

CHAPTER 13

Development and Management of Forests

1. Approach

- 1.1. Forest development works may be carried out on Forest land, Panchayat land, Revenue wasteland / other Govt. lands and on Private holdings. Consent of concerning authorities will be taken before beginning the work on lands other than forest land. In order to expand vegetetal cover, afforestation and pasture development activities will be taken up on massive scale with active participation of people.
- 1.2. The works are to be carried out on:
 - 1.2.1.1. Watershed basis
 - 1.2.1.2. Cluster approach
 - 1.2.1.3. Participatory planning and management
 - 1.2.1.4. Cost Effective approach.
- 1.3. Sustainable development will form the pivotal concept behind all kinds of forestry development activities including soil conservation.
- 1.4. Appropriate area specific technology will be followed for different types of areas, viz. under rainfall and irrigated conditions, areas vulnerable to wind and water erosion, recalcitrant soils like Sand, Saline alkaline and water logged areas / mined out area etc. with the basic purposes of increasing density of vegetation.
- 1.5. Natural regeneration will be encouraged in degraded forest area. Existing natural rootstock will be protected to ensure good growth.
- 1.6. In the barren area and degraded areas, artificial regeneration will be resorted to.
- 1.7. *In situ* soil and moisture conservation measures will be taken up.

- 1.8. Site specific and need based plant species will be selected for planting.

2. Execution of Works

- 2.1. All the development works of the forest department will be executed through systems prescribed by state government from time to time. At present only the Piece Rate contract system is in vogue and detailed terms and conditions for execution of works under this system have been circulated¹ to all the field functionaries.
- 2.2. Department will carry out work and time study to determine the rates of different kind of work items. These rates will be determined on the basis of minimum wages, prescribed by state government from time to time. State government will also approve items of forestry works which can be undertaken on Piece Rate systems / Piece Rate contract systems. Work items for which piece rate wages are not approved will be executed, through other methods on approval by the competent authority.
- 2.3. Department will issue Basic Schedule of Rates based on minimum wages. Regional Chief Conservators of Forests are authorized² to issue BSR for the circle within their jurisdiction. The items not covered by the BSR of Forest Department can be executed, as per the BSR of Public Works Department / Irrigation Department. The works under MNREGA will be executed as per the BSR approved by Rural Development Department. Prior permission of the Regional Chief Conservator of Forests will be necessary for undertaking work items not covered by BSR of Forest Department.

3. Nursery

- 3.1. Raising proper and healthy plants of suitable height in the nursery is the soul of successful plantation. Detailed instructions have been issued by the department on the nursery raising technique. The latest circular³ has reiterated some of the salient features of nursery raising which are as under.
 - 3.1.1. Every Range of the Division must have at least one permanent nursery where sufficient water and land are available.

1. PCCF letter no. F22(1) 95/ Dev/PCCF/8332-461 dated 20-07-95.

2. GO No F7(27)Forest/1995Pt Dt 18 Dec, 2009.

3. PCCF Circular No. F.()2012/Dev/1449 dated 8/6/12

- 3.1.2. The Deputy Conservator of Forests concerned should prepare and circulate nursery wise consolidated list of seedlings to be raised for departmental plantation and for distribution in each nursery just after the targets for each are received in the Division in the month of April.
- 3.1.3. The mother beds for sowing of seeds of the broad leaved spp. may be prepared in the month of May and June. Proper mixer of sand and fertilizer must be prepared. The mother beds should be used for sowing of seeds of Neem, Shisham, Mango, Jamun, Bahera, Mahua, Karanj, Ashoka, Maulshri etc at a spacing of 6" x 6" in the month of July after the onset of Monsoon. After sometime the spacing may be doubled to prevent root competition by removing the alternate seedlings.
- 3.1.4. Polybag filling for raising 10% more seedlings than the target of the following year may be completed by the end of October. The seedlings from the mother beds may be pricked and transplanted in these bags. Sowing of the thorny spp. may be completed by the end of February.
- 3.1.5. Mother bed seedlings of more than 6 months old or seedlings raised in the 12 ½ cm x 30 cm may be transplanted to 20 cm x 40 cm bags with the help of an Extractor.
- 3.1.6. Every nursery will necessarily have a compost pit measuring 6' (length) x 4' (breadth) x 6' (depth) in all. The debris from the nursery may be dumped for making compost.
- 3.1.7. Use of vermi-compost may also be prepared and used at least in the nurseries located at the Range HQ.

