

**NEED FOR INSTITUTIONAL AND REGULATORY
MECHANISM FOR CERTIFICATION OF PLANTING STOCK
OF FOREST SEEDS AND VEGETATIVE ORIGIN**

QUESTIONNAIRE

Increasing human and cattle population along with rapid economic growth have put immense pressures on forests and other natural resources. There is a need to bridge the gap between demand and supply of forest products and services by enhancing productivity and environmental values of forests and forest plantations. This requires substantial improvements in genetic qualities of planting stock for improving productivity and quality of timber/NWFP through application of appropriate scientific techniques and legal framework.

As the foundations of green revolution in agriculture were based on new high yielding varieties and long term breeding support; similar possibilities can be ushered in for vast improvements in productivity of trees / NWFP plantations and quality of timber / NWFP if future plantations can be based on genetically improved seed / seedlings or clonal planting stock of high yielding, disease / pest resistant and field tested clones of important plantation species amenable to cost effective vegetative propagation..

ICFRE has commissioned a consultancy for comprehensive study on the need for institutional and regulatory mechanism for certification of planting stock of forest seeds and vegetative origin. This questionnaire is an attempt to elicit the learned opinion and views of the State/UT Forest Departments, NGOs and others who are engaged in the plantation activities. Their views and valuable suggestions are critically important for the proper understanding of major issues and development of an appropriate and friendly regulatory framework for the end users of quality seed and planting stock of important timber trees / NWFP in India.

You are requested to kindly spare your valuable time and help us in this important study which will be very useful for production forestry all over the country. Your valuable inputs and suggestions shall be highly appreciated. You may provide the requisite information as per following questionnaire within 30 days and oblige. Please feel free to use your own formats as you may deem appropriate if you think that changes in the suggested format are necessary. Kindly forward your response and valuable suggestions through email or hard copy at any of the following addresses:

1. Mr. Piare Lal, 25- Sant Sarwan Das Ji Nagar, P.O. Satnampura, Hadiabad, Phagwara-144402, District Kapurthala, Punjab. Email < piarelal@hotmail.com >. 09814125666.
2. Mr. A.S. Dogra, IFS (Retd.), # 256 Sector 37-A, Chandigarh- Email< asdogra@gmail.com >. 09815016268.
3. Mr. S.L. Dabral, IFS (Retd.), 127, Phase I Vasant Vihar, Dehradun- Uttarakhand. Email < sldabral@yahoo.co.in > 09897030910.

NOTE: - Any reference to forest seed includes other reproductive material as well such as seedlings, cuttings, budwood of forest plants.

(A) Seed and Plant Material Produced by Forest Department

1. State / U.T.
2. Main Forest types (according to Champion & Seth)
3. Forest and Tree Cover: Km²; Forest Coverkm²; Tree Coverkm²
4. Major agro-ecological regions
5. Progress of regeneration/afforestation during last five years (Table 1).

Table 1 - Details of Forest Tree Species Planted

State/ UT:

Sr. No.	Year	Area regenerated/ planted by State / UT ha. (please mention both separately)	No. of seedlings distributed to people by (seedlings in lacs)			Estimated number of seedlings/saplings planted/distributed species wise in order of importance. List only important species, limited to ten. (lacs)										
			Forest Department	Other agencies / NGOs etc.	Total No.	Species										
						1	2	3	4	5	6	7	8	9	10	11
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>13</i>	<i>14</i>	<i>15</i>	<i>16</i>	<i>17</i>
1	2002-03															
2	2003-04															
3	2004-05															
4	2005-06															
5	2006-07															

6. What is the annual estimated requirement of seed/reproductive material for the species listed under Q.5 above (Table 2, p.8)?

