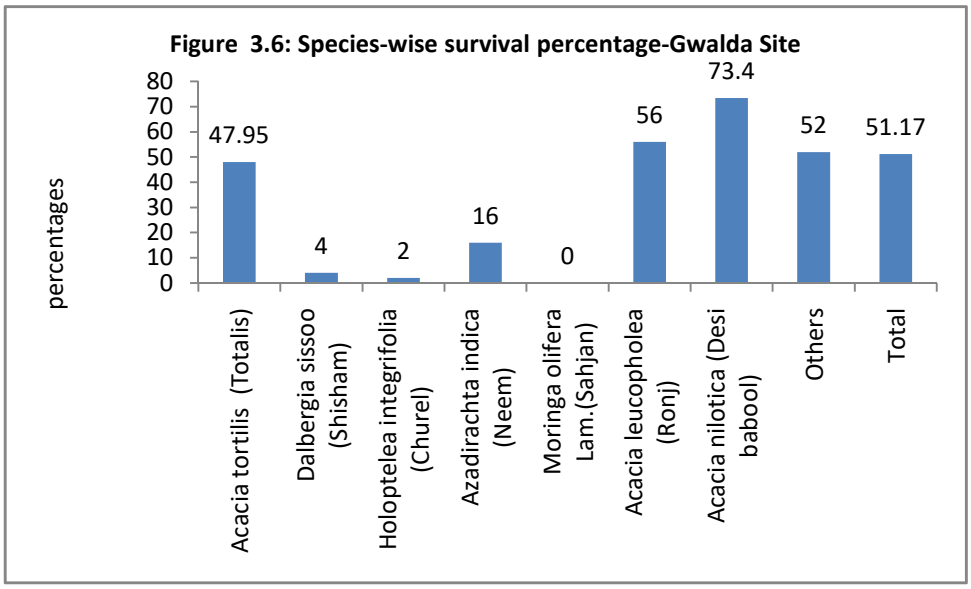
3.4.9. Soil and Water Conservation Measures: There are 15000 RMT (Width & depth -0.45 meter) Contour trenches & earthen check dam (2600 cu.m) in the form of water harvesting structures present in the entire plantation area.

Ditch fencing at the site

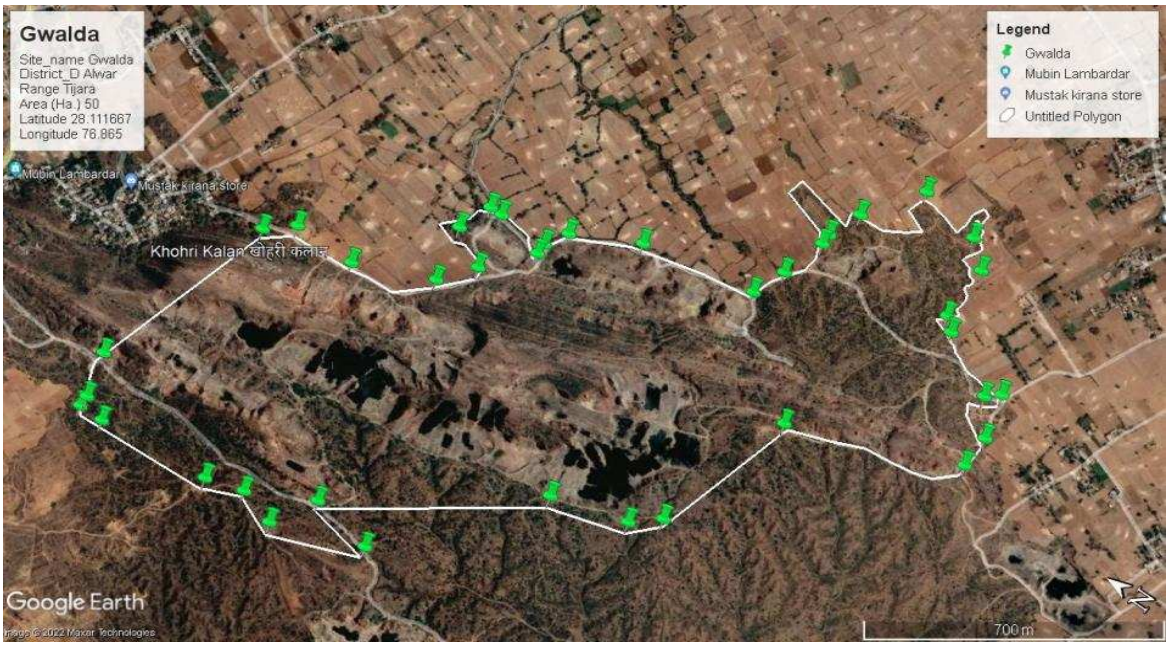
3.4.10. Observations Recorded: Under this model, 700 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 51.17% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was good. A total of 35000 plants comprising seven species were planted in the 50 hectare plantation area.

Table 3.6: Status of Planted Seedlings at the site-Gwalda Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia tortilis (Totalis)	20000	959	19041	47.95	195	109
Dalbergia sissoo (Shisham)	1500	6	1494	4.00	90	65
Holoptelea integrifolia (Churel)	1000	2	998	2.00	92	65
Azadirachta indica (Neem)	500	8	492	16.00	85	60
Moringa olifera Lam.(Sahjan)	500	0	500	0.00	0	0
Acacia leucopholea (Ronj)	1000	56	944	56.00	105	65
Acacia nilotica (Desi babool)	10000	734	9266	73.40	184	101
Others	500	26	474	52.00	90	65
Total	35000	1791	33209	51.17	120	76



3.4.11. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 50 hec as per kml map.



3.1.12. Budget and expenditure

Table 3.7: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18				1650000				
2018-19				1522050				
2019-20				507750				
2020-21				258250				
2021-22				271650				
Total				4209700				

3.5.1. Site 5- Santokpur site in Lakshmangarh range -N 27.24362 and E 76.876552

The selected plantation was carried out on 50 hac. of land at Santokpur in Lakshmangarh range during the year 2018-19. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 100% evaluation. The soil was sandy.

Plantation site Santokpur

3.5.2. Treatment plan before sowing: The topography of the area was hilly & plain. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 20000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Ditch fencing at the site

3.5.3. Health & Damages of Plantation: The growth of planted seedlings at the site was poor. Grazing by stray animals & cattle and destruction by Neel gai, wild boar, rabbit and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status

of guarding/ fencing at the site was poor.

3.5.4. Species Planted: The selected tree species under plantation were 9. Seedlings of Acacia nilotica (Desi babool), Zizyphus mauritiana (Ber), Holoptelea integrifolia (Churel), Pithecellobium dulce (Jangal Jalebi), Acacia catechu (Khair), Acacia senegal (Kumtha), Dalbergia sissoo (Shisham), Albizia lebbeck (Kala Siras) and Acacia leucopholea (Ronj)were planted.

In total 20000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

Natural Vegetation at the site

As per the model, 400 plants per hectare have been planted. Thus, total number of plants planted was 20000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned it was proper. The seedlings selected for plantation were Ronj, Desi babool, Jangal Jalebi & Churel which can survive in the climate. The choice of plants was made as per climatic conditions so that the plants can grow well and survive for longer period. However, species selection can be improved as per site condition. **The growth of survived plants was poor.**

3.5.5. Watering of plants: The provision of watering to plant was not reported at the site. The plantation works carried out here are totally based on rain water.

Measuring height of planted seedling

3.5.6. Natural Vegetation and Regeneration: Chudail, Juliflora, Dhonk & Ronj were the plants found grown naturally in this area. The growth of the plant was good.

3.5.7. Regeneration through seeds sowing: Seeds of species *Kumtha, Desi babool, Ber & Ronj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was poor.**

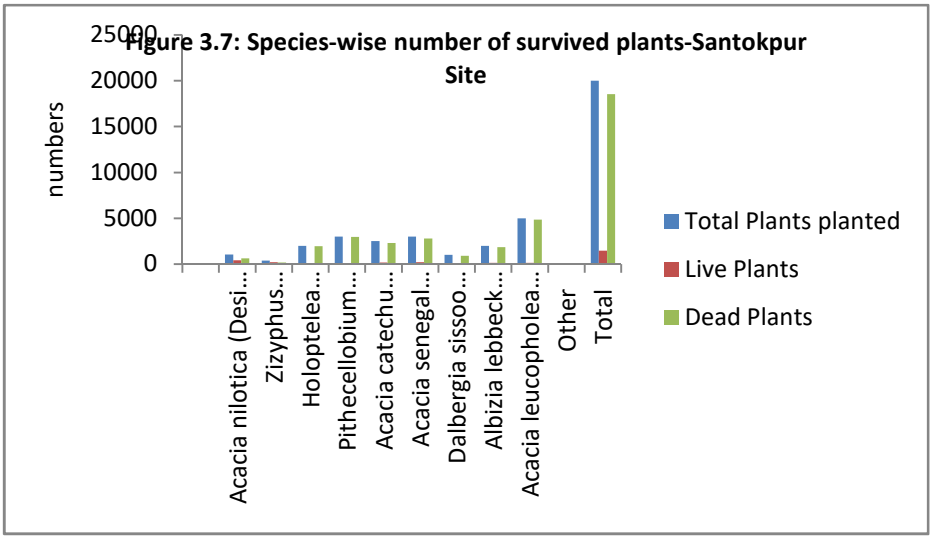
3.5.8. Protection Work: The selected DFL model plantation had loose stone fencing of 2500 RMT & ditch fencing of 1000 RMT. Present condition of loose stone fencing & ditch fencing was average.

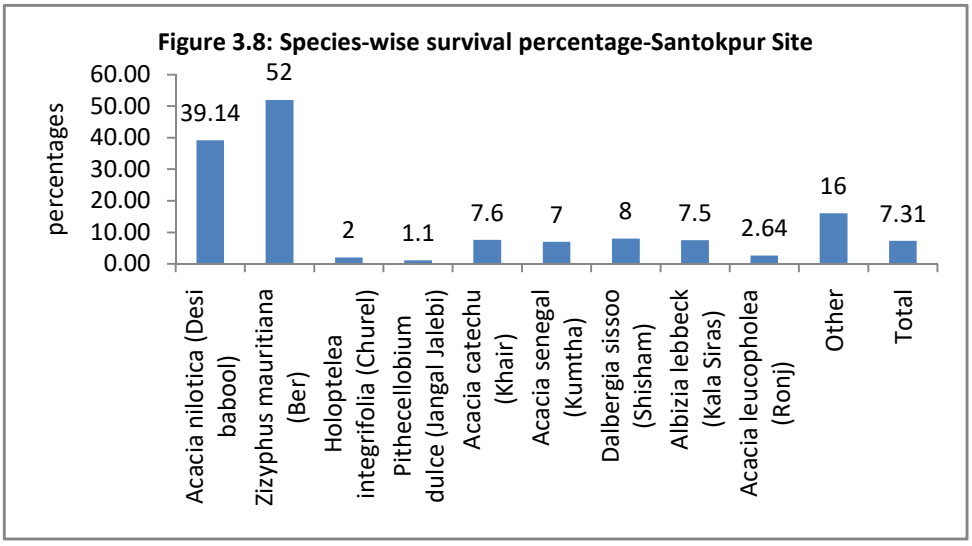
3.5.9. Soil and Water Conservation Measures: There are 7000 RMT Contour trenches & 160 cu.m loose stone checkdams in the form of water harvesting structures present in the entire plantation area.

3.5.10. Observations Recorded: Under this model, 400 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 7.31% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was poor. A total of 20000 plants comprising nine species were planted in the 50 hectare plantation area.

Table 3.8: Status of Planted Seedlings at the site-Santokpur Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)
Acacia nilotica (Desi babool)	1050	411	639	39.14
Zizyphus mauritiana (Ber)	400	208	192	52.00
Holoptelea integrifolia (Churel)	2000	40	1960	2.00
Pithecellobium dulce (Jangal Jalebi)	3000	33	2967	1.10
Acacia catechu (Khair)	2500	190	2310	7.60
Acacia senegal (Kumtha)	3000	210	2790	7.00
Dalbergia sissoo (Shisham)	1000	80	920	8.00
Albizia lebbeck (Kala Siras)	2000	150	1850	7.5
Acacia leucopholea (Ronj)	5000	132	4868	2.64
Other	50	8	42	16.00
Total	20000	1462	18538	7.31

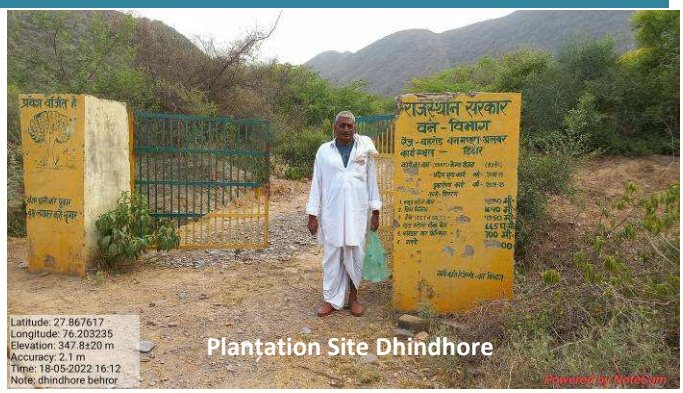




3.5.11. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 50 hec as per kml map.

3.6.1. Site 6- Dhindhor site in Behror range -N 27. 867 617and E 76.203235

The selected plantation was carried out on 50 hac. of land at Dhindhor in Behror range during the year 2019-20. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 10% evaluation. The soil was hard & sandy.



3.6.2. Treatment plan before sowing: The topography of the area was hilly & undulating. Hence, as per availability of soil

digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 25000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.6.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory.

3.6.4. Species Planted: The selected tree species under plantation were 6. Seedlings of Holoptelea integrifolia (Churel), Acacia leucopholea (Ronj), Acacia nilotica (Desi babool), Dalbergia sissoo (Shisham), Zizyphus mauritiana (Ber) and Acacia tortilis (Totalis) were planted.

In total 25000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 500 plants per hectare have been planted. Thus, total number of plants planted was 25000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned it was proper. The seedlings selected for plantation were Ronj, Desi babool, Churail & Totalis which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was satisfactory.**

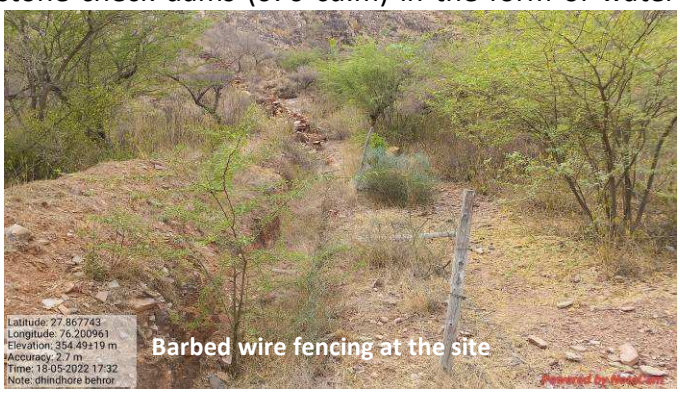
3.6.5. Watering of plants: The provision of watering to plant was not reported at the site. The plantation works carried out here are totally based on rain water.

3.6.6. Natural Vegetation and Regeneration: Ardu, Kumtha, Neeml & Bair were the plants found grown naturally in this area. The growth of the plants was good.

3.6.7. Regeneration through seeds sowing: Seeds of species Bair, Ronj *& Desi babool* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**

3.6.8. Protection Work: The selected DFL model plantation had ditch fencing of 1640 RMT, loose stone fencing of 1650 RMT and 3500 RMT barbed wire fencing. Present condition of fencing was average. However, loose stone fencing & barbed wire fencing was broken at some places.

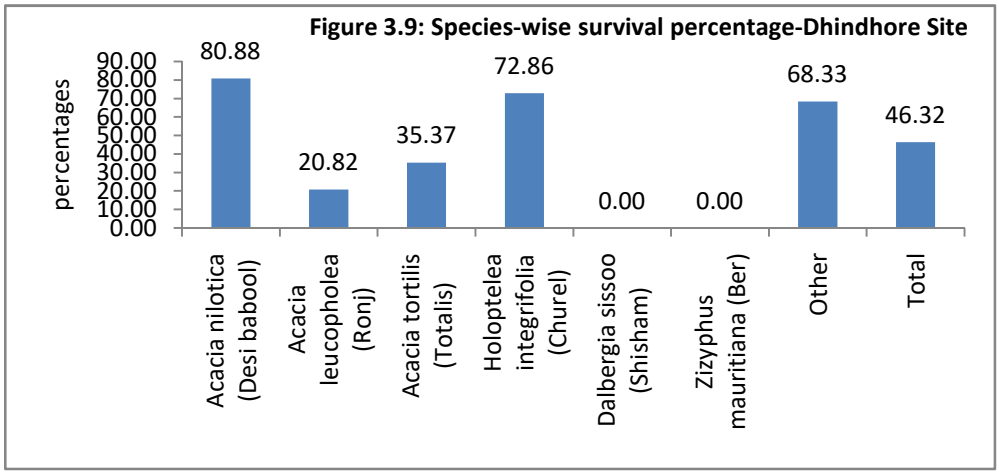
3.6.9. Soil and Water Conservation Measures: There are 14850 RMT (Width & depth -0.45 meters) Contour trenches & loose stone check dams (670 cu.m) in the form of water harvesting structures present in the entire plantation area.



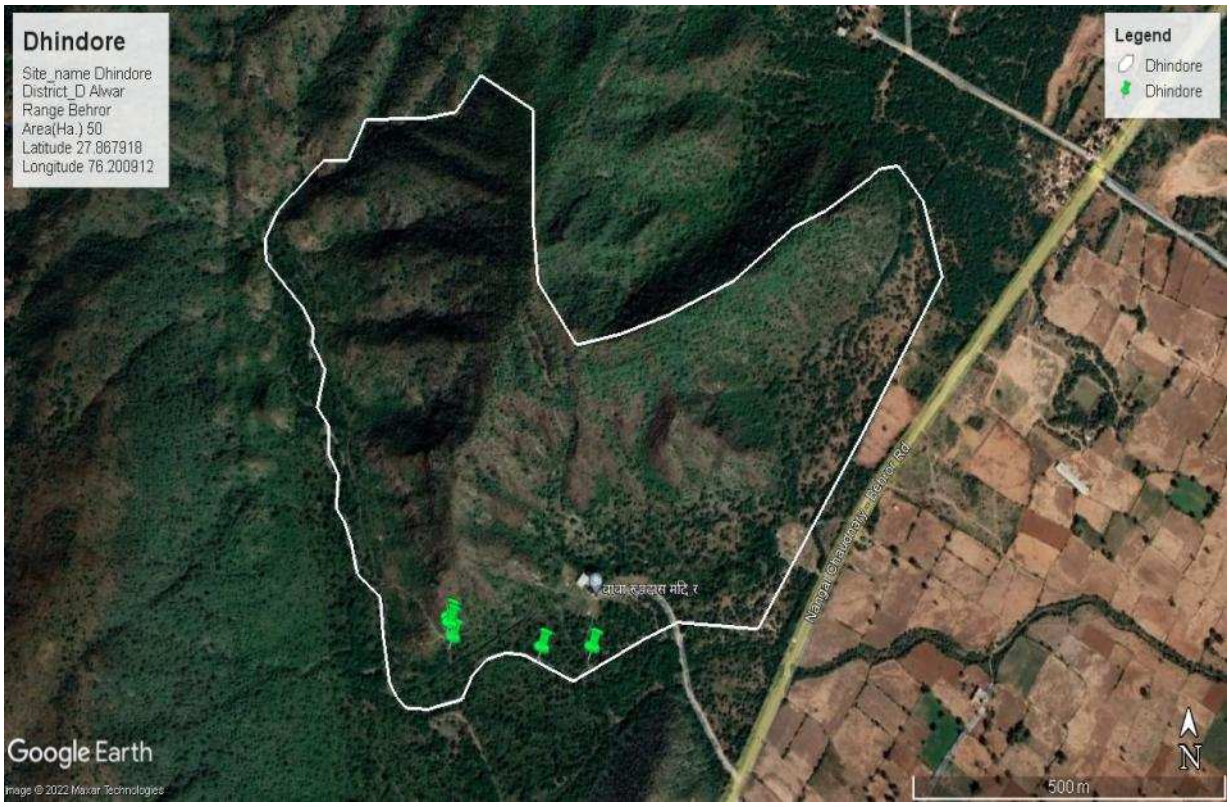
3.6.10. Observations Recorded: Under this model, 500 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 46.32% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was good. A total of 35000 plants comprising six species were planted in the 50 hectare plantation area.

Table 3.9: Status of Planted Seedlings at the site-Dhindhore Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia nilotica (Desi babool)	8000	647	7353	80.88	86	75
Acacia leucopholea (Ronj)	8500	177	8323	20.82	122	110
Acacia tortilis (Totalis)	5400	191	5209	35.37	86	76
Holoptelea integrifolia (Churel)	1400	102	1298	72.86	76	65
Dalbergia sissoo (Shisham)	700	0	700	0.00	0	0
Zizyphus mauritiana (Ber)	400	0	400	0.00	0	0
Other	600	41	559	68.33	133	115
Total	25000	1158	23842	46.32	101	88



3.6.11. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 50 hec as per kml map.



3.6.12. Budget and expenditure

Table 3.10: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2018-19					319405	346781	743283	1409469
2019-20					1276704		0	1276704
2020-21					415747		116667	532414
2021-22					128932		130483	259415
Total					2140788	346781	990433	3478002

4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft at Kahrali, Tijara Range

At Kahrali in Kishangarh Ka bas range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meters & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. Also, construction of Pakki Diwar 4 ft helped in checking illegal mining in the area which was earlier prevalent in the area. However, 120 RMT pakki diwar was damaged by local residents. GPS location of this area was 28.171365 N and 76.860057 E. The expenditure

incurred for constructing this wall was Rs. 10,91,535 (as per MB) against the estimated cost of 11.00 lacs.

Measuring pakki diwar 4ft. at Kahrali

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Alwar division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Chor Basai	DFL	50	48.78	5
2	Gadh Basai	ANR	50	46.00	5
3	Dolatpura	ANR	50	47.98	5
4	Gwalda	DFL	50	51.17	6
5	Santokpur	DFL	50	7.31	4
6	Dhindhor	DFL	50	46.32	5

* <5: Poor (below 50%), 6: Average (50-60%), 7-good (60-70%), 8: Very Good (70-80%), 9: Excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 4 ft	Kahrali	Poor	5

Banswara

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Banswara Forest Division. This Forest Division with 6 Forest Ranges namely Banswara, Kushalgarh, Dungra, Ghatol, Gadhi & Bagidogra has territorial jurisdiction over the entire Banswara District.

Figure: Location of Banswara district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Banswara Forest Division for evaluation were as given in table 1.

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Ghatol	Jagmer Jogimal	2017-18	50	ANR	100%
Dungra	Andeshwar	2019-20	60	ANR	10%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Banswara Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Kusalgarh	Amliyamal	2017-18	Pakki Diwar 4 ft
Ghatol	Jagmer Jogimal	2017-18	Pakki Diwar 4 ft
Banswara	Verteniary hospital	2017-18	Rescue Centre
Bagidora	Nandormata	2018-19	Pakki Diwar 4 ft
Bagidora	Rakho	2018-19	Boundary pillars (50 Nos.)
Banswara	Sawaimata Bhapor	2019-20	Pakki Diwar 4 ft
Garhi	Amjiya	2019-20	Boundary pillars (100 Nos.)

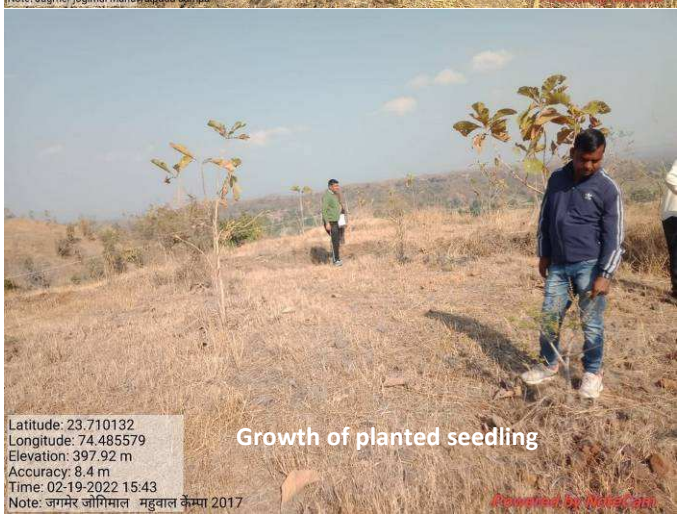
3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1- Jagmer Jogimal in Ghatol range -N 23.708033 and E 74.487672

The selected plantation was carried out on 50 hac of land at Jagmer Jogimal site in Ghatol range during the year 2017-18. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was red stony muram with bolders.

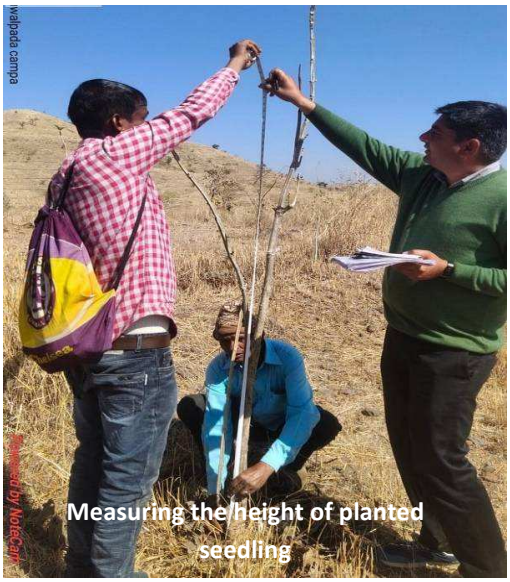
Preparation for 100% counting at the site



Growth of planted seedling

3.1.2. Treatment plan before sowing: The topography of the area was rocky. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was good. Grazing by stray animals & cattle and destruction by Neel gai and wild boar was reported at the site. Also, widely growth of termite and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory.


Measuring the height of planted seedling

3.1.4. Species Planted: The selected tree species under plantation were 10. Seedlings of Tectona grandis (Sagwan), Azadirachta indica (Neem), Ficus racemosa (Hawan), Holoptelea integrifolia (Churel), Wrightia tinctoria (Khirani), Terminalia arjuna (Arjun), Terminalia bellarcia (Baheda), Emblica officinalis(Anwla), Zizyphus mauritiana (Ber) and, Acacia catechu (Khair) were planted.

In total 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

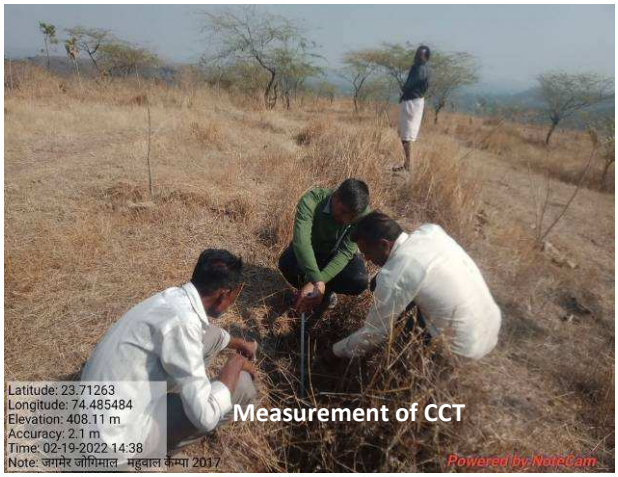
As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned it was proper. The choice of plants was made as per climatic conditions so that the plants can grow well and survive for longer period. **The growth of survived plants was good.**

3.1.5. Watering of plants: The provision of watering to plant was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: Khejdi, Mahuwa, Sagwan, Palash and tendu were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species *kumatha, Khair, Baheda, Ratanjot, ronj and Neem* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**



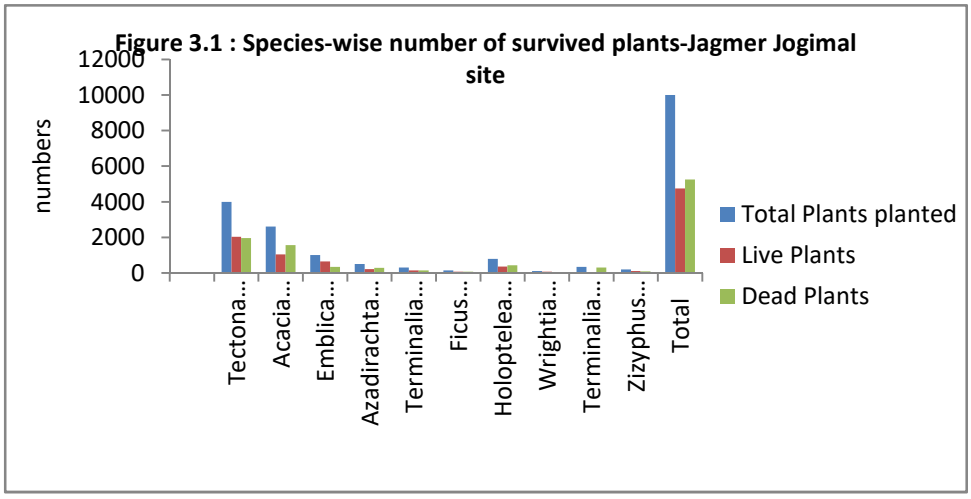
3.1.8. Protection Work: The selected ANR model plantation had loose stone fencing of 253 RMT. Present condition of fencing was satisfactory. Also, 3110 RMT ditch fencing was reported at the site.

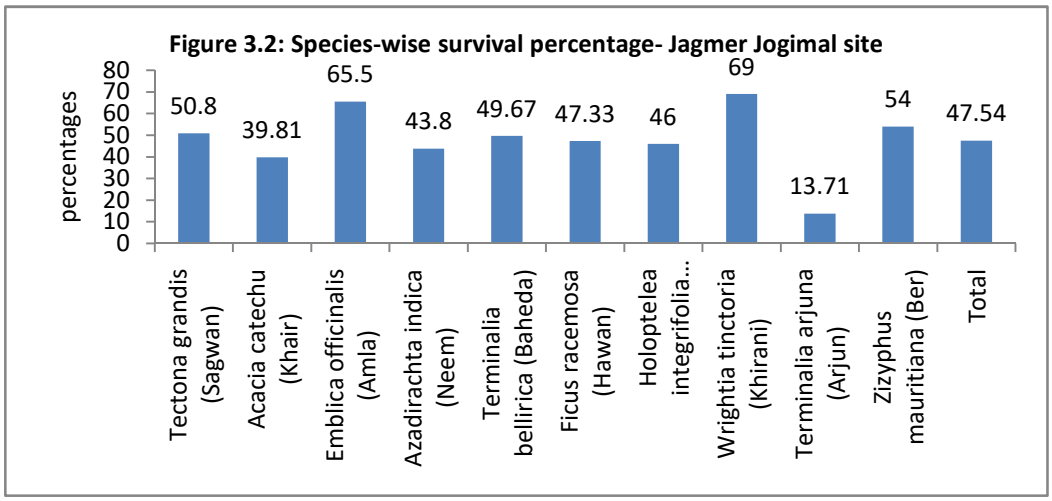
3.1.9. Soil and Water Conservation Measures: There are 15000 RMT (Width & depth -0.45 meters). Contour trenches in the form of water harvesting structures present in the entire plantation area. Also, other SMC structures viz. PCT & loose stone checkdams were reported at the site

3.1.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 47.54% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was good. A total of 10000 plants comprising five species were planted in the 50 hectare plantation area.

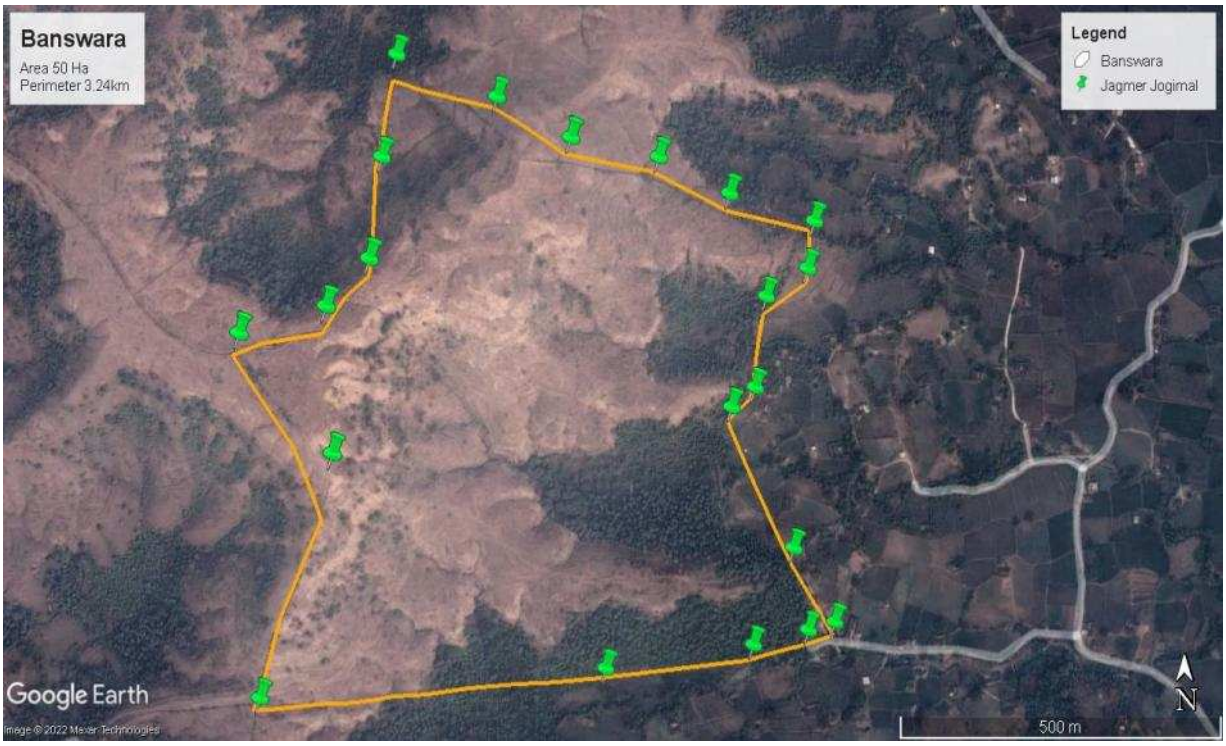
Table 3: Status of Planted Seedlings at the site-Jagmer Jogimal Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average collar girth (mm)
Tectona grandis (Sagwan)	4000	2032	1968	50.80	168	118
Acacia catechu (Khair)	2600	1035	1565	39.81	90	65
Emblica officinalis (Amla)	1000	655	345	65.50	124	75
Azadirachta indica (Neem)	500	219	281	43.80	122	74
Terminalia bellirica (Baheda)	300	149	151	49.67	102	76
Ficus racemosa (Hawan)	150	71	79	47.33	116	82
Holoptelea integrifolia (Churel)	800	368	432	46.00	126	87
Wrightia tinctoria (Khirani)	100	69	31	69.00	122	88
Terminalia arjuna (Arjun)	350	48	302	13.71	117	81
Zizyphus mauritiana (Ber)	200	108	92	54.00	90	65
Total	10000	4754	5246	47.54	134	92





3.1.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.



3.1.12. Budget and expenditure

Table 3.1: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2016-17	-	-	-	1664200	-	-	-	1664193
2017-18	-	-	-	405150	-	-	-	404920
2018-19	-	-	-	162800	-	-	-	162800
2019-20	-	-	-	92250	-	-	-	92244
2020-21	-	-	-	92250	-	-	-	92250
Total	-	-	-	2416650	-	-	-	2416407

3.2.1. Site 2- Andeshwar in Dungra range - N 23.293753 and E 74.338642

The selected plantation was been carried out on 60 ha of land at Andeshwar in Dungra range during the year 2019-20. The activities were done under the ANR model. The site was a forest land and selected for 10% evaluation. The soil was red stony muram.

Preparation for counting at Andeshwar site

3.2.2. Treatment plan before sowing: The topography of the area was rocky. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 12000 pits were dug for plantation in total 60 ha of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was poor. Grazing by stray animals & cattle and destruction by Neel gai and rats was reported at the site. Also, widely growth of termite, soil quality and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.2.4. Species Planted: The selected tree species under plantation were 9. Seedlings of Acacia catechu (Khair), *Emblica officinalis (Amla), Azadirachta indica (Neem), Zizyphus mauritiana (*Ber), Acacia leucopholea (Ronj), Holoptelea integrifolia (Churel), Dendrocalamus strictus (Baans), Tectona grandis (Sagwan) and Terminalia bellirica (Baheda) were planted.

A total of 12000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. Spacing between plants reported 3 m. As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 12000 for 60 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. The growth of survived plants was average.

3.2.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.2.6. Natural Vegetation and Regeneration: Sagwan, Churel Palash and tendu were the plants found grown naturally in this area. The growth of the plant was average.

3.2.7. Regeneration through seeds sowing: Seeds of species Ratanjot, kumtha, Khair, & neem were sown in as well as along the trenches and on the thanwlas. The result of seed sowing was not good. Plants from the seeds sown were rarely seen in contour trenches.

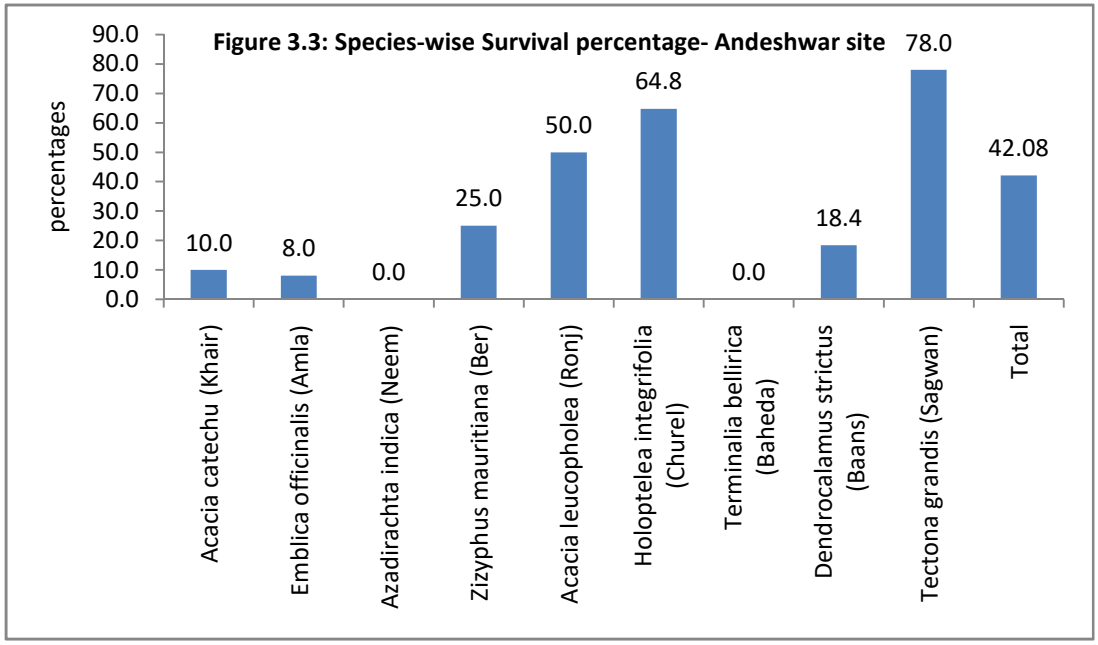
3.2.8. Protection Work: The selected ANR model plantation had loose stone fencing of 2700 RMT having width at the top-0.6 meters, width at the bottom-0.8 meters & height 1.2 meters. Also, 2135 RMT ditch fencing was reported at the site.

3.2.9. Soil and Water Conservation Measures: There are 9500 RMT (Width & depth - 0.45 meters) Contour trenches in the form of water harvesting structures present in the entire plantation area. Other SMC structures viz. SGT, V ditch, loose stone check dams & MPT were reported at the site.

3.2.10. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 42.08% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 12000 plants comprising nine species were planted in the 60 ha plantation area.

Table 3.2: Status of Planted Seedlings at the site- Andeshwar Site

Species	Total Plants planted	10% sample	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average collar girth (mm)
Acacia catechu (Khair)	500	50	5	-	10.00	90	65
Emblica officinalis (Amla)	1000	100	8	-	8.00	113	85
Azadirachta indica (Neem)	500	50	0	-	0.00	0	0
Zizyphus mauritiana (Ber)	1000	100	25	-	25.00	95	68
Acacia leucopholea (Ronj)	500	50	25	-	50.00	90	65
Holoptelea integrifolia (Churel)	2500	250	162	-	64.80	96	70
Terminalia bellirica (Baheda)	500	50	0	-	0.00	0	0
Dendrocalamus strictus (Baans)	2500	250	46	-	18.40	153	81
Tectona grandis (Sagwan)	3000	300	234	-	78.00	143	79
Total	12000	1200	505	11495	42.08	117	75



3.2.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 60 hac as per kml map.

3.2.12. Budget and expenditure

Table 3.3: Cost-estimate & expenditure (Year-wise)

	Cost estimate (Rs.)				Expenditure (Rs.)			
Year	**Plantation**	**SMC works**	**Boundary wall/ Fencing**	**Total**	**Plantation**	**SMC works**	**Boundary wall/Fencing**	**Total**
2018-19	381230	1271223	844978	2497223	226508	102278	844978	1173764
2019-20	583440	-	-	583440	540269	-	-	540269
2020-21	207420	-	-	207420	204061	-	-	204061
Total	116460			116460	68153			68153

4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft. at Amliyamal, Kusalgarh range

At Amliyamal in Kusalgarh range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 Ft and 1303 m length as per MB. But in actual 1320 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meters & height was 1.20 meter.

Construction work appeared to be good and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment. However, 5 meter pakki diwar was damaged by villagers in order to provide drinking water to their cattle from the anicut. GPS location of this area was 23.226999 N and 74.667508 E. The expenditure incurred for constructing this wall was Rs. 22,33,869 (as per MB) against the estimated budget of Rs. 31,27,200.

Site 2- Pakki Diwar 4 Ft at Jagmer Jogimal Ghatol range

Measuring the height of pakki diwar, 4Ft.

At Jagmer Jogimal site in Ghatol range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 500 m length as per MB. But in actual 505 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meters & height was 1.20 meter. Construction work appeared to be good and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment. However, 5 meter pakki diwar was damaged by villagers in order to enter their cattle for grazing & drinking water. GPS location of this area was 23.700922 N and 74.445166 E. The expenditure incurred for constructing this wall was Rs.12 lac (as per MB) against the estimated budget of Rs. 12 lac.

Site 3- Rescue Centre at Veterinary Hospital - Banswara range

Third Party team at Rescue Centre

Rescue Centre at Veterinary hospital Banswara in Banswara range has been evaluated. The Rescue Centre was constructed in the year 2017-18. Site selection for construction of Rescue Centre was adequate. The construction work of Rescue Centre had been completed. The infrastructure created under CAMPA was useful. However, the infrastructure during third party evaluation was neither in use nor was properly maintained. Quality of Construction work was average. GPS location of this area was 23°32'27'' N and 74°26'6" E. The expenditure incurred for constructing the Rescue Centre was Rs. 539762 (as per MB) against the estimated budget of Rs.550,000.

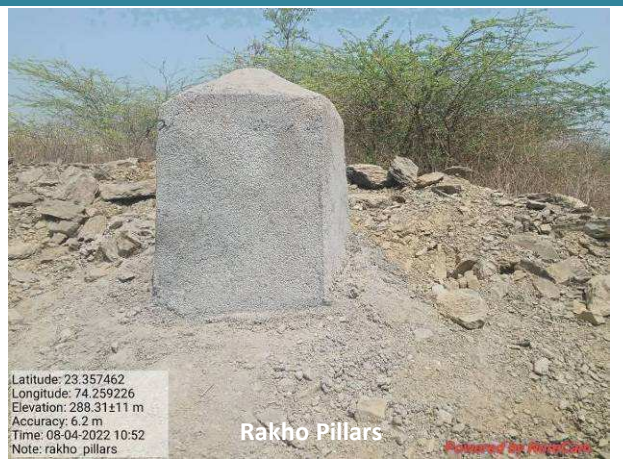
Site 4 - Pakki Diwar 4 Ft. at Nandormata, Bagidora range

At Nandormata site in Bagidora range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 Ft and 500 m length as per MB. But in actual 503 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meters & height was 1.20 meter. Construction work appeared to be good and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment. However, 8 meter pakki diwar was damaged by villagers for grazing their cattle. GPS location of this area was 23.41707 N and 74.33153 E. The present condition of the wall was average. The expenditure incurred for constructing this wall was Rs. 12 lac (as per MB) against the estimated budget of Rs. 12 lac.

Measurement of Nandormata Pakki diwar, 4Ft.

Site 5- Pillars at Rakho, Bagidora range

At Rakho site in Bagidora range, the Pillars (50 Nos.) have been evaluated. The pillars were constructed in the year 2018-19. The pillars were 50 in numbers as per MB. The construction of pillars helped in marking forest boundary. In actual there was no need of constructing pillars at the site as the site boundary was already marked by irrigation canal. The present condition of pillars is satisfactory. The expenditure incurred for constructing the Pillars (50 Nos.) was Rs. 90000 (as per MB) against the estimated budget of Rs. 90000.



Rakho Pillars

Site 6 - Pakki Diwar 4 Ft. at Sawaimata Bhapor, Banswara range

At Sawaimata Bhapor site in Banswara range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 Ft and 500 m length as per MB. But in actual 509 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meters & height was 1.20 meter. Construction work appeared to be good

Third Party team at Pakki diwar, 4Ft. at Sawaimata, Bhapor

and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment. However, pakki diwar was damaged by villagers for grazing their cattle. GPS location of this area was 23.51961 N and 74.4425 E. The present condition of wall is average. The expenditure incurred for constructing the pakki diwar was Rs. 929366 (as per MB) against the estimated budget of Rs. 12 lac.

Site 7 - Pillars at Aamjiya, Garhi range

At Aamliya site in Garhi range, the Pillars (100 Nos.) have been evaluated. The pillars were constructed in the year 2019-20. The pillars were 100 in numbers as per MB. But in actual 101 pillars were found & evaluated by the third party. Construction work appeared to be good and useful. The construction of pillars helped in marking forest boundary. GPS location of pillars area was 23.542931 N and 74.224819 E. The present condition of pillar is good. The expenditure incurred for constructing the Pillars (100 Nos.) was Rs. 108119 (as per MB) against the estimated budget of Rs. 180000

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Banswara division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Jagmer Jogimal	ANR	50	48.2	5
2	Andeshwar	ANR	60	42.1	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 4 ft	Amliyamal	Good	7
2	Pakki Diwar 4 ft	Jagmer Jogimal	Good	7
3	Pakki Diwar 4 ft	Nandormata	Good	7
4	Pillars	Rakho	Poor	3
5	Pakki Diwar 4 ft	Sawaimata, Bhapor	Good	7
6	Pillars	Aamjiya	Good	7
7	Rescue Centre	Veterinary Hospital	Average	6

Baran

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Baran Forest Division. This Forest Division with 9 Forest Ranges namely Anta, Chabara, Chipabarod, Kelwara, Kishanganj, Nahargarh, Shahbad, Atru & Shergarh has territorial jurisdiction over the entire Baran District.

Figure : Location of Baran district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Baran Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Shahbad	Baseli B	2017-18	30	DFL	100%
Kisanganj	Borda	2017-18	130	DFL	10%
Nahargarh	Kadili	2017-18	120	DFL	100%
Shahbad	Dabar B	2017-18	23.45	NFL	10%
Anta	Mundiya B I	2018-19	66	NFL	100%
Kelwara	Sukha Semali A	2018-19	50	ANR	10%
Shahbad	Mandi Sahjana II	2018-2019	50	ANR	100%
Anta	Kanada	2019-20	22	NFL	10%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Baran Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Atru	Govindpura Bid Ghas	2018-19	Pillars
Kisanganj	Karvari	2019-20	Pillars
Kelwara	Kelwara Se Uni Pahadi	2019-20	Roadside plantation

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1 Site 1- Baseli B site in Shahbad range -N 25.164597 and E 77.330567

The selected plantation was carried out on 30 hac. of land at Baseli B in Shahbad range during the year 2017-18. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 100% evaluation. The soil was bolders and moram.

Measuring ditch fencing at the site

3.1.2. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai was reported at the site. Also, widely growth of termite and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average

3.1.3. Natural Vegetation and Regeneration: Palash, Dhonk, Hingot, Gurjan, Dudhi, Chireta & Ber were the plants found grown naturally in this area. The growth of the plants was good.

3.1.4. Regeneration through seeds sowing: Seeds of species *kumatha, Khair and Desi babool* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**

3.1.5. Protection Work: The selected DFL model plantation had ditch fencing of 2230 RMT having width at the top-2 meters, width at the bottom-0.9 meters & height 1.2 meters. Present condition of fencing was good. The plantation site was fully protected by ditch fencing.

3.1.6. Soil and Water Conservation Measures: There are 7000 RMT V ditch & 2000 RMT Contour trenches in the form of water harvesting structures present in the entire plantation area.

3.1.7. Observations Recorded: Under this model, 700 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 59.31% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was good to average. A total of 21000 plants comprising eight species were planted in the 30 hectare plantation area.

Table 3: Status of Planted Seedlings at the site-Baseli B Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Zizyphus mauritiana (Ber)	10000	6218	3782	62.18	200	50
Tectona grandis (Sagwan)	2000	995	1005	49.75	110	50
Holoptelea integrifolia (Churel)	2000	1551	449	77.55	130	40
Pongamia pinnata (Karanj)	1800	1096	704	60.89	140	50
Pithecellobium dulce (Jangal Jalebi)	3100	1495	1605	48.23	210	40
Azadirachta indica (Neem)	900	497	403	55.22	230	60
Dalbergia sissoo (Shisham)	400	52	348	13.00	150	60
Acacia catechu (Khair)	800	552	248	69.00	70	25
Total	21000	12456	8544	59.31	155	47

3.1.8. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 30 hec as per kml map.

3.2.1 Site 2- Borda in Kishanganj range - N 25.075867 and E 76.840653

The selected plantation was carried out on 130 ha of land at Borda in Kisangarh range during the year 2017-18. The activities were done under the DFL (Degraded Forest Land) model. The site was a forest land and selected for 10% evaluation. The soil was sand loamy.

3.2.2. Health & Damages of Plantation: The growth of planted

seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai was reported at the site. Also, widely growth of termite and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory.

3.2.3. Natural Vegetation and Regeneration: Palash, Sagwan, Tendu, Baheda, Arjun, Gurjan & Jamun were the plants found grown naturally in this area. The growth of the plants was good.

3.2.4. Regeneration through seeds sowing: Seeds of species *katkaranj, Khair and ronj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**

Loose Stone fencing at the site

3.2.5. Protection Work: The selected DFL model plantation had loose stone fencing of 5650 RMT having width at the top-0.6 meters, width at the bottom-0.8 meters & height 1.2 meters. Present condition of fencing is average. Loose stone fencing was partially effective in controlling the biotic pressure.

3.2.6. Soil and Water Conservation Measures: There are 39000 RMT (Width & depth -0.45 meters) Contour trenches in the form of water harvesting structures present in the entire plantation area.

3.2.7. Observations Recorded: Under this model, 700 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 46.32% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 81000 plants comprising eight species were planted in the 130 ha plantation area.

Table 3.2: Status of Planted Seedlings at the site-Borda Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Pithecellobium dulce (Jangal Jalebi)	45000	1800		40.00	60	8
Tectona grandis (Sagwan)	12000	580		48.33	40	8
Acacia catechu (Khair)	7000	397		56.71	50	9
Azadirachta indica (Neem)	6000	336		56.00	48	8
Dalbergia sissoo (Shisham)	2000	95		47.50	85	11
Aegle marmelos (Bilpatra)	1000	58		58.00	75	10
Pongamia pinnata (Karanj)	4000	240		60.00	65	11
Holoptelea integrifolia (Churel)	4000	246		61.50	72	12
Total	81000	3752	77248	46.32	62	10

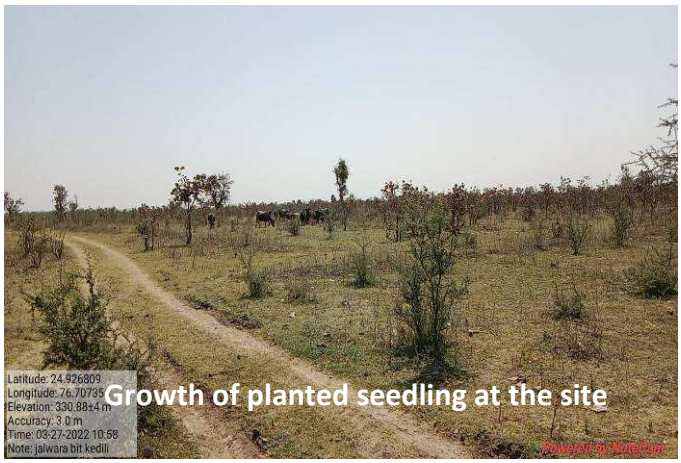
3.2.8. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 130 hec as per kml map.

3.3.1. Site 3-Kadili in Nahargarh range - N 24.929633 and E 76.696682

The selected plantation was carried out on 120 hec of land at Kadili of Nahargarh range during the year 2017-18. The activities were done under the DFL model. The site was a forest land and selected for 100% evaluation. The soil was black (clayey to sandy loam).

Grazing by Cattle at the site

3.3.2. Health & Damages of Plantation: The growth of planted seedlings at the site was good. Grazing by stray animals & cattle and destruction by Neel gai was reported at the site. Cutting of tree by human was reported at the site. Also, widely growth of termite and attack by pests obstruct the growth of planted seedling. The status of guarding/ fencing at the site was satisfactory.



Growth of planted seedling at the site

3.3.3. Natural Vegetation and Regeneration: Palash, Sagwan, Ber, Baheda, Arjun, Gurjan & Desi babul were the plants found grown naturally in this area. The growth of the plants was good.

3.3.4. Regeneration through seeds sowing: Seeds of species *Desi babool Khair and ronj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**

3.3.5 Protection Work: The selected DFL model plantation was protected by ditch fencing of 7700 RMT having width at the top-1.05 meters, width at the bottom-0.9 meters & depth 1.02 meters, loose stone fencing of 500 RMT having width at the top-0.6 meters, width at the bottom-0.8 meters & height 1.2 meters. Present condition of ditch fencing is good. However, the condition of loose stone & ditch fencing was average. Fencing has been partially effective in controlling the biotic pressures.

3.3.6 Soil and Water Conservation Measures: There are 5000 RMT (Width & depth - 0.45 meters) Contour trenches. 47000 RMT V ditch, 02 loose stone check dams & 01 earthen check dam in the form of water harvesting structures present in the entire plantation area

3.3.7. Observations Recorded: Under this model, 700 plants per ha were planted during plantation. Based- on for as 100 percent counting, plants survival was 50.53% at the site. The growth of planted seedlings was good. A total of 84000 plants comprising nine species were planted in the 120 ha plantation area.

Table 3.4: Status of Planted Seedlings at the site-Kadili Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Carissa spinarum (Karonda)	500	418	82	83.60	35	7
Azadirachta indica (Neem)	2500	2178	322	87.12	18	5
*Anthocephalus kadamba (*Kadamba)	3200	2279	921	71.22	45	8
Tamarindus indica (Imli)	3300	2079	1221	63.00	65	8
Pongamia pinnata (Karanj)	2500	1735	765	69.40	50	9
*Cassia sp. (*Cassiashyama)	4000	2087	1913	52.18	55	10
Acacia leucopholea (Ronj)	4500	2702	1798	60.04	58	11
Holoptelea integrifolia (Churel)	3500	3111	389	88.89	62	9
Acacia nilotica (Desi babool)	60000	25863	34137	43.11	162	15
Total	84000	42452	41548	50.54	61	9

3.3.8. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 120 hac as per kml map.

3.4.1. Site 4- Dabar B in Shahbad range - N 25.18944 and E 77.291795

The selected plantation was carried out on 23.45 ha of land at Dabar B in Shahbad range during the year 2017-18. The activities were done under the Non Forest Land (NFL) model. The site was a forest land and selected for 10% evaluation. The soil was sandy clay & boulder.

3.4.2. Health & Damages of Plantation: The growth of planted seedlings at the site was good. Grazing by stray animals & cattle and destruction by Neel gai was reported at the site. Also, widely growth of termite and attack by pest obstruct the growth of planted seedling. The status of guarding/ fencing at the site was average.

3.4.3. Natural Vegetation and Regeneration: Palash, Dhonk, Ber, Dhudi & Hingot were the plants found grown naturally in this area. The growth of the plants was good.

3.4.4. Regeneration through seeds sowing: Seeds of species *Desi babool Khair and ronj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**

3.4.5. Protection Work: The selected NFL model plantation had ditch fencing of 2300 RMT having width at the top-2 meters, width at the bottom-0.8 meters & height 1.2 meters. Present condition of fencing is good. Ditch fencing was fully effective in controlling the biotic pressure.

3.4.6. Soil and Water Conservation Measures: There are 2000 RMT (Width & depth -0.45 meters) Contour trenches & 9000 RMT V ditches in the form of water harvesting structures present in the entire plantation area. These trenches & ditches are prepared for rainwater harvesting and soil conservation.

3.4.7. Observations Recorded: Under NFL model at the site, 900 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 54.66% at the site.** Plant species girth breast height was also measured. A total of 21000 plants comprising seven species were planted in the 23.45 ha plantation area.

Table 3.6: Status of planted Seedlings at the site-Dabar B Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Butea monosperma (Palash)	1200	85		70.83	120	7
Acacia nilotica (Desi babool)	5000	280		56.00	190	8
Zizyphus mauritiana (Ber)	5000	292		58.40	185	8
Holoptelea integrifolia (Churel)	6000	336		56.00	72	6
Pithecellobium dulce (Jangal Jalebi)	800	11		13.75	80	6
Karonda	1500	35		23.33	41	4
Acacia leucopholea (Ronj)	1500	109		72.67	90	5
Total	21000	1148	19852	54.67	111	6

3.4.8. GPS Location and KML file: The selected NFL model under CAMPA plantation site measured 23.45 hac as per kml map.

3.5.1. Site 5- Mundiya B I in Anta range - N 25.318317 and E 76.55357

The selected plantation was carried out on 66 ha of land at Mundiya B I in Anta range during the year 2018-19. The activities were done under the Non Forest Land (NFL) model. The site was a forest land and selected for 100% evaluation. The soil was sandy loam.

3.5.2. Health & Damages of Plantation: The growth of planted seedling at the site was good (Desi babool & Churail) to poor (Rudraksh & Kachnar). Grazing by stray animals & cattle and destruction by Neel gai was reported at the site. Also, widely growth of termite and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average.

3.5.3. Natural Vegetation and Regeneration: Desi babool, Ber,

Khair, Neem, Peepal & Hingot were the plants found grown naturally in this area. The growth of the plant was good.

3.5.4. Regeneration through seeds sowing: Seeds of species *Hingot, Khair and Ber* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**

3.5.5. Protection Work: The selected NFL model plantation had ditch fencing of 4770 RMT having width at the top-2 meters, width at the bottom-0.9 meters & height 1.2 meters. Present condition of fencing is average. Ditch fencing was fully effective in controlling the biotic pressure.

3.5.6. Soil and Water Conservation Measures: There are 26400 RMT (Width & depth -0.45 meters) Contour trenches & 2025 cu.m earthen check dams in the form of water harvesting structures present in the entire plantation area. These trenches & earthen check dams are prepared for rainwater harvesting and soil conservation.

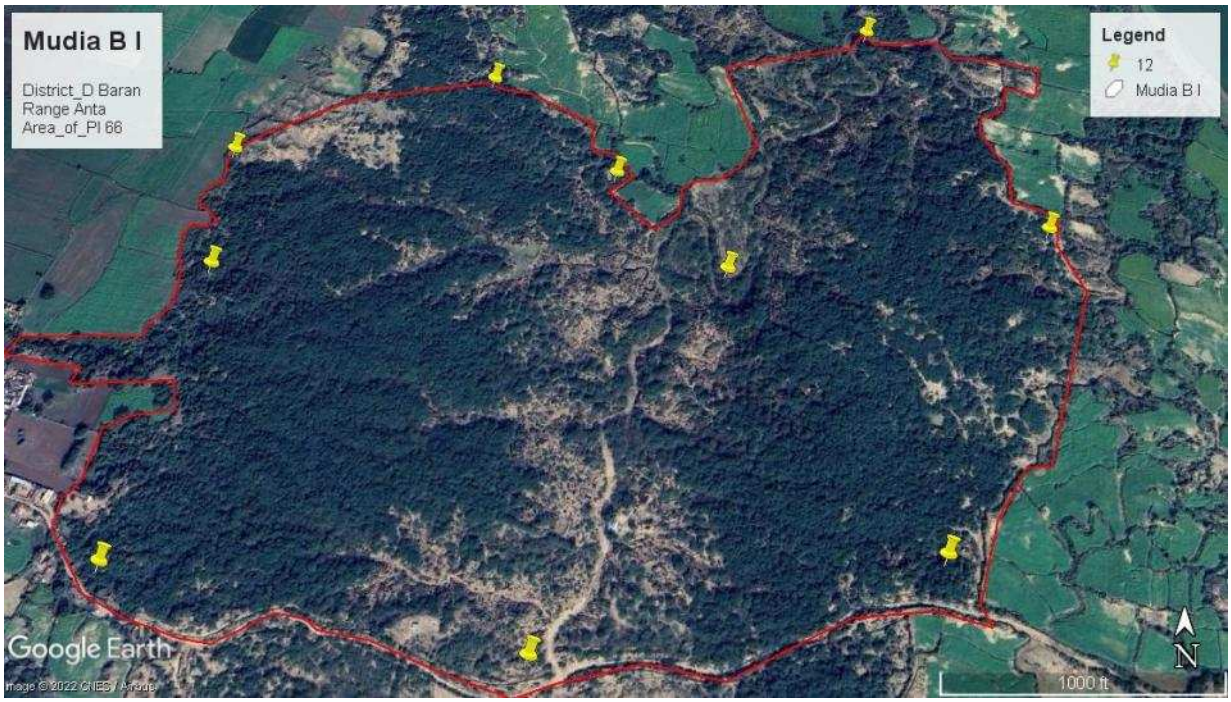
3.5.7. Observations Recorded: Under NFL model at the site, 1100 plants per ha were planted during plantation. **Based on for as 100 percent counting, plants survival was 51.33% at the site.** Plant species girth breast height was also measured. A total of 72548 plants comprising fourteen species were planted in the 66 ha plantation area.

Table 3.8: Status of planted Seedlings at the site-Mundiya B I Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Ficus religiosa (Pipal)	1160	283	877	24.40	51	11
Pongamia pinnata (Karanj)	11987	7965	4022	66.45	62	12
Dalbergia sissoo (Shisham)	6490	2913	3577	44.88	82	11
*Syzygium cumini (*Jamun)	2300	293	2007	12.74	56	10
Bombax ceiba (Semal)	4000	287	3713	7.18	52	9
Azadirachta indica (Neem)	3605	2432	1173	67.46	50	9
Holoptelea integrifolia (Churel)	8000	2965	5035	37.06	65	11
Acacia nilotica (Desi babool)	15800	10193	5607	64.51	68	10
Terminalia arjuna (Arjun)	1000	86	914	8.60	51	8
Bauhinia racemesa (Kachnar)	1806	196	1610	10.85	38	8
Acacia catechu (Khair)	5000	2982	2018	59.64	81	11

Balanites aegyptiaca (Hingot)	7500	3963	3537	52.84	82	11
Zizyphus mauritiana (Ber)	2500	1991	509	79.64	72	12
Ailanthus excelsa (Ardu)	1400	693	707	49.50	49	15
Total	72548	37242	35306	51.33	61	11

3.5.8. GPS Location and KML file: The selected NFL model under CAMPA plantation site measured 66 hac as per kml map.



3.6.1 Site 6- Sukha Semali A in Kelwara range - N 25.217119 and E 76.906477

The selected plantation was carried out on 50 ha of land at Sukha Semali A in Kelwara range during the year 2018-19. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 10% evaluation. The soil was black.

3.6.2. Health & Damages of Plantation: The growth of planted seedlings at the site was good (Jangal Jalebi, Arjun & Churail) to satisfactory (Bargad, Peeple & Karanj). Grazing by stray animals & cattle and destruction by Neel gai was reported at the site. Cutting of plant viz. Palash & Mahuwa by human being was reported at the site. Also, widely growth of termite and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average.

3.6.3. Species Planted: The selected tree species under plantation were 14. Seedlings of Acacia nilotica (desi babool), (Semal, Tectona grandis (Sagwan), Terminalia arjuna (Arjun), Ficus benghalensis (Vad), Ficus religiosa (Pipal), Holoptelea integrifolia (Churel), Pithecellobium dulce (Jangal Jalebi), Madhuca longifolia (Mahua), Anthocephalus kadamba (Kadamba), Pongamia pinnata (Karanj), Azadirachta indica (Neem), Acacia nilotica (Desi babool), Terminalia bellirica (Baheda), and Acacia catechu (Khair) were planted.

3.6.4 Natural Vegetation and Regeneration: Tendu, Mahuwa Palash, Neem, Bargad, Gurjen and Peepal were the plants found grown naturally in this area. The growth of the plant was good.

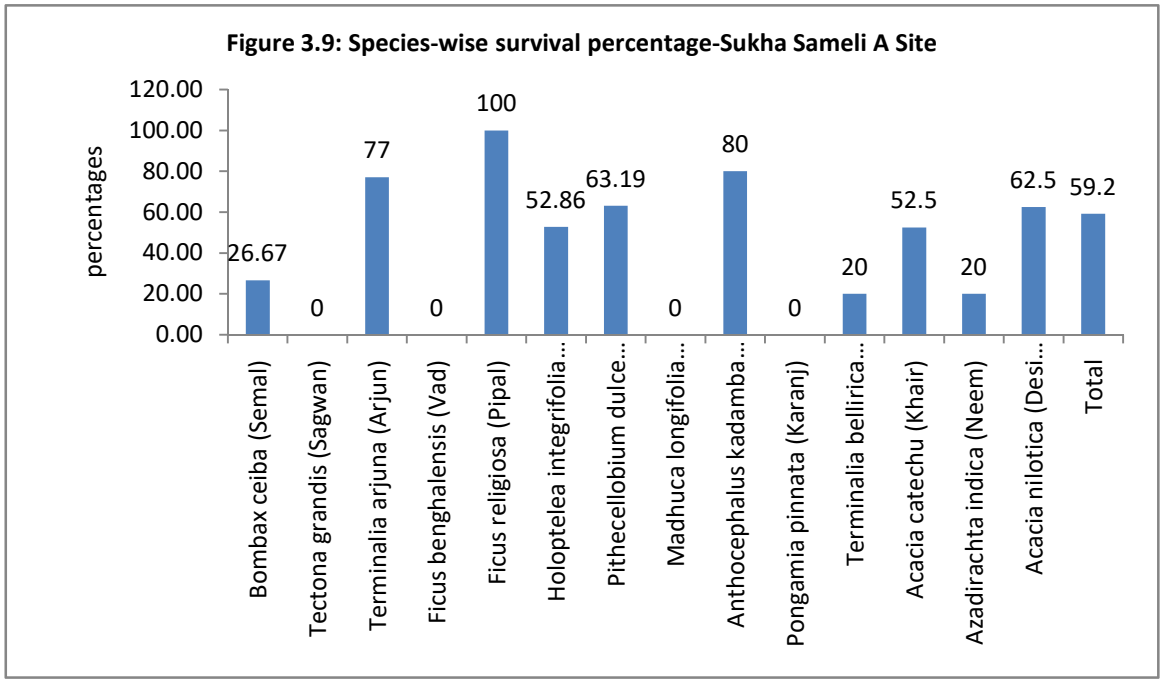
3.6.5. Regeneration through seeds sowing: Seeds of species *Khair and ronj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**

Loose stone fencing

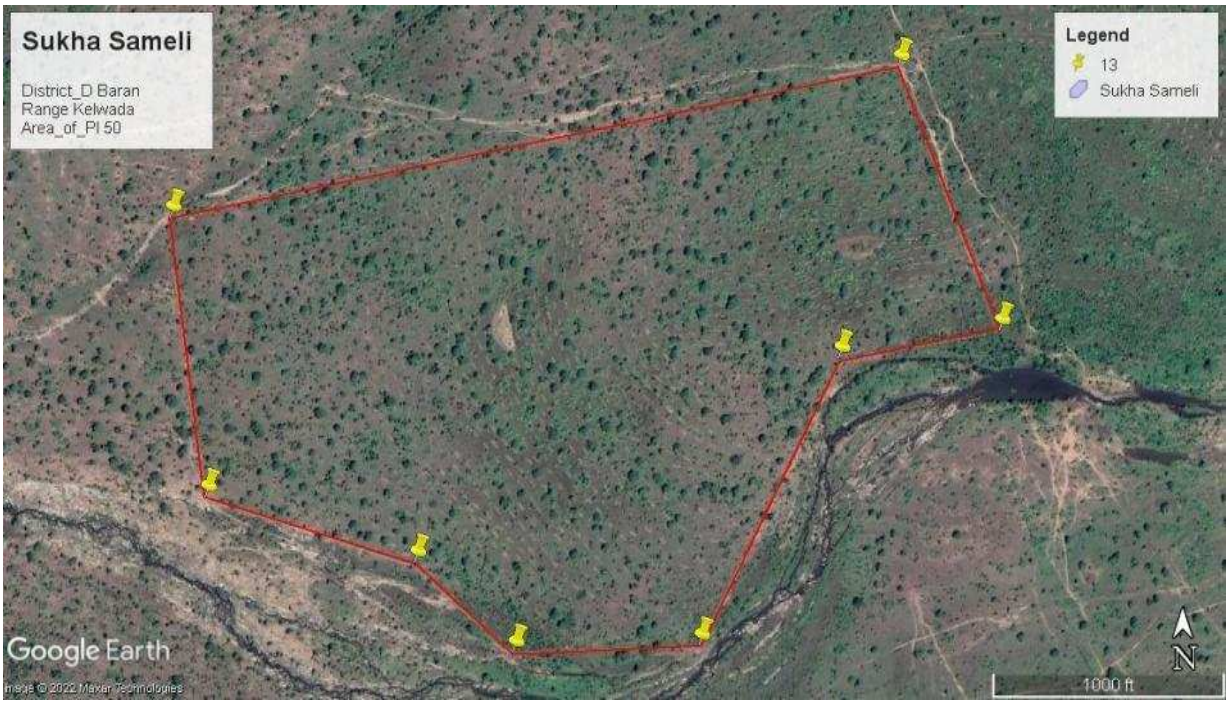
3.6.6. Protection Work: The selected ANR model plantation had loose stone fencing of 3060 RMT having width at the top-0.6 meters, width at the bottom-0.8 meters & height 1.2 meters. Present condition of fencing is good. Loose fencing was fully effective in controlling the biotic pressure.

3.6.7. Soil and Water Conservation Measures: There are 11000 RMT (Width & depth -0.45 meters) Contour trenches & 02 farm ponds in the form of water harvesting structures present in the entire plantation area. These trenches & farm ponds are prepared for rainwater harvesting and soil conservation.

3.6.8. Observations Recorded: Under ANR model at the site, 200 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 59.2% at the site.** Plant species girth breast height was also measured. A total of 10000 plants comprising fourteen species were planted in the 50 ha plantation area.



3.6.9. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hac as per kml map.



3.7.1. Site 7- Mandi Shehjana II in Shahbad range - N 25.12899 and E 77.22551

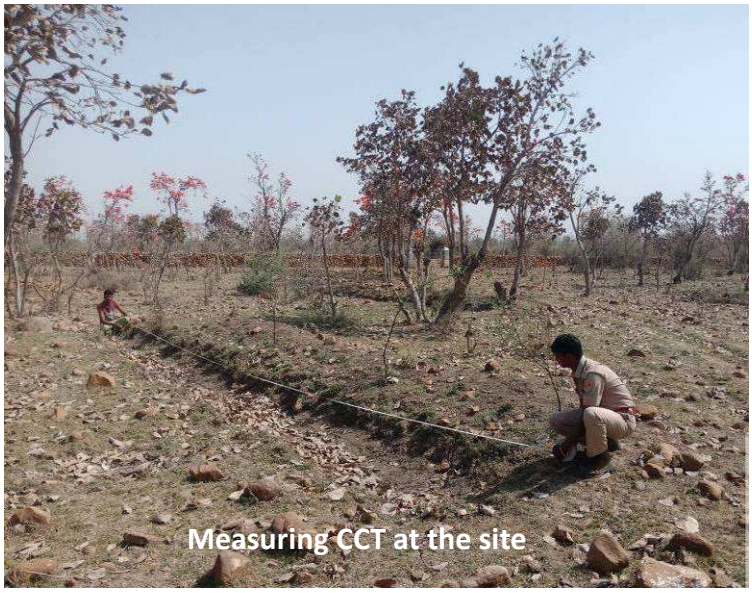
The selected plantation was carried out on 50 ha of land at Mandi Shehjana II in Shahbad range during the year 2018-19. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was black.

Measuring height of the planted

3.7.2. Health & Damages of Plantation: The growth of planted seedlings at the site was good (Neem, Jungle Jalebi, Karonda) to satisfactory (Ber). Grazing by stray animals & cattle and destruction by Neel gai was reported at the site. Also, widely growth of termite and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average.

3.7.3. Natural Vegetation and Regeneration: Dhonk, Ber, Arjun, Palash, Neem, Baheda and Gurjen were the plants found grown naturally in this area. The growth of the plant was good.

3.7.4. Regeneration through seeds sowing: Seeds of species Desi babool, *Khair and Ber* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**


Measuring CCT at the site

3.7.5. Protection Work: The selected ANR model plantation had loose stone fencing of 3200 RMT having width at the top-0.6 meters, width at the bottom-0.8 meters & height 1.2 meters. Present condition of fencing is good. Loose stone fencing was fully effective in controlling the biotic pressure.

3.7.6. Soil and Water Conservation Measures: There are 12750 RMT (Width & depth -0.45 meters) Contour trenches & 02 farm ponds in the form of water harvesting structures present in the entire plantation area. These trenches & farm ponds are prepared for rainwater harvesting and soil conservation.

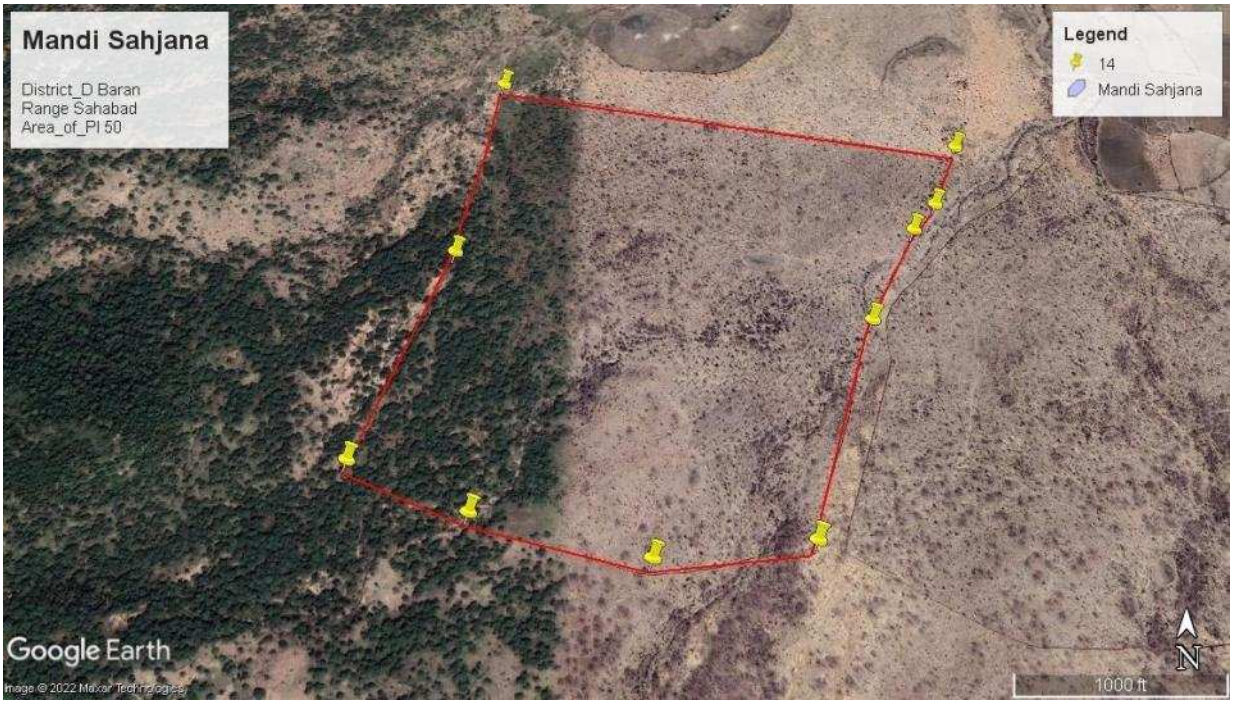
3.7.7. Observations Recorded: Under ANR model at the site, 200 plants per ha were planted during plantation. **Based on for as 100 percent counting, plants survival was 58.02%**

at the site. Plant species girth breast height was also measured. A total of 10000 plants comprising eight species were planted in the 50 ha plantation area.

Table 3.11: Status of planted Seedlings at the site-Mandia Shehjana II Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Tectona grandis (Sagwan)	2000	1076	924	53.80	60	5
Holoptelea integrifolia (Churel)	2000	970	1030	48.50	70	6
Karonda	1500	887	613	59.13	37	4
Pithecellobium dulce (Jangal Jalebi)	1500	1056	444	70.40	75	6
Azadirachta indica (Neem)	200	113	87	56.50	80	7
Pongamia pinnata (Karanj)	800	458	342	57.25	55	5
Acacia catechu (Khair)	1000	687	313	68.70	20	4
Zizyphus mauritiana (Ber)	1000	555	445	55.50	52	5
Total	10000	5802	4198	58.02	56	5

3.7.8. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hac as per kml map.



3.8.1 Site 8- Kanada in Anta range - N 25.380493 and E 76.345775

The selected plantation was carried out on 22 ha of land at Kanada in Anta range during the year 2019-20. The activities were done under the Non Forest Land (NFL) model. The site was a forest land and selected for 10% evaluation. The soil was yellow & hard.

Measuring height of the plant

3.8.2. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai was reported at the site. Also, widely growth of termite and attack by pest obstruct the growth of planted seedling. The status of guarding/ fencing at the site was average.

Natural Vegetation at the Site

3.8.3. Natural Vegetation and Regeneration: Neem, Hingot and Desi babool were the plants found grown naturally in this area. The growth of the plants was good.

3.8.4. Regeneration through seeds sowing: Seeds of species *Khair, Desi babool and Neem* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**

3.8.5. Protection Work: The selected NFL model plantation had ditch fencing of 4250 RMT having width at the top-2.0 meters, width at the bottom-0.9 meters & height 1.2 meters. Present condition of fencing is average. Ditch fencing was partially effective in controlling the biotic pressure.

3.8.6. Soil and Water Conservation Measures: There are 8800 RMT (Width & depth - 0.45 meters) Contour trenches, earthen checkdam (1000 cu.m) and loose stone checkdams (330 cu.m) in the form of water harvesting structures present in the entire plantation area. These trenches, earthen checkdam & loose stone checkdam are prepared for rainwater harvesting and soil conservation.

3.8.7. Observations Recorded: Under NFL model at the site, 1000 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 56.38% at**

the site. Plant species girth breast height was also measured. A total of 22400 plants comprising nine species were planted in the 22 ha plantation area.

Table 3.13: Status of planted Seedlings at the site- Kanada Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Holoptelea integrifolia (Churel)	3700	213		57.57	72	11
Dalbergia sissoo (Shisham)	4000	200		50.00	81	12
Pongamia pinnata (Karanj)	5000	237		47.40	75	13
Acacia nilotica (Desi babool)	3500	330		94.29	78	11
Azadirachta indica (Neem)	4000	140		35.00	38	8
Zizyphus mauritiana (Ber)	1000	90		90.00	88	10
*Madhuca longifolia (*Mahua*)*	200	10		50.00	38	10
*Syzygium cumini (*Jamun)	500	20		40.00	56	13
Balanites aegyptiaca (Hingot)	500	23		46.00	82	11
Total	22400	1263	21137	56.38	68	11

3.8.8. GPS Location and KML file: The selected NFL model under CAMPA plantation site measured 22 hac as per kml map.

4. Results for asset sites

4.1. Site 1- Pillars at Govinpura Bid Ghas, Atru range

At Govinpura Bid Ghas site in Atru range, the Pillars (90 Nos.) have been evaluated. The pillars were constructed in the year 2018-2019. The pillars were 90 in numbers as per MB. But in actual 89 pillars were found & evaluated by the third party. The pillars constructed reported average and useful. Mostly pillars were damaged by the local residents as they were situated in their fields. The construction of pillars helped in marking forest boundary. The present condition of pillars is poor.The expenditure incurred for constructing the Pillars (90 Nos.) was 1.80 lac (as per MB) against the estimated cost of Rs. 179858.

Damaged pillar at the

Site 2 -Pillars at Karvari, Kishangarh range

At Karvari site in Kishanganj range, the Pillars (50 Nos.) have been evaluated. The pillars were constructed in the year 2019-2020. The pillars were 50 in numbers as per MB. But in actual 47 pillars were found & evaluated by the third party. 03 pillars were physically not found as it was submerged in Ramnagar River. The pillars constructed were reported average and useful. The construction of pillars helped in marking forest boundary. The present condition of pillars is average.The expenditure incurred for constructing the Pillars (50 Nos.) was Rs. 83720 lac (as per MB) against the estimated cost of Rs. 9.0 lacs.

Pillar Quality

Site 3- Roadside plantation Kelwara to Uni Pahadi at Kelwara range

Roadside Plantation Kelwara to Uni Pahadi in Kelwara range has been evaluated. The total area of roadside plantation was 4 hac. & had been carried out in the year 2019-20. The soil of the area is black. Seedlings planted were Mahuwa, Karanj, Bargad, Sheesham, Arjun, Peepal, Gular, Semal, Kachnar, Gulmohar, Neem & Jamun. The total seedlings planted were 3320. Total survived plants during Third Party

Kelwara to Uni Pahadi roadside plantation Site

evaluation were 2107. **Hence, the total survival rate was 63.46%.** Barbed wire fencing of 2500 RMT was reported at the site.The present status of barbed wire fencing is good. GPS location of this area was 25°08.653" N and 76°55.736" E. The survival & growth of planted seedlings was good.

5. Overall assessment

Table 5: Quantitative assessment of plantation works created under CAMPA in Baran division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Baseli-B	DFL	30	59.31	6
2	Borda	DFL	130	46.32	5
3	Kadili	DFL	120	50.54	6
4	Dabar-D	NFL	23.45	54.67	6
5	Mundiya B I	NFL	66	51.33	6
6	Sukha samli-A	ANR	50	59.20	6
7	Mundiya Sehjana II	ANR	50	58.02	6
8	Kanada	NFL	22	56.38	6

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction/survival	Rating of quality of construction
1	Pillars	Govindpura Bid Ghas	Poor	2
2	Pillars	Karvari	Average	5
3	Roadside plantation	Kelwara to Uni Pahadi	Good	7

Barmer

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Barmer Forest Division. This Forest Division with 8 Forest Ranges Siwana, Balotra, Dhorimanna, Chohtan, Sindhari, Baytu, Shiv & Barmer has territorial jurisdiction over the entire Barmer District.

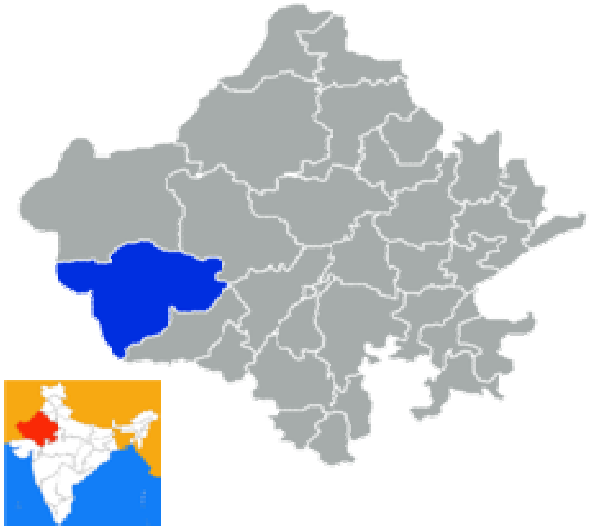


Figure 1 Location of Barmer district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Barmer Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Sivana	Kuship	2017-18	100	ANR	100%
Barmer	Junapatarasar B	2018-19	50	DFL	10%
Shiv	Gafantalai	2017-18	50	DFL	100%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Barmer Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year -	Physical Target Achieved (100%)
Barmer	Barmer Hilli Kua no. 3	2017-18	Pakki Diwar 4 Ft.
Dhorimanna	Dhorimana	2017-18	Rescue Centre
Chouhatan	Chouhatan Nursery	2018-19	Pakki Diwar 4 Ft.
Sivana	Kajri Samdari	2019-20	Pakki Diwar 4 Ft.

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1- Kuship site in Sivana range -N 25.69839 and E 72.387564

The selected plantation was carried out on 100 hac. of land at Kuship in Sivana range during the year 2017-18. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was stony with murar & clayey soil.

Kuship plantation site

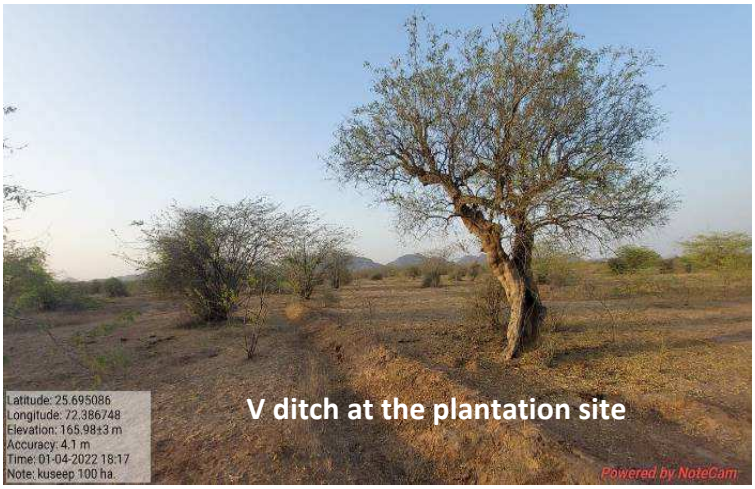
3.1.2. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, Chinkara, rabbit, rat and porcupine was reported at the site. Also, widely growth of termite, soil quality and water quantity obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor

Vegetation & planted seedling

3.1.3. Natural Vegetation and Regeneration: Jaal, Totalis & Kumtha were the plants found grown naturally in this area. The growth of the plants was good.

3.1.4. Regeneration through seeds sowing: Seeds of species *kumatha, and Ber* were sown in as well as along the V ditches and on the thanwlas. **The result of sowing was poor.**

3.1.5. Protection Work: The selected ANR model plantation had ditch fencing of 4096 RMT having width at the top-1.5 meters, width at the bottom-0.9 meters & height 1.2 meters. Present condition of fencing is average. The ditch fencing was partially effective in controlling the biotic pressure. 550 RMT ditch fencing was damaged and



V ditch at the plantation site

silting was reported at many places. Also 500 RMT pakki diwar was reported at the plantation site.

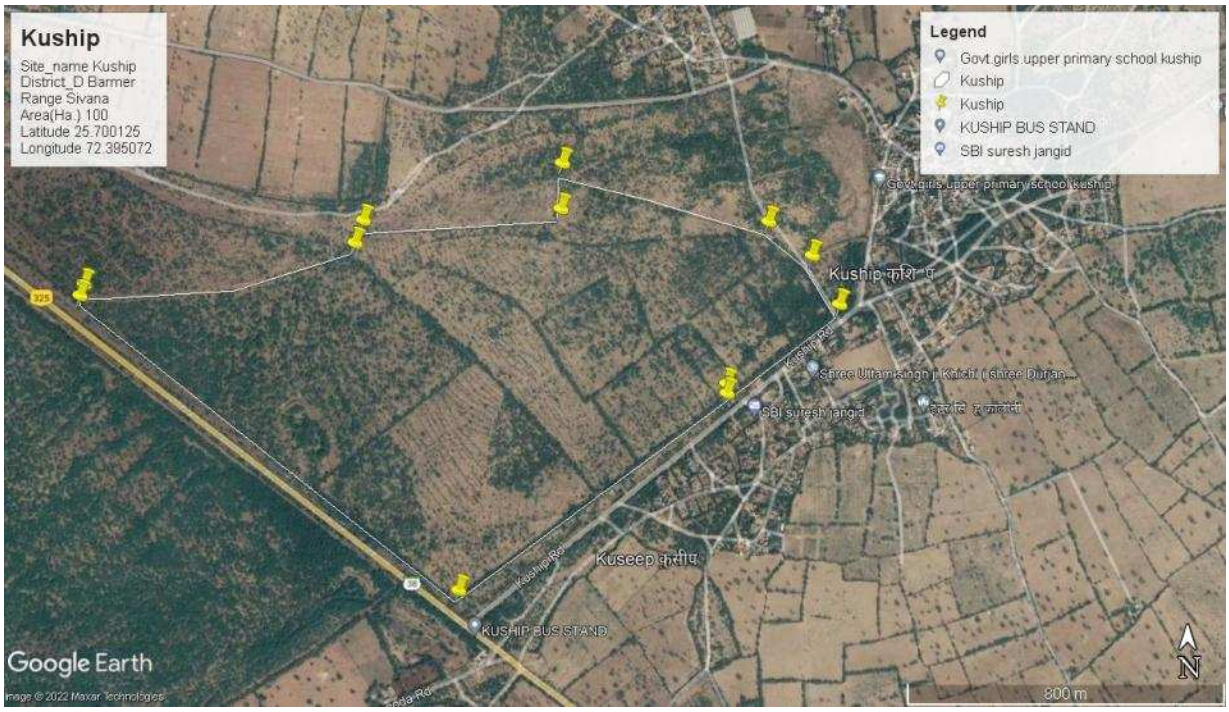
3.1.6. Soil and Water Conservation Measures: There are 15000 RMT V ditches & other 04 water harvesting structures present in the entire plantation area.

3.1.7. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 41.50% at the site.** Plant species collar girth & height was also measured. The growth of planted plants is average. A total of 21000 plants comprising seven species were planted in the 100 hectare plantation area.

Table 3.2: Status of Planted Seedlings at the site-Kuship Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Tecomella undulata (Rohida)	500	50	450	10.00	90	65
Prosopis juliflora (Khejri)	600	50	550	8.33	90	65
Salvadora persica (Jaal)	1100	600	500	54.55	90	65
Zizyphus mauritiana (Ber)	2000	600	1400	30.00	90	65
Azadirachta indica (Neem)	800	80	720	10.00	150	65
Acacia tortilis (Totalis)	11000	5310	5690	48.27	140	65
Acacia senegal (Kumtha)	4000	1610	2390	40.25	90	65
Total	20000	8300	11700	41.50	123	84

3.1.8. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 100 hec as per kml map.



3.2.1. Site 2- Junapatarasar B in Barmer range - N 25.640372 and E 71.199675

The selected plantation was carried out on 50 ha of land at Junapatarasar B in Barmer range during the year 2018-19. The activities were done under the DFL (Degraded Forest Land) model. The site was a forest land and selected for 10% evaluation. The soil was sandy.

3.2.2. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, Chinkara, rabbit, rat and porcupine was reported at the site. Also, widely growth of termite, soil quality and water quantity obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.

3.2.3. Natural Vegetation and Regeneration: Kumtha, Jaal, Rohida & Khejri were the plants found grown naturally in this area. The growth of the plants was good.

3.2.4. Regeneration through seeds sowing: Seeds of species *kumtha & Sevan grass* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was poor.**

3.2.5. Protection Work: The selected DFL model plantation had Barbed wire fencing of 3041 RMT. Present condition of fencing was good. Barbed wire fencing was fully effective in controlling the biotic pressure.

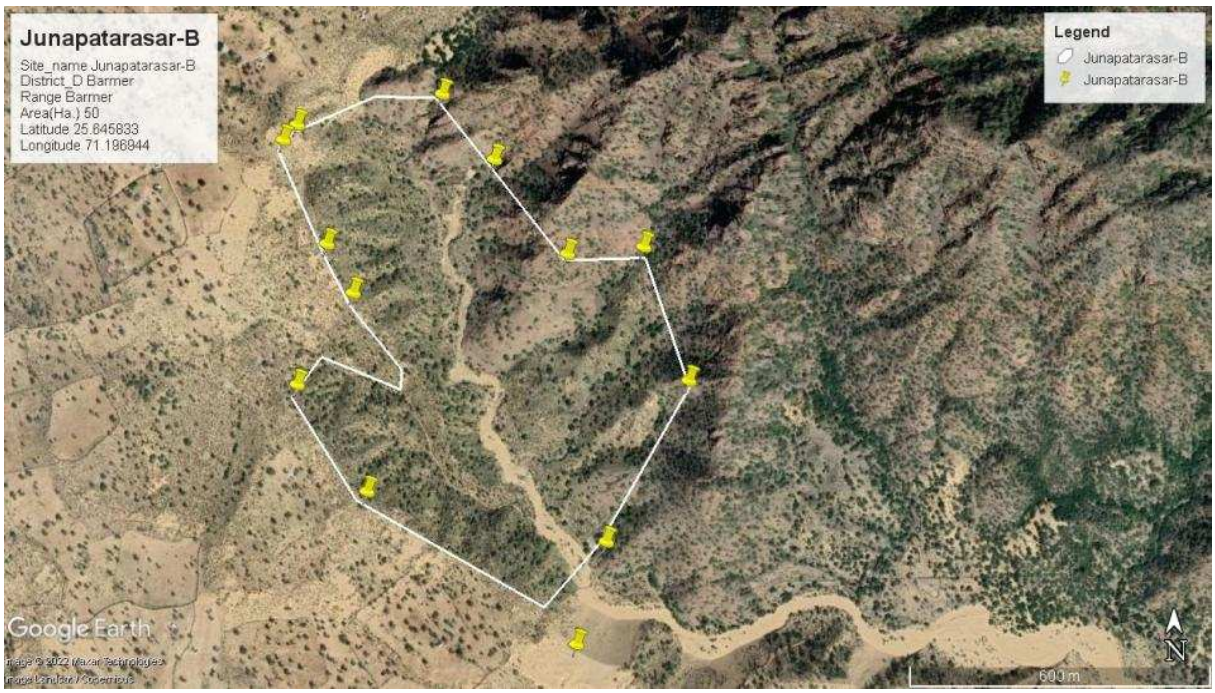
3.2.6. Soil and Water Conservation Measures: There are 12700 RMT Contour trenches, 8000 RMT Mulching, 01 tanka, earthen checkdam (489.51 cu.m) & loose stone checkdam (610 cu.m) in the form of water harvesting structures present in the entire plantation area.

3.2.7. Observations Recorded: Under this model, 500 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 57.2% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 25000 plants comprising eight species were planted in the 50 ha plantation area.

Table 3.4: Status of Planted Seedlings at the site-Junapatarasar Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia tortilis (Totalis)	20730	1152		55.57	115	85
Azadirachta indica (Neem)	500	0		0.00	0	0
Salvadora persica (Jaal)	200			0.00	0	0
Cordia sinensis (Gundi)	100	8		80.00	90	65
Tecomella undulata (Rohida)	1500	117		78.00	90	65
Acacia senegal (Kumtha)	1200	100		83.33	90	65
Zizyphus mauritiana (Ber)	700	53		75.71	90	65
Prosopis juliflora (Khejri)	70			0.00	0	0
Total	25000	1430	23570	57.20	110	81

3.2.8. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 50hec as per kml map.



3.3.1. Site 3-Gafantalai in Shiv range - N 25.889178 and E 70.654867

The selected plantation has been carried out on 50 hec of land at Gafantalai of Shiv range during the year 2018-19. The activities were done under the DFL model. The site was a forest land and selected for 100% evaluation. The soil was hard clayey to sandy domat.

3.3.2. Health & Damages of Plantation: The growth of planted seedling at the site was satisfactory. Grazing by stray animals & cattle's and destruction by Neel gai, Chinkara, rabbit, rat and porcupine was reported at the site. Also, widely growth of termite, soil quality and water quantity obstruct the growth of planted seedling. The status of guarding/ fencing at the site was good.

3.3.3. Natural Vegetation and Regeneration: Jaal & Khejri were the plants found grown naturally in this area. The growth of the plants was good.

3.3.4. Regeneration through seeds sowing: Seeds of species *kumtha* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was satisfactory.**

3.3.5. Protection Work: The selected DFL model plantation had Barbed wire fencing of 3070 RMT. Present condition of fencing is good. Barbed wire fencing was fully effective in controlling the biotic pressure.

Barbed wire fencing at the site

3.3.6. Soil and Water Conservation Measures: There are 12162 RMT V ditches, 90000 RMT Furrow and 01 tanka in the form of water harvesting structures were present in the entire plantation area.

3.3.7. Observations Recorded: Under this model, 500 plants per ha were planted during plantation. **Based on for as 100 percent counting, plants survival was 77.5% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was good. A total of 25000 plants comprising six species were planted in the 50 ha plantation area.

Table 3.6: Status of Planted Seedlings at the site-Gafantalai Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia tortilis (Totalis)	20200	16975	3225	84.03	161	126
Salvadora persica (Jaal)	2500	1095	1405	43.80	90	65
Prosopis juliflora (Khejri)	300	105	195	35.00	90	65
Tecomella undulata (Rohida)	1500	1000	500	66.67	90	65
Zizyphus mauritiana (Ber)	300	150	150	50.00	90	65
Azadirachta indica (Neem)	200	50	150	25.00	90	65
Total	25000	19375	5625	77.50	152	119

3.3.8. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 50hec as per kml map.

4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft. at Barmer Hilly Kua no. 3, Barmer range

At Barmer hilly kua no.3 in Barmer range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 475 m length as per MB. Also, in actual 475 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meters & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment. However, crack was appeared in the pakki diwar. Also, 7.70 meter pakki diwar was damaged by villagers. The present condition of pakki diwar was poor. GPS location of this area was 27.751732 N and 71.38131 E. The expenditure incurred for constructing this wall was Rs. 10.50 lac (as per MB) against the estimated budget of Rs. 10.50 lacs.

Site 2- Rescue Centre at Dhorimana, Dhorimana range

Rescue Centre Dhorimana in Dhorimana range has been evaluated. The Rescue Centre was constructed in the year 2017-18. Site selection for construction of Rescue Centre was proper. The construction work of Rescue Centre had been completed. The infrastructure created under CAMPA was useful. The infrastructure during third party evaluation was in use & was properly maintained. Quality of Construction work was good. The work done under CAMPA was construction of room with attached latrine & bathroom, and construction of

compartment for rescue of animals. The present condition of rescue centre was good. GPS location of this area was 25.203099 N and 71.4375 E. The expenditure incurred for constructing the Rescue Centre was Rs. 571894 (as per MB) against the estimated budget of Rs. 6.00 lacs

Site 3- Pakki Diwar 4 Ft. at Chouhatan Nursery, Chouhatan range

At Chouhatan nursery in Chouhatan range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 340 m length as per MB. Also, in actual 340 m pakki diwar was constructed at the site. The width of the diwar was 0.40 meters & height was 1.20 meter. Construction work appeared to be good and useful. In order to protect the nursery Pakki Diwar 4 ft was constructed. The present condition of pakki diwar is good. GPS location of this area was 25.485533 N and 71.076333 E. The expenditure incurred for constructing this wall was Rs. 816000 (as per MB) against the estimated budget of Rs. 816000.

Site 4- Pakki Diwar 4 Ft. at Kajri Samdari, Sivana range

At Kajri Samdari in Sivana range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar is constructed at the site. The width of the diwar was 0.45 meters & height was 1.20 meter. Construction work appeared to be good and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting forest area. The present condition of pakki diwar is good. GPS location of this area was 25.818374 N and 72.568061 E. The expenditure incurred for constructing this wall was Rs. 990399 (as per MB) against the estimated budget of Rs. 13.00 lacs.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Barmer division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Kusip	ANR	100	41.50	5
2	Junapatarasar-B	DFL	50	57.20	6
3	Gafan Talai	DFL	50	77.50	8

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki diwar 4 Ft.	Barmer Hilly Kua no.3	Average	5
2	Pakki diwar 4 Ft.	Chouhatan Nursery	Good	7
3	Pakki diwar 4 Ft.	Kajri Samdari	Good	8
4	Rescue Centre	Dhorimana	Good	8

Bharatpur

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Bharatpur Forest Division. This Forest Division with 5 Forest Ranges namely Bayana, Kaman, Deeg, Bharatpur & Nadbai has territorial jurisdiction over the entire Bharatpur District.

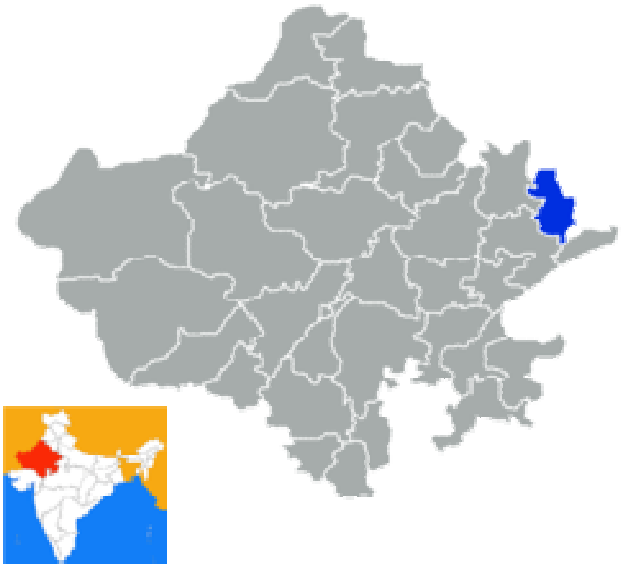


Figure : Location of Bharatpur district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Bharatpur Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Bayana	Ghori Khoj Hathodi	2018-19	50	ANR	100%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Bharatpur Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Deeg	Gharwari Se Chak Gharwari	2017-18	Pakki Diwar 4 ft
Kaman	Swarn Shanti Parwat	2018-19	Pakki Diwar 4 ft

	Sunhera		
Bayana	Khareri Bagrain ke Pas Jogipura	2018-19	Pakki Diwar 4 ft
Bayana	Bayana Vankhand Samraya	2018-19	Boundary Pillars
Kaman	Tyra B	2019-20	Pakki Diwar 4 ft
Bayana	Bayana	2019-20	Nursery

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1- Ghodi Khoj Hathodi site in Bayana range -N 27.019062 and E 77.094196

The selected plantation was carried out on 50 hac. of land at Ghodi Khoj Hathodi in Bayana range during the year 2018-19. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was domat.

3.1.2. Treatment plan before sowing: The topography of the area was undulating. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. It is reported excellent having fair amount of soil. The growth of planted seedlings is less than normal in the area having less soil coverage. Grazing by stray animals & cattle and destruction by Neel gai, wild boar & porcupine was reported at the site. Damage by human beings to plants was

also reported at the site. Also, widely growth of termite, soil quality, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.1.4. Species Planted: The selected tree species under plantation were 5. Seedlings of *Acacia nilotica* (desi babool), *Acacia leucophoelea (*ronj), *Holoptelea integrifolia* (Churel), Prosopis juliflora (Khejri) and Acacia tortilis (Totalis) were planted.

In total 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedling for plantation is concerned, it was proper, fair & suitable. The seedlings selected for plantation were Ronj, Totalis & Desi babool which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**

3.1.5. Watering of plants: The provision of watering to plant was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: Desi babool, Totalis Ronj & Dhonk were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species *Kumatha, Desi babool, Ronj and Totalis* were sown in as well as along the trenches and on the thanwlas. The result of sowing was average.

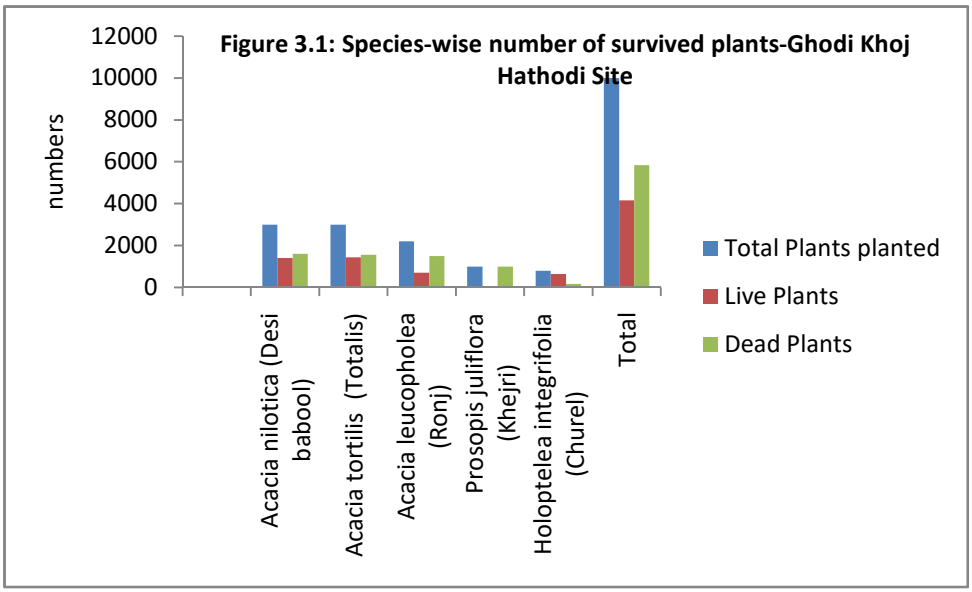
3.1.8. Protection Work: The selected ANR model plantation had loose stone fencing of 1171 RMT & ditch fencing of 3000 RMT. Present condition of fencing was poor. Loose stone fencing & ditch fencing was partially effective in controlling biotic pressure.

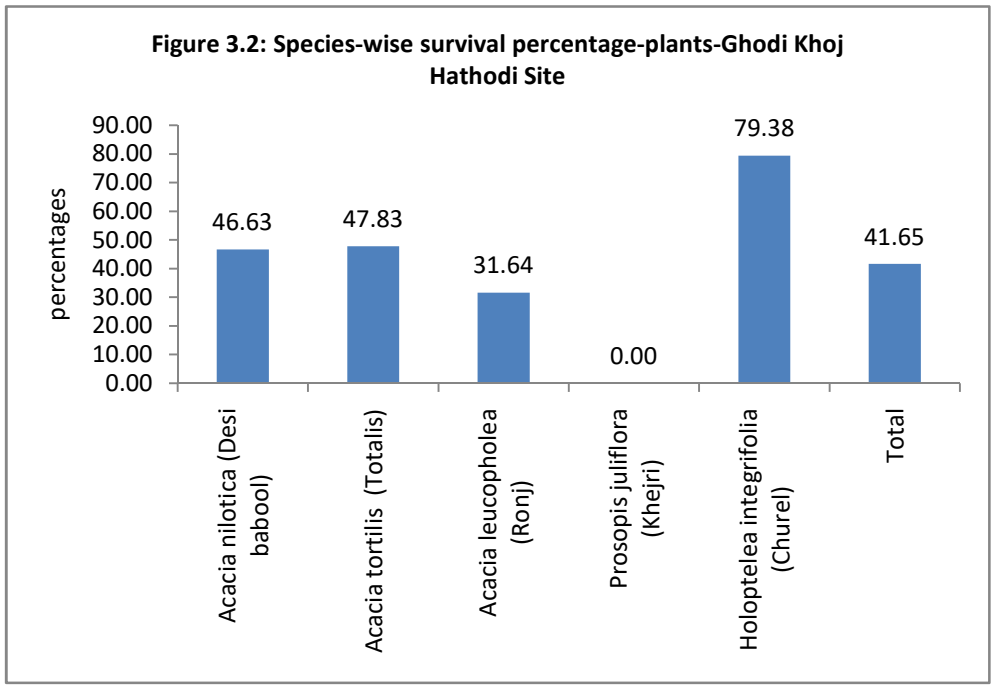
3.1.9. Soil and Water Conservation Measures: There are 1150 RMT Contour trenches, 6150 RMT SGT & earthen check dam (2500 cu.cm) in the form of water harvesting structures present in the entire plantation area.

3.1.10 Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 41.65% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising five species were planted in the 50 hectare plantation area.

Table 3: Status of Planted Seedlings at the site-Ghori Khoj Hathodi Site

Species	Total Plants planted	Live Pl ants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia nilotica (Desi babool)	3000	1399	1601	46.63	90.0	65.0
Acacia tortilis (Totalis)	3000	1435	1565	47.83	90.9	65.0
Acacia leucopholea (Ronj)	2200	696	1504	31.64	95.9	65.0
Prosopis juliflora (Khejri)	1000	0	1000	0.00	0.0	0.0
Holoptelea integrifolia (Churel)	800	635	165	79.38	99.3	65.0
Total	10000	4165	5835	41.65	92.7	65.0





3.1.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.

3.1 12. Budget and expenditure

Table 3.1 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18	383859	750216	632525	1766600	298498	7023395	632525	1633418
2018-19	412600		0	412600	390499		0	390499

2019-20	177850		0	177850	135935		0	135935
2020-21	67878		24347	92225	68218		15091	83309
2021-22	71595		25455	97050	66825		25453	92278
Total	1113782	750216	682327	2546325	959975	7023395	673069	2335439

4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft at Gharwari Se Chak Gharwari, Deeg Range

At Gharwari Se Chak Gharwari in Deeg range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 3040 m length as per MB. But in actual 3047 m pakki diwar was constructed at the site. The width of the diwar was 0.38 meters & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. The pakki diwar was constructed in three parts. Cracks in wall were reported at the site. Quality of construction & finishing of pakki diwar need improvement. GPS location of this area was 27.402918 N and 77.36849 E. The expenditure incurred for constructing this wall was Rs. 58,71,2999 (as per MB) against the estimated cost of 72.96 lacs.

Site 2- Pakki Diwar 4 Ft at Swarn Shanti Parwat Sunhera, Kaman Range

At Swarn Shanti Parwat Sunhera in Kaman range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 450 m length as per MB. Also, in actual 450 m pakki diwar was constructed at the site. The width of the diwar was 0.38 meters & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. Minor Cracks in wall were reported at the site. The wall got covered with soil & height of the wall reduced from 1.20 meter to 0.90 meter. GPS location of this area was 27°39’49” N and 77°13’56”E. The expenditure incurred for constructing this wall was 10.80 lacs (as per MB) against the estimated cost of 10.80 lacs.

Site 3- Pakki Diwar 4 Ft at Khareri Bageran ke pas, Bayana Range

At Khareri Bagrain ke Pas Jogipura in Bayana range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 450 m length as per MB. But in actual 458 m pakki diwar was constructed at the site. The width of

the diwar was 0.40 meters & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. GPS location of this area was 26.924582 N and 77.137276 E. The expenditure incurred for constructing this wall was Rs. 1074962 (as per MB) against the estimated cost of 10.80 lacs.

Site 4- Bayana Van Khand Samraya Bayana range

At Bayana Van Khand site in Bayana Pillars (100 Nos.) have been evaluated. The pillars were constructed in the year 2018-19. The pillars were 100 in numbers as per MB. Also, in actual 100 pillars were found & evaluated by the third party. The pillars constructed were reported average and useful. The construction of pillars helped in marking forest boundary.The expenditure incurred for constructing the Pillars (100 Nos.) was Rs. (as per MB) against the estimated cost of Rs 1.80 lac.

Site 5- Pakki Diwar 4 Ft at Tyra B, Kaman Range

At Tyra B in Kaman range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2098-20. The wall dimensions were 4 ft and 250 m length as per MB. Also, in actual 250 m pakki diwar was constructed at the site. The width of the diwar was 0.38 meters & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. The main purpose of constructing pakki diwar at the site was to prevent illegal mining in the area which is still practicing due to non coverage of complete area. GPS location of this area was 27°41’12” N and 77°17’19”E E. The expenditure incurred for constructing this wall was Rs. 598000 (as per MB) against the estimated cost of Rs. 6.0 lac.

Site 6- Nursery at Bayana, Bayana range

At Bayana in Bayana range, the nursery has been evaluated. The nursery was under category of development of existing nursery. The nursery was found operational & useful at the time of visit. Adequate land & other infrastructure required for development of nursery was available. The nursery was well maintained. Plants are being supplied year-wise as targeted. Work undertaken in the nursery with support from CAMPA was construction of 6 pucca beds. Total beds available at the nursery were 88 (kutcha beds- 70 & pucca beds-18). GPS location of this area was 26.89884 N and 77.284388 E. The expenditure incurred for development of nursery was Rs.11509.96 (as per MB) against the estimated budget of Rs. 1.0 lac.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Bharatpur division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Ghodi Khoj Hathodi	ANR	50	41.65	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of Construction
1	Pakki Diwar 4 ft	Gharwari Se Chak Gharwari	Average	6
2	Pakki Diwar 4 ft	Swarn Shanti Parwat Sunhera	Average	6
3	Pakki Diwar 4 ft	Khareri Bagrain ke Pas Jogipura	Average	6
4	Pillars	Bayana Vankhand Samraya	Poor	5
5	Pakki Diwar 4 ft	Tyra B	Average	6
6	Nursery	Bayana	Average	6

Bharatpur WL

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Bharatpur WL Forest Division. This Forest Division with 2 Forest Ranges namely WL Bandh Baretha & WL KNP Bharatpur has territorial jurisdiction over the entire Bharatpur District.

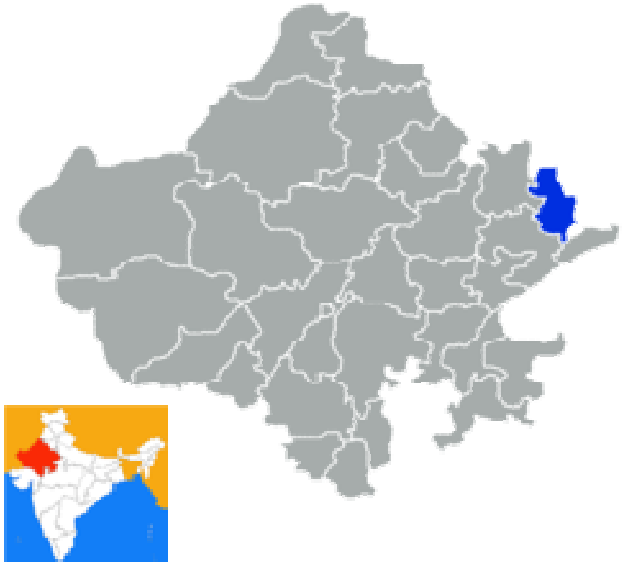


Figure : Location of Bharatpur district, Rajasthan

2.1. Selected Asset Sites for Evaluation

The selected asset sites of Bharatpur WL Forest Division were as given in table 1

Table 1: Asset sample sites for evaluation

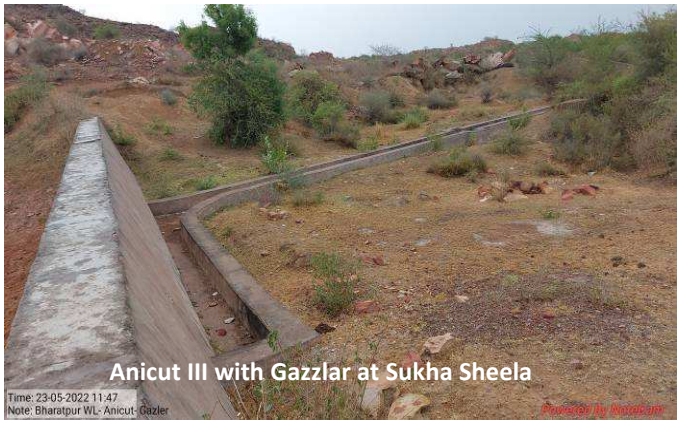
Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Bandh Baretha	Naka Kot	2018-19	Pakki Diwar 6 ft
Bandh Baretha	Sukha Sheela	2018-19	Anicut Type III
Bandh Baretha	Tarbeejpur	2019-20	Pakki Diwar 6 ft
Bandh Baretha	Van Rakshak Chowki Kot	2019-20	Forest Chowki

3. Results for asset sites

3.1. Site 1- Pakki Diwar 6 Ft at Naka Kot , Bandh Baretha Range

At Naka kot in Bandh Baretha range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 2500 m length as per MB. Also, in actual 2500 m pakki diwar was constructed at the site. The width of the diwar was 0.63 m & height was 1.82 meter. Construction work appeared to be average & useful. However, 16.03 feet wall was damaged due to water logging & local residents. GPS location of this area was 26.843495 N and 77.398173 E. The expenditure incurred for constructing this wall was Rs. (as per MB) against the estimated budget of 28.5 lacs.

Site 2- Anicut III with Gazzlar at Sukha Sheela, Bandh Baretha Range



At Sukha Sheela in Bandh Baretha, Anicut III with Gazzlar has been evaluated. The Anicut III with Gazzlar was constructed in the year 2018-19. The length of the structure was 26 meter as per MB. But in actual 27 meter length was constructed at the site. Construction work appeared to be average and useful. Anicut III was connected with Gazzlar which was used for drinking water of wild animals. Water was not available in the anicut at the time of visit. There should be some control mechanism in the Gazzlar in order to use conserve water judiciously. The GPS location of this area was $26^0$53’25” N and $77^0$25’35”E. The expenditure incurred for constructing the anicut wall was 6.0 lacs (as per MB) against the estimated budget of Rs 6.00 lac.

Site 3- Pakki Diwar 6 Ft at Tarbeejpur , Bandh Baretha Range

At Tarbeejpur in Bandh Baretha range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 6 ft and 500 m length as per MB. Also, in actual 2500 m pakki diwar was constructed at the site. The width of the

diwar was 0.40 m & height was 1.8 meter. Construction work appeared to be average & useful. The construction of pakki diwar 6 ft. demarcates the area of forest land. However, construction of pakki diwar 6 ft protected only part and majority of the area is still open. Also, pointing & coping work need improvement. The GPS location of this area was $26^0$53'20" N and $77^0$25'25" E. The expenditure incurred for constructing this wall was Rs.12.42 lac (as per MB) against the estimated budget of 14.30 lac.

Site 4- Van Rakshak Chowki Kot, Bandh Baretha range

Van Rakshak Chowki at Kot Naka site in Band Baretha range has been evaluated. The Van Rakshak Chowki was constructed in the year 2019-20. Site selection for construction of Van Rakshak Chowki was proper. Construction work appeared to be good and useful. The Van Rakshak Chowki created under CAMPA was in use & properly maintained. Rooms, Kitchen & Washroom were constructed under Van Rakshak Chowki. GPS location of this area was 26.813505 N and 77.428232E. The expenditure incurred for constructing the Van Rakshak Chowki was Rs. 547839 (as per MB) against the estimated budget of Rs. 550000.

4. Overall assessment

Table 2: Quantitative assessment of asset works created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 6 ft	Naka Kot	Average	6
2	Pakki Diwar 6 ft	Tarbeejpur	Average	6
3	Anicut III with Gazzlar	Sukha Sheela	Average	6
4	Forest Chowki	Kot	Good	8

Bhilwara

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Bhilwara Forest Division. This Forest Division with 5 Forest Ranges namely Mandalgarh, Jahajpur, Bhilwara, Shahpura & Asind has territorial jurisdiction over the entire Bhilwara District.

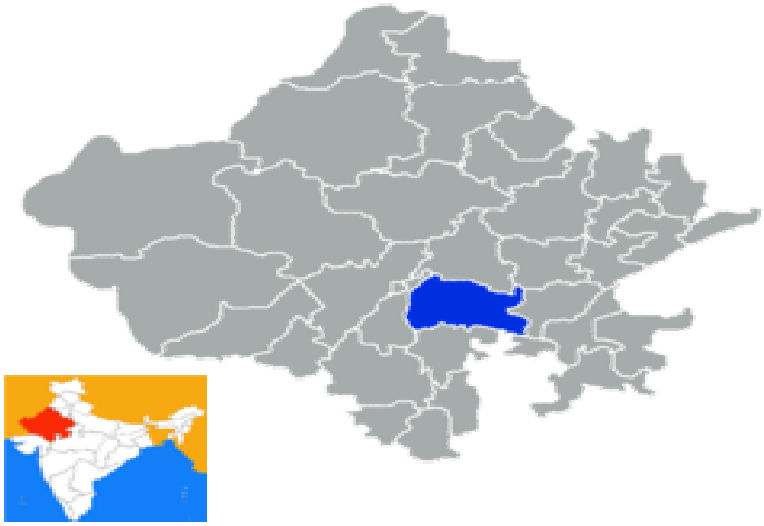


Figure: Location of Bhilwara district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Bhilwara Forest Division for evaluation were as given in table 1.