4. Selection of Sites

- 4.1. Selection of site is of utmost importance in execution of all forestry works. Range Officers may normally select Work sites but it should be inspected and invariably be approved by Deputy Conservator of Forests. CCF may also make it a point to visit as many sites as possible and give proper guidance to his subordinates in selection of sites. It is preferable to have a shelf of project for the areas/ suitable sites available in the Division and sites may be selected out of these as

per requirement. Cluster approach will also be adopted for continuity of works, which will ensure after care through repeated inspections. While selecting a site adequate attention will be paid to all relevant factors like Geology, Soil, Ground water availability, biotic pressures and Socio economic survey. Site should be suitable for the objectives of the work / project / scheme for which it has been selected.

5. Job-Number

5.1. Regional Chief Conservator of Forest will allot a job number. The job number will have names of Region, Division and Range and year. The sequence of these will be as follows:

- 5.1.1. Name of Region
- 5.1.2. Name of Division
- 5.1.3. Name of Range
- 5.1.4. Nature of work model
- 5.1.5. Year
- 5.1.6. Job Number.

5.2. The year in the job number will indicate the year in which Planting is done. Job number will be recorded in all bills, Measurement Books, Plantation journals and Inspection notes. After allotment of job number, the work will be entered in the work register in which item wise expenditure of each month will be recorded for review, Work register will be kept at the office of Regional Chief Conservator of Forest and Deputy Conservator of Forests for proper monitoring of the budget. Higher officers will inspect this register at the time of annual administrative inspection. For the sites situated on other than forest land, prior approval of concerning authority will be sought before starting the work.

6. Preparation of Estimate

6.1. Technical and financial estimate of the work will be prepared and got approved by competent authority before execution of the work. Technical estimate must have map of the Site on survey of India GT sheet (of 1: 50000 Scale) and also on revenue maps, showing village name and khasara number. Map prepared by Chain and Compass survey shall be used for the purpose of soil and treatment maps. A technical note should invariably be enclosed with the work estimate. The technical note must contain topography, existing vegetation, soil

types, soil depth and availability of water sources treatment etc., proposed plant species and distance from nursery. A micro plan of the site / cluster should be prepared making use of RRA/ PRA techniques so that aspirations of local people are properly addressed. If a permanent nursery is located at considerable distance, a site nursery should be prepared closer to the site. Selection of species to be planted shall be made considering objective of plantation, choice of local people and soil type.

- 6.2. The technical note must contain treatment map and type of fencing. Any existing work carried out earlier on the site should also be mentioned in the technical note along with its present status. Design of anicuts, buildings and roads must be submitted with the estimates.
- 6.3. Range Forest Officer will prepare financial estimate as per prevailing models looking to site specific conditions.
- 6.4. The department will prepare various technical models for plantation work and other civil works for the purpose of planning. These models will be area specific and incorporate appropriate and suitable technology. Adequate provisions for *in situ* soil and moisture conservation works will be included in all the models. The model committee appointed by Principal Chief Conservator of Forest (HoFF) will, after the technical examination, recommend the appropriate model to Principal Chief Conservator of Forests (HoFF) for approval.

7. Sanction of Estimate

- 7.1. Range Forest Officers will submit the estimates of works to the Division office along with the separate proposals for the items of works, which will be executed by PR Contractors. The estimates will be examined in the office of the Deputy Conservator of Forest or equivalent officers. After due examination and making corrections if any, competent authority will award technical sanction to the estimate. The estimates will be sanctioned as per the delegated powers⁴. Deviations of any work item beyond prescribed limit of models shall be approved by the next higher authority.
- 7.2. In District headquarters, the building and construction works on forestland will be executed by Forest Department. Works on non-forest land will be executed through PWD / Rajasthan State Bridge

4. GO No. F7 (27) Forest /1995 dated 30-04-09

Construction Corporation or any other competent authorities approved by the State Government.

