

GUIDELINES OF WATERSHED TREATMENT DPR FOR FORESTS UNDER CATP

Watersheds with forest lands

Some watersheds have forest land within the identified boundaries. Since nature does not recognize artificial boundaries of forest and non-forestlands, the entire watershed of a Catchment Area is to be treated in an integrated manner. CATP's DPR for forest areas in JFM mode or non JFM mode shall include them for consistency with working plans and to meet aspiration of VSS (wherever present) from forest restoration.

Forests capture rainfall and replenish and cleanse our water supply. Although these ecological services provided by forests are widely accepted, they have not really been translated into the language that most often drives planning and land use decisions at the local watershed level. Following this principle, the forestlands forming part of such watersheds should also be treated as detailed below.

1. Those watersheds where certain area is under forests (RF, PF, KF - with or without Working Plans), FES identified as the PIA shall prepare DPR in consultation with RO & under guidance of DFO to make its DPR consistent with working plans of the given forest land and the Divisional Forest Officer concerned should give technical sanction of the treatment plans for the forest area, and then undertake implementation of watershed programme in such watersheds.

2. In those watershed projects, where forest area includes assigned area to VSS or/and has Village Forests or/and has recognised forest rights of the village members, the following methodology/ protocol would be followed.
 - (i) Delineation of forest lands within MWS would be jointly done by EC of VSS, Forest Rights Act (FRA) Committee, and PIA with WC. Presence of local Forest Guard shall be coordinated by PIA for guiding and documenting of delineation.
 - (ii) The watershed programme in such areas should include forest lands under public use and individual/community forest rights to bring all of them under the watershed treatment plan.
 - (iii) A detailed action plan would be developed for the identified forest lands within the watershed area in collaboration with already constituted Joint Forest Management Committee (VFC of Village Forests notified), Forest Rights Committee, Watershed Committee, local Forester and Revenue Inspector, and PIA. This treatment plan under DPR shall be made consistent with existing micro-plan (JFMP) of VSS, FRA conditions of Forest Right Holders with their

- consent, as well as working plans if any of the given forest land and the Divisional Forest Officer concerned should give technical sanction of the treatment plans for the forest area. For the purpose, consultation and guidance of Range Officer is to be coordinated by PIA
- (iv) Once the forest treatment plan is declared "fit" and consistent in terms of the overall framework set out under paragraph (iii) above, this approved plan would be integrated into DPR, a copy of which is made available to Gram Sabha/ Panchayat.
 - (v) This plan for the forest area should be implemented by FES as PIA with support of WC or in other PIAs by VSS/VFC/FRC of the village with the support of Watershed Committee. The existing EC of VSS or FRC having been expanded to WC of WA during constitution of Watershed Committee thus functions as a user group under Watershed Committee for implementation and receives funds from the watershed committee. Wherever, there is no such VSS/VFC/FRC in that village, VSS formation or user groups/ self help groups for the purpose should be encouraged by PIA & Watershed Committee for implementation.
 - (vi) VSS & User Groups shall be specifically sensitised of forest area treatment plan and prescribed models mentioned herewith. It is expected that the VSS or user Group of WC will maintain the assets created under this intervention and ensure that benefits from protecting and conserving forest lands are shared with the members in accordance to the JFM Resolution 2011.

Watershed works for forest area treatment under CATP shall include:

Within Forest Blocks:

- a. Ridge Area Treatment: All activities required to restore the health of the catchment area by reducing the volume and velocity of surface runoff, including regeneration of vegetative cover in forest land, afforestation, staggered trenching, contour and graded bunding, bench terracing etc.
- b. Drainage line treatment with a combination of vegetative and engineering structures, such as earthen checks, brushwood checks, gully plugs, loose boulder checks, gabion structures, underground dykes etc.
- c. Development of water harvesting structures such as low-cost water holes, nalla bunds, check-dams, percolation tanks and ground water recharge measures.
- d. Nursery raising for fodder, fuel, timber and horticultural species. As far as possible local species shall be given priority.
- e. Land development including *in-situ* soil and moisture conservation and drainage management measures like field bunds, contour and graded bunds fortified with plantation, bench terracing in hilly terrain etc.

Within Villages in and around Forest Blocks

- a. Pasture development, sericulture, agro-forestry including block plantations, shelterbelts, etc.
- b. Horticultural development.

MODEL TREATMENTS PRESCRIBED

Keeping the major objectives of management of forests under Working Plans in view, appropriate soil and moisture conservation measures of ridge treatment, drainage line treatment, and ground water recharge including water holes for wildlife shall form an integral part of all annual site-specific treatment plans.

In addition, the following prescriptions shall be, *mutatis mutandis*, applied

- ❖ Wherever there is congestion in the crop, cleaning operation shall be undertaken to encourage regeneration and growth of locally desirable species. Climber removal/ cutting to be decided keeping requirement of the forest user group, and if not required, they are to be cut for growth of regenerating shrub/ tree species.
- ❖ These forests shall be strictly protected against uncontrolled grazing, forest fires and unauthorized removals. Only dead, dry and fallen trees shall be removed.
- ❖ Tending operations are required for previous plantations or plantations to be undertaken.
- ❖ Wherever gaps are available, planting of locally desirable species be encouraged. The local indigenous species shall be preferred for plantation. At the same time due consideration shall be given for plantation of fuel wood, fodder, bamboo, NTFP species including fruit bearing species.
- ❖ In the eroded areas, where soil is exposed, the planting of grasses shall be taken up. The efficacy of grasses in checking soil erosion is well researched and well known.