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Jahajpur	Saimala II	2017-18	50	DFL	100%
Mandalgarh	Kharcha ki Nadi	2017-18	50	ANR	10%
Mandalgarh	Bhadurpura	2018-19	50	ANR	100%
Mandalgarh	Ladpura	2019-20	50	DFL	10%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Bhilwara Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Jahazpur	Jeev Rekha	2017-18	Pakki Diwar 4 ft
Mandalgarh	Bijlimariya Handpump ke pas	2019-20	Pakki Diwar 4 ft

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1-Saimala II site in Jahajpur range -N 25.050325018 and E 75.20277522

The selected plantation was carried out on 50 hac. of land at Saimala in Jahazpur range during the year 2017-18. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 100% evaluation. The soil was domat black in colour and stony hard layer.

3.1.2. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boar and porcupine was reported at the site. Also, widely growth of termite, soil quality and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average

Growth of seedling planted at the site

3.1.3. Natural Vegetation and Regeneration: Palash, Mahuwa, Ronj, Neem, Tendu, Baheda were the plants found grown naturally in this area. The growth of the plants was good.

3.1.4. Regeneration through seeds sowing: Seeds of species *kumatha, Khair and Neem* were sown in as well as along the trenches and on the thanwlas. **The result of sowing seeds was poor.**

CCT at Saimala plantation site

3.1.5. Protection Work: The selected DFL model plantation had loose stone fencing of 3100 RMT having width at the top-0.6 meter, width at the bottom-0.8 meter & height 1.2 meters. Present condition of fencing was good. However, 150 RMT loose stone was badly damaged

3.1.6. Soil and Water Conservation Measures: There are 15000 RMT (Width & depth -0.45 meter) Contour trenches in the form of water harvesting structures present in the entire plantation area.

3.1.7. Observations Recorded: Under this model, 700 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 41.73% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 35000 plants comprising five species were planted in the 50 hectare plantation area.

Table 3: Status of Planted Seedlings at the site-Saimala Site

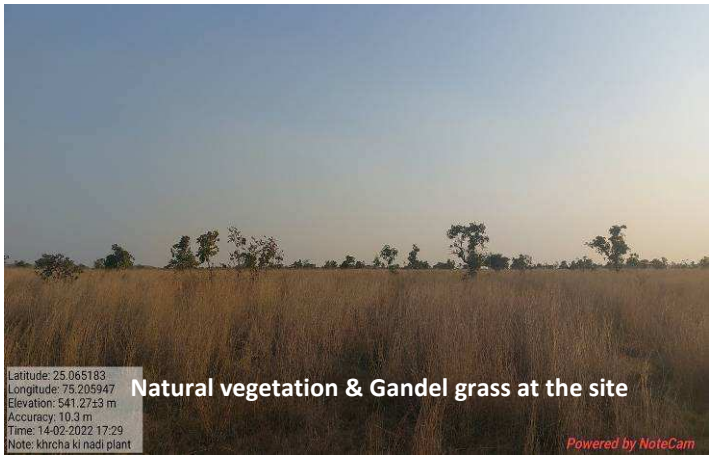
Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia leucopholea (Ronj)	17000	6962	10038	40.95	105	70
Acacia nilotica (Desi babool)	5700	4955	745	86.93	65	65
Pithecellobium dulce (Jangal Jalebi)	3800	483	3317	12.71	75	55
Emblica officinalis (Amla)	1000	131	869	13.10	110	65
Holoptelea integrifolia (Churel)	4000	359	3641	8.98	70	68
Zizyphus mauritiana (Ber)	1000	323	677	32.30	85	60
Terminalia bellirica (Baheda)	2000	1277	723	63.85	80	63
Acacia catechu (Khair)	500	117	383	23.40	77	58
Total	35000	14607	20393	41.73	83.4	63

3.1.8. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 50 hec as per kml map.

3.2.1. Site 2- Kharcha ki Nadi in Mandalgarh range - N 25.0657046 and E 75.2038202

The selected plantation was carried out on 50 ha of land at Kharcha ki Nadi in Mandalgarh range during the year 2017-18. The activities were done under the NFL model. The site was a forest land and selected for 10% evaluation. The soil was domat black in colour and stony hard layer.

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boars and porcupine was reported at the site. Also, widely growth of termite, soil quality and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.



3.2.4. Natural Vegetation and Regeneration: The area has been covered fully with vegetation due to this plantation. The growth of plants was good. Grasses (Gandel) have grown in thanwlas which should be controlled. Plants like Palash, ronj, neem and mahuwa have been found grown naturally.

3.2.5. Regeneration through seeds sowing: Seeds of species kumtha, Khair, desi babool & ronj were sown in as well as along the trenches and on the thanwlas. The result of seeds sowing was not good. Plants from the seeds sown were rarely seen in contour trenches.

3.2.6. Protection Work: The selected ANR model plantation had loose stone fencing of 3743 RMT having width at the top-0.6 meter, width at the bottom-0.8 meter & height 1.2 meters. Present condition of fencing is good. However, 100 RMT loose stone fencing was badly damaged. Loose stone fencing was fully effective in controlling the biotic pressure.

3.2.7. Soil and Water Conservation Measures: There are 20000 RMT (Width & depth - 0.45 meter) Contour trenches in the form of water harvesting structures present in the entire plantation area.

3.2.8. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 42.2% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10200 plants comprising five species were planted in the 50 ha plantation area.

Table 3.2: Status of Planted Seedlings at the site-Kharcha ki Nadi Site

Species	Total Plants planted	10% sample	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia leucopholea (Ronj)	6000	600	150	-	25.00	90	70
Acacia nilotica (Desi babool)	3000	300	250	-	83.33	85	68
Terminalia bellirica (Baheda)	200	20	0	-	0.00	-	-
Holoptelea integrifolia (Churel)	200	20	2	-	10.00	80	67
Pithecellobium dulce (Jangal Jalebi)	200	20	0	-	0.00	-	-
Zizyphus mauritiana (Ber)	100	10	6	-	60.00	83	65
Acacia catechu (Khair)	300	30	14	-	46.67	77	68
Total	10000	1000	422	578	42.20	83	66.6

3.2.9. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.

3.2.12. Budget and expenditure

Table 3.3: Cost-estimate & expenditure (Year-wise)

	Cost estimate (Rs.)				Expenditure (Rs.)			
Year	**Plantation**	**SMC works**	**Boundary wall/Fencing**	**Total**	**Plantation**	**SMC works**	**Fencing**	**Total**
2016-17	312691	700905	650604	1664200	283187	745044	635969	1664200
2017-18	288301	-	-	288301	374243	-	30907	405150
2018-19	148455	-	14345	162800	142995	-	19805	162800
2019-20	66754	-	25496	92250	66889	-	25361	92250
2020-21	68096	-	24154	92250	65821	-	26429	92250
Total	884297	700905	714599	2299801	933135	745044	738471	2416650

3.3.1 Site 3- Bhadurpura in Mandalgarh range - N 25.0657046 and E 75.2038202

The selected plantation was carried out on 50 hec of land at Bhadurpura of Mandalgarh range during the year 2018-19. The activities were done under the ANR model. The site was a forest land and selected for 100% evaluation. The soil was brown in colour and stony hard layer.

3.3.2. Health & Damages of Plantation: The growth of planted seedlings at the site was good. Grazing by stray animals & cattle and destruction by Neel gai, wild boar and porcupine was reported at the site. Also, widely growth of termite, soil quality and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory.

3.3.3. Natural Vegetation and Regeneration*:* The area has been covered fully with vegetation due to this plantation. Plants like Dhok, Ronj, Neem and Desi babool have been found grown naturally. .

3.3.4. Regeneration through seeds sowing: The growth of seeds sowing plants was good. The result of seed sowing (viz. Kumtha, Churel, Palash & Ronj) was good. Plants from the seeds sown were widely seen in lines on contour trenches.

3.3.5. Protection Work: The selected ANR model plantation was protected by ditch fencing of 525 RMT having width at the top-1.05 meters, width at the bottom-0.9 meter & depth 1.02 meters, loose stone fencing of 2735 RMT having width at the top-0.6 meter, width at the bottom-0.8 meter & height 1.2 meters. Present condition of ditch fencing was good. However, the condition of loose stone fencing was poor having badly damaged at 100 RMT & also damaged at several places. Fencing has been partially effective in controlling the biotic pressures.

3.3.6. Soil and Water Conservation Measures: There is 8000 RMT (Width & depth - 0.45 meter) Contour trenches in the form of water harvesting structures present in the entire plantation area

3.3.7. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. Based on for as 100 percent counting, plants survival was 48.74% at the site. Plant species girth breast height was also measured. The growth of planted seedlings was good. The height of plants was 12- 15 feet. A total of 10000 plants comprising six species were planted in the 50 ha plantation area.

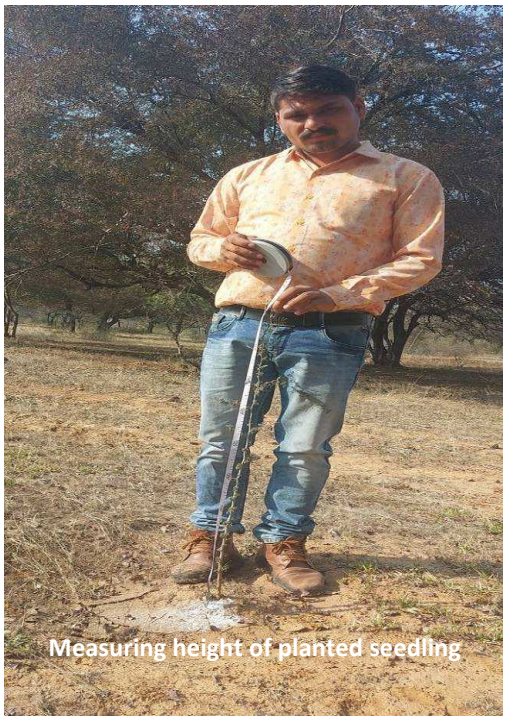
Table 3.4: Status of Planted Seedlings at the site-Bhadurpura Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia nilotica (Desi babool)	4000	2457	1543	61.43	165	125
Acacia leucopholea (Ronj)	2000	1034	966	51.70	170	123
Zizyphus mauritiana (Ber)	1000	423	577	42.30	90	65
Holoptelea integrifolia (Churel)	1000	289	711	28.90	135	102
Azadirachta indica (Neem)	1000	413	587	41.30	155	98
Dalbergia sissoo (Shisham)	1000	274	726	27.40	130	85
Total	10000	4890	5110	48.90	140.8	99.7

3.3.8. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hac as per kml map.

3.4.1. Site 4- Ladpura in Mandalgarh range - N 25.1183126 and E 75.134467

The selected plantation was carried out on 50 ha of land at Ladpura in Mandalgarh range during the year 2019-20. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 10% evaluation. The soil was brown to reddish in colour and stony hard layer.

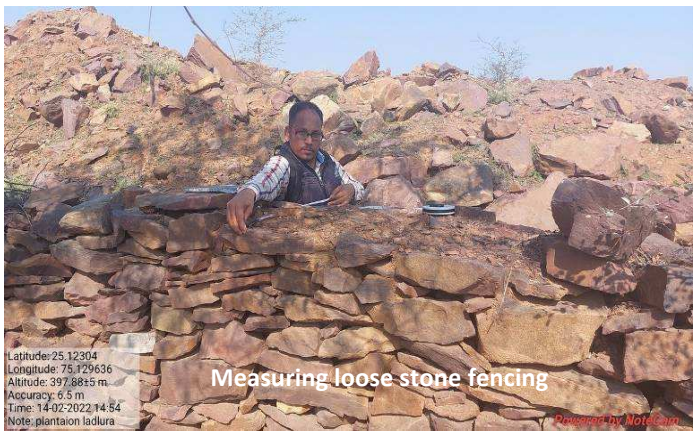

Measuring height of planted seedling

3.4.2. Health & Damages of Plantation: The growth of planted seedlings at the site was poor. Grazing by stray animals & cattle and destruction by Neel gai, wild boar and porcupine was reported at the site. Also, widely growth of termite, soil quality, destruction by human and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor. Heavy grazing was reported at the site. 95 percent of the planted seedlings were grazed by cattle & stray animals

3.4.3. Natural Vegetation and Regeneration: The vegetation cover has increased to some extent. Plants such as Ronj, Dhok, Khair and Ber have been found grown naturally in this area.

3.4.4. Regeneration through seeds sowing: Seeds of species like Neem, Ronj, Khair, Kumtha have sown for natural regeneration. The result of seed sowing was poor with hardly one-two plants were seen on the CCT.

3.4.5. Protection Work: The selected DFL model plantation had loose stone fencing of 3085 RMT having width at the top-0.6 meter, width at the bottom-0.8 meter & height 1.2 meters. Present condition of fencing is good. However, 100 RMT loose stone fencing was badly damaged.



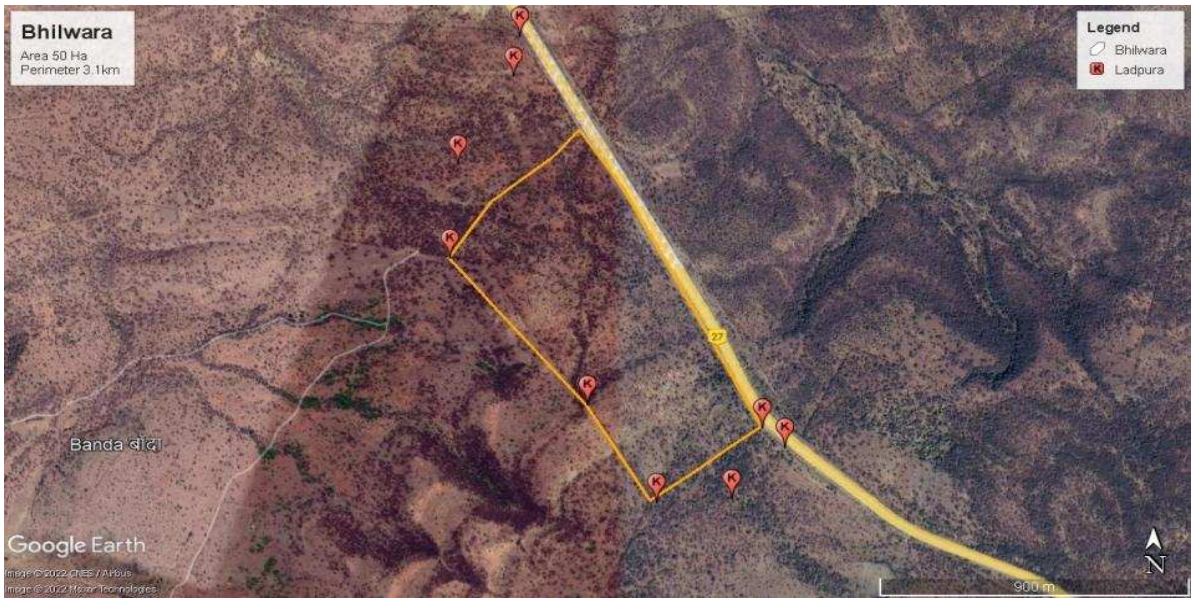
3.4.6. Soil and Water Conservation Measures: There are 15000 RMT (Width & depth -0.45 meters) Contour trenches in the form of water harvesting structures present in the entire plantation area. Also, 950 RMT V-ditch in the form of water harvesting structures present in the entire plantation area. These trenches & ditches are prepared for rainwater harvesting and soil conservation.

3.4.7 Observations Recorded: Under DFL model at the site, 640 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 44.37% at the site.** Plant species girth breast height was also measured. A total of 32000 plants comprising six species were planted in the 50 ha plantation area.

Table 3.6: Status of planted Seedlings at the site-Ladpura Site

Species	Total Plants planted	10% sample	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Zizyphus mauritiana (Ber)	6000	600	450	-	75.00	85	63
Acacia leucopholea (Ronj)	17800	1780	900	-	50.56	90	67
Acacia nilotica (Desi babool)	1000	100	53	-	53.00	92	65
Acacia catechu (Khair)	6500	650	2	-	0.31	82	67
Emblica officinalis (Amla)	500	50	5	-	10.00	87	60
Terminalia arjuna (Arjun)	200	20	10	-	50.00	80	65
Total	32000	3200	1420	1780	44.38	86.0	64.5

3.4.8. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 50 hac as per kml map



4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft. at Jeevrekha, Jahazpur range

At Jeevrekha in Jahajpur range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 500 m length as per MB. But in actual 505 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meter. Construction work appeared to be good and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment. However, cracks had appeared in the pakki diwar. GPS location of this area was 25.606314 N and 75.286356 E. The expenditure incurred for constructing this wall was Rs. 1169182 (as per MB) against the estimated budget of Rs. 12 lacs.

Site 2- Pakki Diwar 4 Ft at Bijlimariya handpump ke pas, Mandalgarh range

At Bijlimariya handpump ke pas in Mandalgarh range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 500 m length as per MB. But in actual 504 m pakki diwar was constructed at the site.

The width of the diwar was 0.45 meter & height was 1.20 meter. Construction work appeared to be good and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment. However, the holes made in the wall for outlet of rain water had been closed by the villagers. Also, crack had appeared in the pakki diwar. GPS location of this area was 25.183432 N and 75.103615 E.

The construction work was started in the year of 2017 after approval and completed March 2018. The expenditure incurred for constructing this wall was Rs. 12 lacs (as per MB) against the estimated budget of Rs. 12 lacs.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Bhilwara division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Saimala	DFL	50	41.7	5
2	Kharcha ki nadi	ANR	50	41.4	5
3	Bahadurpura	ANR	50	48.9	5
4	Ladpura	DFL	50	44.4	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 4 ft	Jeev Rekha	Good	7
2	Pakki Diwar 4 ft	Bijlimariya handpump ke pas	Good	7

Bikaner IGNP II

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Bikaner IGNP II Forest Division. This Forest Division with 4 Forest Ranges namely Unit II 750 RD, Unit I 682 RD, Unit (IV) & Unit (III) has territorial jurisdiction over the entire Bikaner District.

Figure 2 Location of Bikaner district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Bikaner IGNP II Forest Division were given as per table 1 for evaluation.

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Unit II 750 RD	SDS Agneu	2018-19	52.25	NFL	100%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Bikaner IGNP II Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
29 RD Bhoorasar	Bikendri	2017-18	Pakki Diwar 4 ft

3. Results and Evaluation

3.1 Plantations Evaluation

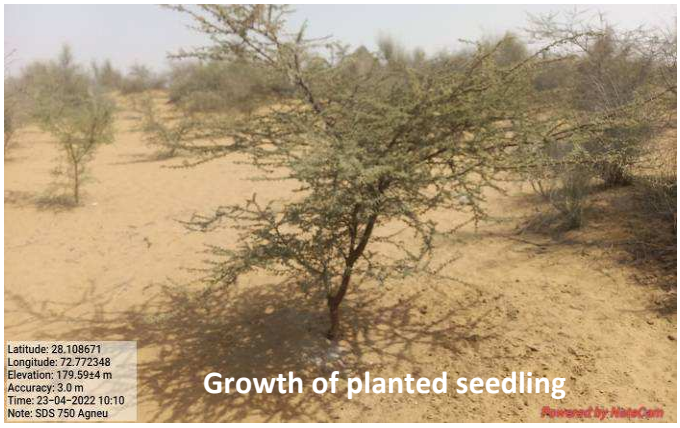
3.1.1. Site 1-SDS Agneu site in Unit II 750 RD range -N 28.111759 and E 72.773174

The selected plantation was carried out on 52.25 hac. of land at SDS Agneu in Unit II 750 RD range during the year 2018-19. The activities were done under the Non Forest Land (NFL) model. The site was a forest land and selected for 100% evaluation. The soil was sandy, domat & clayey.

3.1.2. Treatment plan before sowing: The topography of the area was sand dunes. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 31350 pits were dug for plantation in total 52.25 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai and rabbit was reported at the site. Also, widely growth of termite, soil quality, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average

3.1.4. Species Planted: The selected tree species under plantation were 6. Seedlings of *Acacia *tortilis (Totalis), Tecomella undulata (Rohida), Prosopis juliflora (Khejri),* Zizyphus mauritiana (Ber), Acacia leucopholea (Ronj) and (Kumbtha) were planted.

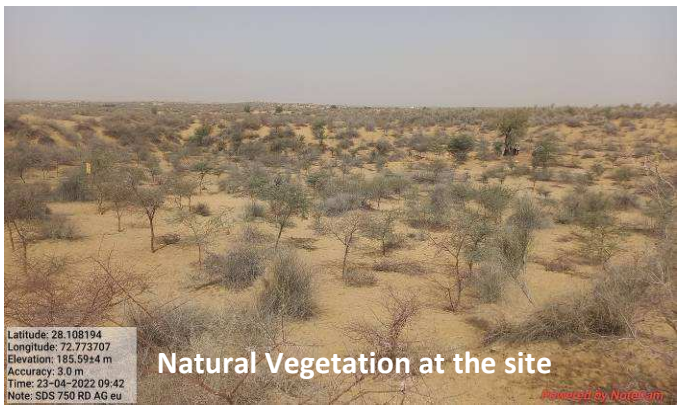


In total 31350 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 600 plants per hectare have been planted. Thus, total number of plants planted was 35000 for 52.5 hectare of land. Map of planting site was prepared.

As far as choice of seedling for plantation is concerned, it was proper. The seedlings selected for plantation were Ronj, Ber & Totalis which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**



Natural Vegetation at the site

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

Barbed wire fencing at the site

3.1.6. Natural Vegetation and Regeneration: Khejri, Ber, Desi babool, tortilis, Khair and Rohida were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species *totalis & Khejri* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**

SMC structure at the plantation site

3.1.8. Protection Work: The selected NFL model plantation had barbed wire fencing of 11808 RMT. Present condition of fencing is average. Barbed wire fencing was partially effective in controlling the biotic pressure.

3.1.9. Soil and Water Conservation Measures: There are 20000 RMT Contour trenches & 02 farm ponds (160.056 cu.m) in the form of water harvesting structures present in the entire plantation area.

3.1.10. Observations Recorded: Under this model, 600 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 55.03% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was

satisfactory. A total of 31350 plants comprising six species were planted in the 50 hectare plantation area.

Table 3: Status of Planted Seedlings at the site-SDS Agneu Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia tortilis (Totalis)	23370	12823	10547	54.87	180	150
Zizyphus mauritiana (Ber)	1630	1223	407	75.03	85	110
Tecomella undulata (Rohida)	1500	265	1235	17.67	53	70
Prosopis juliflora (Khejri)	2200	1635	565	74.32	58	80
Acacia leucopholea (Ronj)	1650	1307	343	79.21	39	80
Acacia senegal (Kumtha)	1000	0	1000	0.00	0	0
Total	31350	17253	14097	55.03	83	98

Figure 3.1: Species-wise number of survived plants-SDS Agneu site

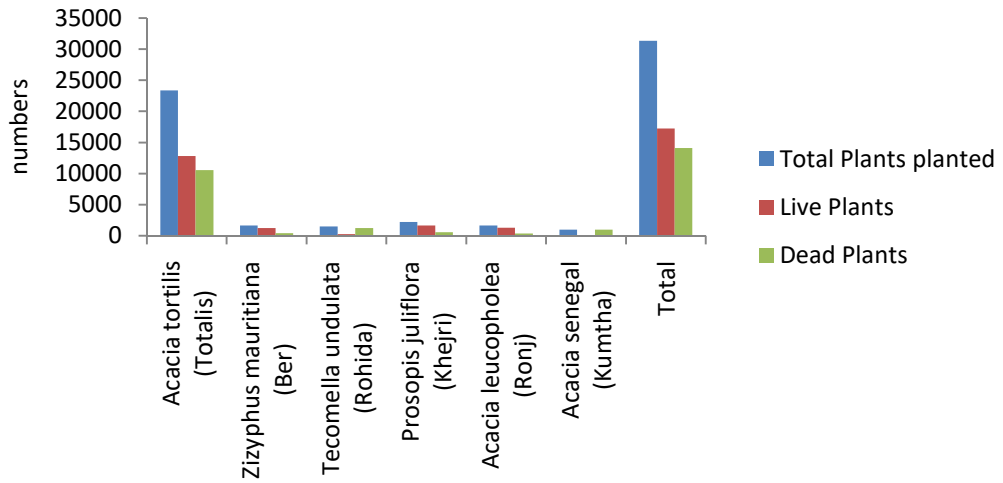
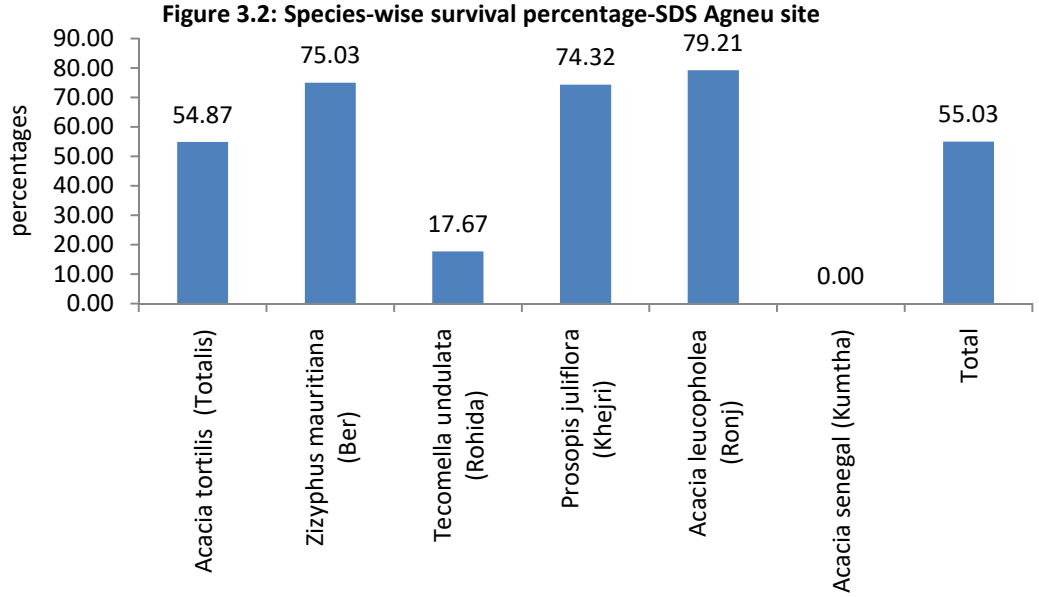
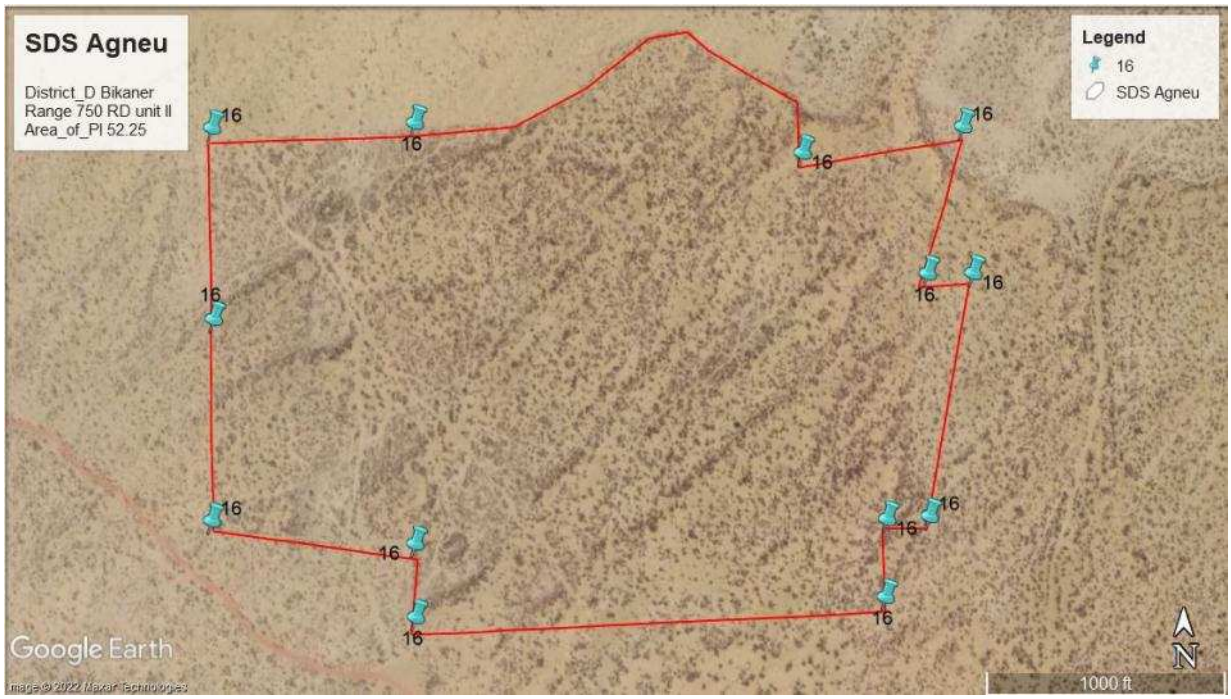


Figure 3.2: Species-wise survival percentage-SDS Agneu site



3.1.11. GPS Location and KML file: The selected NFL model under CAMPA plantation site measured 52.25 hec as per kml map.



3.1.12. Budget and expenditure

Table 3.3 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2018-19	-	-	-	2429497	-	-	-	2098086
2019-20	-	-	-	1482870	-	-	-	897662
2020-21	-	-	-	251664	-	-	-	249642
2021-22	-	-	-	264516	-	-	-	194446
Total	-	-	-	4428547	-	-	-	3439836

4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft. at Bikendri, 29 RD Bhoorasar range

At Bikendri in 29 RD Bhoorasar range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 500 m length as per MB. But in actual 497.34 m pakki diwar was constructed at the site. The width of the diwar was 0.23 meter & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment. The present condition of pakki diwar was average. GPS location of this area was 28.183235 N and

72.43932 E. The expenditure incurred for constructing this wall was Rs. 1076119.55 (as per MB) against the estimated budget of Rs. 12 lacs.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Bikaner IGNP II division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	SDS Agneu	NFL	52.25	55.03	6

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of asset created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rank of Item between 0 to 10
1	Pakki Diwar 4 ft	Bikendri	Average	7

Bikaner

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Bikaner Forest Division. This Forest Division with 4 Forest Ranges namely Lunkaransar, Kolayat, Nokha & Bikaner North has territorial jurisdiction over the entire Bikaner District.

Figure 3 Location of Bikaner district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Bikaner Forest Division were as given in table 1 for evaluation

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Lunkarsar	Mahajan D	2018-19	38.43	DFL	100%
Nokha	Nokha	2019-20	25.43	DFL	10%

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1- Mahajan –D in Lunkarsar range -N 28.720274 and E 73.815676

The selected plantation was carried out on 38.43 hac. of land at Mahajan- D in Lunkarsar range during the year 2018-19. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 100% evaluation. The soil was sandy.

3.1.2. Treatment plan before sowing: The topography of the area was sand dunes. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 19460 pits were dug for plantation in total 38.43 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was poor. Grazing by stray animals & cattle and destruction by Neel gai and rat was reported at the site. Also, widely growth of termite, soil quality, attack by pest and scarcity of water obstruct the growth of planted seedling. Destruction by rat was quite visible at the plantation site as there were holes all around in the ground. The status of guarding/ fencing at the site was poor.

3.1.4. Species Planted: The selected tree species under plantation were 7. Seedlings of *Acacia tortilis (Totalis), Tecomella undulata (Rohida), Prosopis juliflora (Khejri),* Zizyphus mauritiana (Ber), Azadirachta indica (Neem), Salvadora persica (Jaal) and Acacia senegal (Kumtha) were planted.

In total 19460 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

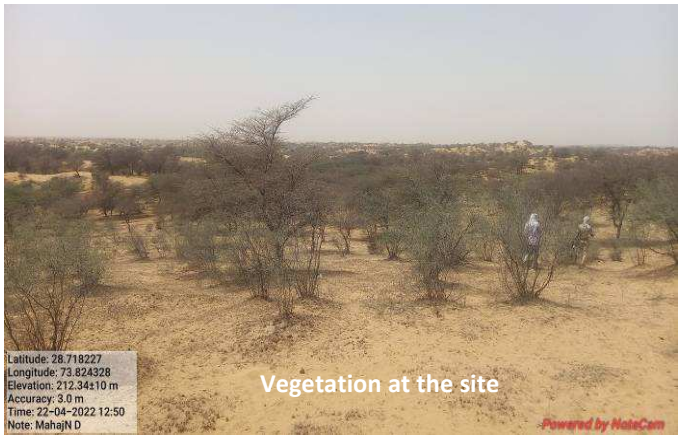
The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 500 plants per hectare have been planted. Thus, total number of plants planted was 19460 for 38.43 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Khejri, Ber & Totalis which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was poor.**

3.1.5. Watering of plants: The provision of watering to plant was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: Khejri, Kheep and Bonli were the plants found grown naturally in this area. The growth of the plants was good.



3.1.7. Regeneration through seeds sowing: Seeds of species *Totalis, Kumtha & Khejri* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was poor.**

3.1.8. Protection Work: The selected DFL model plantation had barbed wire fencing of 9225 RMT. Present condition of fencing was poor. The fencing wire was broken at 22 poles. Barbed wire fencing was partially effective in controlling the biotic pressure.

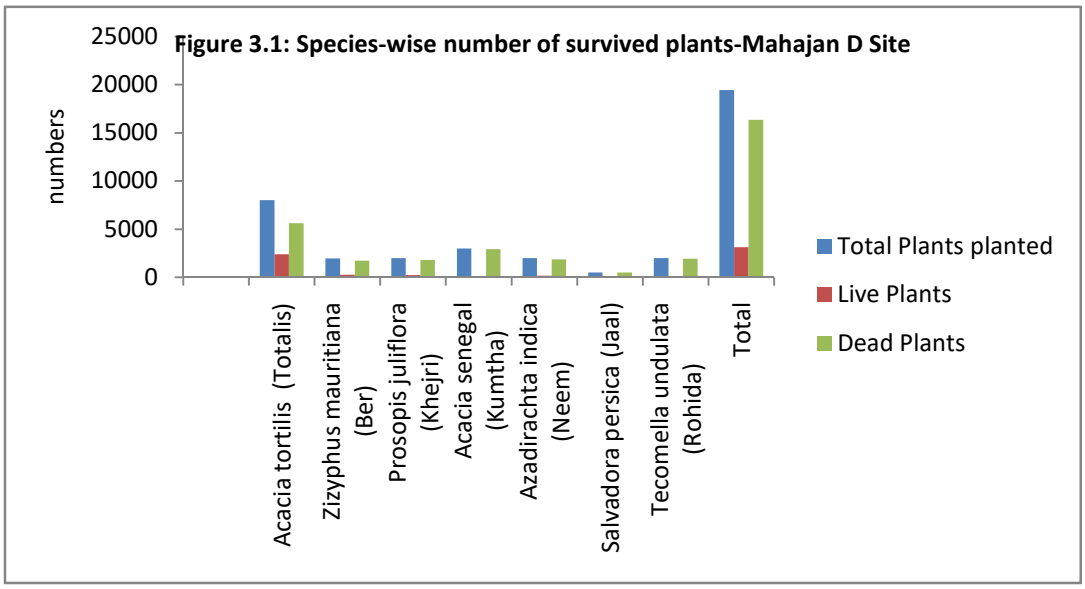
3.1.9. Soil and Water Conservation Measures: There are 02 WHS viz. pakki talai/ diggi in the form of water harvesting structures present in the entire plantation area out of which 01 WHS was totally damaged.

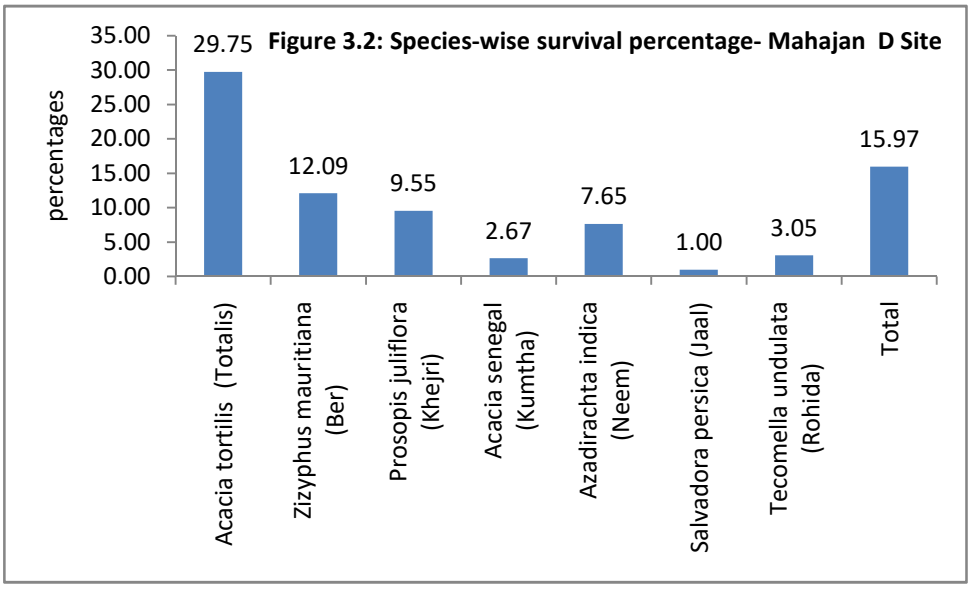
3.1.10. Observations Recorded: Under this model, 500 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 15.97% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was poor. A total of 19460 plants comprising seven species were planted in the 38.43 hectare plantation area.

Table 3: Status of Planted Seedlings at the site-Mahajan-D Site

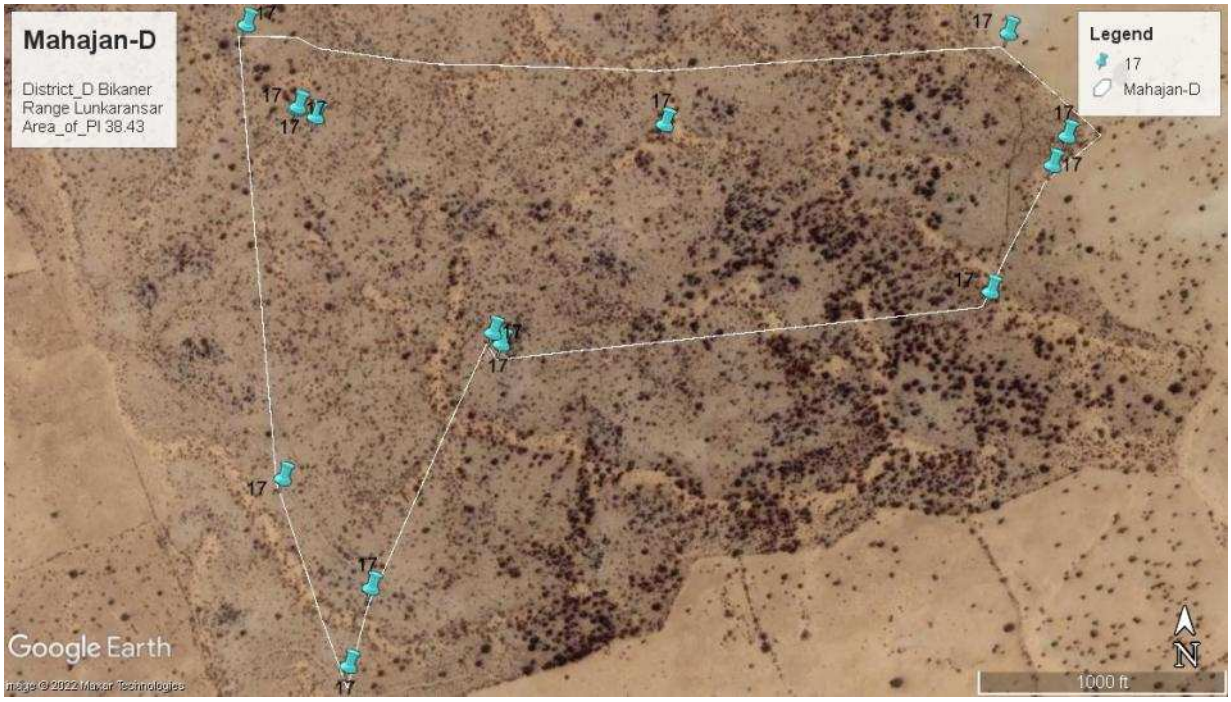
Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)
Acacia tortilis (Totalis)	8000	2380	5620	29.75
Zizyphus mauritiana (Ber)	1960	237	1723	12.09
Prosopis juliflora (Khejri)	2000	191	1809	9.55

Acacia senegal (Kumtha)	3000	80	2920	2.67
Azadirachta indica (Neem)	2000	153	1847	7.65
Salvadora persica (Jaal)	500	5	495	1.00
Tecomella undulata (Rohida)	2000	61	1939	3.05
Total	19460	3107	16353	15.97





3.1.11. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 38.43 hec as per kml map.



3.1.12. Budget and expenditure

Table 3.1: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18	-	-	-	1268208				571704
2018-19	-	-	-	1665478				992006
2019-20	-	-	-	429609				341986
2020-21	-	-	-	197000				143915
2021-22	-	-	-	206450				169650
Total	-	-	-	3766745	-	-	-	2219261

3.2.1. Site 2- Nokha in Nokha range -N 27.595605 and E 73. 414592

The selected plantation was carried out on 25.43 hac. of land at Nokha in Nokha range during the year 2019-20. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 10% evaluation. The soil was sandy.

Plantation site Nokha

3.2.2. Treatment plan before sowing: The topography of the area was plain &sand dunes. Hence, as per

availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 17800 pits were dug for plantation in total 25.43 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Destruction by rat at the site

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was poor. Grazing by stray animals & cattle and destruction by Neel gai was reported at the site. Also, widely growth of termite, soil quality, attack by pest and scarcity of water obstruct the growth of planted seedlings. Destruction by rat was quite visible at the plantation site as there were holes all around in the ground. The status of guarding/ fencing at the site was satisfactory.

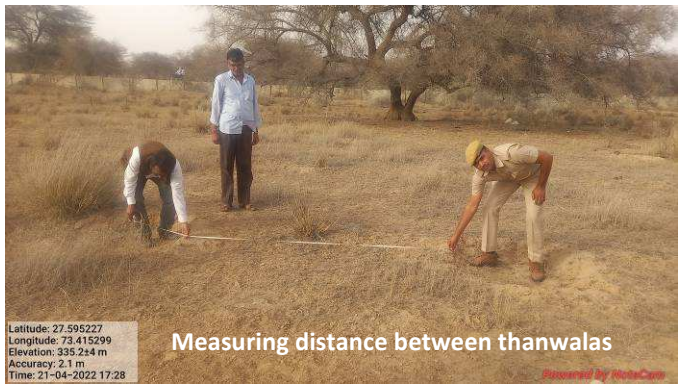
Making block for 10% counting

3.2.4. Species Planted: The selected tree species under plantation were 6. Seedlings of *Acacia tortilis (Totalis), Tecomella undulata (Rohida), Prosopis juliflora (Khejri),* Zizyphus mauritiana (Ber), Acacia leucopholea (Ronj), Salvadora persica (Jaal) and Acacia senegal (Kumtha) were planted.

Measuring height of the plant

In total 17800 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.



Measuring distance between thanwalas

As per the model, 700 plants per hectare have been planted. Thus, total number of plants planted was 17800 for 25.43 hectare of land. Map of planting site was prepared.

As far as choice of seedling for plantation is concerned, it was proper. The seedlings selected for plantation were Kumbtha, Ber & Khejri which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**

3.2.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.2.6. Natural Vegetation and Regeneration: Khejri, Ber & tortilis were the plants found grown naturally in this area. The growth of the plants was good.

3.2.7. Regeneration through seeds sowing: Seeds of species *kumtha & Khejri* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**

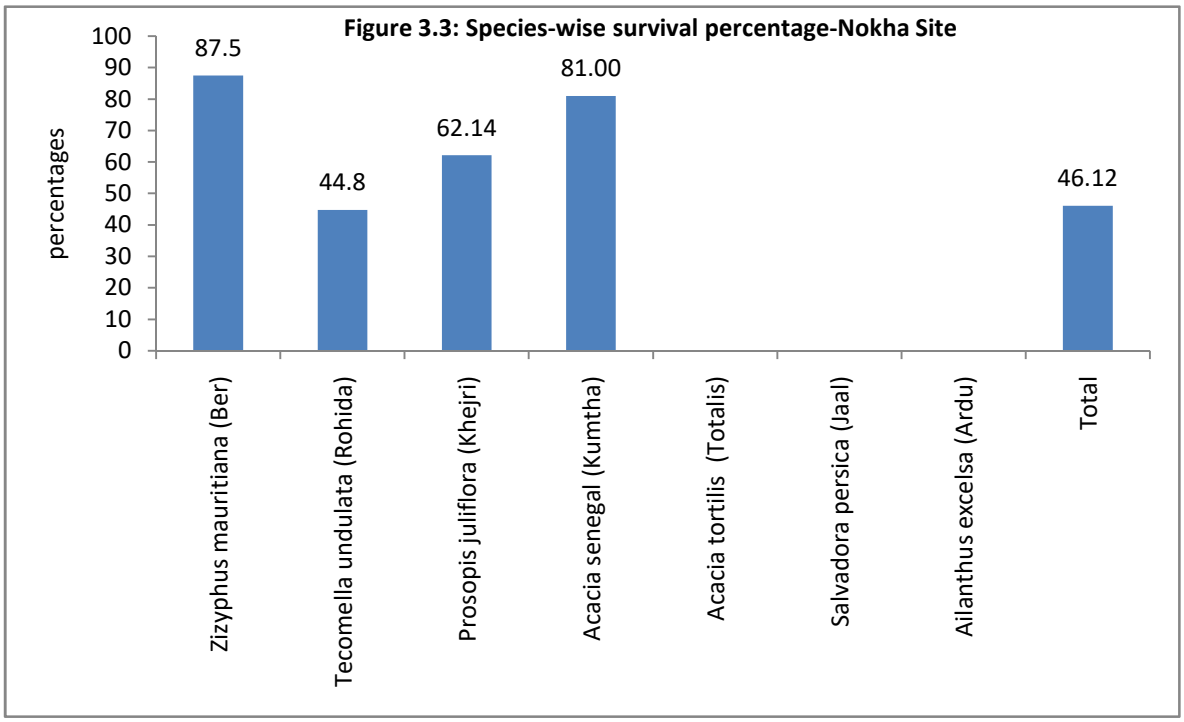
3.2.8. Protection Work: The selected DFL model plantation had barbed wire fencing of 1594 RMT & 576 pucca masonry wall. Present condition of fencing is average. Barbed wire fencing was partially effective in controlling the biotic pressure.

3.2.9. Soil and Water Conservation Measures: There are 25000 RMT furrow and 01 WHS viz. pakki talai/ diggi in the form of water harvesting structures present in the entire plantation area.

3.2.10 Observations Recorded: Under this model, 700 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 46.12% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was satisfactory. A total of 17800 plants comprising six species were planted in the 50 hectare plantation area.

Table 3.2: Status of Planted Seedlings at the site-Nokha Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Zizyphus mauritiana (Ber)	3200	280	2920	87.50	160	100
Tecomella undulata (Rohida)	2500	112	2388	44.80	80	80
Prosopis juliflora (Khejri)	5600	348	5252	62.14	48	70
Acacia senegal (Kumtha)	1000	81	919	81.00	53	55
Acacia tortilis (Totalis)	3000	0	3000	0.00	0	0
Salvadora persica (Jaal)	2000	0	2000	0.00	0	0
Ailanthus excelsa (Ardu)	500	0	500	0.00	0	0
Total	17800	821	16979	46.12	85	76



3.2.11. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 25.43 hec as per kml map.

3.2.12. Budget and expenditure

Table 3.3: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2018-19	-	-	-	839190				677405
2019-20	-	-	-	818500				784466
2020-21	-	-	-	284282				215618
2021-22	-	-	-	143578				133962
Total	-	-	-	2085550				1811451

4. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Bikaner division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Mahajan-D	DFL	38.43	15.97	4
2	Nokha	DFL	25.43	46.12	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Bikaner WL

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Bikaner WL Forest Division. This Forest Division with 1 Forest Range namely Johbid Gadhvala Conservation Reserve Kotri has territorial jurisdiction over the entire Bikaner District.

Figure 4 Location of Bikaner district,

2.1. Selected Asset Sites for Evaluation

The selected asset sites of Bikaner WL Forest Division were as given in table 1

Table 1: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Jodbeed Gadhwala	Jodbeed Gadhwala Conservation Reserve Kotri	2017-18	Pakki Diwar 6 ft
Jodbeed Gadhwala	Jodbeed Gadhwala	2019-20	Forest Chowki

3. Results for asset sites

3.1. Site 1- Pakki Diwar 6 Ft at Jodbeed Gadhwala Conservation Reserve Kotri, Jodbeed Gadhwala Range

At Jodbeed Gadhwala Conservation Reserve Kotri at Jodbeed Gadhwala range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 6 ft and 1940 m length as per MB. Also, in actual 1940 m pakki

diwar was constructed at the site. The width of the diwar was 0.4 meter & height was 1.2 meters. Construction work appeared to be average and the infrastructure was in use. The construction of pakki diwar prevents encroachment by local residents. Also, GPS location of this area was 27.960101 N and 73.382345 E. The expenditure incurred for constructing this wall was Rs.56,73,369 (as per MB) against the estimated budget of 57.00 lac.

Site 2 -Forest Chowki Jodbeed Gadhwala, Jodbeed Gadhwala range

Forest Chowki at Jodbeed Gadhwala site in Jodbeed Gadhwala range has been evaluated. The Forest Chowki was constructed in the year 2019-20. Site selection for construction of Forest Chowki was proper. Construction work appeared to be average and useful. The construction work under Forest Chowki was 02 rooms, 01 Kitchen, 01 bathroom. However, the Forest Chowki created under CAMPA was neither in use nor properly maintained. Light & water connection works were pending in the Forest Chowki. GPS location of this area was 27.918128 N and 73.428737 E. The expenditure incurred for constructing the Forest Chowki was Rs. 372155 (as per MB) against the estimated budget of Rs. 550000.

4. Overall assessment

Table 1: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 6 ft	Jodbeed Gadhwala Conservation Reserve Kotri	Average	6
2	Forest Chowki	Jodbeed Gadhwala	Average	6

Bundi

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Bundi Forest Division. This Forest Division with 5 Forest Ranges namely K.Patan, Hindoli, Daabi, Nainwa & Bundi has territorial jurisdiction over the entire Bundi District.

Figure: Location of Bundi district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Bundi Forest Division were as given in table 1 for evaluation

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
K Patan	Gopalpura	2017-18	27.51	NFL	100%
Hindoli	Maliyon ki Jhopdiya	2017-18	100	DFL	10%
Hindoli	Dholi Chabutri B	2018-19	50	ANR	100%
Nainwa	Topa dhardhadi F	2019-20	50	ANR	10%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Bundi Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Dabi	Guwar	2018-19	Pillars
Bundi	Talab Gaon Vankhand Borkhandi	2019-20	Pakki Diwar 4 ft
Dabi	Kheda Vankhand Dasaaliya B	2019-20	Pakki Diwar 4 ft
Bundi	Gudhanathawat	2019-20	Forest Chowki

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site1- Gopalpura site in Keshavraipatan range -N 27.754315 and E 76.804585

The selected plantation was carried out on 50 hac. of land at Gopalpura in Keshavraipatan range during the year 2017-18. The activities were done under the Non Forest Land (NFL) model. The site was a forest land and selected for 100% evaluation. The soil was deep brown loamy & clayey.

Heavy growth of Juliflora at the site

3.1.2. Health & Damages of Plantation: The growth of planted seedlings at the site was poor. Grazing by stray animals & cattle and destruction by Neel gai, wild boar and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. Heavy growth of Juliflora was reported all over the site which hampered the growth of planted seedlings at the site. The status of guarding/ fencing at the site was poor.

Growth of planted seedling at the site

3.1.3. Natural Vegetation and Regeneration: Jaal, Kair, Goyakher & Juliflora were the plants found grown naturally in this area. The growth of the plants was average. Heavy growth of Juliflora was reported all over the site.

3.1.4. Regeneration through seeds sowing: Seeds of species *Kumtha* were sown in as well as along the trenches and on the thanwlas. The result of sowing was poor.

3.1.5. Protection Work: The selected NFL model plantation had ditch fencing of 2835 RMT. Present condition of ditch fencing is poor. Silting was reported in some parts of ditch fencing.

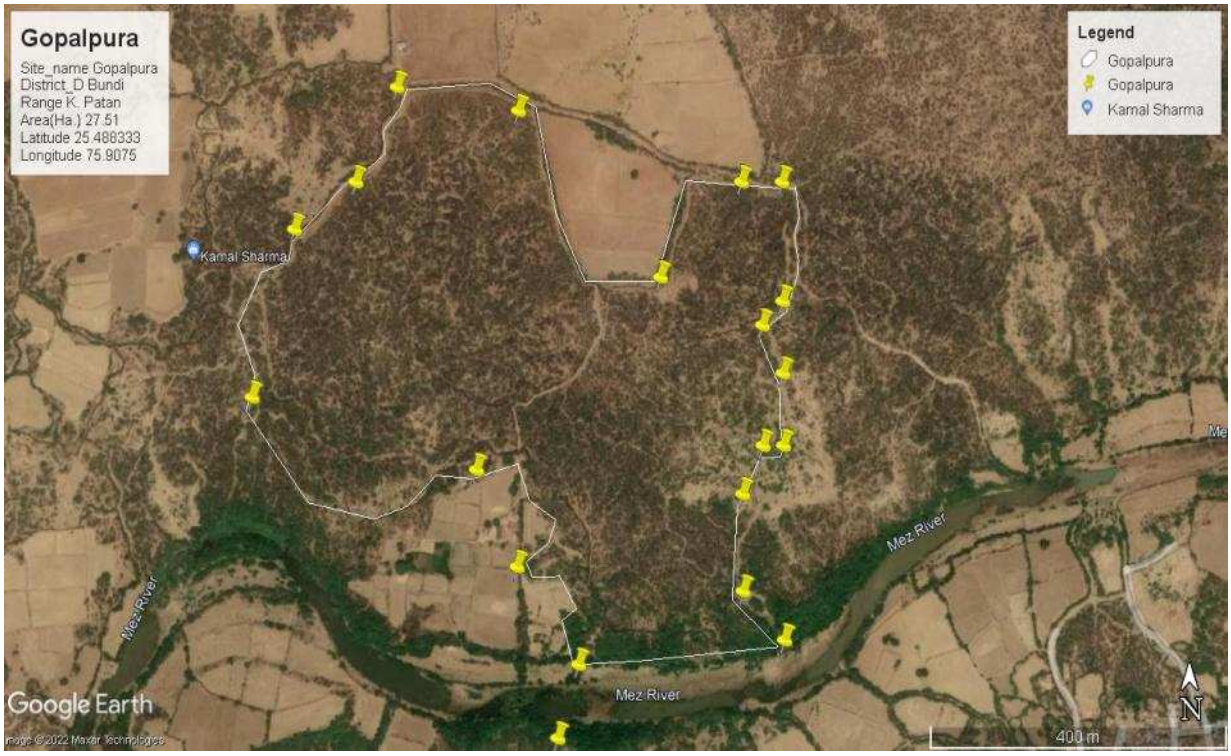
3.1.6. Soil and Water Conservation Measures: There are 11000 RMT (Width & depth -0.45 meters) Contour trenches in the form of water harvesting structures present in the entire plantation area.

3.1.7. Observations Recorded: Under this model, 500 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 2.19% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was poor. A total of 13755 plants comprising six species were planted in the 27.51 hectare plantation area.

Table 3: Status of Planted Seedlings at the site- Gopalpura Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)
Acacia nilotica (Desi babool)	13000	163	12837	1.25
Zizyphus mauritiana (Ber)	110	7	103	6.36
Prosopis juliflora (Khejri)	105	70	35	66.67
Pithecellobium dulce (Jangal Jalebi)	120	61	59	50.83
Holoptelea integrifolia (Churel)	300	0	300	0.00
Pongamia pinnata (Karanj)	120	0	120	0.00
Total	13755	301	13454	2.19

3.1.8 GPS Location and KML file: The selected NFL model under CAMPA plantation site measured 27.51 hec as per kml map.



3.2.1. Site 2- Maliyon ki Jhopdiya site in Hindoli range -N 25.676528 and E 75.521531

The selected plantation was carried out on 100 hac. of land at Maliyon ki Jhopdiya in Hindoli range during the year 2017-18. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 10% evaluation. The soil was deep brown loamy & clayey.

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedling. The status of guarding/ fencing at the site was poor.

Growth of planted seedling at the site

Palash, Khair, Bair & Jangal Jalebi were the plants found grown naturally in this area. The growth of the plants was good.

3.2.4. Regeneration through seeds sowing: Seeds of species Neem, Ronj*, Katkaranj &Churail* were sown in as well as along the trenches and on the thanwlas. The result of sowing was good. Plants from seed sowing were widely seen on trenches & thanwalas.

3.2.5. Protection Work: The selected DFL model plantation had ditch fencing of 5700 RMT. Present condition of ditch fencing is satisfactory. Silting was reported in some parts of ditch fencing.

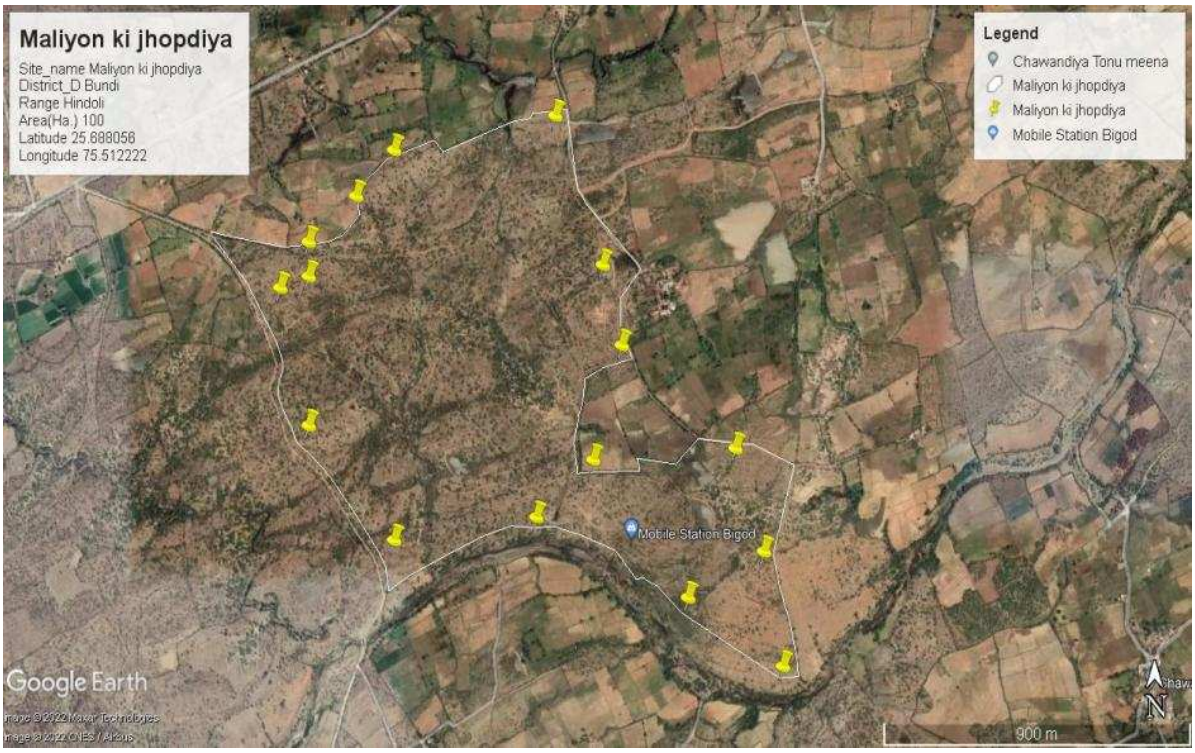
3.2.6. Soil and Water Conservation Measures: There are 30000 RMT (Width & depth -0.45 meters) Contour trenches in the form of water harvesting structures present in the entire plantation area.

3.2.7. Observations Recorded: Under this model, 700 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 46.57% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was satisfactory. A total of 7000 plants comprising seven species were planted in the 100 hectare plantation area.

Table 3.1: Status of Planted Seedlings at the site- Maliyon ki Jhopdiya Site

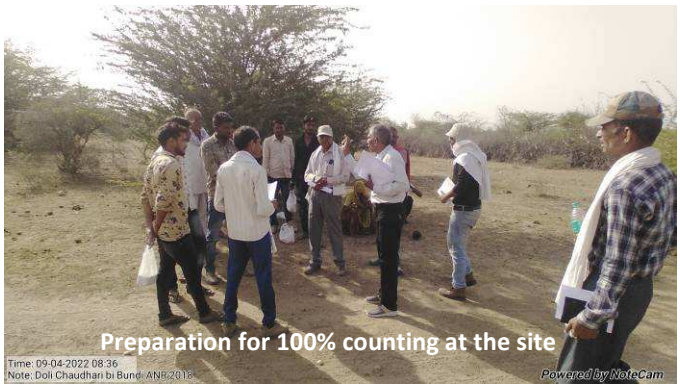
Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth(mm)
Acacia nilotica (Desi babool)	20000	1831		91.55	268	280
Acacia leucopholea (Ronj)	15000	721		48.07	227	210
Pithecellobium dulce (Jangal Jalebi)	5000	346		69.20	178	140
Zizyphus mauritiana (Ber)	5000	362		72.40	50	90
Holoptelea integrifolia (Churel)	10000			0.00		
Azadirachta indica (Neem)	10000			0.00		
*Cassia fistula (*Amaltas)	5000			0.00		
Total	70000	3260	66740	46.57	181	180

3.2.8. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 100 hec as per kml map.



3.3.1 Site 3- Dholi Chabutri B site in Hindoli range -N 25.705663 and E 75.458883

The selected plantation was carried out on 50 hac. of land at Dholi Chabutri B in Hindoli range during the year 2018-19. The activities were done under the Assisted Natural **Regeneration** (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was deep brown loamy & clayey.



3.3.2. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boar and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedling. The status of guarding/ fencing at the site was average.

3.3.3. Natural Vegetation and Regeneration: Desi babool, Churail, Jangal Jalebi, Ronj, Bair & Hingot were the plants found grown naturally in this area. The growth of the plants was good.

3.3.4. Regeneration through seeds sowing: Seeds of species *Kumatha, Ardu and Ronj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was average.**

3.3.5. Protection Work: The selected ANR model plantation had ditch fencing of 2900 RMT. Present condition of ditch fencing is average.

3.3.6. Soil and Water Conservation Measures: There are 10000 RMT Contour trenches in the form of water harvesting structures present in the entire plantation area.

3.3.7. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 41.23% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising six species were planted in the 50 hectare plantation area.

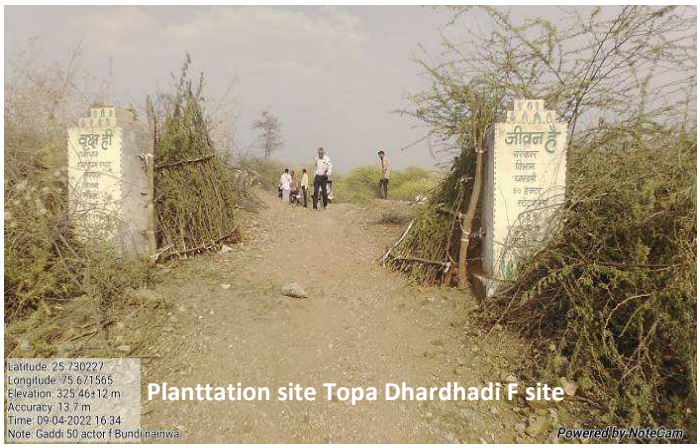
Table 3.3: Status of Planted Seedlings at the site- Dholi Chabutri B Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia nilotica (Desi babool)	5000	2325	2675	46.50	140	150
Holoptelea integrifolia (Churel)	1050	306	744	29.14	40	10
Pithecellobium dulce (Jangal Jalebi)	1580	802	778	50.76	73	130
Zizyphus mauritiana (Ber)	870	304	566	34.94	60	100
Acacia leucopholea (Ronj)	1000	356	644	35.60	52	70
Azadirachta indica (Neem)	500	30	470	6.00	14	5
Total	10000	4123	5877	41.23	63	78

3.3.8. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.

3.4.1. Site 4-Topa Dhardhadi –F site in Nainwa range -N 25.730547 and E 75.674122

The selected plantation was carried out on 50 hac. of land at Topa Dhardhadi F in Nainwa range during the year 2019-20. The activities were done under the Assisted Natural **Regeneration** (ANR) model. The site was a forest land and selected for 10% evaluation. The soil was deep brown loamy & clayey.



3.4.2. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boar and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedling. The status of guarding/ fencing at the site was average.

3.4.3. Natural Vegetation and Regeneration: Desi babool, Neem, Ronj, & Hingot were the plants found grown naturally in this area. The growth of the plants was good.

3.4.4. Regeneration through seeds sowing: Seeds of species *Kumatha, Desi babool, Ardu and Ronj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was average.**

3.4.5. Protection Work: The selected ANR model plantation had ditch fencing of 3170 RMT. Present condition of ditch fencing is average.

3.4.6. Soil and Water Conservation Measures: There are 4000 RMT Contour trenches, 5000 RMT SGT, 1000 RMT DCCT & 1014.99 cu.m earthen check dam in the form of water harvesting structures present in the entire plantation area.

3.4.7. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 48.4% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising eight species were planted in the 50 hectare plantation area.

Table 3.5: Status of Planted Seedlings at the site- Topa Dhardhadi F Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Pithecellobium dulce (Jangal Jalebi)	2000	176		88.00	120	100
Holoptelea integrifolia (Churel)	1500	66		44.00	105	90
Acacia nilotica (Desi babool)	4000	210		52.50	123	120
Zizyphus mauritiana (Ber)	550	26		47.27	81	110
Tamarindus indica (Imli)	250	2		8.00	53	90
Azadirachta indica (Neem)	900	4		4.44	47	80
Dalbergia sissoo (Shisham)	200			0.00		
Emblica officinalis (Amla)	600			0.00		
Total	10000	484	9516	48.40	88	98

3.4.8. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.

4. Results for asset sites

4.1. Site 1- Pillars at Guwar, Dabi range

At Guwar site in Dabi Pillars (100 Nos.) have been evaluated. The pillars were constructed in the year 2018-19. The pillars were 100 in numbers as per MB. Also, in actual 100 pillars were found & evaluated by the third party. The pillars constructed were reported average and useful. The construction of pillars helped in marking forest boundary. The expenditure incurred for constructing the Pillars (100 Nos.) was Rs. 171932 (as per MB) against the estimated cost of Rs 171972.

Site 2- Pakki Diwar 4 Ft at Talab Gaon, Bundi Range

At Talab Gaon in Kishangarh Ka Bundi range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. Also, construction of Pakki Diwar 4 ft helped in checking illegal mining in the area which was earlier prevalent in the area. Hoowever, 120 RMT pakki diwar was damaged by local residents. GPS location of this area was 28.171365 N

and 76.860057 E. The expenditure incurred for constructing this wall was Rs. 10,91,535 (as per MB) against the estimated cost of Rs.11.00 lac.

Site 3- Pakki Diwar 4 Ft at Dasaliya B, Dabi Range

At Dasaliya B in Dabi range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 320 m length as per MB. Also, in actual 320 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. GPS location of this area was 25.06020 N and 75.573695 E. The expenditure incurred for constructing this wall was Rs. 644652 (as per MB) against the estimated cost of Rs.7.20 lac.

Site 4- Forest Chowki Gudhanathawat, Bundi range

Forest Chowki at Gudhanathawat site in Bundi range has been evaluated. The Forest Chowki was constructed in the year 2019-20. Site selection for construction of Forest Chowki was adequate. Construction work appeared to be average and useful. The Forest Chowki created under CAMPA was in use & properly maintained. Rooms, Kitchen & toilet were constructed on the second floor under CAMPA. GPS location of this area was 25.381228 N and 75.519465 E. The expenditure incurred for constructing the Forest Chowki was Rs. (as per MB) against the estimated budget of Rs. 550000.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Bundi division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Gopalpura	NFL	27.51	2.19	4
2	Maliyon ki jhopdiya	DFL	100	46.57	5
3	Dholi Chabutri B	ANR	50	41.23	5
4	Topa Dhardhadi-F	ANR	50	48.40	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction	Rating of Crack	Rating of settlement in structure	Quality of workmanship	Rating of quality of workmanship
1	Pillar	Guwar	Average	5	5	5	Average	5
2	Pakki Diwar 4 ft	Talab Gaon	Average	6	4	5	Average	6
3	Pakki Diwar 4 ft	Dasaliya B	Average	5	5	5	Average	5
4	Forest Chowki	Gudhan athawat	Average	6				

Chambal Wildlife Ghadiyal

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Chambal Wildlife Ghadiyal Division. This Forest Division with 4 Forest Ranges namely K. Patan, Madrayal, Van Vihar Dholpur, & Itawa has territorial jurisdiction over the entire Sawai Madhopur District.

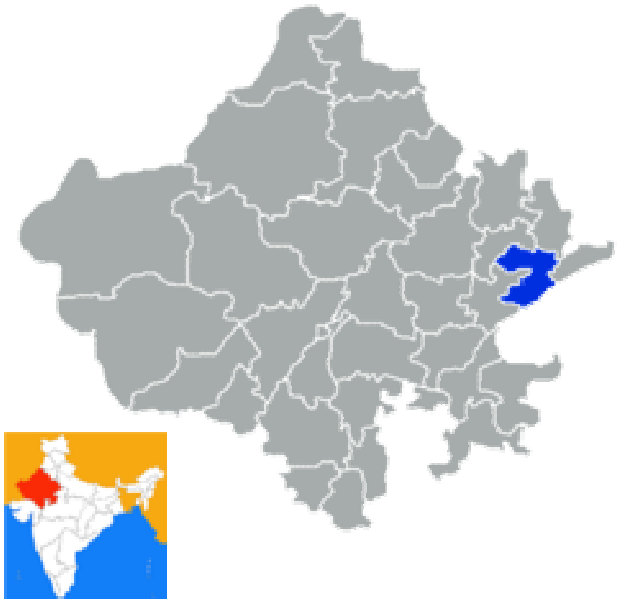


Figure 5 Location of Sawaimadhopur district, Rajasthan

2.1. Selected Asset Sites for Evaluation

The selected asset sites of Chambal Willife Ghadiyal Forest Division were as given in table 1

Table 1: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Mandrayal	Sahed	2017-18	Pakki Diwar 6 ft
Keshavraipatan	Bandhakhedali	2018-19	Forest Chowki

3. Results for asset sites

3.1. Site 1- Pakki Diwar 6 Ft at Sahed , Mandrayal Range

At Sahed in Mandrayal range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 6 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.38 m & height was 1.88 meter. The construction of Pakki Diwar 6 ft helped in preventing encroachment & protecting plantation site. Construction work appeared to be average & useful. The wall was broken at 2-3 places of about 23 RMT. It is important to ensure proper design and construction as per present condition to avoid break/fall of wall due to rain water pressure during monsoon. GPS location of this area was 26°22'45" N and 77°21'21"E.

Site 2- Forest Chowki Bandha Khedali, Keshavraipatan range

Forest Chowki at Bandha Khedali site in Keshavraipatan range has been evaluated. The Forest Chowki was constructed in the year 2018-19. Site selection for construction of Forest Chowki was adequate. Construction work appeared to be average and useful. The Forest Chowki created under CAMPA was in use but not properly maintained. The building is in use by Forest Guard at the Chowki Bandha Khedali. GPS location of this area was 25°26'17" N and 76°8'53"E. The building requires proper maintenance. The local condition of soil should have been considered for construction building to avoid cracks in the building. Construction work of Forest Chowki was completed but sanitary & light fitting was not reported in the building. Paint needs to be done & flooring should be finished in a proper way. The expenditure incurred for constructing the Forest Chowki was Rs. 544408 (as per MB) against the estimated budget of Rs. 550000.

4. Overall assessment

Table 3: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 6 ft	Sahed	Average	5
2	Forest Chowki	Bandhakhedali	Average	6

Chhattargarh

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Chhattargarh I Forest Division. This Forest Division with 4 Forest Ranges namely Beriyawali, Dantor, Sattasar & 61 RD KYD has territorial jurisdiction over the entire Bikaner District.

Figure 6 Location of Bikaner district, Rajasthan

2.1. Selected Asset Sites for Evaluation

The selected asset sites of Chhattargarh I Forest Division were as given in table 1

Table 1: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Beriyawali	Beriyawali	2018-19	Forest Chowki

3. Results for asset sites

3.1. Site 1- Forest Chowki Beriyawali, Beriyawali range

Forest Chowki at Beriyawali site in Beriyawali range has been evaluated. The Forest Chowki was constructed in the year 2018-19. Site selection for construction of Forest Chowki was adequate. Construction work appeared to be average and useful. The construction work under Forest Chowki was 02 rooms, 01 Kitchen, 01 bathroom. However, the Forest Chowki created under CAMPA was not in use but properly maintained. GPS location of this area was 28.717421 N and 72.615937 E. The expenditure incurred for constructing the Forest Chowki was 5.50 lacs (as per MB) against the estimated budget of Rs. 5.50 lacs. The present condition of Forest Chowki is average & quality of construction is good.

4. Overall assessment

Table 2: Quantitative assessment of Forest Chowki created under CAMPA

Sl. No.	Items	Name of the site	Quality of construction	Rating of Quality of Construction
1	Forest Chowki	Beriyawali	Average	7

Chhattargarh

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Chhattargarh Forest Division. This Forest Division with 4 Forest Ranges namely Beriyawali, Dantor, Sattasar & 61 RD KYD has territorial jurisdiction over the entire Bikaner District.

Figure 7 Location of Bikaner district, Rajasthan

2.1. Selected Asset Sites for Evaluation

The selected asset sites of Chhattargarh Forest Division were as given in table 1

Table 1: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Beriawali	21KJD	2019-20	Pillars

3. Results for asset sites

3.1 Site 1- Pillars at 21 KJD, Beriawali range

At 1 KJD site in Beriawali range, the Pillars (100 Nos.) have been evaluated. The pillars were constructed in the year 2019-20. The pillars were 100 in numbers as per MB. In actual 86 pillars were found & evaluated by the third party. However, some pillars had fallen on the ground. Construction work appeared to be average and useful. The construction of pillars helped in marking forest boundary. GPS location of pillars area was 28.652166 N and 72.578716 E. The present condition of pillars is average. The expenditure incurred for constructing the Pillars (86 Nos.) was Rs. 179999 (as per MB).

4. Overall assessment

Table 2: Quantitative assessment of asset created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
2	Pillar (86Nos.)	1 KJD	Poor	5

Chapter - 2

Chittorgarh

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Chittorgarh Forest Division. This Forest Division with 8 Forest Ranges namely Javda, Chittorgarh, Borav, Rawatbhata, Vijaypur, Begun, Nimbaheda & Kapasan has territorial jurisdiction over the entire Chittorgarh District.

Figure: Location of Chittorgarh district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Chittorgarh Forest Division were as given in table 1 for evaluation

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Chittorgarh	Hasla-E	2017-18	50	ANR	100%
Chittorgarh	Siyal kund	2018-19	50	ANR	10%
Nimbahera	Tai B	2019-20	50	DFL	100%
Bengu	Joganiya mata Haribadliya	2019-20	50	ANR	10%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Chittorgarh Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Vijaypur	Vijaypur	2017-18	Pakki Diwar 4 ft
Nimbaheda	Charliya	2017-18	Pakki Diwar 4 ft
Kapasan	Jojaro ka kheda	2018-19	Pakki Diwar 4 ft
Nimbaheda	Arnoda	2018-19	Forest Chowki
Nimbaheda	Kotmagra	2018-19	Boundary Pillars
Rawatbhata	Khedli	2019-20	Pakki Diwar 4 ft
Javda	Rajpura to Sopuriya	2019-20	Roadside plantation
Borav	Meghniwas to Sanga ki badi	2019-20	Roadside plantation
Rawatbhata	Nursery Eklingpura	2019-20	Nursery

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site1- Hasla- E site in Chittorgarh range -N 24.080288 and E 74.730602

The selected plantation was carried out on 50 hac. of land at Hasla-E in Chittorgarh range during the year 2017-18. The activities were done under the Assisted Natural **Regeneration** (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was yellow brown & black stony.

Preparation for 100% counting

3.1.2. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boar and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.1.3. Natural Vegetation and Regeneration: Dhonk, Salar, Gujan, Karudi, Khakhun, Tendu & Khakhra were the plants found grown naturally in this area. The growth of the plants was good.

3.1.4. Regeneration through seeds sowing: Seeds of species *Kumatha, Ratanjot,Khair and Katkaranj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was average.**

3.1.5. Protection Work: The selected ANR model plantation had loose stone fencing of 2807 RMT & ditch fencing of 285 RMT. Present condition of loose stone fencing was good. However, silting was reported in ditch fencing.

3.1.6. Soil and Water Conservation Measures: There are 20000 RMT (Width & depth -0.45 meters) Contour trenches & 01 Nadi (759 cu.m) in the form of water harvesting structures present in the entire plantation area.

3.1.7. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 42.5% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising eight species were planted in the 50 hectare plantation area.

Table 3: Status of Planted Seedlings at the site-Hasla E Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Zizyphus mauritiana (Ber)	1500	660	840	44.00	90	65
Acacia leucopholea (Ronj)	1000	260	740	26.00	90	65
Acacia nilotica (Desi babool)	3000	1570	1430	52.33	90	65
Dendrocalamus strictus (Baans)	1000	140	860	14.00	103	65
Emblica officinalis (Amla)	1000	890	110	89.00	95	74
Holoptelea integrifolia (Churel)	500	210	290	42.00	92	78
Pongamia pinnata (Karanj)	1500	212	1288	14.13	90	65
Acacia catechu (Khair)	500	308	192	61.60	90	65
Total	10000	4250	5750	42.50	92	68

3.1.8 GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.

3.2.1. Site2- Siyal Kund site in Chittorgarh range -N 24.786876 and E 74.727395

The selected plantation was carried out on 50 hac. of land at Siyal Kund in Chittorgarh range during the year 2018-19. The activities were done under the Assisted Natural **Regeneration** (ANR) model. The site was a forest land and selected for 10% evaluation. The soil was red & black stony.

Growth of planted seedling at the site

3.2.2. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boar and rabbit was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedling. The status of guarding/ fencing at the site was poor.

3.2.3. Natural Vegetation and Regeneration: Dhonk, Palash, Gurjan, Ronj Salar, Tendu, Churel & Amaltash, Bad, Aawla were the plants found grown naturally in this area. The growth of the plants was good.

3.2.4. Regeneration through seeds sowing: Seeds of species *Kumatha, Ratanjot, Khair and Katkaranj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**

3.2.5. Protection Work: The selected ANR model plantation had loose stone fencing of 1105 RMT & ditch fencing of 1440 RMT. Present condition of loose stone fencing & ditch fencing was average.

3.2.6. Soil and Water Conservation Measures: There are 5700 RMT (Width & depth - 0.45 meters) Contour trenches & 550 RMT ring trenches in the form of water harvesting structures present in the entire plantation area.

Marking & counting of plants at the site

3.2.7. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 45.0% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising twelve species were planted in the 50 hectare plantation area.

Table 3.2: Status of Planted Seedlings at the site- Siyal Kund Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia catechu (Khair)	600			0.00		
*Cassia fistula (*Amaltas)	650	28		43.08	90	65
Acacia nilotica (Desi babool)	2000	160		80.00	93	68
Dendrocalamus strictus (Baans)	1350	120		88.89	102	66
Emblica officinalis (Amla)	1240	42		33.87	90	65
Holoptelea integrifolia (Churel)	1290	25		19.38	92	70
Azadirachta indica (Neem)	40			0.00	0	0
Pongamia pinnata (Karanj)	1000			0.00	0	0
Terminalia bellirica (Baheda)	50			0.00	0	0
Zizyphus mauritiana (Ber)	1440	75		52.08	90	65
Tamarindus indica (Imli)	100			0.00	0	0
Pithecellobium dulce (Jangal Jalebi)	30			0.00	0	0
Others	210			0.00	0	0
Total	10000	450	9550	45.00	93	67

3.2.8. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.

3.3.1 Site 3- Tai- B site in Nimbaheda range -N 24.887271 and E 74.626386

The selected plantation was carried out on 50 hac. of land at Tai-B in Nimbaheda range during the year 2019-20. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 100% evaluation. The soil was yellow brown kankreet with morar.

3.3.2. Treatment plan before sowing: The topography of the area was hilly. Hence, as per availability of soil digging of pits has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.3.3. Health & Damages of Plantation: The growth of planted seedlings at the site was poor. Grazing by stray animals & cattle and destruction by Neel gai, wild boar and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average.

3.3.4. Species Planted: The selected tree species under plantation were 8. Seedlings of Holoptelea integrifolia (Churel), Cordia sinensis (Gundi), Cassia fistula (Amaltas), Annona squamosa (Sitaphal), Pithecellobium dulce (Jangal Jalebi), Wrightia tinctoria (Khirani), Terminalia arjuna (Arjun) and Zizyphus mauritiana (Ber) were planted.

Preparation for 10% counting at the site

In total 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

Natural Vegetation at the site

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Ber, Churel & Amaltash which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was poor.** The reason behind poor growth & survival of planted seedlings was that fire broke out at the plantation site on 7 April 2022. Due to it 70 percent of the planted seedlings were damaged.

3.3.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

Marking & counting at the site

3.3.6. Natural Vegetation and Regeneration: Dhonk, Salar, Ronj, Safed Dhonk, Godal, & Tendu were the plants found grown naturally in this area. The growth of the plant was good.

3.3.7. Regeneration through seeds sowing: Seeds of species *Ronj, Ratanjot,*

Khair and Ardu were sown in as well as along the trenches and on the thanwlas. **The result of sowing was average.**

3.3.8.. Protection Work: The selected DFL model plantation had loose stone fencing of 1700 RMT (0.8+.60/2 X 1.2) & ditch fencing of 1300 RMT (1.5+.90/2 X 1.2) Present condition of loose stone fencing & ditch fencing was average. Both types of fencing required repair for better protection of plantation site.

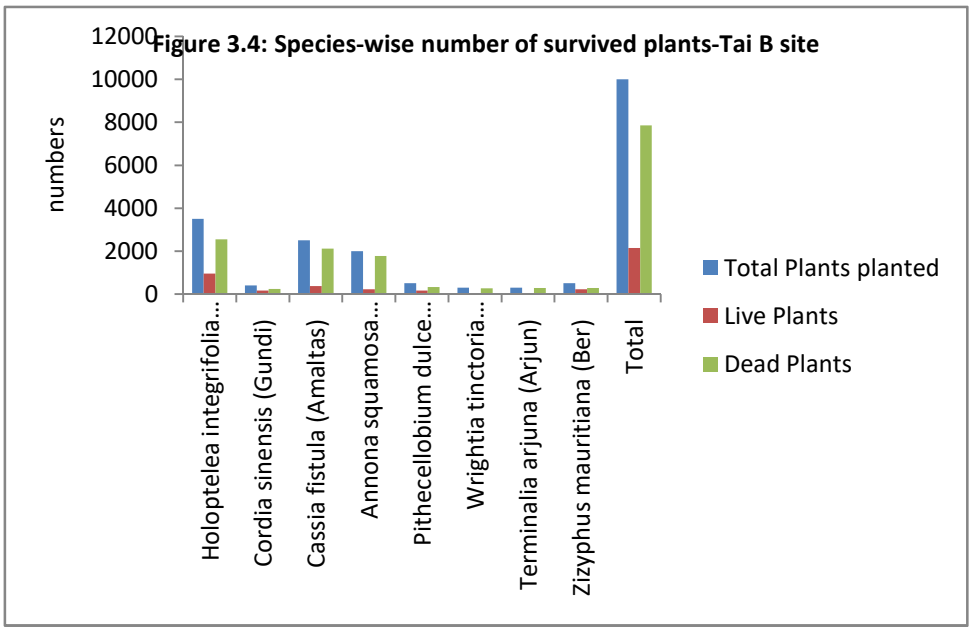
3.3.9. Soil and Water Conservation Measures: There are 6000 RMT (Width & depth - 0.45 meter) Contour trenches & check dams (148.18 cu.m) in the form of water harvesting structures present in the entire plantation area.

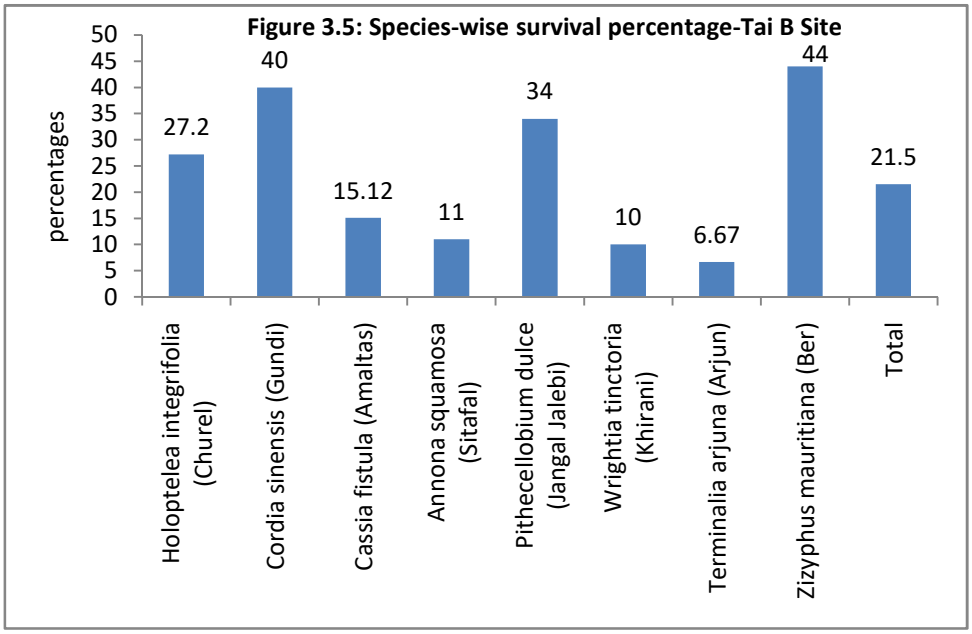
Sign of damage at the site due to fire

3.3.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 21.5% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was poor. A total of 10000 plants comprising eight species were planted in the 50 hectare plantation area.

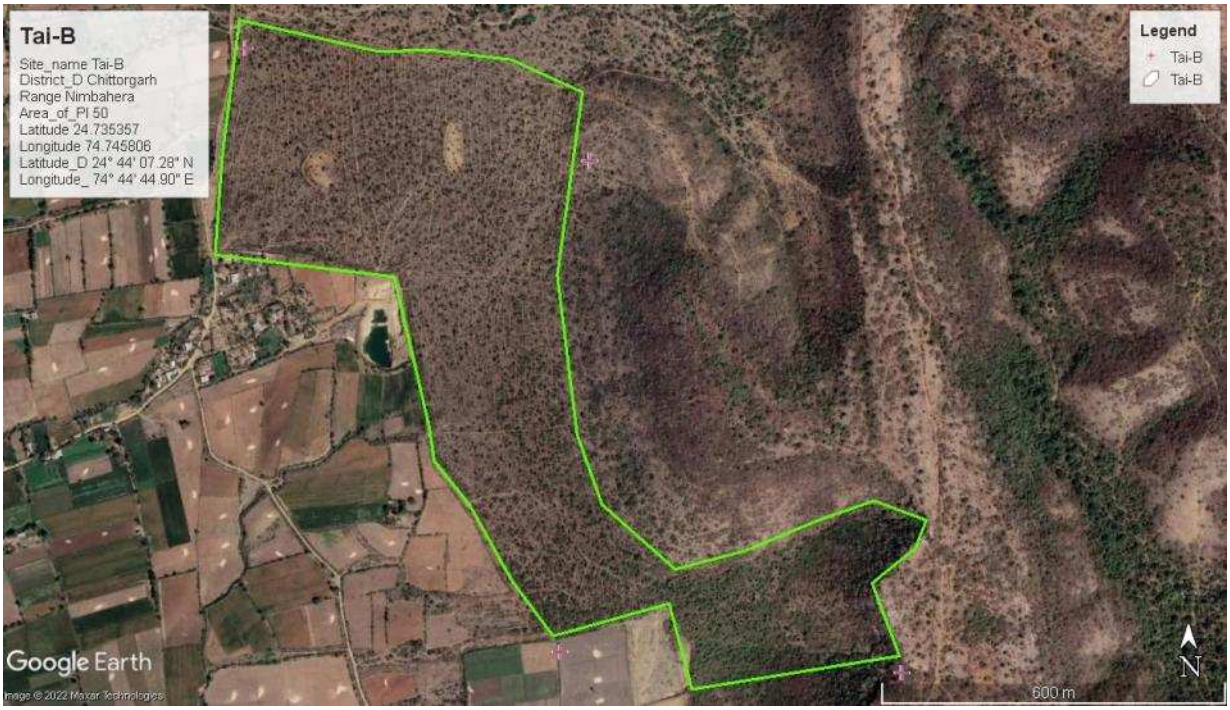
Table 3.3: Status of Planted Seedlings at the site-Tai-B Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Holoptelea integrifolia (Churel)	3500	952	2548	27.20	93	70
Cordia sinensis (Gundi)	400	160	240	40.00	90	65
*Cassia fistula (*Amaltas)	2500	378	2122	15.12	90	65
Annona squamosa (Sitaphal)	2000	220	1780	11.00	90	65
Pithecellobium dulce (Jangal Jalebi)	500	170	330	34.00	90	65
Wrightia tinctoria (Khirani)	300	30	270	10.00	92	67
Terminalia arjuna (Arjun)	300	20	280	6.67	95	70
Zizyphus mauritiana (Ber)	500	220	280	44.00	90	65
Total	10000	2150	7850	21.50	91	67





3.3.11. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 50 hec as per kml map.



3.4.1. Site 4- Joganiya Mata Haribarliya site in Begu range -N 25.091746 and E 74.201933

The selected plantation was carried out on 50 hac. of land at Joganiya Mata Haribarliya in Begu range during the year 2019-20. The activities were done under the Assisted Natural **Regeneration** (ANR) model. The site was a forest land and selected for 10% evaluation. The soil was red & black stony.

3.4.2 Treatment plan before sowing: The topography of the area was hilly. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Marking & counting of plants at the site

3.4.3.. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai and wild boar was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.4.4. Species Planted: The selected tree species under plantation were 10. Seedlings of Acacia catechu (Khair), Zizyphus mauritiana (Ber), Bauhinia sp. (Kachnar), Terminalia bellirica (Baheda), Holoptelea integrifolia (Churel), Pongamia pinnata (Karanj), Azadirachta indica (Neem), Ficus glonerata (Gular), Ficus benghalensis (Vad) and Ficus religiosa (Pipal)were planted.

In total, 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Ber, Khair, Churel & Neem which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**

3.4.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.4.6. Natural Vegetation and Regeneration: Dhonk, Tendu, Churel, Neem, Khair & Mahuwa were the plants found grown naturally in this area. The growth of the plants was good.

3.4.7. Regeneration through seeds sowing: Seeds of species *Kumatha, Ratanjot, Khair, Baheda and Ardu* were

sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**

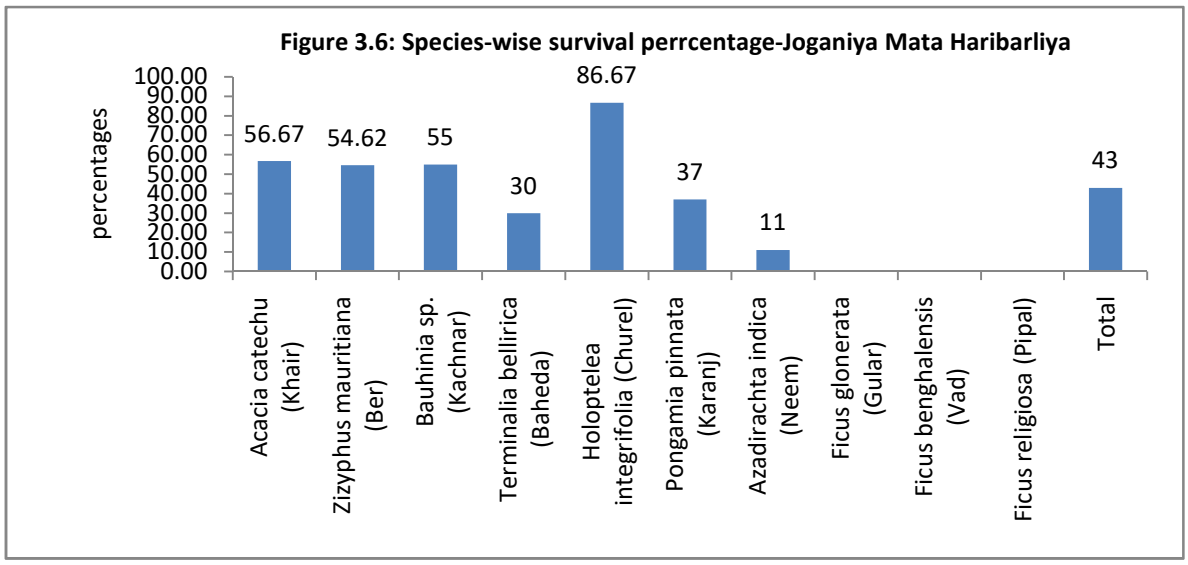
3.4.8. Protection Work: The selected ANR model plantation had loose stone fencing of 2700 RMT. Present condition of loose stone fencing is average.

3.4.9. Soil and Water Conservation Measures: There are 7000 RMT (Width & depth - 0.45 meters) Contour trenches & 106 cu.m loose stone check dams in the form of water harvesting structures present in the entire plantation area.

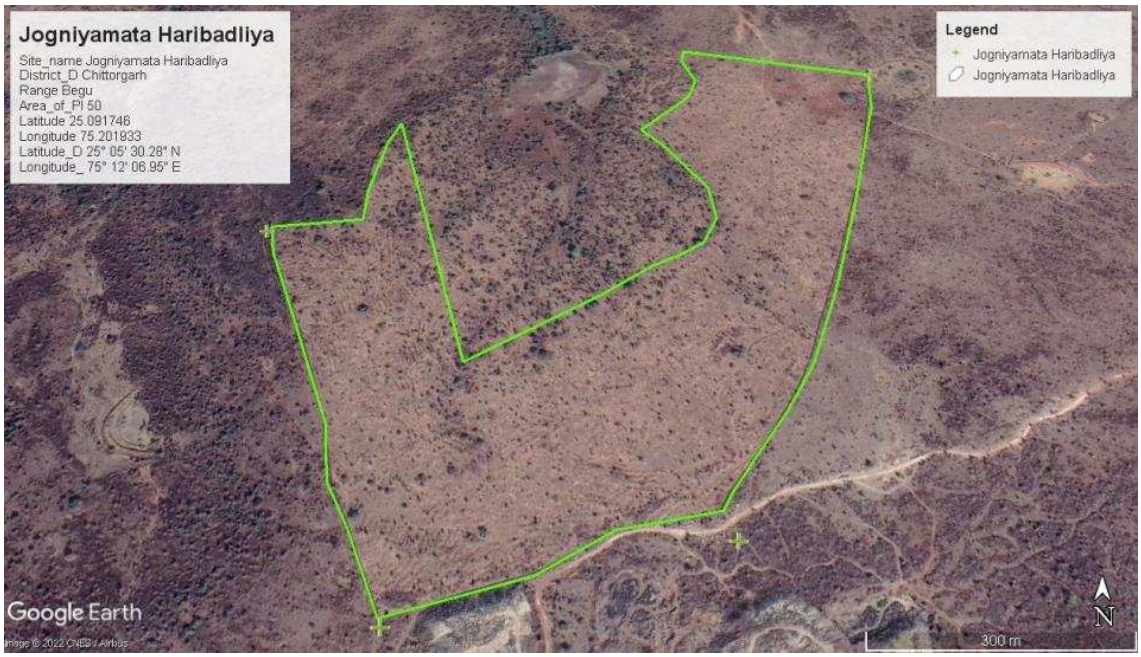
3.4.10 Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 43.0% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising ten species were planted in the 50 hectare plantation area.

Table 3.5: Status of Planted Seedlings at the site- Joganiya Mata Haribarliya Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth(mm)
Acacia catechu (Khair)	1500	85		56.67	92	68
Zizyphus mauritiana (Ber)	1300	71		54.62	90	65
*Bauhinia sp. (*Kachnar*)*	1000	55		55.00	90	65
Terminalia bellirica (Baheda)	1000	30		30.00	93	70
Holoptelea integrifolia (Churel)	1500	130		86.67	100	65
Pongamia pinnata (Karanj)	1000	37		37.00	90	65
Azadirachta indica (Neem)	2000	22		11.00	95	71
Ficus glonerata (Gular)	500	0		0.00	0	0
Ficus benghalensis (Vad)	100	0		0.00	0	0
Ficus religiosa (Pipal)	100	0		0.00	0	0
Total	10000	430	9570	43.00	93	67



3.4.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.



3.4.12. Budget and expenditure

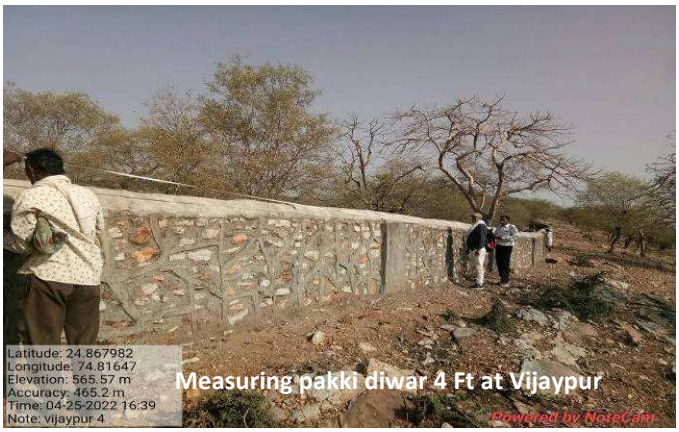
Table 3.6: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2018-19				176680				1714145
2019-20				486000				462274
2020-21				172900				172803
2021-22				97100				94193
Total				932680				2443415

4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft at Vijaypur, Vijaypur Range

At Vijaypur in Vijaypur range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 600 m length as per MB. Also, in actual 600 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. GPS location of this area was 24.887949 N and 74.8110407 E. The expenditure incurred for constructing this wall was Rs. (as per MB) against the estimated cost of 14.40 lac.



Site 2- Pakki Diwar 4 Ft at Charliya, Nimbaheda Range

At Charliya in Nimbaheda range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. GPS location of this area was 24.722375 N and 74.777732 E. The expenditure incurred for constructing this wall was Rs. 1012658 (as per MB) against the estimated cost of 12.00 lacs.

Site 3- Pakki Diwar 4 Ft at Jojro ka kheda, Kapasan range

At Jojro ka Kheda in Kapasan range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 55 m length as per MB. Also, in actual 55 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meter. Construction work

appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. The construction of 55 RMT pakki diwar completed the forest boundary which was earlier left incomplete. GPS location of this area was 25.082045 N and 74.618056 E. The expenditure incurred for constructing this wall was Rs. 97586 (as per MB) against the estimated cost of Rs.123750

Site 4- Forest Chowki Arnoda, Nimbaheda range

Forest Chowki at Arnoda site in Nimbaheda range has been evaluated. The Forest Chowki was constructed in the year 2018-19. Site selection for construction of Forest Chowki was adequate and useful for the staff. Construction work appeared to be good and useful. The construction work under Forest Chowki was 02 rooms & 01 bathroom. The Forest Chowki created under CAMPA was in use & was properly maintained. GPS location of this area was 24.706846 N and 74.759687 E. The expenditure incurred for constructing the Forest Chowki was Rs. 549000 (as per MB) against the estimated budget of 5.50 lacs.

Measuring Forest Chowki at Arnoda

Site 5- Pillars at Kotmagra, Nimbaheda range

At Kotmagra site in Nimbaheda Pillars (60 Nos.) have been evaluated. The pillars were constructed in the year 2018-19. The pillars were 60 in numbers as per MB. But in actual 58 pillars were found & evaluated by the third party. The pillars constructed reported average and useful. The construction of pillars helped in marking forest boundary.

Pillar at Kotmagra

Site 6- Pakki Diwar 4 Ft at Kherli, Rawatbhata range

At Kherli in Rawatbhata range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 250 m length as per MB. Also, in actual 250 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. GPS location of this area was 24.93028 N and 75.62426 E. The expenditure incurred for constructing this wall was 6.00 lacs (as per MB) against the estimated cost of 6.00 lacs

Site 7- Roadside plantation Rajpura Chouraha to Sopuriya, Javda range

Roadside Plantation Rajpura Chouraha to Sopuriya in Javda range has been evaluated. The total area of roadside plantation was 10.2 RKM and had been carried out in the year 2019-20. The soil of the area is brown, red black. Seedlings planted were Kesia Shyama, Gulmohar, Neem, Kuchnar, Siras, Karanj, Chudail & Semal. Local species in the area were Khakhara, Tendu, Khair, Gurjan & Salar. The total seedlings planted were 1275. Total survived plants during Third Party evaluation was 1188. **Hence, the total survival rate was 93.17%.** Grazing by Cattle & stray animals was reported at the site. Planted seedling was protected by loose stone tree guards. GPS location of this area was 24.794135 N and 75.325862 E. The survival & growth of planted seedlings was good.

Roadside plantation from Rajpura Chouraha to Sopuriya

Site 8- Roadside plantation Meghniwas to Sanga ki Badi at Borav range

Roadside Plantation Meghniwas to Sanga ki Badi in Borav range has been evaluated. The total area of roadside plantation was 13.2 RKM and had been carried out in the year 2019-20. The soil of the area is red, brown, stony. Seedlings planted were Neem, Karanj, Katchnar, Kesia Shyama, Shisham, Aawla, Jamun & Peepal. Local species in the area were Palash, Mahua, Ronj & Neem. The total seedlings planted were 1680. Total survived plants during Third Party evaluation were 1670. **Hence, the total survival rate was 99.44%.** Planted seedlings were protected by loose stone tree guards. GPS location of this area was 24.953775 N and 75.330187 E. The survival & growth of planted seedling was good.

Roadside plantation Meghniwas to Sanga ki badi

Site 9- Nursery at Eklingpura, Rawatbhata range

At Eklingpura in Rawatbhata range, the nursery has been evaluated. The nursery at Eklingpura was under category of development of existing nursery. The nursery was found operational & useful at the time of visit. Adequate land & other infrastructure required for development of nursery was available. The status of nursery at the time of third party visit was satisfactory. Work undertaken in the nursery with support from CAMPA was construction of pakki diwar of 22 meters. The construction of 22 RMT pakki diwar completed the nursery boundary which was earlier left open from one side. GPS location of this area was 24.8117596 N and

75.7051349 E. The expenditure incurred for development of nursery was Rs. 47586 (as per MB) against the estimated budget of Rs.50000.

Pakki diwar constructed at nursery under CAMPA

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Chittorgarh division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Hasala-E	ANR	50	42.50	5
2	Siyalkund	ANR	50	45.00	5
3	Tai-B	DFL	50	21.50	4
4	Jogniyamata Haribadliya	ANR	50	43.00	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 4 ft	Vijaypur	Average	5
2	Pakki Diwar 4 ft	Charliya	Average	6
3	Pakki Diwar 4 ft	Jojro ka kheda	Average	6
4	Pillars	Kotmagra	Average	5
5	Pakki Diwar 4 ft	Kherli	Average	6
6	Forest Chowki	Arnoda	Good	7
7	Nursery	Eklingpura	Average	6
8	Roadside plantation	Rajpura Chouraha to Sopuriya	Outstanding	10
9	Roadside plantation	Meghniwas to Sanga ki Badi	Outstanding	10

Chittorgarh WL

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Chittorgarh WL Forest Division. This Forest Division with 4 Forest Ranges namely Dhariyawad, Badi Sadri, Jakham & Bassi has territorial jurisdiction over the entire Chittorgarh District.

Figure : Location of Chittorgarh district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Chittorgarh WL Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Dhariyawad	Nangaliya	2018-19	50	ANR	100%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Chittorgarh WL Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Dhariyawad	Dabela	2017-18	Pakki Diwar 6 ft
Bassi	Javadiya Juna	2018-19	Pakki Diwar 6 ft
Badi Sadri	Kankariya Chorh	2019-20	Pakki Diwar 6 ft
Badi Sadri	Badi Sadri	2019-20	Forest Chowki
Badi Sadri	Jakham	2019-20	Nursery

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1 . Site 1-Nangaliya site in Dhariyawad range -N 24.155109 and E 74.498782

A. About Nangaliya Site

The selected plantation was carried out on 50 hac. of land at Nangaliya in Dhariyawad range during the year 2018-19. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was domat red.

3.1.2. Treatment plan before sowing: The topography of the area was hilly & ravine. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was poor. Grazing by stray animals & cattle and destruction by Neel gai, wild boars and rabbit was reported at the site. Cutting of plants by humans was also reported at the site. Also, widely growth of termite, soil quality and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.1.4. Species Planted: The selected tree species under plantation were 7. Seedlings of Tectona grandis (Sagwan), *Holoptelea integrifolia* (Churel), Azadirachta indica (Neem), Dendrocalamus strictus (Bamboo), Emblica officinalis (Anwla), Zizyphus mauritiana (Ber) and Acacia catechu (Khair) were planted.

In total 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Ber, Anwla, Bamboo & Sagwan which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: Sagwan, Palash, Dhawra, Salar, Tendu & Harshringar were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species *kumatha, Khair and Katkaranj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was poor.**

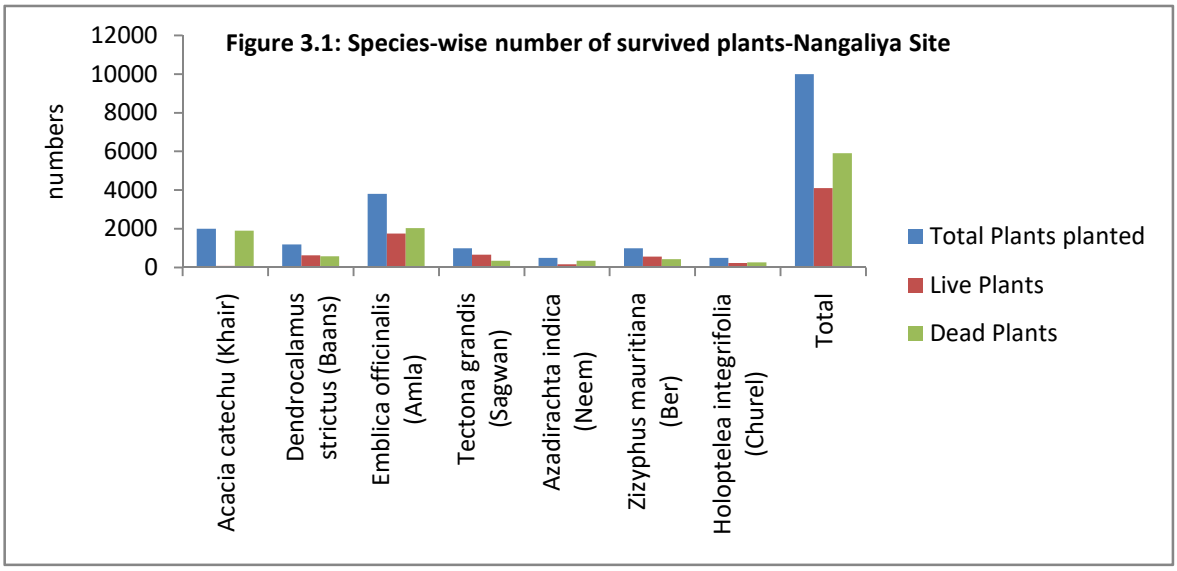
3.1.8. Protection Work: The selected ANR model plantation had loose stone fencing of 700 RMT & ditch fencing of 2630 RMT having width at the top-0.6 meters, width at the bottom-0.8 meter & height 1.2 meters. Present condition of fencing was poor. Loose stone was badly damaged & silting was reported in ditch fencing.

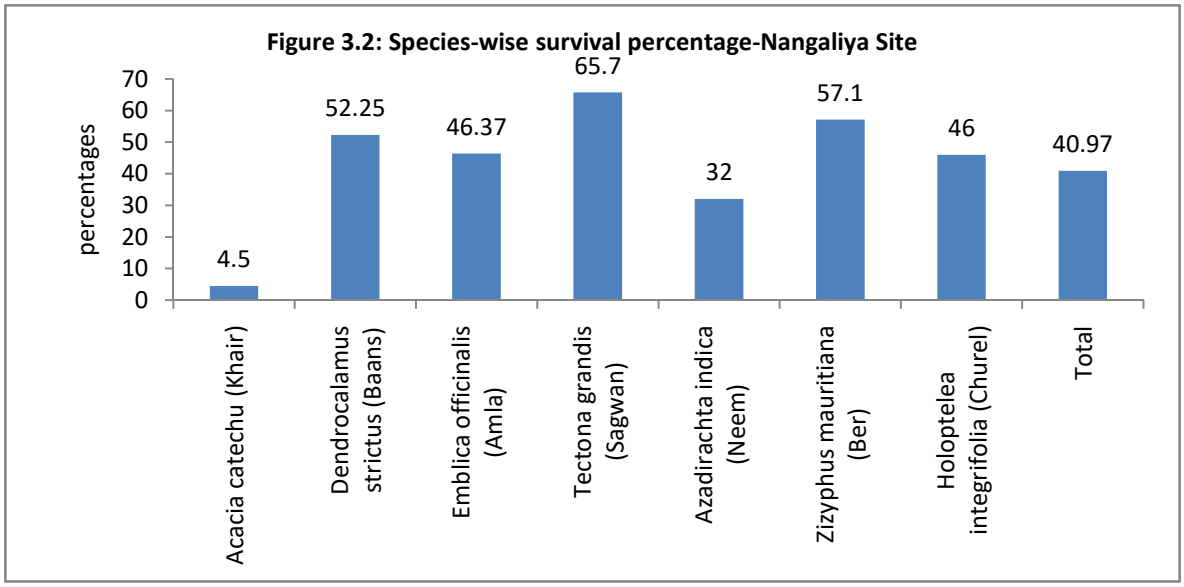
3.1.9. Soil and Water Conservation Measures: There are 10000 RMT (Width & depth -0.45 meter) Contour trenches & Checkdams (200 cu.m) in the form of water harvesting structures present in the entire plantation area.

3.1.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 40.97% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was poor. A total of 10000 plants comprising seven species were planted in the 50 hectare plantation area.

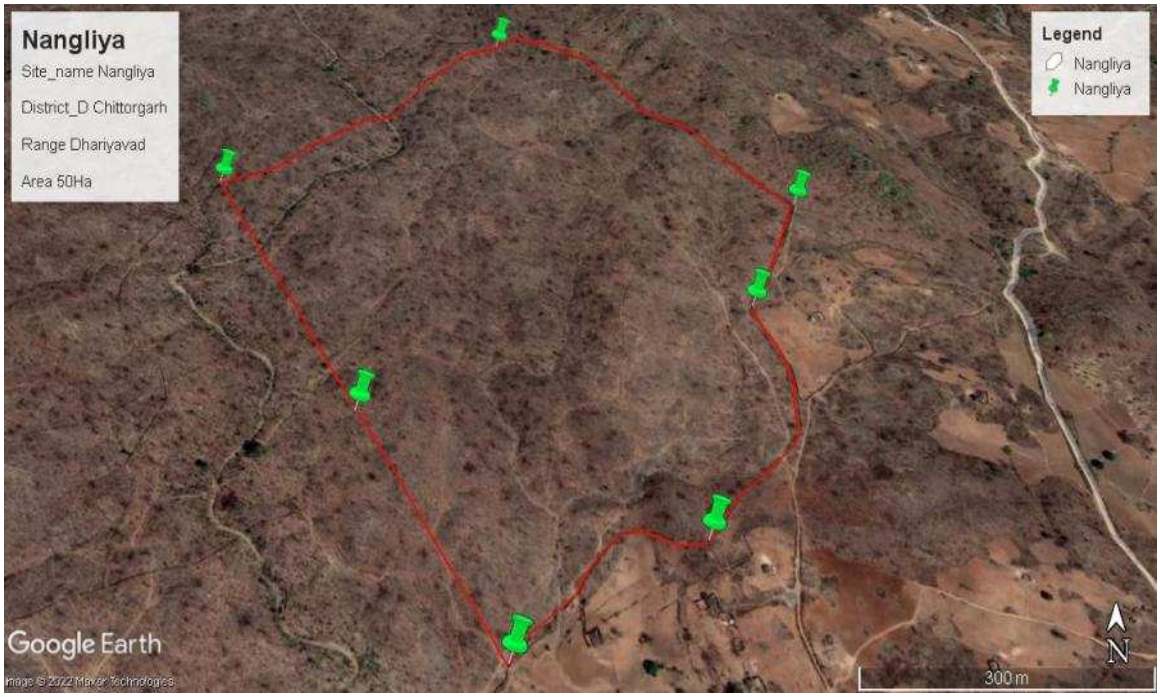
Table 3: Status of Planted Seedlings at the site-Nangaliya Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia catechu (Khair)	2000	90	1910	4.50	90	65
Dendrocalamus strictus (Baans)	1200	627	573	52.25	112	85
Emblica officinalis (Amla)	3800	1762	2038	46.37	91	65
Tectona grandis (Sagwan)	1000	657	343	65.70	136	107
Azadirachta indica (Neem)	500	160	340	32.00	90	65
Zizyphus mauritiana (Ber)	1000	571	429	57.10	96	70
Holoptelea integrifolia (Churel)	500	230	270	46.00	100	74
Total	10000	4097	5903	40.97	101	75





3.1.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.



4. Results for asset sites

4.1. Site 1- Pakki Diwar 6 Ft at Dabela, Dhariyawad Range

At Dabela in Dhariyawad range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 6 ft and 600 m length as per MB. But in actual 602 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.2 meters. Construction work appeared to be average and the infrastructure was in use. The construction of pakki diwar prevents encroachment by local residents. Also, GPS location of this area was 24.294418 N and 74.423259 E. The expenditure incurred for constructing this wall was Rs.1666604 (as per MB) against the estimated budget of Rs.17.10 lac.

Site 2- Pakki Diwar 6 Ft at Javadiya Juna, Bassi Range

At Javadiya Juna in Bassi range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 100 m length as per MB. Also, in actual 100 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.85 meters. Construction work appeared to be average and the infrastructure was in use. The construction of pakki diwar prevents encroachment by local residents. GPS location of this area was 24.970502 N and 74.922463 E. The expenditure incurred for constructing this wall was Rs. 284076 (as per MB) against the estimated budget of Rs.285000. Present condition of pakki diwar is average. It was made of stone with coping.

Site 3- Pakki Diwar 6 Ft at Kankariya Chorh, Bassi Range

At Kankariya Chorh in Bassi, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 6 ft and 280 m length as per MB. But in actual 282 m pakki diwar was constructed at the site. The width of the diwar was 0.50 meter & height was 1.85 meters. Construction wo rk appeared to be average and the

infrastructure was in use. The construction of pakki diwar prevents encroachment by local residents. GPS location of this area was 24.972081 N and 74.925054 E. The expenditure incurred for constructing this wall was Rs. 810400 (as per MB) against the estimated budget of Rs.812000. Present condition of pakki diwar is average. It was made of stone with coping.

Site 4- Forest Guard Chowki Badi Sadri, Badi Sadri range

Forest Guard Chowki Badi Sadri in Badi Sadri range has been evaluated. The Forest Guard Chowki was constructed in the year 2019-20. Site selection for construction of Forest Guard Chowki was adequate. Construction work appeared to be average and useful. Two rooms & one toilet was constructed in Forest Chowki under CAMPA. The Forest Chowki was in use & properly maintained. GPS location of this area was 24.409229 N and 74.46878 E. The expenditure incurred for constructing the Forest Chowki was Rs. 439128 (as per MB) against the estimated budget of Rs. 5.50 lac. The present condition of Forest Chowki was average

Site 5- Nursery at Pugtala Jakham. Jakham range

The site visited under asset created under CAMPA was Nursery at Pugtala Jakham in Jakham range. The site was visited, surveyed, GPS co-ordinates recorded and photographed taken along with the information was filled up in tool 4.

At Pugtala Jakham in Jakham range, the nursery has been evaluated. The nursery at Pugtala Jakham was under category of development of existing nursery. The nursery was found operational & useful at the time of visit. Adequate land & other infrastructure (viz. kuccha & pucca bed, boring, water sprinkler, composting unit, polythene bag & etc. required for development of nursery was available. The status of nursery at the time of third party visit was satisfactory. Work undertaken in the nursery with support from CAMPA was construction of five sprinklers & five water points. Total bed available at the nursery was 57 pucca beds. GPS location of this area was 24.067479 N and 76.568472 E. The expenditure incurred for development of nursery was Rs. 84572 (as per MB) against the estimated budget of Rs. 1.01 lac.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Chittorgarh WL division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Nangliya	ANR	50	40.97	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 6 ft	Dabela	Average	6
2	Pakki Diwar 6 ft	Javadiya Juna	Average	7
3	Pakki Diwar 6 ft	Kakariya Chorh	Average	7
4	Forest Chowki	Badi Sadri	Average	7
5	Nursery	Jakham	Average	7

Churu

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Churu Forest Division. This Forest Division with 5 Forest Ranges namely Ratangarh, WL Talchhapur, Churu, Sujangarh & Rajgarh has territorial jurisdiction over the entire Churu District.

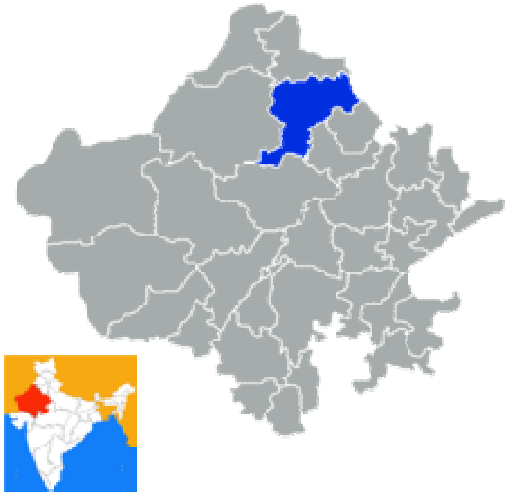


Figure 8 Location of Churu district, Rajasthan

2.1. Selected Asset Sites for Evaluation

The selected asset sites of Churu Forest Division were as given in table 1.

Table 1: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Rajgarh	Vankhand Sankhu Part B	2017-18	Pakki Diwar 4 ft
Sujangarh	Gopalpura 'A' Van shetra	2019-20	Pakki Diwar 4 ft

3. Results for asset sites

3.1. Site 1- Pakki Diwar 4 Ft at Vankhand Sankhu Part B , Rajgarh Range

At Vankhand Sankhu Part B in Rajgarh range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 500 m length as per MB. But, in actual 503 m pakki diwar was constructed at the site. The width of the diwar was 0.23 m & height was 1.2 m. Construction work appeared to be average and the infrastructure was useful. The construction of pakki diwar helps in protection of forest land by demarcating forest boundaries. Also, encroachment issue will be reduced. The present condition of wall is good .GPS location of this area was 28°27'26" N and 75°19'10"E. The expenditure incurred for constructing this wall was Rs. 11,99, 998 (as per MB) against the estimated budget of Rs. 12.00 lac.

Measuring pakki diwarl 4ft. at Van Khand Sankhu Part B

Site 2- Pakki Diwar 4 Ft at Gopalpura 'A' Van shetra , Sujangarh Range

At Gopalpura 'A' Van shetra in Sujangarh range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 464 m length as per MB. Also, in actual 464 m pakki diwar was constructed at the site. The width of the diwar was 0.38 m & height was 1.2 m. Construction work appeared to be average and the infrastructure was useful. The construction of 464 RMT pakki diwar 4 ft. was taken up at three places. The area is mining prone & encroached which was reduced due to the construction of pakki diwar. The present condition of wall is average. The wall was broken at some places. GPS location of this area was 27°44'10" N and 74°22'48"E. The expenditure incurred for constructing this wall was Rs. 11,99,243 (as per MB) against the estimated budget of Rs. 12.00 lac.

Pucca wall 4ft. at Gopalpura 'A' Van Shetra

4. Overall assessment

Table 4: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 4 ft	Vankhand Sankhu Part B	Average	6
2	Pakki Diwar 4 ft	Gopalpura 'A' Van shetra	Average	6

Dausa

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Dausa Forest Division. This Forest Division with 5 Forest Ranges namely Bandikui, Dausa, Lalshot, Mahua & Sikrai has territorial jurisdiction over the entire Dausa District.

Figure : Location of Dausa district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Dausa Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Sikrai	Achalpura	2017-18	50	ANR	100%
Bandikui	Sonadi	2018-19	50	ANR	10%
Sikrai	Faraspura	2019-20	50	ANR	100%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Dausa Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Dausa	Thumadi	2018-19	Pakki Diwar 4 ft
Mahuwa	Samaspur	2018-19	Pakki Diwar 4 ft
Mahuwa	Patoli Gangwana	2018-19	Pillar

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1- Achalpura site in Sikrai range -N 26.886385 and E 76.613576

The selected plantation was carried out on 50 ha of land at Achalpura in Sikrai range during the year 2017-18. The activities were done under the ANR (Assisted Natural Regeneration) model. The site was a forest land and selected for 100% evaluation. The soil was sandy & hard.

