DISCUSSION NOTE

Monitoring of Tree Plantations Under Social Forestry and Compensatory Afforestation Programmes

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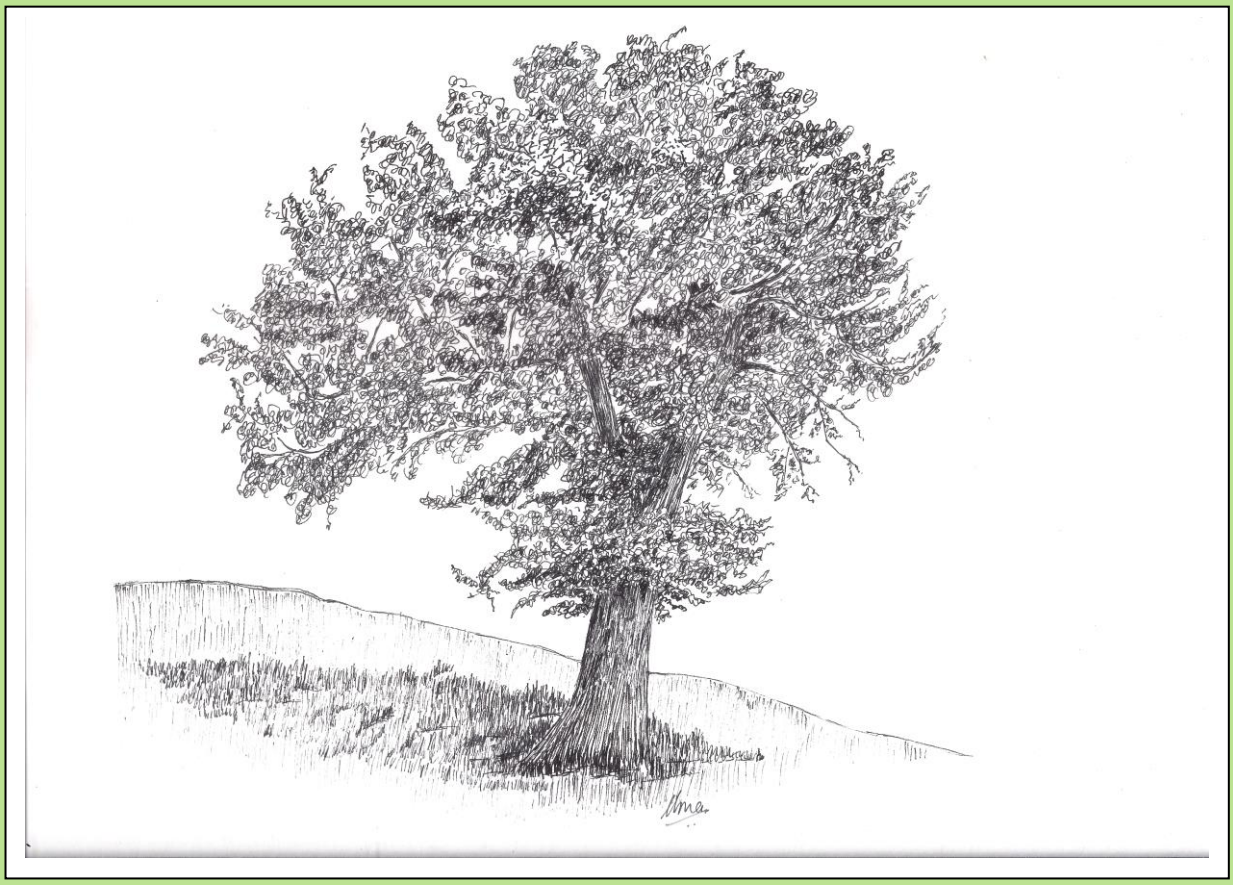

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This discussion note was drafted in 1991, to feed into the ongoing discussions in the Planning Commission on the finalisation of the Eighth Five Year Plan. It attempted to suggest some new directions in the monitoring of tree plantations as a part of social forestry.

The cover illustration is by Uma Bordoloi.

1. At present there seems to exist a very inadequate system of monitoring forest plantations, especially in terms of the area actually planted and the survival rates, done under the social forestry and NWDB Programmes.

2. Till the end of the 7th Plan, the figures given for area planted were actually based on a conversion of the number of saplings reportedly grown and distributed. This is obviously an unsatisfactory way of monitoring plantations.

3. In some cases, especially as part of externally aided programmes, detailed monitoring was done of plantations in specific areas. However, the proportion of plantations covered in this manner is very small.

4. Similarly, there has been very little effort at realistically evaluating forest plantations done as a part of the compensatory afforestation activities of various projects. Though some information is available regarding the amount of compensatory afforestation that has been officially undertaken, the actual coverage and survival rate is mostly not know.

5. There is also little public confidence in the statistics routinely given out by the government. In fact, an impression is growing that very few of the millions of trees reportedly planted actually survive, or are even planted.