Thus, DPR of forest area within watershed shall have treatment plan for soil & moisture conservation works as well as silvicultural works in accordance to subsidiary silvicultural operation (SSO) of forest allotment prescribed under working plans for a Forest Division.

Important :

- Watershed DPR shall have emphasis on detailed & intensive SMC treatment plan implementation on forestland under consideration.
- SMC works are to be simultaneously taken with silvicultural works for controlling erosion from/through the forest area being part of a Micro-watershed.
- All the preventive measures against soil erosion should be completed before the end of April so that soil and trenches settle suitably before the onset of monsoon.
- All the planting operations will be completed within the time schedule as prescribed in the forest plantation manual.

Some model SSO prescriptions:

Operation in Type "A" and "B" areas

This covers coupe (SWC, RWC) worked out areas and areas having Sal rooted waste. In these areas, following operations are suggested.

- 1) Cutting back of high stumps.
- 2) Cutting of climbers and uprooting them wherever possible.
- 3) Singling out of multiple coppice shoots and retaining most promising ones.
- 4) 'C' grade thinning in congested patches. Under this dead, moribund, diseased, suppressed, dominated and defective trees are to be removed without creating gap in canopy.
- 5) Planting of two year old seedlings of bamboo along with fruit bearing and NTFP species.
- 6) Suitable soil conservation measures such as gully plugging check dams done of brush wood, rubbles etc across the gullies. Where the gully erosion is acute, then masonry may be provided. Diversion channels are also to be provided to divert the run-off

Operations in type 'C' areas

This covers completely barren, blank, eroded and degraded patches having plain to gentle slope. These areas are to be rehabilitated by following operations.

1. Planting of fast growing leguminous species.
2. Planting of species like Ailanthus, Siris, Karada, Sidha, Neem, Chakunda, Kusum, Sisso etc. in the plain barren areas.
3. Planting of Babul, Khair, Rohini, Sabai grass etc in eroded patches.
4. Planting of Jamu, Karanja, Arjun etc in the low lying degraded patches having higher moisture content.
5. Planting of bamboo wherever possible.
6. While carrying out plantation activity in these areas the plant spacing should be closer, i.e. 2m X 2m for tree species and 6m X 6m for bamboo.
7. Causality replacement, soil working, manuring and weeding shall be taken up for all the gap plantations in the 1st and 2nd year.
8. Suitable soil conservation measures such as gully plugging check dams done of brush wood, rubbles etc across the gullies. Where the gully erosion is acute, then masonry may be provided. Diversion channels are also to be provided to divert the run-off

Operations in Type 'D' areas

This covers the hill slopes devoid of vegetation or with scanty vegetative growth. For such type of areas, following measures may be taken up:

- o Suitable soil conservation measures such as gully plugging check dams done of brush wood, rubbles etc across the gullies. Where the gully erosion is acute, then masonry may be provided. Diversion channels are also to be provided to divert the run-off

- o For the areas having more than 15°, slope staggered contour trenches will be dug along the contour. The size of contour trenches should be 6m X 0.3m and their spacing should be 8m along the contour line and 10 m along the slopes. The dug out earth of the contour trench shall be deposited on the down hill side and the same will serve as seed bed for raising tree species like Acacia, Khair, Sisoo, Babul, Siris etc. Agave and Sabai grass may be planted in the intervening space of contour trenches.
- o Enrichment plantation shall be taken up in degraded patches, while block plantation will be done in blank and open patches having scanty growth.

Operation in Type 'E' areas

This covers the areas which were subjected to shifting cultivation and encroachment in the past and which are either open with no vegetative growth or covered with bushy and scrubby type of vegetation. In such areas, following measures are to be carried out.

1. These patches which are open with no vegetative growth are to be planted with fast growing species.
2. In the areas having dense bushy and scrubby type of growth, the cleaning and pruning operations are to be carried out. All the bushy growth is to be removed except the saplings, poles and trees of important and useful species. The site is to be given control burning without causing any harm to retained species. Afterwards, as per requirement enrichment plantation is to be taken up.
3. Wherever required, necessary soil and water conservation measures are to be taken up.
4. Necessary administrative and educative measures are to be taken up for dissuading tribals against shifting cultivation and encroachments.

Fencing

The fencing is the key to success of forest restoration measures for all purposes.

Control

The journals and other records will be maintained for each forest patch/coupe under Working Plan by PIA (by VSS also). Necessary entries shall be made in the compartment history by Range Officer/ DFO about all the works undertaken inside the working plan area.

Rights and concessions

Rights and concessions on forestland shall be regulated as per the existing provisions of the relevant notifications applicable to forest.

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