3.1.2. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boar and porcupine was reported at the site. Also, widely growth of termite, soil quality, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory.

3.1.3. Natural Vegetation and Regeneration: The area has been covered fully with vegetation due to this plantation. The growth of plants was good. Plants like Shisham, Kumtha, Juliflora and Ber have been found grown naturally.

3.1.4. Regeneration through seeds sowing: Seeds of species Totalis, kumtha and churel were sown in as well as along the trenches and on the thanwlas. The result of seed sowing was average.

3.1.5. Protection Work: The selected ANR model plantation had 2898 RMT ditch fencing having width at the top-1.5 meters, width at the bottom-0.9 meter & height 1.2 meters. Ditch fencing was partially effective in controlling the biotic pressure. Also, 355 RMT loose stone fencing having width at the top-0.8 meter, width at the bottom-0.6 meter & height 1.2 meters. The condition of ditch fencing & loose stone fencing was satisfactory. 30 RMT barbed wire fencing was reported at the site.

3.1.6. Soil and Water Conservation Measures: There are 12600 RMT (Width & depth - 0.45 meters) Contour trenches, 4867.27 cu.m earthen check dams & 248.24 cu.m loose stone checkdams in the form of water harvesting structures present in the entire plantation area.

3.1.7. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. **Based on for as 100 percent counting, plants survival was 53.47% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was satisfactory. A total of 10000 plants comprising seven species were planted in the 50 ha plantation area.

Table 3: Status of Planted Seedlings at the site-Achalpura Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Dalbergia sissoo (Shisham)	800	425	375	53.13	90	70
Acacia tortilis (Totalis)	4000	2598	1402	64.95	150	150
Holoptelea integrifolia (Churel)	3000	1559	1441	51.97	90	60
Acacia nilotica (Desi babool)	300	0	300	0.00	0	0
Acacia leucopholea (Ronj)	200	0	200	0.00	0	0
Zizyphus mauritiana (Ber)	500	213	287	42.60	90	70
Acacia senegal (Kumtha)	1000	552	448	55.20	120	80
Others	200	0	200	0.00	0	0
Total	10000	5347	4653	53.47	108	86

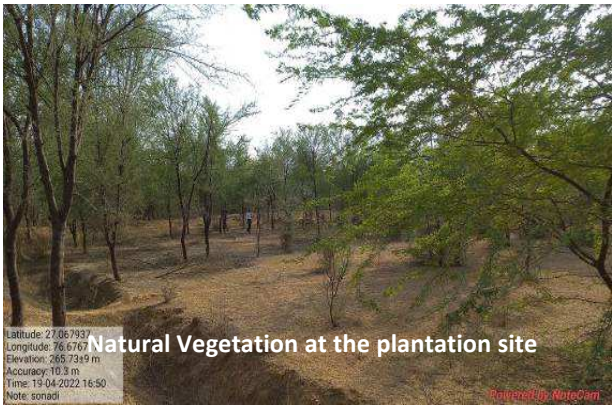
3.1.8. GPS Location and KML file: The selected model under CAMPA plantation site measured 50 hec as per kml map.

3.2.1. Site 2- Sonadi in Bandikui range - N 27.067312 and E 76.678508

The selected plantation was carried out on 50 ha of land at Sonadi in Bandikui range during the year 2018-19. The activities were done under the ANR (Assisted Natural Regeneration) model. The site was a forest land and selected for 10% evaluation. The soil was sandy & hard layer.

3.2.2. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boar and porcupine was reported at the site. Damage to plants by human beings was also reported at the site. Also, widely growth of termite, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.2.3. Natural Vegetation and Regeneration: The area has been covered fully with vegetation due to this plantation. The growth of plants was good. Plants like Desi babool, Karil, Totalis, and Shisham have been found grown naturally.



3.2.4. Regeneration through seeds sowing: Seeds of species kumtha and totalis were sown in as well as along the trenches and on the thanwlas. The result of seed sowing was average.

3.2.5. Protection Work: The selected ANR model plantation had 3900 RMT ditch fencing having width at the top-1.5 meters, width at the bottom-0.9 meter & height 1.2 meters. Ditch fencing was partially effective in controlling the biotic pressure. Ditch fencing was damaged at many places.

3.2.6. Soil and Water Conservation Measures: There are 10000 RMT (Width & depth - 0.45 meters) Contour trenches, 4514 cu.m earthen check dams in the form of water harvesting structures present in the entire plantation area.

3.2.7 Observations Recorded: Under this model, 200 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 50.60% at the**

site. Plant species collar girth & height was also measured. The growth of planted plants was satisfactory. A total of 10000 plants comprising five species were planted in the 50 ha plantation area.

Table 3: Status of Planted Seedlings at the site-Sonadi Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Holoptelea integrifolia (Churel)	2300	163		70.87	120	80
Acacia nilotica (Desi babool)	2500	154		61.60	150	100
Acacia tortilis (Totalis)	4000	115		28.75	150	100
Prosopis juliflora (Khejri)	200	9		45.00	120	100
Dalbergia sissoo (Shisham)	1000	65		65.00	120	100
Total	10000	506	9494	50.60	165	120

3.2.8 GPS Location and KML file: The selected model under CAMPA plantation site measured 50 hec as per kml map.

3.3.1 Site 3- Faraspura in Sikrai range - N 26.855176 and E 76.616419

The selected plantation was carried out on 50 ha of land at Faraspura in Sikrai range during the year 2019-20. The activities were done under the ANR (Assisted Natural Regeneration) model. The site was a forest land and selected for 100% evaluation. The soil was sandy & hard layer.

3.3.2 Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai and porcupine was reported at the site. Damage to plants by human beings was also reported at the site. Also, widely growth of termite, soil quality and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.3.3. Natural Vegetation and Regeneration: The area has been covered fully with vegetation due to this plantation. The growth of plants was good. Plants like Desi babool, Karil, Totalis, and Shisham have been found grown naturally.

3.3.4. Regeneration through seeds sowing: Seeds of species kumtha and totalis were sown in as well as along the trenches and on the thanwlas. The result of seed sowing was average.

3.3.5. Protection Work: The selected ANR model plantation had 1630 RMT ditch fencing having width at the top-1.5 meters, width at the bottom-0.9 meter & height 1.2 meters. & 1427 RMT loose stone fencing. The loose stone fencing was broken at some places. Ditch fencing & loose stone fencing was partially effective in controlling the biotic pressure.

3.3.6. Soil and Water Conservation Measures: There are 3849 RMT (Width & depth - 0.45 meters) Contour trenches, 10279.68 cu.m earthen check dams & 508 cu.m loose stone checkdams in the form of water harvesting structures present in the entire plantation area.

3.3.7. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. **Based on for as 100 percent counting, plants survival was 60.34% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was satisfactory. A total of 10000 plants comprising six species were planted in the 50 ha plantation area.

Table 3: Status of Planted Seedlings at the site-Faraspura Site

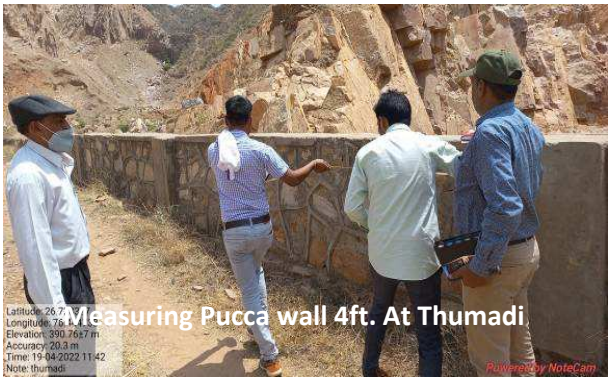
Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh
Dalbergia sissoo (Shisham)	3000	2094	906	69.80	90	60
Holoptelea integrifolia (Churel)	2000	1315	685	65.75	70	60
Acacia tortilis (Totalis)	3000	1922	1078	64.07	130	100
Acacia senegal (Kumtha)	500	67	433	13.40	100	80
Acacia nilotica (Desi babool)	500	226	274	45.20	130	10
Zizyphus mauritiana (Ber)	1000	410	590	41.00	90	70
Total	10000	6034	3966	60.34	102	63

3.3.8. GPS Location and KML file: The selected model under CAMPA plantation site measured 50 hec as per kml map.

4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft at Thumadi, Dausa Range

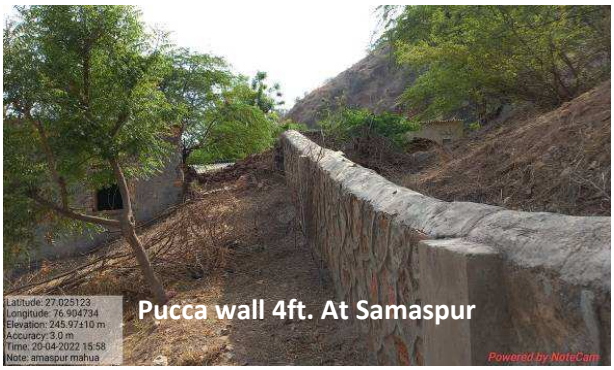
At Thumadi in Dausa range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meters. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing



encroachment. The purpose of constructing wall was to stop illegal mining in the area. Local residents of the area had forcibly broken the wall of 80 meters GPS location of this area was 26.728318 N and 76.444748E. The expenditure incurred for constructing this wall was 12 lacs (as per MB) against the estimated cost of 12 lacs.

Site 2- Pakki Diwar 4 Ft at Samaspur, Mahuwa Range

At Samaspur Mahuwa range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 460 m length as per MB. But in actual 463 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meters. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protects forest boundaries. The purpose of constructing wall was to stop illegal mining in the area. The illegal mining had been stopped right now. Thus, the purpose of constructing wall was fulfilled. GPS location of this area was 27.027383 N and 76.906624 E. The expenditure incurred for constructing this wall was Rs. 8,43,857 (as per MB) against the estimated cost of Rs. 11,04,000.



Pucca wall 4ft. At Samaspur

Site 3- Pillars at Patoli Gagwana , Mahuwa range

At Patoli Gagwana site Pillars (25 Nos.) have been evaluated. The pillars were constructed in the year 2018-19. The pillars were 25 in numbers as per MB. Also in actual 25 pillars were found & evaluated by the third party. The pillars constructed reported average and useful. The construction of pillars helped in marking forest boundary. The pillars were constructed at very low height. Due to location of pillars at low height, the pillars were buried in soil. The land is still occupied by the local residents where the pillars were constructed. Thus, the purpose of constructing boundary pillars was not fulfilled.

Pillar at Patoli Gagwana

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Dausa division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Achalpura	ANR	50	53.47	6
2	Sonadi	ANR	50	50.60	6
3	Fraspura	ANR	50	60.34	7

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 4 ft	Thumadi	Average	5
2	Pakki Diwar 4 ft	Samaspur	Average	6
3	Pillar	Patoli Gagwana	Average	6

Jaipur

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Jaipur Forest Division. This Forest Division with 5 Forest Ranges namely Amer, Phagi, Jaipur Pradeshik, Dudu & Bassi has territorial jurisdiction over the entire Jaipur District.

Figure : Location of Jaipur district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Jaipur Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Amer	Bagwara	2017-18	45	ANR	100%
Amer	Dabla	2018-19	50	ANR	10%
Bassi	Langadiyawas	2018-19	3.86	DFL	100%
Bassi	Dubali	2019-20	50	ANR	10%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Jaipur Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Amer	Vijay Nagar-II	2017-18	Pakki Diwar 4 ft
Amer	Gopali Neendar	2018-19	Pakki Diwar 4 ft
Amer	Sarwa Mod Delhi Byepass	2019-20	Pakki Diwar 4 ft

3. Results and Evaluation

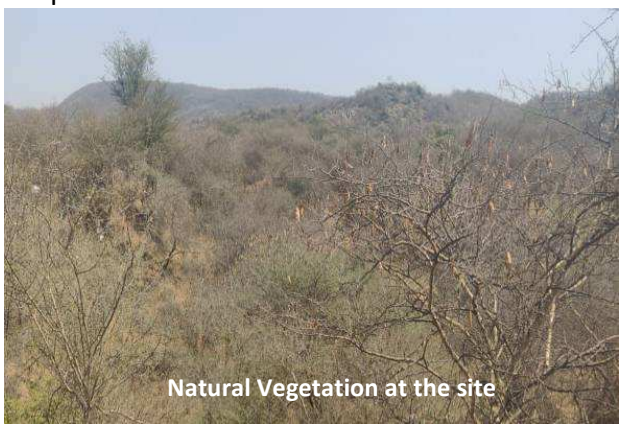
3.1 Plantations Evaluation

3.1.1. Site 1- Bagwara site in Amer range -N 27.082478 and E 75.859061

The selected plantation was carried out on 45 hac. of land at Bagwara in Amer range during the year 2017-18. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was sand loamy.

3.1.2. Treatment plan before sowing: The topography of the area was rocky. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 35000 pits were dug for plantation in total 45 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.1.3. Health & Damages of Plantation: The growth of planted seedling at the site was satisfactory. Grazing by stray animals & cattle's and destruction by Neel gai, rat and porcupine was reported at the site. Also, widely growth of termite, soil quality and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average


Natural Vegetation at the site

3.1.4. Species Planted: The selected tree species under plantation were 5. Seedlings of *Acacia nilotica* (desi babool), Acacia tortilis (Totalis), Dalbergia sissoo (Shisham), Ailanthus excelsa (Ardu) and Zizyphus mauritiana (Ber) were planted.

In total 9000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 9000 for 45 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Totalis& Desi babool which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: Khejri and Ronj were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species *kumatha, ronj, katkaranj, ratanjot and Khair* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was average.**

3.1.8. Protection Work: The selected ANR model plantation had ditch fencing of 4195 RMT having width at the top-0.8 meter, width at the bottom-0.6 meter & height 1.2 meters. Present condition of fencing was satisfactory.

3.1.9. Soil and Water Conservation Measures: There are 13500 RMT (Width & depth -0.45 meter) Contour trenches, 75.53 cu.m loose stone check dams, 5340.59 cu.m earthen check dams & 1458.28 cu.m Nadi in the form of water harvesting structures present in the entire plantation area.

3.1.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 55.23% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 9000 plants comprising five species were planted in the 45 hectare plantation area.

Table 3: Status of Planted Seedlings at the site-Bagwara Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia tortilis (Totalis)	3500	1703	1797	48.66	183	209
Zizyphus mauritiana (Ber)	1000	369	631	36.90	135	65
Dalbergia sissoo (Shisham)	1000	721	279	72.10	182	107
Ailanthus excelsa (Ardu)	500	56	444	11.20	90	65
Acacia nilotica (Desi babool)	1000	539	461	53.90	177	172
Other	2000	1583	417	79.15		
Total	9000	4971	4029	55.23	175	157

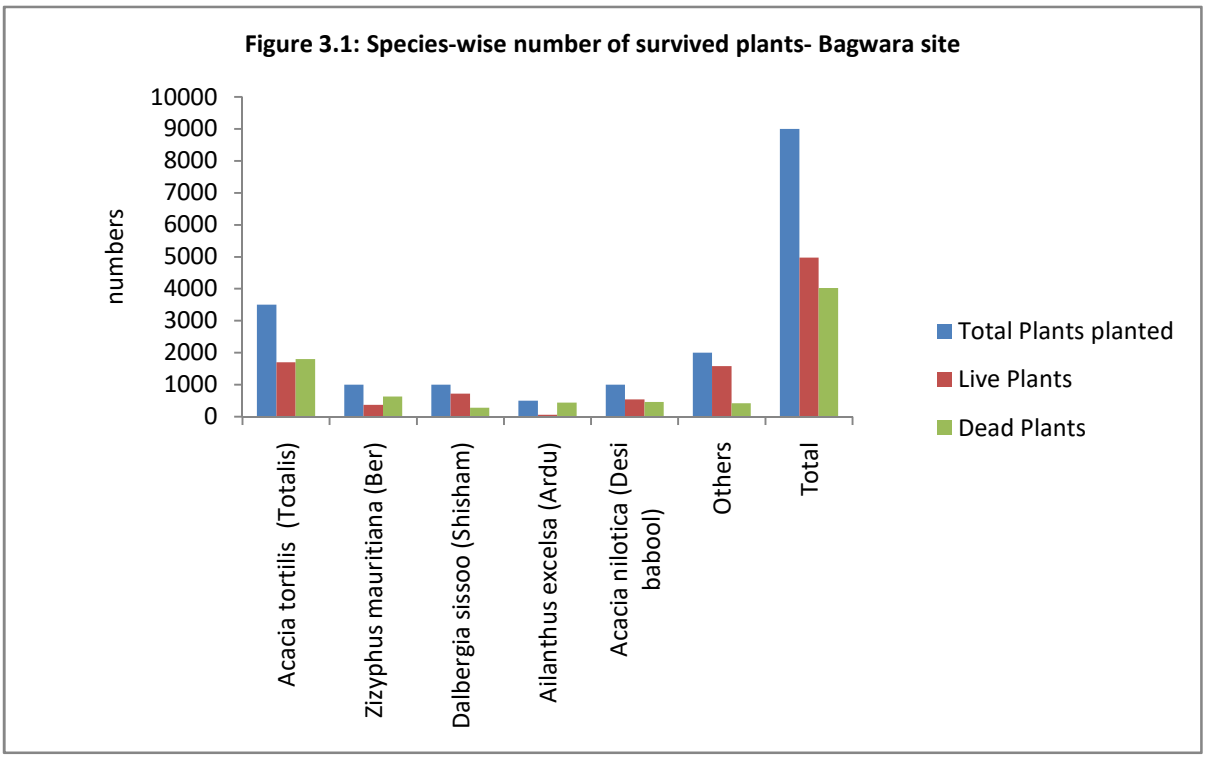


Figure 3.1: Species-wise number of survived plants- Bagwara site
numbers
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Acacia tortilis (Totalis)
Zizyphus mauritiana (Ber)
Dalbergia sissoo (Shisham)
Ailanthus excelsa (Ardu)
Acacia nilotica (Desi babool)
Others
Total
Total Plants planted
Live Plants
Dead Plants

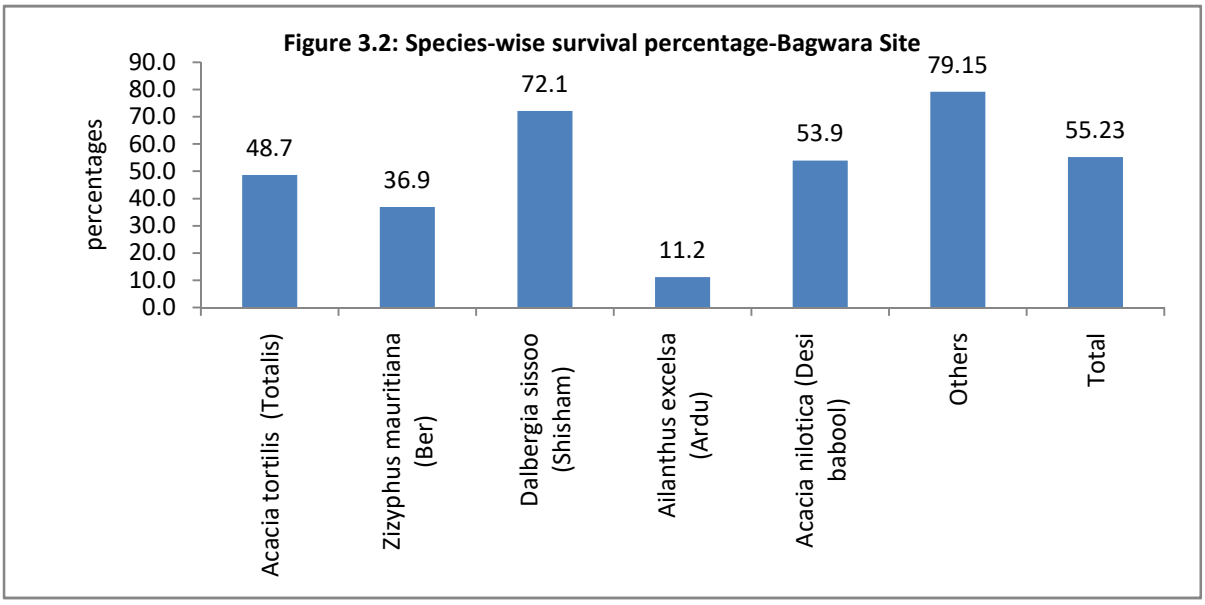
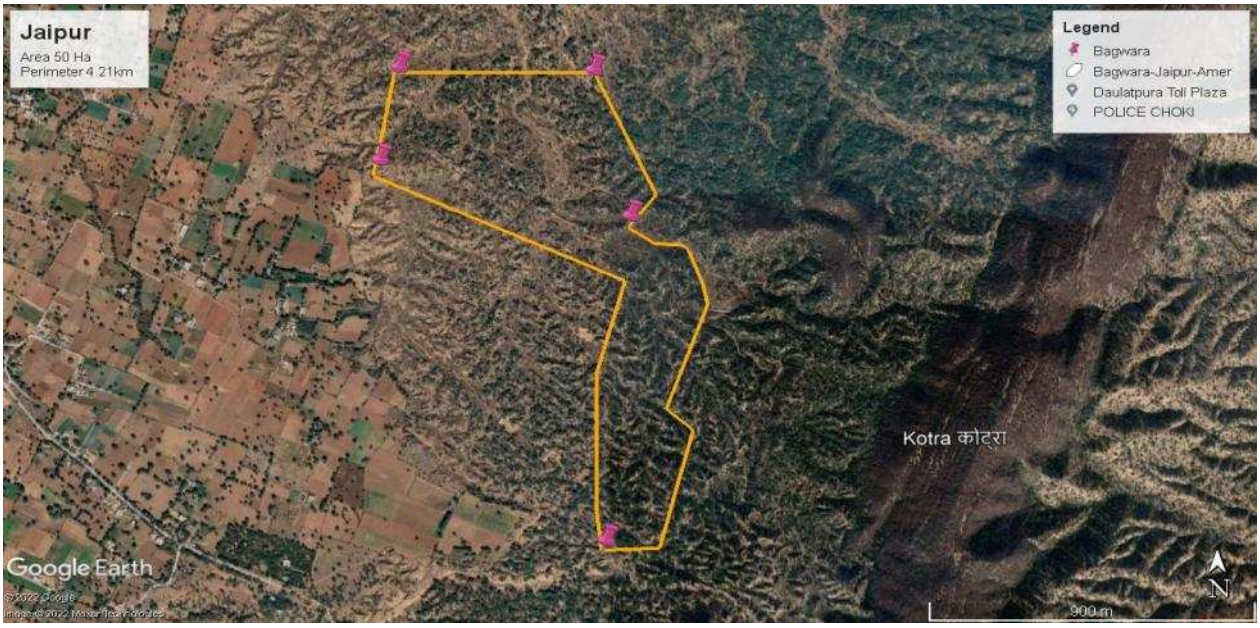


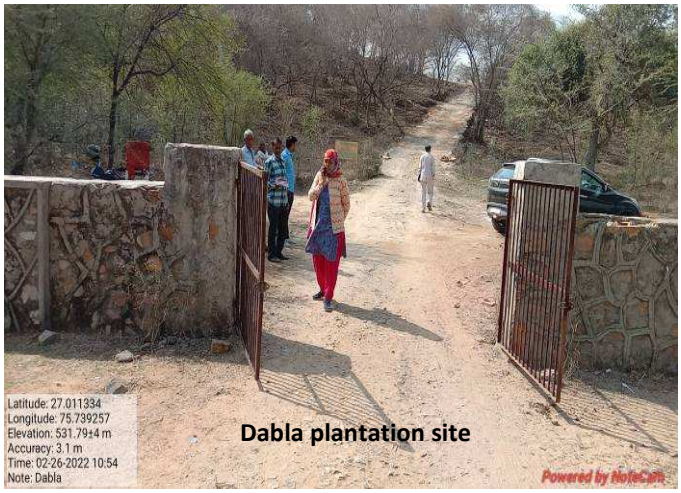
Figure 3.2: Species-wise survival percentage-Bagwara Site
percentages
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
48.7
36.9
72.1
11.2
53.9
79.15
55.23
Acacia tortilis (Totalis)
Zizyphus mauritiana (Ber)
Dalbergia sissoo (Shisham)
Ailanthus excelsa (Ardu)
Acacia nilotica (Desi babool)
Others
Total

3.1.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 45 hec as per kml map.



3.2.1 Site 2- Dabla in Amer range - N 27.0205911 and E 75.740779

The selected plantation was carried out on 50 ha of land at Dabla in Amer range during the year 2018-19. The activities were done under the ANR model. The site was a forest land and selected for 10% evaluation. The soil was sandy & hard layer.



3.2.2. Treatment plan before sowing: The topography of the area was rocky. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 ha of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by

Neel gai, rat and porcupine was reported at the site. Also, widely growth of termite, soil quality and scarcity of water obstruct the growth of planted seedling. The status of guarding/ fencing at the site was satisfactory.

Growth of planted seedling on thanwlas

3.2.4. Species Planted: The selected tree species under plantation were 9. Seedlings of *Acacia nilotica* (desi babool), *Acacia leucophoelea (*ronj), *Holoptelea integrifolia* (Churel), *Zizyphus mauritiana (*Ber) and Acacia catechu (Khair), Dalbergia sissoo (Shisham), Acacia senegal (Kumtha), Acacia leucopholea (Ronj), Acacia tortilis (Totalis) and Ficus religiosa (Pipal)) and were planted.

A total of 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

Natural Vegetation at the site

The plantation of Seedlings was mixed along with the naturally growing plants already available there. Spacing between plants reported 3 m. As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation was Ronj, totalis & Desi babool which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. The growth of survived plants was average.

Ditch fencing & destruction by rat at the site

3.2.5. Watering of plants: The

provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.2.6. Natural Vegetation and Regeneration: The area has been covered fully with vegetation due to this plantation. The growth of plants was good. Plants like Desi babool, Khejdi, Dhok, and Ronj have been found grown naturally.

SMC structure at the site

3.2.7. Regeneration through seeds sowing: Seeds of species kumtha and ronj were sown in as well as along the trenches and on the thanwlas. The result of seed sowing was average. Plants from the seeds sown were rarely seen in contour trenches.

3.2.8. Protection Work: The selected ANR model plantation had loose stone fencing of 2132 RMT having width at the top-0.6 meter, width at the bottom-0.8 meter & height 1.2 meters. Present condition of fencing was average. Also, plantation site had 1240 RMT ditch fencing. Loose stone fencing was partially effective in controlling the biotic pressure. The ditch fencing was filled with soil at many places and loose stone fencing was damaged at some places.

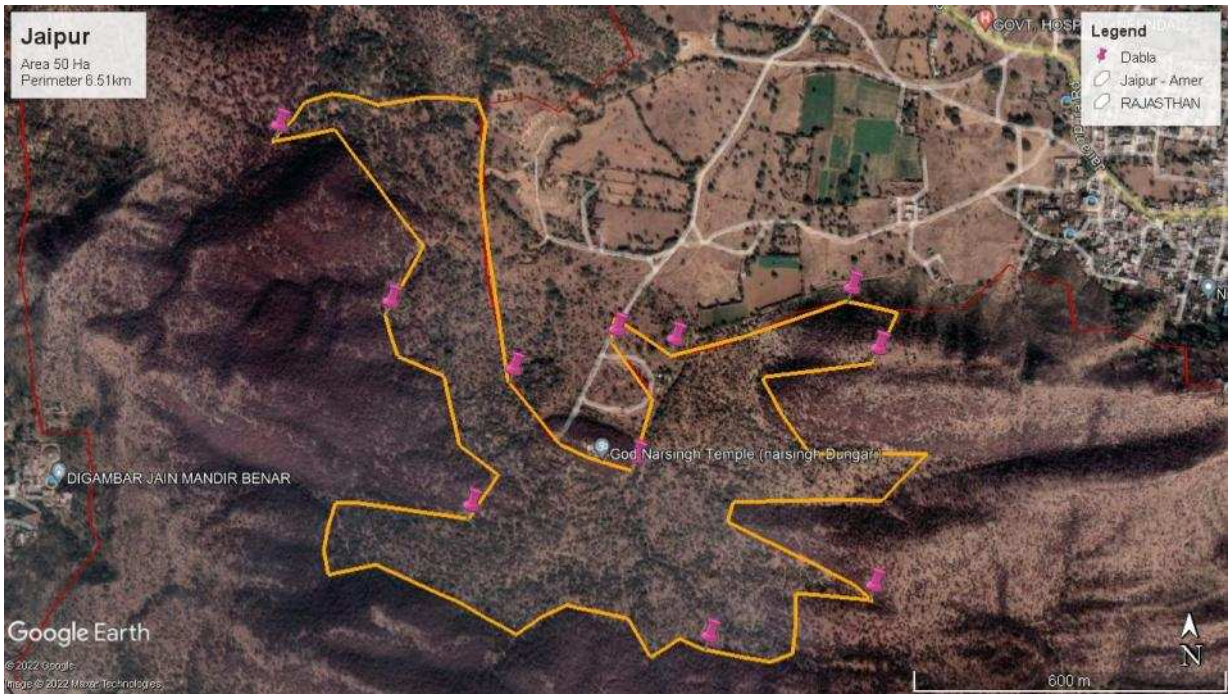
3.2.9. Soil and Water Conservation Measures: There are 6500 RMT (Width & depth - 0.45 meters) Contour trenches in the form of water harvesting structures present in the entire plantation area.

3.2.10. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 74.6% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising five species were planted in the 50 ha plantation area.

Table 3.4: Status of Planted Seedlings at the site-Dabla Site

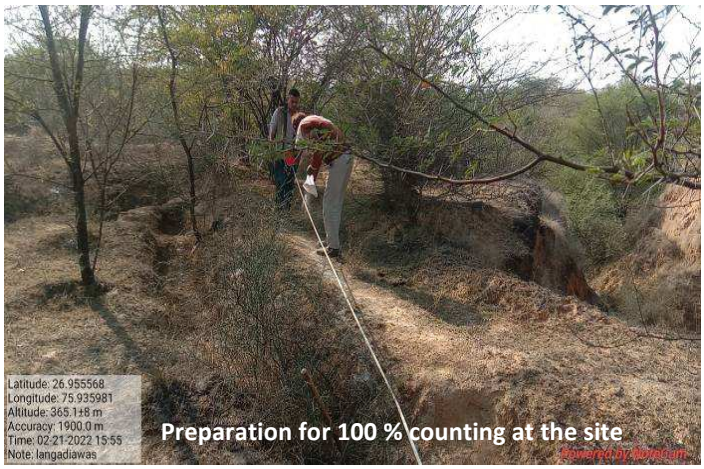
Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia nilotica (Desi babool)		301			150	145
Acacia catechu (Khair)		3			150	122
Dalbergia sissoo (Shisham)		80			139	112
Zizyphus mauritiana (Ber)		47			146	154
Acacia senegal (Kumtha)		227			150	122
Acacia leucopholea (Ronj)		27			131	136
Acacia tortilis (Totalis)		57			141	169
Holoptelea integrifolia (Churel)		2			115	138
Ficus religiosa (Pipal))		2				
Total	10000	746	9254	74.60	147	137

3.2.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.



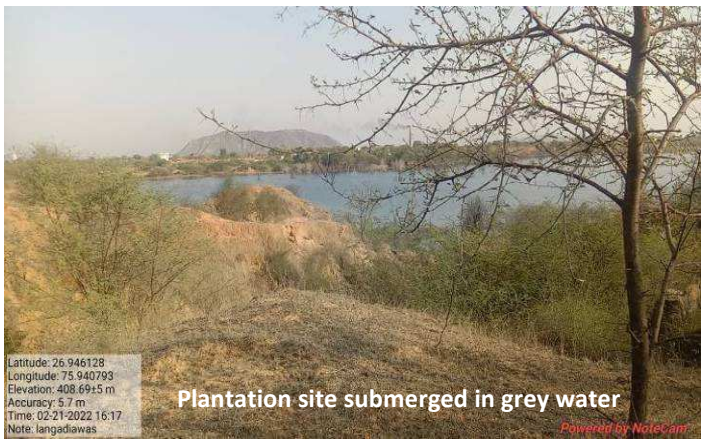
3.3.1 Site 3- Langadiawas in Bassi range - N 26.945957 and E 75.940651

The selected plantation was carried out on 3.86 hec land of Langadiawas in Bassi range during the year 2018-19. The activities were done under the DFL model. The site was a forest land and selected for 100% evaluation. The soil was sandy & hard layer.



3.3.2. Treatment plan before sowing:

The topography of the area was ravine. Hence, as per availability of soil digging of pit has been made for plantation. Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 2702 pits were dug for plantation in total 3.86 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.



3.3.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, rat and porcupine was reported at the site. Also, widely growth of termite, soil quality and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory.

3.3.4. Species Planted: The selected tree species under plantation were 9. Seedlings of *Acacia nilotica* (desi babool), Acacia tortilis (Totalis), *Acacia leucophoelea (*ronj), *Zizyphus mauritiana* (ber), *Azadirachta indica (Neem),* Holoptelea integrifolia (Churel), Salvadora persica (Jaal) Prosopis juliflora (Khejri) and *Holoptelea integrifolia* (churail) were planted.

Natural Vegetation at the site

A total of 2702 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. Spacing between plant to plant was reported 3m/ 4m as per the available site condition. As per the model, 700 plants per hectare have been planted. Thus, total number of plants planted was 2702 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Totalis, Ronj & Desi babool which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. The growth of survived plants was good.

3.3.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.3.6. Natural Vegetation and Regeneration*:* The area has been covered fully with vegetation due to this plantation. Plants like Khejdi, Ronj, and Desi babool have been found grown naturally. .

3.3.7. Regeneration through seeds sowing: The growth of seeds sowing plants was average. The result of seed sowing (viz. Kumtha & Khair) was average. Some plants from the seeds sown were seen on contour trenches.

3.3.8. Protection Work: The selected DFL model plantation was protected by ditch fencing of 400 RMT having width at the top-1.05 meters, width at the bottom-0.9 meter & depth 1.20 meters. The fencing was filled with soil at many places. Fencing has been partially effective in controlling the biotic pressures.

3.3.9. Soil and Water Conservation Measures: There is 300 RMT (Width & depth - 0.45 meters) Contour trenches & 167.1 cu.m earthen check dam in the form of water harvesting structures present in the entire plantation area

3.3.10. Observations Recorded: Under this model, 700 plants per ha were planted during plantation. However, only 2 Hectare area is evaluated out of 3.86 ha. The remaining 1.86 ha. is submerged with grey water. Based on for as 100 percent counting, plants survival was 55.5% at the site. Plant species girth breast height was also measured. The growth of planted seedlings was good. A total of 2702 plants comprising nine species were planted in the 3.86 ha plantation area.

Table 3.6: Status of Planted Seedlings at the site-Langadiwas Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)	**Remark**
Acacia tortilis (Totalis)	500	339	161	67.80	350	200	Only 2 Hectare area is evaluated out of 3.86 ha. The remaining 1.86 ha. is submerged with grey water
Acacia senegal (Kumtha)	200	90	110	45.00			
Acacia nilotica (Desi babool)	200	114	86	57.00	260	100	
Salvadora persica (Jaal)	50	12	38	24.00			
Holoptelea integrifolia (Churel)	150	62	88	41.33	130	100	
Acacia leucopholea (Ronj)	150	95	55	63.33	250	180	
Azadirachta indica (Neem)	150	66	84	44.00	300	120	
Zizyphus mauritiana (Ber)	100	58	42	58.00	130	110	
Prosopis juliflora (Khejri)	100	52	48	52.00	140	100	
Total	1600	888	712	55.50	223	130	

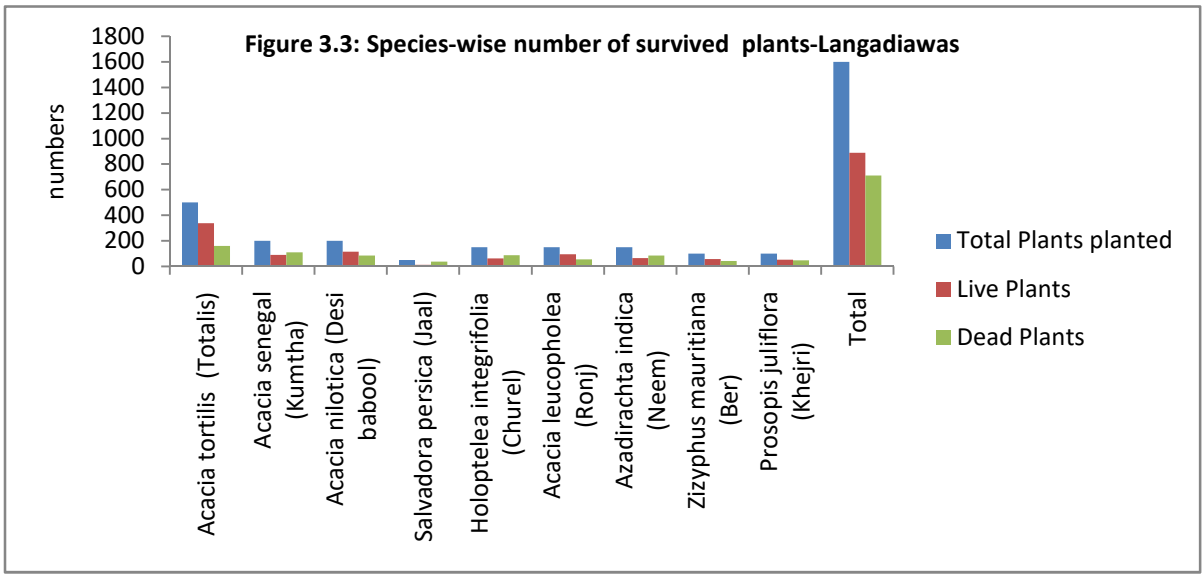
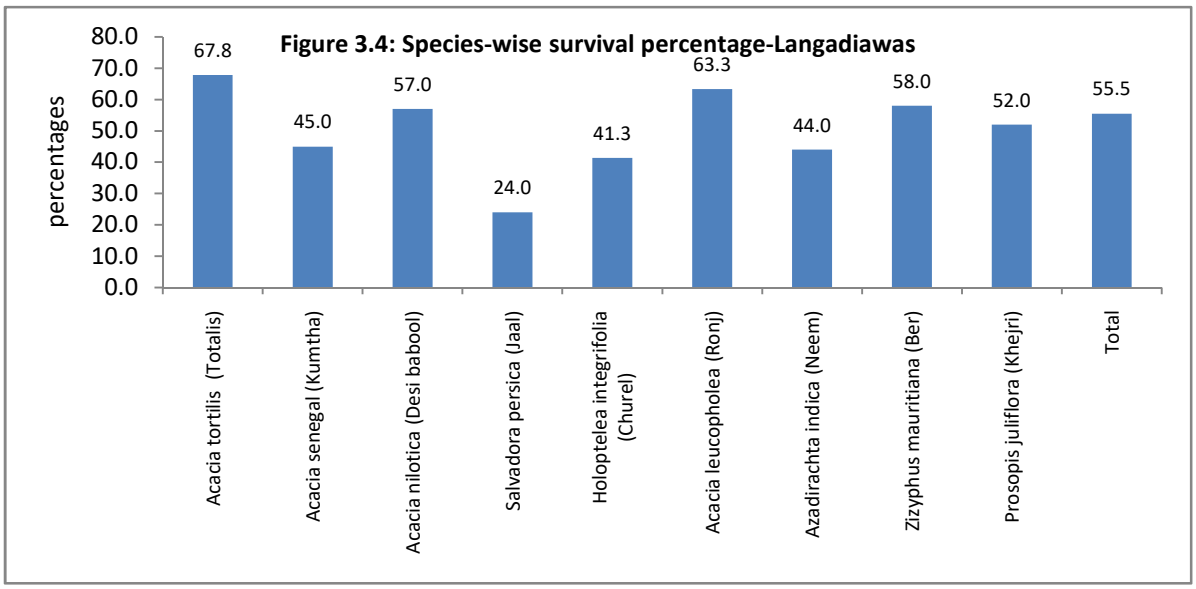


Figure 3.3: Species-wise number of survived plants-Langadiawas



3.3.11. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 3.86 hac as per kml map.

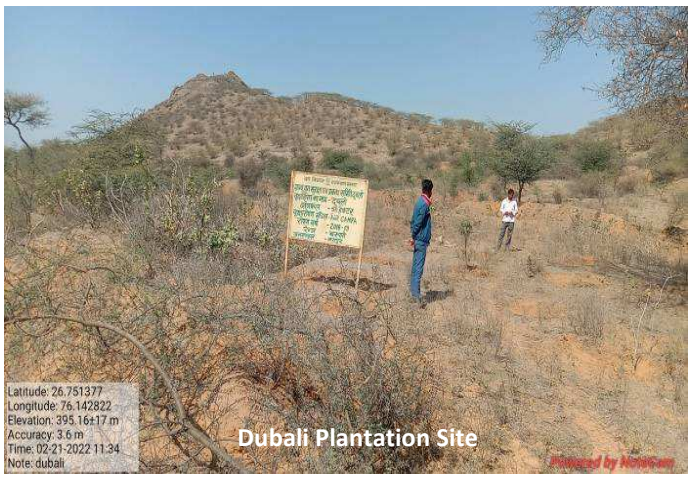
3.3.12. Budget and expenditure:

Table 3.7: Cost-estimate & expenditure (Year-wise)

	Cost estimate (Rs.)				Expenditure (Rs.)			
Year	Plantation	SMC works	Boundary wall/Fencing	Total	Plantation	SMC works	Boundary wall/Fencing	Total
2017-18					41680		38633	80313
2018-19					36180		24177	60357
2019-20					12698			12698
2020-21					15952			15952
2021-22					23499			23499
Total					130009		62810	192819

3.4.1 Site 4: Dubali in Bassi range - N 26.151777 and E 76.142365

The selected plantation was carried out on 50 ha of land at Dubali in Bassi range during the year 2019-20. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 10% evaluation. The soil was sandy.



3.4.2 Treatment plan before sowing*:* The topography of the area was hilly & ravine. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 32000 pits were dug for plantation in total 50 ha of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.4.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, and porcupine

was reported at the site. Also, widely growth of termite, soil quality, destruction by human beings and scarcity of water obstruct the growth of planted seedling. The status of guarding/ fencing at the site was satisfactory.

3.4.4. Species Planted: The selected tree species under plantation were 6. Seedlings of Acacia nilotica (desi babool), Holoptelea integrifolia (Churel), Acacia tortilis (Totalis), *Dalbergia sissoo (Shisham)*, Acacia senegal (Kumtha), *Zizyphus mauritiana* (ber), and were planted.

A total of 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted blockwise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. Spacing between plants has been reported 3 m/ 4 m as per site condition. As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Totalis & Desi babool which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. The growth of survived plants was average.

3.4.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.4.6. Natural Vegetation and Regeneration: The vegetation cover has increased to some extent. Plants such as Ronj, Desi babool, Neem and Ber have been found grown naturally in this area.

3.4.7. Regeneration through seeds sowing: Seeds of species like Ronj, Khair, Kumtha have been sown for natural regeneration. The result of seed sowing was poor with hardly one-two plants were seen on the CCT.

3.4.8. Protection Work: The selected ANR model plantation had ditch fencing of 2236 RMT & pucca masonry wall of 277 RMT. Present condition of fencing was satisfactory. Ditch fencing & pucca masonry wall was partially effective in controlling the biotic pressure.

3.4.9. Soil and Water Conservation Measures: There are 3521 RMT (Width & depth -0.45 meters) Contour trenches & 4588 RMT Deep CCT and 6185 cu. meter earthen check dam in the form of water harvesting structures present in the entire plantation area. These trenches & earthen checkdam are prepared for rainwater harvesting and soil conservation.

3.4.10. Observations Recorded: Under ANR model at the site, 200 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 78.7% at the site.** Plant species girth breast height was also measured. A total of 10000 plants comprising six species were planted in the 50 ha plantation area.

Table 3.8: Status of planted Seedlings at the site-Dubali Site

Species	Total Plants planted	10% sample	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia tortilis (Totalis)	5000	500	401	4599	80.20	182	
Acacia senegal (Kumtha)	1500	150	123	1377	82.00	139	
Holoptelea integrifolia (Churel)	1500	150	121	1379	80.67	95	
Acacia nilotica (Desi babool)	800	80	60	740	75.00	137	
Zizyphus mauritiana (Ber)	700	70	54	646	77.14	96	
Dalbergia sissoo (Shisham)	500	50	28	472	56.00	108	
Total	10000	1000	787	9213	78.70	150	

3.4.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hac as per kml map.

4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft. at Vjay Nagar II, Amer range

Measuring Pakki diwar 4 Ft.

At Vijay Nagar II in Amer range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meters & height was 1.20 meters. Construction work appeared to be good and useful. 50 cm coping on wall was reported. The construction of Pakki Diwar 4 ft helped in preventing encroachment. GPS location of this area was 27°1'17" N and 75°43'38" E.

Site 2-Pakki Diwar 4 Ft at Gopali Neendar , Amer range

Measuring pakki diwar 4ft at Gopali Neendar

At Gopali Neendar in Amer range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 130 m length as per MB. Also, in actual 130 m pakki diwar was constructed at the site. The width of the diwar was 0.45

meter & height was 1.20 meters. Construction work appeared to be good and useful. The wall was constructed with coping of 130 meter. The area is habitated by kucchi basti. Hence, the construction of Pakki Diwar 4 ft helped in preventing encroachment. GPS location of this area was 27°0'4" N and 75°45'36" E.

Site 3- Pakki Diwar 4 Ft at Sarwa Mod, Amer range

At Sarwa Mod in Amer range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 200 m length as per MB. But, in actual 204 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meters. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment. 147 meter length of pakki diwar was found at the site, whereas the remaining 53 meter length of pakki diwar was broken. GPS location of this area was 26.954634 N and 75.864368 E. The expenditure incurred for constructing this wall was Rs. 3,92,465 (as per MB) against the estimated budget of Rs 4 lac.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Jaipur division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Bagwara	ANR	45	55.23	6
2	Dabla	ANR	50	74.60	8
3	Langadiyawas	DFL	3.86	55.50	6
4	Dubali	ANR	50	78.70	8

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 4 ft	Vijay Nagar II	Good	7
2	Pakki Diwar 4 ft	Gopali Neendar	Good	7
3	Pakki Diwar 4 ft	Sarwa Mod	Average	5

Jaipur North

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Jaipur North Forest Division. This Forest Division with 6 Forest Ranges namely Achrol, Kotputli, Shahpura,Veratnagar, Paota & Chomu has territorial jurisdiction over the entire Jaipur District.

Figure : Location of Jaipur district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Jaipur North Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Shahpura	Manoharpur	2017-18	50	ANR	100%
Shahpura	Mishrawas	2018-19	50	ANR	10%
Kothputli	Gadha Buchara	2019-20	50	ANR	100%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Jaipur North Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Achrol	Dheerawas	2017-18	Pakki Diwar 4 ft
Shahpura	Sanjay Van	2017-18	Pakki Diwar 6 ft
Chomu	Jatiji Ka temple	2018-19	Pakki Diwar 4 ft
Paota	Beelwari	2018-19	Pakki Diwar 4 ft

Chomu	Samod Van Khand	2019-20	Pakki Diwar 4 ft
Paota	Papdi Van Khand Badi line 43 A	2019-20	Pakki Diwar 4 ft
Chomu	Nursey Hadota	2019-20	Nursery

3. Results and Evaluation

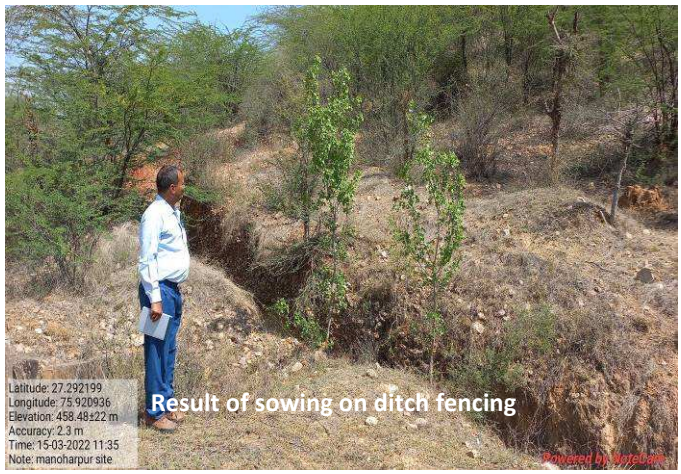
3.1 Plantations Evaluation

3.1.1. Site 1-Manoharpur site in Shahpura range -N 27.292554 and E 75.920783

The selected plantation was carried out on 50 hac. of land at Manoharpur in Shahpura range during the year 2017-18. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was sand loamy.

3.1.2. Treatment plan before sowing: The topography of the area was rocky. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 35000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Third Party team at the plantation Site



Result of sowing on ditch fencing

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, rats and porcupine was reported at the site. Also, widely growth of termite, soil quality and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average

3.1.4. Species Planted: The selected tree species under plantation were 6. Seedlings of *Acacia nilotica* (desi babool), Acacia senegal (Kumtha), Acacia tortilis (Totalis), Holoptelea integrifolia (Churel), Acacia leucopholea (Ronj) and Zizyphus mauritiana (Ber) were planted.

In total 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Totalis& Desi babool which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: Totalis. K*umatha, Ronj, Dhok, Salar and Gugal* were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species Kumtha & Ronj were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**

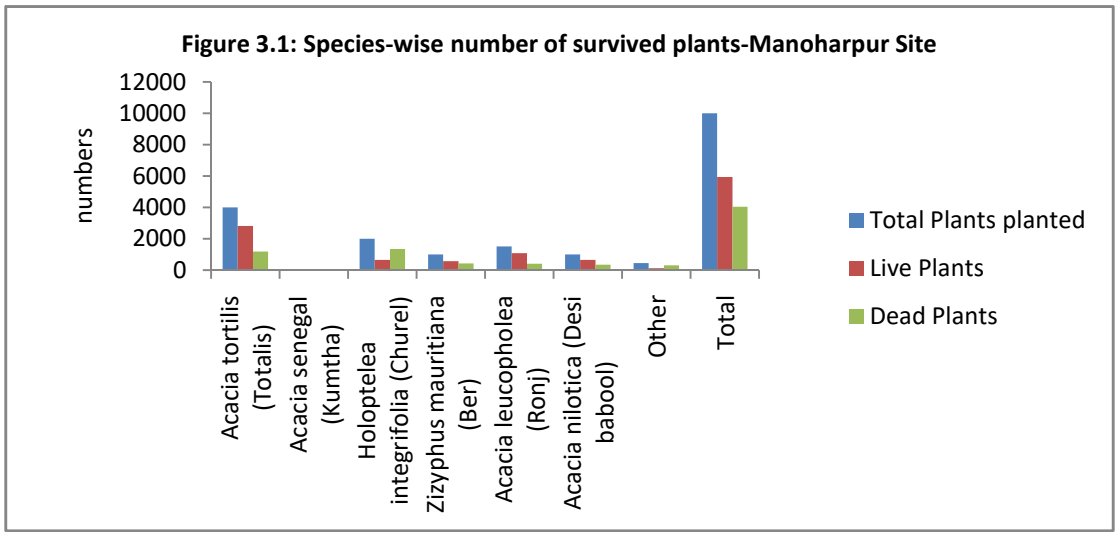
3.1.8. Protection Work: The selected ANR model plantation had ditch fencing of 1500 RMT having width at the top-1.5 meters, width at the bottom-0.9 meter & height 1.2 meters and 500 RMT barbed wire fencing. Present condition of fencing was satisfactory. It was broken at some places

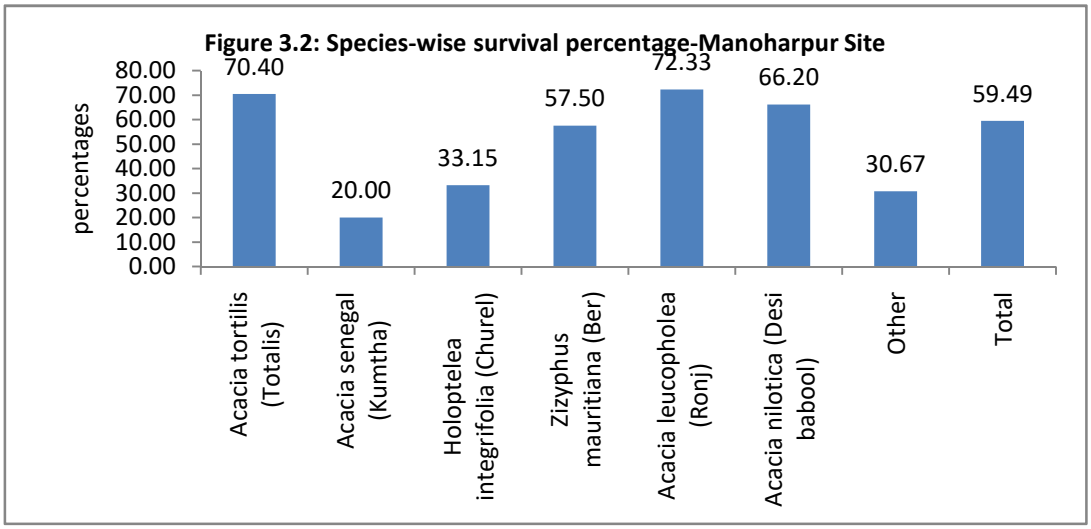
3.1.9. Soil and Water Conservation Measures: There are 20000 RMT (Width & depth -0.45 meters) Contour trenches, 811 cu.m loose stone check dams and 3275 cu.m earthen check dams in the form of water harvesting structures present in the entire plantation area.

3.1.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 59.49% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising six species were planted in the 50 hectare plantation area.

Table 3.2: Status of Planted Seedlings at the site-Manoharpur Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh
Acacia tortilis (Totalis)	4000	2816	1184	70.40	400	250
Acacia senegal (Kumtha)	50	10	40	20.00	120	100
Holoptelea integrifolia (Churel)	2000	663	1337	33.15	120	50
Zizyphus mauritiana (Ber)	1000	575	425	57.50	200	120
Acacia leucopholea (Ronj)	1500	1085	415	72.33	270	170
Acacia nilotica (Desi babool)	1000	662	338	66.20	300	200
Other	450	138	312	30.67	300	100
Total	10000	5949	4051	59.49	244	141





3.1.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.

3.1.12. Budget and expenditure

Table 3.3 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2016-17	-	-	-	-	-	-	-	1653876
2017-18	-	-	-	-	-	-	-	370478
2018-19	-	-	-	-	-	-	-	162779
2019-20	-	-	-	-	-	-	-	92247
2020-21	-	-	-	-	-	-	-	91963
Total	-	-	-	-	-	-	-	2371343

3.2.1. Site 2- Mishrawas in Shahpura range - N 27.322588 and E 75.994816

The selected plantation was carried out on 50 ha of land at Mishrawas in Shahpura range during the year 2018-19. The activities were done under the ANR model. The site was a forest land and selected for 10% evaluation. The soil was sandy.

3.2.2. Treatment plan before sowing: The topography of the area was rocky. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 ha of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Growth of planted seedling on thanwlas

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle (viz. goat & sheep) and destruction by Neel gai, rats and porcupine was reported at the site. Also, widely growth of termite, soil quality and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor. There was no provision of guarding for the current year.

3.2.4. Species Planted: The selected tree species under plantation were 8. Seedlings of *Acacia nilotica* (desi babool), *Acacia leucophoelea (*ronj), *Holoptelea integrifolia* (Churel), *Zizyphus mauritiana (*Ber), Azadirachta indica (Neem) and Dalbergia sissoo (Shisham), Acacia senegal (Kumtha) and Acacia tortilis (Totalis) were planted.

A total of 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. Spacing between plants reported 3 m. As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

Natural Vegetation at the Site

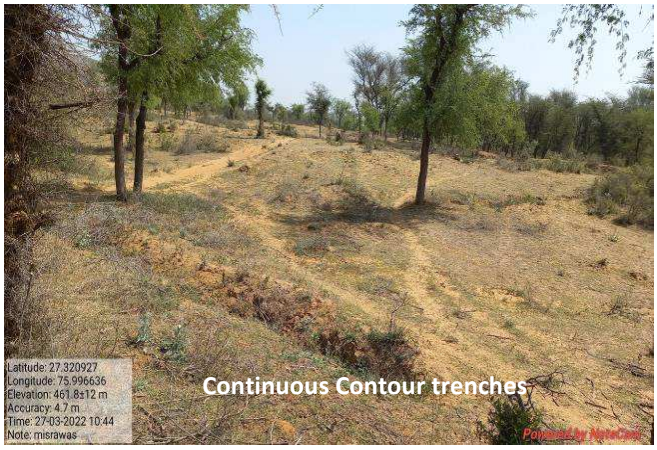
As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Ronj, totalis & Desi babool which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. The growth of survived plants was average.

3.2.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.2.6. Natural Vegetation and Regeneration: The area has been covered fully with vegetation due to this plantation. The growth of plants was good. Plants like Desi babool, Khejari, Totalis, and Ronj have been found grown naturally.

3.2.7. Regeneration through seeds sowing: Seeds of species kumtha and ronj were sown in as well as along the trenches and on the thanwlas. The result of seed sowing was average. Plants from the seeds sown were rarely seen in contour trenches.

3.2.8. Protection Work: The selected ANR model plantation had 2800 RMT ditch fencing having width at the top-1.5 meters, width at the bottom-0.9 meter & height 1.2 meters. Ditch fencing was partially effective in controlling the biotic pressure.



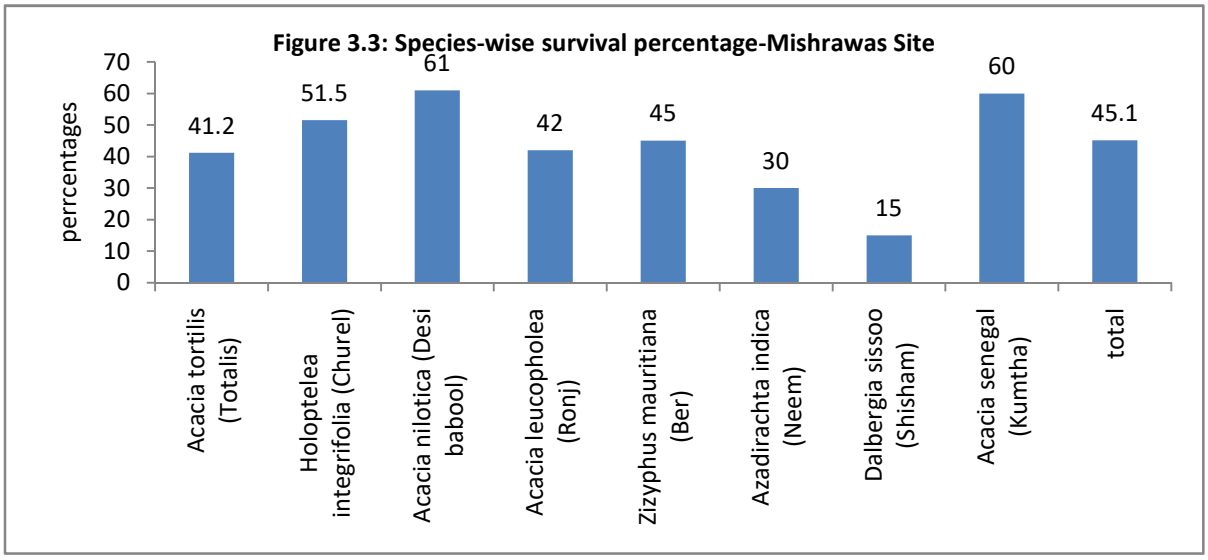
3.2.9. Soil and Water Conservation Measures: There are 20000 RMT (Width & depth -0.45 meter) Contour trenches, 4338 cu.m earthen check dams & 5774 cu.m PCT/Nadi in the form of water harvesting structures present in the entire plantation area.

3.2.10. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 45.10% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising eight species were planted in the 50 ha plantation area.

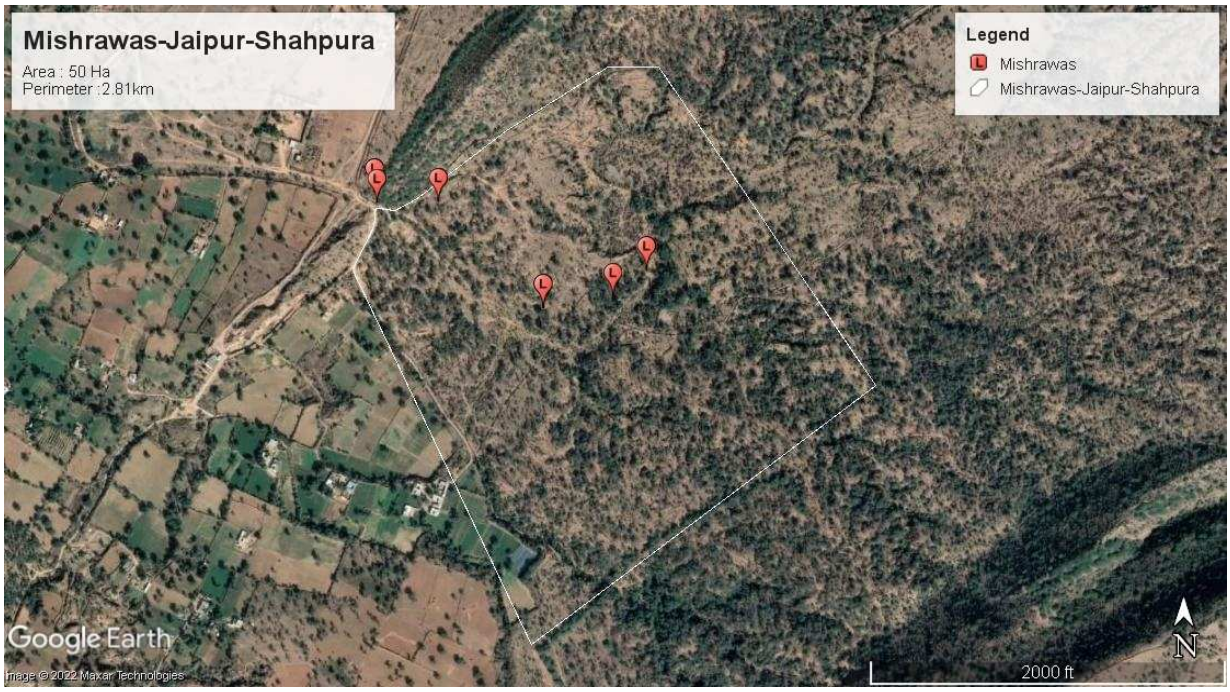
Table 3.4: Status of Planted Seedlings at the site-Mishrawas Site

Species	Total Plants planted	10 % sample	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia tortilis (Totalis)	5000	500	206	-	41.20	150	150
Holoptelea integrifolia	2000		103	-	51.50	70	40

(Churel)		200					
Acacia nilotica (Desi babool)	1000	100	61	-	61.00	150	160
Acacia leucopholea (Ronj)	500	50	21	-	42.00	90	80
Zizyphus mauritiana (Ber)	600	60	27	-	45.00	120	130
Azadirachta indica (Neem)	400	40	12	-	30.00	120	130
Dalbergia sissoo (Shisham)	200	20	3	-	15.00	120	130
Acacia senegal (Kumtha)	300	30	18	-	60.00	140	120
total	10000	1000	451	9549	45.10	120	117.5



3.2.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.



3.2.12. Budget and expenditure

Table 3.5: Cost-estimate & expenditure (Year-wise)

	Cost estimate (Rs.)				Expenditure (Rs.)			
Year	**Plantation**	**SMC works**	**Boundary wall/Fencing**	**Total**	**Plantation**	**SMC works**	**Fencing**	**Total**
2016-17					388892	495490	868070	1752452
2017-18					392060			392060
2018-19					153553			153553
2019-20					44228			44228
2020-21					111155			111155
Total					1089888	495490	868070	2453448

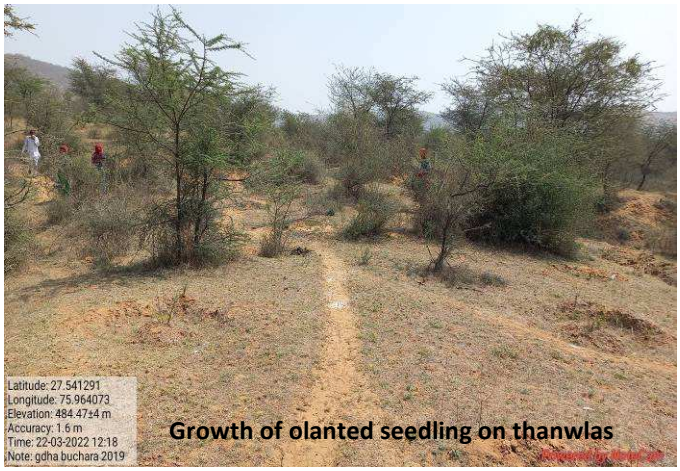
3.3.1 Site 3- Gadha Buchara in Kothputli range - N 27.540794 and E 75.962897

The selected plantation was carried out on 50 hec land of Gadha Buchara at Kothputli range during the year 2019-20. The activities were done under the ANR model. The site was a forest land and selected for 100% evaluation. The soil was sandy & hard layer.

Plantation Site Gadha Buchara

3.3.2. Treatment plan before sowing: The topography of the area was ravine. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land**.** The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.3.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, rats and porcupine was reported at the site. Also, widely growth of termite, soil quality and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory.



Growth of olanted seedling on thanwlas

3.3.4. Species Planted: The selected tree species under plantation were 8. Seedlings of *Acacia nilotica* (desi babool), Acacia tortilis (Totalis), Dalbergia sissoo (Shisham), Albizia lebbeck (Kala Siras), *Zizyphus mauritiana* (ber), *Azadirachta indica*

(Neem), Tecomella undulata (Rohida)and *Holoptelea integrifolia* (churail) were planted.

A total of 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. Spacing between plant to plant was reported 3m/ 4m as per the available site condition. As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Totalis, Ber,Churel & Desi babool which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. The growth of survived plants was good.

3.3.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.3.6. Natural Vegetation and Regeneration*:* The area has been covered fully with vegetation due to this plantation. Plants like Totalis, Churel, and Desi babool have been found grown naturally.

3.3.7. Regeneration through seeds sowing: The result of seed sowing (viz. Kumtha & Khair) was good. Proper growth of plants from the seeds sown was seen on contour trenches.

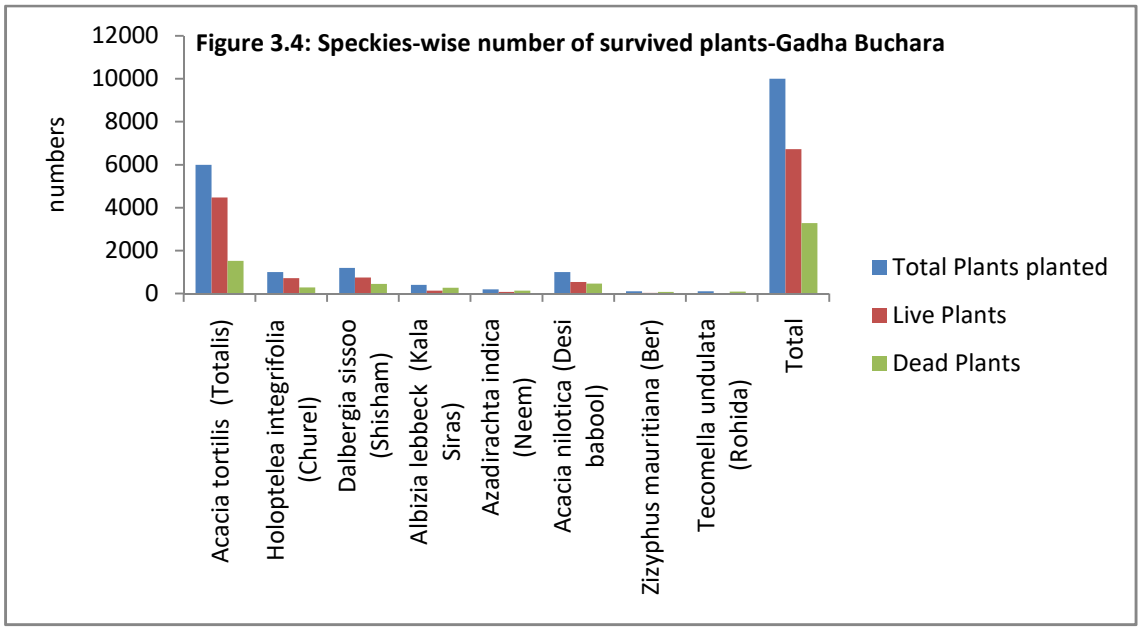
3.3.8. Protection Work: The selected ANR model plantation was protected by ditch fencing of 2810 RMT having width at the top-1.05 meters, width at the bottom-0.9 meter & depth 1.20 meters. The fencing was filled with soil at many places. Fencing has been fully effective in controlling the biotic pressures.

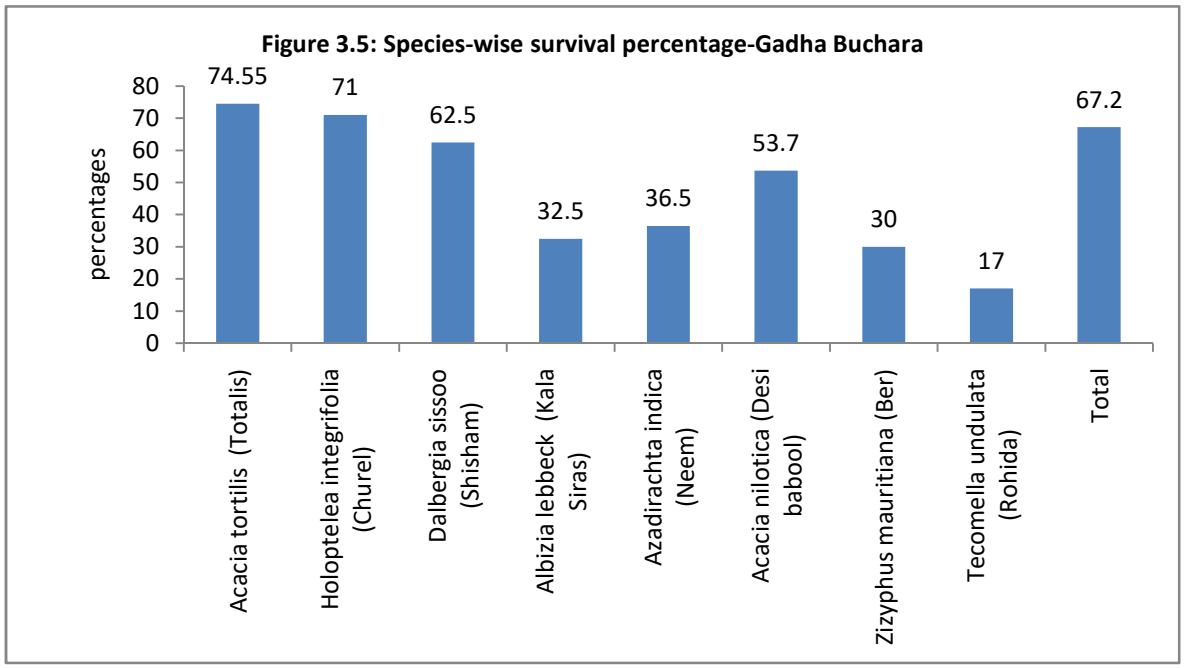
3.3.9. Soil and Water Conservation Measures: There are 2000 RMT (Width & depth - 0.45 meter) Contour trenches, 716 cu.m PCT/Nadi & 5432 cu.m earthen check dams in the form of water harvesting structures present in the entire plantation area

3.3.10. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. Based on for as 100 percent counting, plants survival was 67.20% at the site. Plant species girth breast height was also measured. The growth of planted seedlings was good. A total of 10000 plants comprising eight species were planted in the 50 ha plantation area.

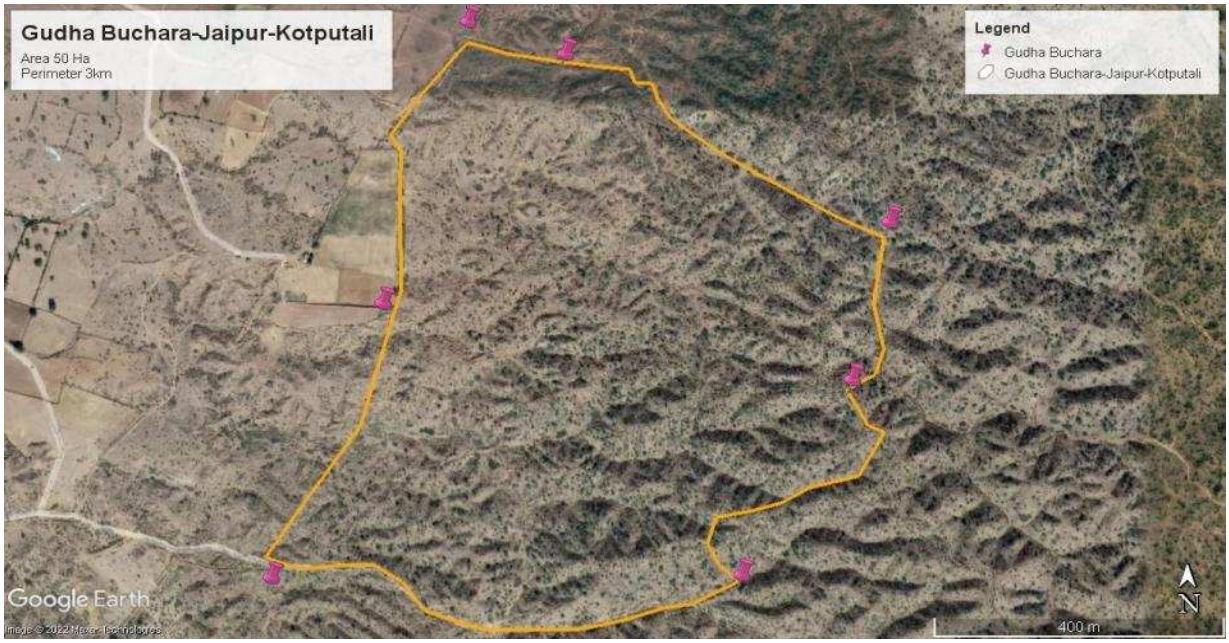
Table 3.6: Status of Planted Seedlings at the site-Gadha Buchara Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh
Acacia tortilis (Totalis)	6000	4473	1527	74.55	280	250
Holoptelea integrifolia (Churel)	1000	710	290	71.00	115	60
Dalbergia sissoo (Shisham)	1200	750	450	62.50	170	220
Albizia lebbeck (Kala Siras)	400	130	270	32.50	140	80
Azadirachta indica (Neem)	200	73	127	36.50	140	80
Acacia nilotica (Desi babool)	1000	537	463	53.70	220	180
Zizyphus mauritiana (Ber)	100	30	70	30.00	140	80
Tecomella undulata (Rohida)	100	17	83	17.00	140	80
Total	10000	6720	3280	67.20	168	129





3.3.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hac as per kml map.



3.3.12. Budget and expenditure:

Table 3.7: Cost-estimate & expenditure (Year-wise)

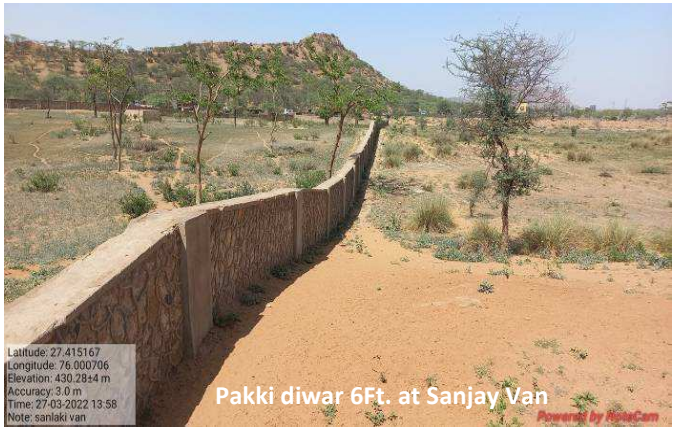
	Cost estimate (Rs.)				Expenditure (Rs.)			
Year	Plantation	SMC works	Boundary wall/Fencing	Total	Plantation	SMC works	Boundary wall/Fencing	Total
2017-18					-	976996	495490	1472486
2018-19					388892			388892
2019-20					46031			46031
2020-21					13845			13845
Total					448768	976996	495490	1921254

4. Results for asset sites

4.1 Site1- Pakki Diwar 4 Ft. at Dheerawas, Achrol range

At Dheerawas in Achrol range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 200 m length as per MB. Also, in actual 200 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meters. Construction work appeared to be average and useful. Coping & pointing work on wall was reported. Wall was broken by local residents at three places. The construction of Pakki Diwar 4 ft helped in preventing encroachment. GPS location of this area was 27.224979 N and 76.079805 E. The expenditure incurred for constructing this wall was Rs. 472240 (as per MB) against the estimated budget of Rs. 48000.

Site 2- Pakki Diwar 6 Ft at Sanjay Van, Shahpura range



At Sanjay Van in Shahpura range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 6 ft and 500 m length as per MB. But in actual 505 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 6 Ft. Construction work appeared to be average and useful. The wall was constructed with coping & pointing work. The present condition of wall was average. The construction of Pakki Diwar 6 ft helped in preventing encroachment. GPS location of this area was 27.415148 N and 76.00968 E. The expenditure incurred for constructing this wall was Rs. 1163855 (as per MB) against the estimated budget of Rs. 1163855

Site 3- Pakki Diwar 4 Ft at Jatiji Ka temple ,Chomu range

At Jatiji Ka temple in Chomu range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 200 m length as per MB. Also, in actual 200 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meter. Construction work appeared to be good and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment .Construction was done as per estimate & drawing. GPS location of this area was 27.191847 N and 75.781462 E. The

expenditure incurred for constructing this wall was Rs. 4.80 lac (as per MB) against the estimated budget of Rs 4.80 lac.

Site 4- Pakki Diwar 4 Ft at Beelwari Paota range

At Jatiji Ka temple in Chomu range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 400 m length as per MB. But in actual 405 m pakki diwar was constructed at the site. The width of the diwar was 0.6 meter & height was 1.20 meters. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting forest land. Coping & pointing work on wall was reported. Wall was broken by local residents at three places. GPS location of this area was 27.411847 N and 76.105517 E. The expenditure incurred for constructing this wall was Rs. 792599 (as per MB) against the estimated budget of Rs.

Site 5- Pakki Diwar 4 Ft at Samod Van Khand Chomu range

At Samod Van Khand in Chomu range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 85 m length as per MB. But in actual 250 m pakki diwar was constructed at the site. There was already 4 Ft. wall in the area connected with the forest whose height was less. In order to protect the forest area instead of wall of 85 meter length, 250 meter wall of 2 Ft. height was constructed. The width of the diwar was 0.45 meter & height was 0.60 meter. Construction work appeared to be good and useful. The construction of Pakki Diwar helped in preventing encroachment & protects forest land. Coping & pointing work on wall was reported. GPS location of this area was 27.192352 N and 75.798564 E. The expenditure incurred for constructing this wall was Rs. 1,98,770 (as per MB) against the estimated budget of Rs 2.04 lac.

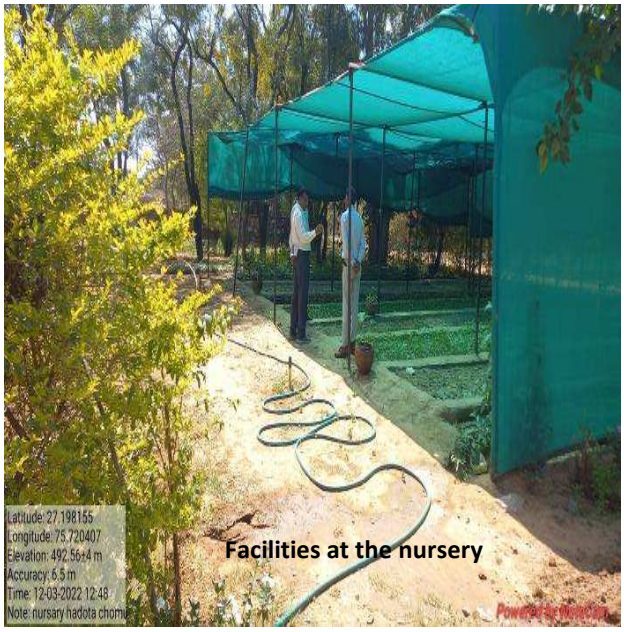
Site 6- Pakki Diwar 4 Ft at Papdi Van Khand Badi line Paota range

At Papdi Van Khand Badi line in Paota range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 200 m length as per MB. But in actual 205 m pakki diwar was constructed at the site. The width of the diwar was 0.60 meter & height was 1.20 meters. Construction work appeared to be average and useful. The construction of Pakki Diwar helped in preventing encroachment & protecting forest land. Coping & pointing work on wall was reported. The present condition of pakki

diwar was average. GPS location of this area was 27.432108 N and 76.1555082 E. The expenditure incurred for constructing this wall was Rs. 385479 (as per MB).

Site 7- Nursery at Hadota Chomu range

At Hadota in Chomu range, the nursery has been evaluated. The work undertaken under CAMPA was to raise nursery plants (50000) in the year 2019-20. The nursery at Hadota was under category of development of existing nursery. The nursery was found operational & useful at the time of visit. Adequate land & other infrastructure required for development of nursery was available. The nursery was well maintained. Nursery had earned revenue of Rs. 8 lac by selling plants in last three years. Total kutcha bed available at the nursery was 111. Looking to the soil problem some pucca should be approved for the nursery. GPS location of this area was 27.198234 N and 75.719928 E. The expenditure incurred for development of nursery was Rs. 2.78 lac (as per MB) against the estimated budget of Rs 2.78 lac.



5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Jaipur North division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Manoharpur	ANR	50	59.49	6
2	Mishrawas	ANR	50	45.1	5
3	Gudha Buchara	ANR	50	67.2	7

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 4 ft	Dheerawas	Average	4
2	Pakki Diwar 6 ft	Sanjay Van	Average	7
3	Pakki Diwar 4 ft	Jatiji ka temple	Average	7
4	Pakki Diwar 4 ft	Beelwari	Average	7
5	Pakki Diwar 4 ft	Samod Van Khand	Good	7
6	Pakki Diwar 4 ft	Papdi Van Khand Badi line	Average	6
7	Nursery	Hadota	Average	6

Jaipur WL

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Jaipur WL Forest Division. This Forest Division with 5 Forest Ranges namely Nahargarh, Jamwaramgarh, Raisar, Wild life Jaipur & Ajabgarh has territorial jurisdiction over the entire Jaipur District.

Figure : Location of Jaipur district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Jaipur WL Forest Division for evaluation were as given in table 1.

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Raisar	Dantali	2019-20	4.17	NFL	100%
Jamua Ramgarh	Papad	2019-20	50	ANR	10%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Jaipur WL Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Jamua Ramgarh	Deepola	2017-18	Pakki Diwar 6 ft
Jamua Ramgarh	Booj	2018-19	Pakki Diwar 6 ft
Raisar	Mehangi	2019-20	Pakki Diwar 6 ft
Ajabgarh	Narayani Petrol pump se Safeda ka Bag Naka Gola Ka Bas	2019-20	Pakki Diwar 6 ft

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1- Dantali site in Raisar range -N 27.120899 and E 76.156494

The selected plantation was carried out on 4.17 hac. of land at Dantali in Raisar range during the year 2019-20. The activities were done under the Non Forest Land (NFL) model. The site was a forest land and selected for 100% evaluation. The soil was hard.

3.1.2. Treatment plan before sowing: The topography of the area was hilly, ravine & undulating. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 3000 pits were dug for plantation in total 4.17 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Marking & counting of planted

3.1.3. Health & Damages of Plantation: The growth of planted seedling at the site was excellent. Grazing by stray animals & cattle and destruction by Neel gai, rabbits and wild boars was reported at the site. Also, widely growth of termite and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory.

CCT at the site

3.1.4. Species Planted: The selected tree species under plantation were 6. Seedlings of *Acacia nilotica* (desi babool), Holoptelea integrifolia (Churel), Dalbergia sissoo (Shisham), Acacia leucopholea (Ronj), Azadirachta indica (Neem) and Zizyphus mauritiana (Ber) were planted.

In total 3000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were

Growth of planted seedling site

planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 700 plants per hectare have been planted. Thus, total number of plants planted was 3000 for 4.17 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Churel, Ber & Desi babool which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was excellent.**

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

Natural Regeneration at the site

3.1.6. Natural Vegetation and Regeneration: Dhonk, Dasare and Thor were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species Kumtha & Ronj were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**

Ditch fencing at the site

3.1.8. Protection Work: The selected NFL model plantation had ditch fencing of 430 RMT having width at the top-1.5 meters, width at the bottom-0.9 meter & height 1.2 meters. The ditch fencing was partially effective in controlling the biotic pressure.

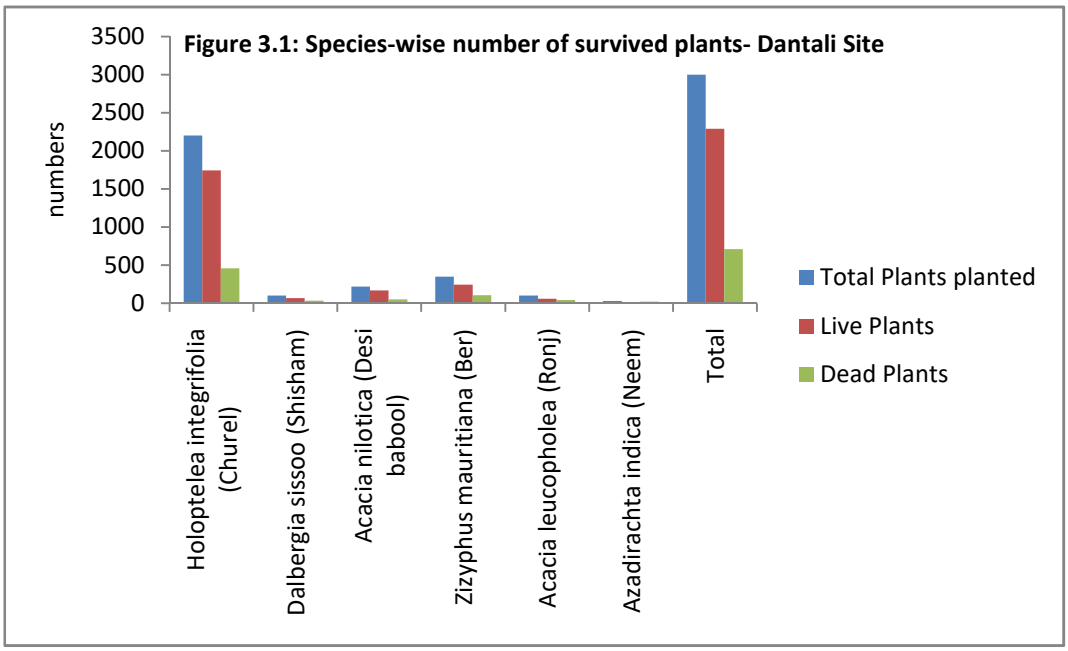
3.1.9. Soil and Water Conservation Measures: There are 700 RMT (Width & depth - 0.45 meter) Contour trenches in the form of water harvesting structures present in the entire plantation area.

3.1.10. Observations Recorded: Under this model, 700 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 76.3% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was

excellent. A total of 3000 plants comprising six species were planted in the 4.17 hectare plantation area.

Table 3.2: Status of Planted Seedlings at the site-Dantali Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Holoptelea integrifolia (Churel)	2200	1744	456	79.27	90	40
Dalbergia sissoo (Shisham)	100	67	33	67.00	100	40
Acacia nilotica (Desi babool)	220	170	50	77.27	180	80
Zizyphus mauritiana (Ber)	350	244	106	69.71	90	30
Acacia leucopholea (Ronj)	100	57	43	57.00	60	30
Azadirachta indica (Neem)	30	7	23	23.33	60	30
Total	3000	2289	711	76.30	97	42



3.1.11 GPS Location and KML file: The selected NFL model under CAMPA plantation site measured 4.17 hec as per kml map.

3.1.12. Budget and expenditure

Table 3.3 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2018-19	-	-	-	-	4274	27286	125436	156996
2019-20	-	-	-	-	196641	-	0	196641
2020-21	-	-	-	-	75465	-	13392	88857
Total	-	-	-	-	276380	27286	138828	442494

3.2.1. Site 2- Papad in Jamua Ramgarh range - N 26.952885 and E 75.027638

The selected plantation was carried out on 50 ha of land at Papad in Jamua Ramgarh range during the year 2019-20. The activities were done under the ANR (Assisted Natural Regeneration) model. The site was a forest land and selected for 10% evaluation. The soil was sandy & hard layer.

3.2.2. Treatment plan before sowing: The topography of the area was rocky. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45

cm^3 have been made. Total 10000 pits were dug for plantation in total 50 ha of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boars and porcupine was reported at the site. Also, widely growth of termite, soil quality and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory.

3.2.4. Species Planted: The selected tree species under plantation were 7. Seedlings of Acacia tortilis (Totalis), Acacia senegal (Kumtha), Dalbergia sissoo (Shisham), *Holoptelea integrifolia* (Churel), Jatropha curcas (Ratanjot), Ficus religiosa (Pipal) and Azadirachta indica (Neem) were planted.

A total of 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. Spacing between plants was reported 3 m. As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Churail, totalis & Kumtha which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. The growth of survived plants was average.

3.2.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.2.6. Natural Vegetation and Regeneration: The area has been covered fully with vegetation due to this plantation. The growth of plants was good. Plants like Desi babool, Khair, Totalis, and Ber have been found grown naturally.

Natural regeneration at the site

3.2.7. Regeneration through seeds sowing: Seeds of species kumtha and ronj were sown in as well as along the trenches and on the thanwlas. The result of seed sowing was good. Plants from the seed sown were widely seen on contour trenches.

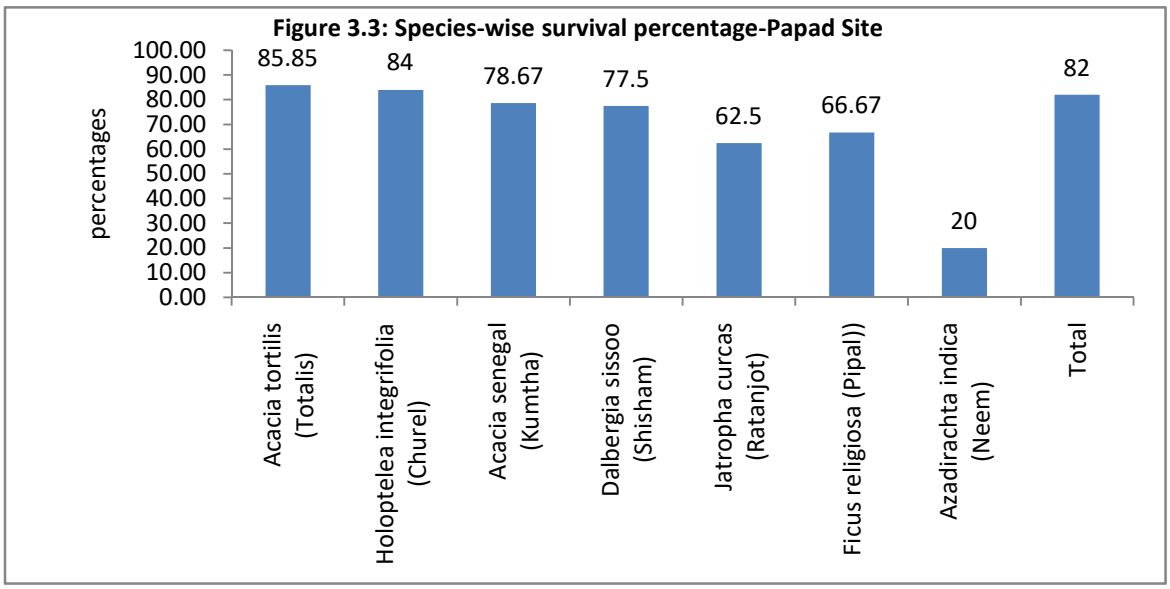
3.2.8. Protection Work: The selected ANR model plantation had 2370 RMT ditch fencing having width at the top-1.5 meters, width at the bottom-0.9 meter & height 1.2 meters. Ditch fencing was partially effective in controlling the biotic pressure. Also, 860 RMT loose stone fencing having width at the top-0.8 meter, width at the bottom-0.6 meter & height 1.2 meters. The condition of ditch fencing & loose stone fencing was satisfactory. Some part of the fencing was damaged by the wild animals.

3.2.9. Soil and Water Conservation Measures: There are 20000 RMT (Width & depth - 0.45 meter) Contour trenches, 2500 cu.m earthen check dams & 225 cu.m loose stone checkdams in the form of water harvesting structures present in the entire plantation area.

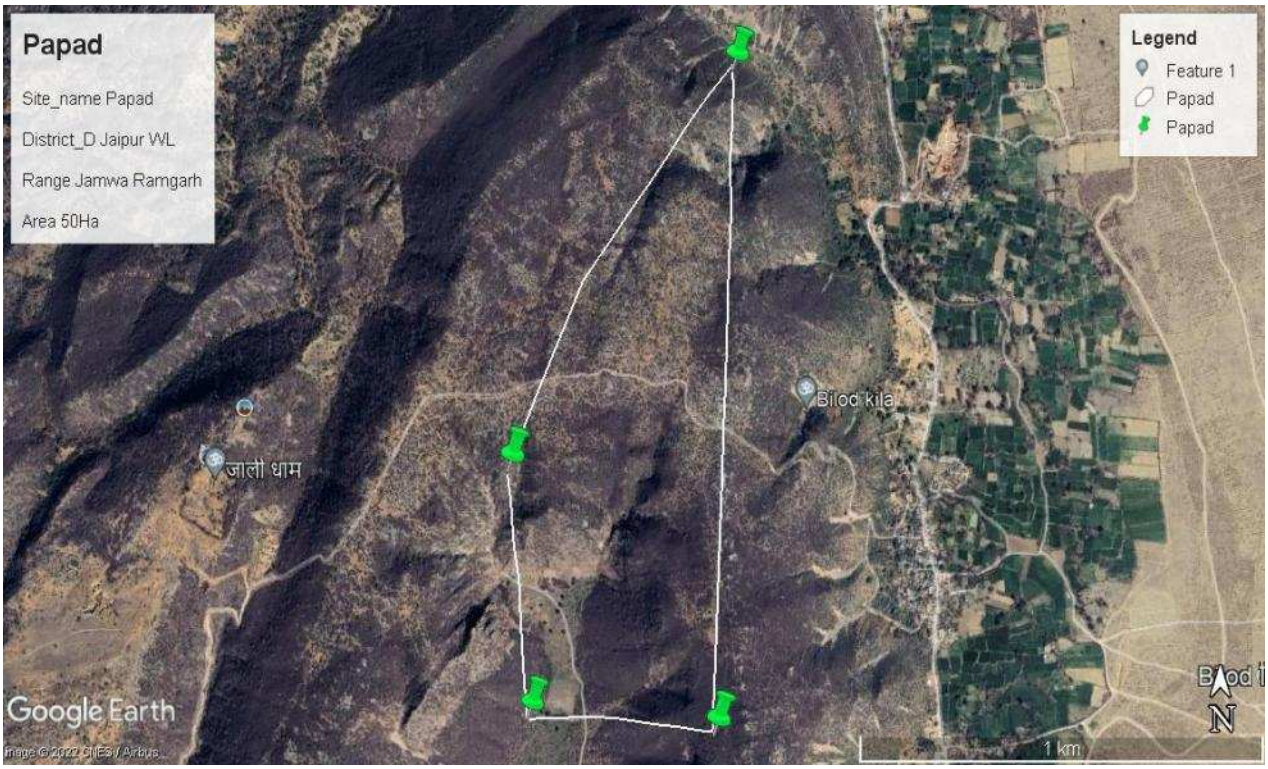
3.2.10. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 82.0% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was excellent. A total of 10000 plants comprising seven species were planted in the 50 ha plantation area.

Table 3.4: Status of Planted Seedlings at the site-Papad Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia tortilis (Totalis)	4100	352	3748	85.85	240	50
Holoptelea integrifolia (Churel)	3000	252	2748	84.00	90	15
Acacia senegal (Kumtha)	1500	118	1382	78.67	210	20
Dalbergia sissoo (Shisham)	800	62	738	77.50	90	30
Jatropha curcas (Ratanjot)	400	25	375	62.50	90	20
Ficus religiosa (Pipal))	150	10	140	66.67	60	20
Azadirachta indica (Neem)	50	1	49	20.00	60	20
Total	10000	820	9180	82.00	120	25



3.2.11. GPS Location and KML file: The selected model under CAMPA plantation site measured 50 hec as per kml map.



3.2.12. Budget and expenditure

Table 3.5: Cost-estimate & expenditure (Year-wise)

	Cost estimate (Rs.)				Expenditure (Rs.)			
Year	Plantation	SMC works	Boundary wall/Fencing	Total	Plantation	SMC works	Fencing	Total
2018-19	461521	984665	31749	1477935	461521	984665	31749	1477935
2019-	153258	27297	-	180555	153258	27297	-	180555

20								
2020-21	105859	-	64019	169878	105859	-	64019	169878
Total	720638	1011962	95768	1828368	720638	1011962	95768	1828368

4. Results for asset sites

4.1. Site 1- Pakki Diwar 6 Ft at Deepola, Jamua Ramgarh range

At Deepola in Jamua Ramgarh range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 6 ft and 389 m length as per MB. Also, in actual 389 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 6 Ft. Construction work appeared to be average and useful. The wall was broken at three places. It should be repaired in order to get the objective of wall construction fulfilled. Also, cracks were reported in the wall.The construction of Pakki Diwar 6 ft helped in preventing encroachment. GPS location of this area was 27.028708 N and 76.041081 E. The expenditure incurred for constructing this wall was Rs. 1181104 (as per MB).

Site 2- Pakki Diwar 6 Ft at Booj, Jamua Ramgarh range

At Booj in Jamua Ramgarh range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 300 m length as per MB. Also, in actual 300 m pakki diwar was constructed at the site. The width of the diwar was 0.60 meter & height was 6 Ft. Construction work appeared to be average and useful. Coping & pointing work of wall was completed. The construction of Pakki Diwar 6 ft helped in preventing encroachment. GPS location of this area was 26.950497 N and 70.075107 E. The expenditure incurred for constructing this wall was Rs. 808086 (as per MB).

Site 3- Pakki Diwar 6 Ft at Mehangi, Raisar range

The site visited under asset created under CAMPA was Pakki Diwar 6 Ft at Mehangi at Raisar range. The site was visited, surveyed, GPS co-ordinates recorded and photographed taken along with the information was filled up in tool 3.

At Mehangi in Raisar range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 6 ft and 460 m length as per MB. Also, in actual 460 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 6 Ft. Construction work appeared to be good and useful. Coping & pointing work of wall was completed. The quality of construction was good. The construction of Pakki Diwar 6 ft helped in preventing encroachment. GPS location of this area was 27.15406 N and 76.162275 E. The expenditure incurred for constructing this wall was Rs. 11,85,439 (as per MB) against the estimated budget of Rs. 14,50,000

Measuring Pakki diwar 6 Ft. at Mehangi

Site 4- Pakki Diwar 6 Ft at Narayani Petrol pump se Safeda Ka Bag Naka Gola Ka Bas, Ajabgarh range

At Narayani Petrol pump se Safeda ka Bag Naka Gola Ka Bas in Ajabgarh range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 6 ft and 460 m length as per MB. But in actual 530 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 6 Ft. Construction work appeared to be average and useful. Coping & pointing work of wall was completed. The quality of construction was average. The construction of Pakki Diwar 6 ft helped in preventing encroachment.The wall was constructed in two phases. The first phase was built in the year 2018-19 with the size of 355 RMT & again in the year 2019-20 175 RMT wall was constructed. Hence, at present 530 RMT pakki diwar 6 ft was made instead of 460 RMT. GPS location of this area was 27.129005 N and 76.345158 E. The expenditure incurred for constructing this wall was Rs. 1496021 (Ist phase-Rs. 1068428 & IInd phase- Rs.427593) (as per MB) against the estimated budget of Rs. 14,50,000

Pakki diwar 4Ft. at Gola Ka Bas

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Jaipur WL division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Dantali	NFL	4.17	76.30	8
2	Papad	ANR	50	82.00	9

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction	Rating of Crack	Rating of quality of workmanship
1	Pakki Diwar 6 ft	Deepola	Average	4	4	4
2	Pakki Diwar 6 ft	Booj	Average	5	5	5
3	Pakki Diwar 6 ft	Mehangi	Good	8	7	8
4	Pakki Diwar 6 ft	Narayani Petrol pump se Safeda ka Bag Naka Gola Ka Bas	Average	6	7	7

Jaipur Zoo

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Jaipur Zoo Forest Division. This Forest Division with 3 Forest Range namely Office Campus, Jaipur Pradeshik & Nahargarh Biological Park has territorial jurisdiction over the entire Jaipur District.

Figure : Location of Jaipur district, Rajasthan

2.1. Selected Asset Sites for Evaluation

The selected asset sites of Jaipur Zoo Forest Division were as given in table 1

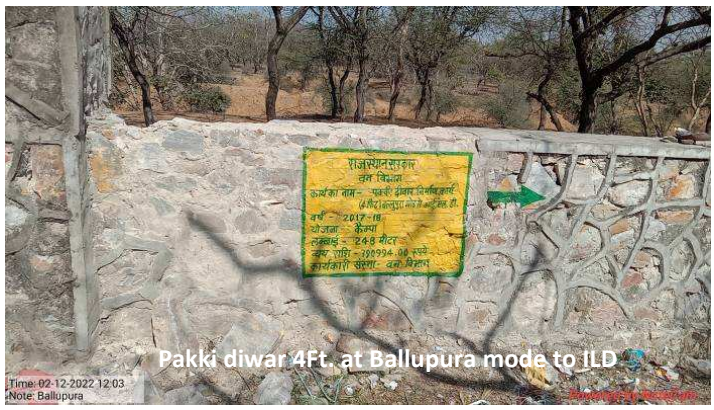
Table 1: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Jaipur Pradeshik	Ballupura mode to ILD	2017-18	Pakki Diwar 4 ft
Office campus	Jaipur Zoo	2017-18	Forest Chowki
Jaipur Pradeshik	Kusth Ashram	2018-19	Pakki Diwar 6 ft
Jaipur Pradeshik	Jaisinghpura khor	2018-19	Pakki Diwar 6 ft
Jaipur Pradeshik	Amargarh Shakti Colony to nahar singh baba road	2018-19	Pakki Diwar 6 ft
Nahargarh Biological Park Jaipur	Near Pappu Ghar	2019-20	Pakki Diwar 6 ft
Jaipur Pradeshik	Rishi Gallav nagar	2019-20	Pakki Diwar 6 ft
Jaipur Pradeshik	Muhana	2017-18	Pakki Diwar 6 ft

3. Results for asset sites

3.1. Site 1- Pakki Diwar 4 Ft at Ballupura mode to ILD , Jaipur Pradeshik

At Ballupura mode to ILD in Jaipur Pradeshik range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 248 m length as per MB. Also, in actual 248 m pakki diwar was constructed at the site. Construction work appeared to be good and the infrastructure was useful. The finishing of pakki diwar was proper. Pointing & Coping of pakki diwar was done. GPS location of this area was 26.907236 N and 75.876616 E. The expenditure incurred for constructing this wall was Rs. 790944 (as per MB) against the estimated budget of Rs. 791000.



Pakki diwar 4Ft. at Ballupura mode to ILD

Site 2- Forest Chowki at Jaipur Zoo

Forest Chowki at Jaipur Zoo has been evaluated. The Forest Chowki was constructed in the year 2017-18. Site selection for construction of Forest Chowki was adequate. Construction work appeared to be good and useful. One room constructed in Forest Chowki under CAMPA was in use & properly maintained. The room constructed in Forest Chowki under CAMPA was used for various office works. GPS location of this area was 26° 54'43"N and 75° 49'22"E. The expenditure incurred for constructing the Forest Chowki was Rs. 358000 (as per MB) against the estimated budget of Rs. 357188.

Forest Chowki

Site 3- Pakki Diwar 6 Ft at Kusth Ashram , Jaipur Pradeshik Range

At Kusth Ashram in Jaipur Pradeshik range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 185 m length as per MB. Also, in actual 185 m pakki diwar was constructed at the site. Construction work appeared to be average and the infrastructure was useful. The finishing of pakki diwar was proper. Pointing & Coping of pakki diwar was done. GPS location of this area was 26.894692 N and 75.868554 E. The expenditure incurred for constructing this wall was Rs. 711881 (as per MB) against the estimated budget of Rs. 1474000.

Pakki diwar 6Ft.at Kusth Ashram

Site 4- Pakki Diwar 6 Ft at Jaisinghpura khor , Jaipur Pradeshik Range

Measuring pakki diwar 6Ft.

At Jaisinghpura khor in Jaipur Pradeshik range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 47 m length as per MB. Also, in actual 47 m pakki diwar was constructed at the site. Construction work appeared to be average and the infrastructure was useful in protecting forest area. The finishing of pakki diwar was proper. Pointing & Coping of pakki diwar was done. GPS location of this area was 26.940512 N and 75.870981 E. The expenditure incurred for constructing this wall was Rs. 188736 (as per MB) against the estimated budget of Rs. 189000.

Site 5- Pakki Diwar 6 Ft at Amargarh Shakti Colony to nahar singh baba road, Jaipur Pradeshik Range

Measuring pakki diwar 6Ft.

At Amargarh Shakti colony to nahar singh baba road in Jaipur Pradeshik range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 320 m length as per MB. Also, in actual 320 m pakki diwar was constructed at the site. Construction work appeared to be average and the infrastructure was useful in protecting forest area. The wall was broken at a few places either due to heavy rain or by villagers. Finishing of pakki diwar was proper. Pointing & Coping of pakki diwar was done. GPS location of this area was 26.905864 N and 75.847455 E. The expenditure incurred for constructing this wall was Rs. 1256482 (as per MB) against the estimated budget of Rs. 1407000.

Record keeping: The documents such as plan and MB were shown to the study team.

Site 6- Pakki Diwar 6 Ft Pappu ke Ghar ke pas, Nahargarh Biological Park Jaipur Range

At Pappu ke Ghar ke pas at Nahargarh Biological Park, Jaipur range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 6 ft and 25 m length as per MB. Also, in actual 25 m pakki diwar was constructed at the site. Construction work appeared to be average and the infrastructure was useful in protecting forest area. The wall was broken at a few places due to rain. Finishing of pakki diwar was proper. Pointing & Coping of pakki diwar was done. GPS location of this area was 27.020517 N

and 75.860314 E. The expenditure incurred for constructing this wall was Rs. 89217 (as per MB) against the estimated budget of Rs. 91250.

Pakki diwar 6Ft. near to Pappu

Site 7- Pakki Diwar 6 Ft at Rishi Gallav Nagar Jaipur Pradeshik

At Rishi Gallav nagar in Jaipur Pradeshik range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 6 ft and 22 m length as per MB. Also, in actual 22 m pakki diwar was constructed at the site. Construction work appeared to be average and the infrastructure was useful in protecting forest area. The wall was intact and found in good condition. GPS location of this area was 26.922357 N and 75.848858 E. The expenditure incurred for constructing this wall was Rs. 104224 (as per MB) against the estimated budget of Rs. 104300.

Measuring pakki diwar 6Ft.

Site 8- Pakki Diwar 6 Ft at Muhana Jaipur Pradeshik

At Muhana in Jaipur Pradeshik range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 6 ft and 1000 m length as per MB. Coping & Pointing work was done in the pakki diwar. Also, in actual 1000 m pakki diwar was constructed at the site. Construction work appeared to be average and the infrastructure was useful in protecting forest area. The wall was submerged in the water of Nevtada dam from both sides. Boundary wall was not clearly seen because entire boundary wall is covered with Juliflora. GPS location of this area was 26.798367 N and 75.715198 E. The expenditure incurred for constructing this wall was Rs. (as per MB) against the estimated budget of Rs. 104300.

Pakki diwar 6 Ft. submerged in water

4. Overall assessment

Table 2: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 4 ft	Ballupura mod to ILD	Good	7
2	Pakki Diwar 6 ft	Kusth Ashram	Average	6
3	Pakki Diwar 6 ft	Jaisinghpura khor	Average	7
4	Pakki Diwar 6 ft	Amargarh Shakti colony to nahar singh baba road	Average	5
5	Pakki Diwar 6 ft	Near Pappu Ghar	Average	7
6	Pakki Diwar 6 ft	Rishi Gallav Nagar	Average	7
7	Pakki Diwar 6 ft	Muhana	Average	6
8	Forest Chowki	Jaipur Zoo	Good	8

Jhunjhunu

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Jhunjhunu Forest Division. This Forest Division with 5 Forest Ranges namely Khetadi,Udaipurwati, Chirani, Jhunjhunu & Navalgarh has territorial jurisdiction over the entire Jhunjhunu District.

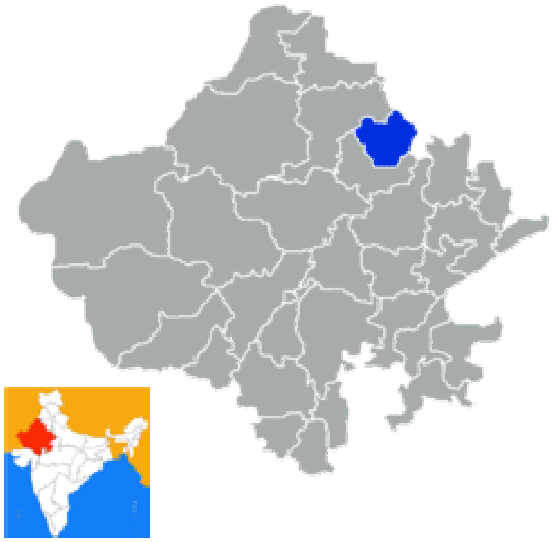


Fig: Location of Jhunjhunu district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Jhunjhunu Forest Division for evaluation were as given in table-1.

Table-1: Selected plantation site for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Khetri	Chirani II	2017-18	50	DFL	100%
Udaipurwati	Indira Colony Kankariya	2017-18	50	DFL	10%
Khetri	Bagora	2017-18	50	ANR	100%
Udaipurwati	Kot	2018-19	50	ANR	10%
Udaipurwati	Kakrana	2018-19	50	DFL	100%
Udaipurwati	Chapoli III	2019-20	50	DFL	10%
Nawalgarh	Chirana	2019-20	50	ANR	100%

2.2. Selected Asset Sites for Evaluation

The selected asset created under CAMPA of Jhunjhunu Forest Division was as given in table 2.

Table-2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Jhunjhunu	Beed Jhunjhunu	2017-18	Pakki Diwar 4 ft
Udaipurwati	Nadi Nirman (PT) Unchha Papada Nala	2019-20	Anicut Type II
Nawalgarh	Nadi Nirman Rampura	2019-20	Anicut Type II
Jhunjhunu	Nari nirman near Bijli pole-4	2019-20	Anicut Type III
Jhunjhunu	Beed Jhunjhunu	2019-20	Forest Chowki

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1 Site 1- Chirani II site in Khetri range -N 28.014464 and E 74.849419

The selected plantation was carried out on 50 hac. of land at Chirani II in Khetri range during the year 2017-18. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 100% evaluation. The soil was black clayey with morar.

3.1.2. Health & Damages of Plantation: The growth of planted seedlings at the site was good. Grazing by stray animals & cattle and destruction by Neel gai, wild boars and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average.

3.1.3. Natural Vegetation and Regeneration: Jaal, Kumtha Ronj, & Desi babool were the plants found grown naturally in this area. The growth of the plants was good.

3.1.4. Regeneration through seeds sowing: Seeds of species *Kumtha* were sown in as well as along the trenches and on the thanwlas. The result of sowing was excellent. Plants from seed sowing were widely seen on trenches & thanwalas.

3.1.5. Protection Work: The selected DFL model plantation had loose stone fencing of 86 RMT (0.8+.60/2 X 1.2) & ditch fencing of 2136 RMT (1.5+.90/2 X 1.2). Present condition of loose stone fencing & ditch fencing was average. Silting was reported in some parts of ditch fencing.

3.1.6. Soil and Water Conservation Measures: There are 15000 RMT (Width & depth -0.45 meters) Contour trenches & PCT/Nadi (600 cu.m) in the form of water harvesting structures present in the entire plantation area.

3.1.7. Observations Recorded: Under this model, 400 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 60.7% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was excellent. A total of 10000 plants comprising nine species were planted in the 50 hectare plantation area.

Measurement of each of the survived species had been taken on randomly selected plants. The measurement has been conducted at various places of the plantation area to get proper average measurement of collar girth & height.

Table 3.2: Status of Planted Seedlings at the site- Chirani II Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Zizyphus mauritiana (Ber)	1689	893	796	52.87	100	74
Dalbergia sissoo (Shisham)	493		493	0.00	0	0
Acacia leucopholea (Ronj)	12782	9109	3673	71.26	125	91
Acacia nilotica (Desi babool)	1169		1169	0.00	0	0
Holoptelea integrifolia (Churel)	1013	541	472	53.41	98	65
Azadirachta indica (Neem)	839	488	351	58.16	99	65
Ficus bengalensis (bargad)	8	6	2	75.00		
Ficus religiosa (Pipal)	7	6	1	85.71		
Acacia tortilis (Totalis)	2000	1097	903	54.85	173	115
Total	20000	12140	7860	60.70	125	90

3.1.8. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 50 hec as per kml map.

3.2.1 Site 2- Indira Colony Kankariya site in Udaipurwati range -N 27^{0}48'24" and E 75^{0}40'37"

The selected plantation was carried out on 50 hac. of land at Indira Colony Kankariya in Udaipurwati range during the year 2017-18. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 10% evaluation. The soil was domat clayey.

3.2.2. Health & Damages of Plantation: The growth of planted seedlings at the site was good. Grazing by stray animals & cattle's and destruction by Neel gai, wild boars and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.

3.2.3. Natural Vegetation and Regeneration: Jaal & Desi babool were the plants found grown naturally in this area. The growth of the plants was good.

3.2.4. Regeneration through seeds sowing: Seeds of species *Kumtha, Ronj, Desi babool* were sown in as well as along the trenches and on the thanwlas. The result of sowing was good. Plants from seed sowing were widely seen on trenches & thanwalas.

3.2.5. Protection Work: The selected DFL model plantation had ditch fencing of 3290 RMT (1.5+.90/2 X 1.2). Present condition of ditch fencing was average. Ditch fencing was partially effective in controlling the biotic pressure.

3.2.6. Soil and Water Conservation Measures: There are 10790 RMT (Width & depth -0.45 meter) Contour trenches in the form of water harvesting structures present in the entire plantation area.

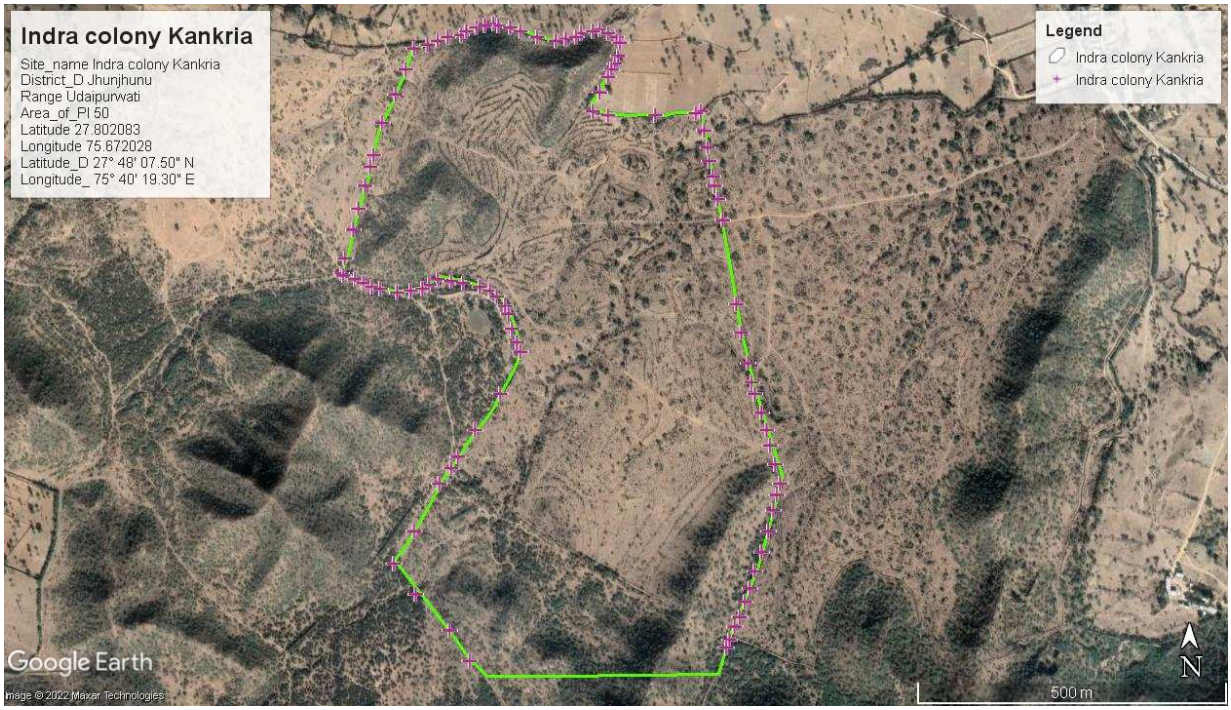
3.2.7. Observations Recorded: Under this model, 600 plants per hectare were planted during plantation. **Based on for as 10 percent *counting, plants survival was 56.9% at the site.*** *Plant species collar girth & height was also* measured. The growth of planted plants was good. A total of 10000 plants comprising eleven species were planted in the 50 hectare plantation area.

Measurement of each of the survived species had been taken on randomly selected plants. The measurement has been conducted at various places of the plantation area to get proper average measurement of collar girth & height.

Table 3.4: Status of Planted Seedlings at the site- Indira Colony Kankariya Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Dalbergia sissoo (Shisham)	*120*	*9*		*7.50*		
Tecomella undulata (Rohida)	*150*			*0.00*	*0*	*0*
Butea monosperma (Chila)	*150*			*0.00*	*0*	*0*
Bauhinia racemosa Lam.(Jheenjha)	*250*	*13*		*5.20*		
Acacia nilotica (Desi babool)	*4500*	*212*		*4.71*	*147*	*78*
Zizyphus mauritiana (Ber)	*4500*	*319*		*7.09*	*152*	*86*
Acacia leucopholea (Ronj)	*14260*	*623*		*4.37*	*120*	*26*
Prosopis juliflora (Khejri)	*500*	*93*		*18.60*	*155*	*83*
Holoptelea integrifolia (Churel)	*4500*	*342*		*7.60*	*25*	
Azadirachta indica (Neem)	*70*	*27*		*38.57*	*137*	*65*
Acacia tortilis (Totalis)	*980*	*69*		*7.04*		
Others	*20*			*0.00*	*0*	*0*
Total	*30000*	*1707*	*28293*	*56.90*	*82*	*38*

3.2.8. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 50 hec as per kml map



3.3.1. Site 3- Bagora site in Udaipurwati range -N 27.725148 and E 75.491261

The selected plantation was carried out on 50 hac. of land at Bagora in Udaipurwati range during the year 2017-18. The activities were done under the Assisted Natural **Regeneration** (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was domat clayey.

3.3.2. Health & Damages of Plantation: The growth of planted seedlings at the site was good. Grazing by stray animals & cattle and destruction by Neel gai, wild boars and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average.

3.3.3. Natural Vegetation and Regeneration: Neem, Kumtha, Gageran, Dhonk & Churail were the plants found grown naturally in this area. The growth of the plants was good.

3.3.4. Regeneration through seeds sowing: Seeds of species *Kumatha* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good on trenches.**

3.3.5. Protection Work: The selected ANR model plantation had loose stone fencing of 938 RMT & ditch fencing of 1433 RMT. Present condition of fencing was average.

3.3.6. Soil and Water Conservation Measures: There are 10000 RMT Contour trenches & loose stone Checkdam (400 cu.m) in the form of water harvesting structures present in the entire plantation area.

3.3.7. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 54.25% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising seven species were planted in the 50 hectare plantation area.

Measurement of each of the survived species had been taken on randomly selected plants. The measurement has been conducted at various places of the plantation area to get proper average measurement of collar girth & height.