- 7.3. For places other than district headquarters, construction of buildings and other civil works of the forest department will be executed by the Department on forestland as well as non-forest land⁵. No work should be initiated until competent authority sanctions the estimates. If there is any necessity of change in sanctioned estimate, sanction of the competent authority will be required afresh.

8. Execution of Works

- 8.1. The works will be executed strictly as per the sanctioned site specific estimates according to treatment plan and design.
- 8.2. Site of plantations on forest land will be selected in such a way that its outer boundaries match with forest boundary and no forest area is left outside the fencing.
- 8.3. Selection of species for planting and sowing should be in consonance with the climate of the area. There should be a balance of thorny, broad leaf, fuel wood, fodder, fruit and small timber species.
- 8.4. Plantation area will be effectively fenced by suitable method of cost-effective fencing.
- 8.5. The work site should invariably show a signboard of standard size prescribed by the department, showing information related to Forest Division, Range / Unit, Name of Scheme / Project, Model. Name of site, Plantation Year / Area / Original outlay etc.
- 8.6. On the backside of the signboard, a sketch map of the area showing sub divisions, quantity of works, number of seedling planted will be shown.
- 8.7. A micro plan should be prepared for the area after suitable discussion with the local people and conducting RRA / PRA exercise.
- 8.8. The plantation area should be sub divided into suitable number of sub divisions. These sub-divisions should be marked and numbered in the plantation area. The boundary of sub-divisions should easily be discernible on the ground even after a few years of plantations.
- 8.9. Soil and moisture conservation works should be taken up first in each sub-division and then only pits should be dug.

5. GO No. F.7(27)Forest/1995 dated 30 Apr 2009.

- 8.10. Drainage line treatment of each nallah is taken up by suitable structures proposed in the estimate.
- 8.11. A daily work register will be kept on each site in which details of works done every day will be recorded. The site in charge will take signature of PR Contractor or his representative every day at closing of day in this register. On completion of works, after due measurement, entries will be made in the MBs. For each work, separate MB is to be maintained. After getting the bill, verifications will be done on the basis of entries in the corresponding MB. The forest officers inspecting the work will check the daily work register and after checking works, put his comments on the records.
- 8.12. A plantation journal as prescribed by the department will also be maintained along with a plantation card on the site. All the details of plantation should be recorded in the plantation journal and a gist of activities will be recorded in the plantation card.
- 8.13. The norms for verification of works are as follows:
- 8.13.1. Officers will inspect the works as per prescribed norms⁶ by the State Government. Inspection note should be entered on plantation journals only. Follow up of instructions given by earlier officers must be ensured by the following touring officers.
 - 8.13.2. Deputy Conservator of Forest / ACF will test check the work and ensure quality and quantity of works. Certificate of checking should also be given on the body of the bills.
 - 8.13.3. Seeds for sowing will be collected or purchased from open market and got tested by Silviculturist. Final payment of seeds will be made on obtaining satisfactory germination reports. If the germination percentage is found below the standard level then proportionate deductions will be made from the payment.
 - 8.13.4. Preparations for plantation operation will be completed by end of May.
 - 8.13.5. Proper training is mandatory for site incharge and working labour before actual planting.

6. GO F.12(6)Rev/8/76 dated 21 Jun 1976.

- 8.13.6. Before plantation, the grading of planting stock should be carried out in nurseries and seedlings of suitable height only be selected for planting. Proper care should be taken for transportation of seedling to planting site.
- 8.13.7. Seedling should be kept near a water source having proper shade on the planting site. The seedlings should be given treatment for termite before planting.
- 8.13.8. Cattle guard hut and water storage tank in plantation area will also be made at suitable places.
- 8.13.9. Sowing of thorny and suitable species should be done on mounds of ditch fencing for live hedge fencing.
- 8.13.10. Alternate fencing methods, may also be resorted to wherever it is feasible.
- 8.13.11. Soil and moisture conservation works should be proposed after considering the slope of the area and erosion proneness of soils. These works should be carried out keeping contour lay outs.
- 8.13.12. Old tanks, if any, located in the plantation area will be desilted.
- 8.13.13. Check dams will be made in a series.
- 8.13.14. Vegetative check dams, brushwood check dams, loose stone check dams, will be made on suitable sites subject to availability of material.
- 8.13.15. Technology manual, if prepared by a competent authority for any region, should be strictly adhered to for carrying out development works in that region.