6. Social forestry plantation schemes can be broadly divided into two categories:

6.1 Block plantations, mostly undertaken by the State Government, where the plantation sites vary in size from a few hectares to many thousand hectares. This accounts for about 50% of the plantations.

6.2 Those which involve distribution of seedlings to farmers and other persons for disaggregated planting around their homes and agricultural fields. Such plantations are very rarely consolidated into one plot. About 50% of the plantation work is done in this manner.

7. The plantations being done as part of the compensatory afforestation programmes are invariably in consolidated blocks, as per the requirements of the Government, and as such are akin to the first category.

8. Bulk plantations can be effectively monitored with the help of remote sensing and aerial photography, given detailed information, on toposheets, of the boundaries of the plantations, the year of plantations, the number of plants per hectare, and the species.

9. Based on this information, the Forest Survey of India, various state remote sensing organisations and the natural resources monitoring system of the Department of Science and Technology could be involved in doing a sample study, using

remote sensing imagery and aerial photography, to monitor the progress of such plantations.

10. These plantations would begin to show up after the first year through aerial photographs and after three years through remote sensing. Based on this, a realistic assessment of the area covered and the survival rates could be made.

11. Wherever there is dispute between the claims of the State Governments/Project Authorities and the reports produced through remote sensing and aerial photography, ground verification can be undertaken on a sample basis, by independent teams.

12. Plantation and survival rates for saplings that have been distributed individually and are not a part of block plantations, needs a different methodology.

13. In case these saplings are of fuelwood and fodder species, it would not be difficult to work out a model by which the success of the programme can be measured by assessing the availability and price of fuelwood and fodder in the areas where such saplings have been distributed. A model similar to the one built up by the famous economist, Prof. Mynard Keynes, to monitor the effectivity of the allied bombing raids on German and French railway yards during the Second World War, by monitoring the prices of oranges and other fruits in local markets, can be developed.

14. The help of the National Informatics Centre and the NSSO taken in the task of collecting and compiling the required information.

15. Concurrently, a network of non-governmental organisations and institutions needs to be built up to assist in the task of monitoring both the quantitative and qualitative aspects of tree plantations.

16. It is neither an impossible, nor a prohibitively expensive, task to involve such organisations and institutions in a monitoring excercise, especially if it is based on a scientific sample.

17. The main steps in the excercise could be as follows:

17.1 The building up of a detailed data-base on reported Plantations, in terms of:

- The area covered (for block plantations).
- The exact location, marked on a toposheet (for block plantations).
- Pattern and density of plantations.
- The number of saplings distributed.
- The villages to which these saplings were distributed.
- The species planted/distributed.
- The month and year of plantation/distribution.
- The agency responsible for planting/distribution.
- The agency responsible for routine monitoring.
- The objectives of the plantation/distribution programme (where it is different or more than just the establishment of plantations).

- Any special features in the methodology for achieving the objectives (where, again, it differs from conventional methodologies).

17.2 The identification of the samples to be monitored during the year, selected in accordance with scientific principles.

17.3 A concurrent briefing of the concerned NGOs and Institutions, on the requirements and methods of the monitoring mission.

17.4 A field survey by teams of researchers, organised through NGOs, and Institutions, collecting data in a uniform set of schedules, both for the quantitative and qualitative aspects.

17.5 Computerisation of the data by the concerned organisations in a an uniformly structured data-base.

17.6 Compilation of these data-bases at the NWDB.

17.7 Comparison of this data-base with information supplied by State Governments and collected through remote sensing, aerial photography, and economic modelling.

17.8 Resolution of discrepancies and production of final report.

18. To ensure objectivity, NGOs could be asked to assess plantations in locations outside their usual area of operation,

so that allegations of bias for/against forest department/project authorities can be minimized.

19. To ensure smooth running, even the task of co-ordinating and collating the data can be entrusted to an institution, rather than be done by the NWDB itself.

20. The system needs to be initiated on an experimental basis, drawing upon the experiences of other countries, and limiting it to a small sample. After adjustments, it can gradually cover the whole country.

21. This excercise can also involve donor and UN agencies who could help with financial assistance, international experiences, and in the design of strategies.

22. There are many positive outcomes of such a system of monitoring:

22.1 The existence of an effective monitoring system would encourage field agencies responsible for planting, protection and routine monitoring to be more responsible and make greater efforts at planting and protecting trees.

22.2 The information generated through such an independent monitoring system, especially if the raw data and the methodology are open to public scrutiny, would have great credibility with the people.

22.3 The ability to collect authentic information about

plantations would enable a realistic assessment and better appreciation of the factors reponsible for both successes and failures. This could lead to more effective strategies for replicating the former and avoiding the latter.

22.4 The involvement of the NGOs in this exercise would significantly strengthen the NGO sector in terms of forestry expertise and experience, thereby helping create an additional cadre of forester.

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