Table 3.6: Status of Planted Seedlings at the site-Bagora Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia leucopholea (Ronj)	4500	2223	2277	49.40	96	67
Holoptelea integrifolia (Churel)	1500	973	527	64.87	96	68
Dalbergia sissoo (Shisham)	500	306	194	61.20	99	69
Acacia nilotica (Desi babool)	1500	804	696	53.60	94	69
Zizyphus mauritiana (Ber)	1000	630	370	63.00	93	68
Prosopis juliflora (Khejri)	200	101	99	50.50	95	69
Tecomella undulata (Rohida)	500	235	265	47.00	95	67
Others	300	153	147	51.00	90	65
Total	10000	5425	4575	54.25	95	68

3.3.8. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.

3.4.1. Site 4- Kot site in Udaipurwati range -N 27^{0}41'3" and E 75^{0}27'23"

The selected plantation was carried out on 50 hac. of land at Kot in Udaipurwati range during the year 2018-19. The activities were done under the Assisted Natural **Regeneration** (ANR) model. The site was a forest land and selected for 10% evaluation. The soil was clayey domat.

3.4.2. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boars and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average.

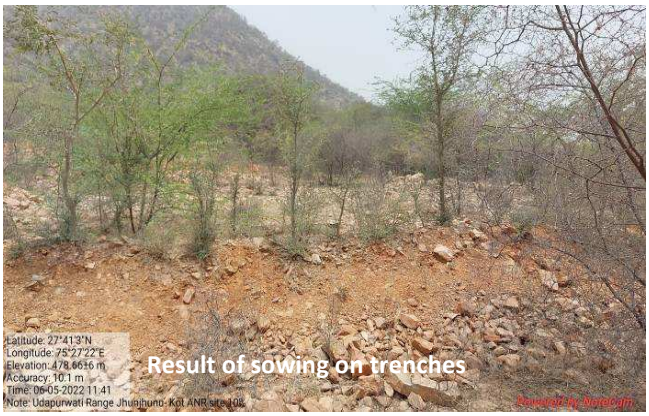
3.4.3. Natural Vegetation and Regeneration: Desi babool, Churel, Kumtha & Neem were the plants found grown naturally in this area. The growth of the plants was good.

3.4.4. Regeneration through seeds sowing: Seeds of species *Kumatha, Desi babool and Ronj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good on trenches.**

3.4.5. Protection Work: The selected ANR model plantation had loose stone fencing of 2820 RMT & ditch fencing of 574 RMT. Present condition of loose stone fencing & ditch fencing was good.

3.4.6. Soil and Water Conservation Measures: There are 2700 RMT Contour trenches & loose stone check dams (565 cu.m) in the form of water harvesting structures present in the entire plantation area.

3.4.7. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 46.0% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising four species were planted in the 50 hectare plantation area.



Measurement of each of the survived species had been taken on randomly selected plants. The measurement has been conducted at various places of the plantation area to get proper average measurement of collar girth & height.

Table 3.8: Status of Planted Seedling at the site- Kot Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia leucopholea (Ronj)	7000	339		48.43	220	115
Holoptelea integrifolia (Churel)	1000	73		73.00	201	151
Azadirachta indica (Neem)	500	4		8.00	403	240
Acacia nilotica (Desi babool)	1000	44		44.00	214	150
Others	500			0.00	230	110
Total	10000	460	9540	46.00	254	153

3.4.8. GPS Location and KML file: The selected ANR model under CAMPA plantation site

measured 50 hec as per kml map.

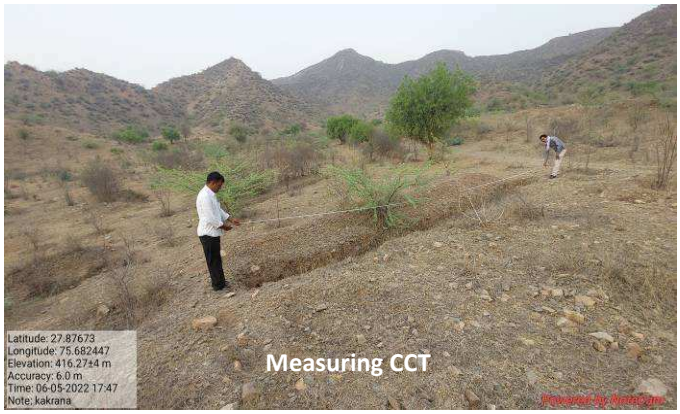
3.5.1. Site 5- Kakrana site in Udaipurwati range -N 27.876911 and E 75.682323

The selected plantation was carried out on 50 hac. of land at Kakrana in Udaipurwati range during the year 2018-19. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 100% evaluation. The soil was domat clayey.

3.5.2. Health & Damages of Plantation: The growth of planted seedlings at the site was good. Grazing by stray animals & cattle and destruction by Neel gai, wild boars and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.

3.5.3. Natural Vegetation and Regeneration: Totalis, Jaal, Desi babool & Bair were the plants found grown naturally in this area. The growth of the plant was good.

3.5.4. Regeneration through seeds sowing: Seeds of species *Kumtha* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**



3.5.5. Protection Work: The selected DFL model plantation had loose stone fencing of 2140 RMT, barbed wire fencing of 1080 RMT & ditch fencing of 575 RMT. Present condition of loose stone fencing & ditch fencing was good. However, silting was reported in some part of ditch fencing.

3.5.6. Soil and Water Conservation Measures: There are 3350 RMT (Width & depth - 0.45 meter) Contour trenches & earthen check dam (2132 cu.m) in the form of water harvesting structures present in the entire plantation area.

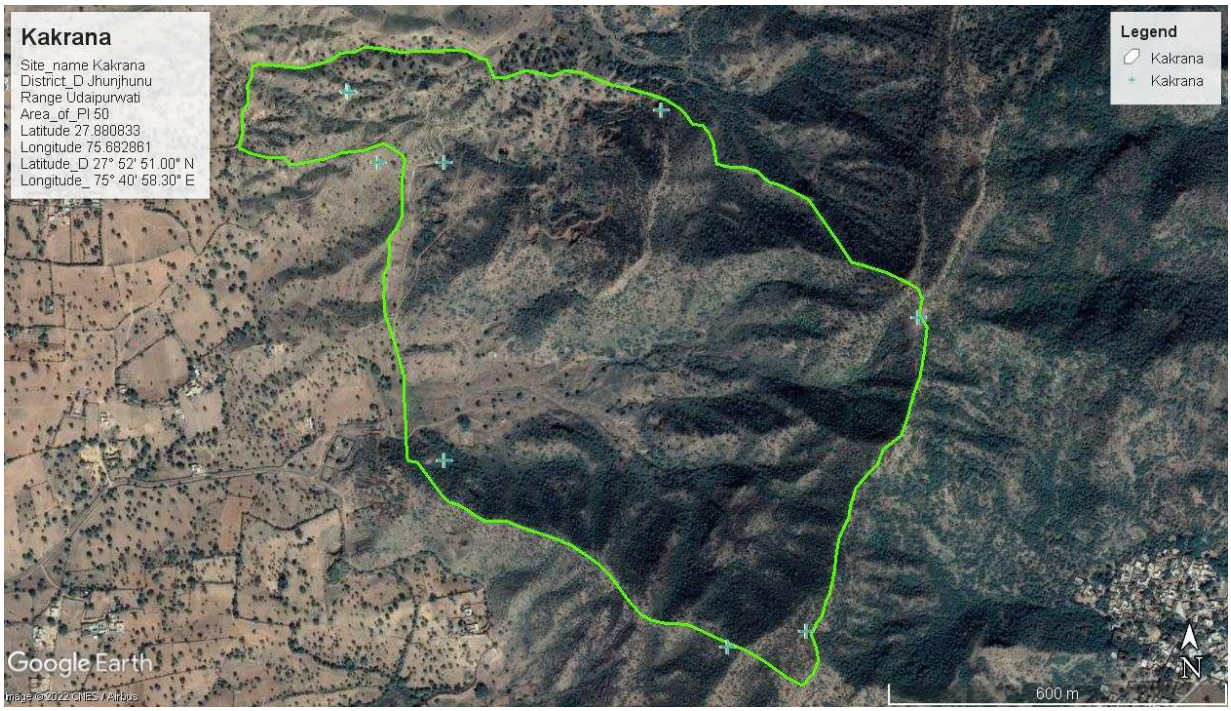
3.5.7. Observations Recorded: Under this model, 600 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 62.67% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was good. A total of 30000 plants comprising five species were planted in the 50 hectare plantation area.

Measurement of each of the survived species had been taken on randomly selected plants. The measurement has been conducted at various places of the plantation area to get proper average measurement of collar girth & height.

Table 3.10: Status of Planted Seedlings at the site-Kakrana Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia leucopholea (Ronj)	18100	10000	8100	55.25	144	97
Acacia nilotica (Desi babool)	4500	3800	700	84.44	149	86
Zizyphus mauritiana (Ber)	2000	1200	800	60.00	98	72
Acacia tortilis (Totalis)	4500	3800	700	84.44	159	108
Holoptelea integrifolia (Churel)	900	0	900	0.00	0	0
Total	30000	18800	11200	62.67	145	95

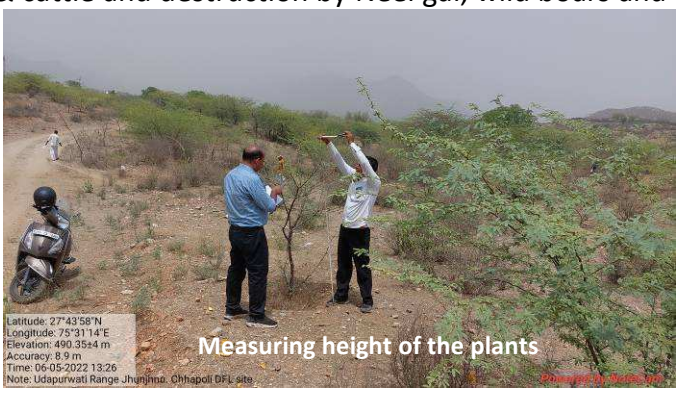
3.5.8. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 50 hec as per kml map.



3.6.1. Site 6- Chapoli III site in Udaipurwati range -N 27.876911 and E 75.682323

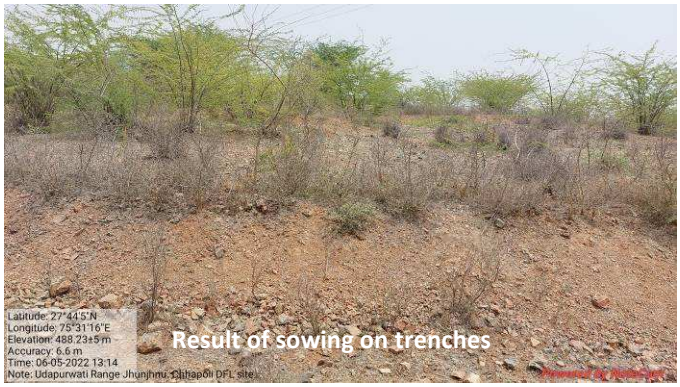
The selected plantation was carried out on 50 hac. of land at Chapoli III in Udaipurwati range during the year 2019-20. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 10% evaluation. The soil was rocky.

3.6.2. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boars and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.



3.6.3. Natural Vegetation and Regeneration: Gageran, Juliflora & Bair were the plants found grown naturally in this area. The growth of the plant was good.

3.6.4. Regeneration through seeds sowing: Seeds of species *Kumtha, Desi babool, Ber & Ronj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**



3.6.5. Protection Work: The selected DFL model plantation had loose stone fencing of 726.60 RMT & ditch fencing of 3150 RMT. Present condition of loose stone fencing & ditch fencing was average.

3.6.6. Soil and Water Conservation Measures: There are 6910 RMT Contour trenches in the form of water harvesting structures present in the entire plantation area.

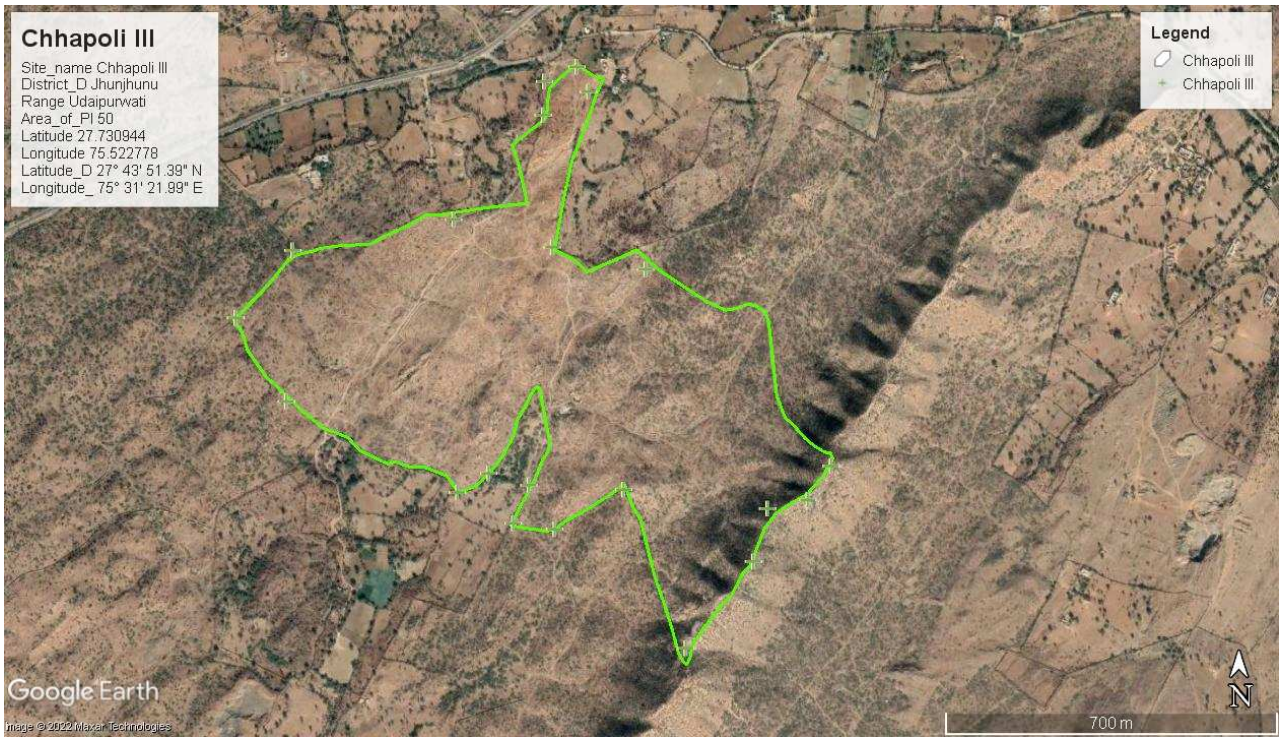
3.6.7. Observations Recorded: Under this model, 600 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 45.5% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was satisfactory. A total of 30000 plants comprising five species were planted in the 50 hectare plantation area.

Measurement of each of the survived species had been taken on randomly selected plants. The measurement has been conducted at various places of the plantation area to get proper average measurement of collar girth & height.

Table 3.12: Status of Planted Seedlings at the site-Chapoli III Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia leucopholea (Ronj)	18400	671		36.47	215	150
Acacia nilotica (Desi babool)	4600	227		49.35	218	150
Holoptelea integrifolia (Churel)	2000	123		61.50	70	7
Zizyphus mauritiana (Ber)	4500	336		74.67	135	80
Bauhinia racemosa Lam.(Jheenjha)	500	9		18.00		
Total	30000	1366	28634	45.53	160	97

3.6.8. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 50 hec as per kml map.



3.7.1. Site 7- Chirana site in Nawalgarh range -N 27. 699857 and E 75.406324

The selected plantation was carried out on 50 hac. of land at Chirana in Nawalgarh range during the year 2019-20. The activities were done under the Assisted Natural **Regeneration** (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was rocky.

3.7.2. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boars and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average.

3.7.3. Natural Vegetation and Regeneration: Salar & Gundi were the plants found grown naturally in this area. The growth of the plants was good.

3.7.4. Regeneration through seeds sowing: Seeds of species *Kumatha, Desi babool and Bair* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good on trenches.**

3.7.5. Protection Work: The selected ANR model plantation had loose stone fencing of 2474 RMT, ditch fencing of 230 RMT & barbed wire fencing of 148 RMT. Present condition of loose stone fencing & ditch fencing was good.

3.7.6. Soil and Water Conservation Measures: There are 8000 RMT Contour trenches, 612.92 cu.m loose stone checkdam & 1500 RMT dykes in the form of water harvesting structures present in the entire plantation area.

3.7.7. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 45.52% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising four species were planted in the 50 hectare plantation area.

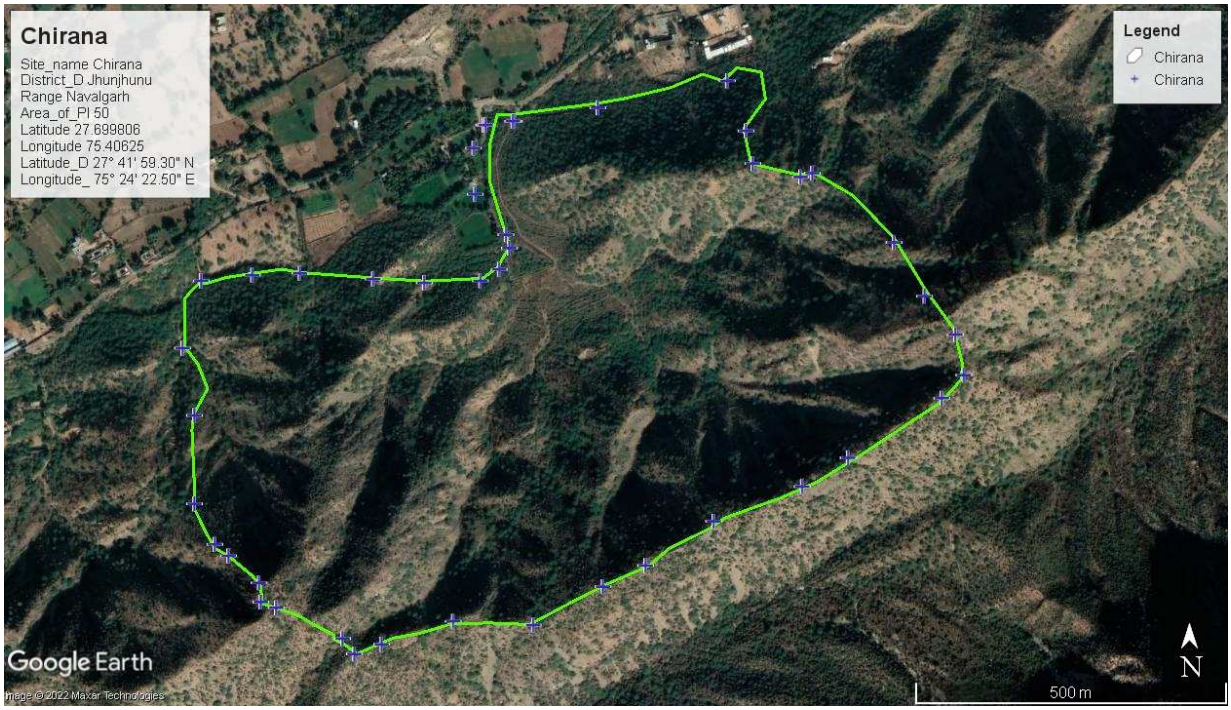
Measurement of each of the survived species had been taken on randomly selected plants. The measurement has been conducted at various places of the plantation area to get proper average measurement of collar girth & height.

Table 3.14: Status of Planted Seedlings at the site- Chirana Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Azadirachta indica (Neem	70	152	548	21.71	109	75
Holoptelea integrifolia	4500	2200	2300	48.89	105	76

(Churel)						
Acacia leucopholea (Ronj)	3000	1200	1800	40.00	110	78
Zizyphus mauritiana (Ber)	1800	1000	800	55.56	99	65
Total	10000	4552	5448	45.52	105	74

3.7.8. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.



4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft at Beed Jhunjhunu, Jhunjhunu Range

At Beed Jhunjhunu in Jhunjhunu range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 2250 m length as per MB. Also, in actual 2250 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meters. Construction work appeared to be good and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protect plantation site. GPS location of this area was 28.169158 N and 75.43168 E. The expenditure incurred for constructing this wall was Rs. 53.99 lac (as per MB) against the estimated cost of Rs. 54.00 lac.

Site 2-Nadi Nirman at Uccha Papada Nala, Udaipurwati Range

At Uccha Papada Nala in Udaipurwati, Nadi Nirman has been evaluated. The Nadi was constructed in the year 2019-20. The length of Nadi was 9.2 meter; breadth 3 meter was constructed at the site. Construction work appeared to be good and useful. Water was not available in the Nadi at the time of visit. However, water was available in the Nadi up to March. The water was used by wildlife for drinking. It also helps in soil & moisture conservation in the nearby area. Water availability level in wells & tubewell increased in the nearby area. Thus, construction of Nadi improves ground water level & local tubewell get recharged in the nearby area. GPS location of this area was 27°42'18" N and 75°29'28"E. The expenditure incurred for constructing the Nadi was Rs. (as per MB) against the estimated budget of Rs 3.75 lac.

Site 3- Nadi Nirman at Rampura, Nawalgarh Range

At Rampura in Nawalgarh, Nadi Nirman has been evaluated. The Nadi was constructed in the year 2019-20. Construction work appeared to be average and useful. Water was not available in the Nadi at the time of visit. Soil erosion was reported near extension wall. Also crack was reported in headwall. Silting was reported in the structure. Water falls over the headwall due to silting. GPS location of this area was 27.68813N and 75.378498 E. The expenditure incurred for constructing the Nadi was Rs. 385900 (as per MB) against the estimated budget of Rs 385900.

Site 4- Nadi Nirman near electricity pole 4, Jhunjhunu Range

Nadi Nirman near electricity pole 4 in Jhunjhunu range has been evaluated. The Nadi was constructed in the year 2019-20. The length of Nadi was 255 RMT; breadth 3 meter was constructed at the site. Construction work appeared to be good and useful. GPS location of this area was 28.162236 N and 75.431875 E. The expenditure incurred

for constructing the Nadi was Rs. (as per MB) against the estimated budget of Rs 6.0 lacs.

Site 5- Forest Chowki at Beed Jhunjhunu, Jhunjhunu range

Forest Chowki at Beed Jhunjhunu

Forest Chowki at Beed Jhunjhunu site in Jhunjhunu range has been evaluated. The Forest Chowki was constructed in the year 2019-20. Site selection for construction of Forest Chowki was adequate and useful for the staff. Construction work appeared to be good and useful. The construction work under Forest Chowki was 02 rooms & bathroom. The Forest Chowki created under CAMPA was in use & was properly maintained. GPS location of this area was 28.148193 N and 75.424666 E. The expenditure incurred for constructing the Forest Chowki was 5.44 lacs (as per MB) against the estimated budget of 5.50 lacs.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Jhunjhunu division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1.	Chirani II	DFL	50	60.70	7
2.	Indira Colony Kankariya	DFL	50	56.9	6
3.	Bagora	ANR	50	54.24	6
4.	Kot	ANR	50	46.0	5
5.	Kakrana	DFL	50	62.67	7
6.	Chapoli III	DFL	50	45.53	5
7.	Chirana	ANR	50	45.52	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of Forest Chowki & Nadi Nirman created under CAMPA

Sl. No.	Items	Name of the site	Rating of Quality of Construction	Quality of Construction
1	Forest Chowki	Beed Jhunjhunu	8	Good
2	Nadi Nirman	Uccha Paada	9	Good
3	Nadi Nirman	Rampura	6	Average
4	Nadi Nirman	Near electricity pole 4	6	Average
5	Pakki Diwar 4 ft	Beed Jhunjhunu	7	Good

Dholpur

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Dholpur Forest Division. This Forest Division with 4 Forest Ranges namely Sarmathura, Baadi, Van Vihar & Dholpur has territorial jurisdiction over the entire Dholpur District.

Figure: Location of Dholapur district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Dholpur Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Sarmathura	Thane Ka Pura II	2017-18	50	ANR	100%
Sarmathura	Dhore Ka Dada	2019-20	50	ANR	10%
Van Vihar	Meenakhuri	2018-19	50	ANR	100%
Badi	Kala Patpara	2018-19	25	DFL	10%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Dholpur Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Dholpur	Near to Government ITI	2017-18	Pakki Diwar 4 ft
Dholpur	Bhurakheda A	2018-19	Pillars
Badi	Sikara	2019-20	Pakki Diwar 4 ft

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1- Thane Ka Pura II site in Sarmathura range -N 26. 49246 and E 77.481395

The selected plantation was carried out on 50 hac. of land at Thane Ka Pura II in Sarmathura range during the year 2017-18. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was rocky, murar & kankreet.

3.1.2. Treatment plan before sowing: The topography of the area was undulating. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was poor. It is reported excellent having fair amount of soil. The growth of planted seedlings is less than normal in the area having less soil coverage. Grazing by stray animals & cattle and destruction by Neel gai, wild boars & porcupine was reported at the site. Also, widely growth of termite, soil quality, attack by pest and scarcity of water obstruct the growth of planted seedling. The status of guarding/ fencing at the site was poor.

Result of sowing at the site

3.1.4. Species Planted: The selected tree species under plantation were 2. Seedlings of *Acacia nilotica* (desi babool), and Anogeissus pendula (Dhok) were planted.

In total 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

Loose stone wall at the site

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper, fair & suitable. The seedlings selected for plantation were Dhonk & Desi babool which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was poor.**

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: *Birbra*, Khair, Dhok, Ronj and Kumtha were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species Desi babool, *Kumatha, Ronj & Khair* were sown in as well as along the trenches, mud wall and on the thanwlas. There was good Growth on thanwalas, mud wall & trenches of seed sowing. **Hence, the result of sowing was good.**

Continuous Contour trench at the site

3.1.8. Protection Work: The selected ANR model plantation had loose stone fencing of 875 RMT& mud wall fencing of 1254 RMT. Present condition of fencing was poor. Loose stone fencing & mud wall fencing was not at all effective in controlling biotic pressure.

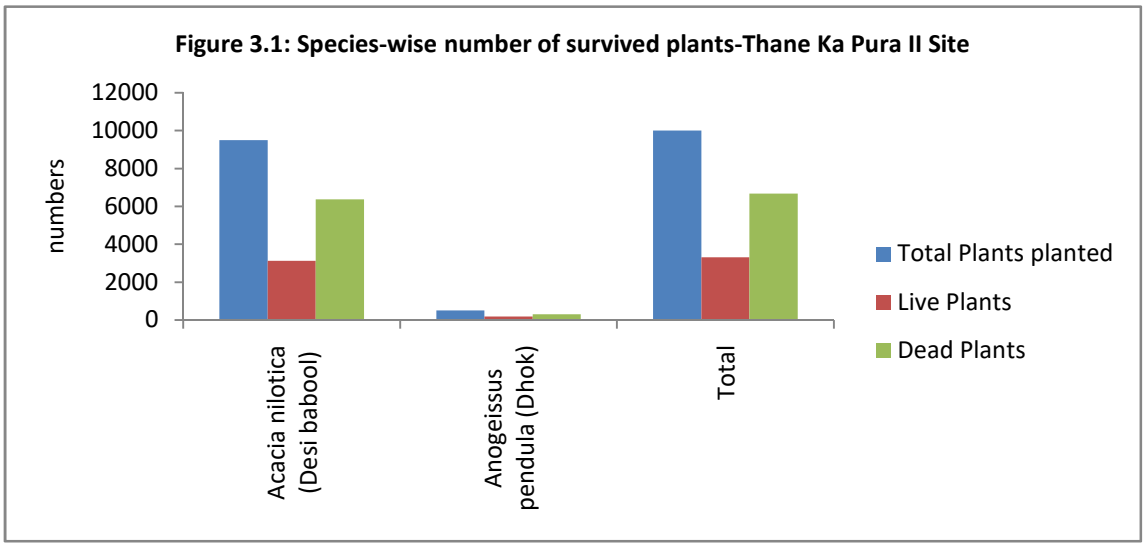
3.1.9. Soil and Water Conservation Measures: There are 20000 RMT Contour trenches & earthen check dams (3200 cu.cm) in the form of water harvesting structures present in the entire plantation area.

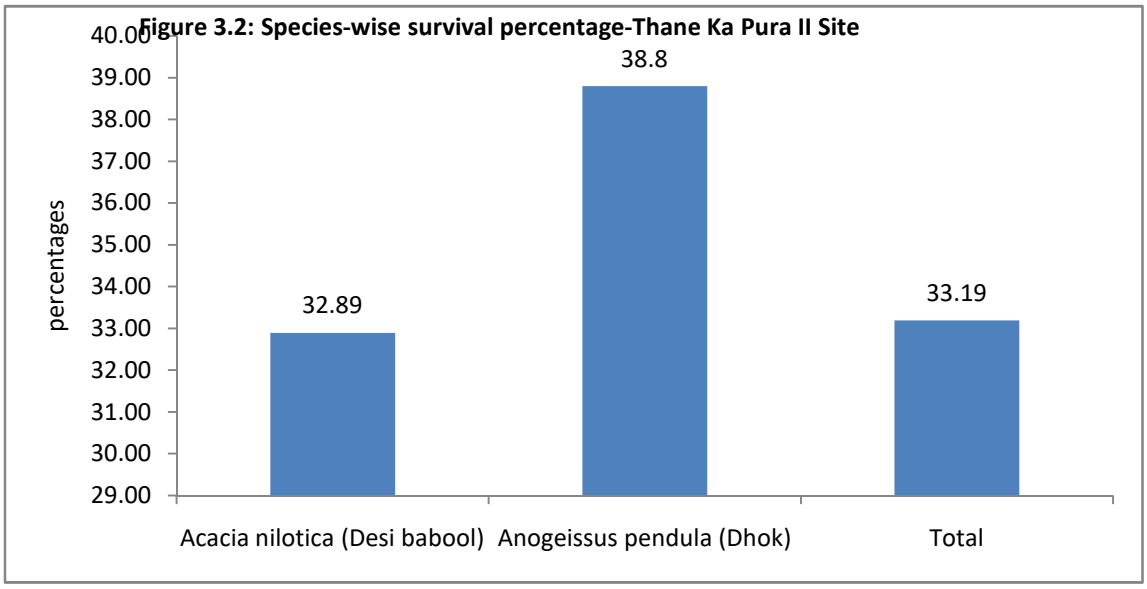
Growth of planted seedling

3.1.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 33.19% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was poor. A total of 10000 plants comprising two species were planted in the 50 hectare plantation area.

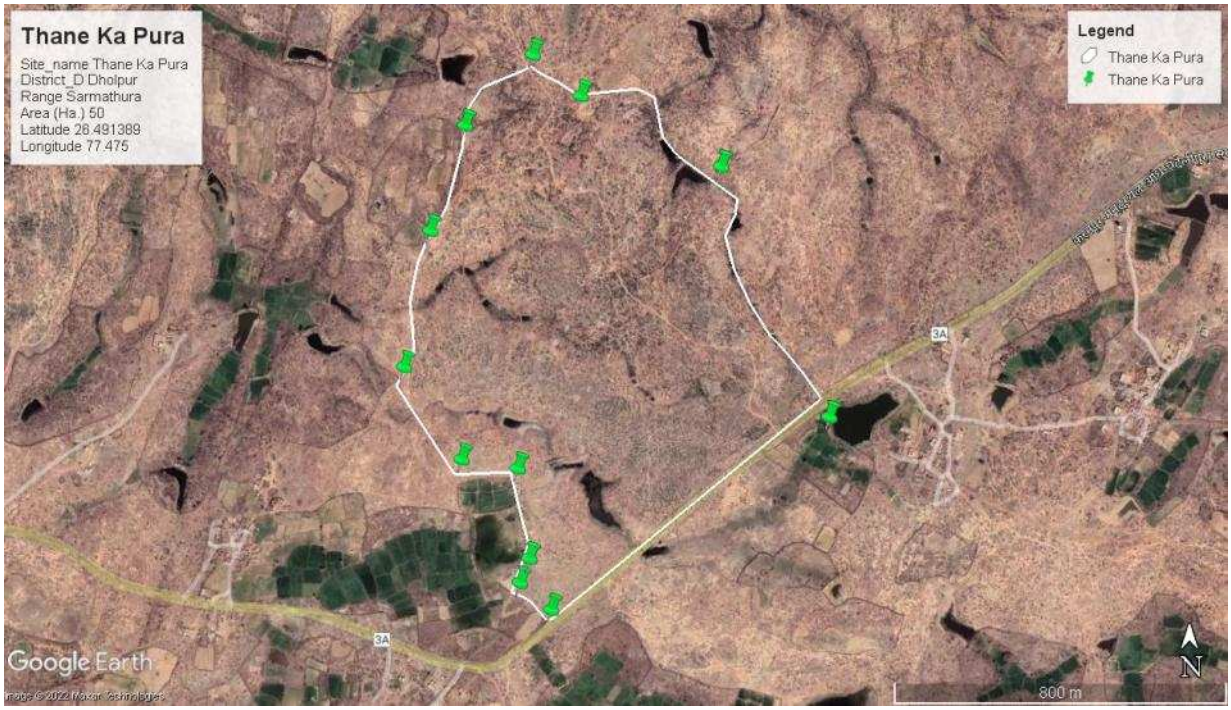
Table 3: Status of Planted Seedlings at the site- Thane Ka Pura II Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia nilotica (Desi babool)	9500	3125	6375	32.89	90.0	65.0
Anogeissus pendula (Dhok)	500	194	306	38.80	90.0	65.0
Total	10000	3319	6681	33.19	90.0	65.0





3.1.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.



3.1.12. Budget and expenditure

Table 3.1 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2016-17				1664200				1539655
2017-18				405150				360843
2018-19				162800				152316
2019-20				92250				92191
2020-21				92250				88572
Total				2416650				2233577

3.2.1. Site 2- Dhore Ka Dada in Sarmathura range - N 26.487281 and E 77.270274

The selected plantation was carried out on 50 ha of land at Dhore Ka Dada in Sarmathura range during the year 2019-20. The activities were done under the ANR model. The site was a forest land and selected for 10% evaluation. The soil was was Kankreet & murar.

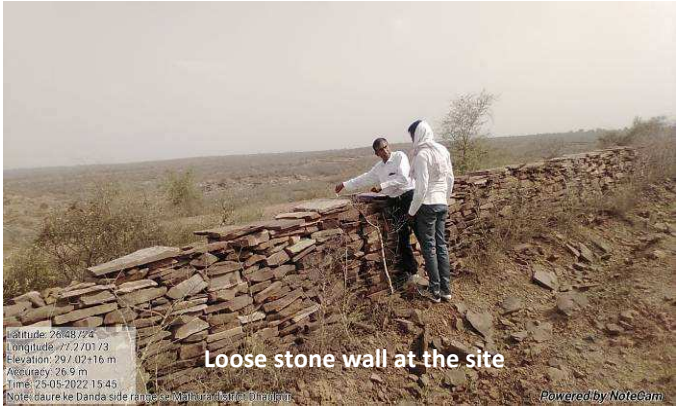
3.2.2. Treatment plan before sowing: The topography of the area was hilly & ravines. Hence, as per availability of soil digging of pits has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 ha of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boars and porcupine was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water obstruct the growth of planted seedling. The status of guarding/ fencing at the site was satisfactory.

3.2.4. Species Planted: The selected tree species under plantation were 12. Seedlings of *Acacia nilotica* (desi babool), Acacia catechu (Khair), Acacia leucopholea (Ronj), Zizyphus mauritiana (Ber), Holoptelea integrifolia (Churel), (Neem), Dalbergia sissoo (Shisham), Aegle marmelos (Bilpatra), Ficus bengalensis (bargad), Ficus religiosa (Pipal)), Ficus glornerata (Gular) and Annona squamosa (Sitafal) were planted.

A total of 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. Spacing between plants was reported 3 m. As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.



As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Bair,Chudail, Ronj & Desi babool which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. Hence, the site has species suitable to soil condition. The growth of survived plants was satisfactory.

3.2.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.2.6. Natural Vegetation and Regeneration: The area has been covered fully with vegetation due to this plantation. The growth of plants was good. Plants like Ronj, Chudail, Khair, Dhonk & GoyaKhair have been found grown naturally.

3.2.7. Regeneration through seeds sowing: Seeds of species Ronj, Kumtha, desi babool, Chudail and Khair were sown in as well as along the trenches, mud wall and on the thanwlas. The result of seed sowing was good. Plants from the seeds sown were widely seen in contour trenches & mud wall.

3.2.8. Protection Work: The selected ANR model plantation had loose stone fencing of 2256 RMT having width at the top-0.8 meter, width at the bottom-0.6 meter & height 1.2 meters. Present condition of loose stone fencing was excellent. Loose stone fencing was fully effective in controlling the biotic pressure. Also, 900 RMT mud dola fencing was reported at the site.

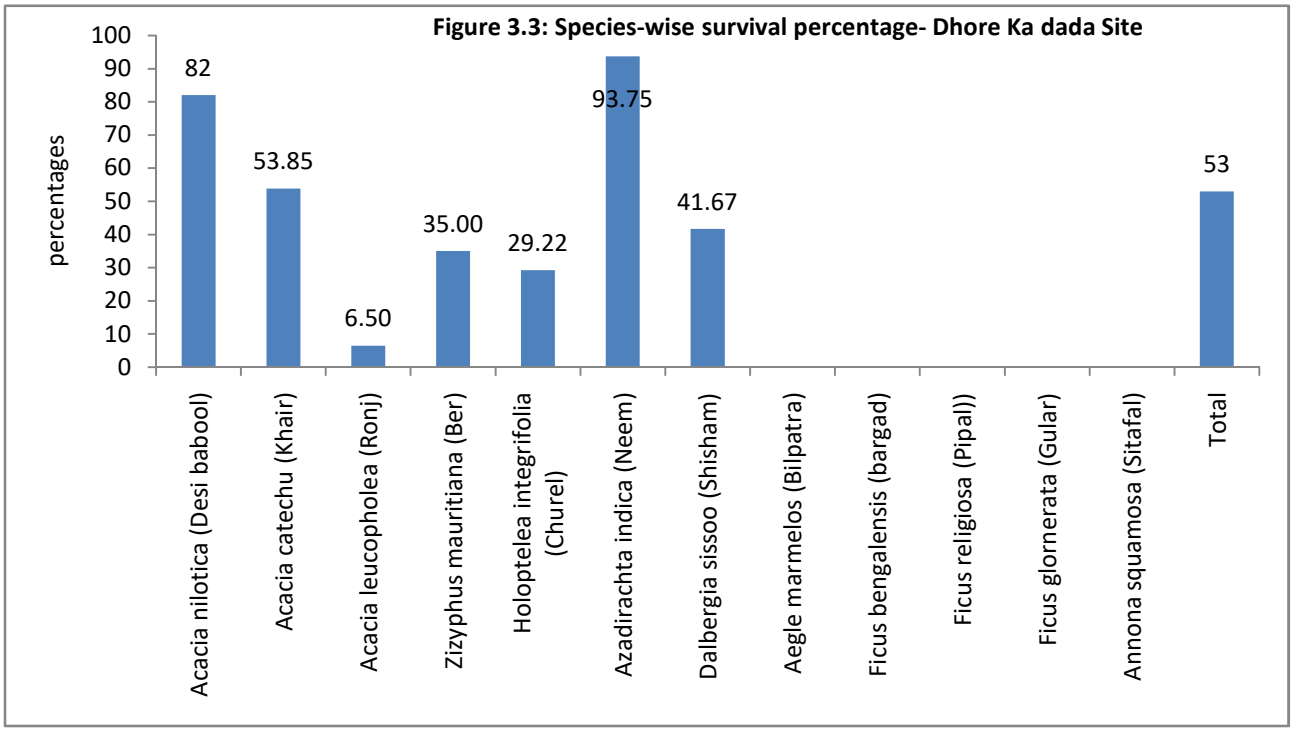
3.2.9. Soil and Water Conservation Measures: There are 10000 RMT Contour trenches & 350 cu.m loose stone check dams in the form of water harvesting structures present in the entire plantation area.

3.2.10. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 53% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising twelve species were planted in the 50 ha plantation area.

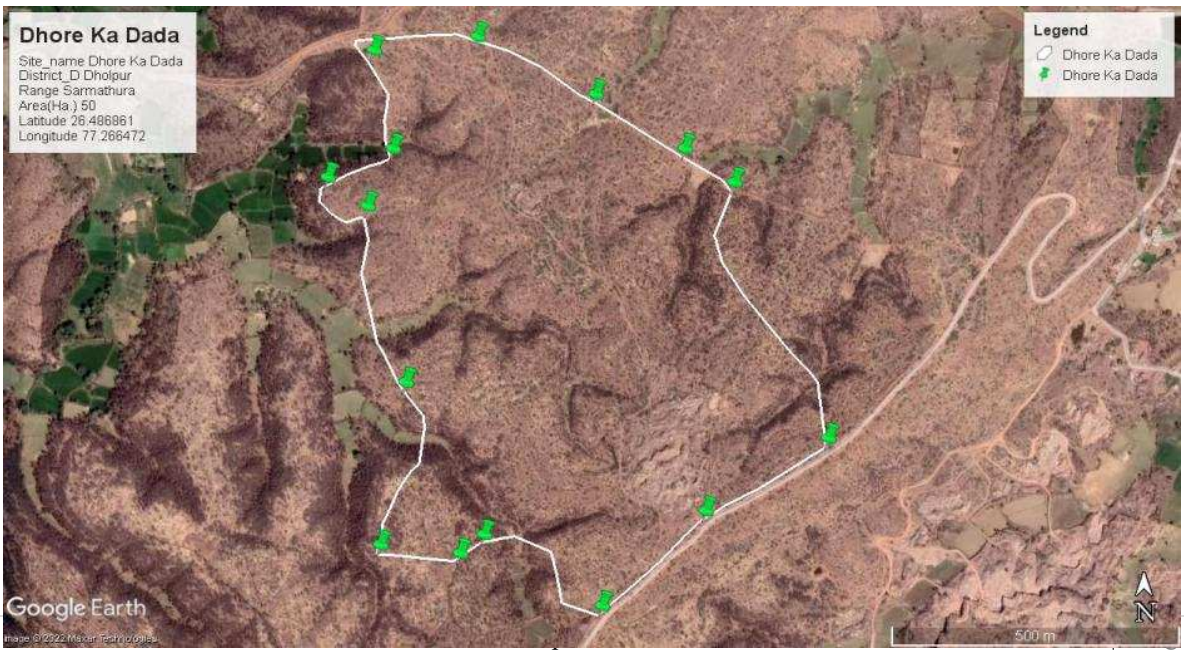
Table 3.2: Status of Planted Seedlings at the site-Dhore Ka Dada Site

Acacia nilotica (Desi babool)	5000	500	410		82.00	90.0	65.0
Acacia catechu (Khair)	160	13	7		53.85	90.0	65.0

Acacia leucopholea (Ronj)	2000	200	13		6.50	90.0	65.0
Zizyphus mauritiana (Ber)	1000	100	35		35.00	90.0	65.0
Holoptelea integrifolia (Churel)	1550	154	45		29.22	90.0	65.0
Azadirachta indica (Neem)	120	16	15		93.75	90.0	65.0
Dalbergia sissoo (Shisham)	120	12	5		41.67	90.0	65.0
Aegle marmelos (Bilpatra)	10	1	0		0.00	0	0
Ficus bengalensis (Bargad)	5	1	0		0.00	0	0
Ficus religiosa (Pipal))	5	1	0		0.00	0	0
Ficus glornerata (Gular)	10	1	0		0.00	0	0
Annona squamosa (Sitafal)	20	2	0		0.00	0	0
Total	10000	1000	530	470	53.00	90.0	65.0



3.2.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hectare as per kml map.



3.2.12. Budget and expenditure

Table 3.3: Cost-estimate & expenditure (Year-wise)

	Cost estimate (Rs.)				Expenditure (Rs.)			
Year	**Plantation**	**SMC works**	**Boundary wall/Fencing**	**Total**	**Plantation**	**SMC works**	**Fencing**	**Total**
2018-19				1766750				1735051
2019-20				503995				486200
2020-21				172850				149189
2021-22				97050				87151
Total				2540645				2457591

3.3.1 Site 3-Meena Khuri in Vanvihar range - N 26.476477 and E 77.544272

The selected plantation was carried out on 50 hec of land at Meena Khuri of Vanvihar range during the year 2018-19. The activities were done under the ANR model. The site was a forest land and selected for 100% evaluation. The soil was morar, kankreet & clayey.

3.3.2. Treatment plan before sowing: The topography of the area was undulating. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land**.** The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.3.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild pigs and porcupine was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water obstruct the growth of planted seedling. The status of guarding/ fencing at the site was poor.

3.3.4. Species Planted: The selected tree species under plantation were 4. Seedlings of *Acacia nilotica* (desi babool), *Acacia leucophoelea (*ronj), *Pithecellobium dulce (Jangal Jalebi)*and Holoptelea integrifolia (Churel) were planted.

A total of 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. Spacing between plant to plant was reported 3m/ 4m as per the available site condition. As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation wes Ronj, Jangal Jalebi, Churail & Desi babool which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. The growth of survived plants was satisfactory.

3.3.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.3.6. Natural Vegetation and Regeneration*:* The area has been covered fully with vegetation due to this plantation. Plants like Dhok, Ronj and Desi babool have been found grown naturally. .

3.3.7. Regeneration through seeds sowing: The growth of seeds sowing plants was good. The result of seed sowing (viz. Kumtha, Desi babool, Bair, Churail & Ronj) was good. Plants from the seeds sown were widely seen in lines on contour trenches, mud wall & thanwalas.

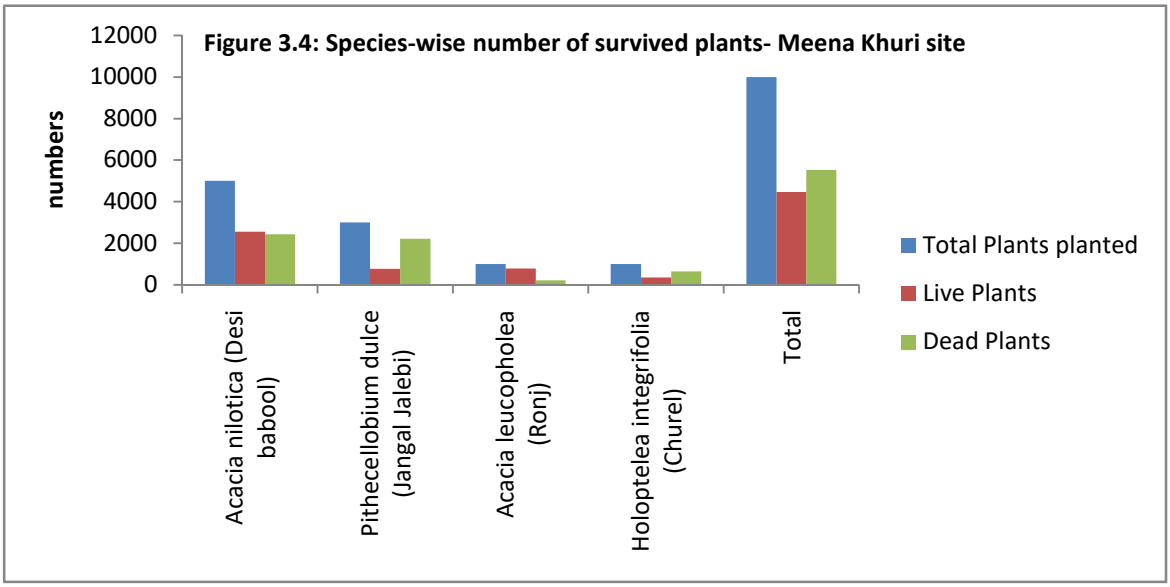
3.3.8 Protection Work: The selected ANR model plantation was protected by ditch fencing of 1690 RMT having width at the top-1.50 meters, width at the bottom-0.9 meter & depth 1.02 meters, loose stone fencing of 860 RMT having width at the top-0.8 meter, width at the bottom-0.6 meter & height 1.2 meters & mud wall fencing having width at the top-3.0 meters, width at the bottom-0.2 meter & height 1.2 meters. Present condition of ditch fencing, mud wall fencing & loose stone fencing was average. Fencing has been partially effective in controlling the biotic pressures.

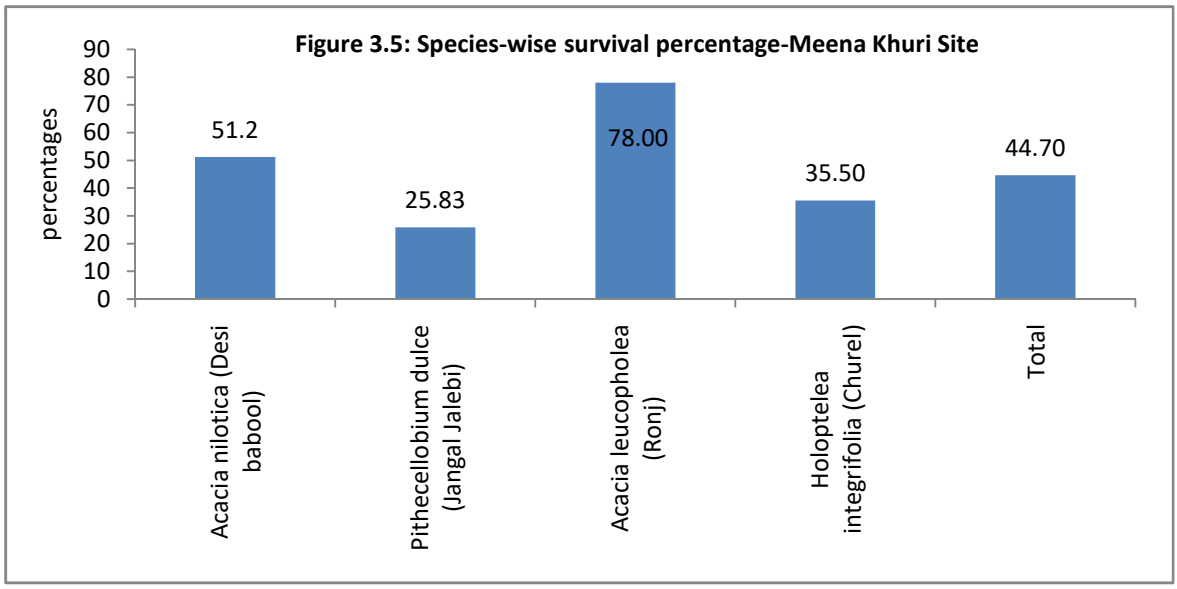
3.3.9 Soil and Water Conservation Measures: There are 20000 RMT (width at the top-1.05 meters, width at the bottom-0.45 meter & height 0.6 meters) Contour trenches & PCT Nadi (2000 cu.m.), earthen check dams (830 cu.m.) & loose stone check dams (455cu.m) in the form of water harvesting structures present in the entire plantation area

3.3.10. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. Based on for as 100 percent counting, plants survival was 44.7% at the site. Plant species girth breast height was also measured. The growth of planted seedling was average. A total of 10000 plants comprising four species were planted in the 50 ha plantation area.

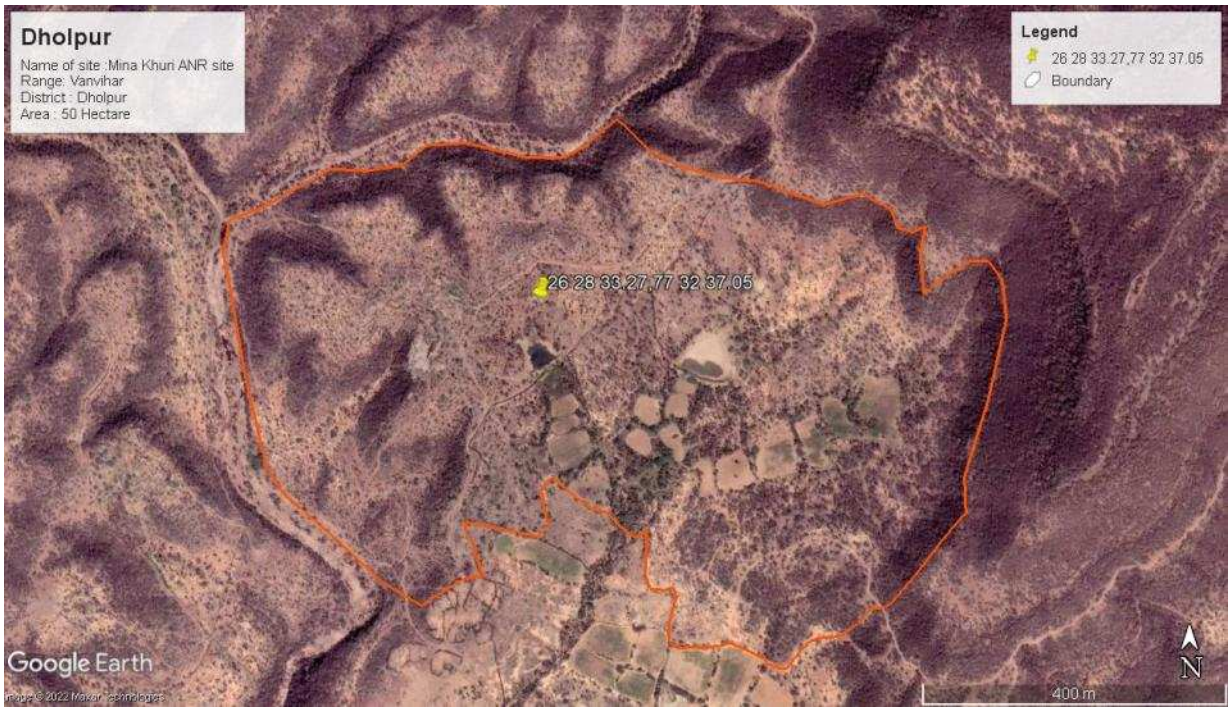
Table 3.4: Status of Planted Seedlings at the site-Meena Khuri Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia nilotica (Desi babool)	5000	2560	2440	51.20	117.6	99.4
Pithecellobium dulce (Jangal Jalebi)	3000	775	2225	25.83	94.1	65.0
Acacia leucopholea (Ronj)	1000	780	220	78.00	97.5	65.0
Holoptelea integrifolia (Churel)	1000	355	645	35.50	97.7	99.3
Total	10000	4470	5530	44.70	108.5	87.4





3.3.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hac as per kml map.



3.3.12. Budget and expenditure:

Table 3.5: Cost-estimate & expenditure (Year-wise)

	Cost estimate (Rs.)				Expenditure (Rs.)			
Year	Plantation	SMC works	Boundary wall/Fencing	Total	Plantation	SMC works	Boundary wall/Fencing	Total
2017-18	209710	550282	623427	1383419	196606	624865	858251	1679722
018-	302751		-	302751	231266	-		231266

19								
2019-20	70260	27720	-	97980	61060	35640		96700
2020-21	-	24033	-	24033	-	23947		23947
2021-22	-	13588	-	13588	-	13587		13587
Total	582721	615623	623427	1821771	488932	698039	858251	2045222

3.4.1 Site 4- Kala Patpara site in Badi range -N 26o41'44" and E 77o23'21"

The selected plantation was carried out on 25 hac. of land at Kala Patpara in Badi range during the year 2018-19. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 10% evaluation. The soil was clayey.

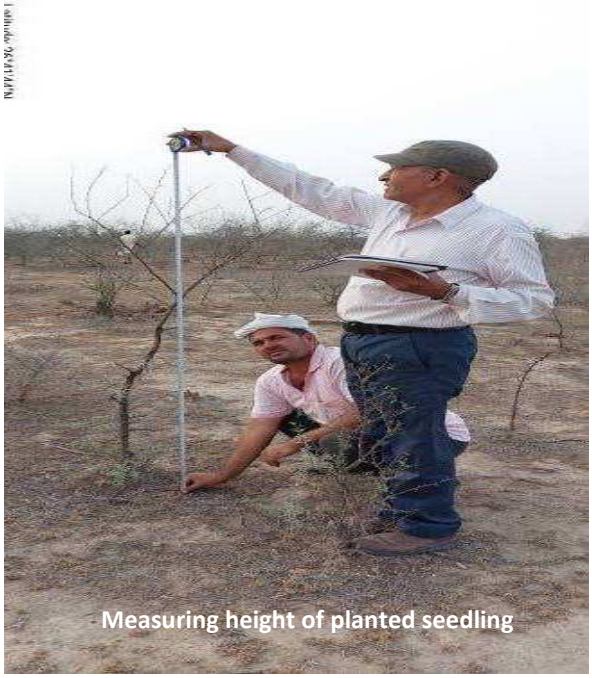
3.4.2. Treatment plan before sowing: The topography of the area was plain. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 18000 pits were dug for plantation in total 25 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.4.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, and porcupine was reported at the site. Also, widely growth of termite & heavy rainfall obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average.

3.4.4. Species Planted: The selected tree species under plantation were 5 Seedlings of Acacia nilotica (Desi babool), Zizyphus mauritiana (Ber), Acacia leucopholea (Ronj), Acacia senegal (Kumtha) and Acacia catechu (Khair) were planted.

In total 18000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.


Measuring height of planted seedling

As per the model, 1100 plants per hectare have been planted. Thus, total number of plants planted was 18000 for 25 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Khair, Kumtha, Ronz, Bair& Desi babool which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was satisfactory.**

Mud wall fencing at the site

3.4.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.4.6. Natural Vegetation and Regeneration: Desi babool, Bair, Ronj & Kumtha were the plants found grown naturally in this area. The growth of the plants was good.

3.4.7. Regeneration through seeds sowing: Seeds of species *Kumtha* were sown in as well as along the trenches and on the thanwlas. The result of sowing was good. Plants from seed sowing were widely seen on trenches & thanwalas.

Continuous Contour trenches at the site

3.4.8. Protection Work: The selected DFL model plantation had mud wall

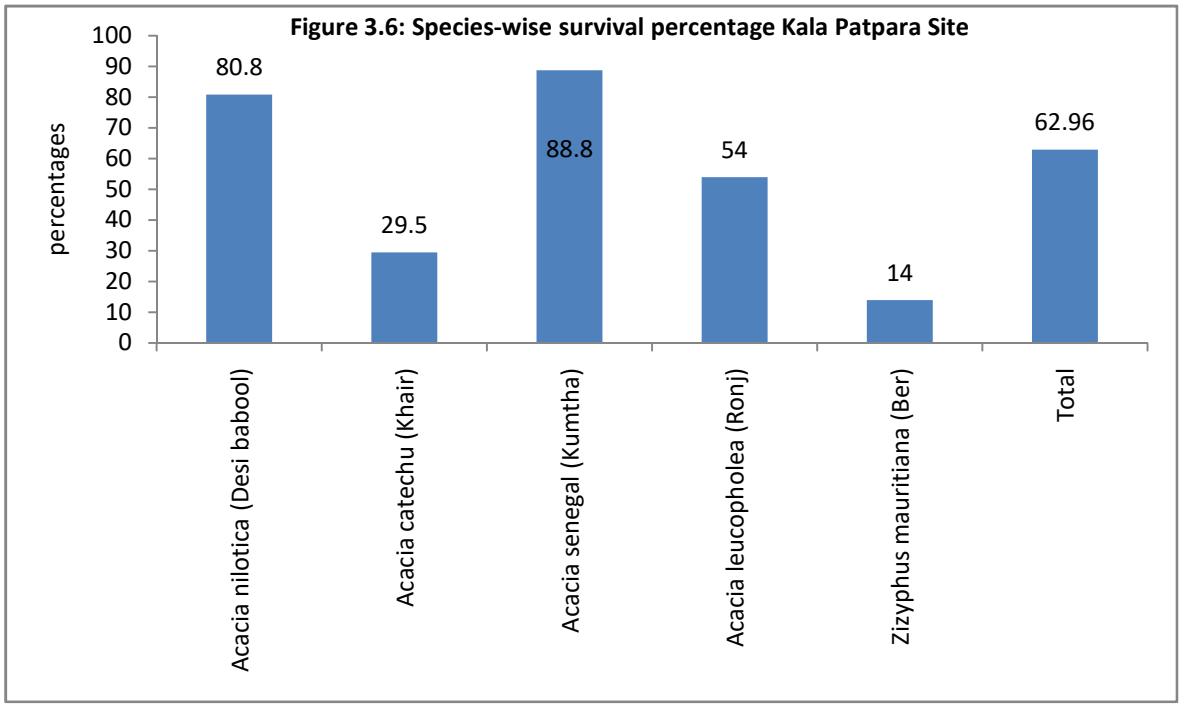
fencing. Present condition of mud wall fencing was satisfactory.

3.4.9. Soil and Water Conservation Measures: There are Contour trenches in the form of water harvesting structures present in the entire plantation area.

3.4.10. Observations Recorded: Under this model, 1100 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 62.96% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was satisfactory. A total of 2800 plants comprising five species were planted in the 25 hectare plantation area.

Table 3.6: Status of Planted Seedlings at the site- Kala Patpara Site

Species	Total Plants planted	10% plantaion area has been observed	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia nilotica (Desi babool)	15000	1500	1212		80.80	99.7	69.2
Acacia catechu (Khair)	4000	400	118		29.50	100.9	68.6
Acacia senegal (Kumtha)	3000	250	222		88.80	107.0	70.0
Acacia leucopholea (Ronj)	2000	300	162		54.00	102.2	86.9
Zizyphus mauritiana (Ber)	3500	350	49		14.00	90.0	81.0
Total	27500	2800	1763	1037	62.96	100.7	71.4



3.4.11. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 25 hec as per kml map.

3.4.11. Budget and expenditure

Table 3.7: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total (in lacs)
2017-18								8.205
2018-19								7.61
2019-20								2.519
2020-21								1.277
2021-22								1.04
Total								20.652

4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft Near Government ITI, Dholpur Range

Near Government ITI in Dholpur range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meters. Construction work appeared to

be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. GPS location of this area was 26.692517 N and 77.858472 E.

Site 2- Pillars at Bhurakhera A , Dholpur range

At Bhurakhera A site in Dholpur Pillars (62 Nos.) have been evaluated. The pillars were constructed in the year 2018-19. The pillars were 62 in numbers as per MB. Also, in actual 62 pillars were found & evaluated by the third party. However, four pillars were found damaged at the time of visit. The pillars constructed were reported average and useful. The construction of pillars helped in marking forest boundary.

Site 3- Pakki Diwar 4 Ft at Sikara , Badi Range

At Sikara in Badi range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.42 meter & height was 1.20 meters. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. GPS location of this area was 26.646569 N and 77.497037 E. The expenditure incurred for constructing this wall was 11.76 lacs (as per MB) against the estimated cost of 12.00 lacs.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Dholpur division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Thane Ka Pura-II ANR	ANR	50	33.19	4
2	Dhore Ka Dada	ANR	50	53.00	6
3	Meenakhuri	ANR	50	44.70	5
4	Kala Patpara	DFL	25	64.11	7

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 4 ft	Near to Government ITI	Average	6
2	Pillar	Bhurakheda A	Average	6
3	Pakki Diwar 4 ft	Sikara	Average	6

IGNP Jaisalmer II

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in IGNP Jaisalmer II Forest Division. This Forest Division with 5 Forest Ranges namely Nachna, I, Unit III, Bharewala & III B.

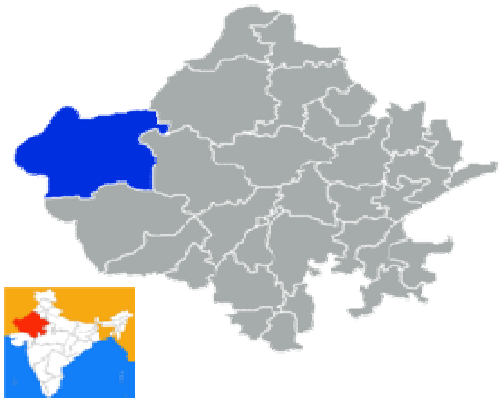


Figure 9 Location of Jaisalmer district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of IGNP Jaisalmer II Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
IInd 1438 RD Mohangarh	SDS 20-23 RD JJW SADRAU POHAD	2017-18	100	NFL	100%
IInd 1438 RD Mohangarh	SDS 10-13 RD KNM	2017-18	25	NFL	10%
IInd 1438 RD Mohangarh	SDS Mandau Barani 13 RD JJW	2018-19	25	NFL	100%
IInd 1438 RD Mohangarh	SDS 35-38 RD JJW C	2019-20	50	NFL	10%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of IGNP Jaisalmer II Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Nachna	Chak 7AWD & Nachna Barani	2018-19	Boundary Pillars

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. SDS 20-23 RD JJW Sadrau Pohad site in IInd 1438 RD Mohangarh range - N 27.394225 and E 71.159807

The selected plantation was carried out on 100 hac. of land at SDS 20-23 RD JJW Sadrau Pohad in IInd 1438 RD Mohangarh range during the year 2017-18. The activities were done under the Non Forest Land (NFL) model. The site was a forest land and selected for 100% evaluation. The soil was sandy & domat.

3.1.2. Treatment plan before sowing: The topography of the area was plane & sand dune. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 60000 pits were dug for plantation in total 100 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Preparation for 100 % counting at the site

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was good. Destruction by rats was reported at the site. Also, widely growth of termite, soil quality, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.

Growth of planted seedling

3.1.4. Species Planted: The selected tree species under plantation were 3. Seedlings of, Acacia tortilis (Totalis), Tecomella undulata (Rohida) and Prosopis juliflora (Khejri) were planted.

In total 60,000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 600 plants per hectare have been planted. Thus, total number of plants planted was 60,000 for 100 hectare of land. Map of planting site was prepared.

Barbed wire fencing at the site

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Totalis & Rohida & Khejari which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was good.**

3.1.5. Watering of plants: Three times watering to plants was reported at the site during the first year. As per requirement of plants watering to plants was provided in the next consecutive year.

3.1.6. Natural Vegetation and Regeneration: The plantation model was Non- forest land (NFL).Only seedlings planted were reported at the site. Thus, Natural Vegetation and Regeneration was not reported at the site

3.1.7. Regeneration through seeds sowing: The plantation site was sand dunes area**.** Hence, seed sowing was not reported at the site.

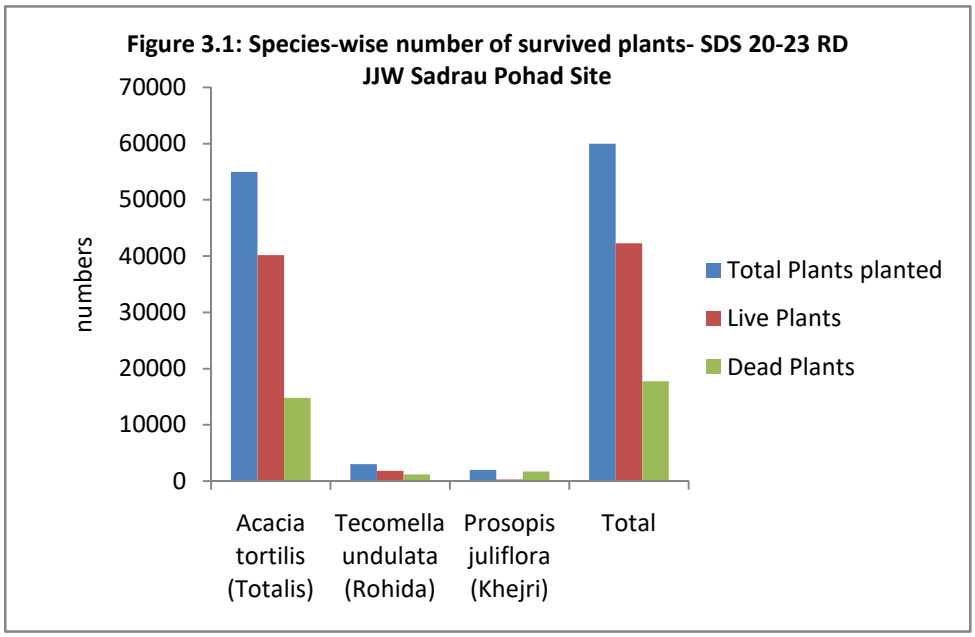
3.1.8. Protection Work: The selected NFL model plantation had barbed wire fencing of 4200 RMT. Present condition of fencing was good.

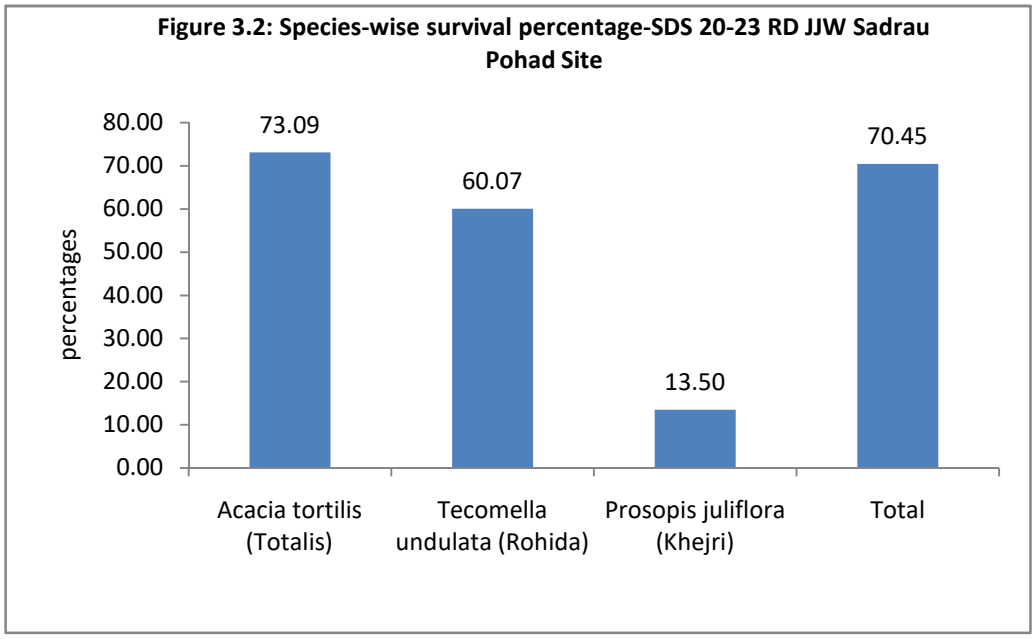
3.1.9. Soil and Water Conservation Measures: There are 28465 RMT Mulching in the form of water harvesting structures present in the entire plantation area.

3.1.10. Observations Recorded: Under this model, 600 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 70.45% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was good. A total of 60,000 plants comprising three species were planted in the 100 hectare plantation area.

Table 3.2: Status of Planted Seedlings at the site-SDS 20-23 RD JJW Sadrau Pohad Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia tortilis (Totalis)	55000	40200	14800	73.09	212	126
Tecomella undulata (Rohida)	3000	1802	1198	60.07	115	122
Prosopis juliflora (Khejri)	2000	270	1730	13.50	90	65
Total	60000	42272	17728	70.45	177	122





3.1.11. GPS Location and KML file: The selected NFL model under CAMPA plantation site measured 100 hec as per kml map.

3.1.11. Budget and expenditure

Table 3.3 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs. In Lac)				Expenditure (Rs. In Lac)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2016-17	-	-	-	3729900	-	-	-	3723661
2017-18	-	-	-	4650200	-	-	-	4650080
2018-19	-	-	-	1336400	-	-	-	1335639
2019-20	-	-	-	436600	-	-	-	436598
2020-21	-	-	-	481700	-	-	-	448479
2021-22	-	-	-	506300	-	-	-	88441
Total	-	-	-	11141100	-	-	-	10682898

3.2.1. Site 2- SDS 10-13 RD KNM site in IInd 1438 RD Mohangarh range -N 27.240862 and E 71.215901

The selected plantation was carried out on 25 hac. of land at SDS 10-13 RD KNM in IInd 1438 RD Mohangarh range during the year 2017-18. The activities were done under the Non-Forest Land (NFL) model. The site was a forest land and selected for 10% evaluation. The soil was sandy & domat.

3.2.2. Treatment plan before sowing: The topography of the area was plane. Hence, as per availability of soil digging of trench cum pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 15000 pits were dug for plantation in total 25 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by rats was reported at the site. Also, widely growth of termite, soil quality, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.

3.2.4. Species Planted: The selected tree species under plantation were 7. Seedlings of, Acacia tortilis (Totalis), Tecomella undulata (Rohida), Acacia senegal (Kumtha), Zizyphus mauritiana (Ber), *Azadirachta indica (Neem)*, *Fras* and Prosopis juliflora (Khejri) were planted.

In total 15,000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was trench cum pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 600 plants per hectare have been planted. Thus, total number of plants planted was 15000 for 25 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Totalis & Rohida & Khejari which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**

3.2.5. Watering of plants: Three times watering to plants was reported at the site during the first year. As per requirement of plants watering to plants was provided in the next consecutive year.

3.2.6. Natural Vegetation and Regeneration: The plantation model was Non- forest land (NFL).Only seedlings planted were reported at the site. Thus, Natural Vegetation and Regeneration was not reported at the site

3.2.7. Regeneration through seeds sowing: The plantation site was sand dunes area**.** Hence, seed sowing was not reported at the site.

3.2.8. Protection Work: The selected NFL model plantation had barbed wire fencing of 2080 RMT. Present condition of fencing was good.

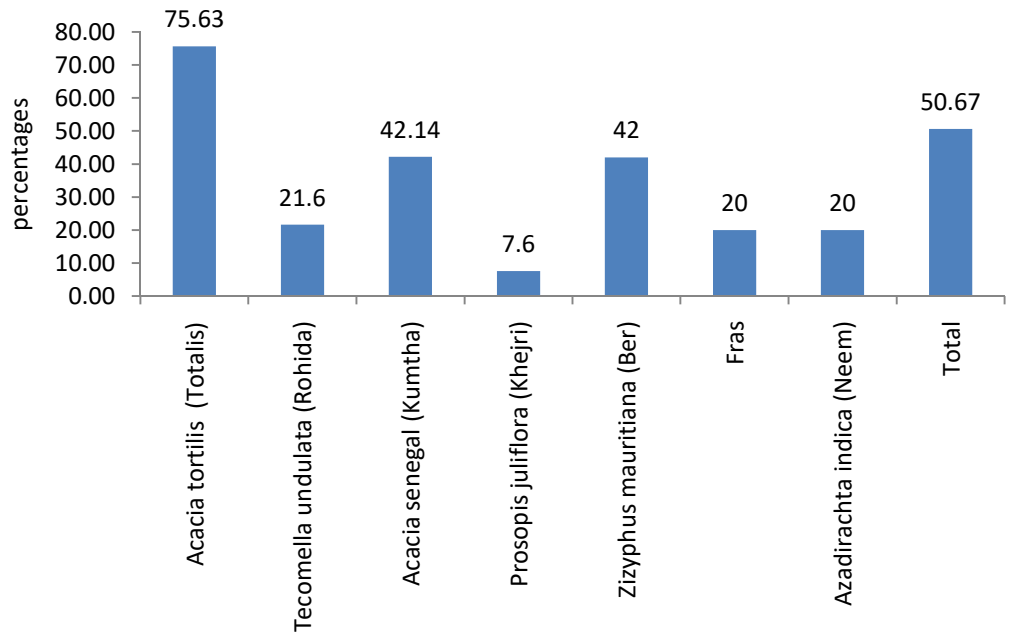
3.2.9. Soil and Water Conservation Measures: There are 25353 RMT trenches cum V ditches in the form of water harvesting structures present in the entire plantation area.

3.2.10. Observations Recorded: Under this model, 600 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 50.67% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 15000 plants comprising seven species were planted in the 25 hectare plantation area.

Table 3.4: Status of Planted Seedlings at the site-SDS 10-13 RD KNM Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia tortilis (Totalis)	8000	605		75.63	111	117
Tecomella undulata (Rohida)	2500	54		21.60	95	70
Acacia senegal (Kumtha)	1400	59		42.14	90	65
Prosopis juliflora (Khejri)	2500	19		7.60	90	65
Zizyphus mauritiana (Ber)	500	21		42.00	93	65
Fras	50	1		20.00	90	68
Azadirachta indica (Neem)	50	1		20.00	90	70
Total	15000	760	14240	50.67	94	74

Figure 3.3: Species-wise survival percentage- SDS10-13 RD KNM Site



3.2.11. GPS Location and KML file: The selected NFL model under CAMPA plantation site measured 25 hec as per kml map.

3.2.12. Budget and expendi-ture

Table 3.5 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs. In Lac)				Expenditure (Rs. In Lac)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2016-17	-	-	-	932475	-	-	-	932038
2017-18	-	-	-	1162550	-	-	-	1162389
2018-19	-	-	-	334100	-	-	-	333845
2019-20	-	-	-	109150	-	-	-	109002
2020-21	-	-	-	120425	-	-	-	107188
2021-22	-	-	-	126575	-	-	-	73577
Total	-	-	-	2785275	-	-	-	2718039

3.3.1. Site 3- SDS Mandau Barani 13 RD JJW site in IInd 1438 RD Mohangarh range -N 27.361095 and E 71.159479

The selected plantation was carried out on 25 hac. of land at SDS Mandau Barani 13 RD JJW in IInd 1438 RD Mohangarh range during the year 2018-19. The activities were done under the Non- Forest Land (NFL) model. The site was a forest land and selected for 100% evaluation. The soil was sandy & domat.

3.3.2. Treatment plan before sowing: The topography of the area was plane & sand dune. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 15000 pits were dug for plantation in total 25 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.3.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by rats was reported at the site. Also, widely growth of termite, soil quality, attack by pest and scarcity of water obstruct the growth of planted seedling. The status of guarding/ fencing at the site was good.

3.3.4. Species Planted: The selected tree species under plantation were 5. Seedlings of Acacia tortilis (Totalis), Tecomella undulata (Rohida), Acacia senegal (Kumtha), Zizyphus mauritiana (Ber), *and* Prosopis juliflora (Khejri) were planted.

In total 15,000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 600 plants per hectare have been planted. Thus, total number of plants planted was 15000 for 25 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Totalis, Rohida & Khejari which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was good.**

Underground tanka at the plantation site

3.3.5. Watering of plants: Three times watering to plants was reported at the site during the first year. As per requirement of plants watering to plants was provided in the next consecutive year.

3.3.6. Natural Vegetation and Regeneration: The plantation model was Non- forest land (NFL).Only seedlings planted was reported at the site. Thus, Natural Vegetation and Regeneration was not reported at the site

3.3.7. Regeneration through seeds sowing: The plantation site was sand dunes area**.** Hence, seed sowing was not reported at the site.

3.3.8. Protection Work: The selected NFL model plantation had barbed wire fencing of 1660 RMT. Present condition of fencing was good.

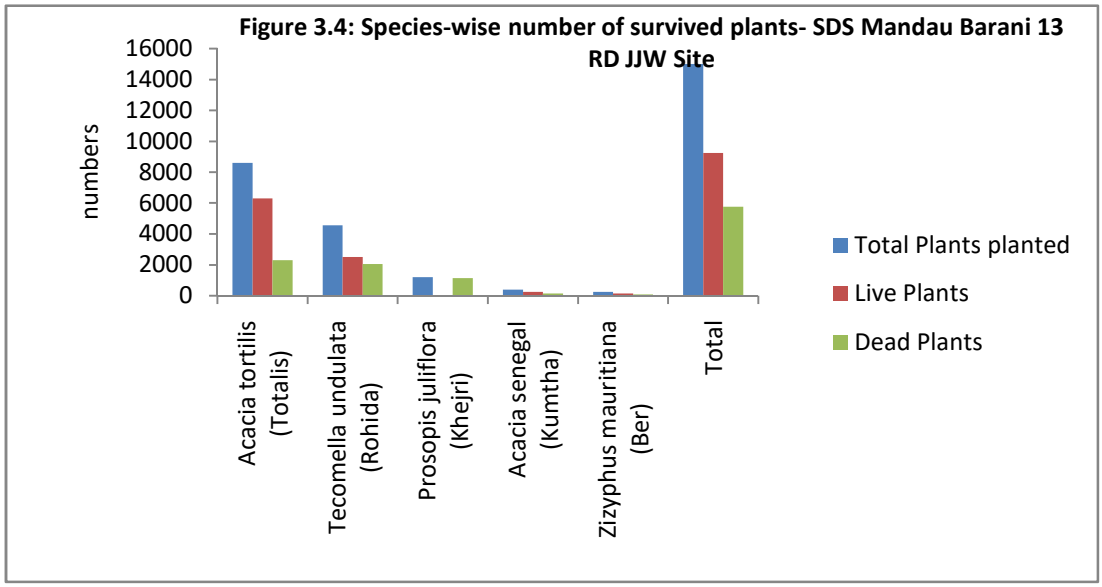
3.3.9. Soil and Water Conservation Measures: There are 20360 RMT Mulching in the form of water harvesting structures present in the entire plantation area.

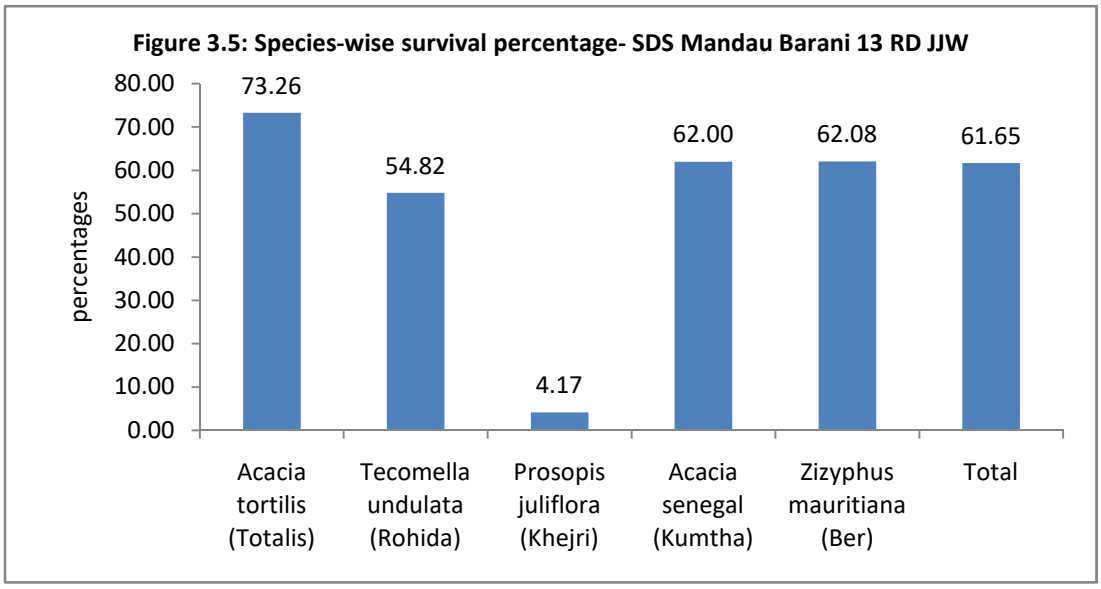
3.3.10. Observations Recorded: Under this model, 600 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 61.65% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was satisfactory. A total of 15000 plants comprising five species were planted in the 25 hectare plantation area.

Measurement of survived species had been taken on randomly selected plants. The measurement has been conducted at various places of the plantation area to get proper average measurement of collar girth & height.

Table 3.6: Status of Planted Seedlings at the site-SDS Mandau Barani 13 RD JJW Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia tortilis (Totalis)	8600	6300	2300	73.26	271	132
Tecomella undulata (Rohida)	4560	2500	2060	54.82	212	99
Prosopis juliflora (Khejri)	1200	50	1150	4.17	90	65
Acacia senegal (Kumtha)	400	248	152	62.00	90	67
Zizyphus mauritiana (Ber)	240	149	91	62.08	135	65
Total	15000	9247	5753	61.65	258	121





3.3.11. GPS Location and KML file: The selected NFL model under CAMPA plantation site measured 25 hec as per kml map.

3.3.12. Budget and expenditure

Table 3.7 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs. In Lac)				Expenditure (Rs. In Lac)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18	-	-	-	987600	-	-	-	962539
2018-19	-	-	-	1162550	-	-	-	1158706
2019-20	-	-	-	353225	-	-	-	353114
2020-21	-	-	-	120425	-	-	-	116095
2021-22	-	-	-	126575	-	-	-	26341
Total	-	-	-	2750375	-	-	-	2616795

3.4.1. Site 4- SDS 35-38 RD JJW C site in IInd 1438 RD Mohangarh range -N 27.409685 and E 71.192489

The selected plantation was carried out on 50 hac. of land at SDS 35-38 RD JJW C in IInd 1438 RD Mohangarh range during the year 2017-18. The activities were done under the Non-Forest Land (NFL) model. The site was a forest land and selected for 10% evaluation. The soil was sandy & domat.

SDS 35-38 RD JJW C plantation Site

3.4.2. Treatment plan before sowing: The topography of the area was plane & sand dune. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 30000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying of pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Growth of planted seedling

3.4.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by rats was reported at the site. Also, widely growth of termite, soil quality, attack by pest and scarcity of water obstruct the growth of planted seedlings The status of guarding/ fencing at the site was good.

Underground tank for water storage

3.4.4. Species Planted: The selected tree species under plantation were 5. Seedlings of, Acacia tortilis (Totalis), Tecomella undulata (Rohida), Acacia senegal (Kumtha), Zizyphus mauritiana (Ber) and Prosopis juliflora (Khejri) were planted.

In total 30,000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 600 plants per hectare have been planted. Thus, total number of plants planted was 30000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Totalis, Rohida & Khejari which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was good.**

Barbed wire fencing at the plantation site

3.4.5. Watering of plants: Three times watering to plants was reported at the site during the first year. As per requirement of plants watering to plants was provided in the next consecutive year.

3.4.6. Natural Vegetation and Regeneration: The plantation model was Non- forest land (NFL).Only seedlings planted was reported at the site. Thus, Natural Vegetation and Regeneration was not reported at the site

3.4.7. Regeneration through seeds sowing: The plantation site was sand dunes area**.** Hence, seed sowing was not reported at the site.

3.4.8. Protection Work: The selected NFL model plantation had barbed wire fencing of 2900 RMT. Present condition of fencing was good.

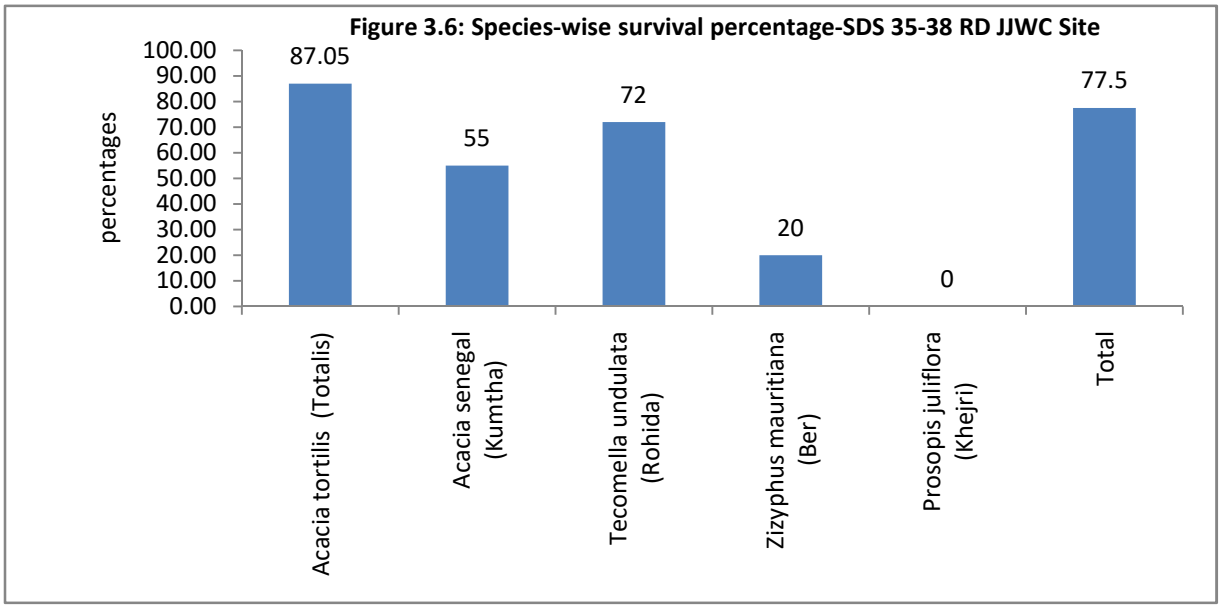
3.4.9. Soil and Water Conservation Measures: There are 41905 RMT Mulching in the form of water harvesting structures present in the entire plantation area.

3.4.10. Observations Recorded: Under this model, 600 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 77.5% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was good. A total of 30000 plants comprising five species were planted in the 50 hectare plantation area.

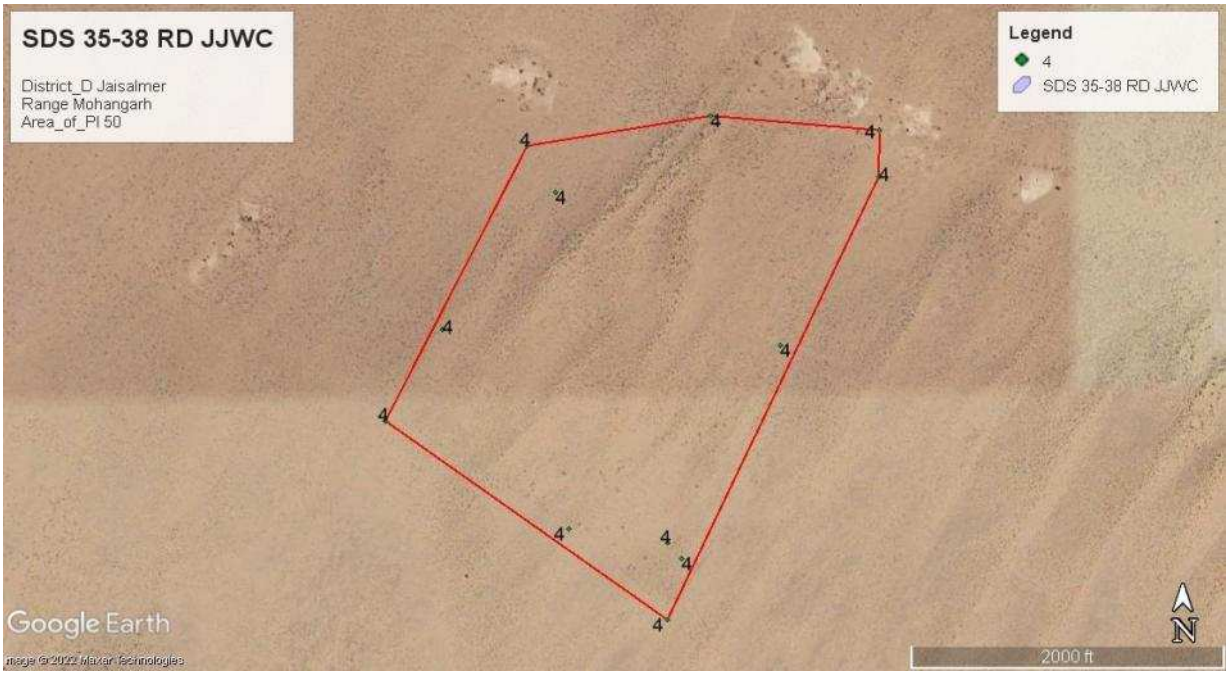
Table 3.8: Status of Planted Seedlings at the site-SDS 35-38 RD JJW C Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia tortilis (Totalis)	22000	19150		87.05	119	81
Acacia senegal (Kumtha)	4000	2200		55.00	90	65

Tecomella undulata (Rohida)	2500	1800		72.00	100	83
Zizyphus mauritiana (Ber)	500	100		20.00	90	65
Prosopis juliflora (Khejri)	1000	0		0.00		
Total	30000	23250	6750	77.50	119	81



3.4.11. GPS Location and KML file: The selected NFL model under CAMPA plantation site measured 50 hec as per kml map.



3.4.12. Budget and expenditure

Table 3.9 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs. In Lac)				Expenditure (Rs. In Lac)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total

2018-19	-	-	-	1975200	-	-	-	1842930
2019-20	-	-	-	2459000	-	-	-	2436604
2020-21	-	-	-	778450	-	-	-	519898
2021-22	-	-	-	253150	-	-	-	66479
Total	-	-	-	5465800	-	-	-	4865911

4. Results for asset site

4.1. Site 1- Pillars at Chak 7 AWD & Nachna Barani, Nachna range

At Chak 7 AWD & Nachna Barani site in Nachna range, the Pillars (50 Nos.) have been evaluated. The pillars were constructed in the year 2019-20. The pillars were 50 in numbers as per MB. 43 pillars were constructed in Nachna Barani & 7 pillars were constructed in Chak 7 AWD. Also in actual 50 pillars were found & evaluated by the third party. The pillars constructed were reported average and useful. 11 pillars were damaged by local residents & 03 pillars were submerged in sand dunes. The construction of pillars helped in marking forest boundary. The expenditure incurred for constructing the Pillars (50 Nos.) was Rs. 89051 (as per MB) against the estimated cost of Rs. 90000.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in IGNP Jaisalmer II division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	SDS 20-23 RDJJW Sadrau	NFL	100	70.45	8
2	SDS 10-13 RD	NFL	25	50.67	6
3	SDS Mandau barani 13RdJJW	NFL	25	61.65	7
4	SDS 35-38 RDJJWC	NFL	50	77.50	8

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of asset created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pillars	Chak 7 AWD & Nachna Barani	Average	6

DDP Jaisalmer

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in DDP Jaisalmer Forest Division. This Forest Division with 4 Forest Ranges namely Jaisalmer, Lathi, Pokharan & Dabla has territorial jurisdiction over the entire Jaisalmer District.

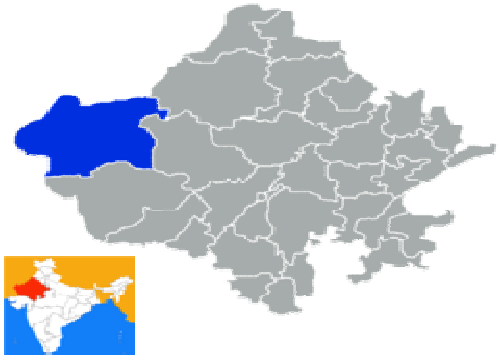


Figure 10 Location of Jaisalmer district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of DDP Jaisalmer Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Dabla	Chhod I	2017-18	220	DFL	100%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of DDP Jaisalmer Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Lathi	Nursery Lathi	2018-19	Rescue Ward
Dabla	Van Rakshak Chowki Unda	2019-20	Forest Chowki
Pokaran	Pokaran	2019-20	Range office cum Residence
Dabla	NH 15 to Basanpeer South	2019-20	Roadside plantation

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1- Chhod I site (Peeru Ki Dhani I,II,III,IV) in Dabla range -N 26°44'23" and E 71°44'23"

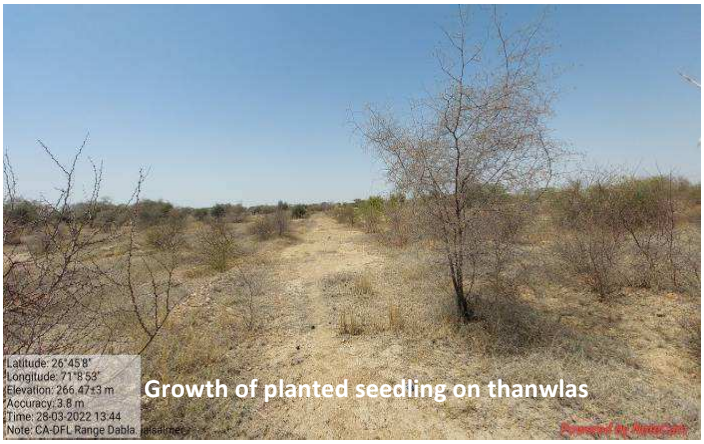
The selected plantation was carried out on 220 hac. of land at Chhod I in Dabla range during the year 2017-18. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 100% evaluation. The soil was rocky.

Plantation Site Chod I

3.1.2. Treatment plan before sowing: The topography of the area was rocky & undulating. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 154000 pits were dug for plantation in total 220 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Measuring height of the plant

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai and Chinkaras was reported at the site. Also, widely growth of termite, soil quality, attack by pest and scarcity of water obstruct the growth of planted seedling. The status of guarding/ fencing at the site was average



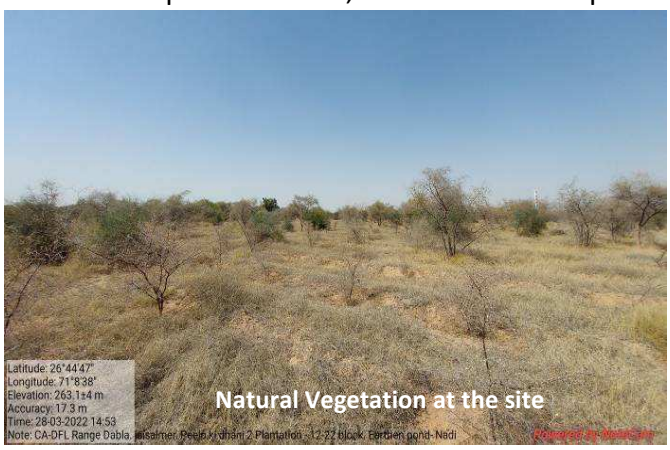
Growth of planted seedling on thanwlas

3.1.4. Species Planted: The selected tree species under plantation were 6. Seedlings of, Acacia tortilis (Totalis), Tecomella undulata (Rohida), Acacia senegal (Kumtha), Salvadora persica (Jaal), Commiphora sp. (Guggal) and Zizyphus mauritiana (Ber) were planted.

In total 1,54,000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 700 plants per hectare have been planted. Thus, total number of plants planted was 154000 for 220 hectare of land. Map of planting site was prepared.



Natural Vegetation at the site

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Totalis & Ber,Jaal, Kumtha which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was satisfacory.**

3.1.5. Watering of plants: Watering to plants was given in first year of plantation. After that watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

Barbed wire fencing at the site

3.1.6. Natural Vegetation and Regeneration: Kumtha, Totalis, Ber & Jaal were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species *kumatha* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**

PCT/ Nadi at the site

3.1.8. Protection Work: The selected DFL model plantation had barbed wire fencing of 6530 RMT. Present condition of fencing was satisfactory.

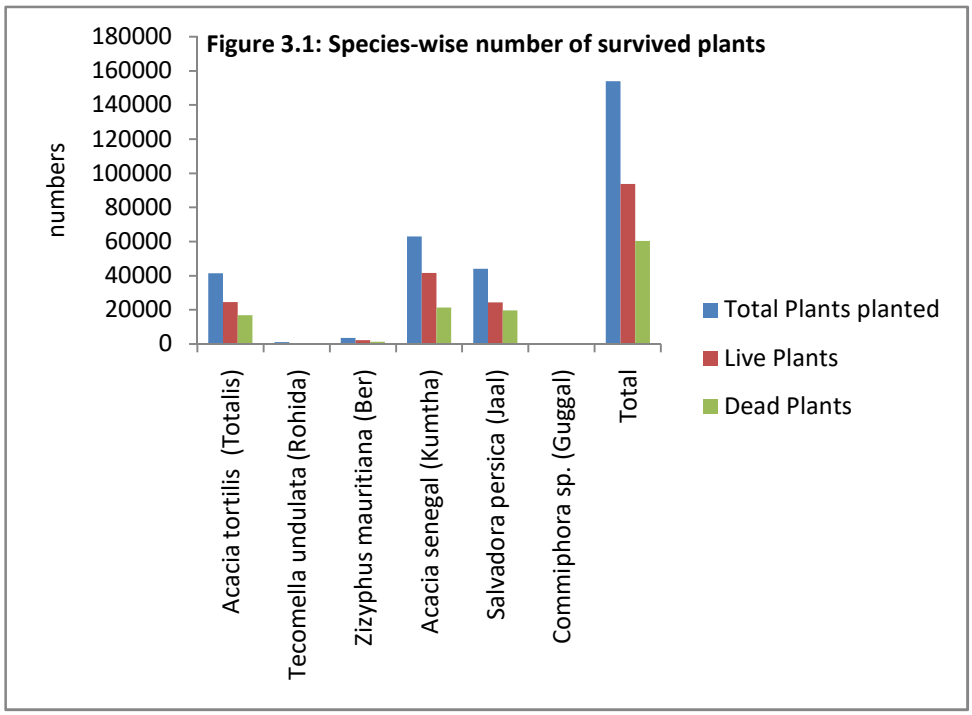
3.1.9. Soil and Water Conservation Measures: There are 11304 RMT Contour trenches, 54000 RMT Contour V

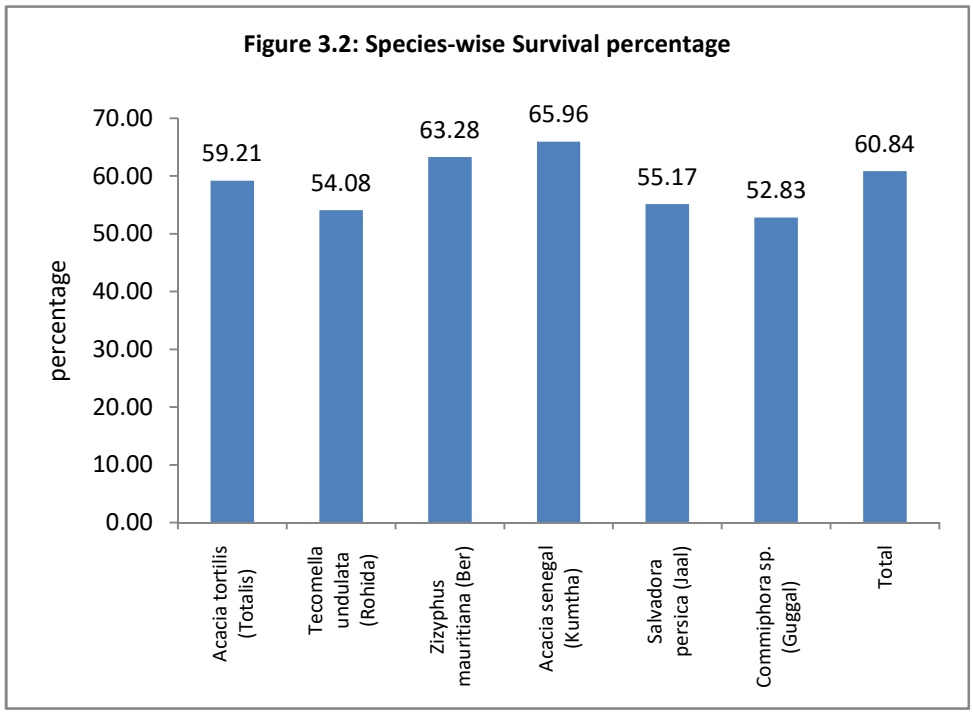
ditches & 2 PCT/Nadi of 612 cu.m in the form of water harvesting structures present in the entire plantation area.

3.1.10. Observations Recorded: Under this model, 700 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 60.84% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 1,54,000 plants comprising five species were planted in the 45 hectare plantation area.

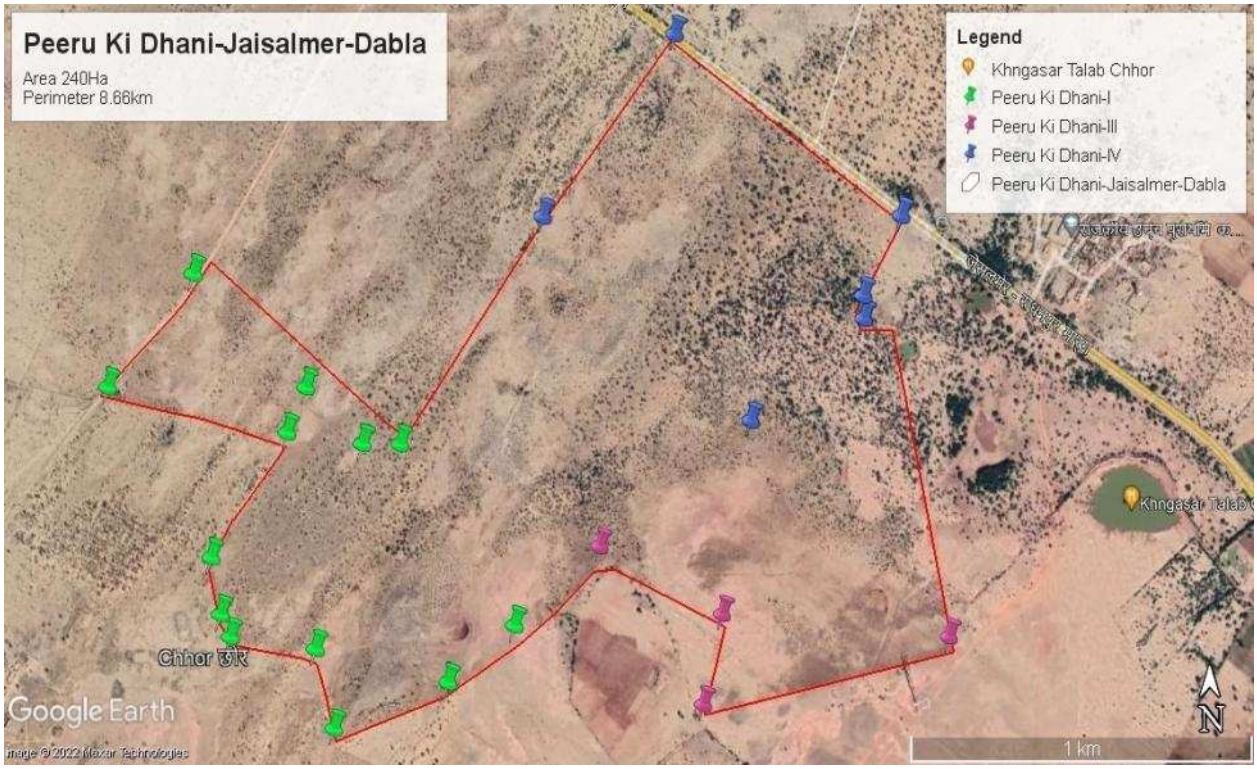
Table 3.2: Status of Planted Seedlings at the site-Chhod I Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth
Acacia tortilis (Totalis)	41500	24571	16929	59.21	164	19
Tecomella undulata (Rohida)	1200	649	551	54.08	85	8
Zizyphus mauritiana (Ber)	3600	2278	1322	63.28	104	10
Acacia senegal (Kumtha)	63000	41557	21443	65.96	152	15
Salvadora persica (Jaal)	44100	24328	19772	55.17	95	12
Commiphora sp. (Guggal)	600	317	283	52.83	57	6
Total	154000	93700	60300	60.84	110	12





3.1.11. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 220 hec as per kml map.



3.1.12. Budget and expenditure

Table 3.3 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs. In Lac)				Expenditure (Rs. In Lac)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18	-	-	-	66.97	-	-	-	66.97
2018-19	-	-	-	21.09	-	-	-	21.09
2019-20	-	-	-	10.27	-	-	-	8.14
2020-21	-	-	-	11.36	-	-	-	11.25
2021-22	-	-	-	11.95	-	-	-	9.31
Total	-	-	-	121.64	-	-	-	116.76

4. Results for asset sites

4.1. Site 1- Rescue Centre at Nursery Lathi , Lathi range

Rescue Centre at Lathi Nursery in Lathi range has been evaluated. The Rescue Centre was constructed in the year 2018-19. Site selection for construction of Rescue Centre was adequate. The construction work of Rescue Centre had been completed. The infrastructure created under CAMPA was useful. Three compartments were constructed under Rescue Centre. Also, the infrastructure during third party evaluation was in use and was properly maintained. Quality of Construction was average. GPS location of this area was 27°2'5" N and 71°29'55" E. The expenditure incurred for constructing the Rescue Centre was Rs.1,47,967 (as per MB)against the estimated budget of Rs. 150000.

Site 2- Forest Guard Chowki UNDA at Dabla range

Forest Guard Chowki Unda in Dabla range has been evaluated. The Forest Guard Chowki was constructed in the year 2019-20. Site selection for construction of Forest Guard Chowki was adequate. Construction work appeared to be average and useful. The Forest Guard Chowki created under CAMPA was used by Guard. The Forest Chowki constructed under

CAMPA was properly maintained. Floor of Forest Guard Chowki was made of marble tiles and roof of red stone/ patti of Jodhpur. Present condition of the Forest Chowki was good. GPS location of this area was 26°36'5" N and 71°10'33" E. The expenditure incurred for constructing the Forest Chowki was Rs. 5,46,939 (as per MB) against the estimated budget of Rs. 5.50 lac.

Site 3- Range office cum residence at Pokaran range

Range office cum residence in Pokaran range has been evaluated. The Range office cum residence was constructed in the year 2019-20. Site selection for construction of Range office cum residence was adequate. Construction work appeared to be average and useful. The Range office cum residence created under CAMPA was in use & was properly maintained. Floor of Range office cum residence was made of marble tiles with two toilets. Present condition of the Range office cum residence was average. GPS location of this area was 26°55'1" N and 71°55'41" E. The expenditure incurred for constructing the Range office cum residence was Rs. 10,50,000(as per MB) against the estimated budget of Rs. 10,39,920 lac.

Measuring Range Office cum residence

Site 4- Roadside plantation NH 15 to Basanpeer South at Dabla range

Roadside Plantation NH 15 to Basanpeer South in Dabla range has been evaluated. The total area of roadside plantation was 17.2 RKM and had been carried out in the year 2019-20. The soil of the area is sandy. Seedlings planted were Totalis, Neem, Rohida & Khijadi. Local species in the area were Desi babool & Neem. The total seedlings planted were 4008. Total survived plants during Third Party evaluation were 2712. **Hence, the total survival rate was 67.66%.** Barbed wire fencing of 45200 RMT & Contour trenches of 20000 RMT were reported at the site. GPS location of this area was 26°53'55" N and 71°4'30" E. The survival & growth of planted seedlings was good. Regular pruning is required for proper growth of plants. Also, fencing should be regularly maintained.

Roadside plantation site

Growth of planted seedling at the

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in DDP Jaisalmer division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Chhod I	DFL	220	60.84	7

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of construction	Rating of Quality of Construction
1	Rescue Centre	Nursery Lathi	Average	7
2	Forest Guard Chowki Unda	Dabla	Average	7
3	Range Office cum residence	Pokaran	Average	8

Jaisalmer DNP (WL)

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Jaisalmer DNP (WL) Forest Division. This Forest Division has 3 Forest Ranges namely, WL Jaisalmer, WL Myazlar & WL Barmer.

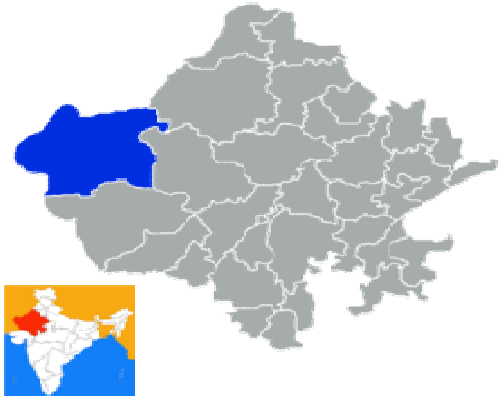


Figure 11 Location of Jaisalmer district, Rajasthan

2.1. Selected Asset Sites for Evaluation

The selected asset sites of Jaisalmer DNP (WL) Forest Division were as given in table 1

Table 1: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Van Jeev Jaisalmer	RKVY Chowki Sudasari	2018-19	Forest Chowki

3. Results for asset sites

3.1 Site 1- Forest Chowki at RKVY Chowki Sudasari, Van Jeev Jaisalmer range

Forest Chowki at RKVY Chowki Sudasari in Van Jeev Jaisalmer range has been evaluated. The Forest Chowki was constructed in the year 2018-19. Site selection for construction of Forest Chowki was adequate. Construction work appeared to be average and useful. The Forest Chowki created under CAMPA was used for store purpose. The Forest Chowki

constructed under CAMPA was not properly maintained. It was not closed. Quality of construction & present condition of the Forest Chowki was average. The roof of the Forest Chowki can be connected with the tanka situated there. GPS location of this area was 26°45’19” N and 70°35’52” E. The expenditure incurred for constructing the Forest Chowki was Rs. 550000 (as per MB) against the estimated budget of Rs. 550000.

4. Overall assessment

Table 2: Quantitative assessment of Forest Chowki created under CAMPA

Sl. No.	Items	Name of the site	Quality of construction	Rating of Site Selection
1	Forest Chowki	RKVY Chowki Sudasari	Average	6

Dungarpur

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Dungarpur Forest Division. This Forest Division with 6 Forest Ranges namely Dungarpur, Aaspur, Antri, Simalwara, Bichhiwara, & Sagwara has territorial jurisdiction over the entire Dungarpur District.

Figure : Location of Dungarpur district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Dungarpur Forest Division for evaluation were as given in table 1.

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Dungarpur	Palwada	2017-18	12.80	NFL	100%
Dungarpur	Vankhand Ranijhula K No. 2 Annpura	2018-19	50	ANR	100%
Seemalwara	Charwara Ratagata	2019-20	50	ANR	100%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Dungarpur Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Bichiwara	Bichiwara	2017-18	Range office cum residence
Aantri	Naramangra	2018-19	Pakki Diwar 4 ft
Aantri	Beedlalgari	2018-19	Boundary Pillars
Aantri	Naramangra	2019-20	Pakki Diwar 4 ft
Aaspur	Vankhand Kyavadi	2019-20	Boundary Pillars

3. Results and Evaluation

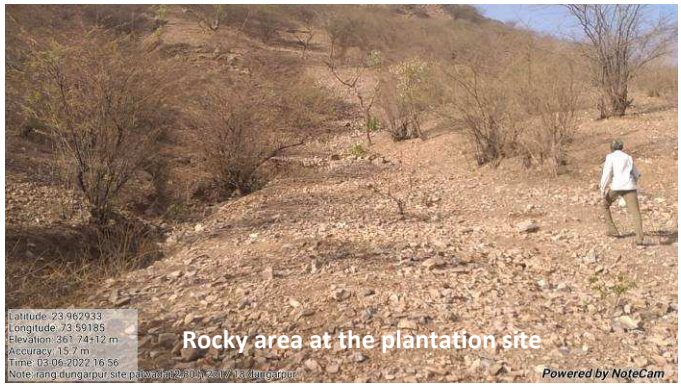
3.1 Plantations Evaluation

3.1.1 Site 1- Palwada site in Dungarpur range -N 23.962308 and E 73.593931

The selected plantation was carried out on 12.80 hac. of land at Palwada in Dungarpur range during the year 2017-18. The activities were done under the Non Forest Land (NFL) model. The site was a forest land and selected for 100% evaluation. The soil was rocky & red.

Preparation for 100% counting at the site

3.1.2. Treatment plan before sowing: The topography of the area was hilly. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 3000 pits were dug for plantation in total 12.80 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.



Rocky area at the plantation site

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was poor. Grazing by stray animals & cattle and destruction by Neel gai, wild boars and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedling. The status of guarding/ fencing at the site was poor.

Heavy growth of Juliflora at the site

3.1.4. Species Planted: The selected tree species under plantation were 7. Seedlings of (Churel), Tectona grandis (Sagwan), Wrightia tinctoria (Khirani), Acacia leucopholea (Ronj), Acacia catechu (Khair), Emblica officinalis (Amla) &*Annona squamosa* (Sitafal) were planted.

In total 3000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the

Making block for counting

availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 240 plants per hectare have been planted. Thus, total number of plants planted was 3000 for 12.80 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Amla, Chudail & Sagwan which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was poor.**

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.4. Natural Vegetation and Regeneration: Dhonk, Churail, Khirni were the plants found grown naturally in this area. The growth of the plants was poor. However, heavy growth of Juliflora was reported at the site.

3.1.7. Regeneration through seeds sowing: Seeds of species *Kumtha & Ratanjot* were sown in as well as along the trenches and on the thanwlas. The result of sowing was poor.

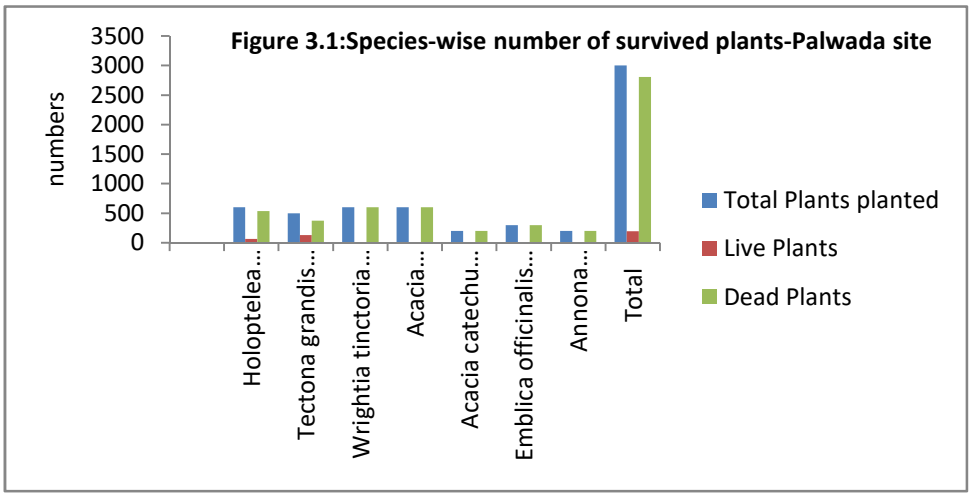
3.1.8. Protection Work: The selected NFL model plantation had loose stone fencing of 2715 RMT & ditch fencing of 1264 RMT. Present condition of loose stone fencing & ditch fencing was average. Loose stone fencing & ditch fencing was damaged at some places.

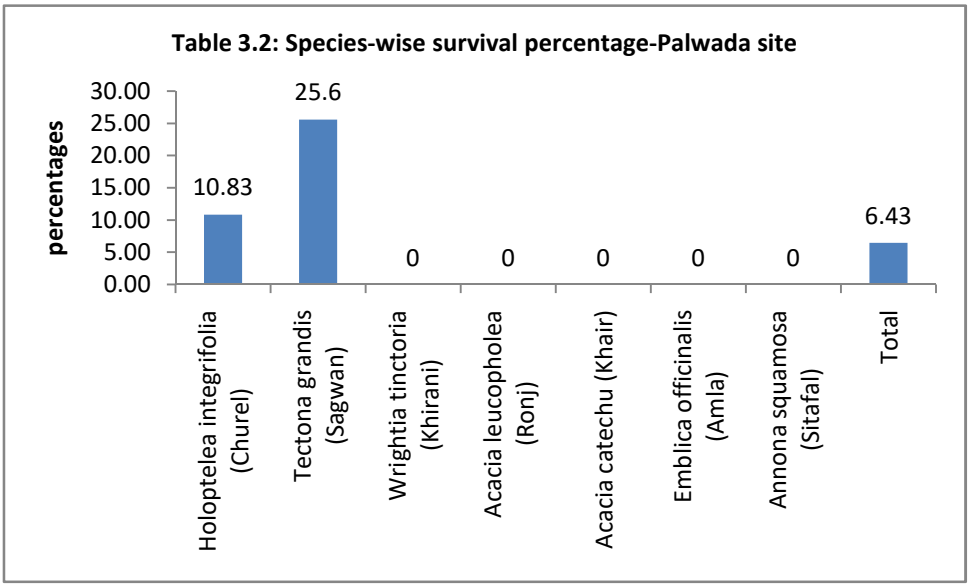
3.1.9. Soil and Water Conservation Measures: SMC structure was not reported at the plantation site.

3.1.10 Observations Recorded: Under this model, 240 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 6.43% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was poor. A total of 3000 plants comprising seven species were planted in the 12.80 hectare plantation area.

Table 3: Status of Planted Seedlings at the site- Palwada Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)
Holoptelea integrifolia (Churel)	600	65	535	10.83
Tectona grandis (Sagwan)	500	128	372	25.60
Wrightia tinctoria (Khirani)	600	0	600	0.00
Acacia leucopholea (Ronj)	600	0	600	0.00
Acacia catechu (Khair)	200	0	200	0.00
Emblica officinalis (Amla)	300	0	300	0.00
Annona squamosa (Sitafal)	200	0	200	0.00
Total	3000	193	2807	6.43





3.1.11. GPS Location and KML file: The selected NFL model under CAMPA plantation site measured 12.80 hec as per kml map.

3.1.12 Budget and expenditure

Table 3.1: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18	595410			595410	133118			133118
2018-19	171059			171059	51569			51569
2019-20	55885			55885	55566			55566
2020-21	27580			27580	19700			19700
2021-22	64806			64806	64350			64350
Total	914740			914740	324303			324303

3.2.1. Site 2-Vankhand Ranijhula K No. 2 Annpura in Dungarpur range -N 23.678142 and E 73.684515

The selected plantation was carried out on 50 hac. of land at Vankhand Ranijhula K No. 2 Annpura in Dungarpur range during the year 2018-19. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for

100% evaluation. The soil was red domat & rocky.

3.2.2. Treatment plan before sowing: The topography of the area was hilly. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Growth of planted seedling at the site

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. It was reported excellent having fair amount of soil. The growth of planted seedlings is less than normal in the area having less soil coverage. Grazing by stray animals & cattle and destruction by Neel gai, wild boars, rats & porcupine was reported at the site. Also, widely growth of termite, soil quality, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory.