7. At present, what are the sources of seed supply/ procurement for departmental nurseries for own use of the Forest Departments, and for supply of planting stock to private growers? Please indicate details of seed sources for ten most important timber species and NWFP species that are planted on large scale in your State / UT under the following categories:

- Seed Stands
- Seed Production Areas
- Seedlings Seed Orchards
- Clonal seed Orchards
- Candidate Plus Trees Identified for seed collection
- Control pollinated hybrid seed production if any
- Candidate Plus cloned and tested under field conditions
- Field Tested Clones Deployed for Commercial Scale Plantations

8. Kindly indicate species wise area in hectares and annual seed production / clonal plant production under each of the categories listed above for ten most important species of timber trees / NWFP planted on large scale in your State / Union Territory either for departmental plantations or agro-forestry/ social forestry plantations.

9. What is the total annual seed requirement for departmental nurseries of the Forest Department and estimated requirement of seed used by private nursery growers of your State/ UT for each of the aforesaid most important species? What percentage of the total requirement of seed for each species is met from known designated seed sources listed above? What Percentage of seed is obtained from sources / categories other than those listed under item 7 above (Table-3, p. 9).

10. The starting point for any seed certification scheme is the identification of regions of provenance or zones for important species. Superior provenances are however, identified by means of provenance tests.

Has your State/UT identified and delineated on maps the region(s) of provenance or zones for each of the species listed in Q.5 and Q.6 above.

- (i) Not yet
- (ii) Done for the following species. Please provide species wise details
- (iii) Yes, for all the species.

11. If the answer to Q 10 above, is (i) or (ii); when do you expect to complete the exercise?
 - (i) In one year
 - (ii) In two years
 - (iii) More than two years (specify).
12. Does your state/UT Forest Department (including FDCs) has seed testing facilities/testing laboratory(ies)?. If so, please state their locations.
In case you do not have your own facilities, where your seed is tested or is not tested at all?
13. In case you have seed testing facilities, how many seed samples are handled annually and how many seed lots in quintals are represented by these samples?
14. Does the seed certified by these laboratories cover the following aspects of seed/planting material?
 - A. seed/planting material purity
 - B. genuineness of provenance/variety
 - C. germination parameters
 - D. viability
 - E. seed vigour
 - F. seed health
 - G. seed moisture
15. How much seed do you need to store? Do you store it after testing? Do you have facilities for proper packing of seed and adequate storage facilities in order to ensure viability and seed vigour for maximum period possible?
16. Do you accept only the certified seed supplied by outside agencies? If not, what is your experience about its performance?
17. What is the expenditure on the seed collected/ procured till its final disposal/use (a rough estimate will suffice)?
18. As the seed production areas and seed orchards described earlier become more productive, an increasing quantity of seed and plants of superior provenances and genetically improved seed sources will be available for general use. Likewise the demand and production of cultivars or clones of important species amenable to cost effective vegetative propagation like poplars and eucalypts has also been growing rapidly. The efforts of forest geneticists, tree breeders and private sector suppliers of quality seed/ clonal planting stock will be largely nullified unless certification procedures are available to maintain the authenticity, genetic purity and quality of the genetically improved seed and clonal planting stock.

The object of the certification of tree seed, seedlings and clonal planting stock is to ensure authentic identify and high genetic quality of the seed, nursery seedlings and clonal plants. Forest Departments, farmers and others interested in raising highly productive plantations shall be able to get certified and authentic seed, nursery seedlings and clonal planting stock for future plantations. Cheating of farmers and supply of spurious seed/ clonal planting stock and related mal practices can be controlled for the benefit of all stake holders.

In view of the above, are you satisfied with the genetic quality, purity, and productivity of forest seed / nursery seedlings and other reproductive material like clonal planting stock presently in use?

(i) Yes

(ii) No

Kindly provide brief justifications for your views. If the answer is no, can we have your valued suggestions as to how the situation can be improved?

