

Monitoring of Area Coverage and survival percentages of Plantation/Afforestation under Forest Development Agency (FDA)

Ministry of Environment and Forest (MoEF) has launched the National Afforestation Programme (NAP) during 10th plan through the decentralized mechanism of Forest Development Agency (FDA) and Joint Forest Management Committees (JFMCs). Some of the FDAs has started afforestation in 2000-2001 and will continue for 5 years. It is envisaged that around 7-8 lakh ha area will be brought under plantation by the end of 10th plan through FDAs.

The NAEB under the Ministry of Environment & Forests, Govt. of India has entrusted the work of monitoring the progress of area covered by plantations & survival percentage under National Afforestation Programme (NAP) by these FSAs on forest and non-forest lands to Forest Survey of India (FSI). Accordingly, FSI, Dehradun has prepared a project for four years for monitoring of plantations under National Afforestation Programme (NAP), commencing from 2003, and culminating in 2007. 60 FDAs selected randomly across the country are to be monitored every year. It is envisaged that by the end of 4 years, 240 FDAs comprising of around 1,000 patches will be monitored. The main objectives of the project are as follows

- Monitoring of area coverage and estimate at the National Level the area coverage of selected FDAs.
- To estimate at the national level survival percentage of plantations (species wise) raised by FDAs in forest and outside forests areas.
- To assess growth parameters of trees planted under NAP scheme.

Methodology:

The study area for this survey is considered as FDA areas of the Districts. Stratified random sampling is being employed for the survey. FDAs are selected randomly distributed over the whole country. The patches of FDAs are further stratified into five strata i.e. four strata in Forest Area (FA) based on patch area, (0-25 ha, 25-50 ha, 50-75 ha and 75 + ha) and one stratum in non-forest area (NFA), which are the sampling units. On the basis of pilot study the sample size for monitoring of FDAs in plain and hilly areas was determined.



Data Recording

Plot Laying

Height Measurement

The selected patches within a FDA are physically verified with the help of GPS by traversing the whole boundary. The expected results of the survey would be with 15% permissible error at 95% probability level at National level. The following data are collected from the selected FDAs:

- (i) Area of patches
- (ii) Total number of plants planted in the plot
- (iii) Total number of plants survived in the plot
- (iv) Name of tree species, height and number of diseased/dead plants in the plot.

Survival percentage is calculated from the data collected from the laid out plot of 0.1 ha in the patches for both hilly and plain areas i.e. total number of plants planted and number of plants survived in the patch

During the year 2003-04, and 2004-05 60 FDAs each were chosen for monitoring. The analyzed results of these districts have already been sent to the Ministry of Environment and Forests (MoEF). During 2003-04, area coverage under FDAs at the national level was estimated at 93.29% with 3.79% SE. Similarly, the survival percentage of plantation was estimated to be 87.58% at the national level with standard error of 5.33%. The results of 2004-05 indicate area coverage at national level was estimated to be 97.34% with 2.17% SE and survival percentage was estimated as 87.23% with 5.02% SE. For 2005-06, 61 FDAs have been selected and monitoring work is under progress.