3.2.4. Species Planted: The selected tree species under plantation were 21. Seedlings of Tectona grandis (Sagwan), Dendrocalamus strictus (Baans), Azadirachta indica (Neem), Wrightia tinctoria (Khirani), Emblica officinalis (Amla), Terminalia arjuna (Arjun), Holoptelea integrifolia (Churel), Albizia lebbeck (Kala Siras), Bombax ceiba (Semal), Pongamia pinnata (Karanj), Dalbergia sissoo (Shisham), Annona squamosa (Sitafal), Tamarindus indica (Imli), Sapindus sp. (Aritha), Ficus racemosa (Hawan), Commiphora sp. (Guggal) and Aegle marmelos (Bilpatra)were planted.

In total 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

Natural Vegetation at the site

As far as choice of seedlings for plantation is concerned, it was proper, fair & suitable. The seedlings selected for plantation were Sagwan, Baans, Khirni & Amla

which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**

3.2.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.2.6. Natural Vegetation and Regeneration: Sagwan & Tendu were the plants found grown naturally in this area. The growth of the plants was good.

3.2.7. Regeneration through seeds sowing: Seeds of species *Kumatha, Ronj & Khair* were sown in as well as along the trenches and on the thanwlas. There was good growth on thanwalas & trenches of seed sowing. **Hence, the result of sowing was good**

3.2.8. Protection Work: The selected ANR model plantation had ditch fencing of 777 RMT & loose stone fencing was 2168 RMT. Present condition of fencing was satisfactory. Ditch fencing & loose stone fencing was partially effective in controlling biotic pressure.

3.2.9. Soil and Water Conservation Measures: There are 10000 RMT CCT & loose stone check dams (230 cu.cm) in the form of water harvesting structures present in the entire plantation area.

3.2.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 43.42% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising twenty one species were planted in the 50 hectare plantation area.

Table 3.2: Status of Planted Seedlings at the site- Vankhand Ranijhula K No. 2 Annpura Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)
Tectona grandis (Sagwan)	1600	1020	580	63.75
Dendrocalamus strictus (Baans)	1500	0	1500	0.00
Azadirachta indica (Neem)	400	290	110	72.50
Wrightia tinctoria (Khirani)	900	690	210	76.67
Emblica officinalis (Amla)	600	385	215	64.17
Sadad	50	35	15	70.00
Terminalia arjuna (Arjun)	50	22	28	44.00
Holoptelea integrifolia (Churel)	800	605	195	75.63

Beda	300	160	140	53.33
Albizia lebbeck (Kala Siras)	150	50	100	33.33
Garar	400	180	220	45.00
Bombax ceiba (Semal)	340	160	180	47.06
Pongamia pinnata (Karanj)	600	310	290	51.67
Dalbergia sissoo (Shisham)	200	75	125	37.50
Annona squamosa (Sitafal)	1000	0	1000	0.00
Tamarindus indica (Imli)	300	180	120	60.00
Sapindus sp. (Aritha)	200	60	140	30.00
Ficus racemosa (Hawan)	210	0	210	0.00
Paras Pipal	200	80	120	40.00
Commiphora sp. (Guggal)	100	0	100	0.00
Aegle marmelos (Bilpatra)	100	40	60	40.00
Total	10000	4342	5658	43.42

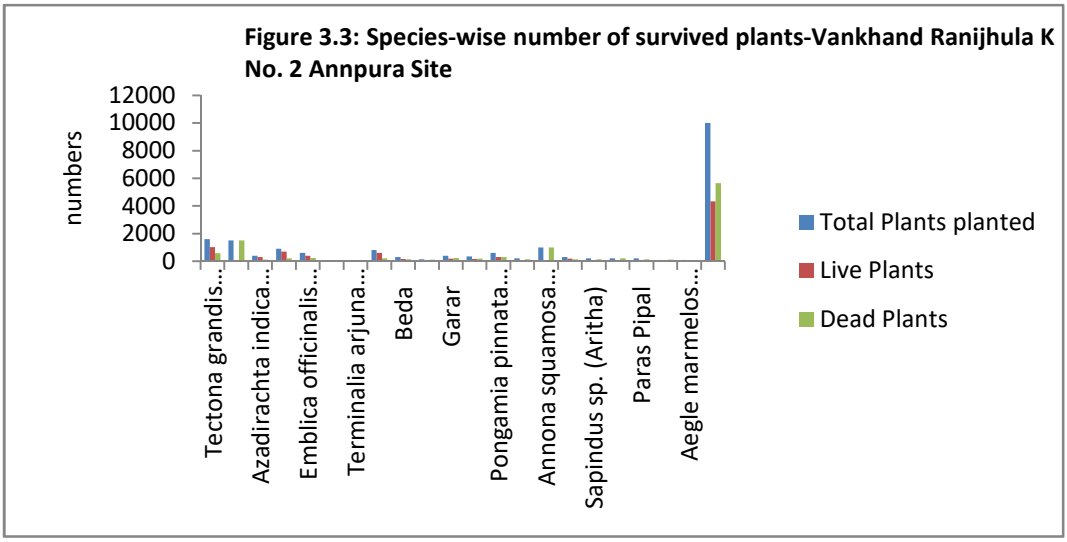


Figure 3.3: Species-wise number of survived plants-Vankhand Ranijhula K No. 2 Annpura Site

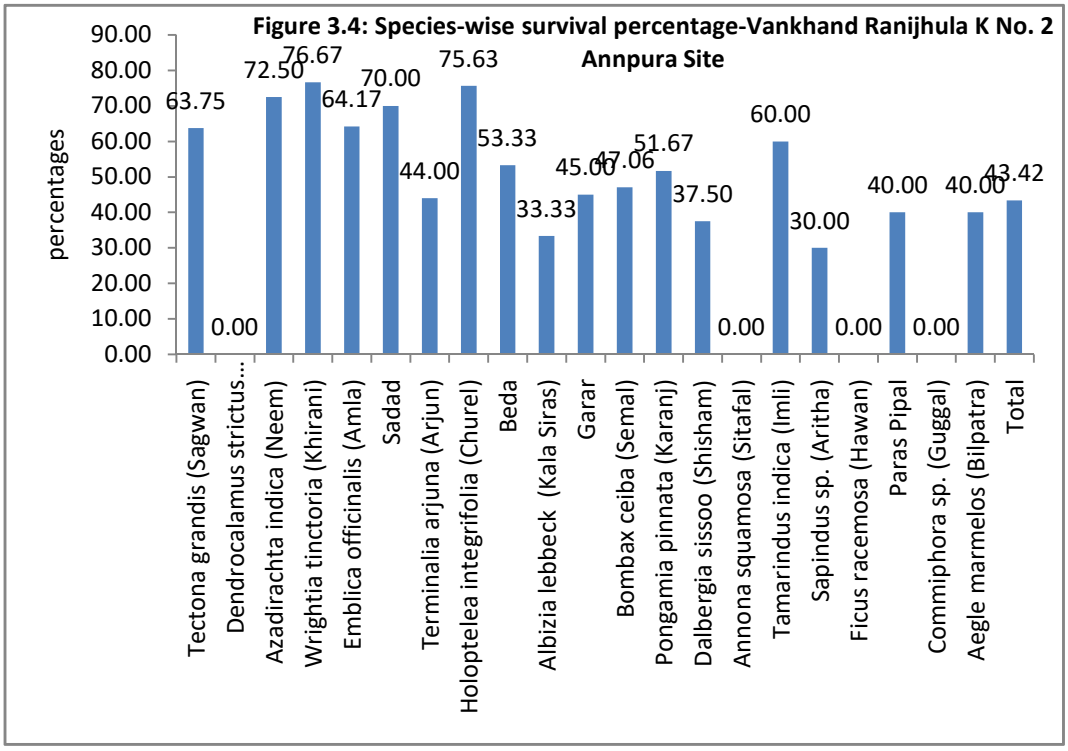
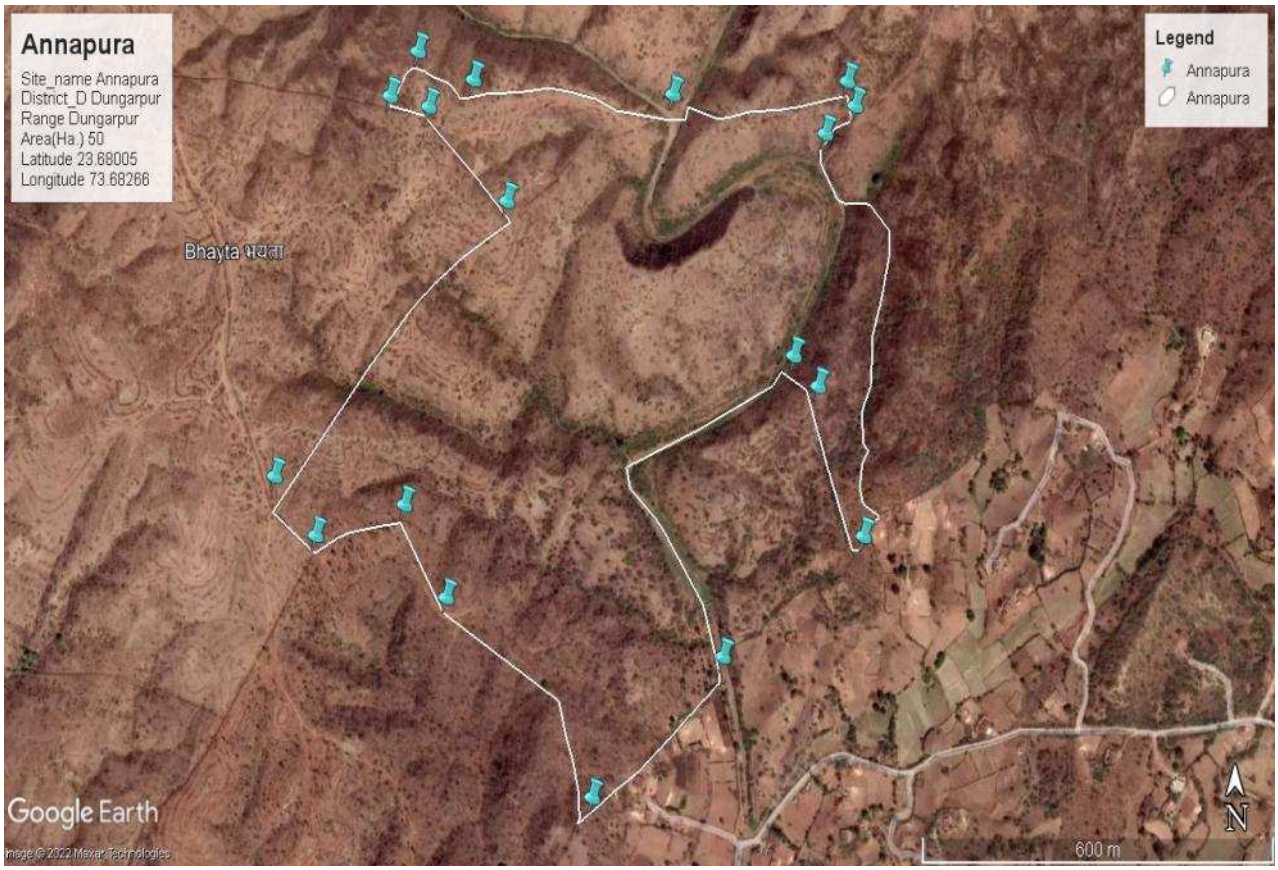


Figure 3.4: Species-wise survival percentage-Vankhand Ranijhula K No. 2 Annpura Site

3.2.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.



3.2.12. Budget and expenditure

Table 3.3 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18	1766800			1766800	1766474			1766474
2018-19	412600			412600	409086			409086
2019-20	177850			177850	177850			177850
2020-21	92250			92250	92249			92249
2021-22	97050			97050	96255			96255
Total	2546550			2546550	2541914			2541914

3.3.1 Site 3- Charwara Rataghata in Seemalwara range - N 23.662645 and E 73.676998

The selected plantation was carried out on 50 ha of land at Charwara Rataghata in Seemalwara range during the year 2019-20. The activities were done under the ANR model. The site was a forest land and selected for 100% evaluation. The soil was red & rocky.

Plantation site Charwara Rataghata

3.3.2. Treatment plan before sowing: The topography of the area was hilly. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 25 ha of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Measuring collar girth of planted seedling

3.3.3 Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boars and porcupine was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water obstruct the growth of planted seedling. The status of guarding/ fencing at the site was satifactory.

3.3.4. Species Planted: The selected tree species under plantation were 9. Seedlings of Emblica officinalis (Amla), Tectona grandis (Sagwan), Holoptelea integrifolia (Churel), Zizyphus mauritiana (Ber), Azadirachta indica (Neem), Acacia catechu (Khair), Terminalia bellarica (Baheda), Aleurites molucana (Hawan) and Acacia leucopholea (Ronj) were planted.

Growth of planted seedling at the site

A total of 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. Spacing between plants was reported 3 m. As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Sagwan, Chudail, Ronj & Amla which can survive in climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. Hence, the site has species suitable to soil condition. The growth of survived plants was satisfactory.

3.3.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.3.6. Natural Vegetation and Regeneration: The area has been covered fully with vegetation due to this plantation. The growth of plants was good. Plants like Sagwan,Tendu & Baheda have been found grown naturally.

3.3.7. Regeneration through seeds sowing: Seeds of species Khair, kumtha and Ratanjot were sown in as well as along the trenches and on the thanwlas. The result of seed sowing was good.

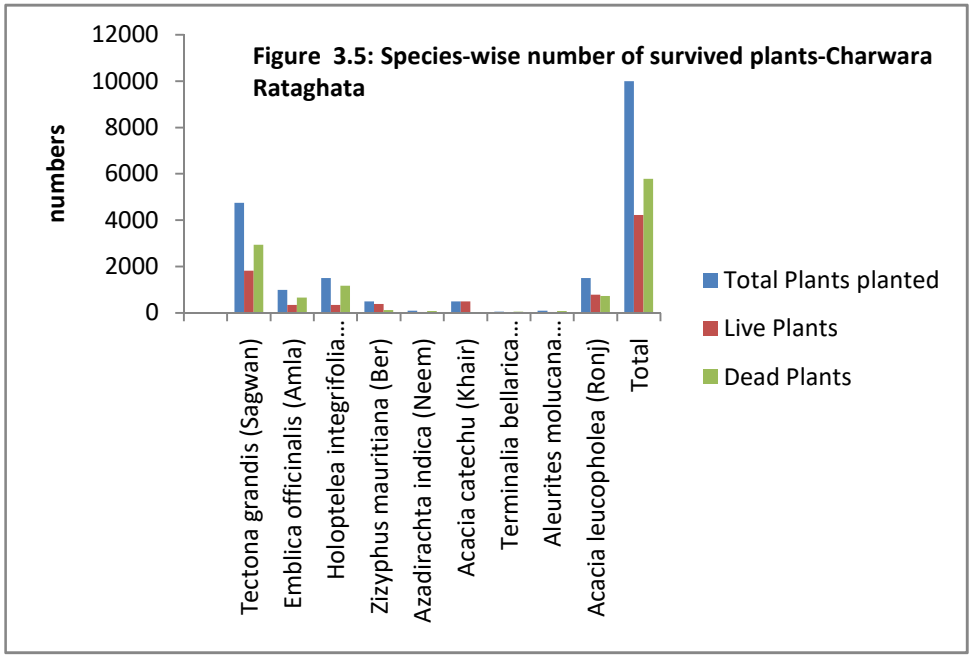
3.3.8. Protection Work: The selected ANR model plantation had loose stone fencing of 3720 RMT. Present condition of fencing was satisfactory. Loose stone fencing was partially effective in controlling the biotic pressure.

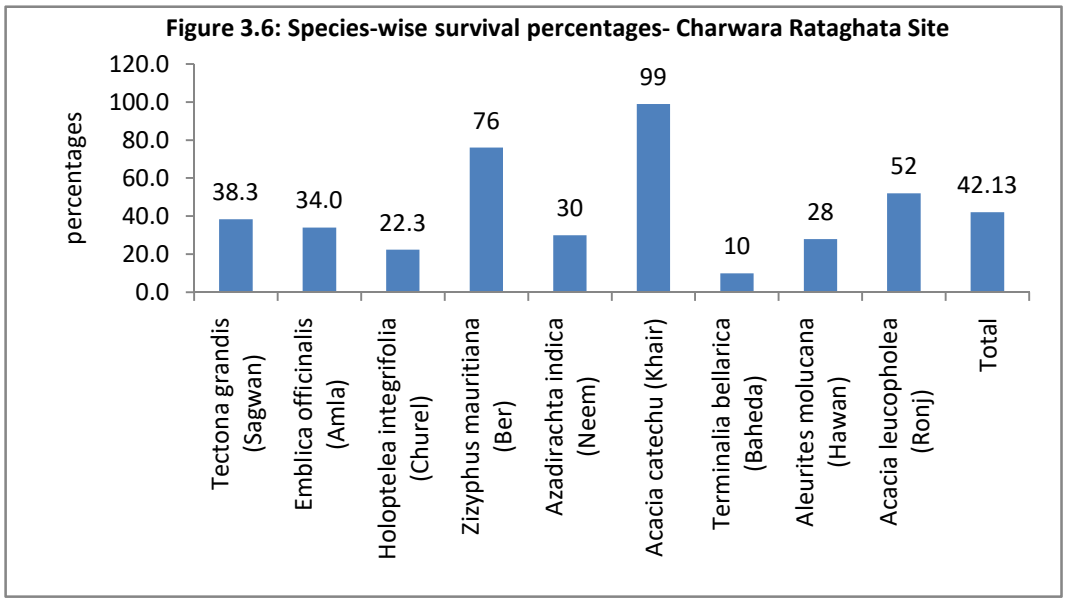
3.3.9. Soil and Water Conservation Measures: There are 10000 RMT trenches comprising 5000 RMT SGT, 4000 RMT CCT & 1000 RMT Deep CCT & 02 earthen check dams in the form of water harvesting structures present in the entire plantation area.

3.3.10. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. **Based on for as 100 percent counting, plants survival was 42.13% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising nine species were planted in the 50 ha plantation area.

Table 3.4: Status of Planted Seedlings at the site-Charwara Rataghata Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)
Tectona grandis (Sagwan)	4750	1820	2930	38.32
Emblica officinalis (Amla)	1000	340	660	34.00
Holoptelea integrifolia (Churel)	1500	335	1165	22.33
Zizyphus mauritiana (Ber)	500	380	120	76.00
Azadirachta indica (Neem)	100	30	70	30.00
Acacia catechu (Khair)	500	495	5	99.00
Terminalia bellarica (Baheda)	50	5	45	10.00
Aleurites molucana (Hawan)	100	28	72	28.00
Acacia leucopholea (Ronj)	1500	780	720	52.00
Total	10000	4213	5787	42.13





3.3.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hectare as per kml map.

3.3.12. Budget and expenditure

Table 3.3 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2018-19	1766835			1766835	1679100			1679100
2019-20	486200			486200	486469			486469

2020-21	172850			172850	171031			171031
2021-22	97050			97050	95620			95620
Total	2522935			2522935	2432220			2432220

4. Results for asset sites

4.1. Site 1- Range Office cum Residence Bichiwara, Bichiwara range

Range office cum residence at Bichiwara range has been evaluated. The Range office cum residence was constructed in the year 2017-18. Site selection for construction of Range office cum residence was adequate. Construction work appeared to be average and useful. The Range office cum residence created under CAMPA was in use & was properly maintained. GPS location of this area was 23.773984 N and 73.498682. Construction work of Range office cum residence was completed. Rooms, Kitchen & wash room was constructed at Range office cum residence The expenditure incurred for constructing the Forest Chowki was Rs. 1049917 (as per MB) against the estimated budget of Rs. 1050000.

Site 2- Pakki Diwar 4 Ft at Naramangra , Aantri Range

At Naramangra in Aantri range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 400 m length as per MB. Also in actual 400 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meters. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. The plaster work of pakki diwar had not been done. GPS location of this area was 23.811589 N and 73.857029 E. The expenditure incurred for constructing this wall was Rs. 830617(as per MB) against the estimated cost of 9.60 lacs.

Site 3- Pillars at Beedlalgari, Aantri range

At Beedlalgari in Aantri Pillars (9 Nos.) have been evaluated. The pillars were constructed in the year 2018-19. The pillars were 9 in numbers as per MB. Also, in actual 9 pillars were found

& evaluated by the third party. The pillars constructed were reported average and useful. The construction of pillars helped in marking forest boundary.The expenditure incurred for constructing the Pillars (9 Nos.) was Rs. 13281 (as per MB) against the estimated cost of Rs 16900.

Site 4 -Pakki Diwar 4 Ft at Naramangra , Aantri Range

At Naramangra in Aantri range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 200 m length as per MB. Also in actual 200 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meters & height was 1.20 meters. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. The plaster work of pakki diwar had not been done. GPS location of this area was 23.808409 N and 73.861657 E. The expenditure incurred for constructing this wall was Rs. 389543 (as per MB) against the estimated cost of 4.80 lacs.

Site 5- Pillars at Vankhand Kyavadi, Aaspur range

At Vankhand Kyavadi in Aaspur Pillars (25 Nos.) have been evaluated. The pillars were constructed in the year 2019-20. The pillars were 25 in numbers as per MB. Also, in actual 25 pillars were found & evaluated by the third party. The pillars constructed were reported average and useful. The construction of pillars helped in marking forest boundary. The expenditure incurred for constructing the Pillars (25 Nos.) was Rs. 29514 (as per MB) against the estimated cost of Rs 45000.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Dungarpur division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Palwada	NFL	12.8	6.43	4
2	Vankhand Ranijhula S.No. 2 Ananpura	ANR	50	43.42	5
3	Charwada Rataghata	ANR	50	42.13	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 4 ft	Naramangra	Average	6
2	Pillars	Beedlalgari	Average	5
3	Pakki Diwar 4 ft	Naramangra	Average	6
4	Pillars	Vankhand Kyavadi	Average	6
5	Range office cum residence	Bichiwara	Average	7

Ganganagar

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Ganganagar Forest Division. This Forest Division with 7 Forest Ranges namely Ravla, Gadsana, Sri Ganganagar, Anupgarh, Biradhwal, Rawla & Suratgarh has territorial jurisdiction over the entire Ganganagar District.

Figure 12 Location of Sri Ganganagar district, Rajasthan

2.1. Selected Asset Sites for Evaluation

The selected asset sites of Ganganagar Forest Division were as given in table 1

Table 1: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Anoopgarh	Nursery Banda	2018-19	Pakki Diwar 4 ft
Biradhwal	Biradhwal	2018-19	Pillars
Riasinghnagar	Riasinghnagar	2019-20	Rescue Centre

3. Results for asset sites

3.1. Site 1- Pakki Diwar 4 Ft at Nursery Banda , Anoopgarh Range

At Nursery Banda in Anoopgarh range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 370 m length as per MB. Alao, in actual 370 m pakki diwar was constructed at the site. The width of the diwar was 0.26 m & height was 1.2 m. Construction work appeared to be

average and the infrastructure was useful. GPS location of this area was 29.269674 N and 73.225623 E. The expenditure incurred for constructing this wall was 8.880 lacs (as per MB) against the estimated budget of 8.880 lacs.

3.1.2 Pillars at Biradhwal, Biradhwal range

At Biradhwal site in Biradhwal range, the Pillars (100 Nos.) have been evaluated. The pillars were constructed in the year 2018-19. The pillars were 100 in numbers as per MB. In actual 100 pillars were found & evaluated by the third party. Construction work appeared to be average and useful. Pillars were not constructed properly. The foundation of pillars was weak. The construction of pillars helped in marking forest boundary. The present condition of pillars was average. The expenditure incurred for constructing the Pillars (100 Nos.) was Rs. 178000 (as per MB) against the estimated budget of Rs. 1.80 lacs.

3.1.3 Rescue Centre at Raisinghnagar, Raisinghnagar range

Raisinghnagar Rescue Centre in Raisinghnagar range has been evaluated. The Rescue Centre was constructed in the year 2019-20. Site selection for construction of Rescue Centre was adequate. The construction work of Rescue Centre had been completed. The infrastructure created under CAMPA was useful. Two rooms with tinshed was constructed under CAMPA. However, the infrastructure during third party evaluation was not in use but was properly maintained. Wild life viz. one deer was spotted at the rescue centre. Quality of Construction work was good. GPS location of this area was 29.524304 N and 73.454166 E. The expenditure incurred for constructing the Rescue Centre was Rs. 99609 lacs (as per MB) against the estimated budget of Rs. 1.00 lacs.

4. Overall assessment

Table 2: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 4 ft	Nursery Banda	Average	7
2	Pillar (100 Nos.)	Biradhwad	Average	5
3	Rescue Centre	Raisinghnagar	Average	7

Hanumangarh

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Hanumangarh Forest Division. This Forest Division with 4 Forest Ranges namely Nohar, Rawatsar, Bhadra & Pilibanga has territorial jurisdiction over the entire Hanumangarh District.

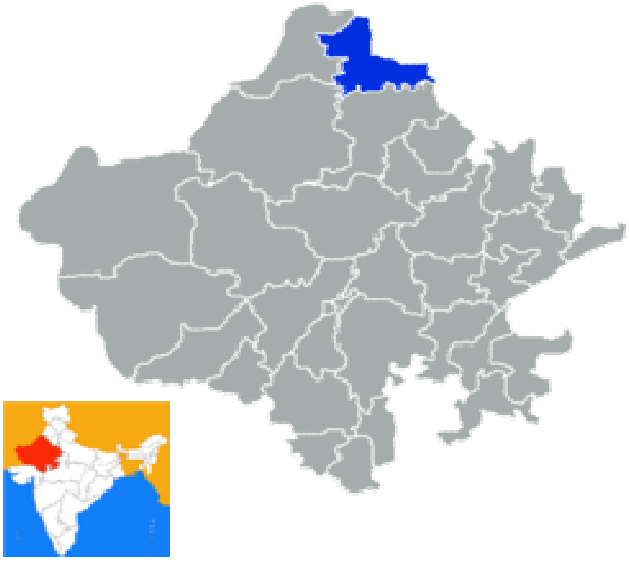


Figure 13 Location of Hanumangarh district, Rajasthan

2.1. Selected Asset Sites for Evaluation

The selected asset sites of Hanumangarh Forest Division were as given in table 1

Table 1: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Nohar	Range Campus	2017-18	Rescue Centre
Rawatsar	Rawatsar Pallu	2017-18	Pakki Diwar 4 ft
Rawatsar	1 JBD	2018-19	Pillars
Rawatsar	BP 29 DWD	2019-20	Pakki Diwar 4 ft
Pilibanga	Rescue Centre, Pilibanga	2019-20	Rescue Centre
Rawatsar	1 JBD, Hardaswali	2019-20	Pillars
Rawatsar	Sirasar	2019-20	Pillars

3. Results for asset sites

3.1. Site 1- Rescue Centre at Range Campus Nohar range

Rescue Centre range campus in Nohar range has been evaluated. The Rescue Centre was constructed in the year 2017-18. Site selection for construction of Rescue Centre was adequate. The construction work of Rescue Centre had been completed. The infrastructure created under CAMPA was useful. Also, the infrastructure during third party evaluation was in use and was properly maintained. Wild life viz. deer & peacocks were spotted at the rescue centre. Quality of Construction work was good. GPS location of this area was 29.187264 N and 74.784359 E. The expenditure incurred for constructing the Rescue Centre was Rs.5.99 lacs (as per MB) against the estimated budget of Rs. 6.50 lacs.

Site 2- Pakki Diwar 4 Ft at Rawatsar Pallu , Rawatsar Range

At Rawatsar Pallu in Rawatsar range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 200 m length as per MB. But, in actual 1000 m pakki diwar was constructed at the site. The width of the diwar was 0.22 m & height was 1.5m. Construction work appeared to be average and the infrastructure was useful. The finishing of pakki diwar was not proper. Plaster work was not completely done. GPS location of this area was 28.926383 N and 74.215181 E. The expenditure incurred for constructing this wall was 4.80 lacs (as per MB) against the estimated budget of Rs. 4.80 lacs.

Site 3- Pillars at 1 JBD, Rawatsar range

At1 JBD site in Rawatsar range, the Pillars (19 Nos.) have been evaluated. The pillars were constructed in the year 2018-19. The pillars were 19 in numbers as per MB. In actual 19 pillars were found & evaluated by the third party. However, due to weak foundation and high intensity wind 05 pillars were either fallen on the ground or submerged in sand. Construction work appeared to be average and useful. The construction of pillars helped in marking forest boundary. GPS location of pillars area was 29.217429 N and 74.227377 E. The present

condition of pillar was average. The expenditure incurred for constructing the Pillars (19 Nos.) was 0.34 lacs (as per MB) against the estimated budget of Rs. 0.34 lacs

Site 4- Pakki Diwar 4 Ft at BP 29 DWD, Rawatsar Range

At BP 29 DWD in Rawatsar range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 300 m length as per MB. But, in actual 1000 m pakki diwar was constructed at the site. The width of the diwar was 0.22m & height was 1 m. Construction work appeared to be average and the infrastructure was useful. The finishing of pakki diwar was not proper. Plaster work was not completely done. GPS location of this area was 29.224289 N and 74.367387 E. The expenditure incurred for constructing this wall was 7.20 lacs (as per MB) against the estimated budget of Rs. 7.20 lacs

BP 29 DWD Pakki diwar 4 Ft.

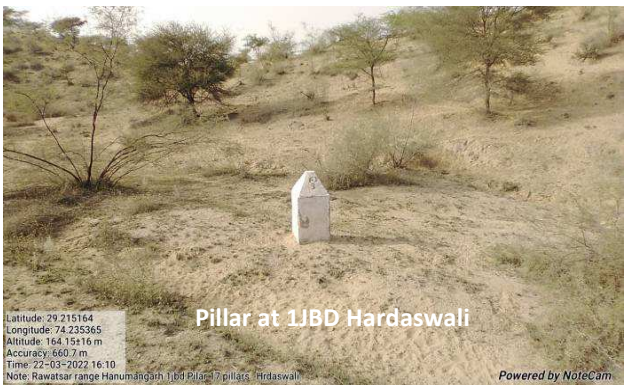
Site 5- Rescue Centre at Pilibanga, Pilibanga range

Rescue Centre Pilibanga in Pilibanga range has been evaluated. The Rescue Centre was constructed in the year 2019-20. Site selection for construction of Rescue Centre was adequate. The construction work of Rescue Centre had been completed. The infrastructure created under CAMPA was useful. The infrastructure during third party evaluation was not in use but was properly maintained. Quality of Construction work was average. The work done under CAMPA was filling of soil at rescue centre, plaster work at rescue centre wall and painting work of rescue centre. GPS location of this area was 29.484163 N and 74.069356 E. The expenditure incurred for constructing the Rescue Centre was Rs. 99868 (as per MB) against the estimated budget of Rs. 1.00 lac

Measuring Rescue Centre, Pilibanga

Site 6- Pillars at 1 JBD Hardaswali , Rawatsar range

At1 JBD Hardaswali site in Rawatsar range, the Pillars (17 Nos.) have been evaluated. The pillars were constructed in the year 2019-20. The pillars were 17 in numbers as per MB. In actual 17 pillars were found & evaluated by the third party. However, due to weak foundation and high intensity wind 04 pillars



Pillar at 1JBD Hardaswali

had either fallen on the ground or submerged in sand. Construction work appeared to be average and useful. The construction of pillars helped in marking forest boundary. GPS location of pillars area was 29.213025 N and 74.232924 E. The present condition of pillars was average. The expenditure incurred for constructing the Pillars (17 Nos.) was 0.31 lac (as per MB) against the estimated budget of Rs. 0.31 lac

Site 7- Pillars at Sirasar, Rawatsar range

At Sirasar site in Rawatsar range, the Pillars (20 Nos.) have been evaluated. The pillars were constructed in the year 2019-20. The pillars were 20 in numbers as per MB. In actual 20 pillars were found & evaluated by the third party. However, due to weak foundation and high intensity wind 07 pillars had either fallen on the ground or submerged in sand. Construction work appeared to be average and useful. The construction of pillars helped in marking forest boundary. GPS location of pillars area was 28.976209 N and 74.103742 E. The present condition of pillars was average. The expenditure incurred for constructing the Pillars (20 Nos.) was 0.36 lac (as per MB) against the estimated budget of Rs. 0.36 lac.

4. Overall assessment

Table 2: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 4 ft	Rawatsar Pallu	Average	5
2	Pillar (19 Nos.)	1 JBD	Average	4
3	Pakki Diwar 4 ft	BP 29 DWD, Rawatsar	Average	4
4	Pillar (17 Nos.)	1 JBD Hardaswali	Average	4
5	Pillar (20 Nos.)	Seerasar	Average	4
6	Rescue Centre	Range Campus, Nohar	Average	7
7	Rescue Centre	Pilibanga	Average	6

Jalore

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Jalore Forest Division. This Forest Division with 4 Forest Ranges namely Jalore, Raniwara, Bhinmal & Jasvantpura has territorial jurisdiction over the entire Jalore District.

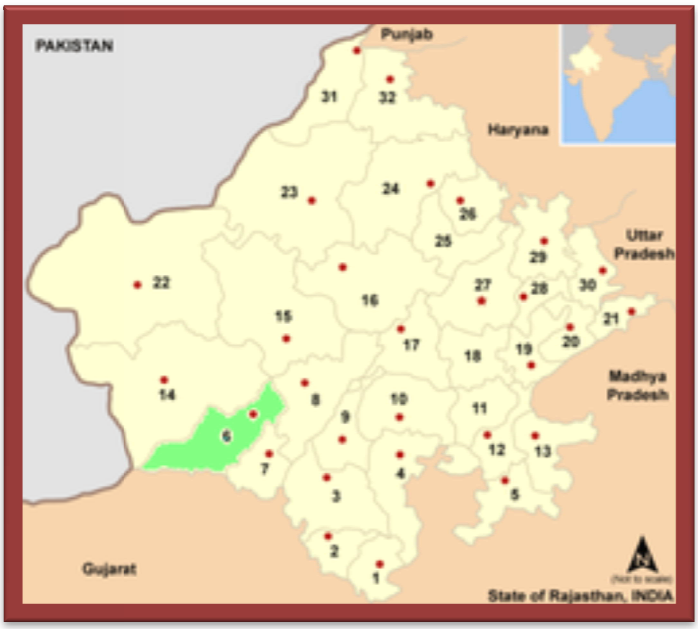


Figure 14 Location of Jalore district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Jalore Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Raniwara	Varetha	2017-18	50	ANR	100%
Jaswantpura	Siroshi Pahadpura	2019-20	50	DFL	10%
Jaswantpura	Veri Dantlawas	2018-19	50	ANR	100%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Jalore Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Jalore	Hateemtai Jod	2017-18	Pakki Diwar 4 ft
Jaswantpura	Sundhamata	2017-18	Forest Chowki
Jalore	Nursery Sayla	2018-19	Pakki Diwar 4 ft
Jalore	Keswara A	2019-20	Pakki Diwar 4 ft

3. Results and Evaluation

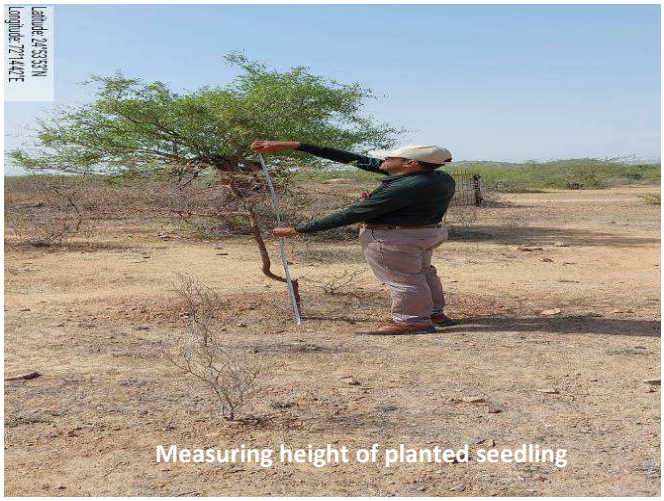
3.1 Plantations Evaluation

3.1.1. Site1- Varetha site in Raniwara range -N 24. 898115 and E 72.245075

The selected plantation was carried out on 50 hac. of land at Varetha in Raniwara range during the year 2018-19. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was hard rocky.

Plantation site Varetha

3.1.2 Treatment plan before sowing: The topography of the area was undulating. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 11000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.


Measuring height of planted seedling

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. It is reported excellent having fair amount of soil. The growth of planted seedlings is less than normal in the area having less soil coverage. Grazing by stray animals & cattle and destruction by Neel gai, wild boars & porcupine was reported at the site. Also, widely growth of termite, soil quality, attack by pest and scarcity of water obstruct the growth of planted seedling. The status of guarding/ fencing at the site was poor.

3.1.4. Species Planted: The selected tree species under plantation were 4. Seedlings Acacia senegal (Kumtha), *Acacia leucophoelea (*ronj), Zizyphus mauritiana (Ber) and Acacia tortilis (Totalis)were planted.

Growth of planted seedling at the site

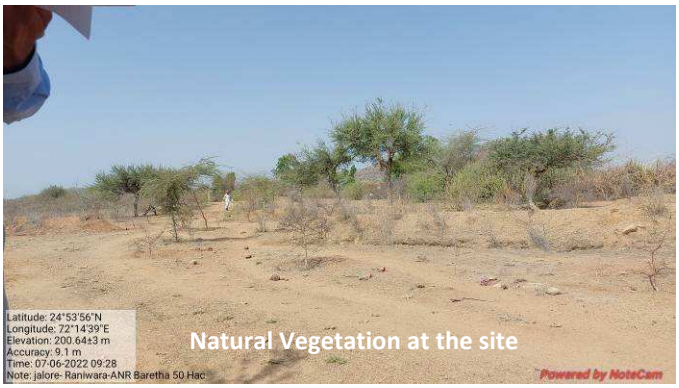
In total 11000 numbers of seedlings were planted at the site. Seedlings of

above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 11000 for 50 hectare of land. Map of planting site was prepared.

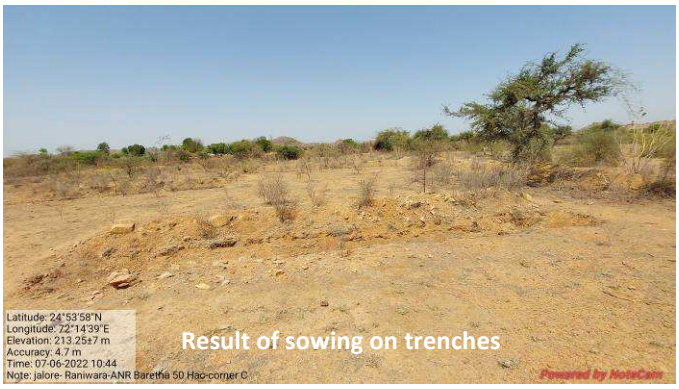
As far as choice of seedlings for plantation is concerned, it was proper, fair & suitable. The seedlings selected for plantation were Kumtha, Totalis, Ronj & Ber which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was satisfactory.**



Natural Vegetation at the site

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: *Jaal, Ronj & Juliflora* were the plants found grown naturally in this area. The growth of the plants was good.



Result of sowing on trenches

3.1.7. Regeneration through seeds sowing: Seeds of species Kumatha were sown in as well as along the trenches and on the thanwlas. There was good growth on thanwalas & trenches of seed sowing. **Hence, the result of sowing was good.**

3.1.8. Protection Work: The selected ANR model plantation had ditch fencing of 2100 RMT having top width 1.5m, bottom width 0.9 m & depth 1.2m. Present condition of fencing was good. Ditch fencing was fully effective in controlling biotic pressure.

Ditch fencing at the site

3.1.9. Soil and Water Conservation Measures: There are

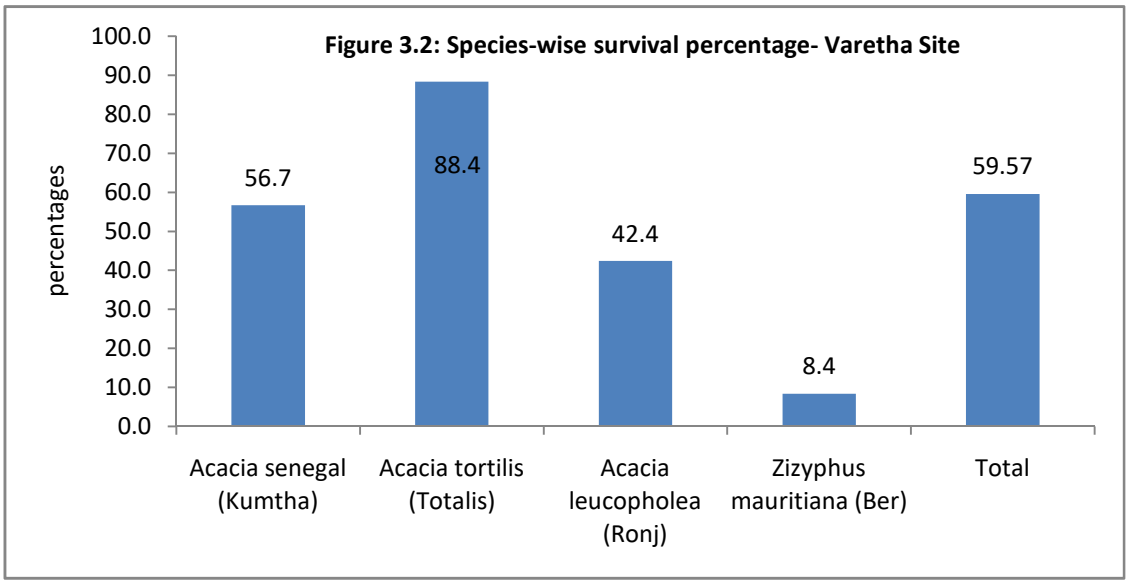
2140 RMT Contour trenches, earthen check dams (1420 cu.cm) & PCT/Nadi 1836 cu.m in the form of water harvesting structures present in the entire plantation area.

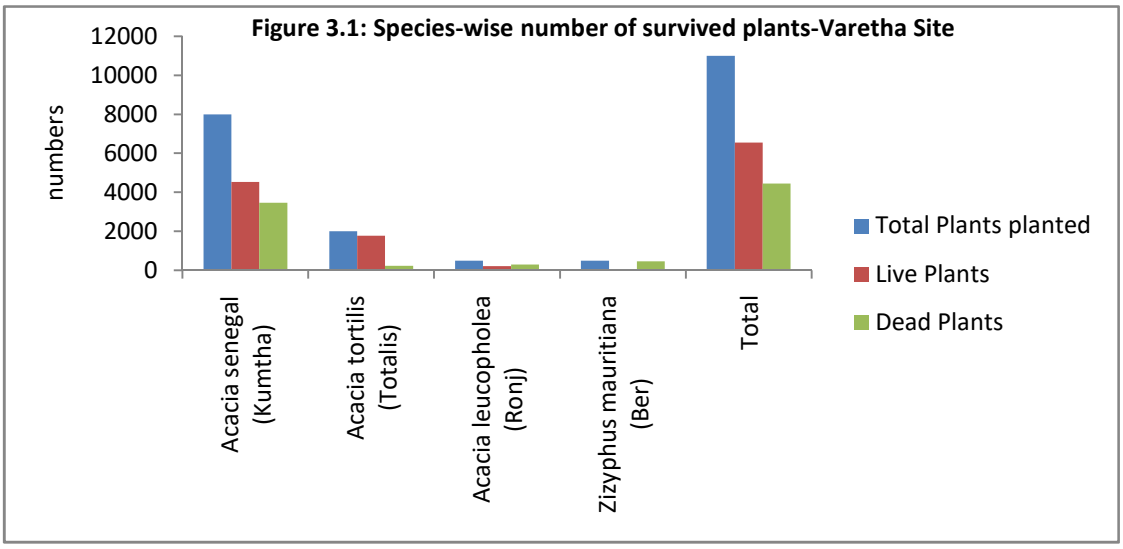
3.1.10 Observations Recorded:

Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 59.57% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 11000 plants comprising four species were planted in the 50 hectare plantation area.

Table 3: Status of Planted Seedlings at the site- Varetha Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia senegal (Kumtha)	8000	4532	3468	56.7	90	65
Acacia tortilis (Totalis)	2000	1767	233	88.4	135	102.3
Acacia leucopholea (Ronj)	500	212	288	42.4	110	90
Zizyphus mauritiana (Ber)	500	42	458	8.4	90	70
Total	11000	6553	4447	59.6	144.5	89





3.1.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.

3.1.12. Budget and expenditure

Table 3.1: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18				17.668				1641328
2018-19				4.126				411594

2019-20				1.778				1.774
2020-21				0.922				0.922
2021-22				0.97				0.966

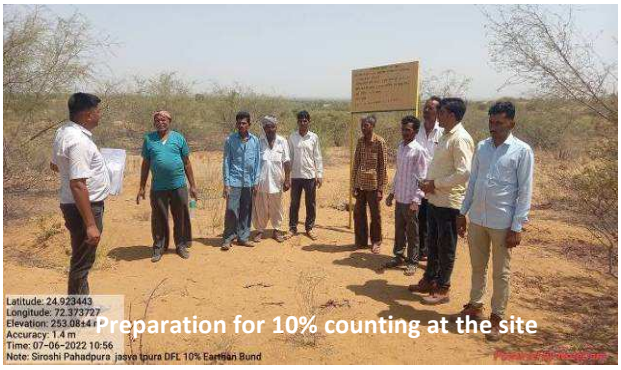
3.2.1 Site 2- Shirosi Pahadpura site in Jaswantpura range -N 24.92344 and E 72.373692

The selected plantation was carried out on 50 hac. of land at Sirosi Pahadpura in Jasvantpura range during the year 2019-20. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 10% evaluation. The soil was sandy.

Destruction by rat at the site

3.2.2. Treatment plan before sowing:

The topography of the area was sand dunes. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 35000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.



Preparation for 10% counting at the site

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, rats and porcupine was reported at the site. Also, widely growth of termite & scarcity of water obstruct the growth of planted seedling. The status of guarding/ fencing at the site was average.

3.2.4. Species Planted: The selected tree species under plantation were 5. Seedlings of Zizyphus mauritiana (Ber), Acacia leucopholea (Ronj), Acacia senegal (Kumtha), Acacia tortilis (Totalis) and Gundi were planted.

In total 35000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 700 plants per hectare have been planted. Thus, total number of plants planted was 35000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Totalis, Kumtha, Bair, Ronj & Gundi which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was satisfactory.**

3.2.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.2.6. Natural Vegetation and Regeneration: Desi babool, Khejri & Bouli were the plants found grown naturally in this area. The growth of the plant was good.

Growth of planted seedling at the site

3.2.7. Regeneration through seeds sowing: Seeds of species *Kumtha* were sown in as well as along the trenches and on the thanwlas. The result of sowing was average. Plants from seed sowing were widely seen on trenches & thanwalas.

Ditch fencing at the site

3.2.8. Protection Work: The selected DFL model plantation had loose stone wall fencing of 382 RMT, ditch fencing 1350 RMT & barbed wire fencing of 450 RMT. Present condition of fencing was satisfactory. Silting was reported in many parts of fencing.

3.2.9. Soil and Water Conservation Measures: There are 15000 RMT Contour trench, earthen checkdams (2907 cu.m), PCT/Nadi (1735 cu.m) & loose stone check dam (888 cu.m) in the form of water harvesting structures present in the entire plantation area.

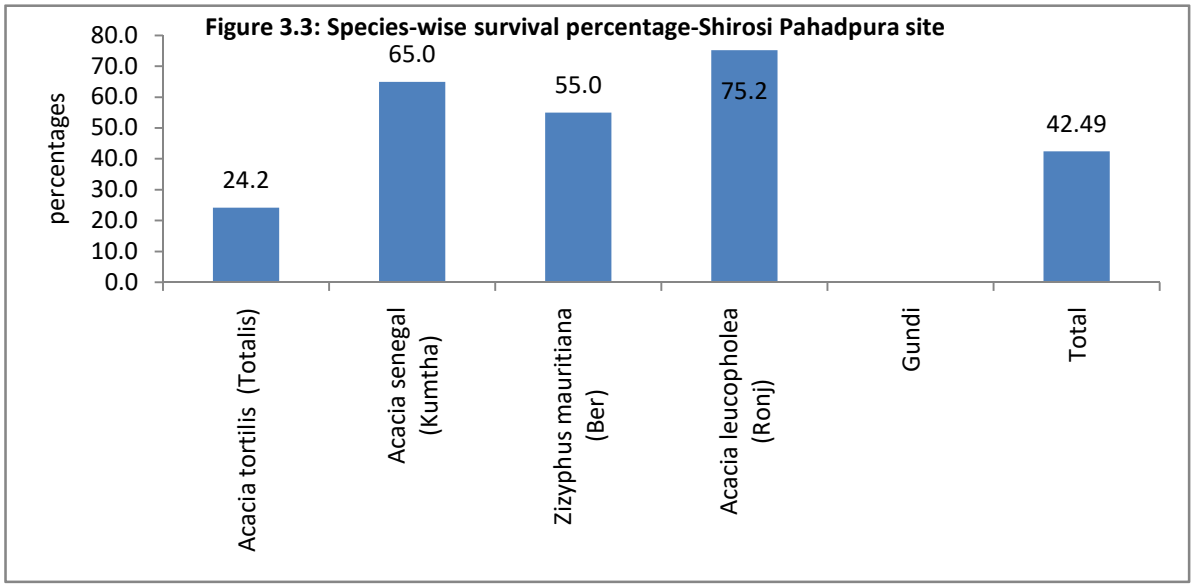
Measuring SMC structure at the site

3.2.10. Observations Recorded: Under this model, 700 plants per hectare were planted during plantation. **Based on**

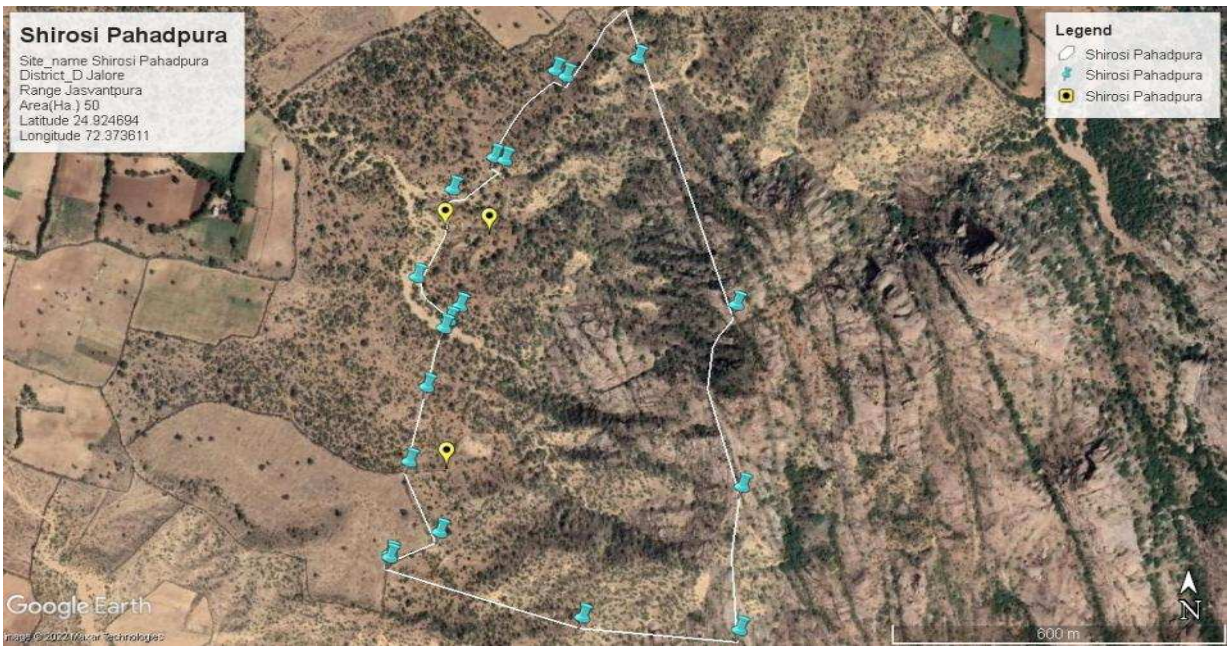
for as 10 percent counting, plants survival was 42.49% at the site. Plant species collar girth & height was also measured. The growth of planted plants was satisfactory. A total of 35000 plants comprising five species were planted in the 25 hectare plantation area.

Table 3.2: Status of Planted Seedling at the site- Shirosi Pahadpura Site

Species	Total Plants planted	10% plantaion area has been observed	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia tortilis (Totalis)	21200	1920	465		24.2	121.0	134.6
Acacia senegal (Kumtha)	8800	700	455		65.0	160.9	92.1
Zizyphus mauritiana (Ber)	3300	320	176		55.0	119.2	71.7
Acacia leucopholea (Ronj)	1300	520	391		75.2	135.4	91.6
Gundi	400	40	0		0.0	0.0	0.0
Total	35000	3500	1487	2013	42.49	137.2	102.3



3.2.11. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 50 hec as per kml map.



3.3.1 Site 3 -Veri Dantlawas in Jaswantpura range - N 24.856045 and E 72.373198

The selected plantation was carried out on 50 hec of land at Veri Dantlawas site of Jaswantpura range during the year 2019-20. The activities were done under the ANR model. The site was a forest land and selected for 100% evaluation. The soil was sandy.

3.3.2. Treatment plan before sowing: The topography of the area was sand dunes. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land**.** The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.3.3 Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai and porcupine

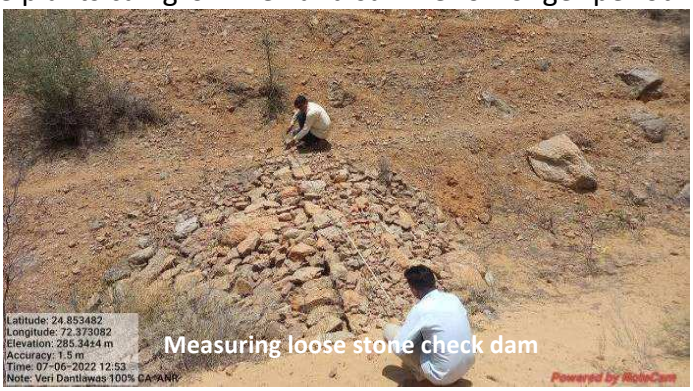
was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average.

3.3.4 Species Planted: The selected tree species under plantation were 9. Seedlings of Acacia senegal (Kumtha), Acacia leucopholea (Ronj), Zizyphus mauritiana (Ber), Pongamia pinnata (Karanj), Acacia tortilis (Totalis), Azadirachta indica (Neem), Albizzia lebbeck (Siras), Holoptelea integrifolia (Churel) and Delonix regia (Gulmohar) were planted.

A total of 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. Spacing between plant to plant reported 3m/ 4m as per the available site condition. As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Ronj, Kumtha, Bair & Totalis which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. The growth of survived plants was satisfactory.



3.3.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.3.6. Natural Vegetation and Regeneration*:* The area has been covered fully with vegetation due to this plantation. Plants like Dhok, Totalis, Kumtha & Neem have been found grown naturally. .

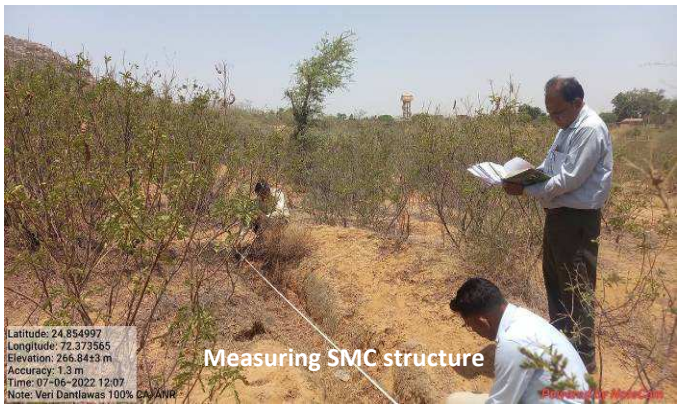
3.3.7. Regeneration through seeds sowing: The growth of seeds sowing plants was average. The result of seed sowing (viz. Kumtha) was satisfactory.

3.3.8. Protection Work: The selected ANR model plantation was protected by ditch fencing of 405 RMT having width at the top-1.50 meters, width at the bottom-0.9 meter & depth 1.02 meters, loose stone fencing of 1380 RMT having width at the top-0.8 meter, width at the bottom-0.6 meter & height 1.2 meters & barbed wire fencing of 450 RMT. Present

condition of fencing was average. Fencing has been partially effective in controlling the biotic pressures.

3.3.9. Soil and Water Conservation Measures:

There is 6210 RMT (width at the top-1.05 meters, width at the bottom-0.45 meter& height 0.6 meters) Contour trench & 1 PCT Nadi, 3 Gabion & loose stone check dam (1055 cu.m.) in the form of water harvesting structures present in the entire plantation area

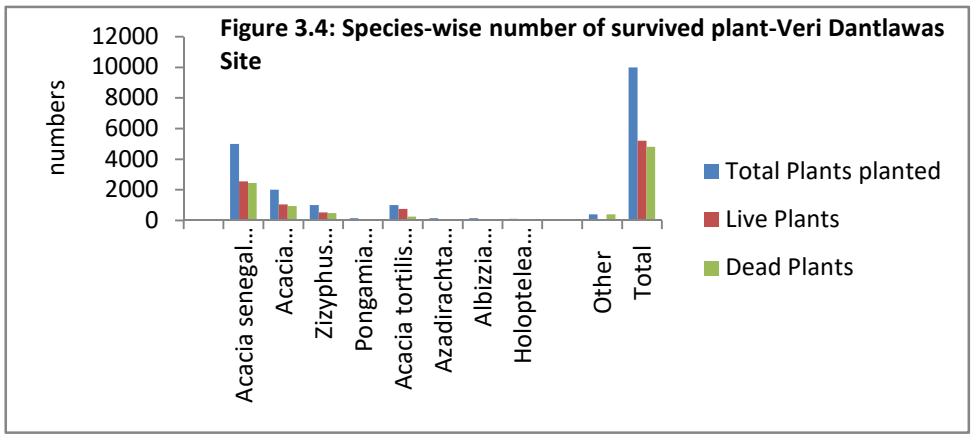


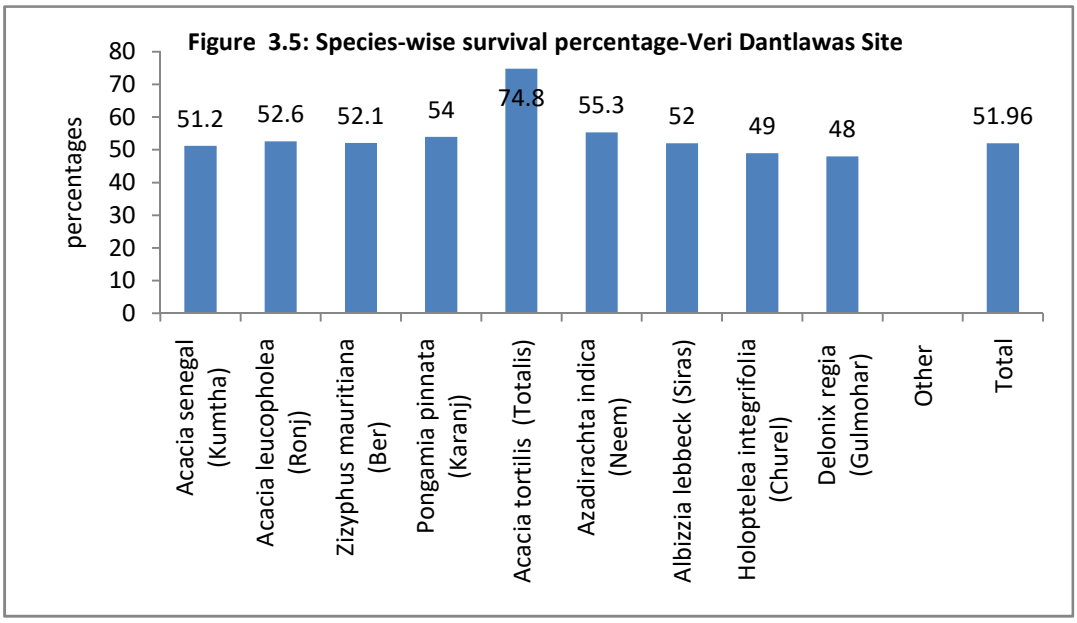
3.3.10. Observations Recorded:

Under this model, 200 plants per ha were planted during plantation. Based on for as 100 percent counting, plants survival was 51.96% at the site. Plant species girth breast height was also measured. The growth of planted seedling was average. A total of 10000 plants comprising nine species were planted in the 50 ha plantation area.

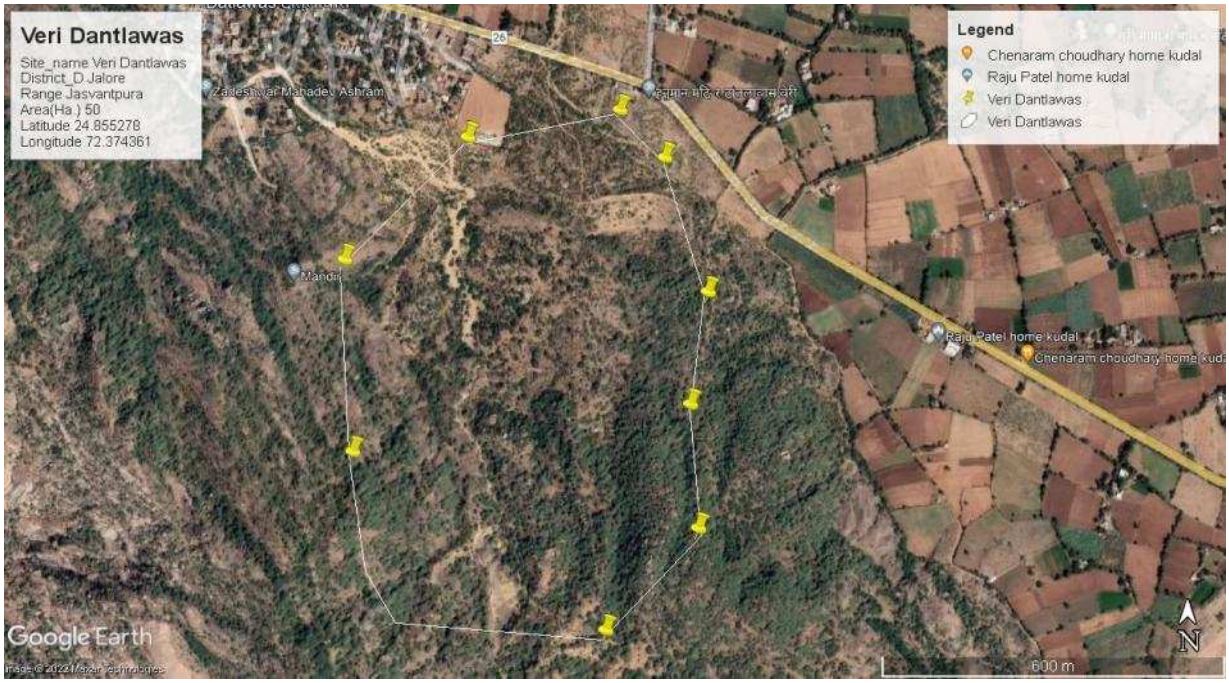
Table 3.3: Status of Planted Seedlings at the site-Veri Dantlawas Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia senegal (Kumtha)	5000	2560	2440	51.20	130.9	105.1
Acacia leucopholea (Ronj)	2000	1052	948	52.60	118.2	80.7
Zizyphus mauritiana (Ber)	1000	521	479	52.10	105.9	74.6
Pongamia pinnata (Karanj)	150	81	69	54.00	115.0	73.9
Acacia tortilis (Totalis)	1000	748	252	74.80	178.6	99.0
Azadirachta indica (Neem)	150	83	67	55.33	120.0	65.0
Albizzia lebbeck (Siras)	150	78	72	52.00	101.3	65.0
Holoptelea integrifolia (Churel)	100	49	51	49.00	90.0	65.0
Delonix regia (Gulmohar)	50	24	26	48.00	105.0	65.0
Other	400	0	400	0.00	0.0	0.0
Total	10000	5196	4804	51.96	131.2	93.8





3.3.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hac as per kml map.



4. Results for asset sites

4.1. Site1- Pakki Diwar 4 Ft at Hattimtai Jod, JaloreRange

At Hateemtai Jod in Jalore range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 1000 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20

Measuring Pakki diwar at the site

meter. Construction work appeared to be average and useful. Gap was reported at the pillars site which was 12 in number. The width of coping was 45 cm. The 500 meter superstructure may be of less width. The wall & other construction activities through contractor need to monitor the quality by the Tendering authority. The VFPMC may be involved in construction in place of contractor. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. GPS location of this area was 25°0'37" N and 72°19'40"E. The expenditure incurred for constructing this wall was 24 lacs (as per MB) against the estimated cost of 24 lacs.

Site 2- Forest Chowki at Sundhamata Jaswantpura range

Forest Chowki at Sundhamata in Jaswantpura range has been evaluated. The Forest Chowki was constructed in the year 2017-18. Site selection for construction of Forest Chowki was adequate. Construction work appeared to be average and useful. The Forest Chowki created under CAMPA was used by department staff. The Forest Chowki constructed under CAMPA was properly maintained. Electricity fitting & sanitary connection of Forest Chowki was completed. Quality of construction & present condition of the Forest Chowki was average. Cracks were reported in wall & floor of Forest Chowki. GPS location of this area was 24.844055 N and 72.355192 E. The expenditure incurred for constructing the Forest Chowki was Rs. 550879 (as per MB) against the estimated budget of Rs. 550879.

Site3- Pakki Diwar 4 Ft at Nursery Sayla , Jalore Range

At Nursery Sayla in Jalore range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 250 m length as per MB. Also, in actual 250 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meters. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft covered nursery Sayla & protected the site. Coping is of 2-5 mm had been done. GPS location of this area was 25°19'16" N and 72°21'20"E. The expenditure incurred for constructing this wall was lacs (as per MB) against the estimated cost of 6.0 lacs.

Site 4- Pakki Diwar 4 Ft at Keswara A, Jalore Range

At Keswara A in Jalore range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meters & height was 1.20 meters. Construction work appeared to be average and useful. Deduction of nalla area was not taken from total superstructure. Coping is hardly of 2-5mm in place of 10 mm. Pointing work was not reported proper. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. GPS location of this area was 25.369585 N and 72.509287E. The expenditure incurred for constructing this wall was lacs (as per MB) against the estimated cost of 12 lacs.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Jalore division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Baretha	ANR	50	59.57	6
2	Siroshi Pahadpura	DFL	50	42.49	5
3	Veri Datlawas	ANR	50	51.96	6

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 4 ft	Hateemtai Jod	Average	6
2	Pakki Diwar 4 ft	Sundhamata	Average	6
3	Pakki Diwar 4 ft	Keswara A	Average	6
4	Forest Chowki	Sundhamata	Average	6

Jhalawar

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Jhalawar Forest Division. This Forest Division with 7 Forest Ranges namely Khanpur, Dag, Manoharthana, Aklera, Jhalawar, Bakani & Asnawar has territorial jurisdiction over the entire Jhalawar District.

Figure : Location of Jhalwar district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Jhalawar Forest Division for evaluation were as given in table 1.

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Khanpur	Sojpur	2017-18	23.25	NFL	100%
Mandalgarh	Barubeh	2019-20	27.670	NFL	10%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Jhalawar Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Jhalawar	Lohiyajhir	2017-18	Pakki Diwar 4 ft
Jhalawar	Gindaur	2017-18	Rescue Centre
Manoharthana	Manoharthana	2018-19	Boundary Pillar
Jhalawar	Jhir	2019-20	Nursery

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1- Sojpur site in Khanpur range -N 24.66241 and E 76.435736

The selected plantation was carried out on 23.25 hac. of land at Sojpur in Khanpur range during the year 2017-18. The activities were done under the Non- Forest Land (NFL) model. The site was a forest land and selected for 100% evaluation. The soil was black & red in colour.

3.1.2. Treatment plan before sowing: The topography of the area was plane & ravine. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 35000 pits were dug for plantation in total 23.25 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Continuous Contour trenches

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai and rabbits, rats was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water obstruct the growth of planted seedling. The status of guarding/ fencing at the site was poor.

Grazing by Cattle at the plantation site

3.1.4. Species Planted: The selected tree species under plantation were 8. Seedlings of *Acacia nilotica* (desi babool), *Acacia leucophoelea (*ronj), Dalbergia sissoo (Shisham), Pithecellobium dulce (Jangal Jalebi), Azadirachta indica (Neem), Hinhot Zizyphus mauritiana (Ber) and, Acacia catechu (Khair) were planted.

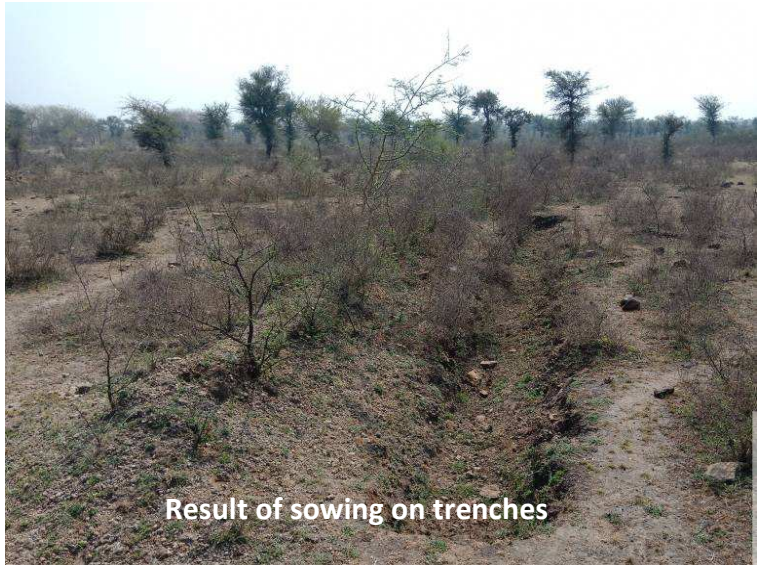
In total 35000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

Natural Vegetation at the site

As per the model, 1500 plants per hectare have been planted. Thus, total number of plants planted was 35000 for 23.25 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Ronj, Neem & Desi babool which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was good.**


Result of sowing on trenches

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water. Only one time watering to 2500 plants was reported at the site.

3.1.6. Natural Vegetation and Regeneration: Dhonk, Ronj, and Ber were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species Ratanjot,*kumatha, Khair and Katkaranj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good especially on contour trenches.**

3.1.8. Protection Work: The selected NFL model plantation had loose stone fencing of 100 RMT having width at the top-0.6 meter, width at the bottom-0.8 meter & height 1.2 meters. Present condition of fencing was poor. 325 RMT loose stone fencing was badly damaged. Also, 3050 RMT ditch fencing having width at the top-1.5 meters, width at the bottom-0.9 meter & height 1.2 meters was reported at the site. The status of ditch fencing was good.

Loose stone fencing at the site

3.1.9. Soil and Water Conservation Measures: There are 7500 RMT (Width & depth - 0.45 meters) Contour trenches & 1500 cu.m earthen bund in the form of water harvesting structures present in the entire plantation area.

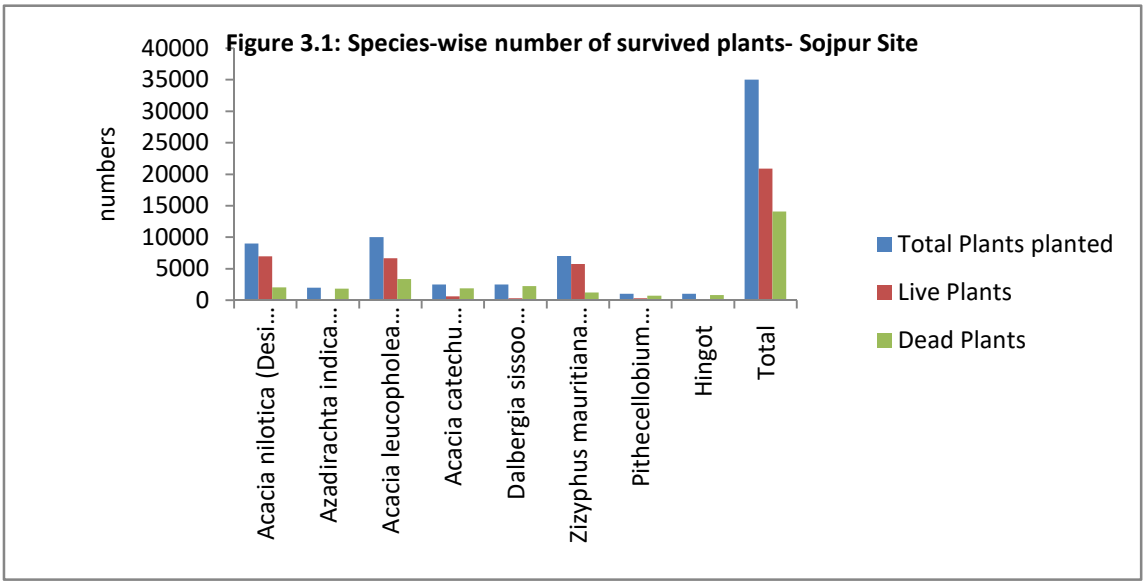
Ditch fencing at the site

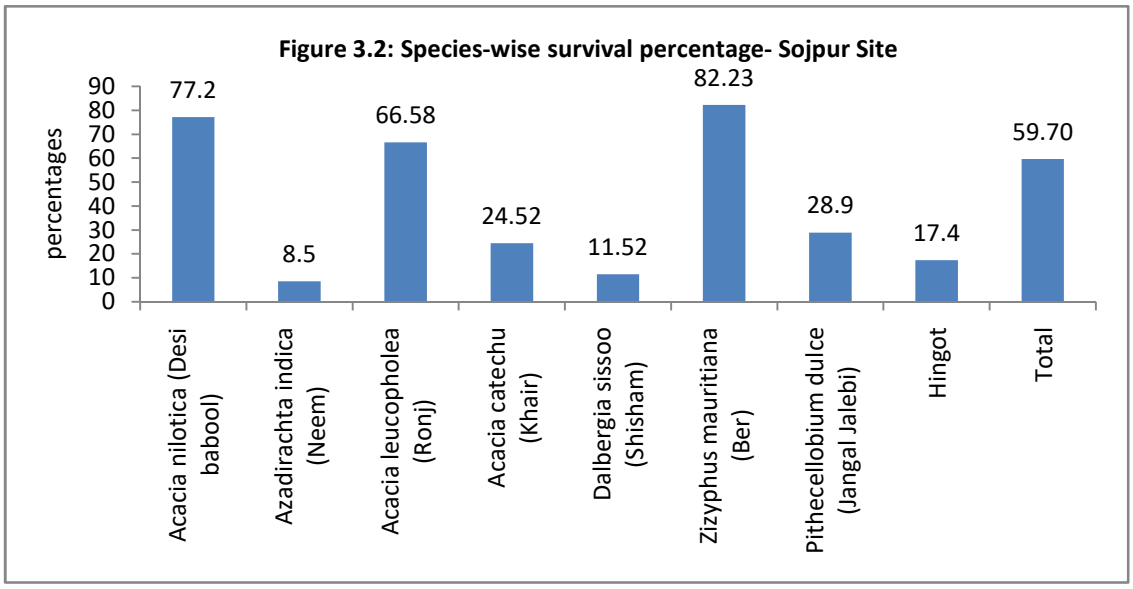
3.1.10 Observations Recorded: Under this model, 700 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 59.70% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 35000 plants comprising eight species were planted in the 23.25 hectare plantation area.

Table 3: Status of Planted Seedlings at the site-Sojpur Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average collar (mm)
Acacia nilotica (Desi babool)	9000	6948	2052	77.20	89	32.2
Azadirachta indica (Neem)	2000	170	1830	8.50	10	8
Acacia leucopholea (Ronj)	10000	6658	3342	66.58	56	7.2
Acacia catechu (Khair)	2500	613	1887	24.52	91	40
Dalbergia sissoo (Shisham)	2500	288	2212	11.52	22.5	6.2
Zizyphus mauritiana (Ber)	7000	5756	1244	82.23	156.5	50
Pithecellobium dulce (Jangal	1000	289	711	28.90	60	50

Jalebi)						
Hingot	1000	174	826	17.40	75	68
Total	35000	20896	14104	59.70	70	34





3.1.11. GPS Location and KML file: The selected NFL model under CAMPA plantation site measured 23.25 hec as per kml map.

3.1.12 Budget and expenditure

Table 3.3 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs. In Lac)				Expenditure (Rs. In Lac)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18	2325100			2325100				
2018-19	668200			668200	544729			544729
2019-20	218282			218282	160741			160741
2020-21	240850			240850	158429			158429
2021-22	253150			253150	233188			233188
Total	3705582			3705582	1097087			1097087

3.2.1. Site 2- Barubeh in Manoharthana range - N 24.41876 and E 76.80006

The selected plantation was carried out on 27.670 ha of land at Barubeh in Manoharthana range during the year 2019-20. The activities were done under the NFL model. The site was a forest land and selected for 10% evaluation. The soil was bolder.

3.2.2 Treatment plan before sowing: The topography of the area was rocky. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 29700 pits were dug for plantation in total 27.60 ha of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Growth of planted seedling on thanwlas

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was good. Grazing by stray animals & cattle and destruction by Neel gai, rats and attack by pest was reported at the site. Also, widely growth of termite obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.

3.2.4.. Species Planted: The selected tree species under plantation were 9. Seedlings of *Acacia nilotica* (desi babool), *Acacia leucophoelea (*ronj), *Holoptelea integrifolia* (Churel), *Zizyphus mauritiana (*Ber), Acacia catechu (Khair), Azadirachta indica (Neem), Dalbergia sissoo (Shisham), Pithecellobium dulce (Jangal Jalebi) and Hingot were planted.

A total of 29700 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. Spacing between plants reported 3 m. As per the model, 1000 plants per hectare have been planted. Thus, total number of plants planted was 29700 for 27.67 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Ronj, Neem, Churel & Desi babool which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. The growth of survived plants was good.

Ditch fencing at the site

3.2.5. Watering of plants: Only once in a year (March/ April) provision of watering to plants was reported at the site. However, the plantation works carried out here are totally based on rain water.

3.2.6. Natural Vegetation and Regeneration: The area has been covered fully with vegetation due to this plantation. Plants like Palash, Ronj, Ber and Dhonk have been found grown naturally.

3.2.7. Regeneration through seeds sowing: Seeds of species kumtha, katkaranj, khair & ronj were sown in as well as along the trenches and on the thanwlas. The result of seed sowing was good. Plants from the seeds sown were rarely seen in contour trenches.

Continuous Contour trenches the

3.2.8. Protection Work: The selected NFL model plantation had ditch fencing of 3200 RMT having width at the top-1.5 meters, width at the bottom-0.9 meter & height 1.2 meters. Present condition of fencing was good. Ditch fencing was fully effective in controlling the biotic pressure.

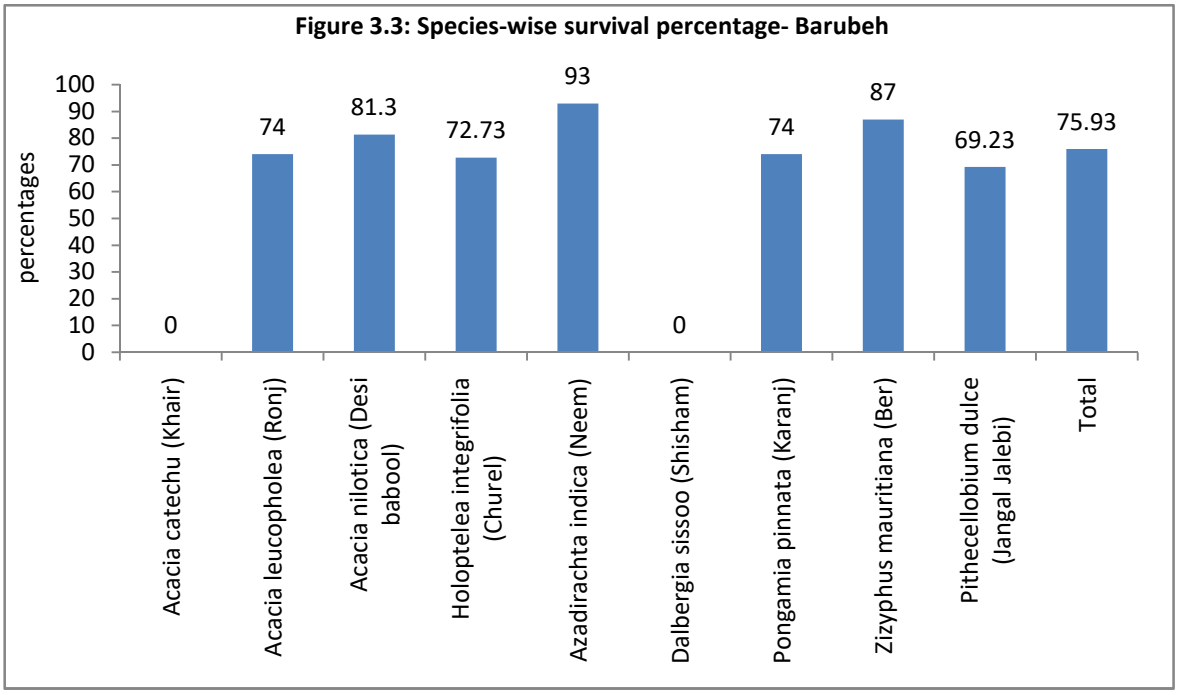
3.2.9. Soil and Water Conservation Measures: There are 3000 RMT (Width & depth - 0.45 meter) Contour trenches in the form of water harvesting structures present in the entire plantation area.

3.2.10. Observations Recorded: Under this model, 1000 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 75.93% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was good. A total of 29700 plants comprising nine species were planted in the 27.67 ha plantation area.

Table 3: Status of Planted Seedlings at the site-Barubeh Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average collar (mm)
Acacia catechu (Khair)	500	0		0.00	0	0
Acacia leucopholea (Ronj)	2500	185		74.00	98	67
Acacia nilotica (Desi babool)	10000	813		81.30	118	68
Holoptelea integrifolia (Churel)	2200	160		72.73	55	40
Azadirachta indica (Neem)	1000	93		93.00	43	25
Dalbergia sissoo (Shisham)	200	0		0.00	0	0

Pongamia pinnata (Karanj)	10000	740		74.00	118	67
Zizyphus mauritiana (Ber)	2000	174		87.00	91	51
Pithecellobium dulce (Jangal Jalebi)	1300	90		69.23	53	66
Total	29700	2255	27445	75.93	82	55



3.2.11. GPS Location and KML file: The selected NFL model under CAMPA plantation site measured 27.67 hec as per kml map.

3.2.12. Budget and expenditure

Table 3.5: Cost-estimate & expenditure (Year-wise)

	Cost estimate (Rs.)				Expenditure (Rs.)			
Year	**Plantation**	**SMC works**	**Boundary wall/Fencing**	**Total**	**Plantation**	**SMC works**	**Fencing**	**Total**
2017-18	675999			675999	675999			675999
2018-19	1374064			1374064	1374064			1374064
2019-20	351764			351764	351764			351764
2020-21	74352			74352	74352			74352
Total	2476179			2476179	2476179			2476179

4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft. at Lohiyajhir, Jhalawar range

At Lohiyajhir in Jhalawar range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 2000 m length as provided by HoFF to the third party. But the wall dimensions were 4 ft and 1000 m length as per MB. In actual 960 m pakki diwar was constructed at the site. However, 1000 meter pakki diwar was constructed at four places viz. 400 meters near to Jhir nursery Rajpur Balgarh, 116 meters at Gindor, 84 meters Jooni Nasiya ji ke pas, Gindor, 360 meters near Navlakha kila near Bakshpura village. The reason for construction of 960 meters pakki diwar at four places was to avoid encroachment of local residents. 116 meters pakki diwar at Gindor was totally damaged and encroached by local residents. The width of the diwar was 0.38 meter & height was 1.20 meters. Construction work appeared to be average and useful. GPS location

of 400 meter pakki diwar was 24.57283 N and 76.148638 E. GPS location of 116 metesr pakki diwar was 24.557804 N and 76.17268 E. GPS location of 84 meters pakki diwar was 24.5494 N and 76.17348 E. GPS location of 360 meters pakki diwar was 24.53314 N and 76.19075 E. The expenditure incurred for constructing 400 meters pakki diwar was Rs. 8,71,715 (as per MB) against the estimated budget of Rs. 9,60,000. The expenditure incurred for constructing 116 meters pakki diwar was Rs. 252998 (as per MB) against the estimated budget of Rs. 278000. The expenditure incurred for constructing 84 meters pakki diwar was Rs. 183061 (as per MB) against the estimated budget of Rs. 201600. The expenditure incurred for constructing 360 meters pakki diwar was Rs. 8,71,715 (as per MB) against the estimated budget of Rs. 9,60,000 lac.

Pakki Diwar 4 Ft.

Site 2- Rescue Centre at Gindor Nursery Jhalawar range

Rescue Centre at Gindor Nursery in Jhalawar range has been evaluated. The Rescue Centre was constructed in the year 2017-18. Site selection for construction of Rescue Centre was adequate. The construction work of Rescue Centre had been completed. The infrastructure created under CAMPA was useful. Three compartments were constructed under Rescue Centre. Also, the infrastructure during third party evaluation was in use and was properly maintained. Quality of Construction was good. GPS location of this area was 24°35’34.60” N and 76°10’26.30” E. The expenditure incurred for constructing the Rescue Centre was Rs. 6.0 lac (as per MB) against the estimated budget of Rs. 6.0 lac.

Rescue Centre at Gindor Nursery

Site 4- Pillars at Manoharthana, Manoharthana range

At Manoharthana site in Manoharthana range, the Pillars (43 Nos.) have been evaluated. The pillars were constructed in the year 2018-19. The pillars were 43 in numbers as per MB. But in actual only 3 pillars were physically found & evaluated by the third party. The pillars constructed reported average and useful. The construction of pillars helped in marking forest boundary.

Pillar at Manoharthana

Site 4- Nursery at Jhir Jhalawar range

Bed facility at Jhir Nursery

At Jhir in Jhalawar range, the nursery has been evaluated. The nursery at Jhir was under category of development of existing nursery. The nursery was found operational & useful at the time of visit. Adequate land & other infrastructure (viz. kuccha & pucca bed, well, tubewell, water sprinkler, composting unit, polythene bag & etc. required for development of nursery were available. The nursery was well maintained. Work undertaken in the nursery with support from CAMPA was construction of water tank with capacity of 30000 litres & submersible pump. Total bed available at the nursery was 129 (kutcha bed- 70 & pucca bed-59). GPS location of this area was 24.572926 N and 76.14882 E. The expenditure incurred for development of nursery was Rs. 195799 (as per MB) against the estimated budget of Rs.2.0 lac.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Jhalawar division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Sojpur	NFL	23.25	59.70	6
2	Barubeh	NFL	27.67	75.93	8

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 4 ft	Lohiyajhir	Average	7
2	Pillar	Bijlimariya handpump ke pas	Good	7
3	Rescue Centre	Nursery Lathi	Average	7
4	Nursery	Jhir	Average	7

Jodhpur

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Jodhpur Forest Division. This Forest Division with 6 Forest Ranges namely Baap, Phalodi, Bilada,Bhopalgarh, Luni & Osian has territorial jurisdiction over the entire Jodhpur District.

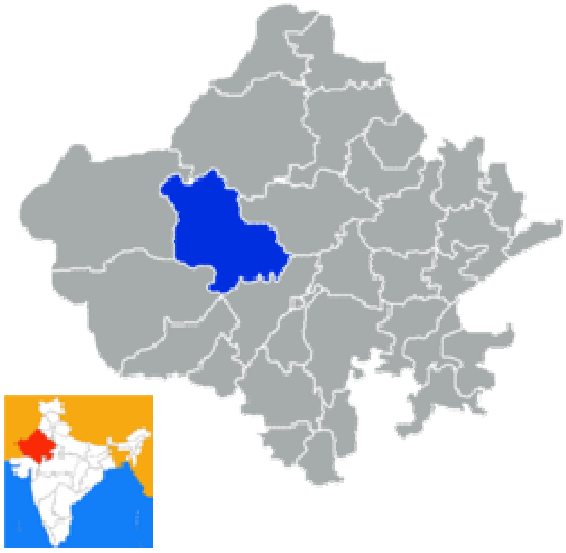


Figure 15 Location of Jodhpur district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Jodhpur Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Bhopalgarh	Devnagar	2017-18	35.24	DFL	100%

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1 Site 1- Devnagar site in Bhopalgarh range -N 26.60061 and E 74.61125

The selected plantation was carried out on 35.24 hac. of land at Devnagar in Bhopalgarh range during the year 2017-18. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 100% evaluation. The soil was rocky & domat.

3.1.2 Treatment plan before sowing:

The topography of the area was hilly & rocky. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Measuring the height of plant

3.1.3 Health & Damages of Plantation:

The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle, deer and destruction by Neel gai and rabbist was reported at the site. Also, widely growth of termite, soil quality and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory

Growth of planted seedling at the site

3.1.4. Species Planted: The selected tree species under plantation were four. Seedlings of *Acacia nilotica* (desi babool), Terminalia Zizyphus mauritiana (Ber), Acacia tortilis (Totalis) and Acacia senegal (Kumtha) were planted.

In total 7084 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

Natural Vegetation at the site

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was for 35.24 hectare of land. Map of planting site was prepared.

Ditch fencing at the Site

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Totalis, Ronj & Desi babool which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was satisfactory.**

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

Result of sowing on trenches

3.1.6. Natural Vegetation and Regeneration: Kair, Bair, Kumtha, Desi babool, Khirni, were the plants found grown naturally in this area. The growth of the plants was average.

3.1.7. Regeneration through seeds sowing: Seeds of species *kumatha* was sown in as well as along the trenches and on the thanwlas. **The result of sowing was satisfactory.**

3.1.8. Protection Work: The selected DFL model plantation had ditch fencing of 1970 RMT having width at the top-1.50 meters, width at the bottom-0.9 meters & height 1.2 meters. Also, 2900 RMT loose stone fencing was reported at the site. The fencing was partially effective in controlling the biotic pressure.

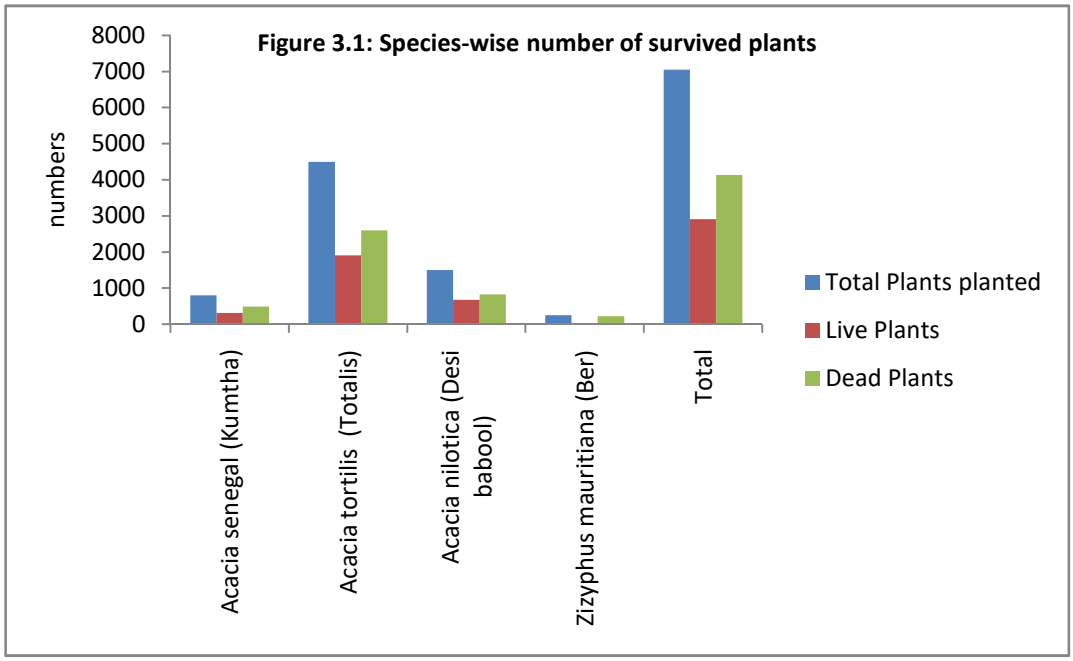
Contour trenches

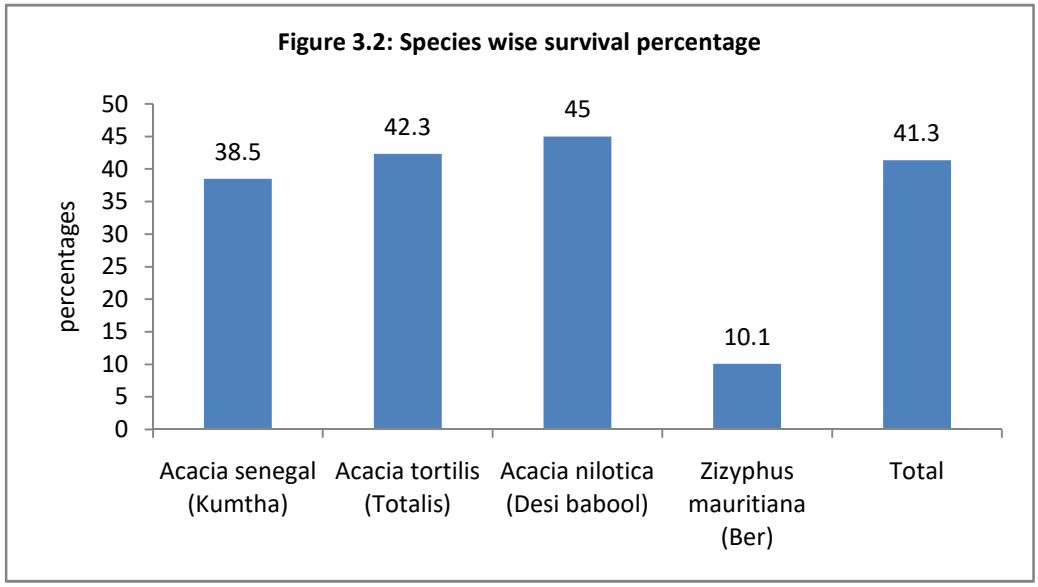
3.1.9. Soil and Water Conservation Measures: There are 4500 RMT Contour trenches, 940 cu. meter earthen checkdam and 1117.8 cu. meter MPT in the form of water harvesting structures present in the entire plantation area.

3.1.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 41.33% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 7048 plants comprising four species were planted in the 35.24 hectare plantation area.

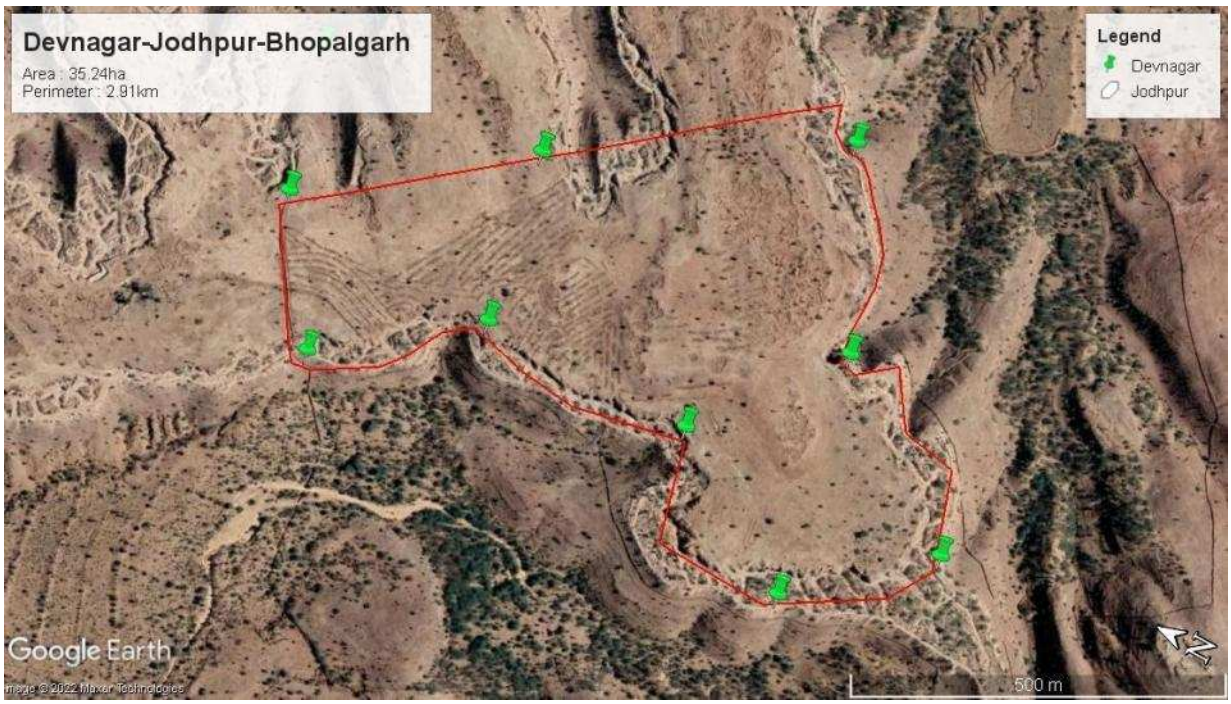
Table 3.2: Status of Planted Seedlings at the site-Devnagar Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia senegal (Kumtha)	800	308	492	38.50	91.5	65.0
Acacia tortilis (Totalis)	4500	1905	2595	42.33	121.6	84.0
Acacia nilotica (Desi babool)	1500	675	825	45.00	106.0	75.0
Zizyphus mauritiana (Ber)	248	25	223	10.08	90.0	65.0
Total	7048	2913	4135	41.33	113.6	80.0





3.1.11. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 35.24 hectare as per kml map.



3.1.12. Budget and expenditure

Table 3.3 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2016-17	-	-	-	1097479	-	-	-	1097151
2017-18	-	-	-	850000	-	-	-	792970
2018-19	-	-	-	337920	-	-	-	337801
2019-20	-	-	-	164606	-	-	-	164502
2020-21	-	-	-	182015	-	-	-	181934
2021-22	-	-	-	191459	-	-	-	191428
Total	-	-	-	2823479	-	-	-	2765786

4. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Jodhpur division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Devnagar	DFL	35.24	41.33	5

Jodhpur WL

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Jodhpur WL Forest Division. This Forest Division with 2 Forest Ranges namely WL Jodhpur & Machiya has territorial jurisdiction over the entire Jodhpur District.

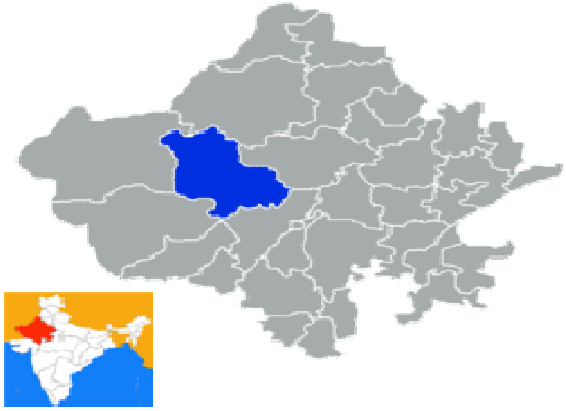


Figure 16 Location of Jodhpur district, Rajasthan

2.1. Selected Asset Sites for Evaluation

The selected asset sites of Jodhpur WL Forest Division were as given in table 1

Table 1: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Van Jeev Jodhpur	Machia Van Khand	2017-18	Pakki Diwar 6 ft
Machia	Machia Van Khand	2018-19	Pakki Diwar 6 ft

3. Results for asset sites

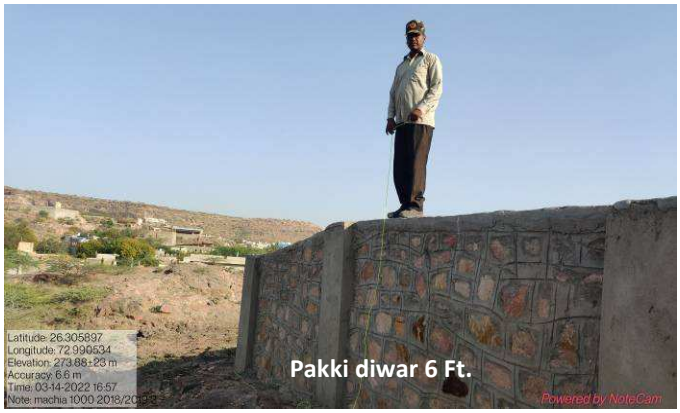
3.1. Site1 -Pakki Diwar 6 Ft at Machia Van Khand , Van Jeev Jodhpur Range

At Machia Vankhand in Van Jeev Jodhpur range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 6 ft and 1500 m length as per MB. But in actual 1399 m pakki diwar was constructed at the site. The width of the diwar was 42-45 cm & height was 90-160 cm. Construction work appeared to be poor and the infrastructure was not much in use. The top of the pakki diwar was not completed with '0' size cement concrete mortar.

The diwar was found broken at six-seven places. Also, height & width of the pakki diwar vary at places across. GPS location of this area was 26°19'11" N and 72°59'40" E. The expenditure incurred for constructing this wall was Rs.34,56,459 (as per MB) against the estimated budget of Rs 42,75,000.

Site 2- Pakki Diwar 6 Ft at Machia Van Khand, Machia Range

At Machia Van Khand in Machia range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 1275 m length as per MB. But in actual 1000 m pakki diwar was constructed at the site. The width of the diwar was 40-45 cm & height was 160-185 cm. Construction work appeared to be average and useful. The construction of Pakki Diwar 6 ft helped in preventing encroachment & protecting forest boundaries. Coping of pakki diwar was not proper at many places. At the top of the wall only sand is visible. Height of the pakki diwar varies from 1.5 to 1.85 meters. GPS location of this area was 26°18'20" N and 72°59'27" E. The expenditure incurred for constructing this wall was Rs.276530 (as per MB) against the estimated budget of Rs 28,50,000.



4. Overall assessment

Table 2: Quantitative assessment of asset work created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 6 ft	Machia Van khand	Poor	4
2	Pakki Diwar 6 ft	Machia Van khand	Average	5

Karauli

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Karauli Forest Division. This Forest Division with 6 Forest Ranges namely Hindaun, Mandrayal, Masalpur, Karauli, Sapotra & Gudachanndraji has territorial jurisdiction over the entire Karauli District.

Figure : Location of Karauli district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Karauli Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Hindaun	Karvwad Jat	2017-18	14.29	DFL	100%
Hindaun	Kachrauli	2019-20	3.0	DFL	10%
Masalpur	Sahanpur	2019-20	55	ANR	10%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Karauli Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Masalpur	Suar wala se Kadere wala jharna Vankhand Gubreda	2017-18	Pakki Diwar 4 ft
Karauli	Pustakalaya se Tal ke Nale ke Chor tak	2018-19	Pakki Diwar 4 ft
Karauli	Kalyani ki Pator se Dhaypura tal tak	2019-20	Pakki Diwar 4 ft

Masalpur	Goder	2019-20	Pillars
Gudhachandraji	Mora Dunger no. 10A	2019-20	Pillars

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1 . Site1- Karvwad Jat site in Hindaun range -N 26°44' 08.9" and E 77°07' 09.2"

The selected plantation was carried out on 14.29 hac. of land at Karvwad Jat in Hindaun range during the year 2017-18. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 100% evaluation. The soil was sandy.

3.1.2. Treatment plan before sowing: The topography of the area was hilly & sand dunes. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 35000 pits were dug for plantation in total 14.29 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boars, rats and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.1.4. Species Planted: The selected tree species under plantation were 7. Seedlings of Acacia nilotica (Desi babool), Acacia tortilis (Totalis), Holoptelea integrifolia (Churel), Acacia leucopholea (Ronj), Zizyphus mauritiana (Ber), Azadirachta indica (Neem) and Acacia senegal (Kumtha)were planted.

In total 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed

along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 700 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 14.29 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Chudail, Totalis, Neem, Desi babool & Kumtha which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was satisfactory.**

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: Dhonk, Churail, Neem, & Ronj were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species *Kumtha, Ronj & Neem* were sown in as well as along the trenches and on the thanwlas. The result of sowing was good. Plants from seeds sowing were widely seen on trenches & thanwalas.

3.1.8. Protection Work: The selected DFL model plantation had ditch fencing of 1300 RMT. Present condition of ditch fencing was satisfactory. Silting was reported in many parts of ditch fencing.

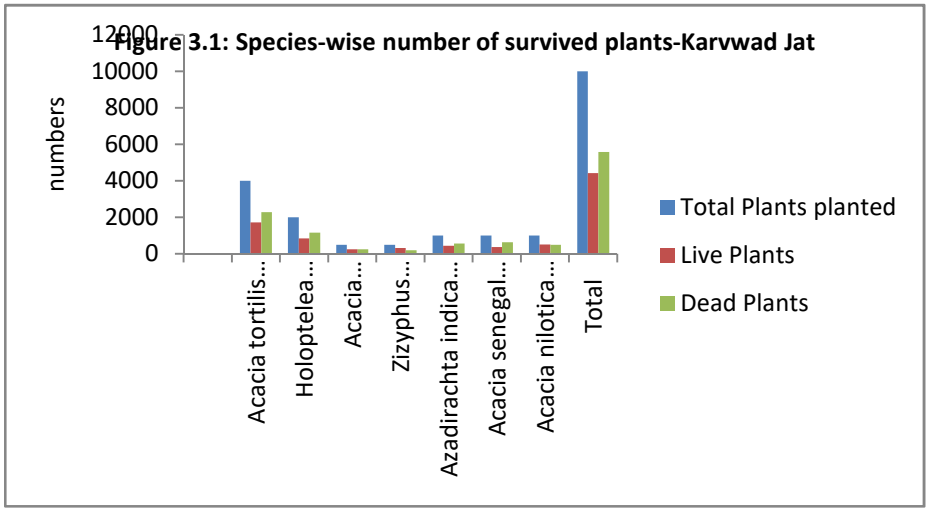
3.1.9. Soil and Water Conservation Measures: There are 2600 RMT Contour trenches & earthen checkdam (807.77 cu.m) in the form of water harvesting structures present in the entire plantation area.

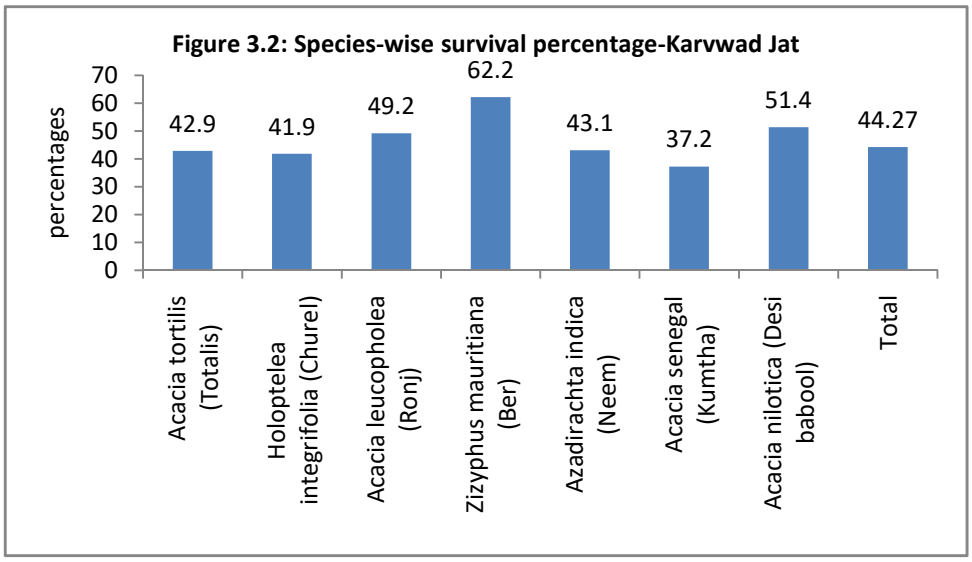
3.1.10. Observations Recorded: Under this model, 700 plants per hectare were planted during plantation. **Based on for as 100**

percent counting, plants survival was 44.27% at the site. Plant species collar girth & height was also measured. The growth of planted plants was satisfactory. A total of 10000 plants comprising seven species were planted in the 50 hectare plantation area. .

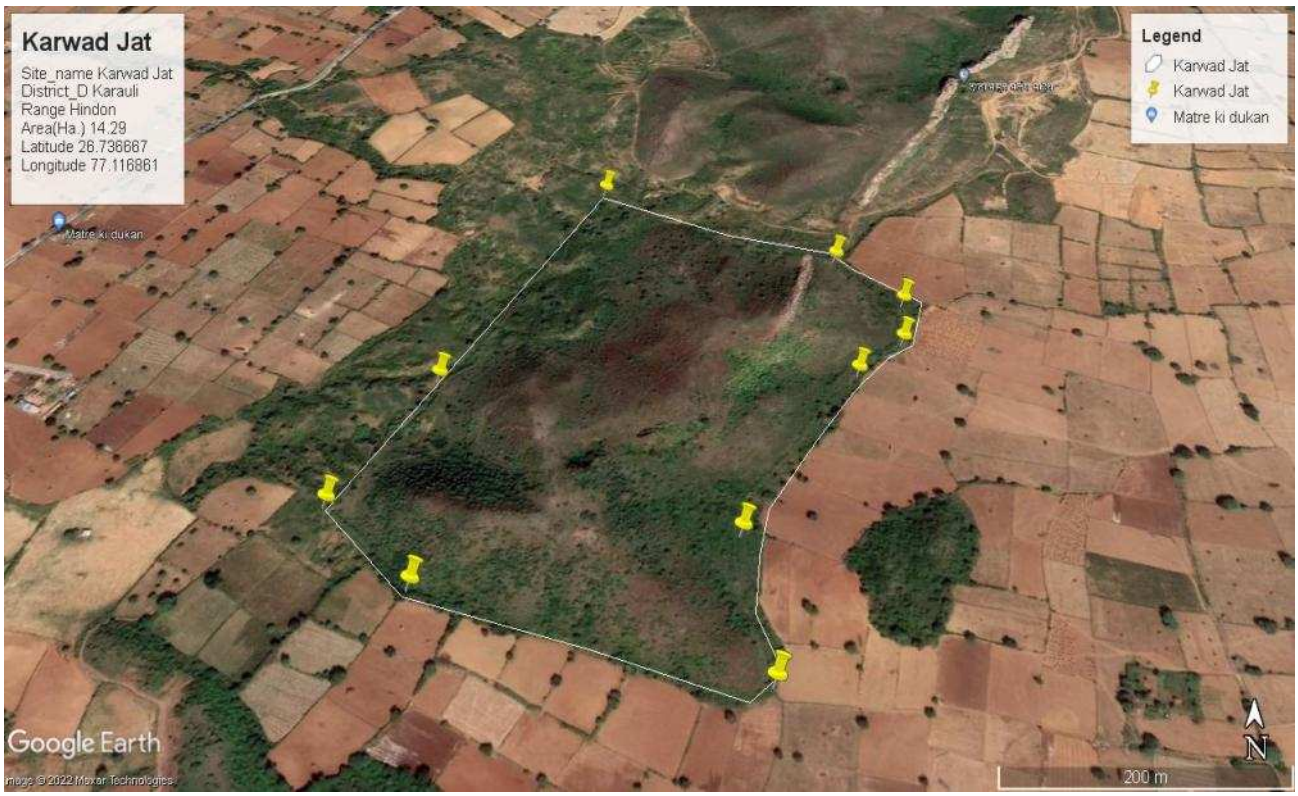
Table 3: Status of Planted Seedlings at the site- Karvwad Jat Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia tortilis (Totalis)	4000	1716	2284	42.9	174.3	95.6
Holoptelea integrifolia (Churel)	2000	837	1163	41.9	137.7	102.3
Acacia leucopholea (Ronj)	500	246	254	49.2	93.6	65
Zizyphus mauritiana (Ber)	500	311	189	62.2	90	65
Azadirachta indica (Neem)	1000	431	569	43.1	104.7	75
Acacia senegal (Kumtha)	1000	372	628	37.2	107.8	71.3
Acacia nilotica (Desi babool)	1000	514	486	51.4	174.5	85.2
Total	10000	4427	5573	44.27	144.5	87.7





3.1.11. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 14.29 hec as per kml map.



3.2.1. Site 2- Kachrauli site in Hindaun range -N 26.071312 and E 77.024393

The selected plantation was carried out on 3 hac. of land at Kachrauli in Hindaun range during the year 2019-20. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 10% evaluation. The soil was rocky, murar, domat & sandy.

3.2.2. Treatment plan before sowing: The topography of the area was ravines. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 2100 pits were dug for plantation in total 3 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, and porcupine

was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.2.4. Species Planted: The selected tree species under plantation were 10. Seedlings of Syzygium cumini (Jamun), Lisoda, Holoptelea integrifolia (Churel), Pongamia pinnata (Karanj), Zizyphus mauritiana (Ber), Acacia nilotica (Desi babool), Dendrocalamus strictus (Baans), Azadirachta indica (Neem), Dalbergia sissoo (Shisham) andAlbizzia lebbeck (Siras) were planted.

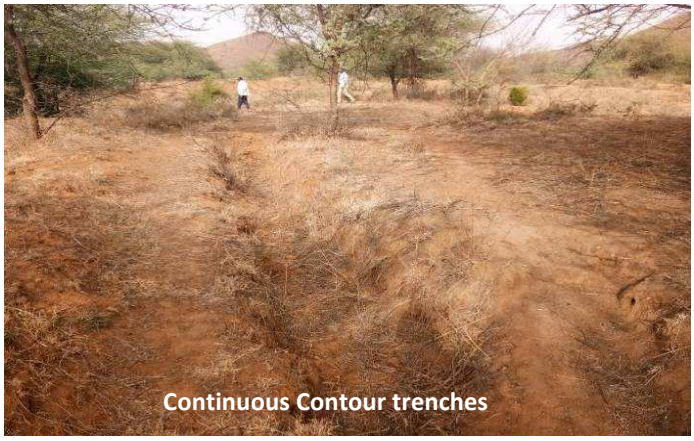
Growth of planted seedling

In total 2100 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 700 plants per hectare have been planted. Thus, total number of plants planted was 2100 for 3 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Neem, Karanj, Desi babool & Jamun which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was satisfactory.**


Continuous Contour trenches

3.2.6. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

Ditch fencing at the site

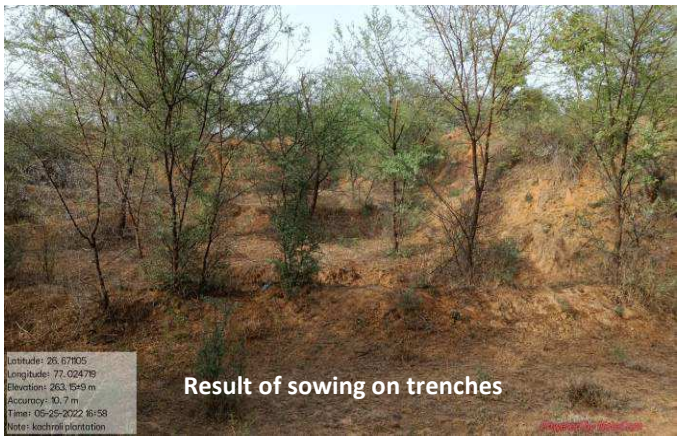
3.2.7. Natural Vegetation and Regeneration: Desi babool, Totalis, Ronj & Kumtha were the plants found grown naturally in this area. The growth of the plants was good.

3.2.8. Regeneration through seeds sowing: Seeds of species Totalis*, Ronj, Desi babool, Kumtha, Khair & Bair* were sown in as well as along the trenches and on the thanwlas. The result of sowing was good. Plants from seeds sowing were widely seen on trenches & thanwalas.

3.2.9. Protection Work: The selected DFL model plantation had ditch fencing of 265 RMT. Present condition of ditch fencing was satisfactory. Silting was reported in some parts of ditch fencing.

3.2.10. Soil and Water Conservation Measures: There are 120 RMT Contour trench, 150 RMT SGT, 30RMT DCCT & earthen checkdam (58.5 cu.m) in the form of water harvesting structures present in the entire plantation area.

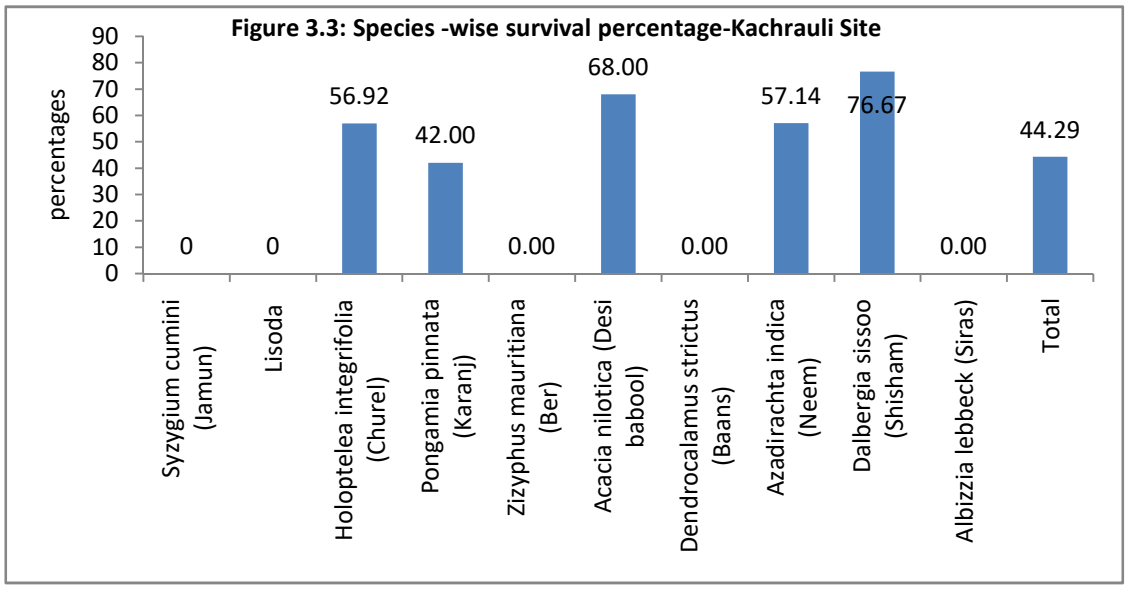
3.2.11. Observations Recorded: Under this model, 700 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 44.28% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was satisfactory. A total of 2100 plants comprising ten species were planted in the 3 hectare plantation area.



Result of sowing on trenches

Table 3.1: Status of Planted Seedlings at the site- Kachrauli Site

Species	Total Plants planted	10% plantaion area has been observed	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
*Syzygium cumini (*Jamun)	100	20	0		0	0.0	0.0
Lisoda	200	20	0		0	0.0	0.0
Holoptelea integrifolia (Churel)	900	260	148		56.9	100.0	80.0
Pongamia pinnata (Karanj)	250	100	42		42	120.0	92.5
Zizyphus mauritiana (Ber)	100	20	0		0	0.0	0.0
Acacia nilotica (Desi babool)	100	50	34		68.0	130.0	115.0
Dendrocalamus strictus (Baans)	50	30	0		0.0	0.0	0.0
Azadirachta indica (Neem)	100	70	40		57.1	120.0	127.5
Dalbergia sissoo (Shisham)	100	60	46		76.7	101.3	142.5
Albizzia lebbeck (Siras)	200	70	0		0.0	0.0	0.0
Total	2100	700	310	390	44.29	109.4	98.0



3.2.11, GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 3 hec as per kml map.

3.3.1 Site 3- Sahanpur site in Masalpur range -N 26.570442 and E 77.239165

The selected plantation was carried out on 55 hac. of land at Sahanpur in Masalpur range during the year 2019-20. The activities were done under the Assisted Natural **Regeneration** (ANR) model. The site was a forest land and selected for 10% evaluation. The soil was Red stony.

3.3.2. Treatment plan before sowing: The topography of the area was hilly & undulating. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 11000 pits were dug for plantation in total 55 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.3.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boars and porcupine was reported at the site. Also, widely growth of termite, scarcity

of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average.

3.3.4. Species Planted: The selected tree species under plantation were 7. Seedlings of Acacia leucopholea (Ronj), Holoptelea integrifolia (Churel), Zizyphus mauritiana (Ber), Dalbergia sissoo (Shisham), Syzygium cumini (Jamun), Balanites aegyptiaca (Hingot) and Acacia nilotica (Desi babool) were planted.

In total 11000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 11000 for 55 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Ronj, Churail, Hingot & Desi babool which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**

3.3.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.3.6. Natural Vegetation and Regeneration: Desi babool, Churail, Jangal Jalebi, Ronj, Bair & Hingot were the plants found grown naturally in this area. The growth of the plants was good.