9. Tending operation

- 9.1. A crescent shaped *thaonla* be constructed around each plant for harvesting of rain waters.
- 9.2. Plants should be irrigated as per provision in estimates.
- 9.3. Weeding and hoeing should be carried out from time to time as per provision in the estimate.
- 9.4. Plants sensitive to frost damage should be given protection from frost in frost prone areas during December to February end.

- 9.5. Anti-termite treatment may be applied wherever essential.
- 9.6. Site incharge should record special events from time to time on plantation journal and get it endorsed by touring officers to authenticate his observations.
- 9.7. Measurement book for each work will be issued by division office to Range Forest Officer or equivalent officer. The measurement of works will be recorded in the measurement book sub division wise. The work carried out by work charged employee will also be recorded in the measurement book.
- 9.8. Deputy Conservator of Forest should regularly inspect the plantation works. Schedule of inspection of Deputy Conservator of Forest should preferably coincide with the time of selection of site, carrying out of advance work, planting and when some irrigation, weeding or hoeing is being carried out.
- 9.9. At the division level, the survival of seedlings in plantations of up to 5 years of age should be undertaken by 100% counting at least once a year during May-June.

10. Silvicultural operations

- 10.1. Pruning: Pruning should be carried out judiciously in lower 1/3 portion of the plant after one year of planting. Pruning will be done by a sharp instrument. It should be carried out either in Dec-Jan at the peak winter or in May-June at the peak summer. Pruning of naturally growing plants in the area should also be done.
- 10.2. Thinning: when plants are planted at close spacing, thinning should be carried out to reduce the crown competition as per silvicultural requirements.
- 10.3. Singling: Cut back of existing root stock results in several shoots per stump. Some of these shoots need to be removed facilitating faster growth of a single leading shoot.
- 10.4. Intermediate felling: Intermediate felling may be carried out in plantation as and when silviculturally permissible.

11. Monitoring & Evaluation

- 11.1. Besides concurrent evaluation of all departmental works by the respective Divisions and their supervising officers, monitoring and evaluation of all development activities will be carried out by the Regional level M&E units under APCCF(M&E). The State

Evaluation Department under planning Division of Government of Rajasthan also carries out evaluation from time to time. Besides, there are provisions for external evaluation which is assigned by the competent authorities to appropriate agencies.

12. Procurement of materials

- 12.1. Seeds for sowing and planting may be obtained from the State Silviculturist. Seeds of species are collected and distributed by the Silviculturist as per prior intimation of requirement of the seeds submitted by Divisions.
- 12.2. Seeds procured from open market will be sent for testing to Silviculturist.
- 12.3. As far as possible, certified seeds should be purchased.
- 12.4. Technical inspection of all the materials purchased will be carried out
- 12.5. For polythene bags, granules will be purchased from manufacturer and got converted to bags from the departmental units.
- 12.6. Polythene bags shall not be purchased from open market without prior approval of the PCCF.
- 12.7. In case of building materials, voids shall be deducted from the quantity and payments for net volume will only be made.
- 12.8. All the prescriptions of GF & AR shall be strictly adhered to.

13. Participatory Planning and Management

- 13.1. All development activities will be carried out by the Department involving local communities, right from the planning to ultimate harvesting of plants. In Joint Forest Management (JFM), Forest Department has been made equal partner with the local committees from inception to the final harvesting stage.
- 13.2. Stock of quality planting material is the soul of a good/successful plantation. Timely selection of species to be planted by the field officers is a must.
- 13.3. For broad leaved species mother beds should be prepared in advance in the month of May, June, when the rainy season starts seed should be sown in these which at later stage should be spaced at 1 feet * 1 feet space. These prickings should be taken in to small polybags later. This process shall be completed by the month of October. Similarly

for thorny seeds sowing in the polybags shall be completed by the end of February.

- 13.4. For every permanent nursery there should be efforts to establish a compost pit & vermin compost bed to prepare quality fertilizer mix readily available at the nursery itself.
- 13.5. Every nursery shall have nursery register to be maintained indicating details of the planting material available species-wise.