19. The Seeds Act 1966 provides for regulation of the quality of seed of food crops and fodder crops etc. for sale and matters connected thereto. It was basically put in place to ensure increased agriculture production. Under the Act, a Central Seeds Committee is constituted to advise on legislative matters, fixing minimum standards of germination, purity and other factors, regulation of seeds certificates and licensing of dealers in seeds, compulsory labeling of seed containers and restricting export, import and inter-state movement of non-descript seeds.

Likewise, many States have statutory regulations and provisions for registration of horticultural nurseries, certification of cultivars of fruit plants etc. However such regulations as applicable to horticultural nurseries/ fruit plants saplings or the Seeds Act 1966 do not cover seed and clonal plants of forest / timber tree species

Should we have a separate Act for regulation of quality and supply of certified Seed / Seedlings and Clonal Planting Stock of Timber Tree/ NWFP species used in afforestation/ reforestation projects by Forest Departments or farmers on the lines of certified horticultural fruit plant saplings / nurseries or the Seeds Act, 1966 with suitable modifications?

(i) Yes

(ii) No

Kindly give brief justification in either case for your recommendation which may be affirmative or indicative of status quo.

20. Enactment of proposed Act and Rules regarding Forest Seed and Planting Material should make suitable provisions to regulate production, processing, labeling, registration of clones and nurseries, certification of seed and clonal planting stock etc. The proposed Act and Rules may regulate trade in respect of forest tree seed and planting stock with a view to making genetically improved and truthfully labeled genuine seed and planting stock available to users including Forest Departments and farmers. What are the considered views of the State/ UT Forest Department in this regard?
- Do you feel need for such regulation and enactment of suitable Act and Rules as urgent, relevant and useful to various stakeholders?
 - Should ICFRE be the Designated Authority for registration of nurseries / certification of forest tree seed and planting stock including clones of various species or a separate Authority should be set up by Government as per provisions of the proposed Act and the Rules to be made there under?
 - Any major hurdles you anticipate in implementing the provisions of proposed legislation and regulation of quality and trade of forest tree seed and planting stock and your valued suggestions for overcoming those concerns?

(B) Forest Nurseries Established by NGOs and Private Individuals / Companies

21. Kindly provide your valued comments on the physical and genetic qualities of the nursery plants/seed / clonal planting stock of timber trees / NWFP species distributed by the private sector nurseries in your state.

22. What are the important sources of obtaining genetically improved seed / field tested superior clones by such private nurseries?

21. Are private sector organizations / individuals permitted to collect seed from forests under the control of State / UT Forest Department? Are there any guidelines / regulations in force for such seed collection? What are the royalty rates for seed collected from forests?

22. Is the labeling of seed/planting material truthful and regulated by any agency?

23. Do the nurseries have technically trained manpower for the job?
24. If not, what measures would you suggest to upgrade their skills?
25. Should employment of trained manpower by nursery owners be made mandatory by law?
26. Kindly highlight any major contributions by private sector in your state in respect of development of genetically improved seed or clones/ clonal planting stock etc. for supplies to the forest departments or private farmers?
27. How best should Government recognize and reward major contributions by individuals / private sector in this regards at the National and State Level?

Table 2 - Requirement of Seed/Planting Material

Sr. No.	Species	No. of clean seed/kg	Quantity of seed required (kg)	No. of Plants required (lacs)
1	2	3	4	5
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

25. How is the seed obtained for species listed under Q. 5 and Q.6 above? Please tick the appropriate column. (If more than one column is ticked please indicate the proportion in a foot note to Table- 3).

Table 3 - Source of Forest Seed

Sr. No.	Species	Unclassified ¹ Seed and plants	Source ² Identified	Selected ³ Seed and plants	Certified ⁴ Seed and plants
1	2	3	4	5	6
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

1. Origin of seed is unknown or inadequately described or seed has been collected from stands not classed as seed source by a competent authority.

2. Seed derived from good stands/plantations registered as seed sources by competent authority.

3. Seed collected from carefully selected candidate plus trees in stands / plantations approved by competent authority.

4. Seed collected from seed orchards (of clonal or seedling origin).

.....