3.3.7. Regeneration through seeds sowing: Seeds of species *Desi babool, Khair, Kumtha, Ronj, Cheela, Churail, Katkaranj & Ardu* were sown in as well as

along the trenches and on the thanwlas. **The result of sowing was good.**

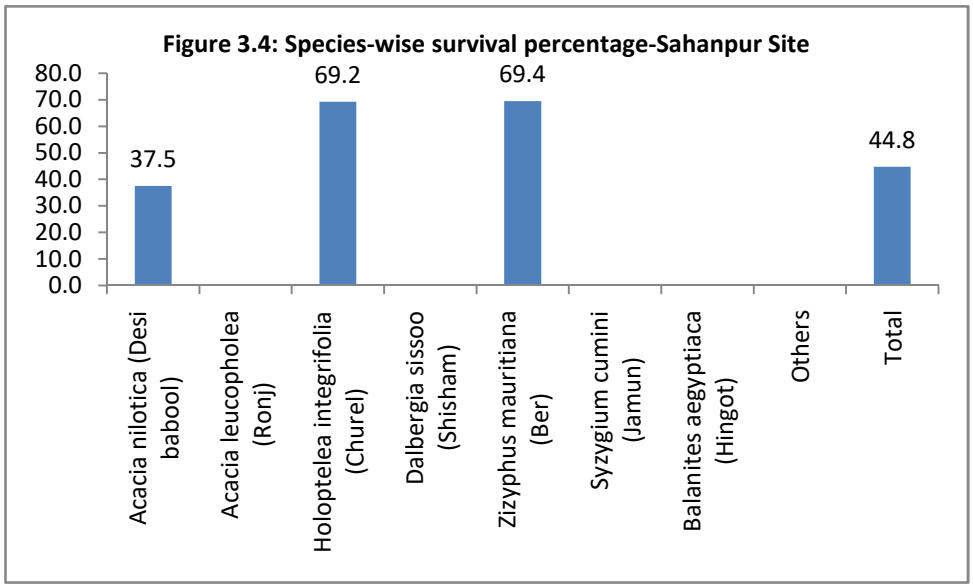
3.3.8. Protection Work: The selected ANR model plantation had loose stone wall fencing of 3430 RMT. Present condition of ditch fencing was average.

3.3.9. Soil and Water Conservation Measures: There are 11350 RMT Contour trenches in the form of water harvesting structures present in the entire plantation area.

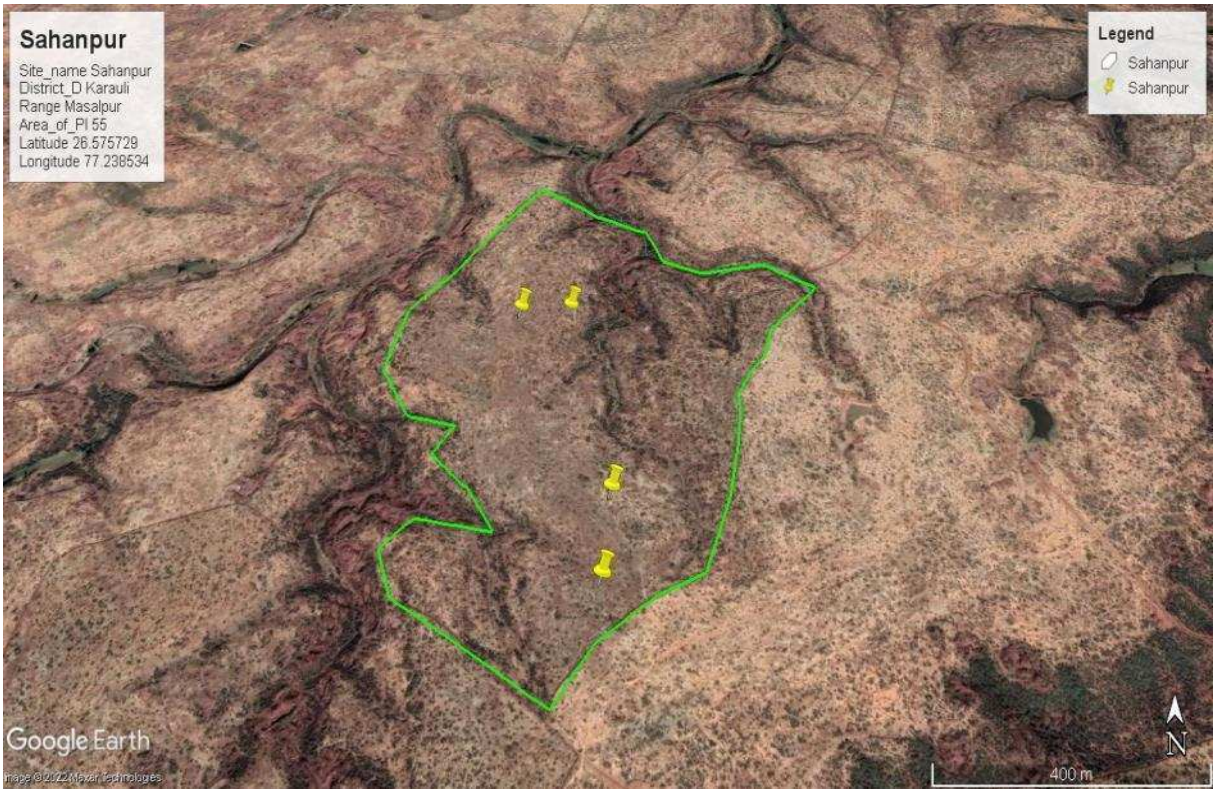
3.3.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 44.76% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 11000 plants comprising seven species were planted in the 55 hectare plantation area.

Table 3.2: Status of Planted Seedlings at the site- Sahanpur Site

Species	Total Plants planted	10% plantaion area has been observed	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia nilotica (Desi babool)	2000	200	75		37.50	90.0	65.0
Acacia leucopholea (Ronj)	500	50	0		0.00	0.0	0.0
Holoptelea integrifolia (Churel)	5200	390	270		69.23	101.7	65.0
Dalbergia sissoo (Shisham)	500	50	0		0.00	0.0	0.0
Zizyphus mauritiana (Ber)	500	180	125		69.44	90.0	65.0
*Syzygium cumini (*Jamun)	150	15	0		0.00	0.0	0.0
Balanites aegyptiaca (Hingot)	2000	150	0		0.00	0.0	0.0
Others	150	15	0		0.00	0.0	0.0
Total	11000	1050	470	580	44.76	96.8	65.0



3.3.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 55 hec as per kml map.



4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft at Suar wala se Kandere wala Jharna Vankhand Gubreda, Masalpur Range

At Suar wala se Kandere wala Jharna Vankhand Gubreda in Masalpur range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 500 m length as per MB. But in actual 510 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. GPS location of this area was 26.568246 N and 77.246975 E.

Site 2 -Pakki Diwar 4 Ft at Pustakalaya Se Tal ke Nale ke chor tak, Karauli Range

Pakki diwar 4ft. at Pustakalya se Tal ke Nale ke chor tak

At Pustakalaya se Tal ke Nale ke Chor tak in Karaulir range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meters. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. GPS location of this area was 26.463102 N and 77.03589 E. The expenditure incurred for constructing this wall was Rs.12.0 lacs (as per MB) against the estimated cost of Rs.12.0 lacs.

Site 3- Pakki Diwar 4 Ft at Kalyani ki Pator Se Dhaypura Tal tak, Karauli Range

Measuring Pakki diwar 4ft.

At Kalyani ki Pator se Dhaypura tal tak in Karauli range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. GPS location of this area was 26.46102 N and 76.990693 E. The expenditure incurred for constructing this wall was Rs.12.0 lac (as per MB) against the estimated cost of Rs.12.0 lac.

Site 4- Pillars at Goder, Masalpur range

The site visited under asset created under CAMPA had Pillars (34 Nos.) at Goder site at Dabi. The site was visited, surveyed, GPS co-ordinates recorded and photographed taken along with the information was filled up in tool 3. At Goder site in Masalpur Pillars (34 Nos.) have been evaluated. The pillars were constructed in the year 2019-20. The pillars were 34 in numbers as per MB. Also, in actual 34 pillars were found & evaluated by the

Pillar at Goder

third party. The pillars constructed were reported average and useful. The construction of pillars helped in marking forest boundary.The expenditure incurred for constructing the Pillars (34 Nos.) was Rs. 61200 (as per MB) against the estimated cost of Rs 61063.

Site 5- Pillars at Mora Dungar No.10 A, Gudachanderaji range

At Mora Dunger no. 10 A site in Gudachandraji Pillars (25 Nos.) have been evaluated. The pillars were constructed in the year 2019-20. The pillars were 25 in numbers as per MB. Also, in actual 25 pillars were found & evaluated by the third party. The pillars constructed were reported average and useful. The construction of pillars helped in marking forest boundary.

Pillar at Mora Dungar No. 10A

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Karauli division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Sahanpur	ANR	55	42.73	5
2	Kachroli	DFL	3	44.29	5
3	Karwad Jat	DFL	14.29	44.27	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 4 ft	Suar wala se Kadere wala jharna Vankhand Gubreda	Average	7
2	Pakki Diwar 4 ft	Pustakalaya se Tal ke Nale ke Chor tak	Average	7
3	Pakki Diwar 4 ft	Kalyani ki Pator se Dhaypura tal tak	Average	5
4	Pillar	Goder	Average	7
5	Pillar	Mora Dunger no. 10A	Average	5

Kota

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Kota Forest Division. This Forest Division with 7 Forest Ranges namely Kanwas, Ladpura, Sultanpur, Itawa & Mandana,Modak & Dag has territorial jurisdiction over the entire Kota District.

Figure: Location of Kota district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Kota Forest Division for evaluation were as given in table-1.

Table-1: Selected plantation site for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Sultanpur	Peepalda Samel	2018-19	50	ANR	100%
Mandana	Mandana I	2018-19	50	ANR	10%
Modak	Rakba Pahad	2019-20	50	ANR	100%

2.2. Selected Asset Sites for Evaluation

The selected asset created under CAMPA of Kota Forest Division was as given in table 2.

Table-2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Ladpura	NH 12 Jhalawar road plantation Retiya II Nala to Suryanagar	2017-18	Pakki Diwar 4 Ft.
Ladpura	Purana Bhadana	2018-19	Pakki Diwar 4 Ft.

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1-Peepalda Samel in Sultanpur range – N 25.51169 and E 76.280488

The selected plantation was carried out on 50 hec of land at Peepalda Samel of Sultanpur range during the year 2018-19. The activities were done under the ANR model. The site was a forest land and selected for 100% evaluation. The soil was brown to dark brown & clayey to clayey loam.

3.1.2. Health & Damages of Plantation: The growth of planted seedlings at the site was poor. Grazing by stray animals & cattle and destruction by Neel gai, wild boars and porcupine was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.1.3. Natural Vegetation and Regeneration*:* The area has been covered fully with vegetation due to this plantation. Plants like Desi babool, Neem, Churail, Ronj, Khair and Bair have been found grown naturally. .

3.1.4. Regeneration through seeds sowing: The growth of seeds sowing plants was average. The result of seed sowing (viz. Desi babool, Khair, Churail & Ronj) was average.

3.1.5. Protection Work: The selected ANR model plantation was protected by ditch fencing of 2800 RMT having width at the top-1.5 meters, width at the bottom-0.9 meters & height 1.2 meters. Present condition of ditch fencing was satisfactory. Fencing was partially effective in controlling the biotic pressures.

3.1.6. Soil and Water Conservation Measures: There is 7000 RMT (Width & depth - 0.45 meters) Contour trenches & loose stone check dams (3040 cu.m) in the form of water harvesting structures present in

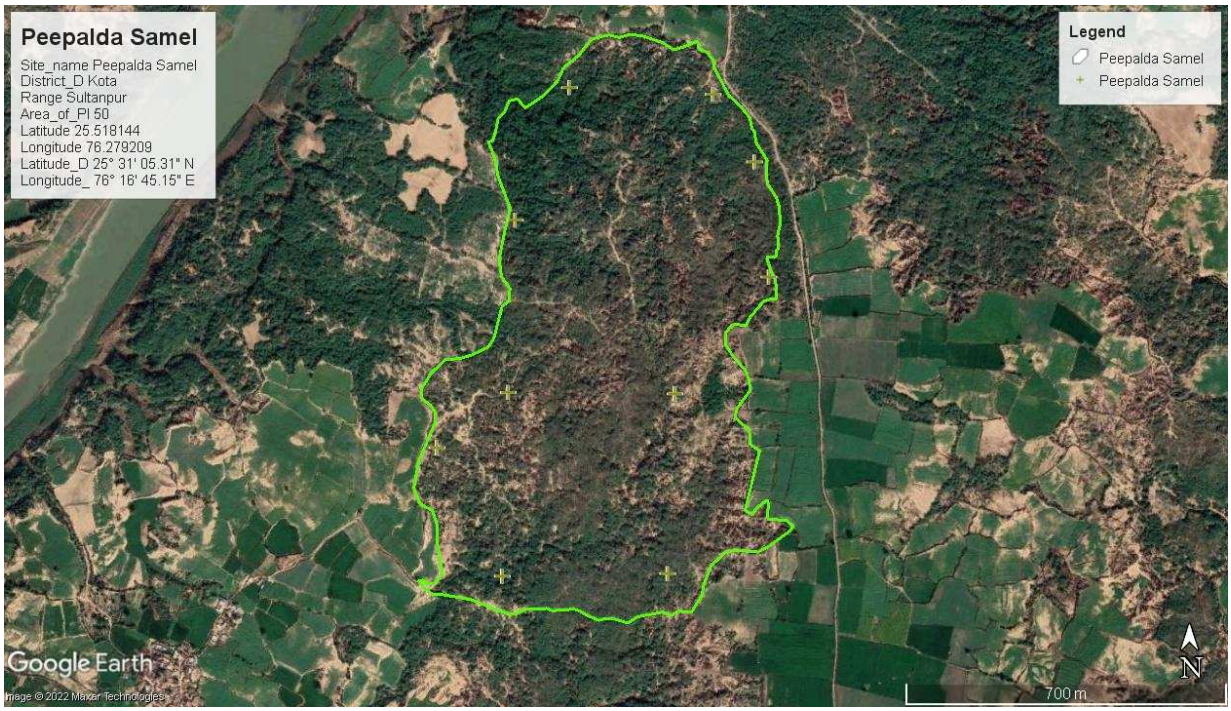
the entire plantation area.

3.1.7. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. Based on for as 100 percent counting, plants survival was 9.28% at the site. Plant species girth breast height was also measured. The growth of planted seedling was poor. A total of 10000 plants comprising three species were planted in the 50 ha plantation area. Measurement of plants has been taken on randomly selected plants of every species. The measurement has been conducted at various places of the plantation area to get proper average measurement.

Table 3.2: Status of Planted Seedlings at the site-Peepalda Samel Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)
Acacia nilotica (Desi babool)	5000	627	4373	12.54
Azadirachta indica (Neem)	3500	122	3378	3.49
Holoptelea integrifolia (Churel)	1500	179	1321	11.93
Total	10000	928	9072	9.28

3.1.8. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hac as per kml map.



3.2.1. Site 2- Mandana I in Mandana range - N 24^0 56’ 48.28” and E 75^0 58’ 36.04”

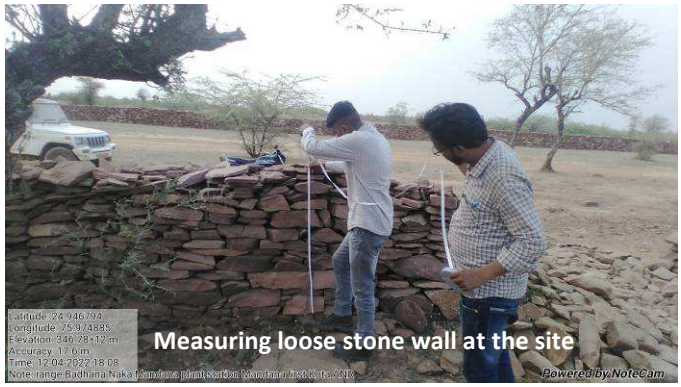
The selected plantation was carried out on 50 ha of land at Mandana I in Mandana range during the year 2018-19. The activities were done under the ANR model. The site was a forest land and selected for 10% evaluation. The soil was stony with bolders.

3.2.2 Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boars and deer was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.2.3. Natural Vegetation and Regeneration: Dhonk, Churel, Palash and Ronj were the plants found grown naturally in this area. The growth of the plant was good.

3.2.4. Regeneration through seeds sowing: Seeds of species kumtha, & ronj were sown in as well as along the trenches and on the thanwlas. The result of seed sowing was good.

3.2.5. Protection Work: The selected ANR model plantation had loose stone fencing of 3126 RMT having width at the top-0.6 meters, width at the bottom-0.68 meters & height 1.2 meters. Present condition of fencing was average. Some part of the fencing was damaged by Cattle & wild animals. Loose stone fencing was fully effective in controlling the biotic pressure.



3.2.6. Soil and Water Conservation Measures: There are 10000 RMT Contour trenches & in the form of water harvesting structures present in the entire plantation area.

3.2.7. Observations Recorded:

Under this model, 200 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 44.4% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising four species were planted in the 50 ha plantation area.

Measurement of each of the survived species had been taken on randomly selected plants. The measurement has been conducted at various places of the plantation area to get proper average measurement of collar girth & height.

Table 3.4: Status of Planted Seedlings at the site- Mandana I Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Zizyphus mauritiana (Ber)	2500	113		45.20	62	8
Holoptelea integrifolia (Churel)	2500	103		41.20	58	9
Acacia leucopholea (Ronj)	3000	195		65.00	78	11
Acacia catechu (Khair)	2000	33		16.50	45	12
Total	10000	444	9556	44.40	61	10

3.2.8. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.

3.3.1. Site 3-Rakba Pahad in Modak range – N 24.709211 and E 76.041861

The selected plantation was carried out on 50 hec of land at Rakba Pahad of Modak range during the year 2019-20. The activities were done under the ANR model. The site was a forest land and selected for 100% evaluation. The soil was brown to dark brown.

3.3.2. Health & Damages of Plantation: The growth of planted seedlings at the site was average. Grazing by stray animals & cattle and destruction by Neel gai, and wild boars was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory.

3.3.3. Natural Vegetation and Regeneration*:* The area has been covered fully with vegetation due to this plantation. Plants like Ronjh, Tendu, Palash, Churail, Karonda and Bair have been found grown naturally. .

3.3.4. Regeneration through seeds sowing: The growth of seeds sowing plants was average due to grazing by Cattle. The result of seed sowing (viz. Kumtha, Khair & Ronj) was average.

3.3.5 Protection Work: The selected ANR model plantation was protected by loose stone fencing of 2288 RMT having width at the top-0.6 meter, width at the bottom-0.8 meters & height 1.2 meters. Present condition of loose stone fencing was average. Fencing was partially effective in controlling the biotic pressures.

3.3.6. Soil and Water Conservation Measures: There is 10000 RMT (Width & depth - 0.45 meters) Contour trenches in the form of water harvesting structures present in the entire plantation area

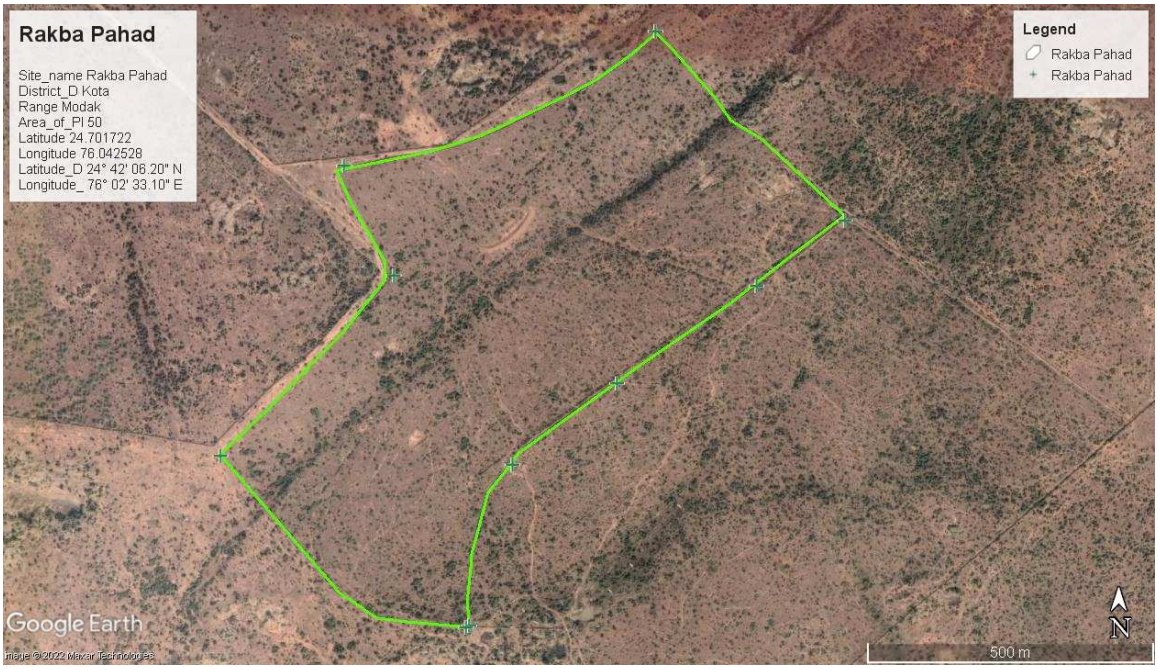
3.3.7. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. Based on for as 100 percent counting, plants survival was

46.35% at the site. Plant species girth breast height was also measured. The growth of planted seedling was average. A total of 10000 plants comprising five species were planted in the 50 ha plantation area. Measurement of plants has been taken on randomly selected plants of every species. The measurement has been conducted at various places of the plantation area to get proper average measurement.

Table 3.6: Status of Planted Seedlings at the site-Rakba Pahad Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Holoptelea integrifolia (Churel)	4000	2193	1807	54.83	120	12
Acacia leucopholea (Ronj)	2000	532	1468	26.60	125	15
Pithecellobium dulce (Jangal Jalebi)	3000	1644	1356	54.80	95	10
Acacia nilotica (Desi babool)	700	162	538	23.14	91	11
Zizyphus mauritiana (Ber)	300	104	196	34.67	115	13
Total	10000	4635	5365	46.35	109	12

3.3.8. GPS Location and KML file: The selected ANR model under CAMPA plantation site



measured 50 hac as per kml map.

4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft at NH 12 Jhalawar road plantation Retiya II Nala to Suryanagar, Ladpura Range

At NH 12 Jhalawar road plantation Retiya II Nala to Suryanagar at Ladpura range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meters & height was 1.20 meter.

Construction work appeared to be average and useful. However, cracks were reported at some part of the wall. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. GPS location of this area was 25.07235 N and 75.86555 E .The expenditure incurred for constructing this wall was Rs. 1178975(as per MB) against the estimated cost of Rs.1200000.

Site 2- Pakki Diwar 4 Ft at Purana Bhadana, Ladpura Range

At Purana Bhadana at Ladpura range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 55 m length as per MB. But in actual 59.33 m pakki diwar was constructed at the site. . The width of the diwar was 0.45 meters & height was 1.20 meter. Construction work appeared to be average and useful. However, 13.73 RMT wall was damaged by loca residents. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. GPS location of this area was 25.235389 N and 75.893485 E .The expenditure incurred for constructing this wall was Rs. 123678(as per MB) against the estimated cost of Rs.132000.

Pakki diwar 4 ft. at Purana Bhadana

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Kota division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1.	Peepalda Samel	ANR	50	9.28	4
2.	Mandana I	ANR	50	44.4	5
3.	Rakba Pahad	ANR	50	46.35	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of asset work created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 4 ft	NH 12 Jhalawar road plantation Retiya II Nala to Suryanagar	Average	5
2	Pakki Diwar 4 ft	Purana Bhadana	Average	5

Kota MNP

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Kota MNP Forest Division. This Forest Division with 7 Forest Ranges namely Borawas, Darra, Jawahar Sagar, Head Quarter Range,Roontha, Kolipura & Gagraun has territorial jurisdiction over the entire Kota District.

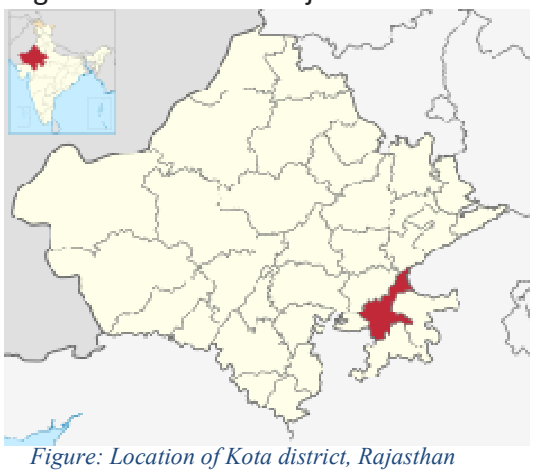


Figure: Location of Kota district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Kota MNP Forest Division for evaluation were as given in table 1

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Jawahar Sagar	Dhonk ki kui B	2017-18	36.40	DFL	100%
Dara	Kalya Khal MJSA II	2017-18	50	ANR	10%
Kolipura	Kanya Talab	2019-20	50	ANR	100%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Kota MNP Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Gagaron	Rajpura	2017-18	Forest Chowki
Borawas	Visthapan Mandal Office	2018-19	Range office cum residence
Kolipura	Sambhar Leva	2018-19	Anicut III
Jawahar Sagar	Patti Khan ke pas	2019-20	Pakki Diwar 6 Ft.

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1- Dhonk ki kui B site in Jawahar Sagar range -N 25°01'38.14" and E 75°32'20.78"

The selected plantation was carried out on 36.40 hac. of land at Dhonk ki kui B in Jawahar Sagar range during the year 2017-18. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 100% evaluation. The soil was loamy & bolders.

Measuring height of plant

3.1.2. Treatment plan before sowing: The topography of the area was undulating. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 18200 pits were dug for plantation in total 36.40 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Growth of planted seedling at the site

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, rats and porcupine was reported at the site. Also, widely growth of termite, attack by pests and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.

3.1.4. Species Planted: The selected tree species under plantation were 7. Seedlings of *Acacia leucophoelea (*ronj), *Holoptelea integrifolia* (Churel), Pongamia pinnata (Karanj) Terminalia bellarcia (Baheda) Emblica officinalis (Anwla), Zizyphus mauritiana (Ber), Beel and Acacia catechu (Khair) were planted.

In total 18200 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 500 plants per hectare have been planted. Thus, total number of plants planted was 18200 for 36.40 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Aamla, Ber & Ber which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**

Result of seed sowing on CCT

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: Dhonk, Ber, Khair, Khakra, Tendu were the plants found grown naturally in this area. The growth of the plant was good.

3.1.7. Regeneration through seeds sowing: Seeds of species *kumatha, Khair and Ronj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was poor.**

Loose stone fencing at the site

3.1.8. Protection Work: The selected DFL model plantation had loose stone fencing of 2615 RMT having width at the top-0.8 meter, width at the bottom-0.75 meter & height 1.2 meters. Present condition of loose stone fencing was good. Also, ditch fencing of 1955 RMT having width at the top-1.5 meters, width at the bottom-0.9 meter & height 1.2 meters was reported at the site. Present condition of ditch fencing was average.

3.1.9. Soil and Water Conservation Measures: There are 10920 RMT Contour trenches in the form of water harvesting structures present in the entire plantation area.

3.1.10. Observations Recorded: Under this model, 500 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 45.96% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 18200 plants comprising seven species were planted in the 36.4 hectare plantation area.

Table 3.2: Status of Planted Seedlings at the site-Dhonk ki kui B Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average collar (mm)
Acacia catechu (Khair)	4600	2361	2239	51.33	117.3	72.9
Acacia leucopholea (Ronj)	4150	1409	2741	33.95	88.4	46.9
Emblica officinalis (Amla)	2000	1078	922	53.90	86.1	54.7
Holoptelea integrifolia (Churel)	1950	652	1298	33.44	108.2	105.6
Zizyphus mauritiana (Ber)	4500	2418	2082	53.73	136.7	50.7
Beel	200	113	87	56.50	61.0	45.7
Pongamia pinnata (Karanj)	800	333	467	41.63	85.5	40.6
Total	18200	8364	9836	45.96	97.6	59.6

Figure 3.1: Species-wise number of survived plants-Dhonk ki kui B

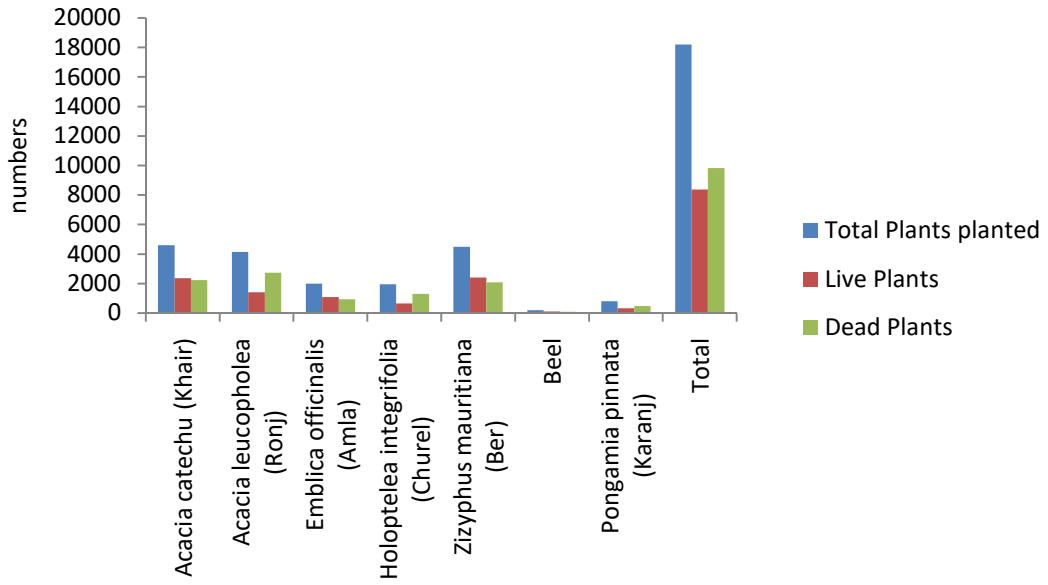
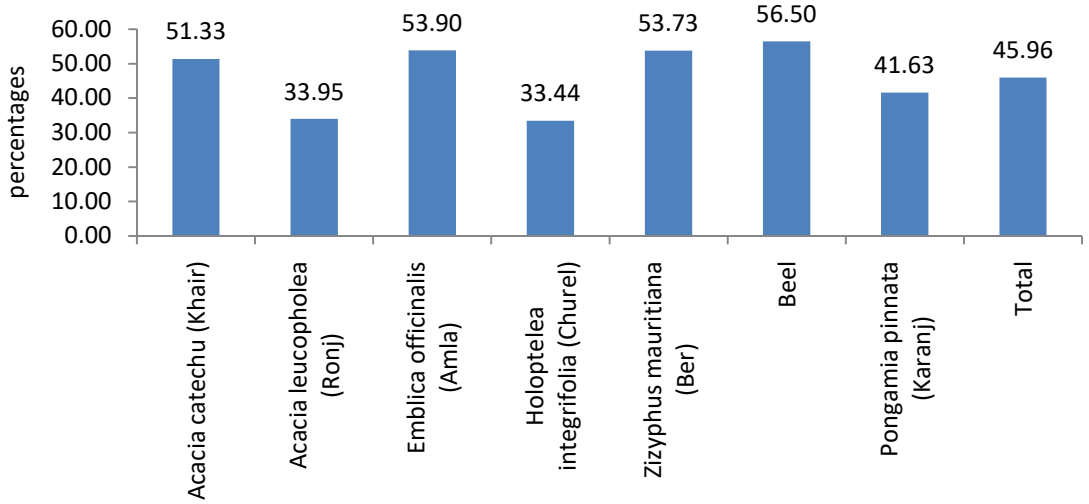
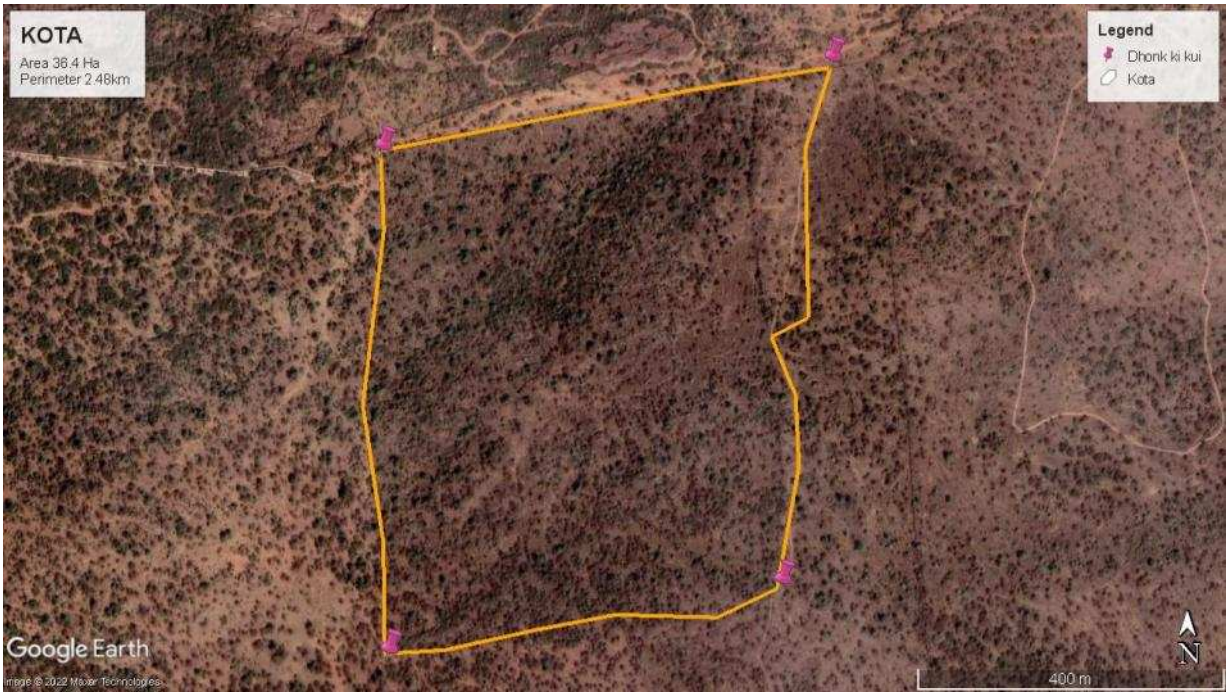


Figure 3.2: Species -wise survival percentage- Dhonk ki kui B site



3.1.10. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 36.40 hec as per kml map.



3.1.11. Budget and expenditure

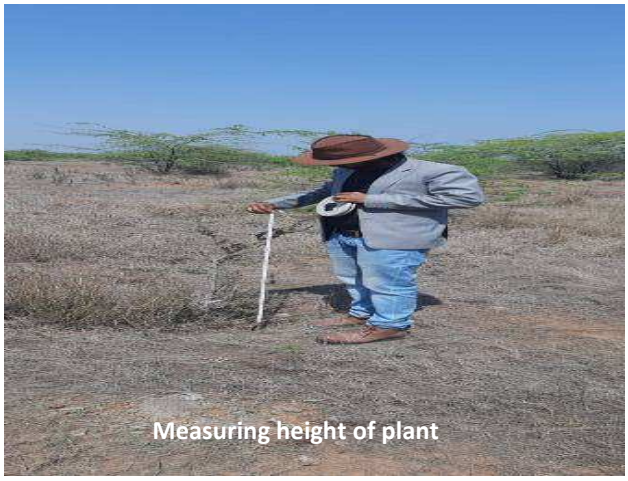
Table 3.3 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs. In Lac)				Expenditure (Rs. In Lac)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18	1108000			1108000	889953			889953
2018-19	349040			349040	274005			274005
2019-20	170024			170024	137162			137162
2020-21	188006			188006	156094			156094
2021-22	118600			118600	73780			73780
Total	1933670			1933670	1530994			1530994

3.2.1. Site 2- Kalya Khal MJSA II in Dara range - N 24.805181 and E 76.108747

The selected plantation was carried out on 50 ha of land at Kalya Khal MJSA II in Dara range during the year 2017-18. The activities were done under the ANR model. The site was a forest land and selected for 10% evaluation. The soil was stony with bolders.

3.2.2. Treatment plan before sowing: The topography of the area was plain & ravine. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 ha of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.



3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, rats and porcupine was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.

3.2.4. Species Planted: The selected tree species under plantation were 7. Seedlings of *Acacia nilotica* (desi babool), *Acacia leucophoelea (*ronj), *Holoptelea integrifolia* (Churel), *Zizyphus mauritiana (*Ber) and Acacia catechu (Khair), Bombax ceiba (Semal) and Prosopis juliflora (Khejri)were planted.

A total of 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. Spacing between plants reported 3 m. As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Khejari, Ber & Desi babool which can survive in the climate. The choice of

plants was made as per climatic condition so that the plants can grow well and survive for longer period. The growth of survived plants was average.

3.2.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.2.6. Natural Vegetation and Regeneration: Dhonk, Ber, Khair and Ronj were the plants found grown naturally in this area. The growth of the plants was good.

3.2.7. Regeneration through seeds sowing: Seeds of species kumtha, & ronj were sown in as well as along the trenches and on the thanwlas. The result of seed sowing was good.

3.2.8. Protection Work: The selected ANR model plantation had loose stone fencing of 2966 RMT having width at the top-0.6 meter, width at the bottom-0.8 meter & height 1.2 meters. Present condition of fencing was poor. Loose stone fencing was not at all effective in controlling the biotic pressure.

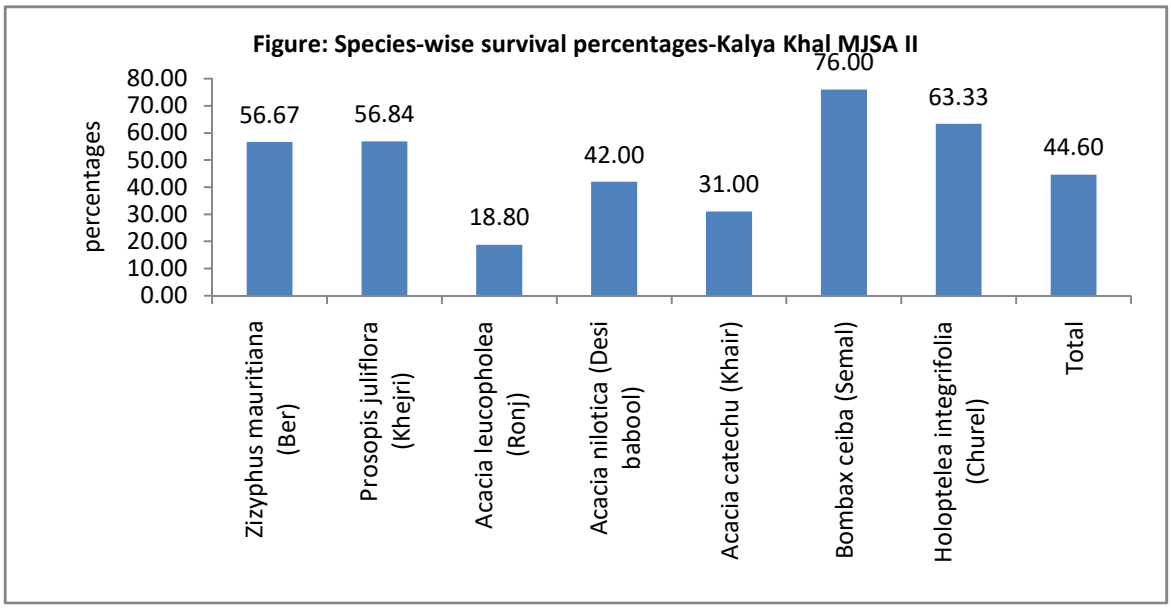
3.2.9. Soil and Water Conservation Measures: There are 20000 RMT (Width & depth -0.45 meter) Contour trenches & 1550 cu.m earthen check dam in the form of water harvesting structures present in the entire plantation area.

Neel gai at the plantation site

3.2.10. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 44.6% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10200 plants comprising five species were planted in the 50 ha plantation area.

Table 3.4: Status of Planted Seedlings at the site-Kalya Khal MJSA II Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average collar (mm)
Zizyphus mauritiana (Ber)	1800	102	1698	56.67	91.4	40.6
Prosopis juliflora (Khejri)	1900	108	1792	56.84	89.9	36.1
Acacia leucopholea (Ronj)	2500	47	2453	18.80	71.6	24.0
Acacia nilotica (Desi babool)	1500	63	1437	42.00	105.3	46.9
Acacia catechu (Khair)	1000	31	969	31.00	60.0	33.6
Bombax ceiba (Semal)	1000	76	924	76.00	94.5	48.2
Holoptelea integrifolia (Churel)	300	19	281	63.33	112.8	50.8
Total	10000	446	9554	44.60	89.4	40.0



3.2.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.

3.2.12. Budget and expenditure

Table 3.5: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs. In Lac)				Expenditure (Rs. In Lac)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18	1664200			1664200	1664000			1664000
2018-19	405100			405100	388750			388750
2019-20	162800			162800	159764			159764
2020-21	92250			92250	69766			69766
2021-22	92250			92250	83150			83150
Total	2416600			2416600	2365430			2365430

3.3.1. Site 3-Kanya Talab in Kolipura range - N 24.952845 and E 75.635063

The selected plantation was carried out on 50 hec of land at Kanya Talab of Kolipura range during the year 2019-20. The activities were done under the ANR model. The site was a forest land and selected for 100% evaluation. The soil was hard bolders.

3.3.2. Treatment plan before sowing: The topography of the area was undulating & hilly. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land**.** The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.3.3 Health & Damages of Plantation: The growth of planted seedlings at the site was good. Grazing by stray animals & cattle and destruction by Neel gai, rats and porcupine was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory.

3.3.4. Species Planted: The selected tree species under plantation were 11. Seedlings of *Acacia nilotica* (desi babool), *Acacia leucophoelea (*ronj), *Zizyphus mauritiana* (ber), *Azadirachta indica (Neem), Albizia lebbeck (Kala Siras), Tamarindus indica (Imli), Pongamia pinnata (Karanj), Pithecellobium dulce (Jangal Jalebi), Acacia senegal (Kumtha)* and *Holoptelea integrifolia* (churail) were planted.

A total of 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. Spacing between plant to plant was reported 3m/ 4m as per the available site condition. As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Ronj, Ber,Churail & Desi babool which can survive in the climate. The

choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. The growth of survived plants was good.

3.3.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.3.6. Natural Vegetation and Regeneration*:* The area has been covered fully with vegetation due to this plantation. Plants like Dhok, Tendu, Palash, Khair and Bair have been found grown naturally. .

3.3.7. Regeneration through seeds sowing: The growth of seeds sowing plants was good. The result of seed sowing (viz. Kumtha, Ber & Ronj) was good. Plants from the seeds sown were widely seen in lines on contour trenches.

33.8. Protection Work: The selected ANR model plantation was protected by loose stone fencing of 3000 RMT having width at the top-0.6 meter, width at the bottom-0.8 meters & height 1.2 meters. Present condition of loose stone fencing was good. Fencing was fully effective in controlling the biotic pressures.

3.3.9. Soil and Water Conservation Measures: There are 18000 RMT (Width & depth - 0.45 meter) Contour trenches in the form of water harvesting structures present in the entire plantation area

3.3.10. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. Based on for as 100 percent counting, plants survival was 50.85% at the site. Plant species girth breast height was also measured. The growth of planted seedling was good. A total of 10000 plants comprising eleven species were planted in the 50 ha plantation area.

Table 3.6: Status of Planted Seedlings at the site-Kanya Talab Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average collar (mm)
Acacia leucopholea (Ronj)	2000	390	1610	19.50	95.2	63.1
Zizyphus mauritiana (Ber)	1500	1135	365	75.67	78.5	64.7
Emblica officinalis (Amla)	1450	645	805	44.48	51.8	41.5
Acacia nilotica (Desi babool)	2650	1823	827	68.79	92.9	54.5
Albizia lebbeck (Kala Siras)	300	35	265	11.67	51.8	41.5

Holoptelea integrifolia (Churel)	750	287	463	38.27	43.4	39.0
Tamarindus indica (Imli)	400	261	139	65.25	48.0	38.0
Pongamia pinnata (Karanj)	150	46	104	30.67	57.9	40.6
Pithecellobium dulce (Jangal Jalebi)	200	106	94	53.00	88.4	53.3
Azadirachta indica (Neem)	200	102	98	51.00	48.8	35.0
Acacia senegal (Kumtha)	400	255	145	63.75	49.8	37.0
Total	10000	5085	4915	50.85	64.2	46.2

Figure 3.4: Species-wise number of survived plants-Kanya Talab

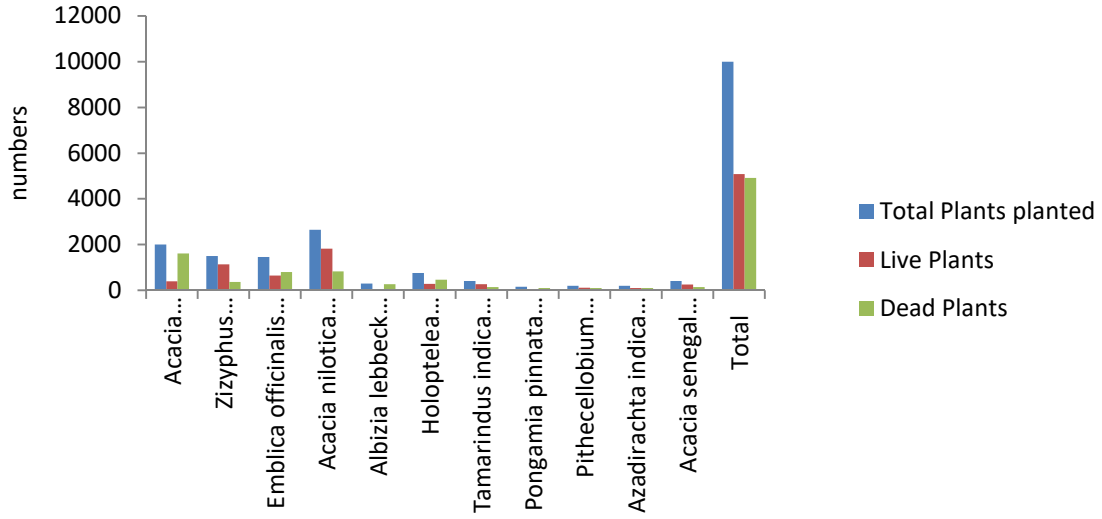
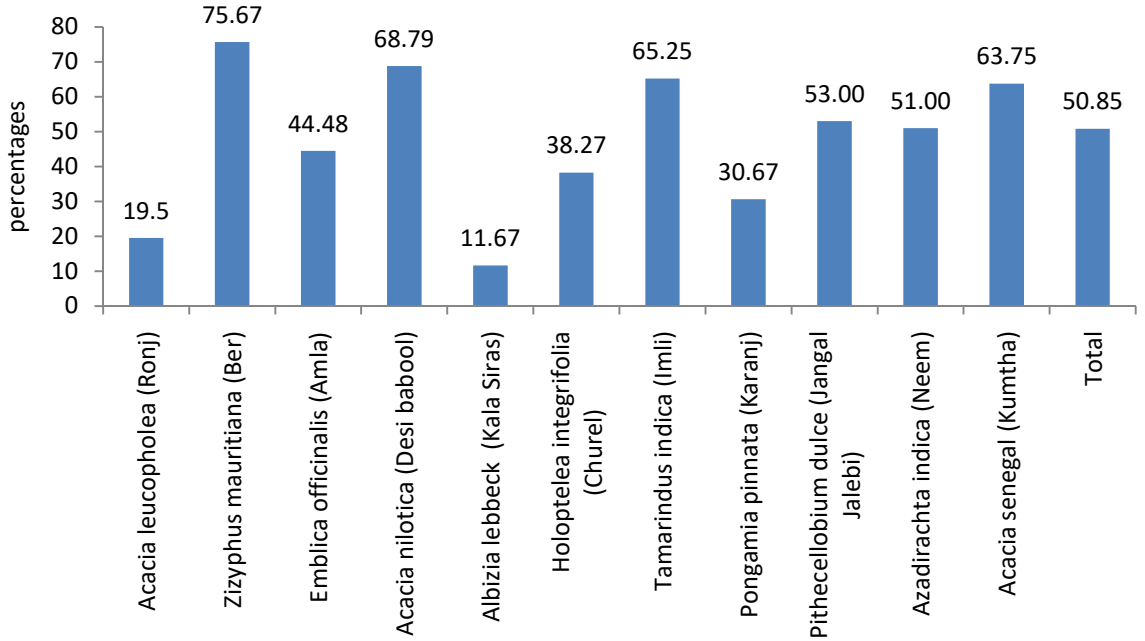
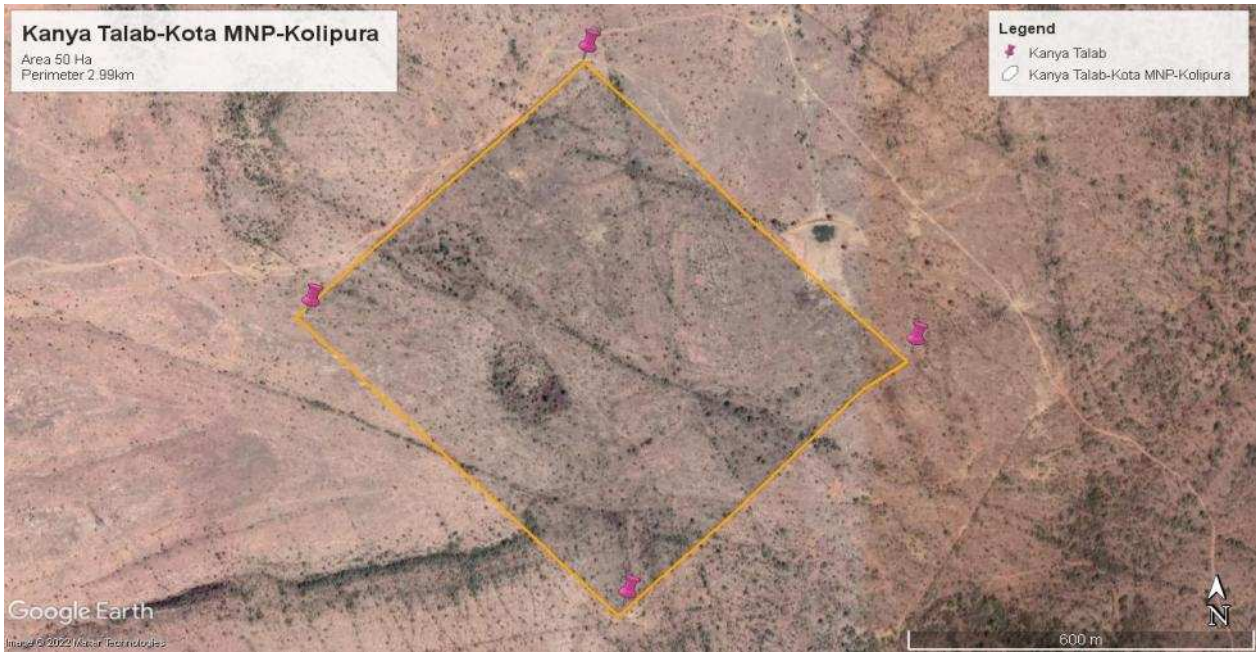


Figure 3.5: Species-wise survival percentage-Kanya Talab



3.3.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hac as per kml map.



4. Results for asset sites

4.1. Site 1- Forest Chowki Rajpura at Gagaron range

Forest Chowki at Rajpura

Forest Chowki Rajpura in Gagaron range has been evaluated. The Forest Chowki was constructed in the year 2017-18. Site selection for construction of Forest Chowki was adequate. Construction work appeared to be average and useful. Good space is available in the Forest Chowki. The Forest Chowki constructed under CAMPA was properly maintained. Present condition of the Forest Chowki was average. GPS location of this area was 24.67965 N and 76.186432 E. The expenditure incurred for constructing the Forest Chowki was Rs. 792241(as per MB) against the estimated budget of Rs. 8.0 lac.

Site 2- Range office cum residence at Visthapan Mandal Office Borawas range

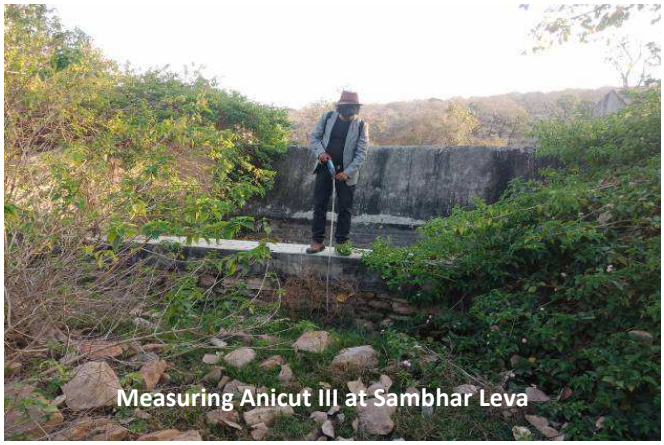
The site visited under asset created under CAMPA was Range office cum residence at Visthapan Mandal Office at Borawas range. The site was visited, surveyed, GPS co-ordinates recorded and photographs taken along with the information was filled up in tool 2.Range office cum residence at Visthapan Mandal Office in Borawas range has been evaluated. The Range office cum residence was constructed in the year 2018-19. Site selection for construction of Range office cum residence was adequate. Construction work appeared to be average and useful. The Range office cum residence created under CAMPA was in use & was

properly maintained. Quality of workmanship was good. Adequate space & proper ventilation was available in Range office cum residence. Present condition of the Range office cum residence was average. GPS location of this area was 25°8'16" N and 75°48'41" E. The expenditure incurred for constructing the Range office cum residence was Rs. 9,30,727 (as per MB) against the estimated budget of Rs. 10.50 lac.

Range office cum residence at Visthapan Mandal Office

Site 3- Anicut III at Sambhar Leva, Kolipura Range

At Sambhar Leva at Kolipura, Anicut III has been evaluated. The Anicut III was constructed in the year 2018-19. The length of the structure was 6.5 meters, breadth .70 meters, height 1.50 meters (6.825 cu.m) as per MB. But in actual length 6.46 meters, breadth 0.72 meters, height 1.65 meters (7.674 cu.m) was constructed at the site. Construction work appeared to be good and useful. Water was available in the anicut at the time of the visit. Slope of the anicut was good. Wild animals used to drink water from the anicut. GPS location of this area was 24°58'5" N and 75°39'7" E. The expenditure incurred for constructing the anicut wall was Rs.6.0 lac (as per MB) against the estimated budget of Rs 6.0 lac.


Measuring Anicut III at Sambhar Leva

Site 4- Pakki Diwar 6 Ft at Patti Khan Ke pas, Jawahar Sagar Range

At Patti Khan ke pas in Jawahar Sagar range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 6 ft and 1500 m length as per MB. Also, in actual 1500 m pakki diwar was constructed at the site. The width of the diwar was 0.45-0.60 m & height was 1.8-1.9 m. Construction work appeared to be good and useful. The construction of Pakki Diwar 6 ft helped in preventing encroachment & protecting forest boundaries.4.6 meter pakki diwas was damaged by local residents. GPS location of this area was 25°03'05.26" N and

Measuring 6 Ft. wall at Patti Khan ke pas

75°33’58.41” E. The expenditure incurred for constructing this wall was Rs.39,52,613 (as per MB) against the estimated budget of Rs 47,00,000.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Kota MNP division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Dhonk ki kui	DFL	36.4	45.96	5
2	Kalya Khal MJSA II	ANR	50	44.60	5
3	Kanya Talab	ANR	50	50.85	6

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of construction	Rating of Quality of Construction
1	Forest Chowki Rajpura	Gagaron	Average	7
2	Range Office cum residence Mandal office	Visthapan	Good	8
3	Anicut III	Sambhar Leva	Good	8
4	Pakki Diwar 6 ft	Patti khan ke pas	Good	8

Kota WL

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Kota WL Forest Division. This Forest Division with 5 Forest Ranges namely Kota Zoo Campus, Jaitpura, Bhainsrodgarh, Ramgarh Bundi & Shergarh has territorial jurisdiction over the entire Kota District.

Figure : Location of Kpta district, Rajasthan

2.1. Selected Asset Sites for Evaluation

The selected asset sites of Kota WL Forest Division were as given in table 1

Table 1: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Bhainsroadgarh	Gram Padajhar Saddledam	2017-18	Pakki Diwar 6 ft
Ramgarh WL	Rameshwar Mahadev Aakoda road	2018-19	Pakki Diwar 6 ft
Shergarh	Barapati Se Badora	2019-20	Pakki Diwar 6 ft
Bhainsrorgarh	Dand ki khal Jhunjhala	2019-20	Anicut Type II
Ramgarh Bundi	Guman Bavri Khal	2019-20	Anicut Type III
Kota Zoo	Kota Zoo	2019-20	Rescue Centre

3. Results for asset sites

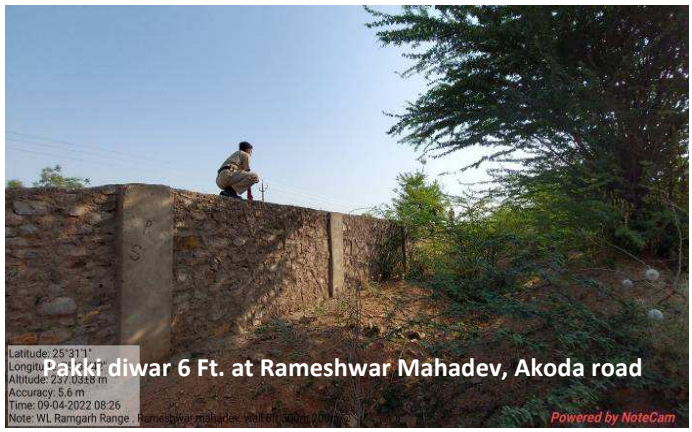
3.1. Site 1- Pakki Diwar 6 Ft at Gram Padajhar Saddledam , Bhainsrorgarh Range

At Gram Padajhar Saddledam in Bhainsroadgarh range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 6 ft and 600 m length as per MB. But in actual 606 m pakki diwar was constructed at the site. The

width of the diwar was 0.38 m & height was 1.82 meter. Construction work appeared to be average & useful. 11 meter wall was damaged by local residents. GPS location of this area was 24.906755 N and 75.551598 E. The expenditure incurred for constructing this wall was Rs.12,99,454 (as per MB) against the estimated budget of Rs.14.25 lac.

Site 2- Pakki Diwar 6 Ft at Rameshwar Mahadev Akoda road, WL Kota Range

At Rameshwar Mahadev Akoda road in WL Kota range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 38-44 cm & height was 165-190 cm. Construction wo rk appeared to be average and useful. The construction of Pakki Diwar 6 ft helped in preventing encroachment & protecting forest boundaries. Coping of pakki diwar was not proper at many places. At the top of the wall only sand is visible. Height of the pakki diwar varies from 165 cm to 190 cm. Wall width varies from 38 cm to 44 cm meters. GPS location of this area was 25°30'58" N and 75°38'42" E. The expenditure incurred for constructing this wall was Rs. (as per MB) against the estimated budget of Rs.14.50 lac.



Site 3- Pakki Diwar 6 Ft at Barapati to Badora, Shergarh Range

At Barapati to Badora in Shergarh range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 2570 m length as per MB. Also, in actual 2570 m pakki diwar was constructed at the site. The width of the diwar was 0.45 m & height was 1.82 m. Construction work appeared to be good and useful. The construction of Pakki Diwar 6 ft helped in preventing encroachment & protecting forest boundaries. GPS location of this area was 24.747553 N and 76.455392 E. The expenditure incurred for constructing this wall was Rs. 6282099(as per MB) against the estimated budget of Rs.9180000.

Site 4- Anicut II at Dand ki Khal Jhunjhala, Bhainsrorgarh Range

The site visited under asset created under CAMPA was Anicut II at Dand ki Khal Jhunjhala at Bhainsroadgarh. The site was visited, surveyed, GPS co-ordinates recorded and photographs taken along with the information was filled up in tool 5. At Dand ki Khal Jhunjhla at Bhainsroadgarh, Anicut II has been evaluated. The Anicut II was constructed in the year 2019-20. The length of Anicut II was 14.28 meters, breadth .85 meters, height 2.73 meters was constructed at the site. Construction work appeared to be average and useful. Water was available (up to 130 meters) in the anicut at the time of the visit. Wild animals used to drink water from the anicut. It also helps in soil & moisture conservation in the nearby area. GPS location of this area was 24.859534 N and 75.540563 E. The expenditure incurred for constructing the anicut wall was Rs.370574 (as per MB) against the estimated budget of Rs 3.75 lac.

Measuring Anicut II

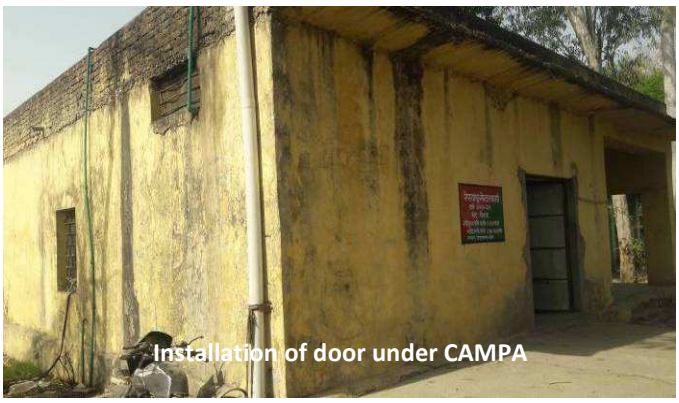
Site 5- Anicut III at Guman Bawri, Ramgarh Bundi Range

At Guman Bawri in Ramgarh Bundi., Anicut III has been evaluated. The Anicut II was constructed in the year 2019-20. The length of the structure was 13 meters, breadth 1 meter, height 1.7 meters as per MB. Also, in actual 13 meter length, breadth 1 meter, height 1.2 meter (due to silting) was constructed at the site. Construction wo rk appeared to be average and useful. Due to silting the height of the anicut was reduced to 1.2 meters. Anicut needs repair. Water was not available in the anicut. The GPS location of this area was $25^0$28'57" N and $75^0$42'31"E. The expenditure incurred for constructing the anicut wall was Rs. (as per MB) against the estimated budget of Rs 6.00 lac.

Anicut Quality

Site 6- Rescue Centre at Kota Zoo Campus, range

Rescue Centre at Kota Zoo Campus in Kota Zoo range has been evaluated. The Rescue Centre was constructed in the year 2019-20. Site selection for construction of Rescue Centre was adequate. The infrastructure created under CAMPA was useful. The infrastructure during third party


Installation of door under CAMPA

evaluation was in use and was properly maintained. Quality of Construction work was average. The work done under CAMPA was maintenance & repair of rescue centre viz. plaster work, installation of new door, steel gate & grill welding, distemper work at Vertinary doctor room etc. GPS location of this area was 25.1889364 N and 75.8557556 E. The expenditure incurred for constructing the Rescue Centre was Rs. 86789 (as per MB) against the estimated budget of Rs. 1.00 lac

4. Overall assessment

Table 2: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 6 ft	Gram Padajhar Saddledam	Average	6
2	Pakki Diwar 6 ft	Rameshwar Mahadev Akoda road	Average	5
3	Pakki Diwar 6 ft	Barapati to Badora	Good	7
4	Anicut II	Dand ki Khal Jhunjhala	Average	6
5	Anicut III	Guman Bawri	Average	5
6	Rescue Centre	Sambhar Leva	Good	8

Nagaur

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Nagaur Forest Division. This Forest Division with 4 Forest Ranges namely Parbatsar, Nagaur, Merta & Kuchaman has territorial jurisdiction over the entire Nagaur District.

Figure 17 Location of Nagaur district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Nagaur Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Kuchaman	Kuchaman	2018-19	50	ANR	100%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Nagaur Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Parbatsar	Manglana Makrana	2017-18	Pakki Diwar 4 ft
Merta	Range Office Merta Campus	2018-19	Rescue ward
Kuchaman	Kabara Ka Naka, West area, Kuchaman 'A'	2019-20	Pakki Diwar 4 ft

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1- Kuchaman site in Kuchaman range -N 27.12394 and E 74.82678

The selected plantation was carried out on 50 hac. of land at Kuchaman in Kuchaman range during the year 2018-19. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was sandy domat and chikni domat.

Kuchaman plantation Site

3.1.2. Treatment plan before sowing: The topography of the area was hilly & rocky. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 35000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was good. Grazing by stray animals & cattle and destruction by Neel gai and rats was reported at the site. Also, widely growth of termite, soil quality and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory

Growth of planted seedling at the site

3.1.4. Species Planted: The selected tree species under plantation were 7. Seedlings of Acacia tortilis (Totalis), *Acacia nilotica* (desi babool), *Acacia leucophoelea (*ronj), *Holoptelea integrifolia* (Churel), Terminalia Zizyphus mauritiana (Ber), Azadirachta indica (Neem) and Prosopis juliflora (Khejri) were planted.

In total 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedling for plantation is concerned, it was proper. The seedlings selected for plantation were Ronj & Desi babool which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was good.**

3.1.5. Watering of plants: Watering to 2600 plants was reported in March 2019. The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

Natural Vegetation at the site

3.1.6. Natural Vegetation and Regeneration: Totalis & khejadi were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species *kumatha, totalis and katkaranj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**

3.1.8. Protection Work: The selected ANR model plantation had ditch fencing of 2000 RMT having width at the top-1.50 meters, width at the bottom-0.9 meter & height 1.2 meters. Also, 220 RMT loose stone fencing & 400 meters barbed wire fencing was reported at the site.

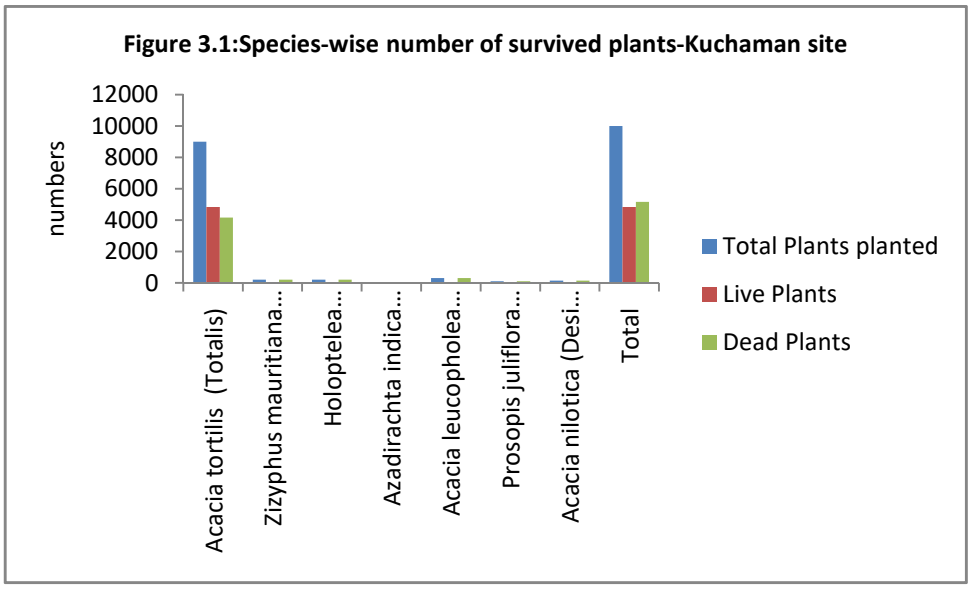
Ditch fencing at the site

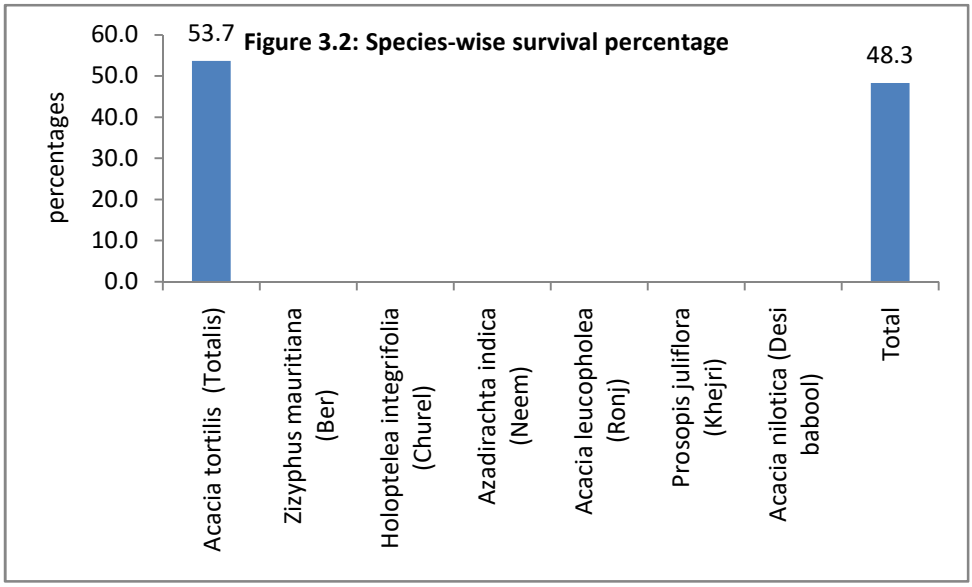
3.1.9. Soil and Water Conservation Measures: There are 4000 RMT (Width & depth -0.45 meter) Contour trenches, 5000 RMT SGT, 1000 RMT deep CCT, 519 cu. meter PCT/ Nadi, 4005 cu. meter earthen check dam and 111 cu. meter loose stone check dam in the form of water harvesting structures present in the entire plantation area.

3.1.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 48.3% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising seven species were planted in the 50 hectare plantation area.

Table 3.2: Status of Planted Seedlings at the site-Kuchaman Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia tortilis (Totalis)	9000	4830	4170	53.67	149	91
Zizyphus mauritiana (Ber)	200	0	200	0	0	0
Holoptelea integrifolia (Churel)	200	0	200	0	0	0
Azadirachta indica (Neem)	50	0	50	0	0	0
Acacia leucopholea (Ronj)	300	0	300	0	0	0
Prosopis juliflora (Khejri)	100	0	100	0	0	0
Acacia nilotica (Desi babool)	150	0	150	0	0	0
Total	10000	4830	5170	48.30	149	91





3.1.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.

3.1.12. Budget and expenditure

Table 3.3 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18	345724	753374	364326	1463424	345724	753374	364326	1463424
2018-19	362524	49834	0	412358	362524	49834	0	412358
2019-20	118885	0	44204	163089	118885	0	44204	163089
2020-21	68073	0	24176	92249	68073	0	24176	92249
2021-22	79276	0	17774	97050	79276	0	17774	97050
Total	974482	803208	450480	2228170	974482	803208	450480	2228170

4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft at Manglana Makrana Parbatsar range

At Manglana Makrana in Parbatsar range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 388 m length as per MB. Also, in actual 388 m pakki diwar was constructed at the site. The width of the diwar was 0.40 meters & height was 1.28 meter. Construction work appeared to be good and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment. However, due to heavy deposition of sand along wall near nullah & school boundary the height of pakki diwar 4 ft varies. GPS location of this area was 27°2'2" N and 74°45'36" E. The expenditure incurred for constructing this wall was Rs. 12 lac (as per MB) against the estimated budget of Rs. 12 lac.

Pakki diwar 4ft.

Site 2- Rescue Ward at Range Office Merta Campus Merta range

Rescue Centre at range office Merta campus in Merta range has been evaluated. The Rescue Centre was constructed in the year 2018-19. Site selection for construction of Rescue Centre was adequate. The construction work of Rescue Centre had been completed. The infrastructure created under CAMPA was useful. Also, the infrastructure during third party evaluation was in use and was properly maintained. Quality of Construction work was average. The rescue ward room constructed under CAMPA was found useful. However, ramp may be constructed.GPS location of this area was 26°39'9'' N and 74°2'24" E. The expenditure incurred for constructing the Rescue Centre was Rs. 1,50,000 (as per MB) against the estimated budget of Rs 1,50,000.

Rescue Ward at Range Office Merta Campus

Site 3- Pakki Diwar 4 Ft at Kabara ka Naka, West area Kuchaman 'A' Kuchaman range

At Kabara ka Naka, West area, Kuchaman 'A' site in Kuchaman range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 443 m length as per MB. Also, in actual 443 m pakki diwar was constructed at the site. The width of the diwar was 0.38 meter & height was 1.20 meter. Construction work

Measuring Pakki diwar 4 Ft.

appeared to be average and useful. However, pointing was not done, only plaster on edges was done. The construction of Pakki Diwar 4 ft helped in protecting illegal mining. GPS location of this area was 27°3'40" N and 74°48'5" E. The expenditure incurred for constructing this wall was Rs. 11.30 lac (as per MB) against the estimated budget of Rs. 11.30 lac.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Nagaur division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Kuchaman	ANR	50	48.30	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 4 ft	Manglana Makrana	Good	8
2	Pakki Diwar 4 ft	Kabara Ka Naka, West area, Kuchaman 'A'	Average	7
3.	Rescue ward	Range Office Merta Campus	Average	6

Pali

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Pali Forest Division. This Forest Division with 5 Forest Ranges namely Pali, Sumerpur, Sojat, Sendra& Marwar Junction has territorial jurisdiction over the entire Pali District.

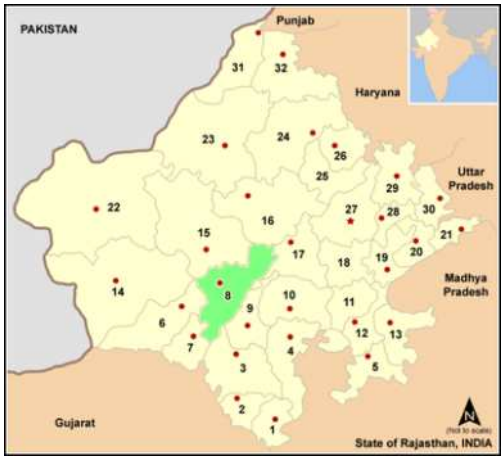


Figure : Location of Pali district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Pali Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Sendara	Dholiya	2018-19	50	ANR	100%
Sumerpur	Rojara	2018-19	50	ANR	10%
Sojat	Rundiya	2019-20	50	ANR	100%

3. Results and Evaluation

3.1 Plantations Evaluation

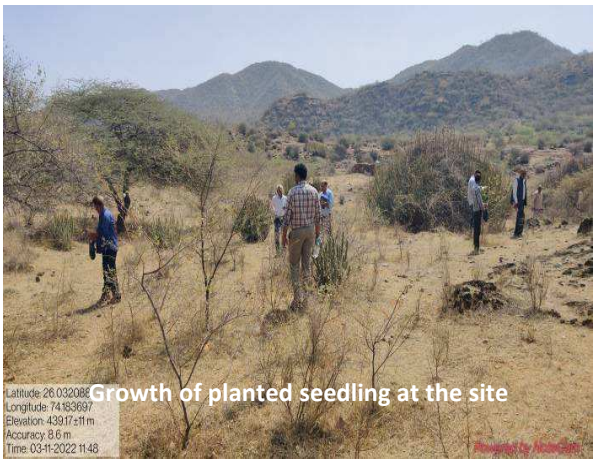
3.1.1. Site 1- Dholiya site in Sendara range -N 26^{0}1'54" and E 74^{0}11'3"

The selected plantation was carried out on 50 hac. of land at Dholiya in Sendara range during the year 2018-19. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was rocky.

3.1.2. Treatment plan before sowing: The topography of the area was undulating. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. It is reported excellent having fair amount of soil. The growth of planted seedling is less than normal in the area having less soil coverage. Grazing by stray animals & cattle and destruction by Neel gai, Reech & porcupine was reported at the site. Also, widely growth of termite, soil quality, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average

3.1.4. Species Planted: The selected tree species under plantation were 7. Seedlings of *Acacia nilotica* (desi babool), *Acacia leucophoelea (*ronj), *Holoptelea integrifolia* (Churel), Pithecell obium duice (JangaL Jalebi), Zizyphus mauritiana (Ber), Tecomella undulata (Rohida) and Acacia catechu (Khair) were planted.



In total 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

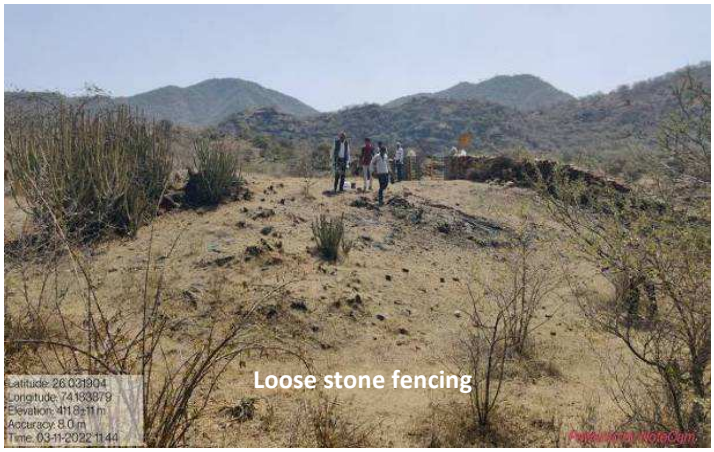
The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerneds it was proper, fair & suitable. The seedlings selected for plantation were Ronj & Desi babool which can survive in harsh & dry

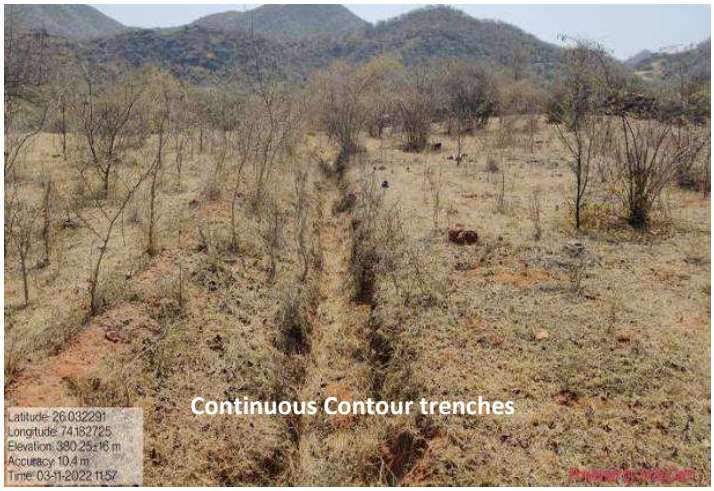
climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.



3.1.6. Natural Vegetation and Regeneration: Desi babool, Bair, Chudail, Palash, Dhok and Salar were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species *Kumatha* were sown in as well as along the trenches and on the thanwlas. There was good growth on thanwalas & trenches of seed sowing. **Hence, the result of sowing was good**



3.1.8. Protection Work: The selected ANR model plantation had loose stone fencing of 3500 RMT having width at the top-45 cm, & height 120 cm. Present condition of fencing was satisfactory. Loose stone fencing was partially effective in controlling biotic pressure.

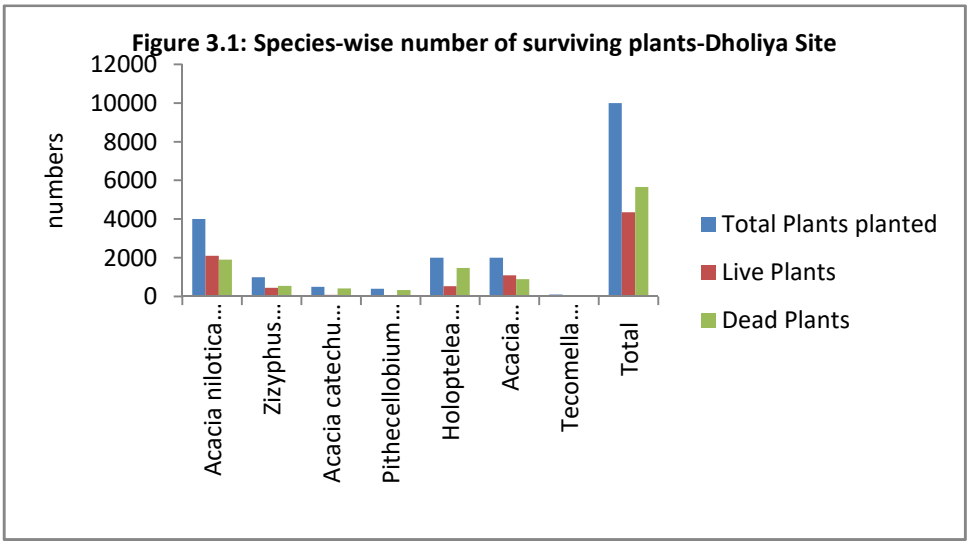
3.1.9. Soil and Water Conservation Measures: There are 20000 RMT (Width & depth -0.45 meter) Contour trenches & loose stone check dam (500 cu.cm) in the form of water harvesting structures present in the entire plantation area.

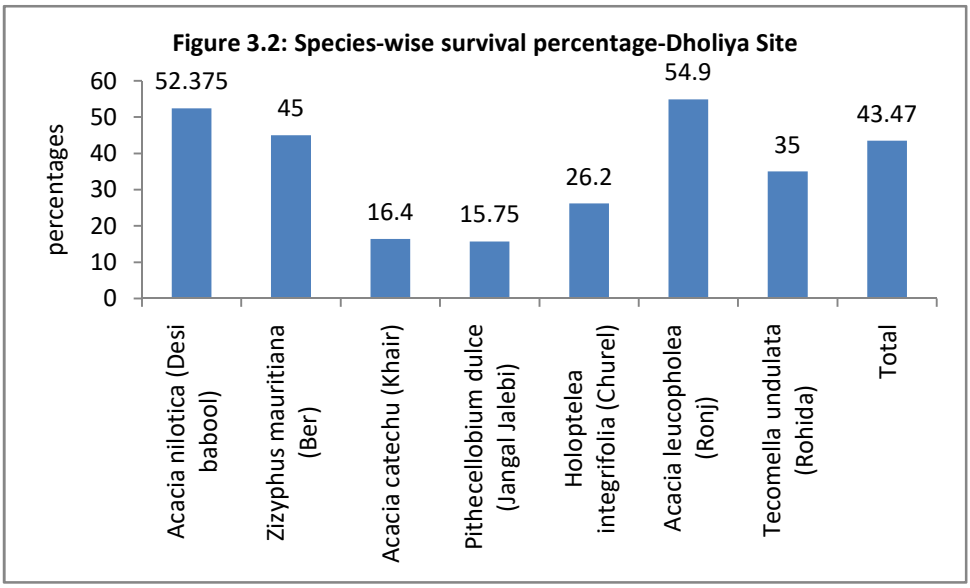
3.1.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 41.47% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising five species were planted in the 50 hectare plantation area.

Measurement of each of the survived species had been taken on randomly selected plants. The measurement has been conducted at various places of the plantation area to get proper average measurement of collar girth & height.

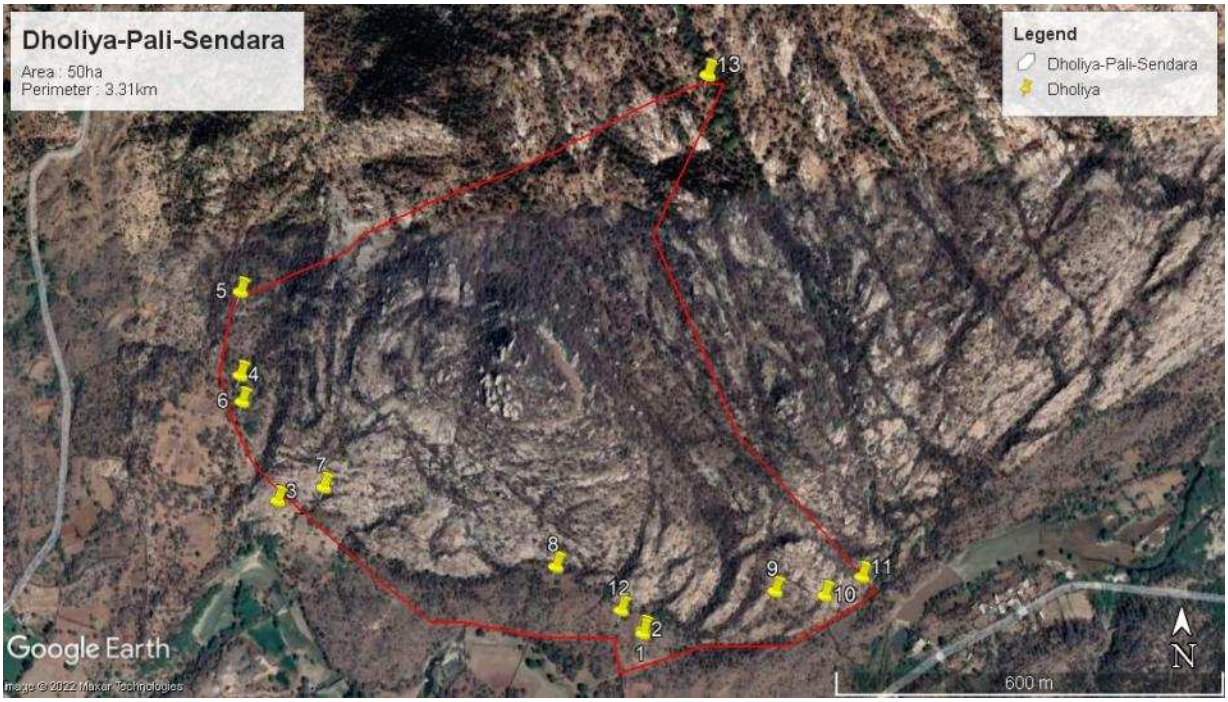
Table 3.2: Status of Planted Seedlings at the site-Dholiya Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth
Acacia nilotica (Desi babool)	4000	2095	1905	52.38	201	120
Zizyphus mauritiana (Ber)	1000	450	550	45.00	172	101
Acacia catechu (Khair)	500	82	418	16.40	180	80
Pithecellobium dulce (Jangal Jalebi)	400	63	337	15.75	138	85
Holoptelea integrifolia (Churel)	2000	524	1476	26.20	175	160
Acacia leucopholea (Ronj)	2000	1098	902	54.90	155	113
Tecomella undulata (Rohida)	100	35	65	35.00	90	65
Total	10000	4347	5653	43.47	181	119





3.1.11. GPS Location and KML file: The selected ANR model under CAMPA plantation



site measured 50 hec as per kml map.

3.1.12. Budget and expenditure

Table 3.3 Cost-estimate & expenditure (Year-wise)

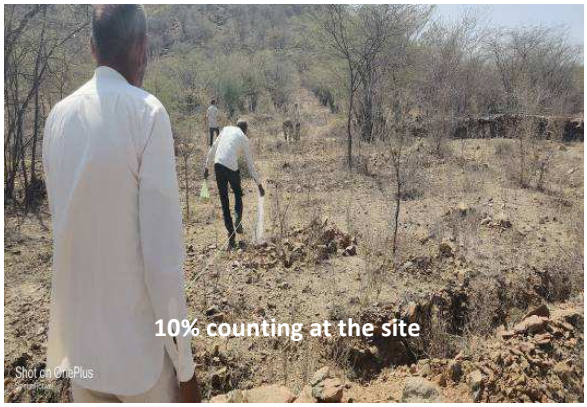
Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18	924342	784919	57539	1766800	263149	784763	688234	1736146
2018-19	412600			412600	392181		17907	410088
2019-20	177900			177900	167081		18255	175336
2020-21	92250			92250	67725		24525	92250
Total	97050			97050	61636		25475	87111

3.2.1 Site 2- Rojara in Sumerpur range - N 25^{0}14’4” and E 73^{0}5’50”

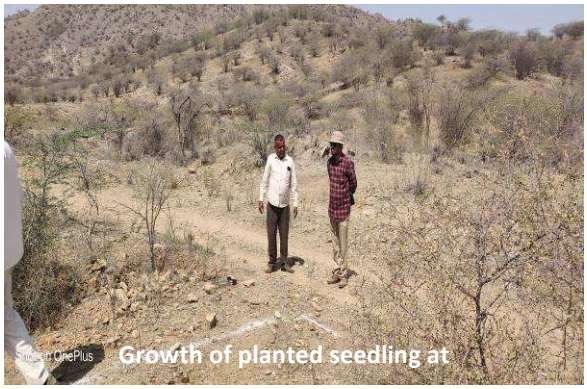
The selected plantation was carried out on 50 ha of land at Rojara in Sumerpur range during the year 2018-19. The activities were done under the ANR model. The site was a forest land and selected for 10% evaluation. The soil was rocky.

3.2.2. Treatment plan before sowing: The topography of the area was steep slope. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 ha of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild pigs, rats and porcupine was reported at the site. Also, widely growth of termite, soil quality, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good. Cattle guard was posted and will continue till March 2022.



3.2.4. Species Planted: The selected tree species under plantation were 5. Seedlings of *Acacia nilotica* (desi babool), *Acacia leucophoelea (*ronj), *Zizyphus mauritiana (*Ber), Cordia sinensis (Gundi) and Acacia senegal (Kumtha) were planted.



A total of 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. Spacing between plants reported 3 m. As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Ronj & Desi babool which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. Hence, the site has species suitable to soil condition. The growth of survived plants was satisfactory.

3.2.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.2.6. Natural Vegetation and Regeneration: The area has been covered fully with vegetation due to this plantation. The growth of plants was good. Plants like Khejri, Totalis, Khair, Juliflora and ronj have been found grown naturally.

3.2.7. Regeneration through seeds sowing: Seeds of species kumtha and Khair were sown in as well as along the trenches and on the thanwlas. The result of seed sowing was not good. Plants from the seeds sown were rarely seen in contour trenches.

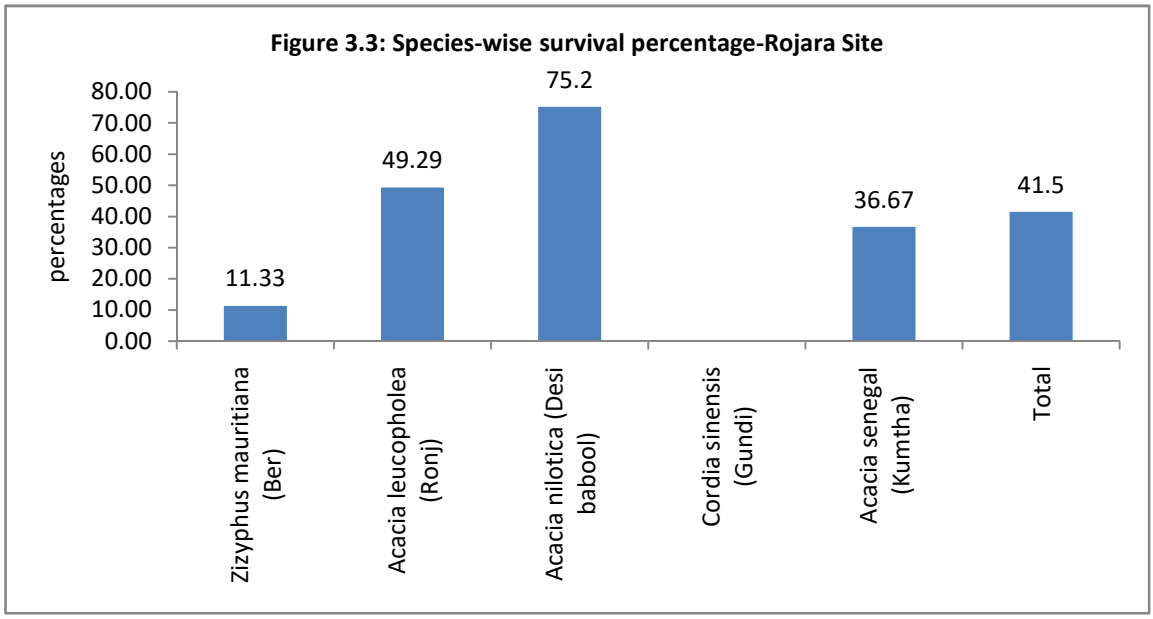
3.2.8. Protection Work: The selected ANR model plantation had loose stone fencing of 2100 RMT having width at the top-0.6 meter, width at the bottom-0.8 meter & height 1.2 meters. Present condition of fencing was satisfactory. However, at a few places loose stone fencing was badly damaged. Loose stone fencing was partially effective in controlling the biotic pressure. Also, 850 RMT ditch fencing having width at the top-1.5 meters, width at the bottom-0.9 meter & height 1.2 meters was reported at the site.

3.2.9. Soil and Water Conservation Measures: There are 20000 RMT (Width & depth -0.45 meter) Contour trenches in the form of water harvesting structures present in the entire plantation area.

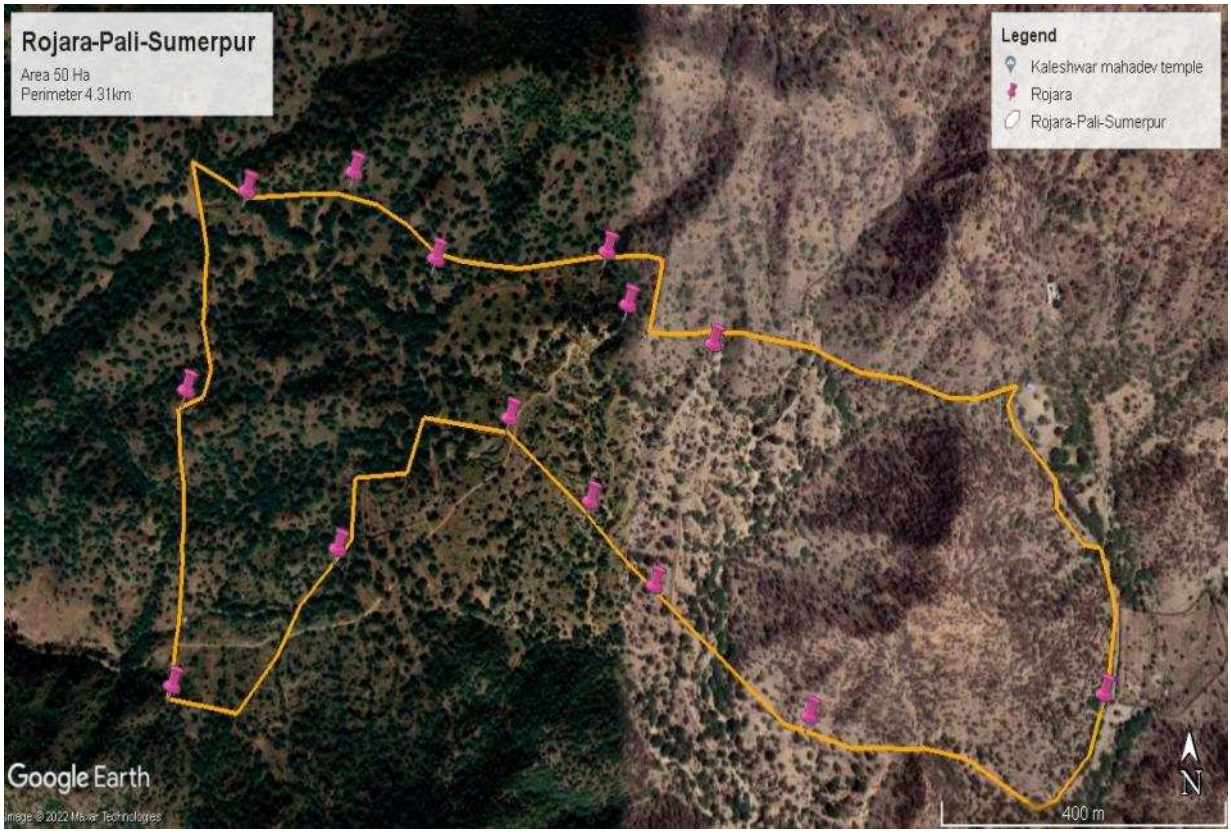
3.2.10. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 41.5% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising five species were planted in the 50 ha plantation area.

Table 3.4: Status of Planted Seedlings at the site-Rojara Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average collar
Zizyphus mauritiana (Ber)	3000	34	-	11.33	90	65
Acacia leucopholea (Ronj)	2800	138	-	49.29	95	68
Acacia nilotica (Desi babool)	2500	188		75.20	94	66
Cordia sinensis (Gundi)	200	0	-	0.00	0	0
Acacia senegal (Kumtha)	1500	55	-	36.67	92	67
Total	10000	415	9585	41.50	92.8	66.5



3.2.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hectare as per kml map.



3.3.1. Site 3-Rundiya in Sojat range - N 26^{0}1'46" and E 73^{0}42'3"

The selected plantation was carried out on 50 hec of land at Rundiya of Sojat range during the year 2019-20. The activities were done under the ANR model. The site was a forest land and selected for 100% evaluation. The soil was black & rocky.

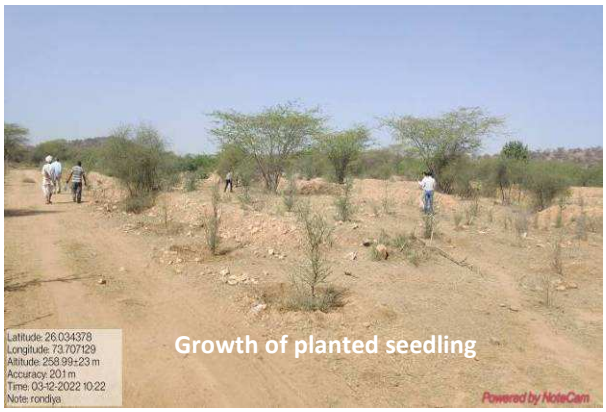
3.3.2. Treatment plan before sowing: The topography of the area was undulating. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land**.** The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Preparation for 100% counting

3.3.3. Health & Damages of Plantation: The growth of planted seedlings at the site was good. Grazing by stray animals & cattle and destruction by Neel gai, wild pigs and porcupine was reported at the site. Also, widely growth of termite, soil quality and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory.

3.3.4. Species Planted: The selected tree species under plantation were 5. Seedlings of *Acacia nilotica* (desi babool), *Acacia leucophoelea (*ronj), *Zizyphus mauritiana* (ber), *Azadirachta indica (Neem),* and Acacia senegal (Kumtha) were planted.

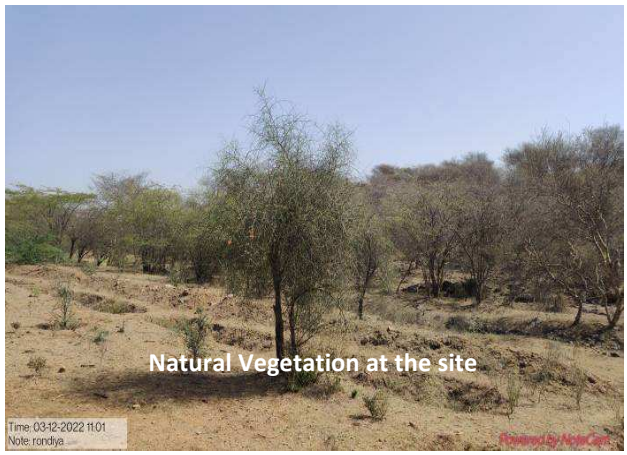
A total of 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.



Growth of planted seedling

The plantation of Seedlings was mixed along with the naturally growing plants already available there. Spacing between plant to plant was reported 3m/ 4m as per the available site condition. As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Ronj & Desi babool which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. The growth of survived plants was good.



3.3.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.3.6. Natural Vegetation and Regeneration*:* The area has been covered fully with vegetation due to this plantation. Plants like Dhok, Ronj, Neem and Desi babool have been found grown naturally. .

3.3.7. Regeneration through seeds sowing: The growth of seeds sowing plants was good. The result of seed sowing (viz. Kumtha, katkaranj & Ronj) was good. Plants from the seeds sown were widely seen in lines on contour trenches.

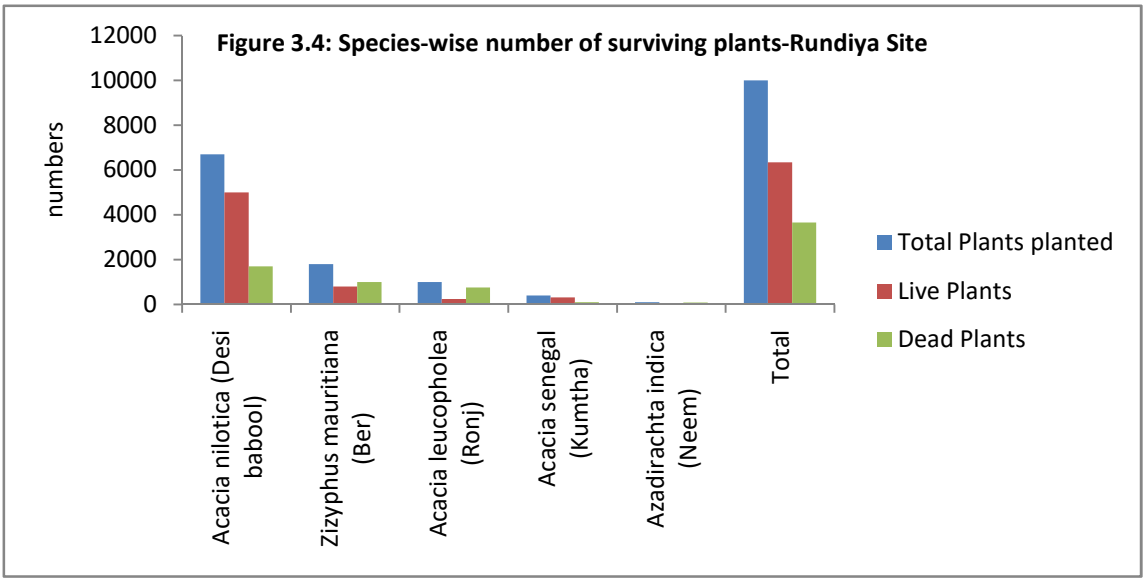
3.3.8. Protection Work: The selected ANR model plantation was protected by ditch fencing of 1175 RMT having width at the top-1.50 meters, width at the bottom-0.9 meter & depth 1.02 meters, loose stone fencing of 2219 RMT having width at the top-0.6 meter, width at the bottom-0.8 meter & height 1.2 meters. Present condition of ditch fencing & loose stone fencing was good. Fencing has been fully effective in controlling the biotic pressures.

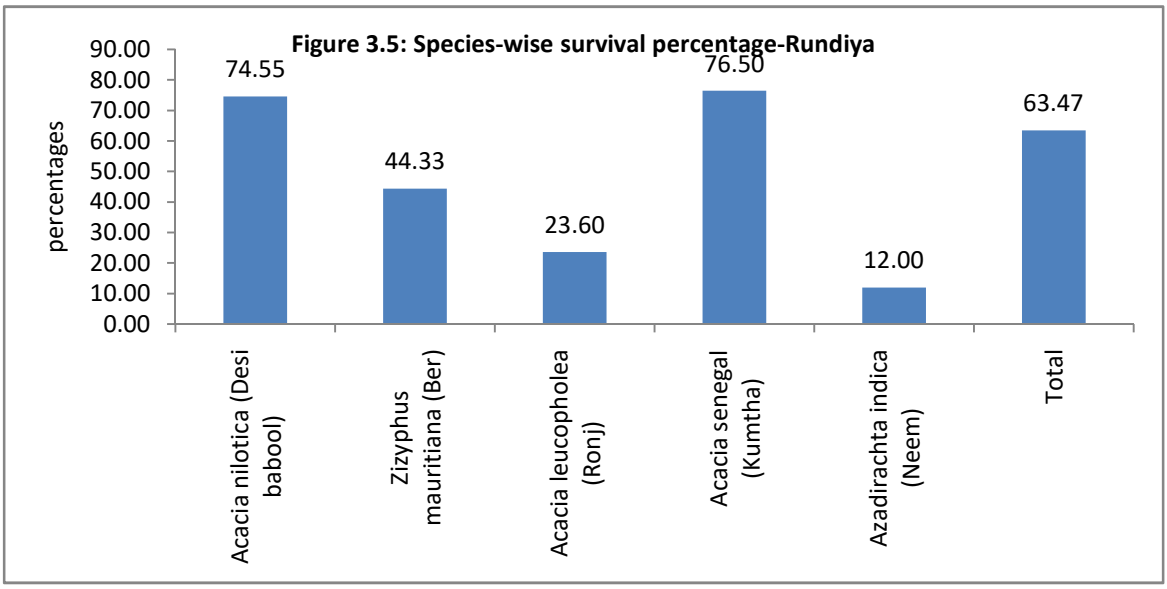
3.3.9. Soil and Water Conservation Measures: There are 9897 RMT (Width & depth - 0.45 meter) Contour trenches & PCT Nadi (952 cu.m.) in the form of water harvesting structures present in the entire plantation area

3.3.10. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. Based on for as 100 percent counting, plants survival was 63.47% at the site. Plant species girth breast height was also measured. The growth of planted seedlings was good. A total of 10000 plants comprising five species were planted in the 50 ha plantation area.

Table 3.6: Status of Planted Seedlings at the site-Rundiya Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average collar
Acacia nilotica (Desi babool)	6700	4995	1705	74.55	111	75
Zizyphus mauritiana (Ber)	1800	798	1002	44.33	107	72
Acacia leucopholea (Ronj)	1000	236	764	23.60	106	70
Acacia senegal (Kumtha)	400	306	94	76.50	105	71
Azadirachta indica (Neem)	100	12	88	12.00	90	65
Total	10000	6347	3653	63.47	110	70.6





3.3.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hac as per kml map.

3.3.12 Budget and expenditure:

Table 3.7: Cost-estimate & expenditure (Year-wise)

	Cost estimate (Rs.)				Expenditure (Rs.)			
Year	Plantation	SMC works	Boundary wall/Fencing	Total	Plantation	SMC works	Boundary wall/Fencing	Total
2019-20	-	-	-	20.81	-	-	-	1998517
2020-21	-	-	-	4.86	-	-	-	462330
2021-22	-	-	-	1.82	-	-	-	182000
Total	-	-	-	27.49	-	-	-	2642847

4. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Pali division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Rundiya	ANR	50	63.47	7
2	Rojara	ANR	50	41.50	5
3	Dholiya	ANR	50	43.47	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Pratapgarh

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Pratapgarh Forest Division. This Forest Division with 6 Forest Ranges namely Devgarh, Chhotisadri, Bansi, Pratapgarh, Pipalkhunt & Dhariyawad has territorial jurisdiction over the entire Pratapgarh District.

Figure 18 Location of Pratapgarh district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Pratapgarh Forest Division for evaluation were as given in table-1.

Table1: Selected plantation site for evaluation

Forest Range	Name of Site	Year of Plantation	H a	Model	Percent of sample
ChotiSadri	Santokpuriya	2017-18	50	ANR	100%
Peepatkhoont	Bakhtod	2018-19	50	ANR	10%
Dhariyawad	Bagora	2019-20	10	NFL	100%
Devgarh	Kot	2019-20	3.64	DFL	10%
ChotiSadri	Kakrana	2019-20	50	ANR	100%

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1- Santokpuriya site in Chotisadri range -N 24.229393 and E 74.724815

The selected plantation was carried out on 50 hac. of land at Santokpuriya in Chotisadri range during the year 2017-18. The activities were done under the Assisted Natural **Regeneration** (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was Brown domat.

Plantation site Santokpuriya

3.1.2. Health & Damages of Plantation: The growth of planted seedlings at the site was good. Grazing by stray animals & cattle and destruction by Neel gai, wild boars, rats and rabbits was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.

Measuring height of plant

3.1.3. Natural Vegetation and Regeneration: Tendu, Palash & Khejri were the plants found grown naturally in this area. The growth of the plants was good.

Growth of planted seedling at the site

3.1.4. Regeneration through seeds sowing: Seeds of species *Neem, Katkaranj, Ratanjot, Khair & Ronj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good on trenches.**

Result of sowing on trenches

3.1.5. Protection Work: The selected ANR model plantation had ditch fencing of 3400 RMT. Present condition of fencing was average.

3.1.6. Soil and Water Conservation Measures: There are 20000 RMT Contour trenches & PCT/Nadi (368 cu.m) in the form of water harvesting structures present in the entire plantation area.

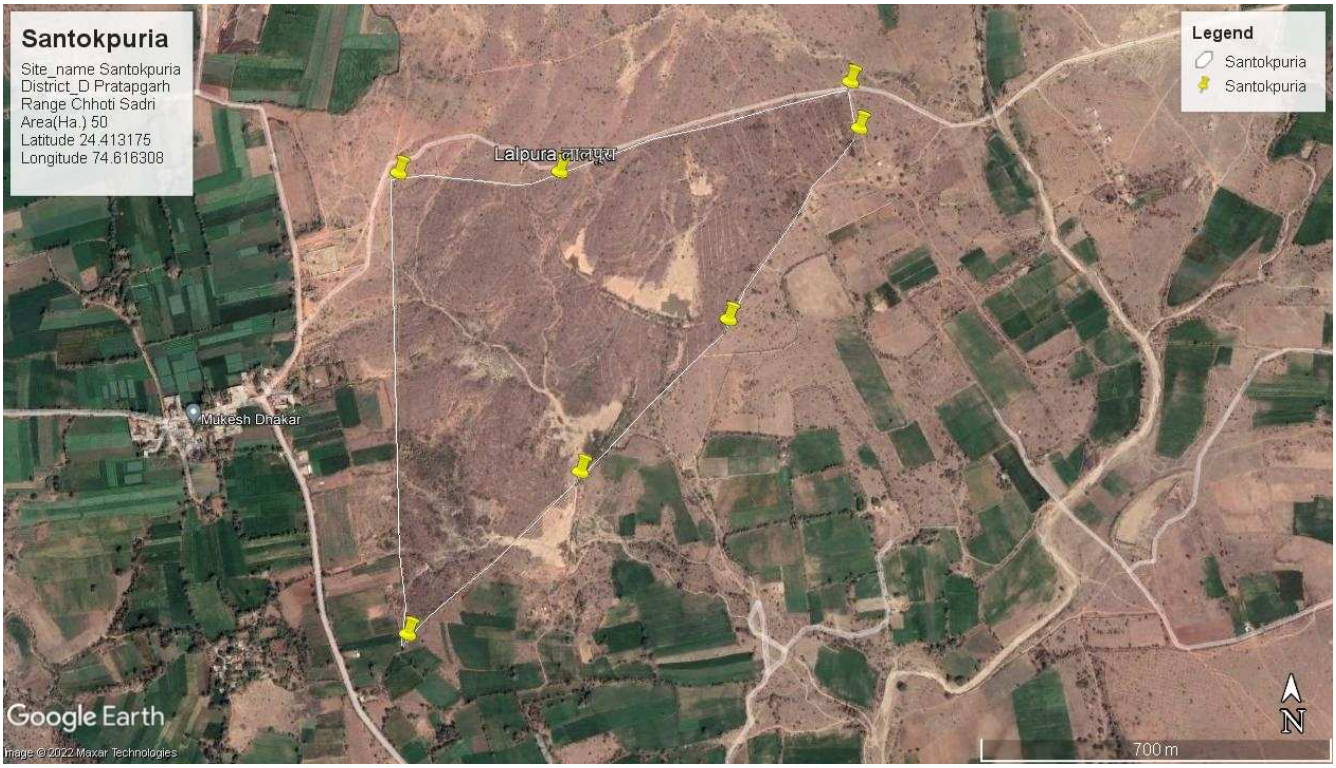
3.1.7. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 55.68% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was good. A total of 10000 plants comprising nine species were planted in the 50 hectare plantation area.

Measurement of each of the survived species had been taken on randomly selected plants. The measurement has been conducted at various places of the plantation area to get proper average measurement of collar girth & height.

Table 3.2: Status of Planted Seedlings at the site-Santokpuriya Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia catechu (Khair)	1000	300	700	30.00	90	65
Emblica officinalis (Amla)	500	400	100	80.00	180	85
Dendrocalamus strictus (Baans)	1000	700	300	70.00	135	88
Holoptelea integrifolia (Churel)	1500	900	600	60.00	104	85
Zizyphus mauritiana (Ber)	1500	900	600	60.00	115	65
Pongamia pinnata (Karanj)	1000	700	300	70.00	103	76
Tectona grandis (Sagwan)	1500	918	582	61.20	90	65
Acacia leucopholea (Ronj)	1500	550	950	36.67	90	65
Azadirachta indica (Neem)	500	200	300	40.00	90	65
Total	10000	5568	4432	55.68	110	74

3.1.8. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.



3.2.1. Site 2- Bakhtod site in Pipalkhoot range -N 23.74997 and E 74.614087

The selected plantation was carried out on 50 hac. of land at Bakhtod in Pipalkhoot range during the year 2018-19. The activities were done under the Assisted Natural **Regeneration** (ANR) model. The site was a forest land and selected for 10% evaluation. The soil was black & red with stone.

3.2.2. Health & Damages of Plantation: The growth of planted seedlings at the site was poor. Grazing by stray animals & cattle and destruction by Neel gai and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.2.3. Natural Vegetation and Regeneration: Sagwan, Palash, Desi babool & Neem were the plants found grown naturally in this area. The growth of the plants was good.

3.2.4. Regeneration through seeds sowing: Seeds of species *Neem, Katkaranj,Ratanjot, Khair, hawan & Ronj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good on trenches.**

3.2.5. Protection Work: The selected ANR model plantation had ditch fencing of 1000 RMT & 2520 RMT loose stone wall. Present condition of fencing was poor.

3.2.6. Soil and Water Conservation Measures: There are 10000 RMT Contour trenches & loose stone checkdams (176 cu.m) in the form of water harvesting structures present in the entire plantation area.

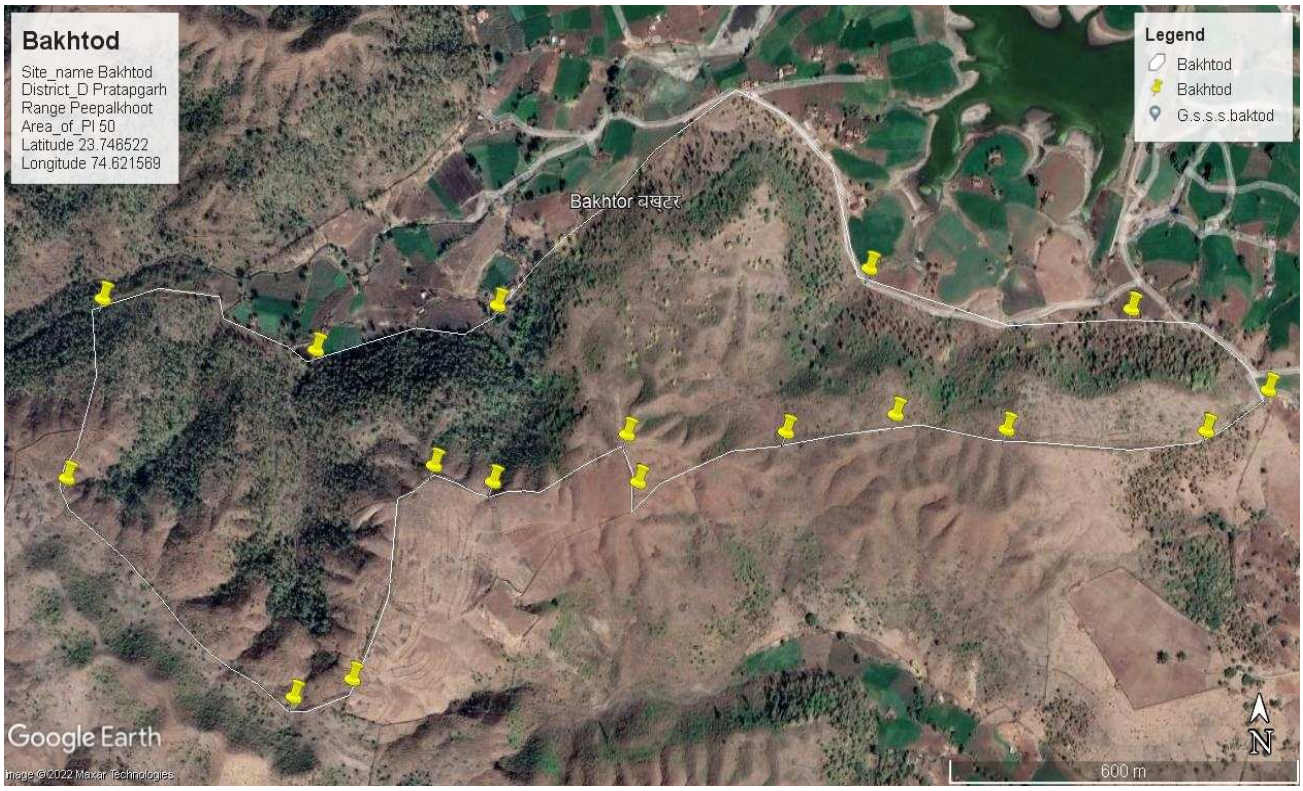
3.2.7. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 42.4% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was good. A total of 10000 plants comprising seven species were planted in the 50 hectare plantation area.

Measurement of each of the survived species had been taken on randomly selected plants. The measurement has been conducted at various places of the plantation area to get proper average measurement of collar girth & height.

Table 3.4: Status of Planted Seedlings at the site-Bakhtod Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Dendrocalamus strictus (Baans)	3000	150		50.00	195	105
Tectona grandis (Sagwan)	3000	130		43.33	165	105
Azadirachta indica (Neem)	1000	34		34.00	90	65
Emblica officinalis (Amla)	1000	40		40.00	90	65
Holoptelea integrifolia (Churel)	500	25		50.00	90	65
Acacia catechu (Khair)	1000	15		15.00	90	65
Pongamia pinnata (Karanj)	500	30		60.00	90	65
Total	10000	424	9576	42.40	122	80

3.2.8. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.



3.3.1 Site 3- Ghatela site in Dhariyawad range -N 23.959659 and E 74.422691

The selected plantation was carried out on 10 hac. of land at Ghatela in Dhariyawad range during the year 2019-20. The activities were done under the Non-Forest Land (NFL) model. The site was a forest land and selected for 100% evaluation. The soil was red & black stony.

Preparation for 100% counting at the site

3.3.2. Health & Damages of Plantation: The growth of planted seedlings at the site was good. Grazing by stray animals & cattle and destruction by Neel gai, wild boars and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.

Marking & counting of planted seedling at the site

3.3.3. Natural Vegetation and Regeneration: Sagwan, Churail & Neem were the plants found grown naturally in this area. The growth of the plant was good.

3.3.4. Regeneration through seeds sowing: Seeds of species *Khair, Ratanjot, Katkaranj & kumtha* were sown in as well as along the trenches and on the thanwlas. The result of sowing was poor.

3.3.5. Protection Work: The selected NFL model plantation had 500 RMT pucca masonry wall & 600 RMT ditch fencing (1.5+.90/2 X 1.2). Present condition of ditch fencing was average. Ditch fencing was partially effective in controlling the biotic pressure.

Continuous Contour trenche at the site

3.3.6. Soil and Water Conservation Measures: There are 4000 RMT (Width & depth - 0.45 meters) Contour trenches in the form of water harvesting structures present in the entire plantation area.

3.3.7. Observations Recorded: Under this model, 1100 plants per hectare were planted during plantation. **Based on for as 100 percent *counting, plants survival was 46.82% at the site.*** *Plant species collar girth & height was also* measured. The growth of planted plants was

good. A total of 11000 plants comprising eleven species were planted in the 10 hectare plantation area.

Measurement of each of the survived species had been taken on randomly selected plants. The measurement has been conducted at various places of the plantation area to get proper average measurement of collar girth & height.

Table 3.6: Status of Planted Seedlings at the site- Ghatela Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Dendrocalamus strictus (Baans)	3000	2000	1000	66.67	176	120
Emblica officinalis (Amla)	2000	1100	900	55.00	110	87
Holoptelea integrifolia (Churel)	1700	700	1000	41.18	90	65
Azadirachta indica (Neem)	1000	400	600	40.00	90	65
Albizia lebbeck (Kala Siras)	800	200	600	25.00	90	65
Ficus racemosa (Hawan)	500		500	0.00	0	0
Pongamia pinnata (Karanj)	500		500	0.00	0	0
Terminalia bellirica (Baheda)	300	150	150	50.00	90	65
Terminalia arjuna (Arjun)	800	500	300	62.50	90	65
Zizyphus mauritiana (Ber)	200		200	0.00	0	0
Tectona grandis (Sagwan)	200	100	100	50.00	90	65
Total	11000	5150	5850	46.82	128	91

3.3.8. GPS Location and KML file: The selected NFL model under CAMPA plantation site measured 10 hec as per kml map.

3.4.1. Site 4- Jhantala C site in Devgarh range -N 24.230131 and E 74. 72416

The selected plantation was carried out on 3.64 hac. of land at Jhantala C in Devgarh range during the year 2019-20. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 10% evaluation (1 hectare). The soil was black & red murath.

3.4.2. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boars and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedling. The status of guarding/ fencing at the site was average. Due to fire at the plantation site last year, planted seedlings were damaged.

3.4.3. Natural Vegetation and Regeneration: Sagwan, Palash & Baans were the plants found grown naturally in this area. The growth of the plants was good.

3.4.4. Regeneration through seeds sowing: Seed sowing was not reported at the site**.**

3.4.5. Protection Work: The selected DFL model plantation had loose stone fencing of 430 RMT & ditch fencing of 580 RMT. Present condition of loose stone fencing & ditch fencing was average.

3.4.6. Soil and Water Conservation Measures: There are loose stone check dams (156.46 cu.m) in the form of water harvesting structures present in the entire plantation area.

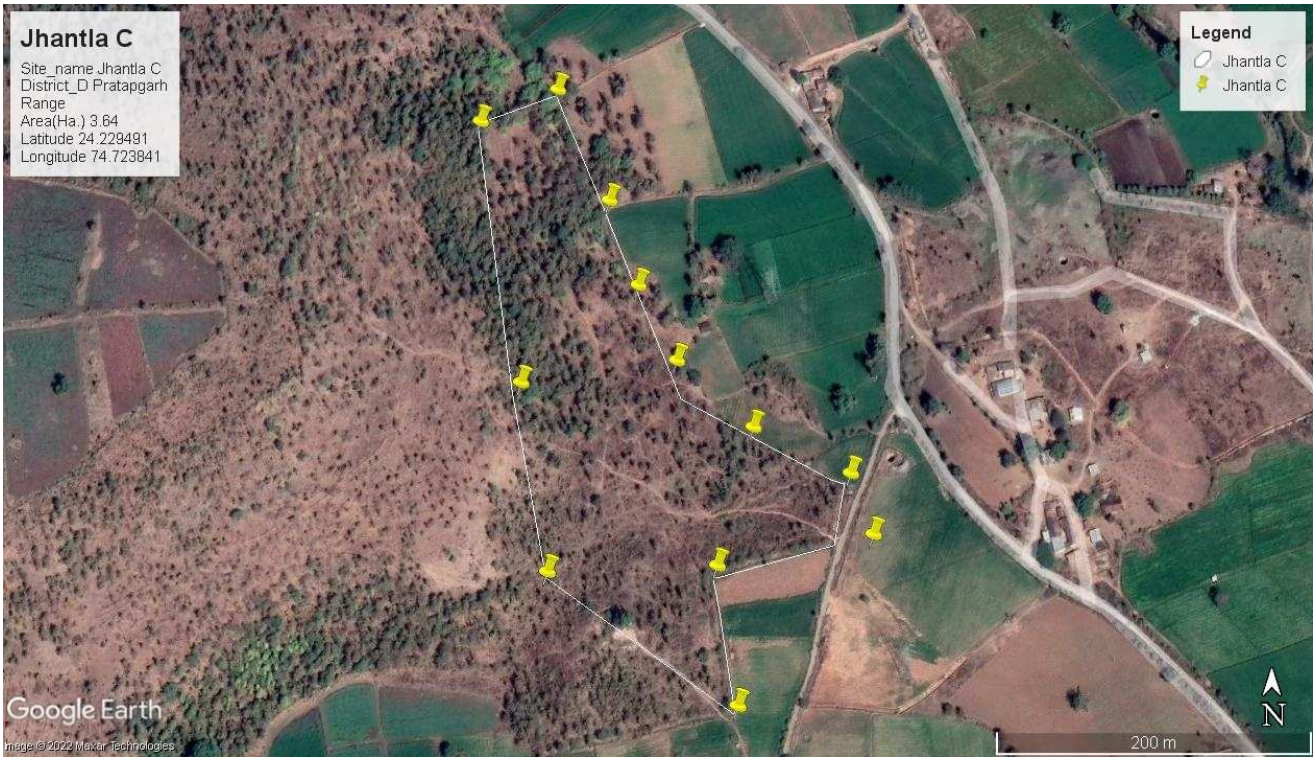
3.4.7. Observations Recorded: Under this model, 2000 plants per hectare were planted during plantation. **Based on for as 10 percent (1 hectare) counting, plants survival was 50.35% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 7280 plants comprising ten species were planted in the 3.64 hectare plantation area.

Measurement of each of the survived species had been taken on randomly selected plants. The measurement has been conducted at various places of the plantation area to get proper average measurement of collar girth & height.

Table 3.8: Status of Planted Seedlings at the site- Jhantala C Site

Species	Total Plants planted	Plants in One ha	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia senegal (Kumtha)	350	96			0.00	0	0
Emblica officinalis (Amla)	900	247	170		68.76	165	105
Carissa spinarum(Karonda)	280	77	50		65.00	90	65
Aegle marmelos (Bilpatra)	170	47	45		96.35	90	65
Ocimum gratissimum (Tulsi)	250	69	39		56.78		
Aloevera (Gwarpatha)	3805	1045	480		45.92		
Ashvagandha	300	82	47		57.03		
Kalmegh	600	165	160		97.07		
*Cassia fistula (*Amaltas)	575	158	16		10.13	90	65
Ocimum gratissimum (Tulsi)	50	14			0.00		
Total	7280	2000	1007	993	50.35	104	73

3.4.8. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 3.64 hec as per kml map.



3.5.1 Site 5- Hamel Mahadev site in Choti Saddri range -N 24.377416 and E 74.612731

The selected plantation was carried out on 50 hac. of land Hamel Mahadev in Choti Sadri range during the year 2019-20. The activities were done under the Assisted Natural **Regeneration** (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was Red, hard & murar with boulders.

Plantation site Hamel Mahadev

3.5.2. Health & Damages of Plantation: The growth of planted seedlings at the site was poor. Grazing by stray animals & cattle and destruction by Neel gai and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.5.3. Natural Vegetation and Regeneration: Palash, Tendu, Ronj, Churail, Karpata, Bargad & Neem were the plants found grown naturally in this area. The growth of the plant was good.

3.5.4. Regeneration through seeds sowing: Seeds of species *Neem, Katkaranj, Ratanjot, Khair, Kumtha, Neem & Ronj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was excellent on trenches.**

Loose stone wall at the site

3.5.5. Protection Work: The selected ANR model plantation had ditch fencing of 2477 RMT & 745 RMT loose stone wall. Present condition of ditch fencing was poor & loose stone wall fencing was good.

3.5.6. Soil and Water Conservation Measures: There are 4000 RMT Contour trenches, 4000 RMT SGT & 1000 RMT deep CCT in the form of water harvesting structures present in the entire plantation area.

Continuous Contor trench at the site

3.5.7. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival**

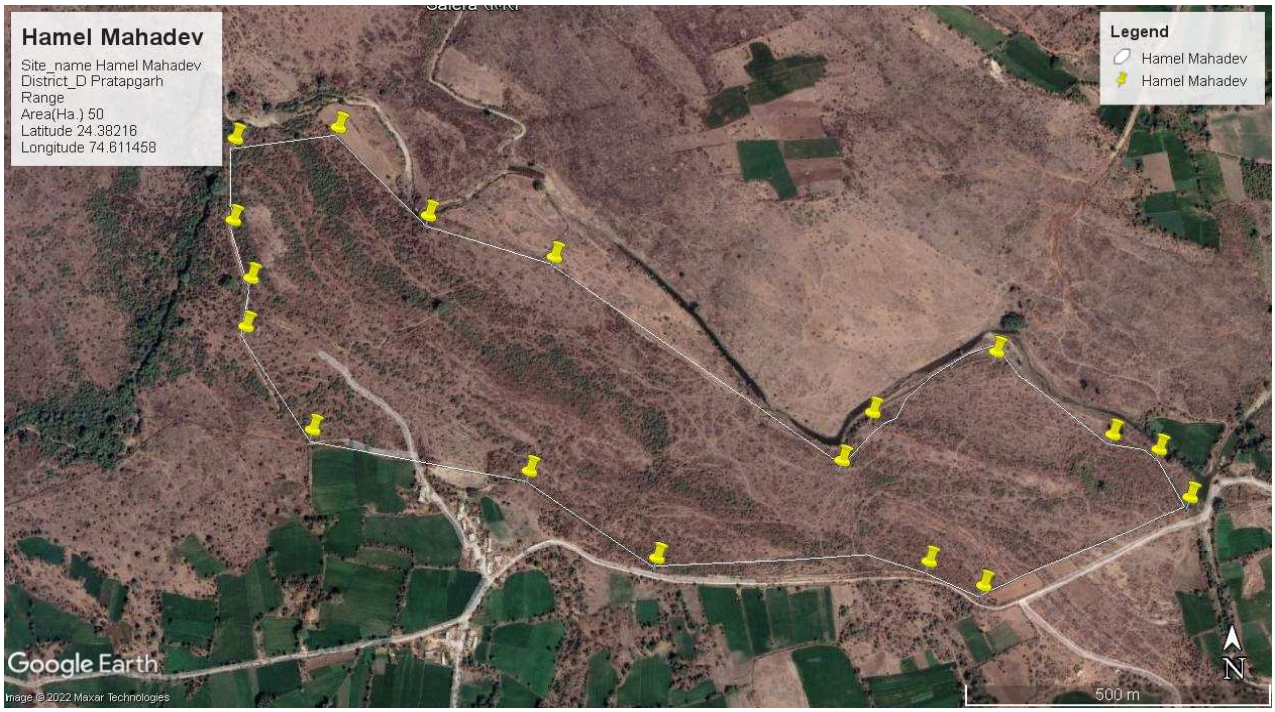
was 41.0% at the site. Plant species collar girth & height was also measured. The growth of planted plants was poor. A total of 10000 plants comprising eleven species were planted in the 50 hectare plantation area.

Measurement of each of the survived species had been taken on randomly selected plants. The measurement has been conducted at various places of the plantation area to get proper average measurement of collar girth & height.

Table 3.10: Status of Planted Seedlings at the site-Hamel Mahadev Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia catechu (Khair)	500	400	100	80.00	90	65
Emblica officinalis (Amla)	500	400	100	80.00	101	75
Dendrocalamus strictus (Baans)	1000	700	300	70.00	114	65
Holoptelea integrifolia (Churel)	2000	800	1200	40.00	90	65
Azadirachta indica (Neem)	1000	100	900	10.00	90	65
Pongamia pinnata (Karanj)	1000	500	500	50.00	90	65
Acacia leucopholea (Ronj)	500	0	500	0.00	0	0
Pithecellobium dulce (Jangal Jalebi)	1000	300	700	30.00	90	65
Carissa spinarum(Karonda)	500	200	300	40.00	90	65
Tectona grandis (Sagwan)	500	300	200	60.00	90	65
Zizyphus mauritiana (Ber)	500	300	200	60.00	90	65
Albizia lebbeck (Kala Siras)	500	100	400	20.00	90	65
Others	500	0	500	0.00	0	0
Total	10000	4100	5900	41.00	95	66

3.5.8. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.



5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Pratapgarh division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1.	Santokpuriya	ANR	50	55.68	6
2.	Bakhtod	ANR	50	42.4	5
3.	Bagora	NFL	10	46.82	5
4.	Kot	DFL	3.64	50.35	6
5.	Kakrana	ANR	50	41.0	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Rajsamand

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Rajsamand Forest Division. This Forest Division with 17 Forest Ranges namely Bhim, Kumbhalgarh, Desuri, Saran, Nathdwara, Ghanerao, Bhagoda, Bagadi, Todgarh, Jhilwara, Rajsamand, Sadri, Devgarh, Bokhada, Bijagudha, Jojawar & Ravli has territorial jurisdiction over the entire Rajsamand District.

Figure : Location of Rajsamand district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Rajsamand Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Kumbhalgarh	Uparthala Jaitaran	2017-18	50	ANR	100

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Rajsamand Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Nathdwara	Ganesh Tekri near temple Circle Part -B	2017-18	Pakki Diwar 4 ft

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1-Uparthala site in Kumbhalgarh range -N 25.057353 and E 73.496181

The selected plantation was carried out on 50 hac. of land at Uparthala in Kumbhalgarh range during the year 2017-18 The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was domat & rocky.

3.1.2. Treatment plan before sowing: The topography of the area was hilly. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was average. Grazing by stray animals & cattle and destruction by Neel gai and wild boars was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water obstruct the growth of planted seedling. The status of guarding/ fencing at the site was good.

3.1.4. Species Planted: The selected tree species under plantation were thirteen. Seedlings of Acacia catechu (Khair), Dendrocalamus strictus (Baans), Tectona grandis (Sagwan), Annona squamosa (Sitaphal), Mangifera indica (Mango), Holoptelea integrifolia (Churel), Emblica officinalis (Amla), Zizyphus mauritiana (Ber), Ailanthus excelsa (Ardu), Ficus racemosa (Hawan), Albizia lebbeck (Kala Siras), Dalbergia sissoo (Shisham)and Pongamia pinnata (Karanj) were planted.

In total, 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Churail, Bamboo & Sagwan which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was satisfactory.**

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: *Dhok, Palash, Kala Siras & Khirni* were the plants found grown naturally in this area. The growth of the plant was good.

3.1.7 Regeneration through seeds sowing: Seeds of species Khair, *Kumtha, Ronj, Ratanjot and Neem* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was average.** The result of sowing was seen on contour trenches and thanwalas.

3.1.8. Protection Work: The selected ANR model plantation had loose stone fencing of 3772 RMT having width at the top-0.6 meter, width at the bottom-0.8 meter & height 1.2 meters.

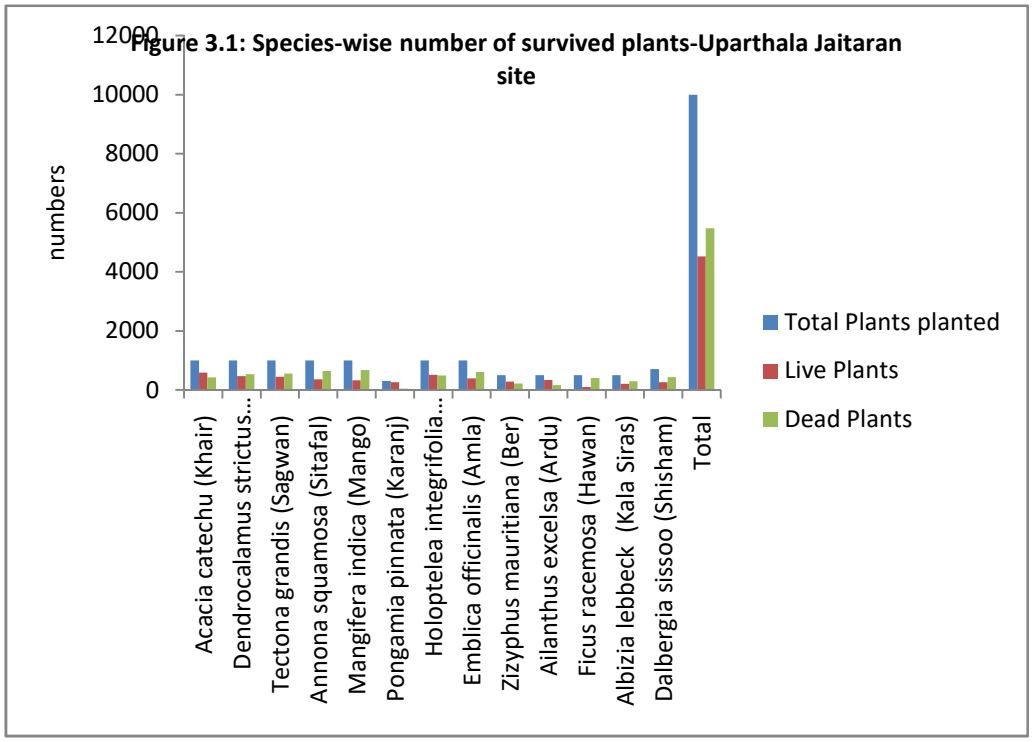
3.1.9. Soil and Water Conservation Measures: There are 2000 RMT Contour trenches and loose stone checkdam (305 cu.m) in the form of water harvesting structures present in the entire plantation area.

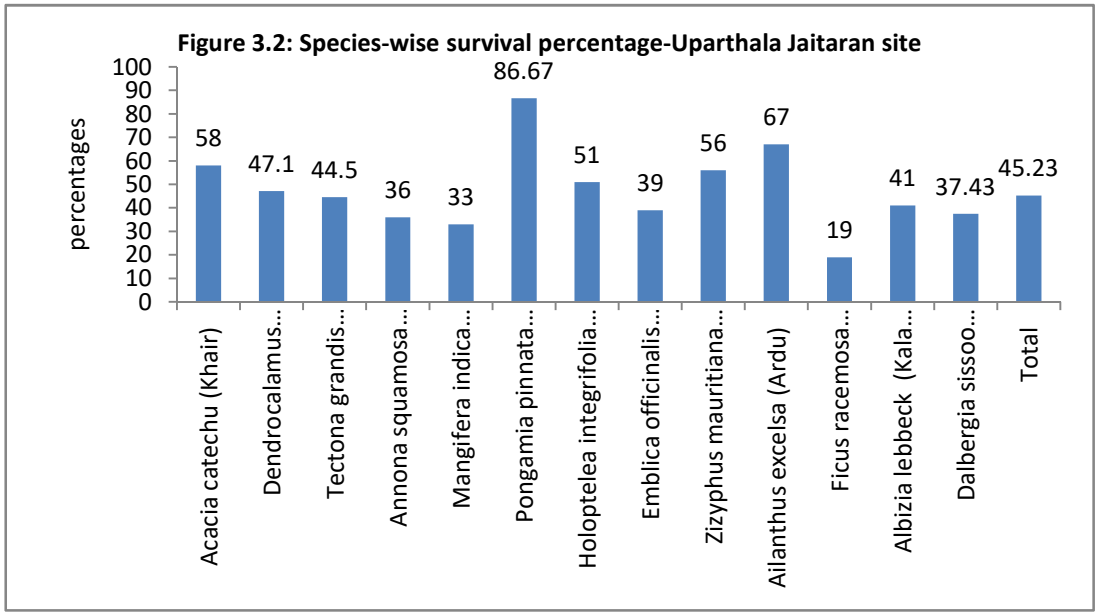
3.1.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival**

was 45.23% at the site. Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising thirteen species were planted in the 50 hectare plantation area.

Table 3: Status of Planted Seedlings at the site- Uparthala Jaitaran Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth(mm)
Acacia catechu (Khair)	1000	580	420	58.00	95	65
Dendrocalamus strictus (Baans)	1000	471	529	47.10	107	67
Tectona grandis (Sagwan)	1000	445	555	44.50	95	65
Annona squamosa (Sitafal)	1000	360	640	36.00	90	65
*Mangifera indica (*Mango*)*	1000	330	670	33.00	90	65
Pongamia pinnata (Karanj)	300	260	40	86.67	92	67
Holoptelea integrifolia (Churel)	1000	510	490	51.00	93	65
Emblica officinalis (Amla)	1000	390	610	39.00	92	65
Zizyphus mauritiana (Ber)	500	280	220	56.00	94	68
Ailanthus excelsa (Ardu)	500	335	165	67.00	90	65
Ficus racemosa (Hawan)	500	95	405	19.00	91	67
Albizia lebbeck (Kala Siras)	500	205	295	41.00	90	66
Dalbergia sissoo (Shisham)	700	262	438	37.43	92	67
Total	10000	4523	5477	45.23	93	66





3.1.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 Hac as per kml map.

3.1.12. Budget and expenditure

Table 3.1: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2016-17				1764200				
2017-18				505150				
2018-19				162800				
2019-20				360000				
Total				2792150				

4. Results for asset sites

4.1. Site1- Pakki Diwar 4 Ft at Ganesh Tekri near temple Circle Part-B, Udaipur West Range

At Ganesh Tekri near temple Circle Part -B in Nathdwara range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 350 m length as per MB. But in actual 353 m pakki diwar was constructed at the site. The width of the diwar was 0.60 meter & height was 1.20 meters. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. GPS location of this area was 24.920801 N and 73.810958E. The expenditure incurred for constructing this wall was Rs. (as per MB) against the estimated cost of Rs. 8.40 lac.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Rajsamand division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Uparthala Jaitaran	ANR	50	45.23	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of asset created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction	Rating of Crack	Rating of settlement in structure	Quality of workmanship	Rating of quality of workmanship
1	PakkiDiwar 4 ft	Ganesh Tekri near temple Circle Part -B	Average	6	6	6	Average	6

Rajsamand WL

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Rajsamand WL Forest Division. This Forest Division with 17 Forest Ranges namely Bhim, Kumbhalgarh, Desuri, Saran, Nathdwara, Ghanerao, Bhagoda, Bagadi, Todgarh, Jhilwara, Rajsamand, Sadri, Devgarh, Bokhada, Bijagudha, Jojawar & Ravli has territorial jurisdiction over the entire Rajsamand District.

Figure : Location of Rajsamand district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Rajsamand WL Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Desuri	Satimata B	2018-19	50	ANR	100
Bheem	Koya Talai Bhagbad	2018-19	50.62	DFL	10
Devgarh	Devpura	2019-20	50	ANR	100

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Rajsamand WL Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Nathdwara	Bandariya Magra Nathdwara	2018-19	Pakki Diwar 4 ft
Sadri	Ruparmata Bijapur	2018-19	Anicut II
Sadri	Thakardi Bijapur	2018-19	Anicut III
Desuri	GopelaSumer	2019-20	Pakki Diwar 6 ft

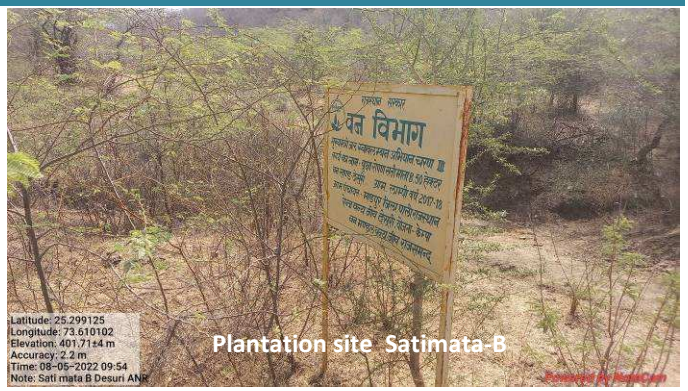
Bheem	Borba	2019-20	Anicut II
Devgarh	Goram ghat	2019-20	Anicut III
Bheem	Bheem	2019-20	Range office cum residence
Kumbhalgarh	Bagor Part C	2019-20	Boundary pillars

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1-Satimata B site in Desuri range -N 25.29914 and E 73.610136

The selected plantation was carried out on 50 hac. of land at Satimata-B in Desuri range during the year 2018-19 The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was clayey domat.



Plantation site Satimata-B

Preparation for 100% counting at the site

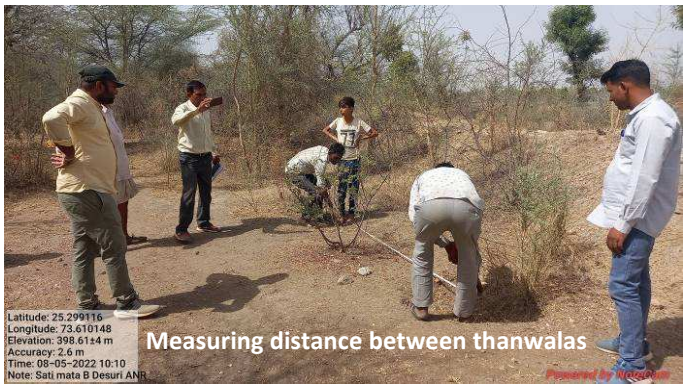
3.1.2. Treatment plan before sowing: The topography of the area was hilly. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was average. Grazing by stray animals & cattle and destruction by Neel gai, rabbits, porcupine and wild boars was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water& low rainfall obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.

Growth of termite

3.1.4. Species Planted: The selected tree species under plantation were seven. Seedlings of Zizyphus mauritiana (Ber), Acacia leucopholea (Ronj), (Khair), Cordia sinensis (Gundi), Holoptelea integrifolia (Churel), Dendrocalamus strictus (Baans)and Cenchrus setigerus Vahl(Dhaman) were planted.

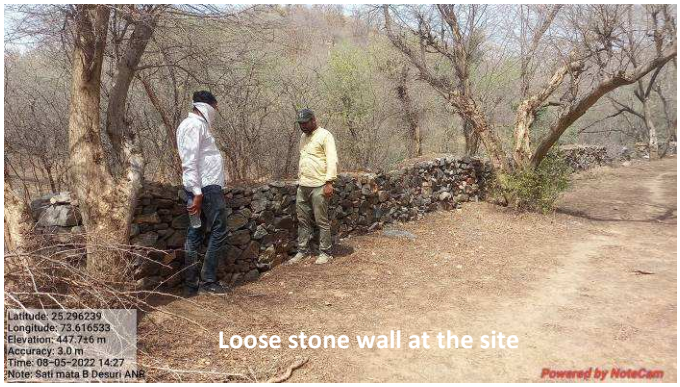
In total, 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.



The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Bair, Ronj & Gundi which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was satisfactory.**



3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: *Desi babool, Ronj, Dhonk, Khejri & Hingot* were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species Khair, *Kumtha, Desi babool and Neem* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.** The result of sowing was seen on contour trenches and thanwalas.

3.1.8. Protection Work: The selected ANR model plantation had loose stone fencing of 1225 RMT having width at the top-0.6 meter, width at the bottom-0.8 meter & height 1.2 meters. Also, 1573 RMT ditch fencing having width at the top-1.75 meters, width at the bottom-1.05 meters & height 1.08 meters wa reported at the site. The condition of both the fencing was satisfactorily. 105 RMT loose stone fencing was damaged & silting (75 RMT) was reported in the ditch fencing.

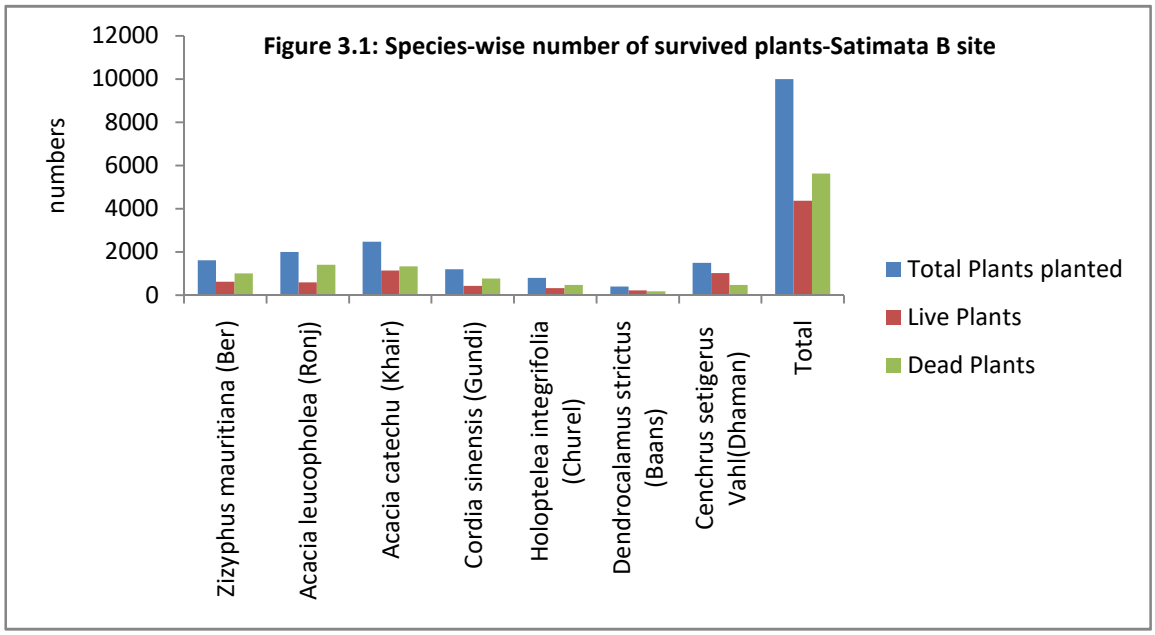
3.1.9. Soil and Water Conservation Measures: There are 4000 RMT Contour trenches and SGT (7220 RMT) in the form of water harvesting structures present in the entire plantation area.

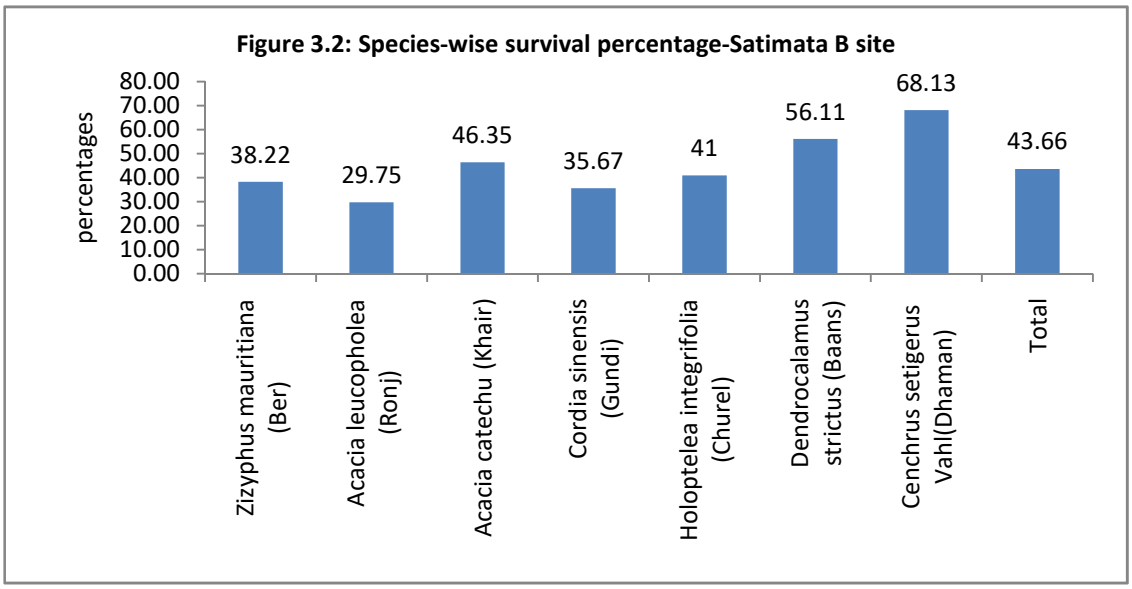
3.1.10 Observations Recorded:

Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 43.66% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising seven species were planted in the 50 hectare plantation area.

Table 3: Status of Planted Seedling at the site- Satimata-B Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Zizyphus mauritiana (Ber)	1622	620	1002	38.22	99	65
Acacia leucopholea (Ronj)	2000	595	1405	29.75	90	65
Acacia catechu (Khair)	2477	1148	1329	46.35	90	65
Cordia sinensis (Gundi)	1200	428	772	35.67	94	65
Holoptelea integrifolia (Churel)	800	328	472	41.00	90	65
Dendrocalamus strictus (Baans)	401	225	176	56.11	108	65
Cenchrus biflorus(Dhaman)	1500	1022	478	68.13	25	
Total	10000	4366	5634	43.66	85	56





3.1.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 Hac as per kml map.

3.1.11. Budget and expenditure

Table 3.1 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18				1766871				1766800
2018-19				412600				388337
2019-20				177850				166332
2020-21				92250				87750
Total				2449571				2409219

3.2.1. Site 2- Koya Talai Bhagbad site in Bheem range -N 25.732468 and E 74.010522

The selected plantation was carried out on 50.62 hac. of land at Koya Talai Bhagbad in Bheem range during the year 2018-19. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 10% evaluation. The soil was yellow & bhurbhuri.

3.2.2. Treatment plan before sowing: The topography of the area was hilly. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 3500 pits were dug for plantation in total 50.62 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals &cattle and destruction by Neel gai and wild boars was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.2.4. Species Planted: The selected tree species under plantation were thirteen. Seedlings of Acacia nilotica (Desi babool), Holoptelea integrifolia (Churel), Zizyphus mauritiana (Ber), Emblica officinalis (Amla), Acacia leucopholea (Ronj), Cordia sinensis (Gundi), Pithecellobium dulce (Jangal Jalebi), Acacia catechu (Khair), Azadirachta indica (Neem), Albizia lebbeck (Kala Siras), Tamarindus indica (Imli), Anogeissus pendula(Dhok) and Acacia senegal (Kumtha) were planted.

In total 35000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 700 plants per hectare have been planted. Thus, total number of plants planted was 35000 for 50.62 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Churel, Desi babool Ber& Anwla which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**

3.2.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.2.6. Natural Vegetation and Regeneration: Ronj, Salar, Dhonk & Desi babool were the plants found grown naturally in this area. The growth of the plants was good.

3.2.7. Regeneration through seeds sowing: Seeds of species *Kumtha, Desi babool and Ronj* were sown in as well as along the trenches and on the thanwlas. The result of sowing was average. However, the result of sowing was good on some CCT.

3.2.8. Protection Work: The selected DFL model plantation had loose stone fencing of 4054 RMT having width at the top-0.6 meter, width at the bottom-0.6 meter & height 1.2 meters. The status of fencing was good. Loose stone fencing was fully effective in controlling the biotic pressure.

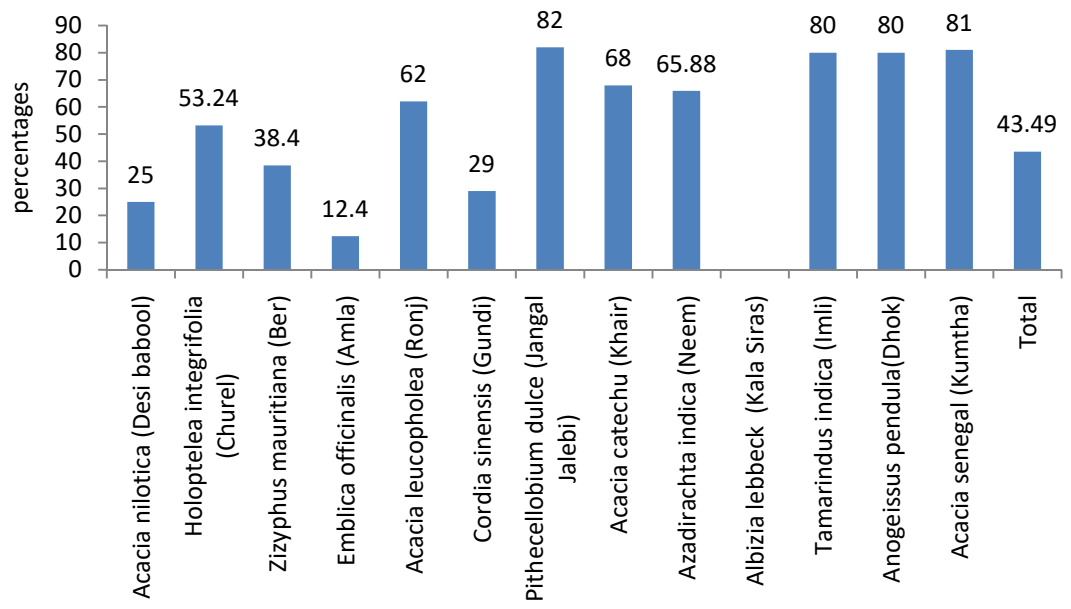
3.2.9. Soil and Water Conservation Measures: There are 10000 RMT Contour trenches & loose stone check dam (225 cu.m) in the form of water harvesting structures present in the entire plantation area.

3.2.10. Observations Recorded: Under this model, 700 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 43.49% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 35000 plants comprising thirteen species were planted in the 50.62 hectare plantation area.

Table 3.2: Status of Planted Seedlings at the site-Koya Talai Bhagbad Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia nilotica (Desi babool)	6000	150		25.00	92	68
Holoptelea integrifolia (Churel)	7100	378		53.24	85	60
Zizyphus mauritiana (Ber)	5000	192		38.40	90	63
Emblica officinalis (Amla)	5000	62		12.40	82	62
Acacia leucopholea (Ronj)	2000	124		62.00	92	68
Cordia sinensis (Gundi)	1000	29		29.00	90	66
Pithecellobium dulce (Jangal Jalebi)	1000	82		82.00	85	65
Acacia catechu (Khair)	2000	136		68.00	88	65
Azadirachta indica (Neem)	1700	112		65.88	90	68
Albizia lebbeck (Kala Siras)	1000			0.00	0	0
Tamarindus indica (Imli)	1500	120		80.00	83	65
Anogeissus pendula(Dhok)	700	56		80.00	82	62
Acacia senegal (Kumtha)	1000	81		81.00	86	63
Total	35000	1522	33478	43.49	87	65

Figure 3.3: Species-wise survival percentage-Koya talai Bhagbad site



3.2.11. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 50.62 Hac as per kml map.

3.2.12. Budget and expenditure

Table 3.3: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2018-19				1540900				1592891
2019-20				514000				496488
2020-21				120000				120017
2021-22				124999				124998
Total				2299899				2334394

3.3.1 Site 3- Devpura site in Devgarh range -N 25.547764 and E 74.032815

The selected plantation was carried out on 50 hac. of land at Devpura in Devgarh range during the year 2019-20 The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was clayey domat with bolders.

3.3.2. Treatment plan before sowing: The topography of the area was hilly & undulating. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.3.3. Health & Damages of Plantation: The growth of planted seedlings at the site was average. Grazing by stray animals & cattle and destruction by Neel gai and wild boars was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water& low rainfall obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.

3.3.4. Species Planted: The selected tree species under plantation were thirteen. Seedlings of Zizyphus mauritiana (Ber), Azadirachta indica (Neem), Acacia nilotica (Desi babool), Acacia catechu (Khair), Dendrocalamus strictus (Baans), Emblica officinalis (Amla), Holoptelea integrifolia (Churel), Albizia lebbeck (Kala Siras), Bauhinia sp. (Kachnar), Tamarindus indica (Imli), Pithecellobium dulce (Jangal Jalebi), Pongamia pinnata (Karanj) and Dalbergia sissoo (Shisham) were planted.

In total, 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

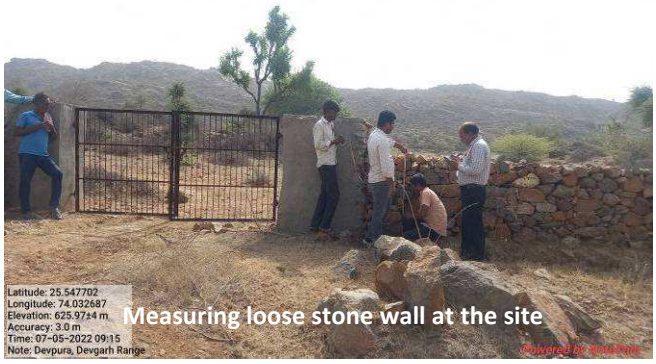
As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Bair, Churel & Desi babool which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was satisfactory.**

3.3.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.3.6. Natural Vegetation and Regeneration: *Dhonk, Khirni, Neem Churel, Khair, Kumtha & Ronj* were the plants found grown naturally in this area. The growth of the plants was good.

3.3.7. Regeneration through seeds sowing: Seeds of species Khair, *Kumtha, Ronj, Ratanjot & Ardu* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.** The result of sowing was seen on contour trenches and thanwalas.



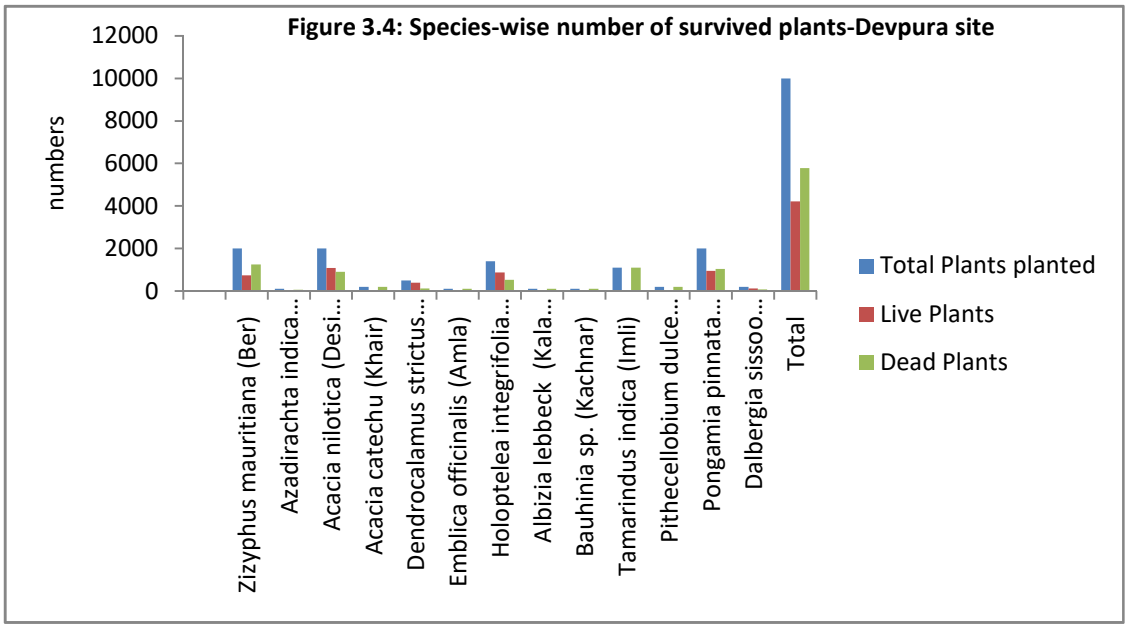
3.3.8. Protection Work: The selected ANR model plantation had loose stone fencing of 3931 RMT having width at the top-0.6 meter, width at the bottom-0.8 meter & height 1.2 meters. The condition of the fencing was satisfactorily.

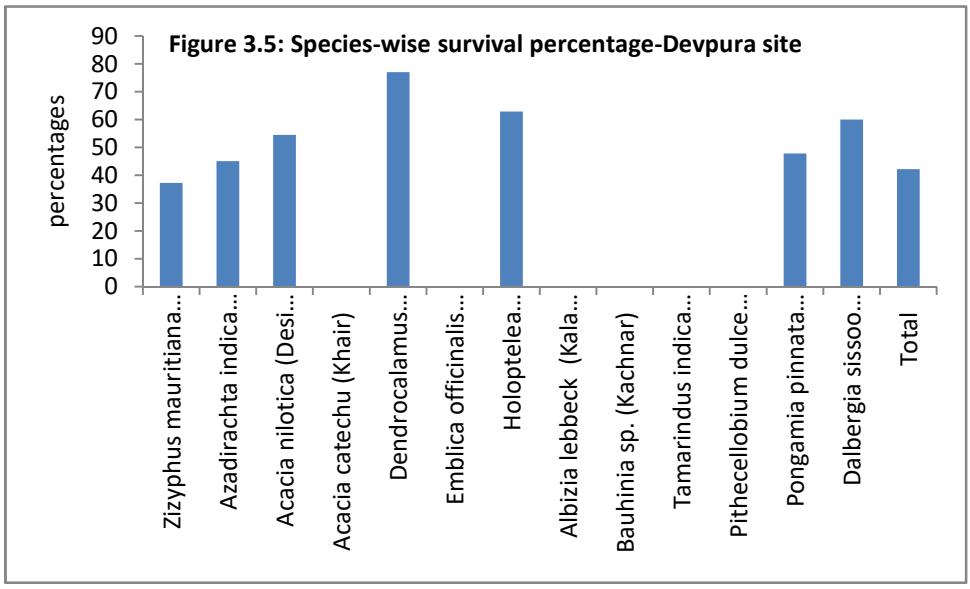
3.3.9. Soil and Water Conservation Measures: There are 7500 RMT Contour trenches in the form of water harvesting structures present in the entire plantation area.

3.3.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 42.21% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising thirteen species were planted in the 50 hectare plantation area.

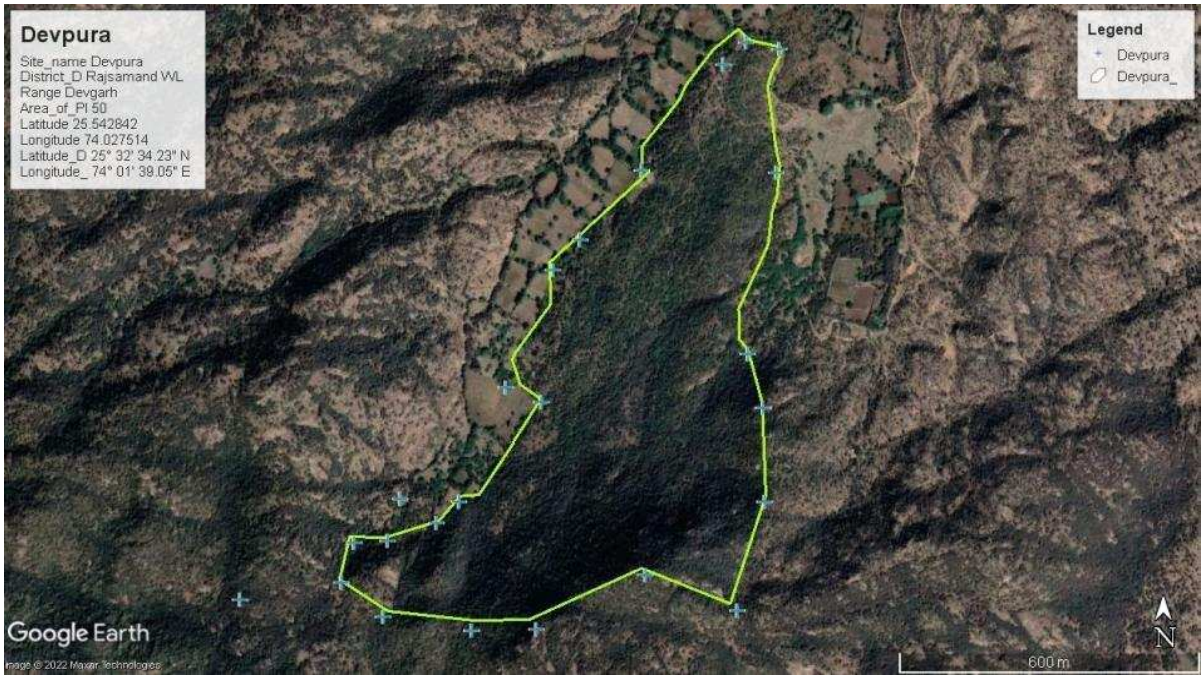
Table 3.4: Status of Planted Seedlings at the site- Devpura Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Zizyphus mauritiana (Ber)	2000	745	1255	37.25	76	10
Azadirachta indica (Neem)	100	45	55	45.00	18	8
Acacia nilotica (Desi babool)	2000	1090	910	54.50	56	16
Acacia catechu (Khair)	200		200	0.00	0	0
Dendrocalamus strictus (Baans)	500	385	115	77.00	72	9
Emblica officinalis (Amla)	100		100	0.00	0	0
Holoptelea integrifolia (Churel)	1400	880	520	62.86	62	14
Albizia lebbeck (Kala Siras)	100		100	0.00	0	0
*Bauhinia sp. (*Kachnar*)*	100		100	0.00	0	0
Tamarindus indica (Imli)	1100		1100	0.00	0	0
Pithecellobium dulce (Jangal Jalebi)	200		200	0.00	0	0
Pongamia pinnata (Karanj)	2000	956	1044	47.80	43	10
Dalbergia sissoo (Shisham)	200	120	80	60.00	53	12
Total	10000	4221	5779	42.21	54	11





3.3.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 Hac as per kml map.



3.3.12. Budget and expenditure

Table 3.5: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2018-19				1732875				1732875
2019-20				486200				471072
2020-21				172850				168564
2021-22				97050				96991
Total				2488975				2469502

4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft at Bandariya Magra Nathdwara, Nathdwara Range

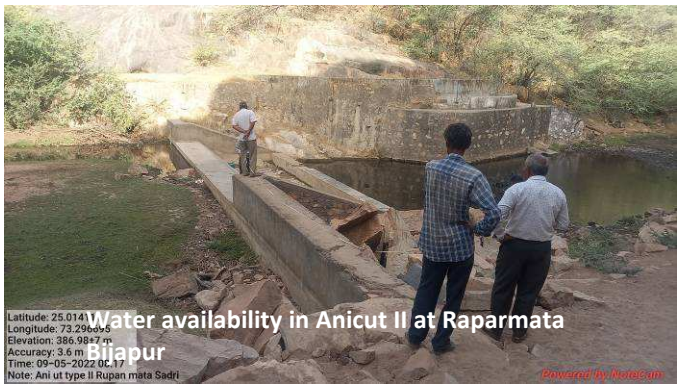
At Bandariya Magra Nathdwara in Nathdwara range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 1350 m length as per MB. But in actual 1353.6 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meter. The pakki diwar was constructed in five parts in order to prevent encroachment of local residents. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. GPS location of this area was 24.925887 N and 73.812481 E. The expenditure incurred for constructing this wall was Rs.36.09 lac (as per MB) against the estimated cost of 36.10 Rs.lac.

Site 2- Anicut II at Ruparmata Bijapur, Sadri Range

At Ruparmata Bijapur at Sadri, Anicut II has been evaluated. The Anicut II was constructed in the year 2018-19. Construction work appeared to be good and useful. Water was available (up to 10 inches) in the anicut at the time of the visit. Due to availability of water in the anicut throughout the year, the water was used by Cattle &Wild animals for drinking purpose. It also helps in soil & moisture conservation in the nearby area. However, silting was reported in the anicut. GPS location of this area was 25.04163 N and 73.296632 E. The expenditure incurred for constructing the anicut wall was Rs.3.75 lac (as per MB) against the estimated budget of Rs. 3.75 lac.

Site3- Anicut III at Thakardi Bijapur, Sadri Range

The site visited under asset created under CAMPA was Anicut III at Thakardi Bijapur at Sadri. The site was visited, surveyed, GPS co-ordinates recorded and photographs taken along with the information was filled up in tool 5. At Thakardi Bijapur at Sadri, Anicut III has been evaluated. The Anicut III was



constructed in the year 2018-19. Construction work appeared to be good and useful. Water was not available in the anicut at the time of visit. However, water was available in the anicut up to March. The water was used by wildlife for drinking. It also helps in soil & moisture conservation in the nearby area. Water availability was reported in wells located at a distance of 600 meters from the anicut. Thus, construction of anicut improves ground water level in the nearby area. It GPS location of this area was 25.048579 N and 73.29501 E. The expenditure incurred for constructing the anicut was Rs. 6.0 lac (as per MB) against the estimated budget of Rs 6.00 lac.

Site 4- Pakki Diwar 6 Ft at Gopela Sumer, Desuri Range

At Gopela Sumer in Desuri range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 6 ft and 1000 m length as per MB. Also, in actual 1000 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.8 meters. Construction work appeared to be average and the infrastructure was in use. The construction of pakki diwar prevents encroachment by local residents. However, due to collection of pond water, settlement was reported in the wall (up to 5 meters). GPS location of this area was 25.327334 N and 73.62689 E. The expenditure incurred for constructing this wall was Rs.28.99 lac (as per MB) against the estimated budget of Rs.29.0 lac.

Site 5- Anicut II at Borwa, Bheem Range

At Borwa in Bheem, Anicut II has been evaluated. The Anicut II was constructed in the year 2019-20. Construction work appeared to be good and useful. Water was not available in the anicut at the time of visit. However, water was available in the anicut up to January-February. Water was filled in apron of anicut through tanker for wildlife. Construction of anicut helps in soil & moisture conservation in the nearby area. GPS location of this area was 26.006968 N and 74.369582 E. The expenditure incurred for constructing the anicut wall was Rs.3.75 lac (as per MB) against the estimated budget of Rs 3.75 lac.

Site 6- Anicut III at Goramghat, Devgarh Range

At Goram ghat in Devgarh, Anicut III has been evaluated. The Anicut III was constructed in the year 2019-20. Construction work appeared to be good and useful. Water was not available in the anicut at the time of visit. Cracks were reported in the headwall & sidewall of the anicut. It also helps in soil & moisture conservation in the nearby area. The GPS location of this area was 25.647463 N and 73.879474 E. The expenditure incurred for constructing the anicut was Rs. 6.0 lac (as per MB) against the estimated budget of Rs 6.00 lac.

Site 7- Range office cum residence at Bheem, Bheem range

Range office cum residence Bheem has been evaluated. The Range office cum residence was constructed in the year 2019-20. Site selection for construction of Range office cum residence was adequate. Construction work appeared to be good and useful. The Range office cum residence created under CAMPA was in use & was properly maintained. Quality of workmanship was good. Adequate space & proper ventilation was available in Range office cum residence. Present condition of the Range office cum residence was good. GPS location of this area was 25.732806 N and 74.079925 E. The expenditure incurred for constructing the Range office cum residence was Rs.10.49 lac (as per MB) against the estimated budget of Rs. 10.50 lac.

4.1.8 Pillars at Bagor Part C, Kumbhalgarh range

At Bagor Part C site in Kumbhalgarh Pillars (200 Nos.) have been evaluated. The pillars were constructed in the year 2019-20. The pillars were 200 in numbers as per MB. Also, in actual 200 pillars were found & evaluated by the third party. The pillars constructed were reported average and useful. The construction of pillars helped in marking forest boundary.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Rajsamand WL division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Satimata-B	ANR	50	43.66	5
2	Koyatalai	DFL	50.62	43.49	5
2	Devpura	ANR	50	42.21	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction	Rating of Crack
1	PakkiDiwar 4 ft	Bandariya Magra Nathdwara	Average	7	7
2	Pakki Diwar 6 ft	Gopela Sumer	Average	7	6
3	Pillars	Bagor Part C	Average	6	6
4	Anicut II	Ruparmata Bijapur	Good	8	
5	Anicut III	Thakardi	Average	7	
6	Anicut II	Borwa	Average	7	
7	Anicut III	Goramghat	Average	5	
8	Range Office cum residence	Bheem	Good	7	

Sawai Madhopur

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Sawai Madhopur Forest Division. This Forest Division with 3 Forest Ranges namely Sawai Madhopur, Bonli & Gangapur City has territorial jurisdiction over the entire Sawai Madhopur District.

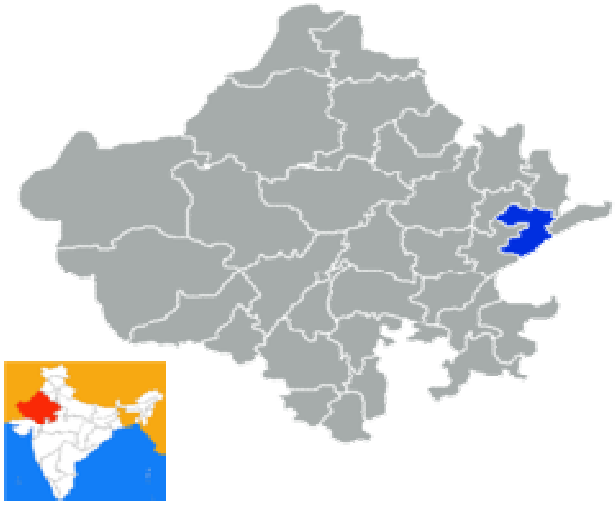


Figure 19 Location of Sawaimadhopurdistrict, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Sawai Madhopur Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Bonli	Khitkhadi	2019-20	50	ANR	100%
Bonli	Silki Dungari	2018-19	25	ANR	

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Sawai Madhopur Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Sawai Madhopur	Bhagwatgarh	2017-18	Pakki Diwar 4 ft
Gangapur City	Sintholi	2018-19	Pakki Diwar 4 ft
Bonli	Bonli Campus	2019-20	Pakki Diwar 4 ft
Gangapur City	Narayanpur Tatvada Main	2019-20	Boundary Pillars

3. Results and Evaluation

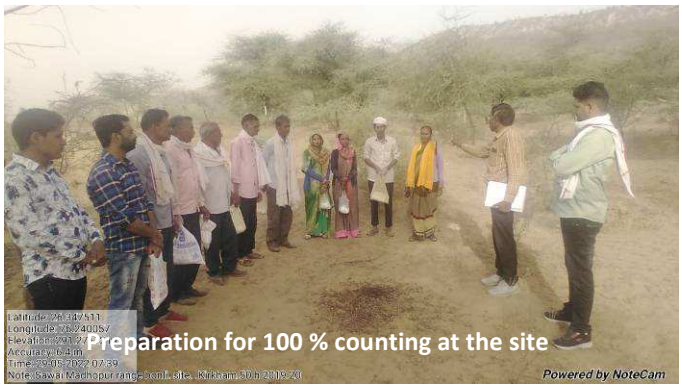
3.1 Plantations Evaluation

3.1.1. Khirkhadi site in Bonli range -N 26.347412 and E 76.240123

The selected plantation was carried out on 50 hac. of land at Khirkhadi in Bonli range during the year 2019-20. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was sandy domat & clayey domat with boulders.

Khirkhadi plantation site

3.1.2. Treatment plan before sowing: The topography of the area was sand dunes. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.



Preparation for 100 % counting at the site

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. It is reported excellent having fair amount of soil. The growth of planted seedlings is less than normal in the area having less soil coverage. Grazing by stray animals & cattle and destruction by Neel gai, wild boars, rats & porcupine was reported at the site. Also, widely growth of termite, soil quality, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory.

Marking & counting of planted seedling at the site

3.1.4. Species Planted: The selected tree species under plantation were 4. Seedlings of *Holoptelea integrifolia* (Churel), Acacia tortilis (Totalis), Ailanthus excelsa (Ardu) and Zizyphus mauritiana (Ber) were planted.

In total 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper, fair & suitable. The seedlings selected for plantation were Totalis, Chudail & Bair which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

Growth of planted seedling at the site

3.1.6. Natural Vegetation and Regeneration: Totalis, Ronj & Khejri were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species Totalis,*Kumatha, Katkaranj & Bair* were sown in as well as along the trenches and on the thanwlas. There was **g**ood growth on thanwalas & trenches of seed sowing. **Hence, the result of sowing was good**

Earthen check dam

3.1.8. Protection Work: The selected ANR model plantation had ditch fencing of 3250 RMT having width at the top-1.5 m, bottom-0.9 m & height 1.2 cm. Present condition of fencing was poor. Ditch fencing was not at all effective in controlling biotic pressure.

Topography & Natural Vegetation at the site

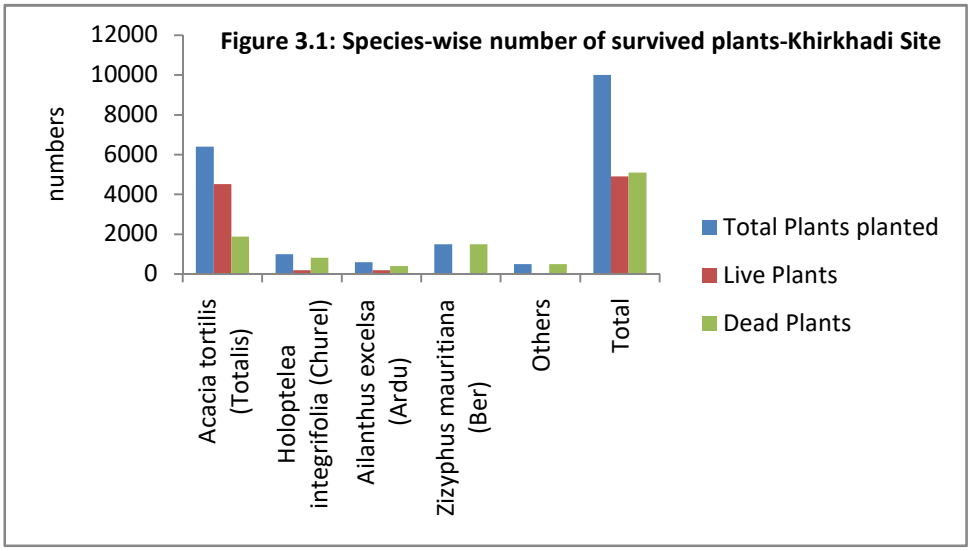
3.1.9. Soil and Water Conservation Measures: There are 10000 RMT CCT

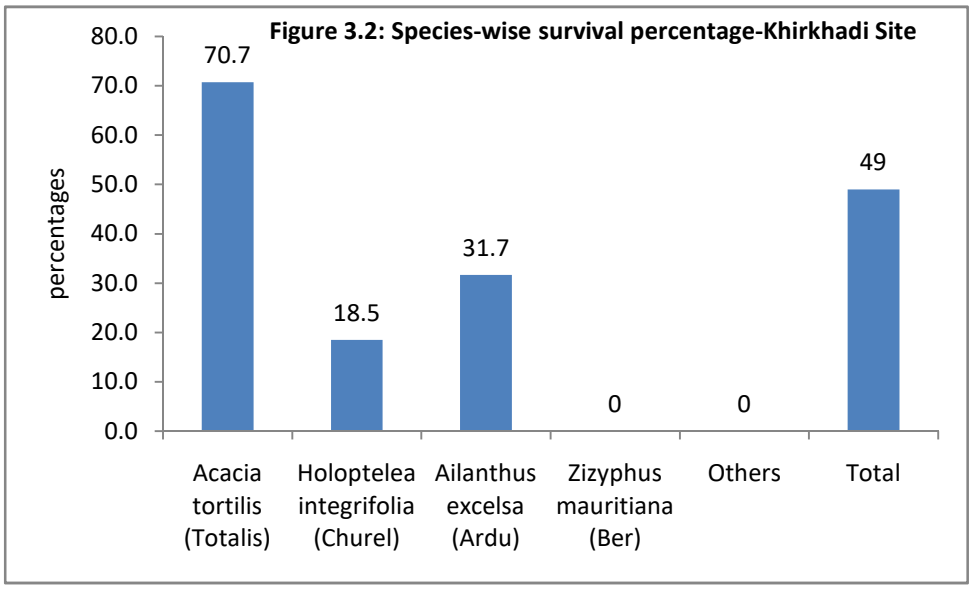
&earthen check dams (3000 cu.cm) in the form of water harvesting structures present in the entire plantation area.

3.1.10 Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 49% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising four species were planted in the 50 hectare plantation area.

Table 3: Status of Planted Seedlings at the site-Khirkihadi Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia tortilis (Totalis)	6400	4525	1875	70.7	185.0	69.4
Holoptelea integrifolia (Churel)	1000	185	815	18.5	90.0	65.0
Ailanthus excelsa (Ardu)	600	190	410	31.7	0.0	0.0
Zizyphus mauritiana (Ber)	1500	0	1500	0.0	90.0	65.0
Others	500	0	500	0.0	0.0	0.0
Total	10000	4900	5100	49.0	142.8	67.5





3.1.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.

3.1.12. Budget and expenditure

Table 3.1: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2018-19	17.66250			17.66250	17.65479			17.65479
2019-20	4.86200			4.86200	4.54369			4.54369
2020-21	1.72850			1.72850	1.72800			1.72800
2021-22	0.97050			0.97050	0.96926			0.96926
Total	25.2235			25.2235	24.89574			24.89574

3.2.1 Site 2- Silki Dungari in Bonli range - N 26.330804 and E 76.210427

The selected plantation was carried out on 25 ha of land at Silki Dungari in Bonli range during the year 2018-19. The activities were done under the ANR model. The site was a forest land and selected for 10% evaluation. The soil was domat clayey hard with boulders.

3.2.2 Treatment plan before sowing: The topography of the area was ravines. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 5000 pits were dug for plantation in total 25 ha of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals & cattle and destruction by Neel gai, wild boars, rats and porcupine was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.2.4. Species Planted: The selected tree species under plantation were 4. Seedlings of *Acacia nilotica* (desi babool), Acacia tortilis (Totalis), Holoptelea integrifolia (Churel) and Butea monosperma (Chila) were planted.

A total of 5000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. Spacing between plants reported 3 m. As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 5000 for 25 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Totalis, Chudail, Cheela & Desi babool which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. Hence, the site has species suitable to soil condition. The growth of survived plants was satisfactory.

3.2.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.2.6. Natural Vegetation and Regeneration: The area has been covered fully with vegetation due to this plantation. The growth of plants was good. Plants like Cheela, Dhonk, Totalis, Jaal, Hingot & Kakeda have been found grown naturally.

3.2.8. Regeneration through seeds sowing: Seeds of species Desi babool, kumtha and Cheela were sown in as well as along the trenches and on the thanwlas. The result of seeds sowing was good.

3.2.8. Protection Work: The selected ANR model plantation had ditch fencing of 1698 RMT having width at the top- 1.5 meters, width at the bottom-0.9 meter & height 1.2 meters. Present condition of fencing was satisfactory. Ditch fencing was partially effective in controlling the biotic pressure.

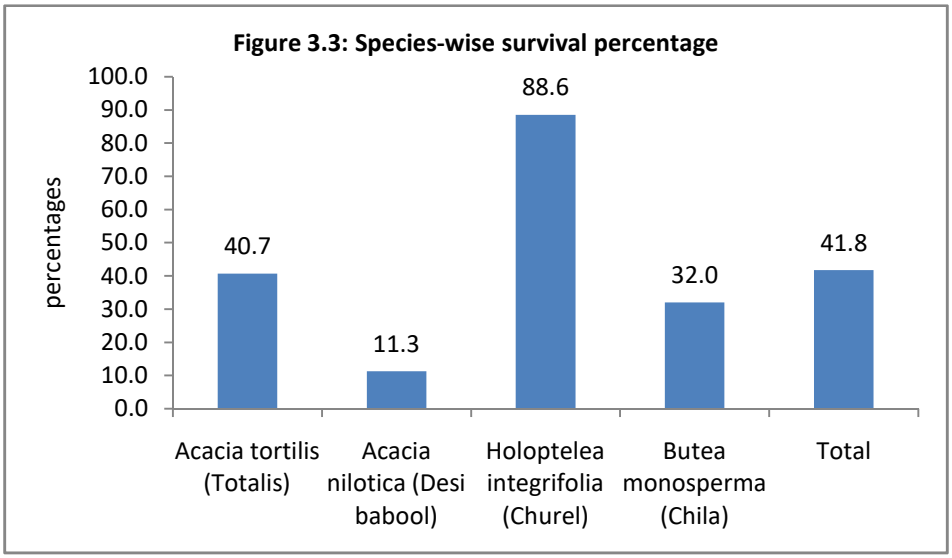
3.2.9. Soil and Water Conservation Measures: There are 2000 RMT Contour trenches & earthen check dams (1500 cu.m) in the form of water harvesting structures present in the entire plantation area.

3.2.10. Observations Recorded: Under this model, 200 plants per ha were planted during plantation. **Based on for as 10 percent counting, plants survival was 41.8% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was

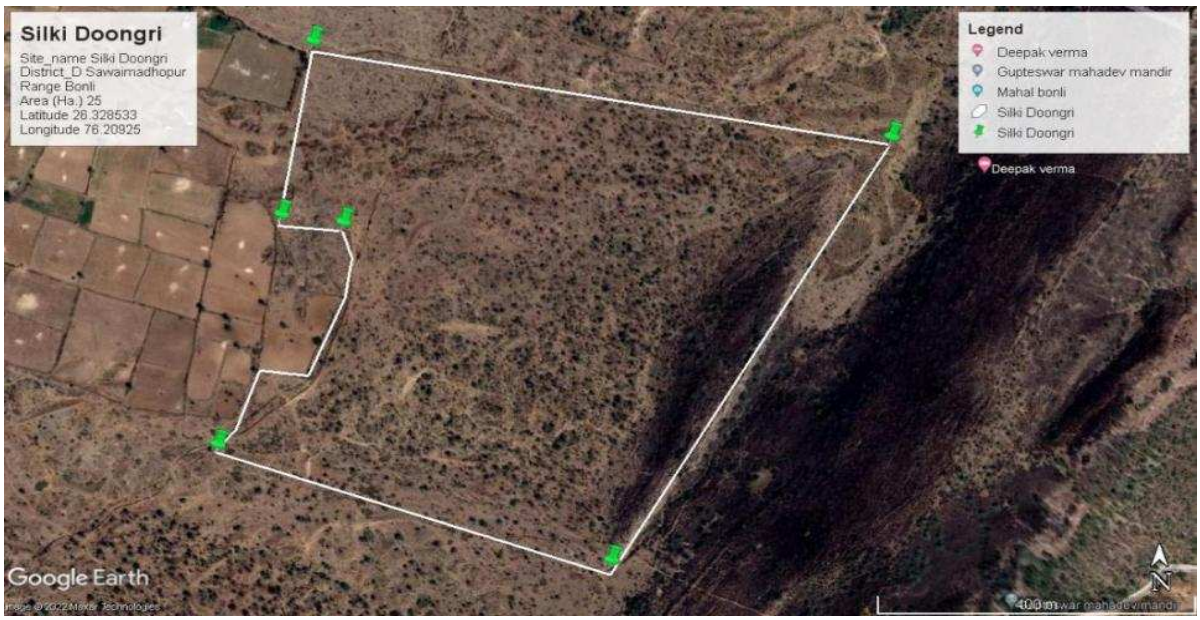
average. A total of 5000 plants comprising four species were planted in the 25 ha plantation area.

Table 3.1: Status of Planted Seedling at the site-Silki Dungari Site

Species	Total Plants planted	10% plantaion area has been observed	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia tortilis (Totalis)	3000	300	122		40.7	90.0	65.0
Acacia nilotica (Desi babool)	1000	100	9		9	90.0	65.0
Holoptelea integrifolia (Churel)	500	50	62		124	90.0	65.0
Butea monosperma (Chila)	500	50	16		32	90.0	65.0
Total	5000	500	209	291	41.80	90.0	65.0



3.2.11. GPS Location and KML file: The selected ANR model under CAMPA plantation



site measured 25 hectare as per kml map.

3.2.12. Budget and expenditure

Table 3.3 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18	8.834			8.834	4.58187			4.58187
2018-19	2.63			2.63	2.5813			2.5813
2019-20	0.88925			0.88925	0.85308			0.85308
2020-21	0.46125			0.46125	0.45985			0.45985
2021-22	0.48525			0.48525	0.48505			0.48505
Total	13.29975			13.29975	8.96115			8.96115

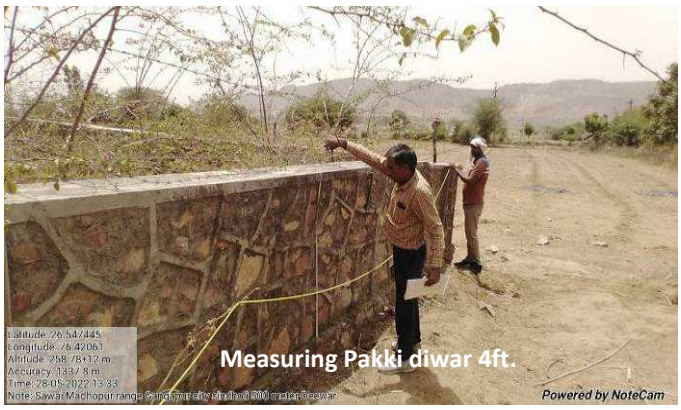
4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft at Bhagwatgarh , Sawai Madhopur Range

At Bhagwatgarh in Sawai Madhopur range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 325 m length as per MB. But in actual 330 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meters. Construction work appeared to be good and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. The construction of pakki diwar at the site had reduced illegal mining, grazing, damage of plantation by human beings & destruction by wild animals. GPS location of this area was 26.114987 N and 76.210176 E. The expenditure incurred for constructing this wall was Rs.625597 (as per MB) against the estimated cost of Rs.8.55 lac.

Record keeping: The documents such as plan and MB were shown to the study team.

Site 2- Pakki Diwar 4 Ft at Sintholi , Gangapur City Range



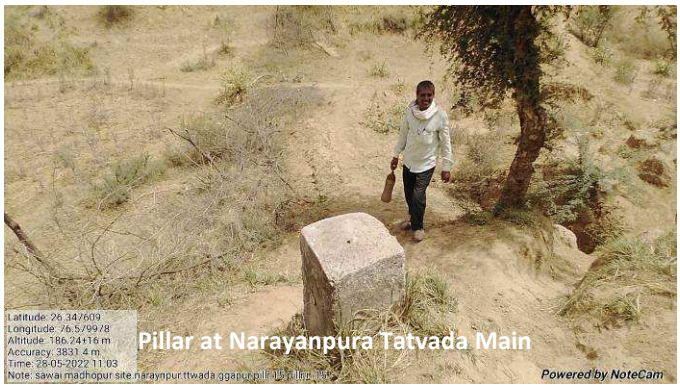
At Sintholi in Gangapur City range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 500 m length as per MB. But in actual 505 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20

meter. Construction work appeared to be good and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. The department got the place vacated which was encroached by local residents and constructed pakki diwar 4ft in order to prolect Smriti Van plantation site. GPS location of this area was 26.546297 N and 76.419985 E. The expenditure incurred for constructing this wall was Rs. 11,92,725 (as per MB) against the estimated cost of Rs. 12.0 lacs.

Site 3- Pakki Diwar 4 Ft at Bonli Campus , Bonli Range

At Bonli Campus in Bonli range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 580 m length as per MB. But in actual 585 m pakki diwar was constructed at the site. The width of the diwar was 0.40 meter & height was 1.20 meter. Construction work appeared to be good and useful. The construction of pakki diwar at the site had protected range office & nursery. GPS location of this area was 26.546632 N and 76.420396 E. The expenditure incurred for constructing this wall was Rs. 1377686 (as per MB) against the estimated cost of Rs.13.92 lacs.

Site 4- Pillars at Narayanpura Tatvada Main, Dabi range



At Narayanpura Tatvada Main site in Gangapur City Pillars (15 Nos.) have been evaluated. The pillars were constructed in the year 2019-20. The pillars were 15 in numbers as per MB. Also, in actual 15 pillars were found & evaluated by the third party. The pillars constructed were reported average and useful. The construction of pillars helped in marking forest boundary.The expenditure incurred for constructing the Pillars (15 Nos.) was Rs. 24628 (as per MB) against the estimated cost of Rs 27000.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Sawai Madhopur division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Khirkhadi	ANR	50	49.00	5
	Shilki dungari	ANR	25	41.80	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction	Rating of Crack	Rating of settlement in structure	Quality of workmanship	Rating of quality of workmanship
1	Pakki Diwar 4 ft	Bhagwatgarh	Good	7	No	No	Good	7
2	Pakki Diwar 4 ft	Sintholi	Good	8	No	No	Good	8
3	Pakki Diwar 4 ft	Bonli Campus	Good	7	No	No	Good	7
4	Pillars	Narayanpur Tatvada Main	Average	5	No	No	Average	5

RTR Sawai Madhopur

2.1. Introduction

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in RTR Sawai Madhopur Forest Division. This Forest Division with 9 Forest Ranges namely Phalodi, Alanpur Veterinary Centre, Taleda, Khandar, Indragarh(WL), Sawai Madhopur, Kundera, Indragarh & Baler has territorial jurisdiction over the entire Sawai Madhopur District.

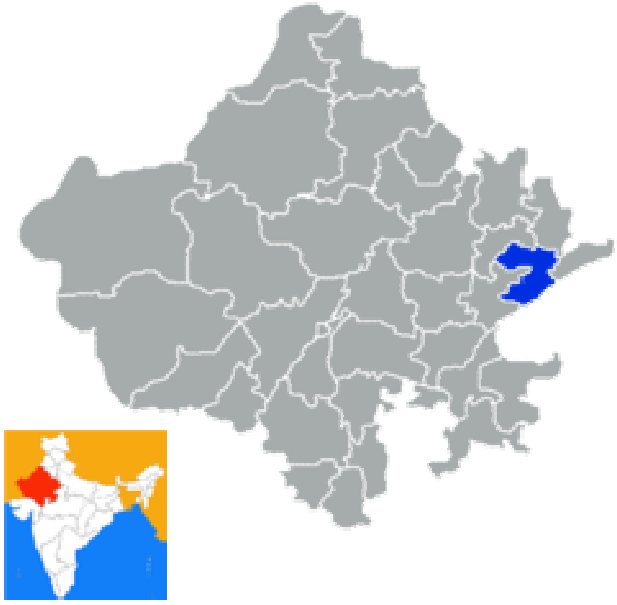


Figure 20 Location of Sawaimadhopurdistrict, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of RTR Sawai Madhopur Forest Division for evaluation were as given in table 1 Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Indragarh	Kanchandham	2018-19	2.12	NFL	100%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of RTR Sawai Madhopur Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Falodi	Seldar Nalla se Neemli Khurd	2017-18	Pakki Diwar 6 ft
Falodi	Bhairupura Tiraha Vankhand	2017-18	Forest Chowki

	Chowki		
Sawai Madhopur	Mayapur Ki Dungari se Bandha Mansarovar	2018-19	Pakki Diwar 6 ft
Falodi	Handpump se Pani ke Khel tak Bhatpura-I	2018-19	Pakki Diwar 6 ft
Khandar	Banpur	2018-19	Pakki Diwar 6 ft
Talara	Nadi Baloli Se Heeraman Baba Harkesh Gujar Ke Samne tak	2018-19	Pakki Diwar 6 ft
Kundera	Bhadlao Dwar ke pas	2018-19	Anicut Type II
Talara	Sangam nai range ke pas	2018-19	Anicut Type III
Indragarh	Peer ji Nala naka Anicut II	2019-20	Anicut Type II
Sawai Madhopur	Gular ka Nala	2019-20	Anicut Type III

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1 Site 1- Kanchandham site in Indragarh range -N 25°32.095' and E 75°57.164'

The selected plantation was carried out on 2.12 hac. of land at Kanchandham in Indragarh range during the year 2018-19. The activities were done under the Non-Forest Land (NFL) model. The site was a forest land and selected for 100% evaluation. The soil was stony& sandy.

Measuring collar girth of planted seedling

3.1.2. Treatment plan before sowing: The topography of the area was plain. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 35000 pits were dug for plantation in total 2.12 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was good. Grazing by stray animals & cattle and destruction by Neel gai, wild boars, rats and porcupine was reported at the site. Also, widely growth of termite, scarcity of water and attack by pest obstruct

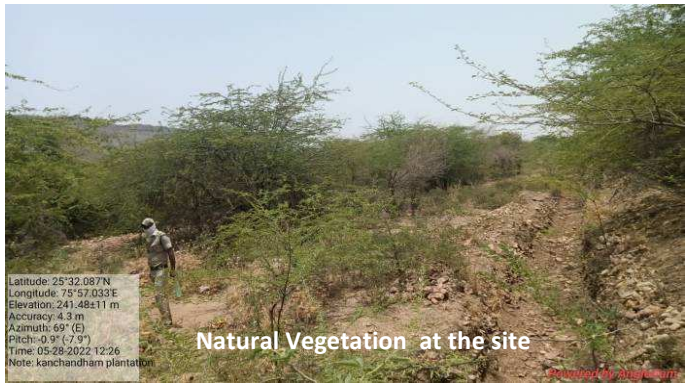
Tree guard to protect the planted seedling

the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory.

3.1.4. Species Planted: The selected tree species under plantation were 10. Seedlings of Dalbergia sissoo (Shisham), Holoptelea integrifolia (Churel), Azadirachta indica (Neem), Ficus religiosa (Pipal), Ficus benghalensis (Vad), Tamarindus indica (Imli), Syzygium cumini (Jamun). Delonix regia (Gulmohar), Acacia nilotica (Desi babool) and Acacia catechu (Khair)were planted.

In total 1000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.



As per the model, 500 plants per hectare have been planted. Thus, total number of plants planted was 1000 for 2.12 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Desi babool, Churail, Shisham & Neemj which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer. **The growth of survived plants was good.**

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: Dhonk, Khair, Desi babool, Kumtha, Neem & Gulmohar were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Sowing was not reported at the planted site.

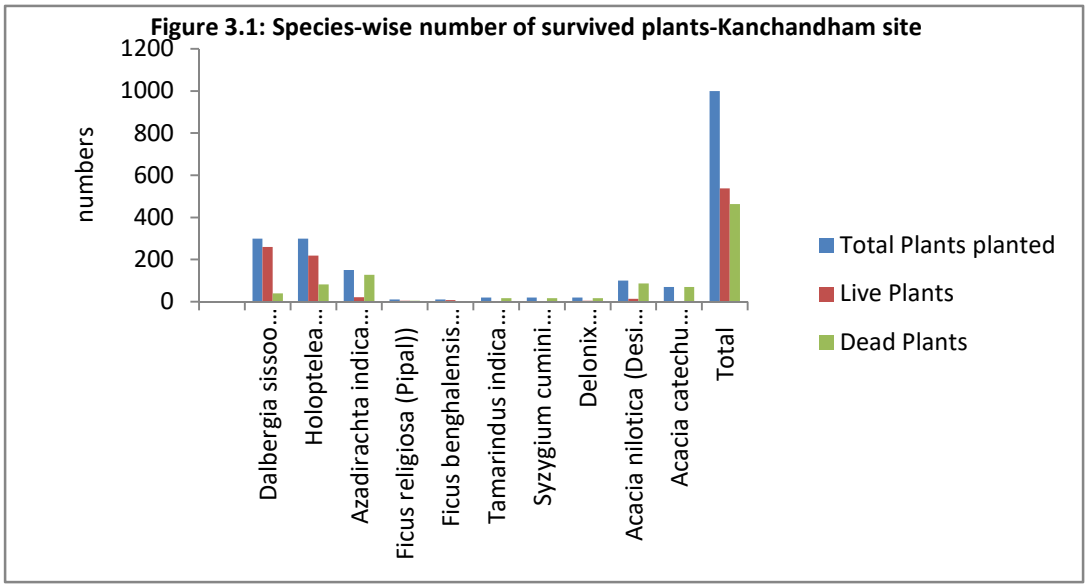
3.1.8. Protection Work: The selected NFL model plantation had ditch fencing of 447 RMT. Present condition of ditch fencing was satisfactory. Silting was reported in some parts of ditch fencing.

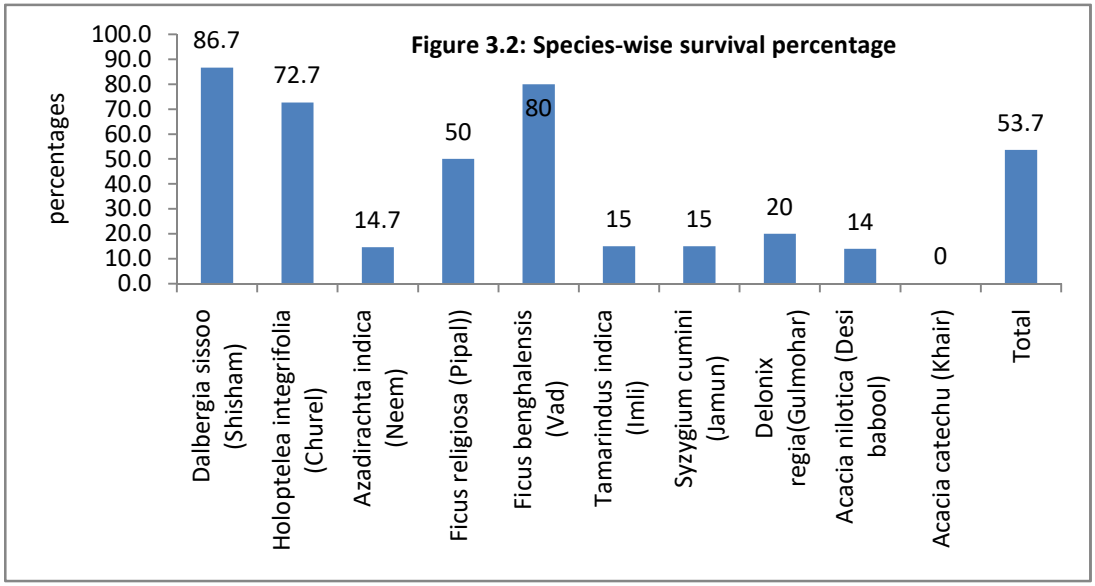
3.1.9. Soil and Water Conservation Measures: SMC structures were not reported at the plantation site.

3.1.10. Observations Recorded: Under this model, 500 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 53.9% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was good. A total of 1000 plants comprising ten species were planted in the 2.12 hectare plantation area.

Table 3: Status of Planted Seedlings at the site- Kanchandham Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Dalbergia sissoo (Shisham)	300	260	40	86.67	127	82
Holoptelea integrifolia (Churel)	300	218	82	72.67	130	93
Azadirachta indica (Neem)	150	22	128	14.67	113	180
Ficus religiosa (Pipal))	10	5	5	50.00	135	195
Ficus benghalensis (Vad)	10	8	2	80.00	165	195
Tamarindus indica (Imli)	20	3	17	15.00	135	105
*Syzygium cumini (*Jamun)	20	3	17	15.00	165	225
Delonix regia(Gulmohar)	20	4	16	20.00	195	195
Acacia nilotica (Desi babool)	100	14	86	14.00	150	120
Acacia catechu (Khair)	70		70	0.00	0	0
Total	1000	537	463	53.70	132	103





3.1.11. GPS Location and KML file: The selected NFL model under CAMPA plantation

site measured 2.12 hec as per kml map.

3.1.12. Budget and expenditure

Table 3.1: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18				83530				83530
2018-19				98584				98584
2021-22								9900

4. Results for asset sites

4.1. Site1- Pakki Diwar 6 Ft at Seldar Nala Se Neemali Khurd , Falodi Range

At Seldar Nalla se Neemli Khurd in Falodi range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 6 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.45 m & height was 1.80 meter. Construction work appeared to be average & useful. 6 meter wall was washed away with rain water flow. GPS location of this area was 25°58'7" N and 76°20'48"E. The expenditure incurred for constructing this wall was Rs.11,68,642 (as per MB) against the estimated budget of lacs.

MeasurPakki diwar 6ft.

Site 2- Forest Chowki Bhairupura Teeraha Van Khand Chowki, Keshavraipatan range

Forest Chowki at Bhairupura Teeraha Van Khand Chowki site in Falodi range has been evaluated. The Forest Chowki was constructed in the year 2017-18. Site selection for construction of Forest Chowki was adequate. Construction work appeared to be good and useful. The Forest Chowki created under CAMPA was in use & properly maintained with facility of drinking water & electricity. The building is in use by Forest Guard. GPS location of this area was 25°53'29" N and 76°25'18"E. The expenditure incurred for constructing the Forest Chowki was Rs. 548087 (as per MB) against the estimated budget of Rs. 550000.

Bhairupura Teeraha Van Khand Chowki

Site 3- Pakki Diwar 6 Ft at Mayapur Ki Dungari se Bandha Mansarovar, Sawai Madhopur Range

At Mayapur Ki Dungari se Bandha Mansarovar in Sawai Madhopur range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 763 m length as per MB. Also, in actual 763 m pakki diwar was constructed at the site. The width of the

Pakki diwar 6 ft. at Mayapur Ki Dungari to Bandha Mansarovar

diwar was 40 cm & height was 180 cm. Construction work appeared to be average and useful. The construction of Pakki Diwar 6 ft helped in preventing encroachment & protecting forest boundaries. Coping of pakki diwar was not proper at many places. The Wall was constructed in two places. Pointing is done at outer wall & inner wall by filling of mortar on edges of stone. GPS location of this area was 25°55'23" N and 76°25'59" E.

Site 4- Pakki Diwar 6 Ft at Handpump Se Pani ke Khel tak Bhatpura I, Falodi Range

At Handpump se Pani ke Khel tak Bhatpura-I in Falodi range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 235 m length as per MB. Also, in actual 235 m pakki diwar was constructed at the site. The width of the diwar was 0.40 m & height was 1.80 m. Construction work appeared to be average and useful. The construction of Pakki Diwar 6 ft helped in preventing encroachment & protecting forest boundaries. The quality of construction of wall can be improved if proper supervision has been done. The EDC role in construction can be better option and may be instrumental as the team gathers information from local people & forest dpartment functionaries. GPS location of this area was 25°50'7" N and 76°17'45" E. The expenditure incurred for constructing this wall was Rs. 569984(as per MB) against the estimated budget of Rs.

Site 5- Pakki Diwar 6 Ft at Banpur, Khandar Range

At Banpur in Khanpur range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 235 m length as per MB. Also, in actual 235 m pakki diwar was constructed at the site. The width of the diwar was 0.40 m & height was 1.80 m. Construction work appeared to be average and useful. The construction of Pakki Diwar 6 ft helped in preventing encroachment & protectiing forest boundaries. GPS location of this area was 26.068835 N and 76.60428 E. The expenditure incurred for constructing this wall was Rs.5.54 lac (as per MB) against the estimated budget of Rs. 7,25,862.

Site 6- Pakki Diwar 6 Ft at Nadi Baloli Se Heeraman Baba Harkesh Gujar, ke samne tak Talara Range

At Nadi Baloli Se Heeraman Baba Harkesh Gujar Ke Samne tak in Talara range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 235 m length as per MB. Also, in actual 235 m pakki diwar was constructed at the site. The width of the diwar was 0.40 m & height was 1.80 m. Construction work appeared

to be average and useful. The construction of Pakki Diwar 6 ft helped in preventing encroachment & protecting forest boundaries. The plaster work of 6.50 meter wall was not complete. About 3.7 meter wall was damaged by the local residents. GPS location of this area was 26.223533 N and 76.548213 E.

Site 7- Anicut II at Bhadlao dwar ke pas, Kundera Range

At Bhadlao dwar ke pas in Kundera range, Anicut II has been evaluated. The Anicut II was constructed in the year 2018-19. The length of Anicut II was 7 meters, breadth 0.6 meter, height 2.10 meters was constructed at the site. Construction work appeared to be average and useful. Cracks were reported in the anicut. Water was not available in the anicut at the time of the visit. It also helps in soil & moisture conservation in the nearby area. Water level in the nearby water source viz. tubewell had increased. GPS location of this area was 26.106848 N and 76.498837 E. The expenditure incurred for constructing the anicut wall was Rs. (as per MB) against the estimated budget of Rs 75871.

Site 8- Anicut III at Sangam new range ke pas, Sawai Madhopur Range

At Sangam new range ke pas in Sawai Madhopur, Anicut III has been evaluated. The Anicut III was constructed in the year 2018-19. The anicut was totally damaged due to heavy rain & flow of river water from upside at the time of visit by team. Technical team should be consulted during the construction of anicut so that the anicut can be in use for longer period & its quality can be ensured. GPS location of this area was 26.117268 N and 76.58361 E. The expenditure incurred for constructing the anicut wall was Rs. 449935 (as per MB).

Site 9- Anicut II at Peer ji ka Nalla, Indergarh Range

At Peer ji ka Nalla at Indergarh, Anicut II has been evaluated. The Anicut II was constructed in the year 2019-20. Construction work appeared to be average and useful. Due to heavy flow of water during rainy season, heavy silting was reported at the anicut site. Water was not available in the anicut at the time of the visit. It also helps in soil & moisture conservation in the nearby area. GPS location of this area was 25°42'8" N and 76°12'26" E. The expenditure incurred for constructing the anicut wall was Rs. 370022 (as per MB) against the estimated budget of Rs 375000.

Anicut Peerji ka Nalla, Indergarh Range

Site 10- Anicut III at Gullar ka Nalla, Sawai Madhopur Range

At Gullar ka Nalla in Sawai Madhopur Anicut III has been evaluated. The Anicut III was constructed in the year 2019-20. Construction work appeared to be average and useful. The foundation needs to be proper so that the problem of water seepage can be taken care. Rain water used to collect for 3-4 months. It is important to undertake operation & maintenance of anicut. Water was not available in the anicut. GPS location of this area was 26°2'8" N and 76°26'52"E. The expenditure incurred for constructing the anicut wall was Rs. 592327 (as per MB) against the estimated budget of Rs 6.00 lac.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in RTR Sawai Madhopur division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Kanchan Dham	NFL	2.12	53.70	6

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 6 ft	Seldar Nalla se Neemli Khurd	Average	6
3	Pakki Diwar 6 ft	Mayapur Ki Dungari se Bandha Mansarovar	Average	6
4	Pakki Diwar 6 ft	Handpump se Pani ke Khel tak Bhatpura-I	Average	6
5	Pakki Diwar 6 ft	Banpur	Average	6
6	Pakki Diwar 6 ft	Nadi Baloli Se Heeraman Baba Harkesh Gujar Ke Samne tak	Average	6
7	Anicut II	Bhadlao Dwar ke pas	Average	6
8	Anicut III	Sangam nai range ke pas	Poor	4
9	Anicut II	Peer ji Nala naka Anicut II	Average	5
10	Anicut III	Gular ka Nala	Average	6

RTR II Karauli

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in RTR Karauli Forest Division. This Forest Division with 4 Forest Ranges namely Mandrayal, Kaila Devi, Nainiyaki & Karanpur has territorial jurisdiction over the entire Karauli District.

Figure : Location of Karauli district, Rajasthan

2.1. Selected Asset Sites for Evaluation

The selected asset sites of RTR Karauli Forest Division were as given in table 1

Table 1: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Nainiyaki	Gorehar	2017-18	Pakki Diwar 6 ft
Mandrayal	Bhumia ka sthan, Doylepur	2017-18	Pakki Diwar 6 ft
Kaila devi	Karauli	2017-18	Rescue Centre
Kaila devi	Cheer ki Narauli	2018-19	Pakki Diwar 6 ft
Nainiyaki	Guvadi C	2018-19	Pakki Diwar 6 ft
Nainiyaki	Dangra Patar/ Baler	2018-19	Boundary Pillars
Karanpur	Karanpur Torke II	2019-20	Pakki Diwar 6 ft
Nainiyaki	Gaupat Type II	2019-20	Anicut Type III
Kaila devi	Kaila devi	2019-20	Rescue Centre

3. Results for asset sites

3.1. Site 1- Pakki Diwar 6 Ft at Gorehar , Nainiyaki Range

At Gorehar in Nainiyaki range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 6 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.38 m & height was 1.82 meter. Construction wo rk appeared to be average & useful. The Pakki diwar was constructed near nalla. Due to heavy flow of water from nalla, the wall was washed away at two places. GPS location of this area was 26.2434084 N and 76.706707 E. The expenditure incurred for constructing this wall was Rs.14.25 lac (as per MB) against the estimated budget of Rs.14.25 lac.

Site 2- Pakki Diwar 6 Ft at Bhumia ka Sthan, Doylepura, Mandrayal Range

At Bhumia Ka Sthan, Doylepura in Mandrayal range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 6 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 38 cm & height was 180 cm. Construction work appeared to be average and useful. The construction of Pakki Diwar 6 ft helped in preventing encroachment & protecting forest boundaries. Coping of pakki diwar was not proper at many places. GPS location of this area was 26°20'40" N and 77°7'38" E. About 6 meter wall was damaged due to water runoff near pillars 51 to 52. The expenditure incurred for constructing this wall was Rs. 14.25 lac (as per MB) against the estimated budget of Rs.14.25 lac.

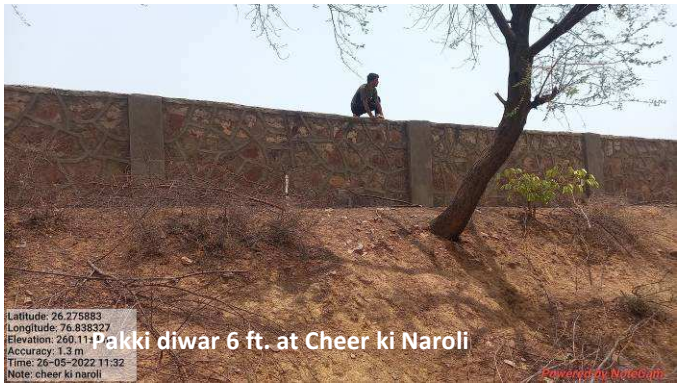
Site 3- Rescue Centre at Karauli, Kaila Devi range

Rescue Centre at Karauli in Kaila Devi range has been evaluated. The Rescue Centre was constructed in the year 2017-18. Site selection for construction of Rescue Centre was adequate. The infrastructure created under CAMPA was useful. The infrastructure during third party evaluation was in use and was properly maintained. Quality of Construction work was average. The work

done under CAMPA was construction of model rescue centre. GPS location of this area was 26.48864 N and 77.032652 E. The expenditure incurred for constructing the Rescue Centre was Rs. 5,99,929 (as per MB) against the estimated budget of Rs. 6.00 lac

Site 4- Pakki Diwar 6 Ft at Cheer Ki Naroli, Kaila Devi Range

At Cheer ki Naroli in Kaila Devi range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.45 m & height was 1.82 m. Construction work appeared to be good and useful. The construction of Pakki Diwar 6 ft helped in preventing encroachment & protecting forest boundaries. GPS location of this area was 26.276207 N and 76.837855 E. The expenditure incurred for constructing this wall was Rs. (as per MB) against the estimated budget of Rs.15.03 lac.



Pakki diwar 6 ft. at Cheer ki Naroli

Site 5- Pakki Diwar 6 Ft at Guvadi C, Nainiyaki Range

At Cheer ki Naroli at Guvadi C at Nainiyaki range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.38 m & height was 1.85 m. Construction work appeared to be average and useful. The construction of Pakki Diwar 6 ft helped in preventing encroachment & protecting forest boundaries. GPS location of this area was 26°15’22” N and 76°47’53” E. The expenditure incurred for constructing this wall was Rs. 13,58,995 (as per MB) against the estimated budget of Rs.14.25 lac.

Measuring pakki diwar 6 ft.

Site 6- Pillars at Dangra Patar/ Baler, Nainiyaki range

At Dangra Patar/ Baler site in Nainiyaki Pillar (1 No.) has been evaluated. The pillar was constructed in the year 2018-19. The pillar was 1 in number as per MB. Also, in actual 1 pillar was found & evaluated by the third party. The pillar constructed was reported average and useful. The construction of pillar helped in

Pillar at Dangra Patar/ Baler

marking forest boundary.

Site 7- Pakki Diwar 6 Ft at Karanpur Torke, Karanpur Range

At Karanpur Torke in Karanpur range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 6 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.38 m & height was 1.80 m. Construction work appeared to be average and useful. The construction of Pakki Diwar 6 ft helped in preventing encroachment & protecting forest boundaries. Pakki diwar 6 ft. was constructed in two parts. Coping & pointing work of pakki diwar need improvement. Some way for people had been left while constructing pakki diwar. GPS location of this area was 26°10'31" N and 76°59'1" E. The expenditure incurred for constructing this wall was Rs. 14.50 lac. (as per MB) against the estimated budget of Rs.14.50 lac.

Site 8- Anicut III at Gaupat, Nainiyaki Range

At Gaupat at Nainiyaki, Anicut III has been evaluated. The Anicut III was constructed in the year 2019-20. Construction work appeared to be average and useful. Water was available in the anicut at the time of visit. Wild animals used to drink water from the anicut. It also helps in soil & moisture conservation in the nearby area. The GPS location of this area was 26.108798 N and 76.729938 E. The expenditure incurred for constructing the anicut wall was Rs. 4,87,462 (as per MB) against the estimated budget of lac.

Site 9- Rescue Centre at Kaila Devi, range

Rescue Centre at Kaila Devi in Kaila Devi range has been evaluated. The Rescue Centre was constructed in the year 2019-20. The infrastructure created under CAMPA was useful. The infrastructure during third party evaluation was in use and was properly maintained. The work done under CAMPA was purchase of rescue equipment viz. tranquillizing gun, trap camera, fire control equipment, snake catcher,

projector, LED torch & iron cage. All the rescue equipments purchased under CAMPA were in use & found functional.

4. Overall assessment

Table 4: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 6 ft	Gorehar	Average	6
2	Pakki Diwar 6 ft	Bhumiya Ka Sthan, Doylepur	Average	6
3	Pakki Diwar 6 ft	Cheer Ki Naroli	Good	7
4	Pakki Diwar 6 ft	Guvadi C	Average	6
5	Pillar	Dangra Patar/Baler	Average	6
6	Pakki Diwar 6 ft	Karanpur Torke	Average	5
7	Rescue Centre	Karauli	Average	6
8	Anicut III	Gaupat	Average	6
9	Rescue Centre	Kaila Devi	Average(purchase of equipment	6

Sariska Tiger Project

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Sariska Tiger Project Forest Division. This Forest Division with 6 Forest Ranges namely Akbarpur, Alwar Buffer, Talvriksh, Tehla, Ajabgarh and Sariska has territorial jurisdiction over the entire Alwar District

Figure : Location of Alwar district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Sariska Tiger Project Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Tehala	Nadoli	2017-18	85.44	NFL	100

2.2. Selected Asset Sites for Evaluation

The selected asset site of Sariska Tiger Project Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Alwar Buffer	Gorakhnath Ashram to Military Area	2017-18	Pakki Diwar 6 ft
Akbarpur	Chawal Pauz to Unda Nalla	2017-18	Pakki Diwar 6 ft
Sariska	Vankhand Raipurabal Pathan ki bani Se Pabudan ka Bandha	2017-18	Pakki Diwar 6 ft

Reception Sariska	Sariska Parishar boundary wall	2017-18	Pakki Diwar 6 ft
Tehala	Ghevar Chowki ke pas	2018-19	Pakki Diwar 6 ft
Akbarpur	Chhela Anicut Kalikhol	2018-19	Pakki Diwar 6 ft
Sariska	Burja Kharifa B	2019-20	Pakki Diwar 6 ft
Tehala	Boretha	2019-20	Pakki Diwar 6 ft
Alwar Buffer	Nidani B	2019-20	Pakki Diwar 6 ft

3. Results and Evaluation

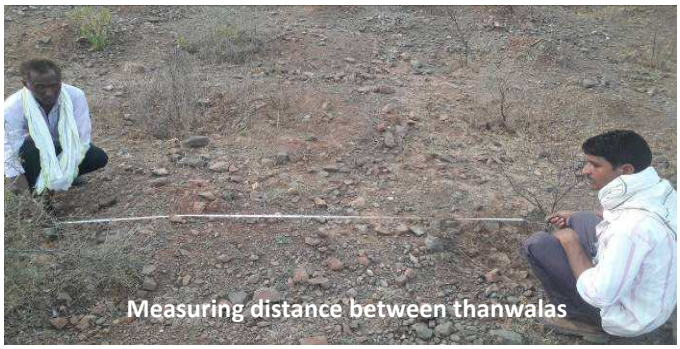
3.1 Plantations Evaluation

3.1.1. Site 1- Nadoli site in Tehala range -N 27.260552 and E 76.406268

The selected plantation was carried out on 85.44 hac. of land at Nadoli in Tehala range during the year 2017-118 The activities were done under the Non Forest Land (NFL) model. The site was a forest land and selected for 100% evaluation. The soil was clayey domat & rocky.

3.1.2. Treatment plan before sowing: The topography of the area was hilly. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 55000 pits were dug for plantation in total 8544 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Cattle at the plantation site


Measuring distance between thanwalas

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was average. Grazing by stray animals & cattle and destruction by Neel gai, porcupine and wild boars was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water& low rainfall obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was average.

3.1.4. Species Planted: The selected tree species under plantation were seven. Seedlings of Acacia nilotica (Desi babool), Acacia leucopholea (Ronj), Butea monosperma (Chila), Acacia senegal (Kumtha), Acacia catechu (Khair), Holoptelea integrifolia (Churel) and Zizyphus mauritiana (Ber), were planted.

In total, 55000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

Measuring height of plant

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 700 plants per hectare have been planted. Thus, total number of plants planted was 55000 for 85.44 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Desi babool, Ronj, Churel & Kumtha which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was satisfactory.**

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: *Desi babool, Chila, Goya, Gurjan, Bair, Churail & Hingot* were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species Ronj and *Kumtha* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.** The result of sowing seeds was seen on contour trenches and thanwalas.

Measuring ditch fencing

3.1.8. Protection Work: The selected NFL model plantation had loose stone fencing of 1900 RMT having width at the top-0.45 meter, width at the bottom-0.8 meter & height 1.2 meters. Also, 6979 RMT ditch fencing having width at the top-2.3 meters, width at the bottom-1.5 meters & height 1.5 meters was reported at the site. The condition of both the fencings was satisfactorily..

Continuous Contour trenches at the site

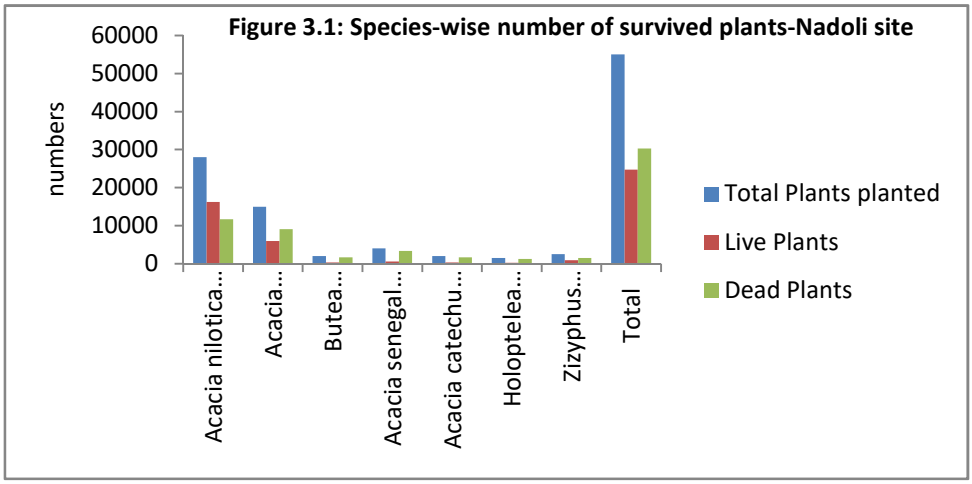
3.1.9. Soil and Water Conservation Measures: There are 3400 RMT Contour trenches and 2 PCT/Nadi (1760 cu.m) in the form of water harvesting structures present in the entire plantation area.

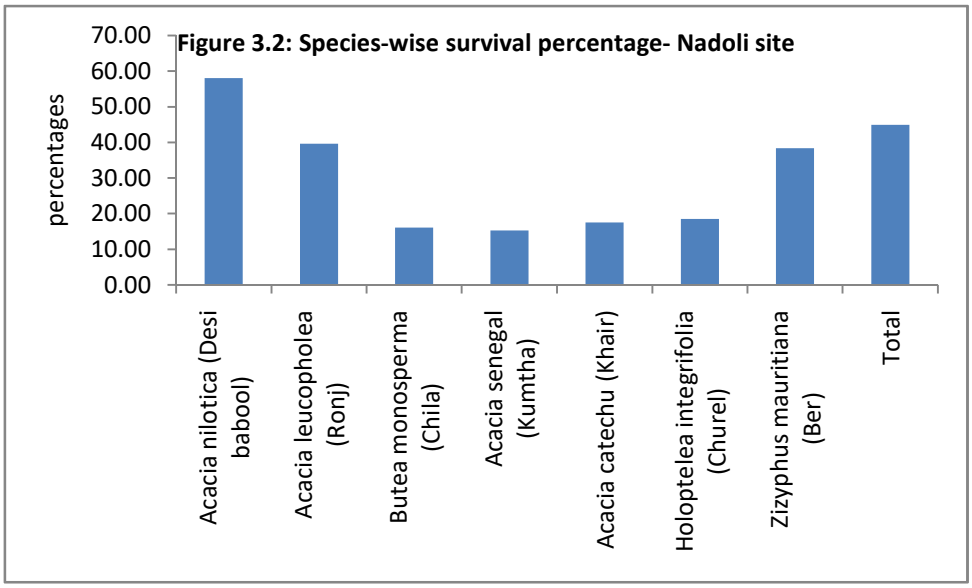
3.1.10. Observations Recorded: Under this model, 700 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 44.95% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 55000 plants comprising seven species were planted in the 85.44 hectare plantation area.

Measurement of survived species had been taken on randomly selected plants. The measurement has been conducted at various places of the plantation area to get proper average measurement of collar girth & height.

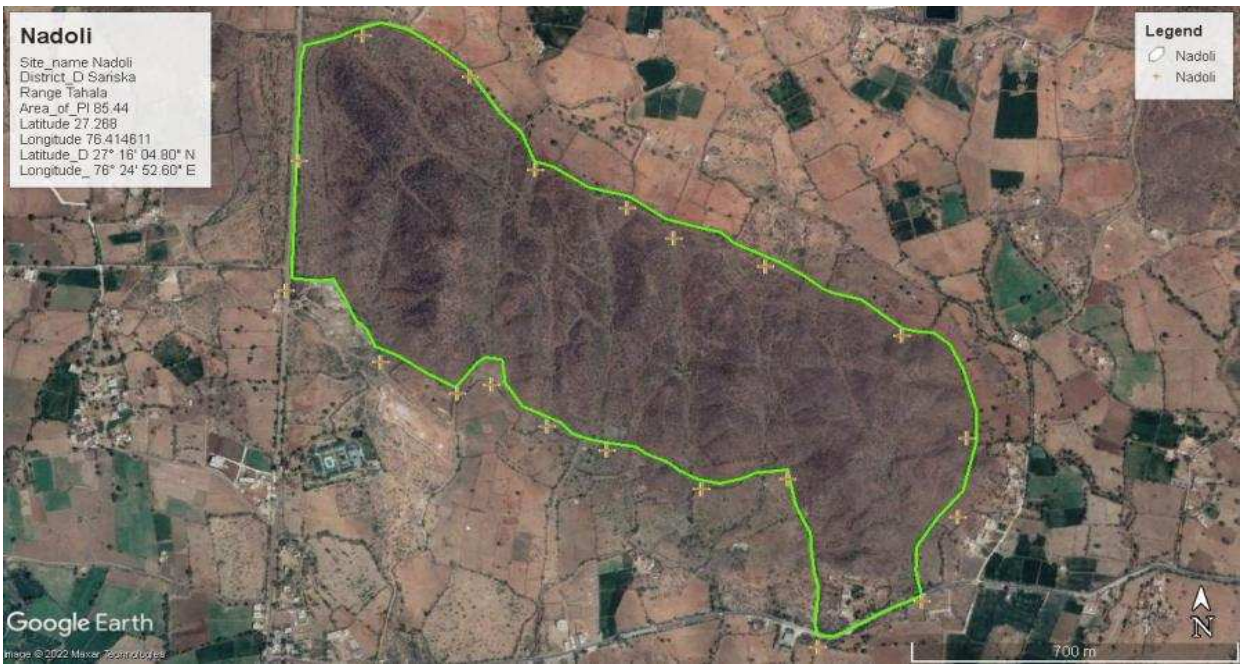
Table 3.2: Status of Planted Seedlings at the site- Nadoli Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia nilotica (Desi babool)	28000	16261	11739	58.08	292	180
Acacia leucopholea (Ronj)	15000	5940	9060	39.60	275	150
Butea monosperma (Chila)	2000	321	1679	16.05	120	110
Acacia senegal (Kumtha)	4000	612	3388	15.30	110	110
Acacia catechu (Khair)	2000	351	1649	17.55	85	100
Holoptelea integrifolia (Churel)	1500	278	1222	18.53	127	120
Zizyphus mauritiana (Ber)	2500	960	1540	38.40	158	110
Total	55000	24723	30277	44.95	167	126





3.1.11. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 85.44 Hac as per kml map.



3.1.12 Budget and expenditure

Table 3.3 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2016-17				3186826				2646048
2017-18				3973000				2879247
2018-19								1659299
2019-20								322017
2020-21				411000				408167
2021-22				432583				432381

4. Results for asset sites

4.1. Site 1- Pakki Diwar 6 Ft at Gorakhnath Ashram to Military area, Alwar Buffer Range

At Gorakhnath Ashram to Military area at Alwar Buffer range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 6 ft and 100 m length as per MB. Also, in actual 100 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.8 meters. Construction wo rk appeared to be average and the infrastructure was in use. The construction of pakki diwar prevents encroachment by local residents. GPS location of this area was 27.548098 N and 76.590886 E. The expenditure incurred for constructing this wall was Rs. 2,97,658 (as per MB) against the estimated budget of Rs.3.0 lac.

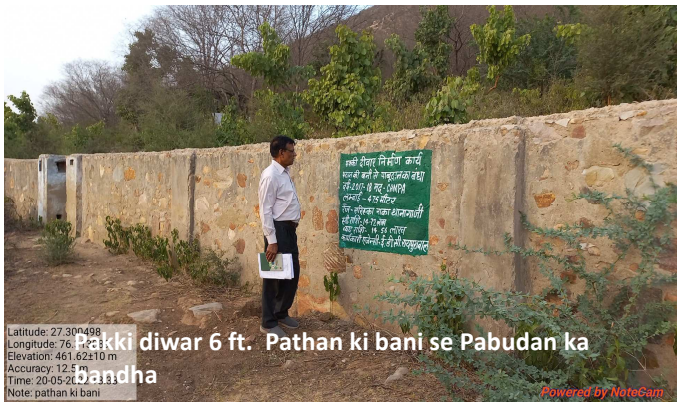
Site 2- Pakki Diwar 6 Ft at Chawal Pauz to Unda Nalla, Akbarpur Range

At Chawal Pauz to Unda Nalla in Akbarpur range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 6 ft and 400 m length as per MB. Also, in actual 400 m pakki diwar was constructed at the site. The width of the diwar was 0.50 meter & height was 1.8 meters. Construction work appeared to be average and the infrastructure was in use. The construction of pakki diwar prevents encroachment by local residents. However, the wall was broken at 3-4 places due to water flow & other reasons. Hence, wall should be repaired in order to protect forest area. GPS location of this area was 27.404987 N and 76.516718 E. The expenditure incurred for constructing this wall was Rs. 10,46,779 (as per MB) against the estimated budget of Rs.14,60,000 lac.

Site 3- Pakki Diwar 6 Ft at Vankhand Raipurabal Pathan ki bani Se Pabudan Ka Bandha , Sariska Range

The `site visited under asset created under CAMPA was Pakki Diwar 6 Ft at Vankhand Raipurabal Pathan ki bani Se Pabudan ka Bandha in Sariska range. The site was visited, surveyed, GPS co-ordinates recorded and photographs taken along with the information was filled up in tool 3.At Vankhand Raipurabal Pathan ki bani Se Pabudan ka Bandha in Sariska range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 6 ft and 475 m length as per MB. Also, in actual 475 m pakki diwar

was constructed at the site. The width of the diwar was 0.45 meter & height was 1.8 meters. Construction work appeared to be average and the infrastructure was in use. The Coping & pointing work of the wall should be better. The construction of pakki diwar prevents encroachment by local residents. GPS location of this area was 27.300547 N and 76.3132 E. The expenditure incurred for constructing this wall was Rs. 14,55,749 (as per MB) against the estimated budget of Rs. 14,72,000.



Pakki diwar 6 ft. Pathan ki bani se Pabudan ka bandha

Site 4- Pakki Diwar 6 Ft at Sariska Parishar, Reception Sariska Range

At Sariska Parishar in Reception Sariska range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 6 ft and 163 m length as per MB. Also, in actual 163 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.4 meters. Construction work appeared to be average and the infrastructure was in use. The wall is constructed to cover the Sarishka Campus. Wall was built from school building to Canteen. The wall was built by demolishing the old broken wall. The wall is made according to the estimate in different size at different places. GPS location of this area was 27.392627 N and 76.3132 E. The expenditure incurred for constructing this wall was Rs. 288757 (as per MB) against the estimated budget of Rs. 3.0 lac.

Pakki diwar 6 ft. at Sarishka Parishar

Site 5- Pakki Diwar 6 Ft at Ghevar Chowki ke pas , Tehala Range

At Ghevar Chowki ke pas in Tehala range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 200 m length as per MB. But in actual 203 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.8 meters. Construction work appeared to be average and the infrastructure was in use. The wall was made in three parts 167.5 m, 6.4 m & 30 m. The construction of pakki diwar prevents encroachment by local residents, controls grazing & protects forest from destruction by wild life. GPS location of this area was 27.26547 N and 76.44145 E. The expenditure incurred for constructing this wall was Rs. 635590 (as per MB) against the estimated budget of Rs. 635590.

Pakki diwar 6 ft. at Ghevar ki Chowki

Site 6 -Pakki Diwar 6 Ft at Chhela Anicut Kalikhol, Akbarpur Range

At Chhela Anicut Kalikhol in Akbarpur range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 1197 m length as per MB. Also, in actual 1197 m pakki diwar was constructed at the site. The width of the diwar was 0.38 meter & height was 1.8 meters. Construction work appeared to be average and the infrastructure was in use. The wall was made in three parts 542 m, 525 m & 130 m. The wall begins at Chhela anicut & goes parallel to the mountain. The construction of pakki diwar prevents encroachment and stops illegal mining. GPS location of this area was 27.46219 N and 76.513613 E. The expenditure incurred for constructing this wall was Rs. 3315225(as per MB) against the estimated budget of Rs. 3375395.

Measuring pakki diwar 6 ft.

Site 7- Pakki Diwar 6 Ft at Burza Kharifa B, Sariska Range

At Burza Kharifa B in Sariska range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 6 ft and 350 m length as per MB. But in actual 325 m pakki diwar was constructed at the site. The width of the diwar was 0.38 meter & height was 1.8 meters. Construction work appeared to be average and the infrastructure was in use. Due to the protest of local residents only 325 meters wall was built against 350 meters. GPS location of this area was 27.34199 N and 76.304387 E. The expenditure incurred for constructing this wall was Rs. 917613(as per MB) against the estimated budget of Rs.14.50 lac.

Measuring pakki diwar

Site 8- Pakki Diwar 6 Ft at Boretha, Tehala Range

At Boretha in Tehala range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 6 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.38 meter & height was 1.8 meters. Construction work appeared to be average and the infrastructure was in use. The wall was useful in protecting forest land & wild life. However, the coping & pointing work

Quality of workmanship

of wall should have been done properly. GPS location of this area was 27.299017 N and 76.553545 E. The expenditure incurred for constructing this wall was Rs. 1413929(as per MB) against the estimated budget of Rs.14.50 lac.

Site 9 -Pakki Diwar 6 Ft at Nidani B, Alwar Buffer Range

At Boretha in Tehala range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 6 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.8 meters. The wall was constructed in two parts. Construction work appeared to be average and the infrastructure was in use.

The wall was useful in protecting forest land, preventing encroachment & illegal mining. However, the coping & pointing work of wall should have been done properly. GPS location of this area was 27.61642 N and 76.605115 E. The expenditure incurred for constructing this wall was Rs. 1443428(as per MB) against the estimated budget of Rs.14.50 lac.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Sariska Tiger Project division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Nadoli	NFL	85.44	44.95	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	PakkiDiwar 6 ft	Gorakhnath Ashram to Military area	Average	5
2	Pakki Diwar 6 ft	Chawal Pauz to Unda Nalla	Average	4
3	Pakki Diwar 6 ft	Vankhand Raipurabal Pathan ki bani Se Pabudan ka Bandha	Average	6
4	Pakki Diwar 6 ft	Sarishka Parishar	Average	4
5	Pakki Diwar 6 ft	Ghevar Chowki ke pas	Average	6
6	Pakki Diwar 6 ft	Chhela Anicut Kalikhol	Average	5
7	Pakki Diwar 6 ft	Burza Kharifa B	Average	6
8	Pakki Diwar 6 ft	Boretha	Average	6
9	Pakki Diwar 6 ft	Nidani B	Average	6

Sikar

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Sikar Forest Division. This Forest Division with 6 Forest Ranges namely Srimadhopur, Danta, Sikar, Neem Ka Thana, Patan & Fatehpur has territorial jurisdiction over the entire Sikar District.

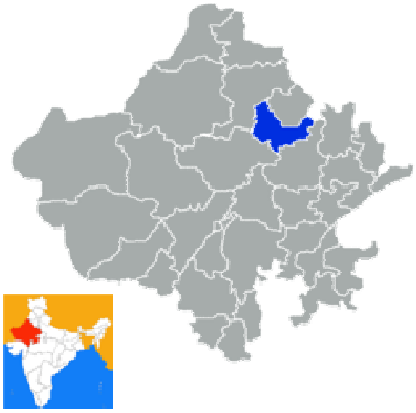


Figure : Location of Sikar district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Sikar Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Shri Madhopur	Ajeetgarh	2017-18	50	ANR	100
Neemka thana	Bhagega	2018-19	2.62	NFL	100
Patan	Jaitpura	2018-19	50	ANR	100

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Sikar Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Danta	Nimbera Tambakupura	2017-18	Pakki Diwar 4 ft
Patan	Ladikabas Sanwalpura Tavran	2017-18	Roadside Plantation
Neem Ka Thana	Raipur Jagir	2017-18	Pakki Diwar 4 ft
Shrimadhopur	Khiroti (Burja ki dhani)	2018-19	Pakki Diwar 4 ft

Patan	Raila	2018-19	Boundary pillars
Danta	Khatiwas	2019-20	Pakki Diwar 4 ft
Sikar	Sakambari Conservation (Khori Brahman)	2019-20	Pakki Diwar 6 ft
Sikar	Antari	2019-20	Boundary pillars
Patan	Van khand Patan	2019-20	Boundary pillars
Shrimadhopur	Reengas	2019-20	Nursery

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1 Site 1-Ajeetgarh site in Shrimadhopur range -N 27.427556 and E 75.827617

The selected plantation was carried out on 50 hac. of land at Ajeetgarh in Shrimadhopur range during the year 2017-18. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was clayey domat.

3.1.2 Treatment plan before sowing: The topography of the area was hilly. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was average. Grazing by stray animals & cattle and destruction by Neel gai, rabbits, porcupine and wild boars was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water& low rainfall obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.

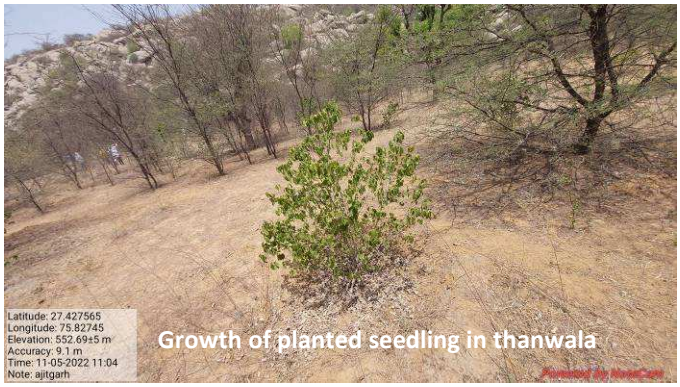
3.1.4. Species Planted: The selected tree species under plantation were four. Seedlings of Acacia tortilis (Totalis), *Holoptelea integrifolia* (Churel), Zizyphus mauritiana (Ber) and Acacia nilotica (Desi babool) were planted.

In total, 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Bair, Desi babool, Churail & Totalis which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was satisfactory.**



3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: *Desi babool, Ronj & Totalis* were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species Khejri & *Kumta were* sown in as well as along the trenches and on the thanwlas. **The result of sowing was average.**

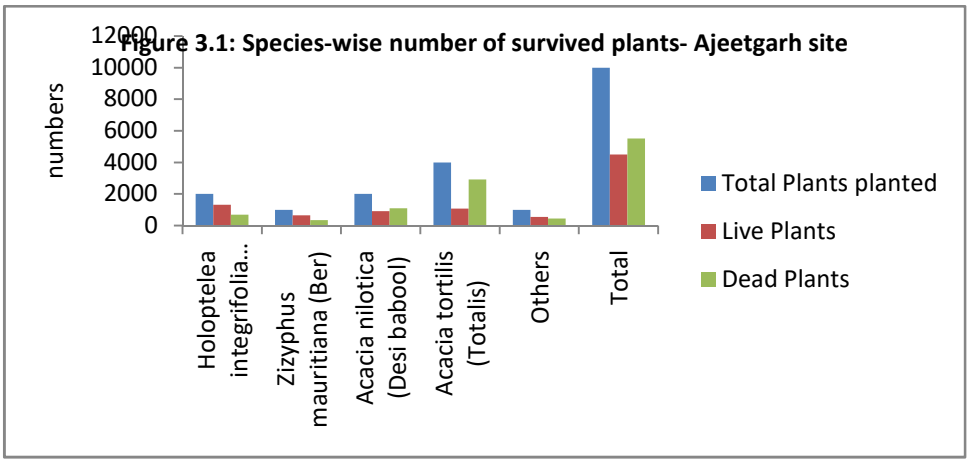
3.1.8. Protection Work: The selected ANR model plantation had loose stone fencing of 1000 RMT having width at the top-0.6 meter, width at the bottom-0.8 meter & height 1.2 meters. Also, 1490 RMT ditch fencing having width at the top-1.75 meters, width at the bottom-1.05 meters & height 1.08 meters was reported at the site. 780 RMT barbed wire fencing was also reported at the site. The condition of he fencing was satisfactorily. Silting was reported in the ditch fencing in some parts.

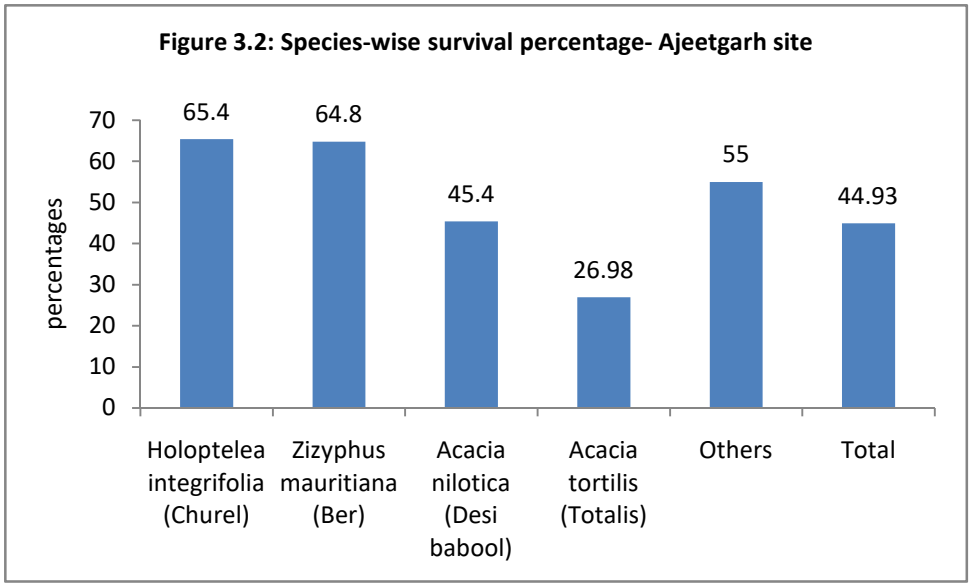
3.1.9. Soil and Water Conservation Measures: There are 8000 RMT Contour trenches, earthen check dam(2078 cu.m) and PCT/Nadi (2300 cu.m) in the form of water harvesting structures present in the entire plantation area.

3.1.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 44.93% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising four species were planted in the 50 hectare plantation area.

Table 3: Status of Planted Seedlings at the site- Ajeetgarh Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Holoptelea integrifolia (Churel)	2000	1308	692	65.40	119	94
Zizyphus mauritiana (Ber)	1000	648	352	64.80	90	65
Acacia nilotica (Desi babool)	2000	908	1092	45.40	115	87
Acacia tortilis (Totalis)	4000	1079	2921	26.98	165	116
Others	1000	550	450	55.00		
Total	10000	4493	5507	44.93	126	94





3.1.11 GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 Hac as per kml map.

3.1.12. Budget and expenditure

Table 3.1: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2016-17	607188	592904	464108	1664200	215684	529731	349817	1095232
2017-18	425319	117702	30140	573161	423277	117702	30140	57119
2018-19	16060	0	2740	18800	759973	0	2740	762713
2019-20	89093	0	3157	92250	88318	0	3157	91475
2020-21	57321	0	34929	92250	56970	0	34929	91899
Total	1194981	710606	535074	2440661	1544222	647433	420783	2098438

3.2.1 Site 2- Bhagega site in Neem Ka Thana range -N 27° 47'.830"and E 75 °50'.349"

The selected plantation was carried out on 2.62 hac. of land at Bhagega in Neem Ka Thana range during the year 2018-19. The activities were done under the Non Forest Land (NFL) model. The site was a forest land and selected for 100% evaluation. The soil was domat & clayey.

3.2.2. Treatment plan before sowing: The topography of the area was sand dunes. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 2882 pits were dug for plantation in total 2.62 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Vetiva grass on earthen check dam to check soil erosion

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals &cattle and destruction by Neel gai, rats and porcupine was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

Damaged plants due to fire

3.2.4. Species Planted: The selected tree species under plantation were four. Seedlings of Acacia tortilis (Totalis), Dalbergia sissoo (Shisham), Acacia nilotica (Desi babool) and Zizyphus mauritiana (Ber) were planted.

In total 2882 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

Sign of regeneration of plant

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row were 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 1100 plants per hectare have been planted. Thus, total number of plants planted was 2882 for 2.62 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Totalis, Desi babool Ber& Shisham which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**

3.2.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.2.6. Natural Vegetation and Regeneration: Totalis, Bair, Kheep & Neem were the plants found grown naturally in this area. The growth of the plants was good.

3.2.7. Regeneration through seeds sowing: Seed sowing was not reported at the plantation site. However, munja was grown on the earthen check dam in order to check soil erosion.

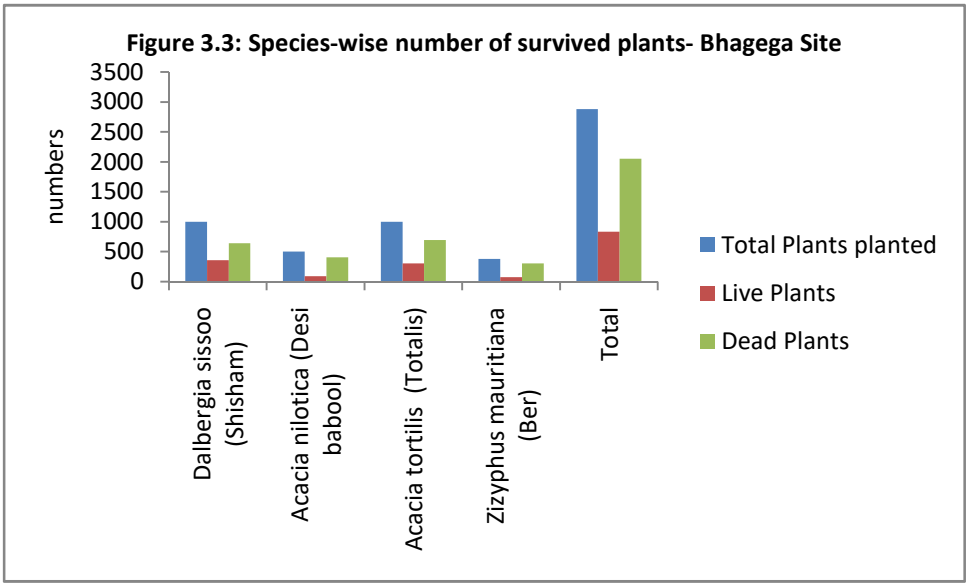
3.2.8. Protection Work: The selected NFL model plantation had barbed wire fencing of 684 RMT. The status of fencing was poor.

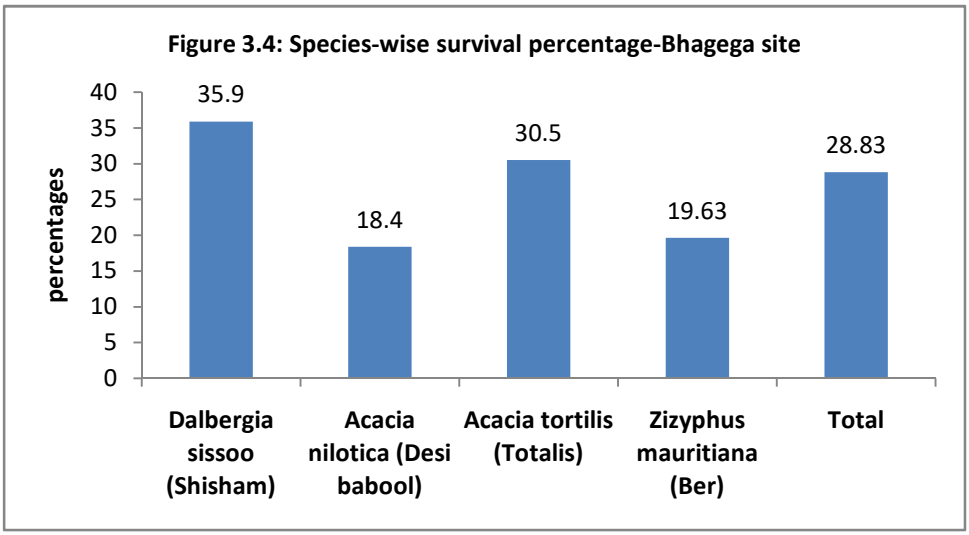
3.2.9. Soil and Water Conservation Measures: There is earthen check dam (572.80 cu.m) in the form of water harvesting structures present in the entire plantation area.

3.2.10. Observations Recorded: Under this model, 1100 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 28.83% at the site.** The growth of planted plants was low. The reason for low survival was damage due to fire at the plantation site. 99 percent planted seedlings were completely damaged due to fire. Regeneration of planted seedlings was reported at the site. Hence, collar girt & height of planted seedling was not taken. A total of 2882 plants comprising four species were planted in the 2.62 hectare plantation area.

Table 3.2: Status of Planted Seedlings at the site-Bhagega Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)
Dalbergia sissoo (Shisham)	1000	359	641	35.90
Acacia nilotica (Desi babool)	500	92	408	18.40
Acacia tortilis (Totalis)	1000	305	695	30.50
Zizyphus mauritiana (Ber)	382	75	307	19.63
Total	2882	831	2051	28.83





3.2.11. GPS Location and KML file: The selected NFL model under CAMPA plantation site measured 2.62 Hac as per kml map.

3.3.1 Site 3- Jaitpura site in Patan range -N 25.650463 and E 75.943507

The selected plantation was carried out on 50 hac. of land at Jaitpura in Patan range during the year 2018-19. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was clayey domat & sandy.

3.3.2. Treatment plan before sowing: The topography of the area was hilly & plain. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.3.3. Health & Damages of Plantation: The growth of planted seedlings at the site was average. Grazing by stray animals & cattle and destruction by Neel gai and wild boars was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water& low rainfall obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory.

3.3.4. Species Planted: The selected tree species under plantation were four. Seedlings of *Holoptelea integrifolia* (Churel), Acacia nilotica (Desi babool), Zizyphus mauritiana (Ber) and Acacia leucopholea (Ronj) were planted.

In total, 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Bair, Churel & Desi babool which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was satisfactory.**

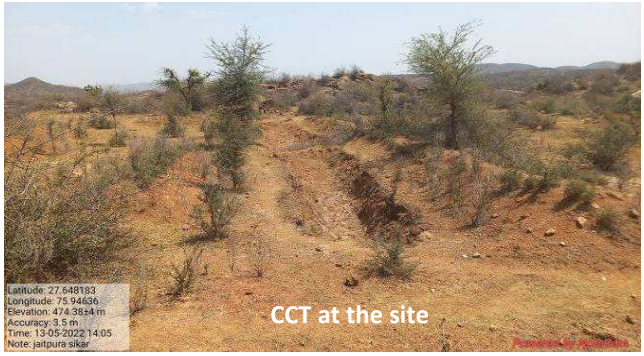
3.3.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.3.6. Natural Vegetation and Regeneration: *Desi babool Churel & Ronj* were the plants found grown naturally in this area. The growth of the plants was good.

3.3.7. Regeneration through seeds sowing: Seeds of species Neem, Cheela, *Kumtha & Desi babool* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.** The result of sowing was seen on contour trenches and thanwalas.

3.3.8. Protection Work: The selected ANR model plantation had loose stone fencing of 2505 RMT & 805 RMT ditch fencing. The condition of the fencing was average. Loose stone fencing was broken at many places. Also, ditch fencing was filled with soil

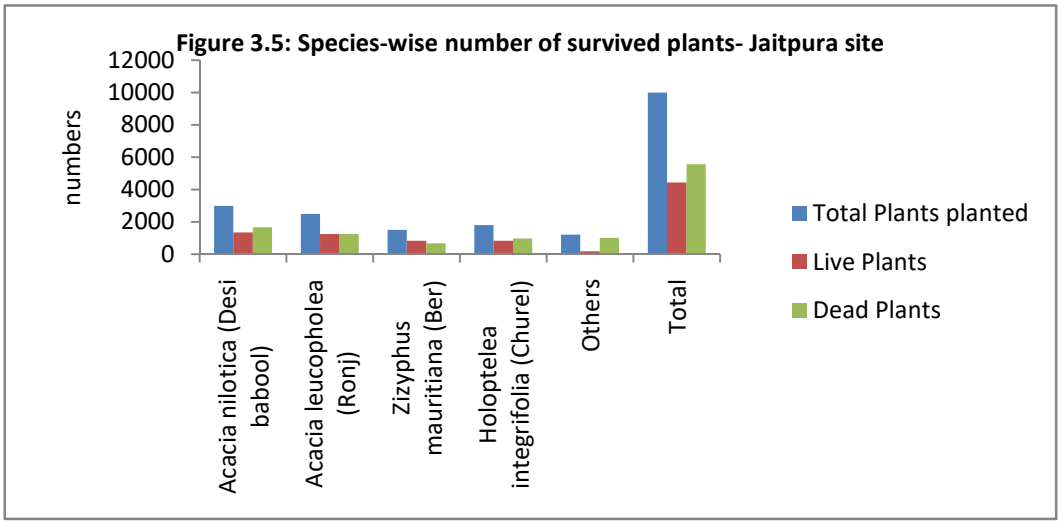
3.3.9. Soil and Water Conservation Measures: There are 16415 RMT Contour trenches & 1015 cu.m loose stone check dams in the form of water harvesting structures present in the entire plantation area.

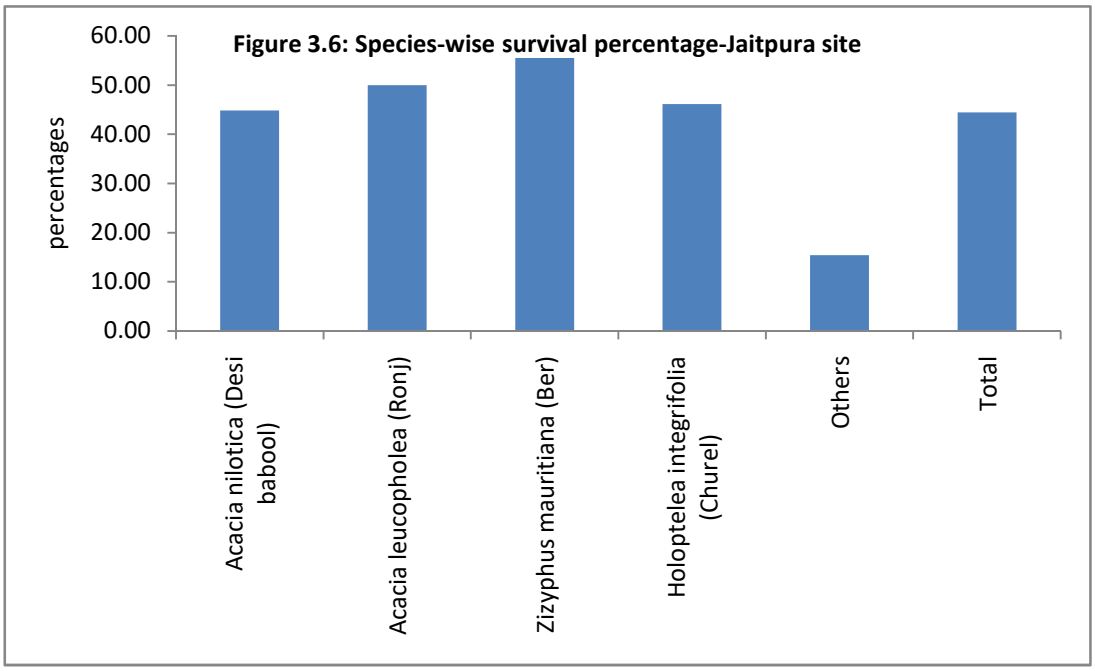


3.3.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 44.44% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising four species were planted in the 50 hectare plantation area.

Table 3.3: Status of Planted Seedlings at the site- Jaitpura Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average girth (mm)
Acacia nilotica (Desi babool)	3000	1346	1654	44.87	118	81
Acacia leucopholea (Ronj)	2500	1249	1251	49.96	90	66
Zizyphus mauritiana (Ber)	1500	833	667	55.53	93	65
Holoptelea integrifolia (Churel)	1800	831	969	46.17	90	65
Others	1200	185	1015	15.42	90	65
Total	10000	4444	5556	44.44	99	70





3.3.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 Hac as per kml map.

3.3.12. Budget and expenditure

Table 3.4: Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2018-19					360943	361856	40890	763689
2019-20					170480	5012	19256	194748
2020-21					13451		64460	77911
2021-22					66825		30320	97145
Total					611699	366868	154926	1133493

4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft at Nimbera Tambakupura, Danta Range

At Nimbera Tambakupura in Danta range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 50 m length as per MB. But in actual 60 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meter. The pakki diwar constructed at the site was completely insufficient to prevent encroachment & protect forest

boundaries. Construction work appeared to be average and useful. GPS location of this area was 27.473568 N and 75.20841 E. The expenditure incurred for constructing this wall was Rs. 1,13,523 (as per MB) against the estimated cost of Rs.1.50 lac.

Site 2- Roadside plantation Ladikabas Sanwalpura Tavran at Patan range

Roadside Plantation Ladikabas Sanwalpura Tavran in Patan range has been evaluated. The total area of roadside plantation was 8.4 RKM and had been carried out in the year 2017-18. The soil of the area is black domat, stony. Seedlings planted were Neem, Bad, Churail, Ardu, Ronj, Khejri, Desi babool& Peepal. The total seedlings planted were 840. Total survived plants during Third Party evaluation were 268. **Hence, the total survival rate was 31.90%.** Planted seedlings were grown on big thanwala for moisture retention. GPS location of this area was 27.648402 N and 75.931895 E. The survival & growth of planted seedlings was low. The reason for low survival was lack of provision of watering and destruction to planted seedlings by termite.

Site 3- Pakki Diwar 4 Ft at Raipur Jagir, Neem Ka Thana Range

At Raipur Jagir in Neem Ka Thana range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 240 m length as per MB. Also, in actual 240 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meter. The pakki diwar constructed at the site prevents encroachment, illegal mining & protects forest boundaries. However, some part of the wall was damaged which requires repair. Construction work appeared to be average and useful. GPS location of this area was 27.468914 N and 75.909609 E. The expenditure incurred for constructing this wall was Rs. 466386 (as per MB).

Site 4- Pakki Diwar 4 Ft at Khiroti (Burja ki dhani), Srimadhopur Range

At Khiroti (Burja ki dhani) in Srimadhopur range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 300 m length as per MB. Also, in actual 300 m pakki diwar was

constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meter. The pakki diwar constructed at the site prevents encroachment, illegal mining & protects forest boundaries. However, 4.50 meter wall was damaged due to illegal mining. The broken wall should be repaired in order to prevent illegal mining. Construction work appeared to be average and useful. GPS location of this area was 27.468914 N and 75.909609 E. The expenditure incurred for constructing this wall was Rs. 4,66,386 (as per MB) against the estimated cost of lacs.

Site 5- Pillars at Raila, Patan range

Pillar at Raila

At Raila site in Patan Pillars (15 Nos.) have been evaluated. The pillars were constructed in the year 2018-19. The pillars were 15 in numbers as per MB. Also, in actual 15 pillars were found & evaluated by the third party. The pillars constructed were reported average and useful. The construction of pillars helped in marking forest boundary.The expenditure incurred for constructing the Pillars (15 Nos.) was Rs. 18390 (as per MB).

Site 6- Pakki Diwar 4 Ft at Khatiwas, Danta Range

Measuring Pakki diwar 4ft. at Khatiwas

At Khatiwas in Danta range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 100 m length as per MB. Also, in actual 100 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meter. The pakki diwar constructed at the site prevents encroachment & protects forest boundaries. Construction work appeared to be average and useful. Coping & Pointing work was done in the wall. GPS location of this area was 27.356624 N and 75.173673 E. The expenditure incurred for constructing this wall was Rs. 187893 (as per MB) against the estimated cost of Rs.2.00 lac.

Site 7- Pakki Diwar 6 Ft at Sakambari Conservation (Khori Brahman), Sikar Range

Measuring pakki diwar 6 Ft.

At Sakambari Conservation (Khori Brahman) in Sikar range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 6 ft and 1000 m length as per MB.

Also, in actual 1000 m pakki diwar was constructed at the site. The width of the diwar was 0.50 meter & height was 1.80 meter. The pakki diwar constructed at the site prevents encroachment & protects forest boundaries. Construction work appeared to be average and useful. Coping & Pointing work was done in the wall. GPS location of this area was 27.685526 N and 75.371203 E. The expenditure incurred for constructing this wall was Rs. 985960 (as per MB) against the estimated cost of Rs. 12.00 lac.

Site 8- Pillars at Antari, Sikar range

Pillar at Antari

At Antari site in Sikar Pillars (10 Nos.) have been evaluated. The pillars were constructed in the year 2019-20. The pillars were 10 in numbers as per MB. Also, in actual 10 pillars were found & evaluated by the third party. The pillars constructed were reported average and useful. The construction of pillars helped in marking forest boundary.The expenditure incurred for constructing the Pillars (10 Nos.) was Rs. 11340 (as per MB) against the estimated cost of Rs.1.20 lac.

Site 9- Pillars at Patan, Patan range

Pillar at Patan

At Patan site in Patan Pillars (8 Nos.) have been evaluated. The pillars were constructed in the year 2019-20. The pillars were 8 in numbers as per MB. Also, in actual 8 pillars were found & evaluated by the third party. The pillars constructed were reported average and useful. The construction of pillars helped in marking forest boundary.The expenditure incurred for constructing the Pillars (8 Nos.) was Rs. 9720 (as per MB) against the estimated cost of Rs. 9600.

Record keeping: The documents such as plan and MB were shown to the study team.

Site 10- Nursery at Reengas, Shrimadhopur range

Facility at Nursery

At Reengas in Shrimadhopur range, the nursery has been evaluated. The nursery at Reengas was under category of development of existing nursery. The nursery was found operational & useful at the time of visit. Adequate land & other infrastructure required for development of nursery was available. The nursery was well maintained. Plants

are being supplied year-wise as targeted. Work undertaken in the nursery with support from CAMPA was upkeep & maintenance of plants. Total bed available at the nursery was 213 (kutcha bed- 182 & pucca bed-31). GPS location of this area was 27352756 N and 75.595902 E. The expenditure incurred for development of nursery was Rs. 11509.96 (as per MB) against the estimated budget of Rs. 11510.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Sikar division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Ajeetgarh	DFL	50	44.93	5
2	Bhagega I	NFL	2.62	28.83	4
3	Jetpura	ANR	50	44.44	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	PakkiDiwar 4 ft	Tambakupura Nimeda	Average	6
2	PakkiDiwar 4 ft	Raipur Jagir	Average	6
3	PakkiDiwar 4 ft	Khiroti (Burja ki dhani)	Average	5
4	Pillars	Raila	Average	6
5	PakkiDiwar 4 ft	Khatiwas	Average	6
6	Pakki Diwar 6 ft	Sakambari Conservation (Khori Brahman)	Average	6
7	Pillars	Antari	Average	6
8	Pillars	Patan	Average	6
9	Roadside plantation	Ladikabas Sanwalpura Tavran	Poor	4
10	Nursery	Reengas	Average	6

Sirohi

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Sirohi Forest Division. This Forest Division with 4 Forest Ranges namely Pindwara, Sirohi, Abu road & Sirodi has territorial jurisdiction over the entire Sirohi District.

Figure: Location of Sirohi district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Sirohi Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Pindwara	Pahadkala no. 30 Ubri Pani Sabela	2018-19	50	ANR	100%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Sirohi Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Pindwara	Piece rate Wages Pranali, Ghasbeed	2017-18	Pillar
Pindwara	Ghasbeed Pindwara Nichli Odan	2018-19	Pakki Diwar 4 ft
Pindwara	Dharla Viroli Ghasbeed	2019-20	Pakki Diwar 4 ft
Pindwara	Dharla Viroli Vankhand	2019-20	Boundary Pillars
Sirohi	Arathwara	2019-20	Nursery

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1- Pahad Kala no.30 Ubri Pani Sabela site in Pindwara range - N 24.797024 and E 73.142418

The selected plantation was carried out on 50 hac. of land at Pahadkala no. 30 Ubri Pani Sabela in Pindwara range during the year 2018-19. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was black red & stony.

3.1.2. Treatment plan before sowing: The topography of the area was hilly. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. It is reported excellent having fair amount of soil. The growth of planted seedlings is less than normal in the area having less soil coverage. Grazing by stray animals & cattle and destruction by Neel gai & porcupine was reported at the site. Also, widely growth of termite, soil quality, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

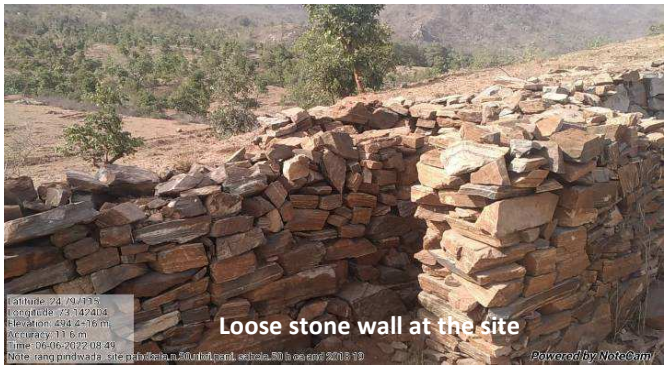
3.1.4. Species Planted: The selected tree species under plantation were 12. Seedlings of Acacia catechu (Khair), Dendrocalamus strictus (Baans), Pongamia pinnata (Karanj), Holoptelea integrifolia (Churel), Madhuka latifolia (Mahuaa), Zizyphus mauritiana (Ber), Pithecellobium dulce (Jangal Jalebi), Cassia fistula (Amaltas), Annona

squamosa (Sitafal), Syzygium cumini (Jamun), Azadirachta indica (Neem) and Emblica officinalis (Amla) were planted.

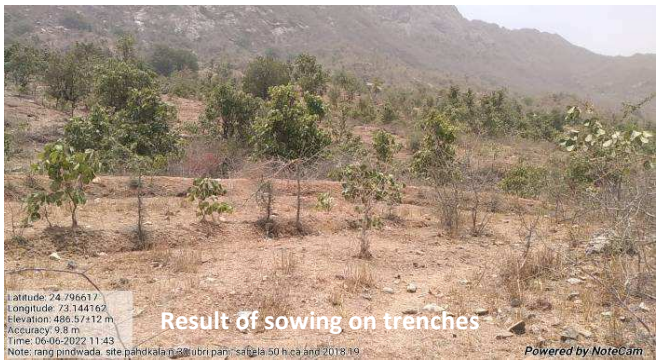
In total 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.



As far as choice of seedlings for plantation is concerned, it was proper, fair & suitable. The seedlings selected for plantation were Khair, Karanj, Bamboo & Bair which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**



3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: Palash, Bargad, Tendu, Khirni, Ronj & Salar were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species *Kumatha, Khair and Ronj* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was average.**

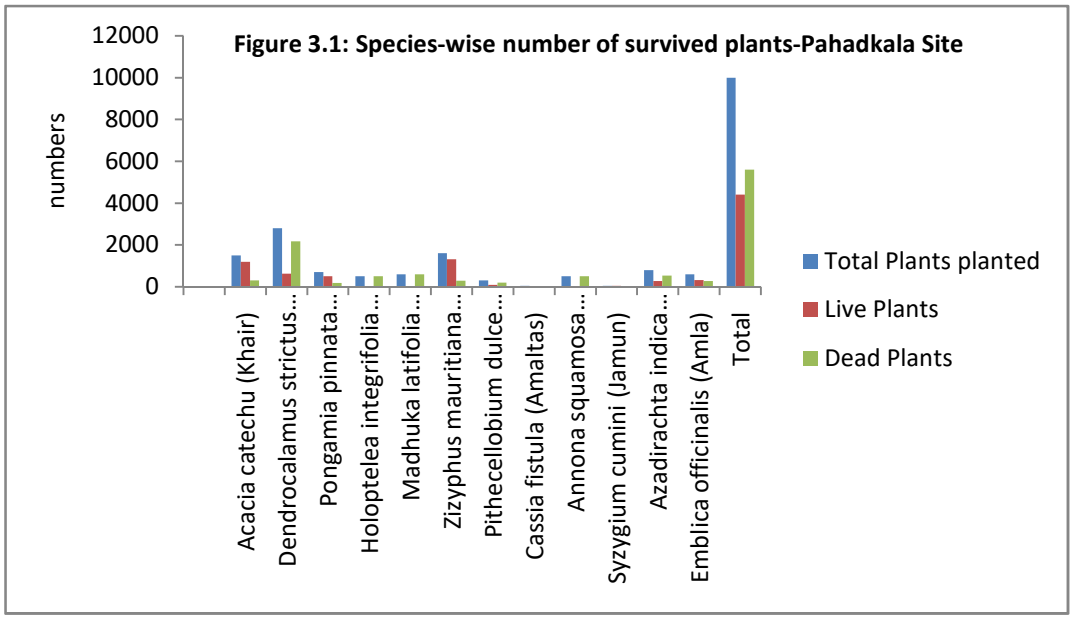
3.1.8. Protection Work: The selected ANR model plantation had loose stone fencing of 2857 RMT. Present condition of fencing was good. Loose stone fencing was fully effective in controlling biotic pressure.

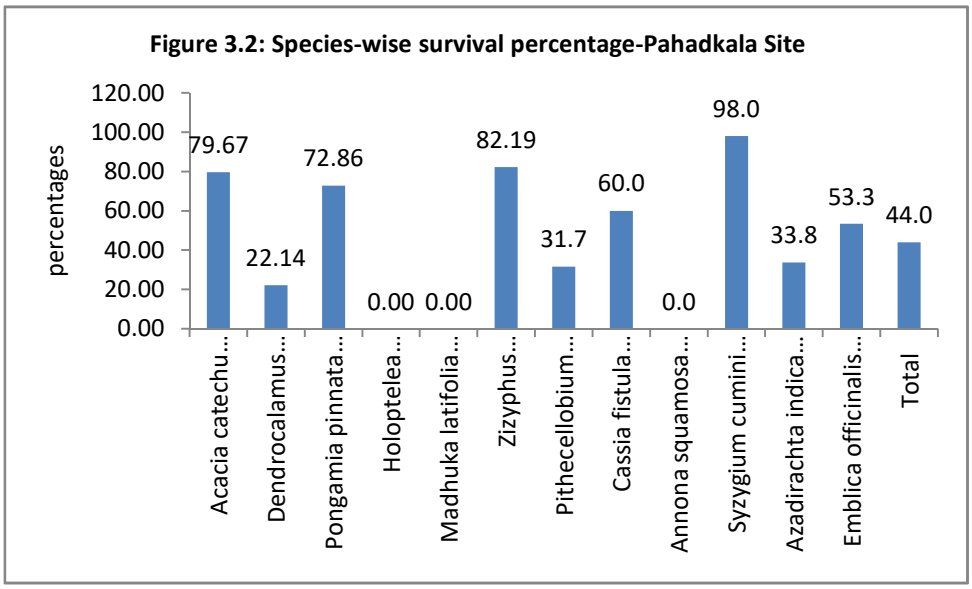
3.1.9. Soil and Water Conservation Measures: There are 990 RMT Contour trenches, 900 RMT SGT & 1000 RMT Deep CCT & loose stone check dam (1400 cu.cm) in the form of water harvesting structures present in the entire plantation area.

3.1.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 54.43% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising five species were planted in the 50 hectare plantation area.

Table 3: Status of Planted Seedlings at the site- Pahadkala no. 30 Ubri Pani Sabela Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)
Acacia catechu (Khair)	1500	1195	305	79.7
Dendrocalamus strictus (Baans)	2800	620	2180	22.1
Pongamia pinnata (Karanj)	700	510	190	72.9
Holoptelea integrifolia (Churel)	500	0	500	0.0
Madhuka latifolia (Mahuaa)	600		600	0.0
Zizyphus mauritiana (Ber)	1600	1315	285	82.2
Pithecellobium dulce (Jangal Jalebi)	300	95	205	31.7
*Cassia fistula (*Amaltas)	50	30	20	60.0
Annona squamosa (Sitafal)	500		500	0.0
*Syzygium cumini (*Jamun)	50	49	1	98.0
Azadirachta indica (Neem)	800	270	530	33.8
Emblica officinalis (Amla)	600	320	280	53.3
Total	10000	4404	5596	44.0





3.1.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 hec as per kml map.

4. Results for asset sites

4.1. Site 1- Pillars at Piece Rate Wages Pranali Ghasbeed, Pindwara range

At Piece rate Wages Pranali, Ghasbeed site in Pindwara Pillars (23 Nos.) have been evaluated. The pillars were constructed in the year 2017-18. The pillars were 23 in numbers as per MB. Also, in actual 23 pillars were found & evaluated by the third party. The pillars constructed were reported average and useful. The construction of pillars helped in marking forest boundary.The expenditure incurred for constructing the Pillars (23 Nos.) was Rs.20866 (as per MB) against the estimated cost of Rs 41377.

Site 2- Pakki Diwar 4 Ft at Ghasbeed Pindwara Nichli Odan Pindwara Range

At Ghasbeed Pindwara Nichli Odan in Pindwara range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.38 meter & height was 1.20 meter. Construction work appeared to be poor and useful. Plaster of pakki diwar had not been done. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. Quality of construction & finishing of pakki diwar need improvement. GPS location of this area was 24.799017 N and 73.076916 E. The expenditure incurred for constructing this wall was Rs. 796837 (as per MB) against the estimated cost of Rs.12.0 lac.

Site 3- Pakki Diwar 4 Ft at Dharla Viroli Ghasbeed, Pindwara Range

At Dharla Viroli Ghasbeed in Pindwara range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 600 m length as per MB. But in actual 605 m pakki diwar was constructed at the site. The width of the diwar was 0.38 meter & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment & protecting plantation site. The wall was damaged at four places. GPS location of this area was 24.905845 N and 73.017496 E. The expenditure incurred for constructing this wall was Rs.1057660 (as per MB) .

Site 4- Pillars at Dharla Viroli Van Khand Pindwara range

At Dharla Viroli Vankhand in Pindwara Pillars (53 Nos.) have been evaluated. The pillars were constructed in the year 2019-20. The pillars were 53 in numbers as per MB. But in actual 48 pillars were found & evaluated by the third party. 05 pillars were not found at the site as department had sold the land to local residents. The pillars constructed were reported average and useful. The construction of pillars helped in marking forest boundary. The expenditure incurred for constructing the Pillars (53 Nos.) was Rs 56245 (as per MB) against the estimated cost of Rs 95400.

Site 5- Nursery at Arathwara, Sirohi range

At Arathwara in Sirohi range, the nursery has been evaluated. The nursery was under category of development of existing nursery. The nursery was found operational & useful at the time of visit. Adequate land & other infrastructure required for development of nursery was available. The nursery was well maintained. Plants are being supplied year-wise as targeted. Work undertaken in the nursery with support from CAMPA was construction of 5 pucca bed (10mX 1mX 45cm). Total beds available at the nursery were 110 (kutcha bed- 20 & pucca beds-90). However, beds made under CAMPA were yet to be use. Permanent source of water is not available in the nursery. GPS location of this area was 25°3'58"N and 75°57'50"E. The expenditure incurred for development of nursery was Rs. 1.50 lac (as per MB) against the estimated budget of Rs. 1.50 lac.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Sirohi division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Pahadkala No. 30 Ubari Pani Sabela	ANR	50	44.04	5

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pillar	Piece rate Wages Pranali, Ghasbeed	Average	5
2	Pakki Diwar 4 ft	Ghasbeed Pindwara Nichli Odan	Poor	4
3	Pakki Diwar 4 ft	Dharla Viroli Ghasbeed	Average	6
4	Pillars	Dharla Viroli Vankhand	Average	6
5	Nursery	Arathwada	Average	6

Tonk

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Tonk Forest Division. This Forest Division with 5 Forest Ranges namely Deoli, Malpura, Newai, Tonk, & Uniyara has territorial jurisdiction over the entire Tonk District.

Figure : Location of Tonk district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Tonk Forest Division for evaluation were as given in table 1

Table1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha.	Model
Deoli	Devnarayanji	2017-18	50	DFL
Mandalgarh	Pahad Kabri Khal	2019-20	50	ANR

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Tonk Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Tonk	Narayan Mata Mandir	2017-18	Pakki Diwar, 4ft.
Newai	Kucchi Basti se Narayan Kua	2018-19	Pakki Diwar, 4ft.
Malpura	Van Rakshak Chowki Nursery Tordi	2018-19	Forest Chowki
Newai	Vankhand Nohta (Chowki ke pas)	2019-20	Pakki Diwar, 4ft.
Newai	Sanjayvan	2019-20	Nursery

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1- Devnarayanji site in Deoli range - N 25.754682 and E 75.604597.

The selected plantation was carried out on 50ha of land at at Devnarayan ji in Deoli range during the year 2017-18. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 100% evaluation. The soil was hard rocky & muram.

Growth of planted seedling

3.1.2. Treatment plan before sowing:

The topography of the area was undulating. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 35000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

Natural Vegetation at the plantation Site

3.1.3. Health & Damages of Plantation:

The growth of planted seedlings at the site was good. Grazing by stray animals & cattle and destruction by Neel gai was reported at the site. Also, widely growth of termite, soil quality and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was satisfactory.

Ditch Fencing

3.1.4 Species Planted: The selected tree species under plantation were 7. Seedlings of *Acacia nilotica* (desi babool), *Acacia leucophoelea (*ronj), *Holoptelea integrifolia* (Churel), Dalbergia sissoo (Shisham), *Zizyphus mauritiana (*Ber), Azadirachta indica, (neem) and Ailanthus excelso (Ardu) were planted.

In total 35000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 700 plants per hectare have been planted. Thus, total number of plants planted was 35000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Ronj & desi babool which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. The growth of survived plants was good.

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. One time watering to plant was provided to 6000 plants. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: Ronj plants were found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species *kumatha, desi babool and Ardu* were sown in as well as along the trenches and on the thanwlas. The result of sowing seeds was good.

3.1.8. Protection Work: The selected DFL model plantation had ditch fencing of 3825 RMT having depth of 1.2 meters. 200 meter silting of ditch fencing was reported at the site. Fencing was fully effective in controlling the biotic pressure.

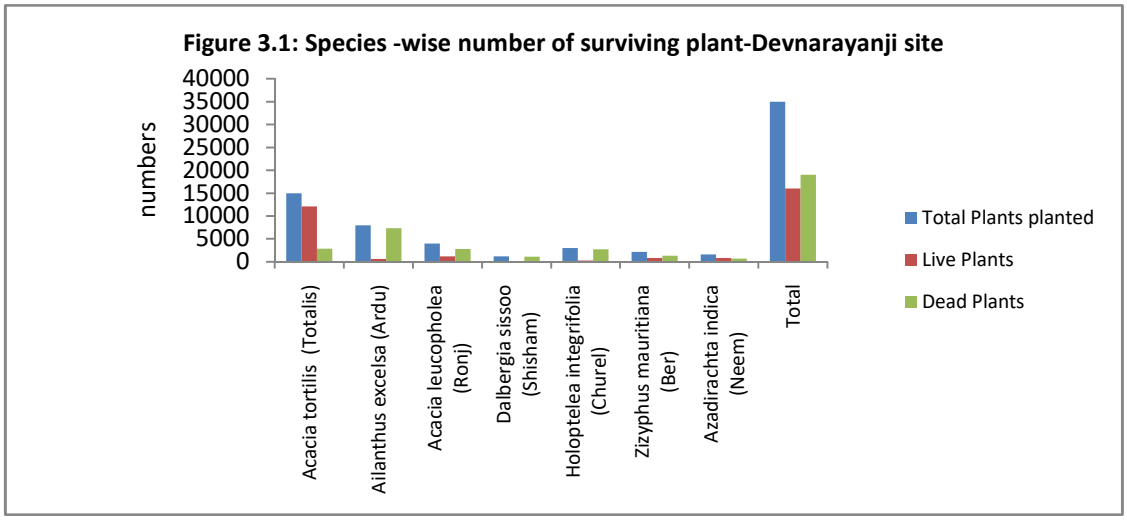
3.1.9. Soil and Water Conservation Measures: There are 12000 RMT (Width & depth -0.45 meter) Contour trenches in the form of water harvesting structures present in the entire plantation area. 2 PCT/ Nadi were reported at the site.

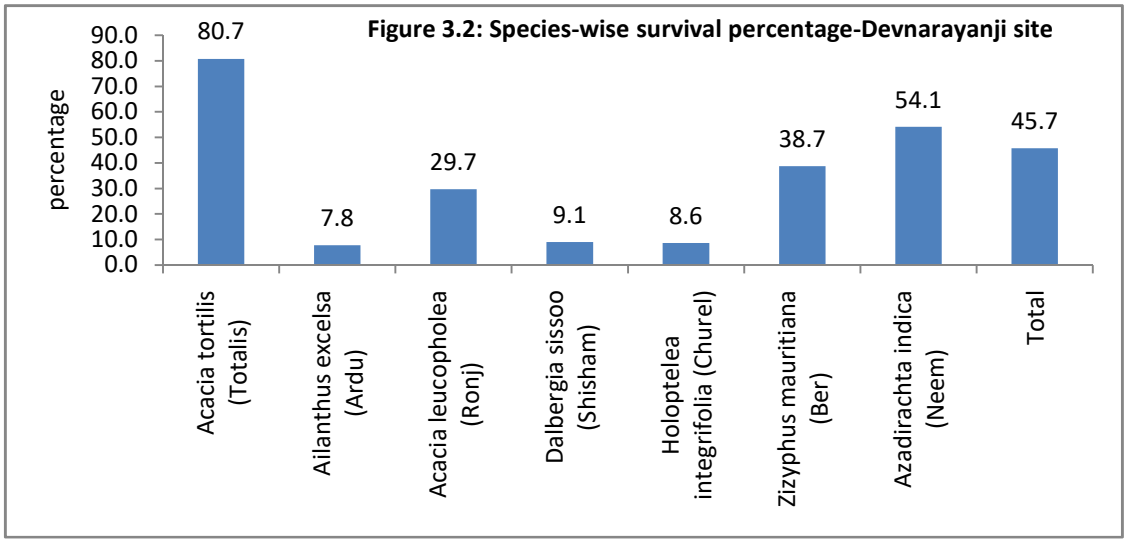
3.1.10. Observations Recorded: Under this model, 700 plants per hectare were planted during plantation. **Based on for as 100 percent**

counting, plants survival was 45.73% at the site. Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 35000 plants comprising seven species were planted in the 50 ha plantation area.

Table 3.2: Status of Planted Seedlings at the site-Devnarayanji Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average gbh (mm)
Acacia tortilis (Totalis)	15000	12109	2891	80.73	190	160
Ailanthus excelsa (Ardu)	8000	625	7375	7.81	155	105
Acacia leucopholea (Ronj)	4000	1187	2813	29.68	110	105
Dalbergia sissoo (Shisham)	1200	109	1091	9.08	130	85
Holoptelea integrifolia (Churel)	3000	259	2741	8.63	90	63
Zizyphus mauritiana (Ber)	2200	851	1349	38.68	120	105
Azadirachta indica (Neem)	1600	866	734	54.13	125	70
Total	35000	16006	18994	45.73	131.4	99.0





3.1.11. GPS Location and KML file: The selected DFL model under CAMPA plantation site measured 50 ha as per kml map.

3.1.12. Budget and expenditure

Table 3.3: Cost-estimate & expenditure (Year-wise)

	Cost estimate (Rs.)				Expenditure (Rs.)			
Year	**Plantation**	**SMC works**	**Boundary wall/Fencing**	**Total**	**Plantation**	**SMC works**	**Boundary wall/Fencing**	**Total**
2016-17	610755	81112	865283	1557150	539980	160807	819625	1520412
2017-18	1385963	136037	0	1522000	139302	131569	0	1521871
2018-19	479450	0	0	479450	424828	0	54595	479423
2019-20	146260	0	87290	233550	118858	0	114555	233413
2020-21	143564	0	114686	258250	135908	0	114686	250594
2021-22	155792	0	115858	271650	147979	0	112656	260635
Total	2921784	217149	1183117	4322050	1506855	292376	1216117	4266348

3.2.1. Site2- Newai Pahad Kabri Khal site in Newai range- N 26^{0}21'08.05" and E 75^{0}54'04.89"

The selected plantation was carried out on 50 hac. of land at Newai Pahad Kabri Khal in Newai range during the year 2019-20. The activities were done under the ANR model.

The site was a forest land and soil was domat & sandy.

Newai Pahad Kabri Khal plantation site

3.2.2. Treatment plan before sowing: The topography of the area was plain & sand dunes. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was poor. Grazing by stray animals & cattle and destruction by Neel gai was reported at the site. Also, widely growths of termite, scarcity of water obstruct the growth of planted seedlings. Apart from it, illegal mining by human beings was also reported. The status of guarding/ fencing at the site was poor. The site was complete failure due to poor growth & mortality of seedlings planted.

3.2.4. Species Planted: The selected tree species under plantation were 11. Seedlings of *Acacia nilotica* (desi babool), *Holoptelea integrifolia* (Churel), *Zizyphus mauritiana (*Ber), Azadirachta indica Azadirachta indica, (neem), *Holoptelea integrifolia* (Churel), Pongamia pinnata *(Karanj),Albizia lebbek(Siras), Prosopis juliflora (Khehdi), Ficus benghalensis (Vad), Ficus religiosa (Pipal), Acacia tortilis (Totalis)* and Ailanthus excelso (Ardu) were planted.

In total 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Ronj & desi babool which can survive in harsh & dry climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. The growth of survived plants was very poor.

3.2.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.2.6. Natural Vegetation and Regeneration: Plants like kumtha, Ardu, totalis and Khejdi have been found grown naturally. The growth of the plants was satisfactory

3.2.7. Regeneration through seed sowing: Seeds of species kumtha, Khair& desi babool were sown on trenches & thanwalas. The result of seed sowing was poor. Plants from the seeds sown were rarely seen on contour trenches.

3.2.8. Protection Work: The selected ANR model plantation had ditch fencing of 3000 RMT having width at the top-1.50 meters, width at the bottom-0.9 meter & depth 1.2 meters. Present condition of fencing was poor. It was badly damaged & silted at many places. Ditch fencing was not at all effective in controlling the biotic pressure.

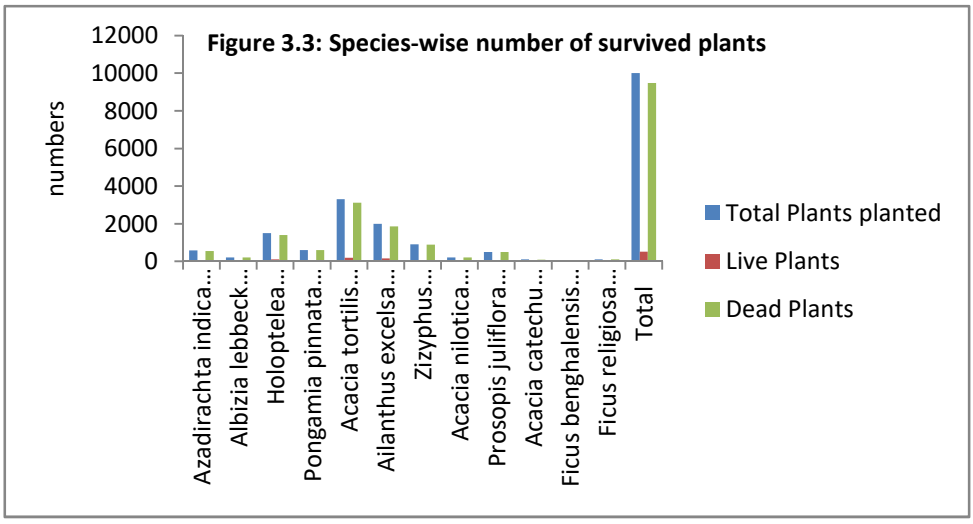
3.2.9. Soil and Water Conservation Measures: There are 4400 RMT Contour trenches, 7945 RMT SGT, 4753.62 cu. m earthen check dam and 5275.28 cu. m PCT/ Nadi in the form of water harvesting structures present in the entire plantation area

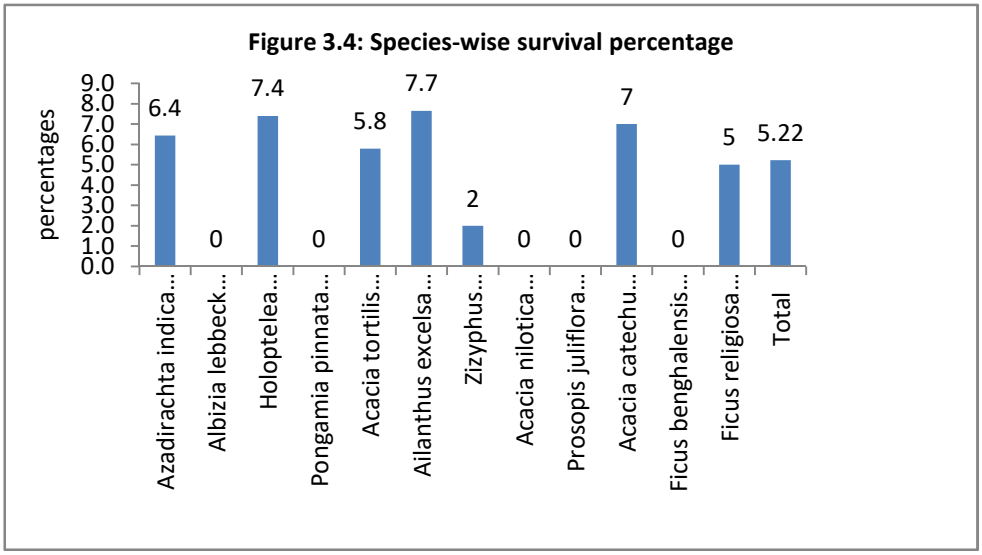
3.2.11. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 5.2% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was very poor. A total of 10000 plants comprising eleven species were planted in the 50 hectare plantation area.

Measurement of each of the survived species had been taken on randomly selected plants. The measurement has been conducted at various places of the plantation area to get proper average measurement of collar girth & height.

Table 3.3: Status of Planted Seedlings at the site-Kabri khal Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)	Average height of plants (cm)	Average collar (mm)
Azadirachta indica (Neem)	575	37	538	6.43	90	85
Albizia lebbeck (Kala Siras)	200		200	0.00	0	0
Holoptelea integrifolia (Churel)	1500	111	1389	7.40	92	90
Pongamia pinnata (Karanj)	600		600	0.00	0	0
Acacia tortilis (Totalis)	3300	191	3109	5.79	93	90
Ailanthus excelsa (Ardu)	2000	153	1847	7.65	98	93
Zizyphus mauritiana (Ber)	900	18	882	2.00	95	90
Acacia nilotica (Desi babool)	200		200	0.00	0	0
Prosopis juliflora (Khejri)	500		500	0.00	0	0
Acacia catechu (Khair)	100	7	93	7.00	95	70
Ficus benghalensis (Vad)	25		25	0.00	0	0
Ficus religiosa (Pipal))	100	5	95	5.00	94	80
	10000	522	9478	5.22	94	85

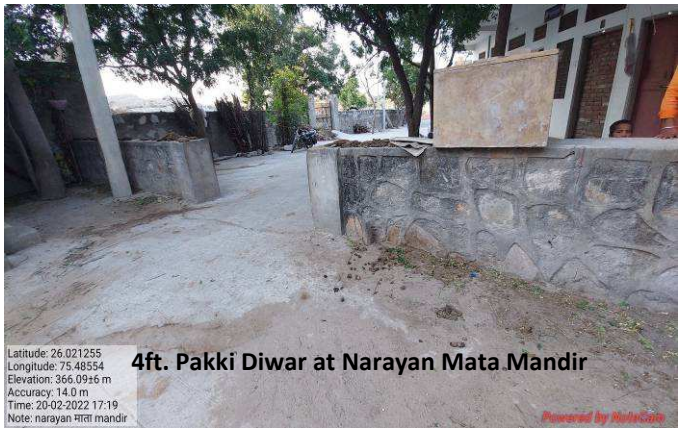




3.2.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 ha as per kml map.

4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft. at Narayan Mata Mandir, Tonk range



4ft. Pakki Diwar at Narayan Mata Mandir

At Narayan Mata Mandir in Tonk range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 273 m length as per MB. In actual 273 m pakki diwar was constructed at the site. The width of the diwar was 0.38 meter & height was 1.20 meter. Construction work appeared to be good and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment. Also, no crack was appeared in the pakki diwar. GPS location of this area was 26.02124 N and 75.48552 E. The expenditure incurred for constructing this wall was Rs. 400395 (as per MB) against the estimated budget of Rs. 648000.

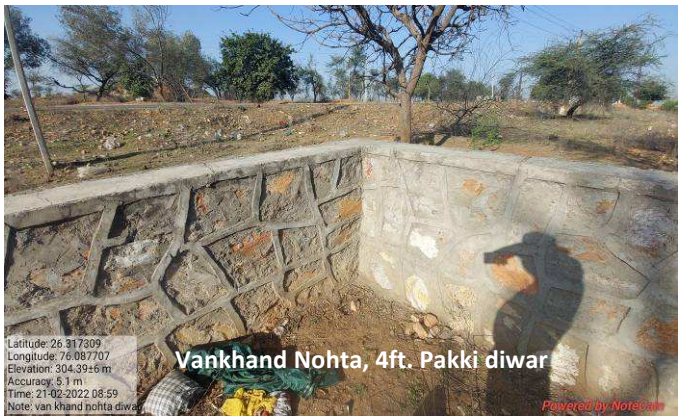
Site 2- Pakki Diwar 4 Ft at Kucchi Basti se Narayan Kua Newai range

Kucchi basti se Narayan Kua site in the Newai range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 4 ft and 500 m length as per MB. In actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.65 meter & height was 1.20 meters. Construction work appeared to be good and useful. However, the present condition of wall was poor. Due to heavy soil cut off near to the wall of pakki diwar, the foundation of the wall was clearly visible. Thus, soil should be

immediately filled in order to avoid falling of pakki diwar. GPS location of this area was 26.36316 N and 75.90402 E. The expenditure incurred for constructing this wall was Rs. 1195352 (as per MB) against the estimated budget of Rs. 1200000.

Site 3- Pakki Diwar 4 Ft at Vankhand Nohta (Chowki ke pas) Newai range

Vankhand Nohta (Chowki ke pas) site in the Newai range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 400 m length as per MB. In actual 400 m pakki diwar was constructed at the site. The width of the diwar was 0.65 meter & height was 1.20 meter. Construction work appeared to be good and useful. However, the present condition of wall was average. The pakki diwar 4ft was constructed to avoid encroachment & illegal mining. There should be provision for repairing of pakki diwar. GPS location of this area was 26.31897 N and 76.08641 E. The expenditure incurred for constructing this wall was Rs. 830069 (as per MB) against the estimated budget of Rs. 1200000.



Site 4- Van Rakshak Chowki Tordi Nursery Malpura range

Van Rakshak Chowki at Tordi nursery site in Malpura range has been evaluated. The Van Rakshak Chowki was constructed in the year 2018-19. Site selection for construction of Van Rakshak Chowki was adequate. Construction work appeared to be good and useful. The Van Rakshak Chowki created under CAMPA was in use & properly maintained. GPS location of this area was 26.22356 N and 75.41862 E. The expenditure incurred for constructing the Van Rakshak Chowki was Rs. 549850 (as per MB) against the estimated budget of Rs. 550000.

Site 5- Sanjayvan Nursery Newai range

At Sanjayvan nursery in Newai range no expenditure had been incurred under CAMPA in the year 2019-20

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Tonk division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Devnarayanji	DFL	50	45.73	5
2	Newai pahad kabri khal	ANR	50	5.22	4

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction
1	Pakki Diwar 4 ft	Narayan Mata Mandir	Good
2	Pakki Diwar 4 ft	Kucchi basti se Narayan Kua	Good
3	Pakki Diwar 4 ft	Vankhand Nohta (Chowki ke pas)	Average
4	Van Rakshak Chowki Nursery Tordi	Van Rakshak Chowki	Good

Udaipur North

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Udaipur North Forest Division. This Forest Division with 4 Forest Ranges namely Bhindar, Gogunda, Sayra & Udaipur has territorial jurisdiction over the entire Udaipur District.

Figure : Location of Udaipur district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Udaipur North Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Gogunda	Naal Mokhi-D	2019-20	40	ANR	100%
Udaipur	Banadiya	2018-19	95.69	NFL	10
Udaipur	Nagar Van Udyan	2017-18	80	ANR	100%

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Udaipur North Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)	
Kotada	Kotada	2017-18	Rescue Centre	Cancelled by division
Udaipur East	Kaler	2017-18	Pakki Diwar 4 ft	Work completed
Udaipur East	Segara	2019-20	Pakki Diwar 4 ft	Work completed
Kukawas	Kukawas	2019-20	Nursery	Work completed

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Naal Mokhi-D site in Gogunda range -N 24.714506 and E 73.493124

The selected plantation was carried out on 40 hac. of land at Naal Mokhi-D in Gogunda range during the year 2019-20. The activities were done under the Assissted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was brown & black clayey.

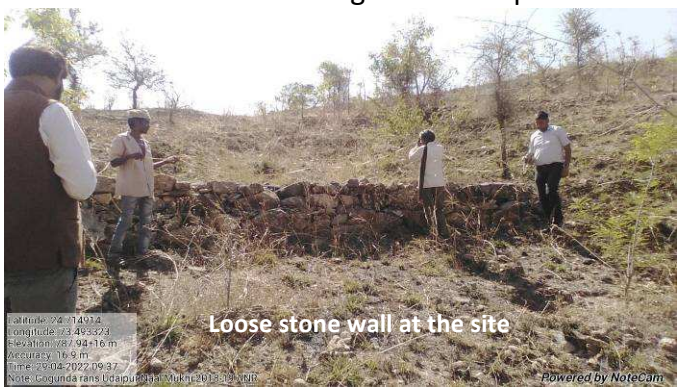
Measuring collar girth of the plant

3.1.2. Treatment plan before sowing: The topography of the area was hilly. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 8050 pits were dug for plantation in total 40 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals &cattle and destruction by Neel gai was reported at the site. Also, widely growth of termite & attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.1.4. Species Planted: The selected tree species under plantation were fourteen. Seedlings of Acacia tortilis (Totalis), Dendrocalamus strictus (Baans), Emblica officinalis (Amla), *Holoptelea integrifolia* (Churel), Acacia catechu (Khair), Zizyphus mauritiana (Ber), Wrightia tinctoria (Khirani), Ficus racemosa (Hawan), Syzygium cumini (Jamun), Mangifera indica(Mango), Cassia fistula (Amaltas), Wrightia tinctoria (Khirani), Bombax ceiba (Semal), Aegle marmelos (Bilpatra)Madhuca longifolia (Mahua) and Pongamia pinnata (Karanj) were planted.

In total 8050 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.



Loose stone wall at the site

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 8050 for 40 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Churel, Bamboo, Ber & Anwla which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: Ronj, Khair, Jamun, Dhonk, Salar, Bad and Godal were the plants found grown naturally in this area. The growth of the plants was good.

3.1.7. Regeneration through seeds sowing: Seeds of species *Khair, Kumtha, Khakhra, Baheda and Mahuwa* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.** The result of sowing was seen on contour trenches and thanwalas.

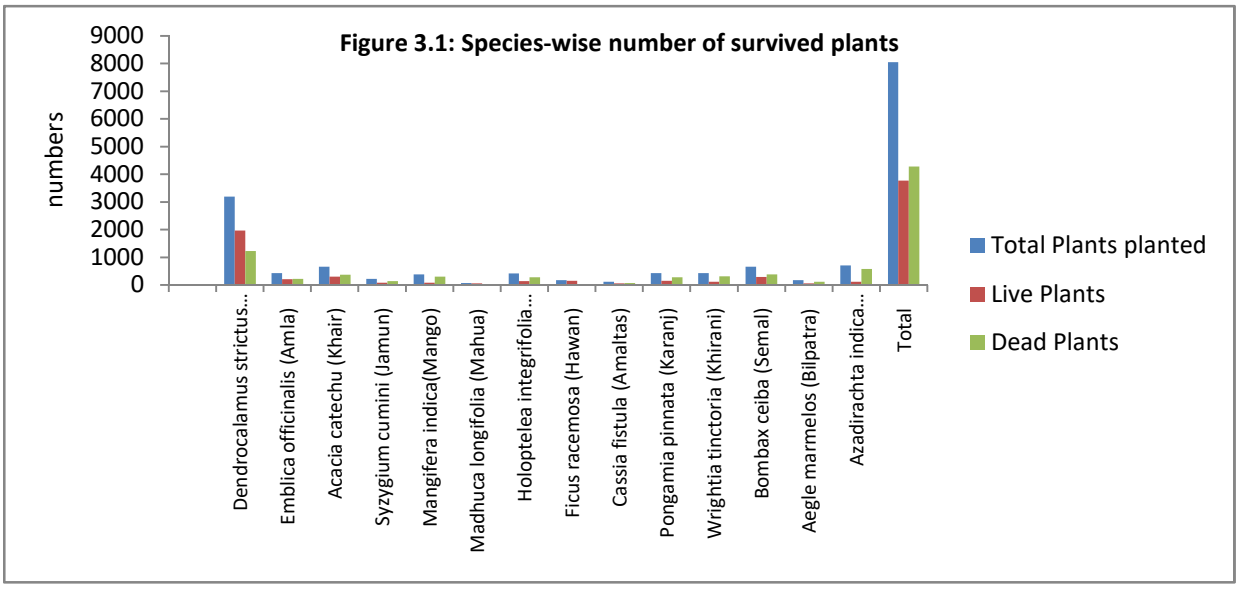
3.1.8. Protection Work: The selected ANR model plantation had loose stone fencing of 2100 RMT having width at the top-0.6 meter, width at the bottom-0.6 meter & height 1.2 meters.

3.1.9. Soil and Water Conservation Measures: There are 3200 RAT Contour trenches, 3700 RMT SGT, 800 RMT Deep CCT & and 318 cu. meter loose stone checkdam in the form of water harvesting structures present in the entire plantation area.

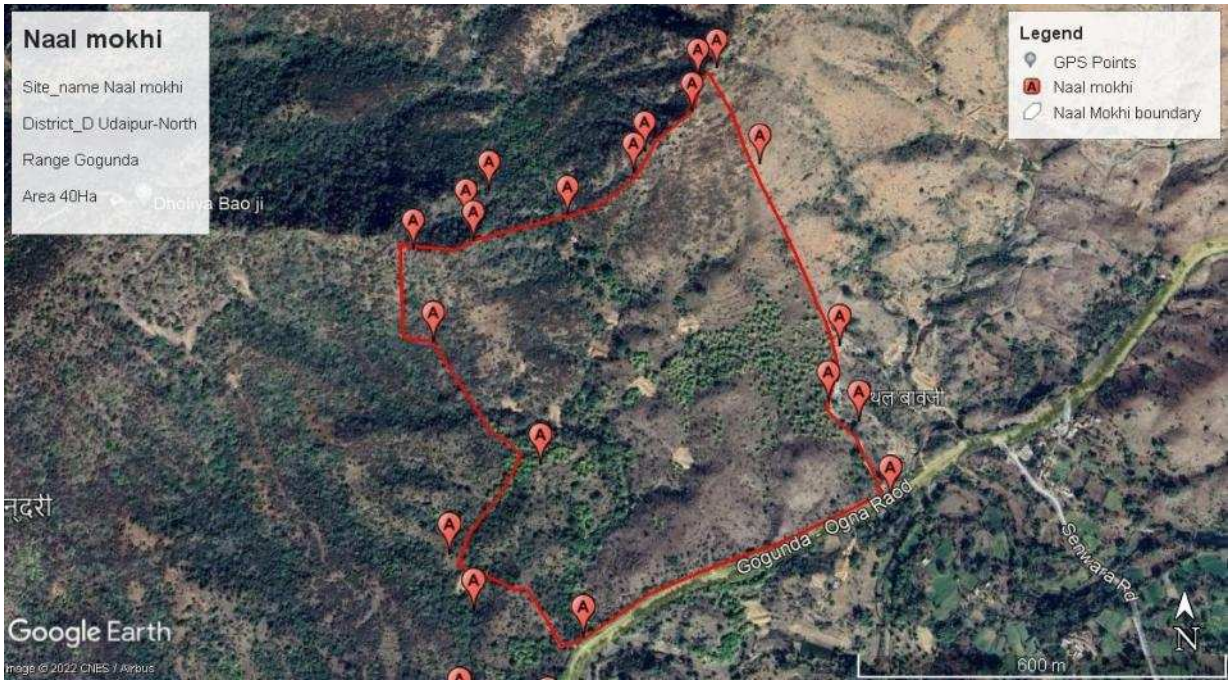
3.1.10. Observations Recorded: Under this model, 200 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 46.80% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 8050 plants comprising fourteen species were planted in the 40 hectare plantation area.

Table 3: Status of Planted Seedling at the site-Naal Mokhi-D Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)
Dendrocalamus strictus (Baans)	3190	1966	1224	61.63
Emblica officinalis (Amla)	425	204	221	48.00
Acacia catechu (Khair)	660	295	365	44.70
*Syzygium cumini (*Jamun)	225	85	140	37.78
Mangifera indica(Mango)	380	79	301	20.79
*Madhuca longifolia (*Mahua*)*	70	60	10	85.71
Holoptelea integrifolia (Churel)	420	144	276	34.29
Ficus racemosa (Hawan)	170	155	15	91.18
*Cassia fistula (*Amaltas)	120	57	63	47.50
Pongamia pinnata (Karanj)	430	151	279	35.12
Wrightia tinctoria (Khirani)	425	112	313	26.35
Bombax ceiba (Semal)	660	284	376	43.03
Aegle marmelos (Bilpatra*)*	175	57	118	32.57
Azadirachta indica (Neem&other)	700	118	582	16.86
Total	8050	3767	4283	46.80



3.1.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 40 Hac as per kml map.



3.1.12. Budget and expenditure

Table 3.3 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2018-19				1413400				1395828
2019-20				388960				350699
2020-21				138280				137838
2021-22				77640				77544
Total				2018280				1961959

3.2.1. Site 2- Banadiya site in Udaipur range -N 24°38.568 and E 73°33.846

The selected plantation was carried out on 95.69 hac. of land at Banadiya in Udaipur East range during the year 2018-19. The activities were done under the Non Forest Land (NFL) model. The site was a forest land and selected for 10% evaluation. The soil was hardy clay soil.

3.2.2. Treatment plan before sowing: The topography of the area was hilly. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size

0.45*0.45*0.45 cm^3 have been made. Total 47845 pits were dug for plantation in total 95.69 hac of land.The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was excellent. Grazing by stray animals & cattle and destruction by Neel gai, rabbits and porcupine was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.

Growth of planted seedling at the site

3.2.4. Species Planted: The selected tree species under plantation were fourteen. Seedlings of Dendrocalamus strictus (Baans), Pongamia pinnata (Karanj), Holoptelea integrifolia (Churel), Wrightia tinctoria (Khirani), Syzygium cumini (Jamun), Butea monosperma (Palash), Cassia fistula (Amaltas), Emblica officinalis (Amla), Acacia catechu (Khair), Acacia leucopholea (Ronj), Terminalia bellirica (Baheda), Zizyphus mauritiana (Ber) and Tectona grandis (Sagwan)were planted.

In total, 47845 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 500 plants per hectare have been planted. Thus, total number of plants planted was 47845 for 95.69 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Karanj, Bamboo, Sagwan &Amla which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was average.**

Natural Vegetation at the site

3.2.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.2.6. Natural Vegetation and Regeneration: *Khirni, Ronj, Tendu & Khakhara* were the plants found grown naturally in this area. The growth of the plant was good.

3.2.7. Regeneration through seeds sowing: Seeds of species *Neem, Khirni, khakhra and Ratanjot* were sown in as well as along the trenches and on the thanwlas. **The result of sowing was good.**

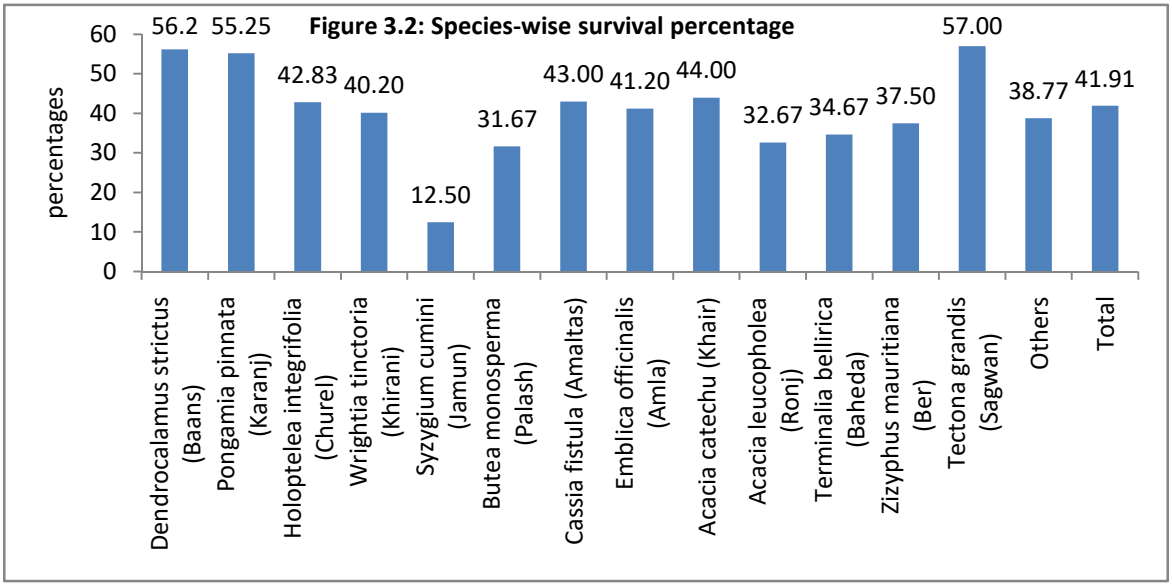
3.2.8. Protection Work: The selected NFL model plantation had loose stone fencing of 4240 RMT having width at the top-0.6 meters, width at the bottom-0.6 meters & height 1.2 meters.

3.2.10. Soil and Water Conservation Measures: There are 38276 RMTContour trenches, 1435 RMT Contour Dykes & 1136 cu.m loose stone checkdam in the form of water harvesting structures present in the entire plantation area.

3.2.11. Observations Recorded: Under this model, 500 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 41.91% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 47845 plants comprising fourteen species were planted in the 95.69 hectare plantation area.

Table 3.1: Status of Planted Seedlings at the site-Banadiya Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)
Dendrocalamus strictus (Baans)	5000	281		56.20
Pongamia pinnata (Karanj)	4000	221		55.25
Holoptelea integrifolia (Churel)	6000	257		42.83
Wrightia tinctoria (Khirani)	5000	201		40.20
*Syzygium cumini (*Jamun)	2000	25		12.50
*Butea monosperma (*Palash)	3000	95		31.67
*Cassia fistula (*Amaltas)	2000	86		43.00
Emblica officinalis (Amla)	5000	206		41.20
Acacia catechu (Khair)	5250	231		44.00
Acacia leucopholea (Ronj)	3000	98		32.67
Terminalia bellirica (Baheda)	1500	52		34.67
Zizyphus mauritiana (Ber)	2000	75		37.50
Tectona grandis (Sagwan)	1000	57		57.00
Others	3095	120		38.77
Total	47845	2005	45840	41.91



3.2.11. GPS Location and KML file: The selected NFL model under CAMPA plantation site measured 95.69 Hac as per kml map.

3.3.1 Site 3- Nagar Van Udhyan Amberi site in Udaipur range -N 24°39'52.9" and E 73°.43'48.3"

The selected plantation was carried out on 80 hac. of land at Nagar Van Udhyan Amberi site in Udaipur range during the year 2017-18. The activities were done under the Assissted Natural Regeneration (ANR) model. The site was a forest land and selected for 100% evaluation. The soil was hard kanker murad soil.

3.3.2 Treatment plan before sowing: The topography of the area was hilly. Hence, as per availability of soil digging of pit

has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 80 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.3.3 Health & Damages of Plantation: The growth of planted seedlings at the site was excellent. Grazing by stray animals &cattle and destruction by Neel gai was reported at the site. Also, widely growth of termite & attack by pest obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.

3.3.4. Species Planted: The selected tree species under plantation were twenty one. Seedlings of Peltafarm, Gulmohar, Bauhinia sp. (Kachnar), Cassia sp. (K.Shyama), Spethodia, Neem Chameli, Cassia fistula (Amaltas), Jakrenda, Kaner, Bogenviliya, Gultara, Kaser Adusa, Wrightia tinctoria (Khirani), Holoptelea integrifolia (Churel), Azadirachta indica (Neem), Aegle marmelos (Bilpatra), Emblica officinalis (Amla), Commiphora sp. (Guggal), Acacia catechu (Khair) and Terminalia arjuna (Arjun) were planted.

In total 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 125 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 80 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Bogenvillia, Gultara & Khair which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was excellent.**

3.3.5. Watering of plants: The provision of watering to roadside planted seedling was reported twice in a month at the site. Watering to other planted seedling was not reported at the site. The plantation works carried out here are totally based on rain water.

3.3.6. Natural Vegetation and Regeneration: Ronj, Imli, Bamboo, Khirni, Salar, Semal and Bel were the plants found grown naturally in this area. The growth of the plant was good.

3.3.7. Regeneration through seeds sowing: Seeds of species *Khair, Neem & Khakhra,* were sown in as well as along the trenches and on the thanwlas. **The result of sowing seeds was good.** The result of sowing seeds was seen on contour trenches and thanwalas.

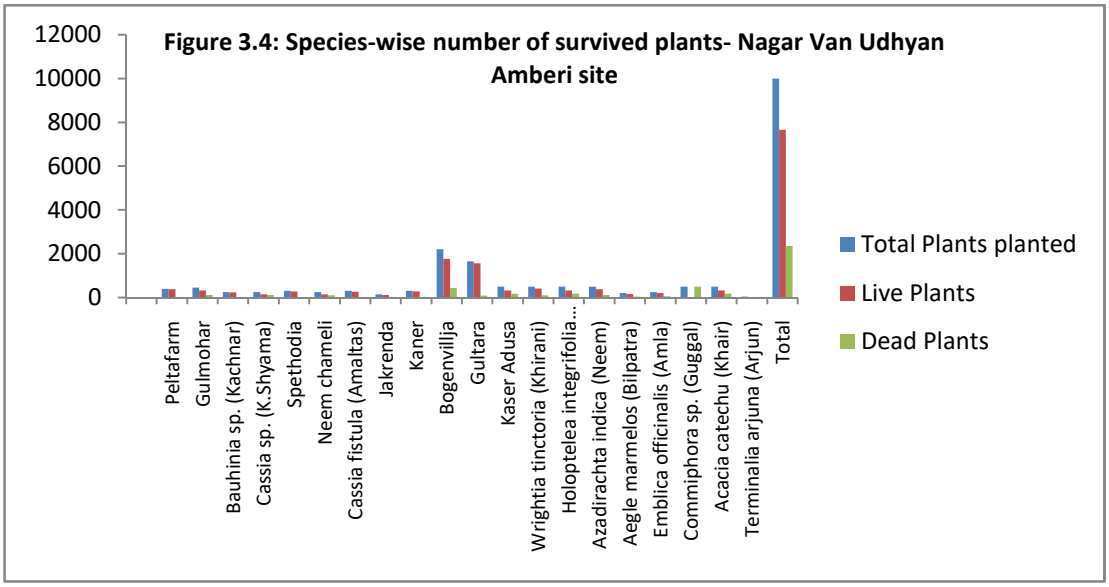
3.3.8. Protection Work: The selected ANR model plantation had pucca stone fencing of 366 RMT & barbed wire fencing of 798 RMT.

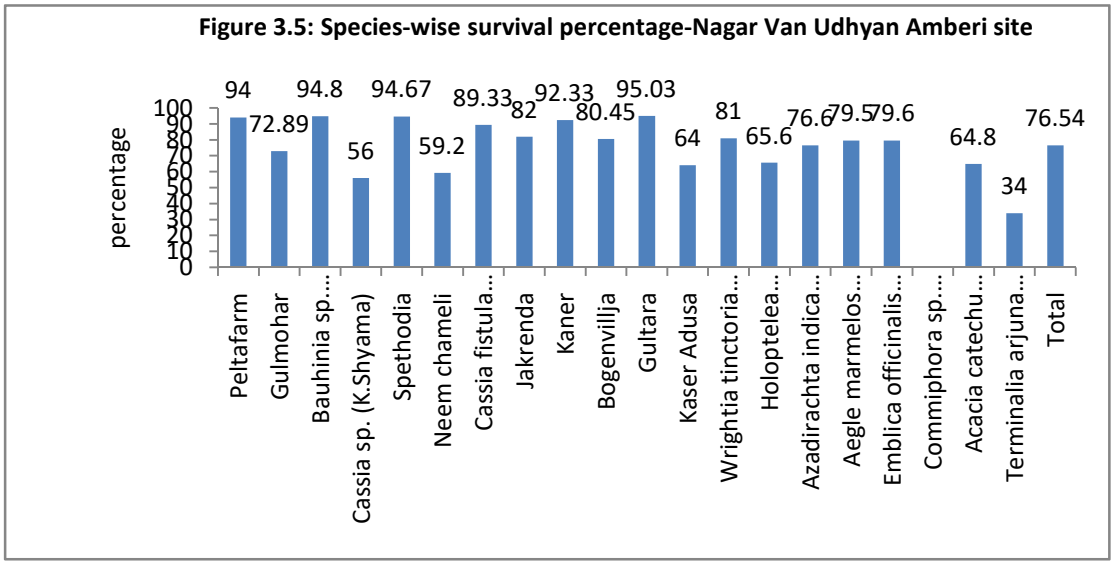
3.3.9. Soil and Water Conservation Measures: There are 8000 RMT Contour trenches, 18 Gabion and 553 cu. meter loose stone checkdam in the form of water harvesting structures present in the entire plantation area.

3.3.10. Observations Recorded: Under this model, 125 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 76.54% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 1000 plants comprising twenty one species were planted in the 80 hectare plantation area.

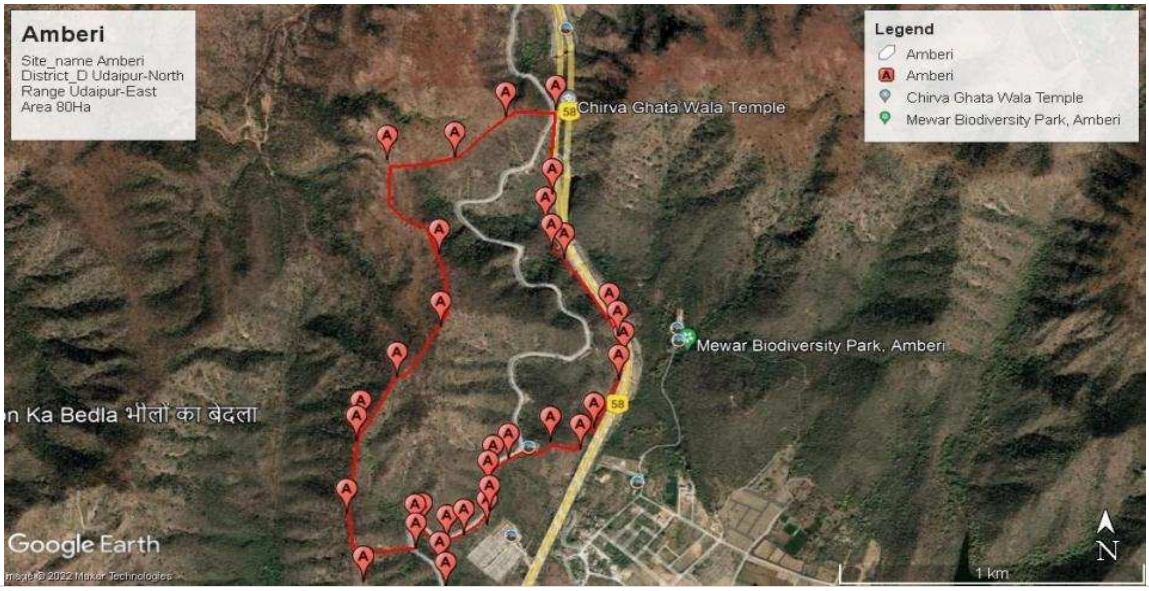
Table 3.3: Status of Planted Seedlings at the site- Nagar Van Udhyan Amberi Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)
Peltafarm	400	376	24	94.00
Gulmohar	450	328	122	72.89
Bauhinia sp. (Kachnar)	250	237	13	94.80
Cassia sp. (K.Shyama)	250	140	110	56.00
Spethodia	300	284	16	94.67
Neem chameli	250	148	102	59.20
Cassia fistula (Amaltas)	300	268	32	89.33
Jakrenda	150	123	27	82.00
Kaner	300	277	23	92.33
Bogenvillya	2200	1770	430	80.45
Gultara	1650	1568	82	95.03
Kaser Adusa	500	320	180	64.00
Wrightia tinctoria (Khirani)	500	405	95	81.00
Holoptelea integrifolia (Churel)	500	328	172	65.60
Azadirachta indica (Neem)	500	383	117	76.60
Aegle marmelos (Bilpatra)	200	159	41	79.50
Emblica officinalis (Amla)	250	199	51	79.60
Commiphora sp. (Guggal)	500	0	500	0.00
Acacia catechu (Khair)	500	324	176	64.80
Terminalia arjuna (Arjun)	50	17	33	34.00
Total	10000	7654	2346	76.54





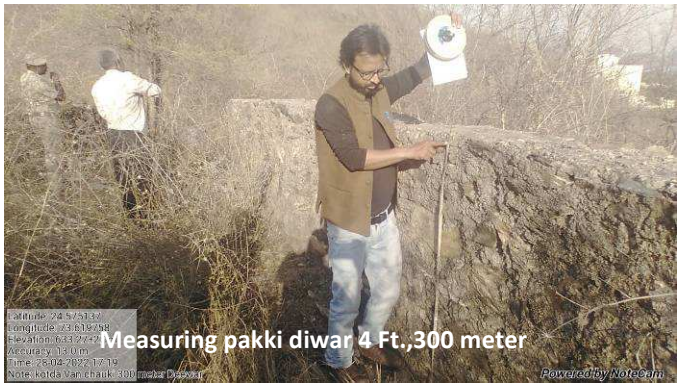
3.2.11 GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 80 Hac as per kml map.



4. Results for asset sites

4.1. Site 1- PakkiDiwar 4 Ft at Kaler, Udaipur East Range

At Kaler in Udaipur East range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 1500 m length as per MB. Also, in actual 1500 m pakki diwar was constructed at the site. The wall was constructed in two parts viz. 1200 meters & 300 meters. The width of the diwar was 0.45 meters & height was 1.20 meter. Construction work appeared to be average and useful.



The construction of Pakki Diwar 4 ft helped in preventing encroachment. GPS location of this area was 24.58110 N and 73.63066 E (1200m), 24.575415 N and 73.617444 E (300m).The expenditure incurred for constructing this wall was Rs. 3028054(as per MB) against the estimated cost of Rs.3596143.

Site 2- Pakki Diwar 4 Ft at Segra, Udaipur East Range

At Segra in Udaipur East, the pakk idiwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20.The wall dimensions were 4 ft and 260 m length as per MB. Also, in actual 260 m pakki diwar was constructed at the site. The wall was constructed in three parts viz. 160 meters, 85 meters & 15 meters. The width of the diwar was 0.50 meter & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment. GPS location of this area was 24.61625 N and 73.77171 E. The expenditure incurred for constructing this wall was Rs. 525530 (as per MB) against the estimated cost of Rs. 6.24 lac.

Site 3- Nursery at Range office Kukawas, Kukawas range

At Range office Kukawas in Kukawas range, the nursery has been evaluated. The nursery at Range office Kukawas was under category of development of existing nursery. The nursery was found operational & useful at the time of visit. Adequate land & other infrastructure required for development of nursery was available. The status of nursery at

the time of third party visit was excellent. Work undertaken in the nursery with support from CAMPA was pipeline repair & upgradation. The pipeline upgraded is used for betterment of watering system in the nursery. Total beds available at the nursery were 65 (16 pucca beds & 49 Kutcha beds). GPS location of this area was 24.517927 N and 73.060619 E. The expenditure incurred for development of nursery was Rs. 47140 (as per MB) against the estimated budget of Rs. 50,000.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Udaipur North division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Naal Mokhi	ANR	40	46.80	5
2	Banadiya	NFL	95.69	41.90	5
3	Amberi	ANR	80	76.54	8

* <5: poor (below 50%), 6: average(50-60%), 7-good (60-70%), 8: very good (70-80%),9: excellent (80-90%),

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	PakkiDiwar 4 ft	Kaler	Average	6
2	PakkiDiwar 4 ft	Segra	Average	6
3	Nursery	Range Office Kukawas	Average	6

Udaipur

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Udaipur Forest Division. This Forest Division with 9 Forest Ranges namely Udaipur West, Udaipur, Salumbar, Parsad, Phalasiya, Ogana, Sarada, Kherwara & Kurabad has territorial jurisdiction over the entire Udaipur District.

Figure : Location of Udaipur district, Rajasthan

2.1. Selected Plantation Sites for Evaluation

The selected plantation sites of Udaipur Forest Division for evaluation were as given in table 1

Table 1: Plantation sites for evaluation

Forest Range	Name of Site	Year of Plantation	Ha	Model	Percent of sample
Udaipur West	RadajiBawji	2018-19	56	DFL	100%
Salumber	Jallara	2019-20	50	ANR	10

2.2. Selected Asset Sites for Evaluation

The selected asset sites of Udaipur Forest Division were as given in table 2

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Udaipur West	Hoda	2017-18	Pakki Diwar 4 ft
Kherwara	Raiyana	2018-19	Pillar
Kurbad	Vasu	2019-20	Pakki Diwar 4 ft
Sarada	Baluwa Dhan ka wara	2019-20	Pillar

3. Results and Evaluation

3.1 Plantations Evaluation

3.1.1. Site 1- Radaji Bawji site in Udaipur West range -N 24.503656 and E 73.582037

The selected plantation was carried out on 56 hac. of land at RadajiBawji in Udaipur West range during the year 2018-19. The activities were done under the Degraded Forest Land (DFL) model. The site was a forest land and selected for 100% evaluation. The soil was brown & red loamy.

3.1.2. Treatment plan before sowing: The topography of the area was hilly. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 39200 pits were dug for plantation in total 56 hac of land. The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.1.3. Health & Damages of Plantation: The growth of planted seedlings at the site was satisfactory. Grazing by stray animals &cattle and destruction by Neel gai and rats was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was poor.

3.1.4. Species Planted: The selected tree species under plantation were fourteen. Seedlings of Acacia tortilis (Totalis), Dendrocalamus strictus (Baans), Emblica officinalis (Amla), *Holoptelea integrifolia* (Churel), Acacia catechu (Khair), Zizyphus mauritiana (Ber), Wrightia tinctoria (Khirani), Ficus racemosa (Hawan), Butea monosperma (Palash), Terminalia arjuna (Arjun), Terminalia bellirica (Baheda), Albizia lebbeck (Kala Siras), Madhuca longifolia (Mahua) and Pongamia pinnata (Karanj) were planted.

In total 39200 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

Growth of planted seedling

As per the model, 700 plants per hectare have been planted. Thus, total number of plants planted was 39200 for 56 hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Churel, Ber& Anwla which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was poor.**

Measuring loose stone fencing

3.1.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.1.6. Natural Vegetation and Regeneration: Ronj, Khirni, Baheda, Ber, Semal, Neem&Desi babool were the plants found grown naturally in this area. The growth of the plants was good.

Measuring Continuous trenches

3.1.7. Regeneration through seeds sowing: Seeds of species *Khair, Katkaranj and Ratanjot* were sown in as well as along the trenches and on the thanwlas. **The result of sowing seeds was good.** The result of sowing seeds was seen on contour trenches and thanwalas.

3.1.8. Protection Work: The selected DFL model plantation had loose stone fencing of 4000RMT having width at the top-0.6 meter, width at the bottom-0.6 meter & height 1.2 meters.

Result of sowing on CCT

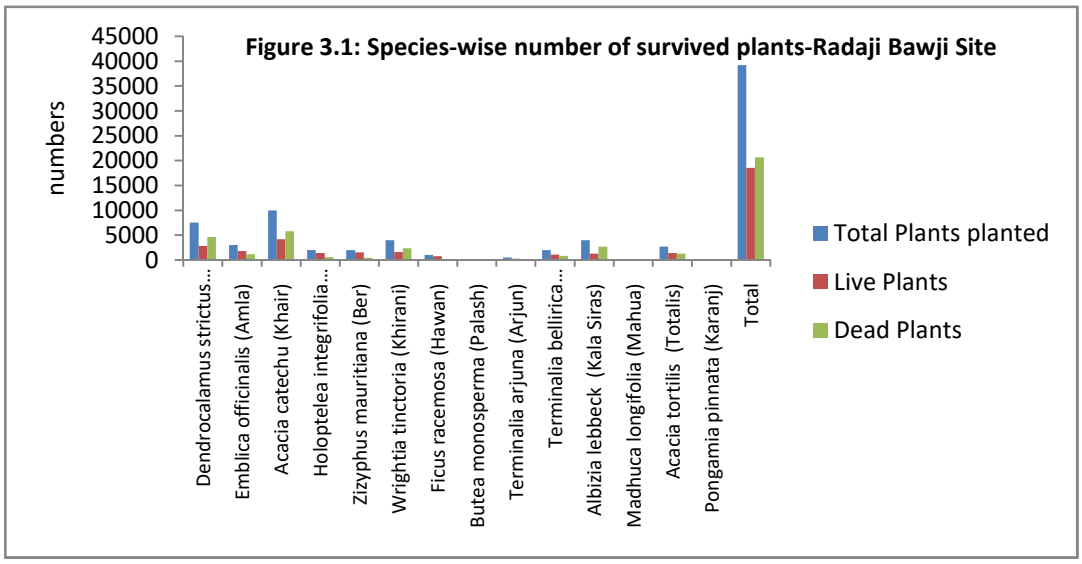
3.1.9. Soil and Water Conservation Measures: There are 16800 RMT Contour trenches, and 437 cu. meter

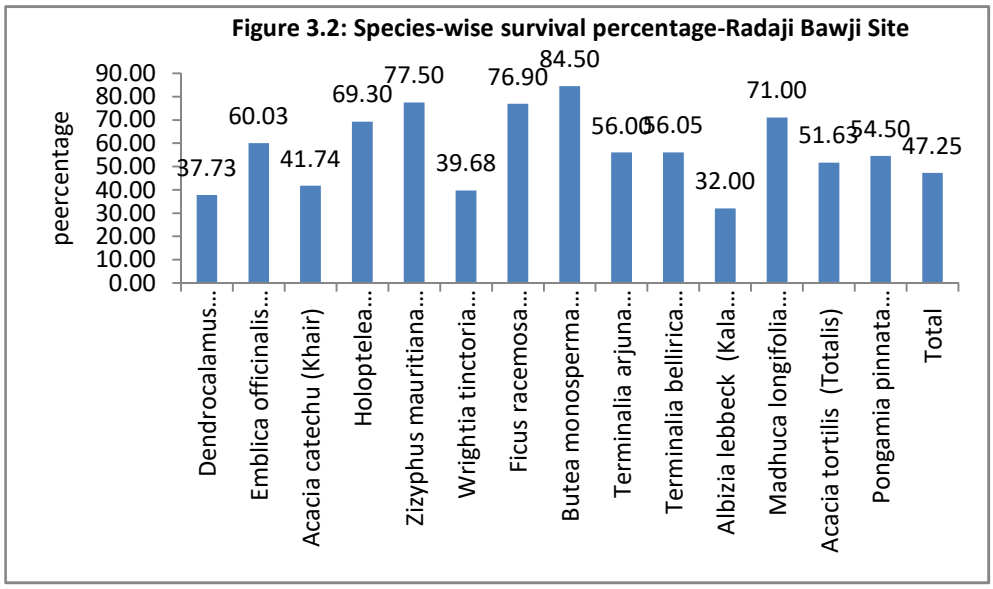
loose stone checkdam in the form of water harvesting structures present in the entire plantation area.

3.1.10. Observations Recorded: Under this model, 700 plants per hectare were planted during plantation. **Based on for as 100 percent counting, plants survival was 47.25% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 39200 plants comprising fourteen species were planted in the 56 hectare plantation area.

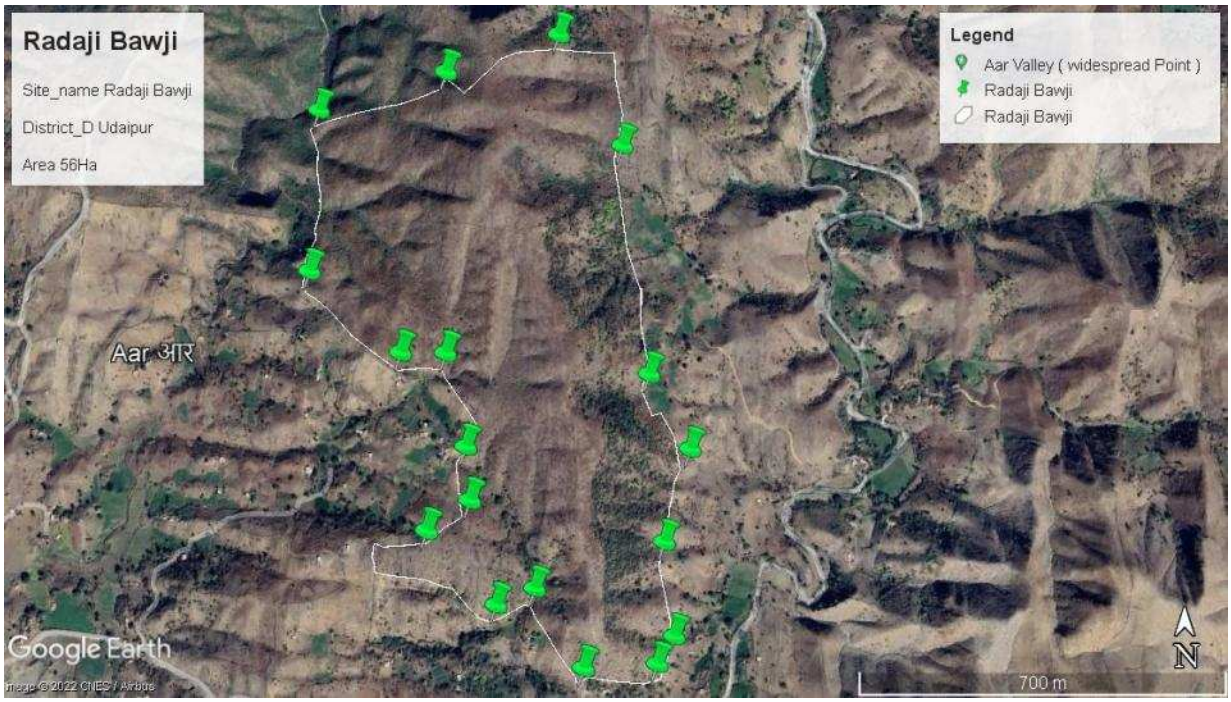
Table 3: Status of Planted Seedlings at the site-RadajiBawji Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)
Dendrocalamus strictus (Baans)	7500	2830	4670	37.73
Emblica officinalis (Amla)	3000	1801	1199	60.03
Acacia catechu (Khair)	10000	4174	5826	41.74
Holoptelea integrifolia (Churel)	2000	1386	614	69.30
Zizyphus mauritiana (Ber)	2000	1550	450	77.50
Wrightia tinctoria (Khirani)	4000	1587	2413	39.68
Ficus racemosa (Hawan)	1000	769	231	76.90
*Butea monosperma (*Palash)	200	169	31	84.50
Terminalia arjuna (Arjun)	500	280	220	56.00
Terminalia bellirica (Baheda)	2000	1121	879	56.05
Albizia lebbeck (Kala Siras)	4000	1280	2720	32.00
*Madhuca longifolia (*Mahua*)*	100	71	29	71.00
Acacia tortilis (Totalis)	2700	1394	1306	51.63
Pongamia pinnata (Karanj)	200	109	91	54.50
Total	39200	18521	20679	47.25





3.1.11 GPS Location and KML file: The selected DFLmodel under CAMPA plantation site measured 56 Hac as per kml map.



3.1.12. Budget and expenditure

Table 3.3 Cost-estimate & expenditure (Year-wise)

Year	Cost estimate (Rs.)				Expenditure (Rs.)			
	Plantation	SMC works	Boundary wall/ Fencing	Total	Plantation	SMC works	Boundary wall/ Fencing	Total
2017-18				1848850				1823009
2018-19				1705609				1688384
2019-20				568985				541323
2020-21				289395				280509
2021-22				304411				260977
Total				4717250				4594202

3.2.1. Site 2- Jallara site in Salumber range -N 24.004818 and E 74.087105

The selected plantation was carried out on 56 hac. of land at Jallara in Salumberrange during the year 2019-20. The activities were done under the Assisted Natural Regeneration (ANR) model. The site was a forest land andselected for 10% evaluation. The soil was rocky.

Plantation site Jallara

3.2.2. Treatment plan before sowing: The topography of the area was hilly. Hence, as per availability of soil digging of pit has been made for plantation**.** Pits of size 0.45*0.45*0.45 cm^3 have been made. Total 10000 pits were dug for plantation in total 50 hac of land.The seedlings were planted after applying pesticides and manure in the pit. First year the pits were made and second year during monsoon, the plantation works carried out.

3.2.3. Health & Damages of Plantation: The growth of planted seedlings at the site was excellent. Grazing by stray animals & cattle and destruction by Neel gaiand porcupine was reported at the site. Also, widely growth of termite, attack by pest and scarcity of water obstruct the growth of planted seedlings. The status of guarding/ fencing at the site was good.

Wide Growth of termite at the plantation site

3.2.4. Species Planted: The selected tree species under plantation were fourteen. Seedlings of Acacia tortilis (Totalis), Dendrocalamus strictus (Baans), Emblica officinalis (Amla), *Holoptelea integrifolia* (Churel), Acacia catechu (Khair), Syzygium cumini (Jamun), Madhuca longifolia (Mahua), Zizyphus mauritiana (Ber), Azadirachta indica (Neem),Terminalia bellirica (Baheda), Albizia lebbeck (Kala Siras), Madhuca longifolia (Mahua) and Pongamia pinnata (Karanj) were planted.

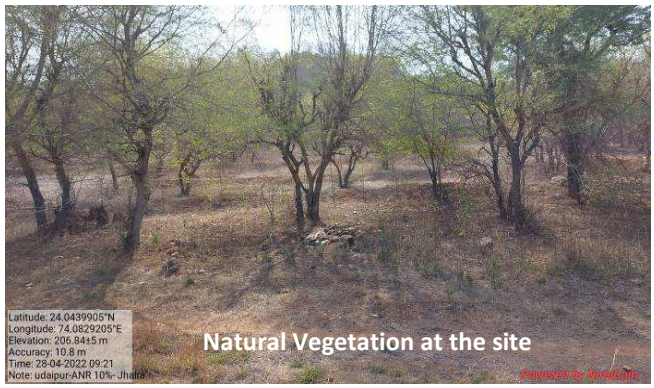
Measuring height of plant

In total, 10000 numbers of seedlings were planted at the site. Seedlings of above plants were planted. Seedlings were planted block-wise according to the availability of space in the plantation area. Technique of planting at the site was pit.

The plantation of Seedlings was mixed along with the naturally growing plants already available there. The spacing between plants was 3x3m and between row to row 4m and 5 m depending upon the condition and location as per site conditions.

As per the model, 200 plants per hectare have been planted. Thus, total number of plants planted was 10000 for 50hectare of land. Map of planting site was prepared.

As far as choice of seedlings for plantation is concerned, it was proper. The seedlings selected for plantation were Neem, Bamboo, Sagwan & Amla which can survive in the climate. The choice of plants was made as per climatic condition so that the plants can grow well and survive for longer period. **The growth of survived plants was good.**



3.2.5. Watering of plants: The provision of watering to plants was not reported at the site. The plantation works carried out here are totally based on rain water.

3.2.6. Natural Vegetation and Regeneration: *Dhok, Ronj, Khair, Khakhara* were the plants found grown naturally in this area. The growth of the plants was good.

3.2.7. Regeneration through seeds sowing: Seeds of species *Kumtha Katkaranj and Ratanjot* were sown in as well as along the trenches and on the thanwlas. **The result of sowing seeds was good.** The result of sowing seeds was seen on contour trenches and thanwalas.

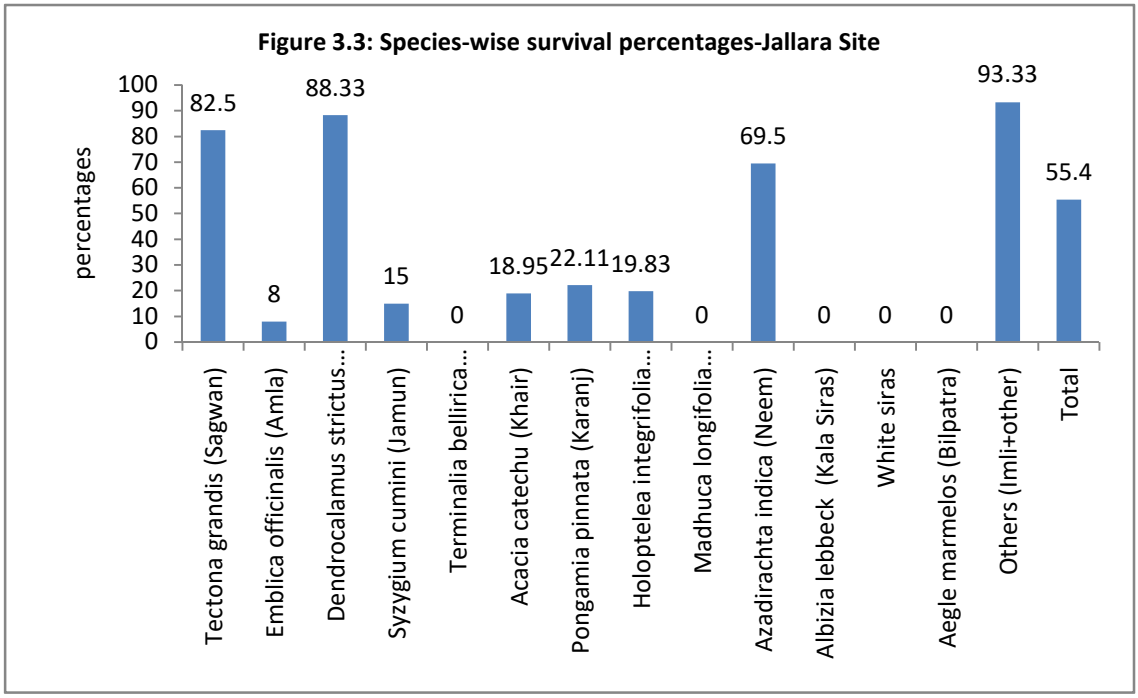
3.2.8. Protection Work: The selected ANR model plantation had loose stone fencing of 3100 RMT having width at the top-0.6 meters, width at the bottom-0.6 meters & height 1.2 meters.

3.2.9. Soil and Water Conservation Measures: There are 8265 RMT Contour trenches, MPT and loose stone checkdam in the form of water harvesting structures present in the entire plantation area.

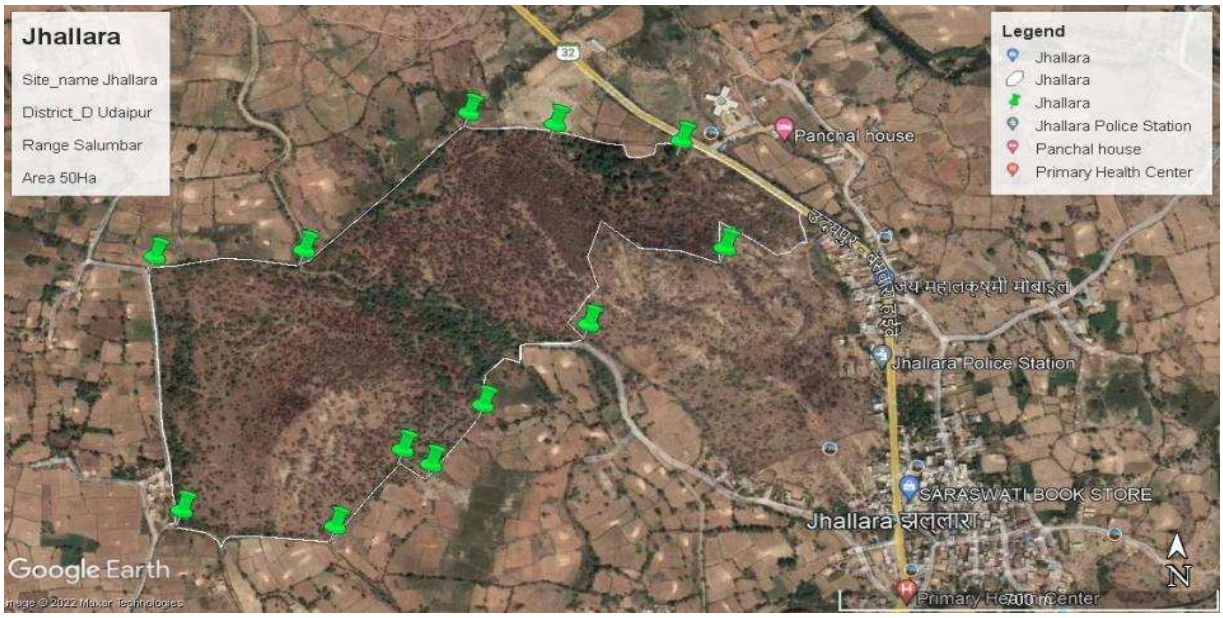
3.2.10. Observations Recorded: Under this model, 700 plants per hectare were planted during plantation. **Based on for as 10 percent counting, plants survival was 55.4% at the site.** Plant species collar girth & height was also measured. The growth of planted plants was average. A total of 10000 plants comprising fourteen species were planted in the 50 hectare plantation area.

Table 3.1: Status of Planted Seedlings at the site-Jallara Site

Species	Total Plants planted	Live Plants	Dead Plants	Survival (%)
Tectona grandis (Sagwan)	800	66		82.50
Emblica officinalis (Amla)	500	4		8.00
Dendrocalamus strictus (Baans)	3000	265		88.33
*Syzygium cumini (*Jamun)	200	3		15.00
Terminalia bellirica (Baheda)	30			0.00
Acacia catechu (Khair)	950	18		18.95
Pongamia pinnata (Karanj)	950	21		22.11
Holoptelea integrifolia (Churel)	1210	24		19.83
*Madhuca longifolia (*Mahua*)*	20			0.00
Azadirachta indica (Neem)	2000	139		69.50
Albizia lebbeck (Kala Siras)	70			0.00
White siras	50			0.00
Aegle marmelos (Bilpatra*)*	70			0.00
Others (Imli+other)	150	14		93.33
Total	10000	554	9446	55.40



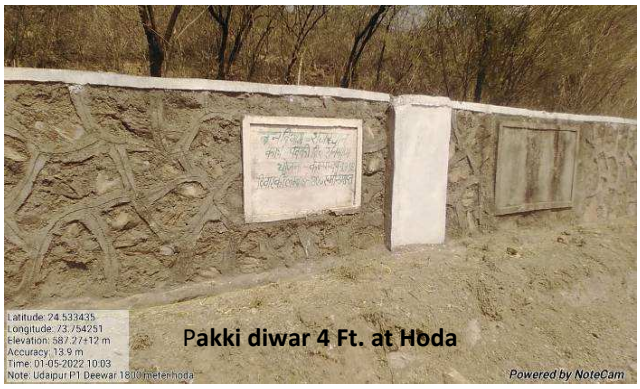
3.2.11. GPS Location and KML file: The selected ANR model under CAMPA plantation site measured 50 Hac as per kml map.



4. Results for asset sites

4.1. Site 1- Pakki Diwar 4 Ft at Hoda, Udaipur West Range

At Hoda at Udaipur West range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2017-18. The wall dimensions were 4 ft and 1800 m length as per MB. But in actual 1754.2 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meter. Construction work appeared to be average and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment. GPS location of this area was 24.539199 N and 73.736972E. The expenditure incurred for constructing this wall was Rs. 4318660 (as per MB) against the estimated cost of Rs. 43.2 lacs.



Site 2- Pillars at Raiyana, Kherwararange

At Raiyana site in Kherwara Pillars (25 Nos.) have been evaluated. The pillars were constructed in the year 2018-19. The pillars were 25 in numbers as per MB. Also, in actual 25 pillars were found & evaluated by the third party. The pillars constructed were reported average and useful. The construction of pillars helped in marking forest boundary.

Site 3- Pakki Diwar 4 Ft at Vasu, Kurbad Range

At Vasu in Kurbad range, the pakki diwar 4 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 4 ft and 600 m length as per MB. But in actual 605.23 m pakki diwar was constructed at the site. The width of the diwar was 0.45 meter & height was 1.20 meter. Construction work appeared to be good and useful. The construction of Pakki Diwar 4 ft helped in preventing encroachment. GPS location of this area was 24.355302 N and 73.857902 E. The expenditure incurred for constructing this wall was Rs. 1439994 (as per MB) against the estimated cost of Rs.14.40 lac.

Site 4-Pillars at Baluwa Dhak ka wara,Sarada range

At Baluwa Dhak ka wara site in Sarada Pillars (100 Nos.) have been evaluated. The pillars were constructed in the year 2019-20. The pillars were 100 in numbers as per MB. Also in actual 100 pillars were found & evaluated by the third party. The pillars constructed reported good and useful. The construction of pillars helped in marking forest boundary.

5. Overall assessment

Table 5: Quantitative assessment of plantation work created under CAMPA in Udaipur division

Sl. No.	Site	Model	Area in Ha	Survival percentage	Rank of Site (Between 0 to 10)*
1	Rodaji Bawji	DFL	56	47.25	5
2.	Jhallara	ANR	50	55.40	6

Table 6: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction	Rating of Crack	Rating of settlement in structure	Quality of workmanship	Rating of quality of workmanship
1	PakkiDiwar 4 ft	Hoda	Average	6	5	5	Average	6
2	Pillar	Raiyana	Average	6	5	5	Average	6
3	PakkiDiwar 4 ft	Vasu	Good	7	7	6	Good	7
4	Pillar	Baluwa Dhak ka wara	Good	7	7	7	Good	7

Udaipur WL

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in Udaipur WL Forest Division. This Forest Division with 5 Forest Ranges namely Sajjangarh, Mamer, Panarwa, Kotda & Jaisamand has territorial jurisdiction over the entire Udaipur District.

Figure : Location of Udaipur district, Rajasthan

2.1. Selected Asset Sites for Evaluation

The selected asset sites of Udaipur WL Forest Division were as given in table 1

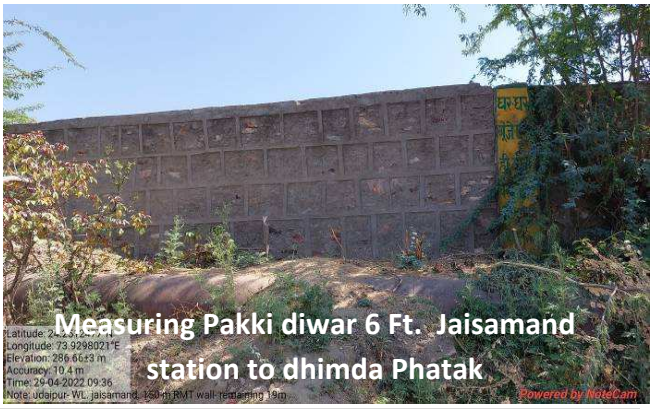
Table 1: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Jaisamand	Jaisamand station to Dhimda Phatak	2018-19	Pakki Diwar 6 ft
Panarva	Birothi	2018-19	Forest Chowki
Panarva	Vankhand Ambasa	2019-20	Pillars

3. Results for asset sites

3.1. Site 1- Pakki Diwar 6 Ft at Jaisamand station to Dhimda Phatak, Jaisamand Range

At Jaisamand station to Dhimda Phatak in Jaisamand range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 150 m length as per MB. But in actual 134 m pakki diwar was constructed at the site. Earlier 16 meter pakki diwar of 6 ft. height was made.



Hence, incomplete work of pakki diwar 6 ft. was taken up and completed. The width of the diwar was 0.45 meter & height was 1.8 meters. Construction work appeared to be good and the infrastructure was in use. The construction of pakki diwar prevents encroachment by local residents. GPS location of this area was 24.251 594 N and 73.928549 E. The expenditure incurred for constructing this wall was Rs.4,47,512 (as per MB) against the estimated budget of Rs.5.447 lac.

Site 2- Forest Chowki Birothi, Panarva range

Forest Chowki at Birothi site in Panarva range has been evaluated. The Forest Chowki was constructed in the year 2018-19. Site selection for construction of Forest Chowki was adequate and useful for the staff. Construction work appeared to be average and useful. The construction work under Forest Chowki was 02 rooms & 01 bathroom. The Forest Chowki created under CAMPA was in use till September 2021. However, due to transfer of Guard it is lying vacant. It was properly maintained. GPS location of this area was 24.377472 N and 73.314776 E. The expenditure incurred for constructing the Forest Chowki was Rs. 551585 (as per MB) against the estimated budget of Rs. 550000.

Site 3- Pillars at Ambasa, Panerva range

At Ambasa site in Panerva range, the Pillars (50 Nos.) have been evaluated. The pillars were constructed in the year 2019-20. The pillars were 50 in numbers as per MB. In actual 50 pillars were found & evaluated by the third party. Construction work appeared to be good and useful. The construction of pillars helped in marking forest boundary. GPS location of pillars area was $24^0$4'11"N and $73^0$13'43"E. The present condition of pillars was average. The expenditure incurred for constructing the Pillars (50 Nos.) was Rs.86403 (as per MB) against the estimated budget of Rs. 90000

4. Overall assessment

Table 2: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Quality of Construction	Rating of quality of construction
1	Pakki Diwar 6 ft	Jaisamand station to Dhimda Phatak	Good	9
2	Pillar	Ambasa	Good	7
3	Forest Chowki	Birothi	Average	7

WL Mount Abu

1. Present Third Party Evaluation/ Study

Present Third Party Evaluation/ Study pertains to works carried out under Rajasthan State CAMPA Project during the years 2017-18 to 2019-20 in WL Mount Abu Forest Division. This Forest Division with 4 Forest Ranges namely Anadara, Abutaleti, Abu Parwat & Taleti has territorial jurisdiction over the entire Sirohi District.

Figure : Location of Sirohi district, Rajasthan

2.1. Selected Asset Sites for Evaluation

The selected asset sites of WL Mount Abu Forest Division were as given in table 1

Table 2: Asset sample sites for evaluation

Forest Range	Name of Site	Year	Physical Target Achieved (100%)
Anadara	Telpi to Patolia	2018-19	Pakki Diwar 6 ft
Taleti	Reshma Devi Ke Ghar se Phoolabai Ka Khera	2019-20	Pakki Diwar 6 ft
Taleti	Vagnala	2019-20	Anicut Type II
Abu Parwat	Aza Mata	2019-20	Anicut Type III

3.1. Site 1- Pakki Diwar 6 Ft at Telpi to Patolia , Anadara Range

At Telpi to Patolia in Anadara range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2018-19. The wall dimensions were 6 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 0.45 m & height was 1.80 meter. Construction work appeared to be good & useful. The construction of

Pakki Diwar 6 ft helped in preventing encroachment, illegal mining & protecting forest boundaries and also from grazing by animals. Coping & pointing work of wall had been done. GPS location of this area was 24. 722987 N and 72.765777 E.

Site 2- Pakki Diwar 6 Ft at Reshma Devi Ghar to Phoola Bai Ka Khera, Taleti Range

At Reshma Devi Ke Ghar se Phoolabai Ka Khera in Taleti range, the pakki diwar 6 ft. has been evaluated. The wall was constructed in the year 2019-20. The wall dimensions were 6 ft and 500 m length as per MB. Also, in actual 500 m pakki diwar was constructed at the site. The width of the diwar was 50 cm & height was 180 cm. Construction work appeared to be average and useful. Private landholding was situated at one side of pakki diwar. Hence, construction of Pakki Diwar 6 ft helped in preventing encroachment of forest department land & protecting forest boundaries. GPS location of this area was 24.645105 N and 72.865277 E. The expenditure incurred for constructing this wall was Rs. 1449779 (as per MB) against the estimated budget of Rs. 14.50 lac.

Site 3- Anicut II at Vagnala, Taleti Range

At Vagnala in Taleti range, Anicut II has been evaluated. The Anicut II was constructed in the year 2019-20. The Anicut II having length 5 meters, breadth 0.84 meter, height 1.10 meter was constructed at the site. Construction work appeared to be good and useful. Water was not available in the anicut at the time of the visit. The collected water used to stay up to one month after rainy season. The main purpose of constructing anicut was to reduce soil run off/ erosion & protect Mount Abu road from being washed away. It also helps in soil & moisture conservation in the nearby area. GPS location of this area was 24.559518 N and 72.795035 E. The expenditure incurred for constructing the anicut wall was Rs.281127 (as per MB) against the estimated budget of Rs 3.75 lac.

Site 4- Anicut III at Aza Mata, Abu Parwat Range

At Aza Mata in Abu Parwat, Anicut III has been evaluated. The Anicut III was constructed in the year 2019-20. The length of the structure was 7.65 meters, breadth 0.50 meter, height 1.2 meter as per MB. Also, in actual 7.60 meters length, breadth 0.5 meter, height 0.7 meter (due to silting) was constructed at the site. Construction work appeared to be average and useful. Due to silting the height of the anicut was reduced by 50 cm. Anicut pitching needs to be proper. Water was not available in the anicut. The flow of appron should be proper so that soil erosion can be prevented. GPS location of this area was 24°38'18" N and 72°46'5"E. The expenditure incurred for constructing the anicut wall was Rs. 599272 (as per MB) against the estimated budget of Rs. 6.0 lac.

4. Overall assessment

Table 4: Quantitative assessment of assets created under CAMPA

Sl. No.	Items	Name of the site	Rating of Site Selection	Rating of Quality of Construction
1	Anicut II	Vagnala	Average	7
2	Anicut III	Aza Mata	Average	7
3	Pakki Diwar 6 ft	Telpi to Patolia	Good	8
4	Pakki Diwar 6 ft	Reshma Devi Ke Ghar se Phoolabai Ka Khera	Average	7

"The sacred place of silent minds and deep souls is the depths of the forest!"

— Mehment Murat ildan

"A nation that destroys its soils destroys itself. Forests are the lungs of our land, purifying the air and giving fresh strength to our people."

— Franklin D. Roosevelt

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