

NATIONAL BAMBOO MISSION

1. MISSION OBJECTIVES

The main objectives of the Mission are:

- To promote holistic growth of the bamboo sector through area based regionally Differentiated strategies;
- To increase the coverage of area under bamboo both in forest and non-forest areas; with appropriate varieties to enhance yields;
- To promote marketing of bamboo based handicrafts.
- To establish convergence and synergy among stake-holders for development of bamboo.
- To promote, develop and disseminate technologies through a seamless brand of traditional wisdom and modern scientific knowledge.
- To generate employment opportunities for skilled and unskilled persons, especially unemployed youths.

2. STRATEGY

To achieve the above objectives, the Mission would adopt the following strategies:

- Adopt a specific approach covering production and marketing to assure appropriate Returns to growers/producers;
- Promote of Research and Development (R&D) of technologies for production.
- Enhanced acreage (in forest and non-forest areas) and productivity;
- Adopt a coordinated approach and promote partnership, convergence and synergy among R&D marketing agencies in public as well as private sectors, at all levels;
- Promote cooperatives and self-help groups to ensure support and adequate returns to farmers;
- Facilitation of capacity-building and Human Resource Development;
- Setting up of National, State and sub-State level structures, keeping in view the need for getting adequate returns for the produce of the farmers and eliminating middlemen to the extent possible

3. PROCEDURE FOR APPROVAL AND IMPLEMENTATION

- ❖ States will be required to prepare a Bamboo Development Mission Document (BDMD) projecting a plan of action for the X Plan and XI Plan periods. The BDMD will form the basis for preparing Annual Action Plans (AAP). The AAP will be area based, on the basis of existing potential for bamboo development, available infrastructure for implementation and monitoring, available unspent balance out of previous release and capacity to absorb the funds in taking up activities. In non-forest area, the Committees at the District level will prepare and submit the Annual Action Plan (AAP) to the

Bamboo Development Agency (BDA), which in turn will submit to State Level Steering Committee. In forest area, the Annual Action Plan will be prepared by Joint Forest Management Committee (JFMC) and submit to Forest Development Agency, which in turn, will submit to the State Level Steering Committee for finalization. AAP approved by the SLSC will be considered by the National Steering Committee. Attempt would be made in the AAP to address all the issues relating to bamboo development covering production, Handicrafts and marketing. Format for submission of Annual Action Plan to the Ministry of Agriculture is given at

❖ The SLCs will upload the AAP, as communicated to the National level Steering Committee, on the web site exclusively created for the purpose. The same will be replaced after its approval by National level Steering Committee. Attempts will be made to display the position regarding approvals of the AAP online.

❖ There are 4 Mini-Missions details of which are given below:-

Key Elements of the National Bamboo Mission

1. Research and Development for Bamboo Development
2. Establishment of new Nurseries to raise bamboo seedlings
3. Raising high yielding bamboo plantations on commercial basis in Forest and Non-Forest areas
4. Improvement of senile bamboo plantations, Pest and Disease Management of bamboo.
5. Handicrafts, bamboo marketing and exports
6. Capacity building and Human Resource Development of farmers and personnel
7. Establishment of Bamboo Markets and new Marketing Strategy for Bamboo.
8. Meticulous monitoring, evaluation and reporting, Database generation, compilation and analysis.

Research and Development

- ❖ The programmes under research and development will concentrate on technology generation as appropriate to each region/ State keeping in view their specific agro-climatic and socio-economic conditions. Emphasis will be on effective documentation/ transfer and dissemination of technologies available in India and abroad. The Indian Council of Agricultural Research (ICAR), Indian Council of Forestry Research and Education (ICFRE) Institutes such as Rain Forest Research Institute (RFRI), Jorhat and Forest Research Institute, Dehradun, Indian Institute of Wood Science, Bangalore(IWST); the State Forest Research Institutes; Indian Institute of Forest Management, Bhopal; (Kerala Forest Research Institute (KFRI), Peechi; Indian Plywood Industries Research & Training Institute (IPIRTI), Bangalore; Indian Institute of Technology (IIT), Bombay; Indian Institute of Science, Bangalore; Regional Research Laboratories (RRLs); Central Agricultural Universities; State Agricultural Universities and other

research institutes in the public sector having capabilities in this area will be the primary institutes for taking up research programmes on bamboo. Research programmes will be guided by the Working Group on R&D and will address identified and emerging needs in the areas of plantation, developing new Agro-forestry systems with bamboo, harvesting and sustainable management of bamboo resources, livelihood based ecosystem protection and improving the durability of bamboo.

Plantation Development

- ❖ This component primarily aims at expansion of area under bamboo plantation in the potential areas, both in Government forests as well as in non-forest lands for commercial utilization. The main objective of this component is to increase production of commercially important bamboo species and shoots for regular supply to the processing units for production of more value added products. The overall goal of this component is to ensure that the target is achieved within the stipulated time in order to ensure employment generation and achieve rural poverty alleviation with input of right technology for supply of planting material and pre-harvest management practices. The principal activities under this are:

Establishment of Nurseries

- ❖ For raising plantations, a sizable quantity of planting material will be required. This will be achieved through establishment of Centralized and decentralized nurseries. Planting materials will also be generated from Tissue Culture laboratories. Since establishing tissue culture laboratories will require time, the primary source for planting material would be through the conventional method of raising nursery seedlings.
- ❖ The Nursery activities are categorized based on the area and yearly production capacities of plantlets. Accordingly, the following types of Nurseries are proposed:

Certifying Agency for Planting Materials:

- ❖ In order to ensure quality supply of Planting Materials for commercial bamboo plantation in both Government Forest Land as well as the Non Forest Land, a suitable Certifying Agency will be identified by the respective BDAs/ FDAs in each State. For example, in the States of North Eastern Region, existing organizations like State Forest Research Institute, Rain Forest Research Institute, State Agricultural Universities, etc. who have expertise on the subject will be consulted. Similarly other States can also appoint Certifying Agencies in Public/ Private Institutions located in the specified region. Assistance for certification facilities for ensuring quality of planting material would be provided to the public sector/private sector on project basis.

Tissue Culture Laboratories

- ❖ For supply of quality planting material in large quantities, which is free from diseases and viruses, Tissue Culture Units need to be set up. Effort will be made to set up these Units in the private/public or cooperative sector. Therefore, a provision is kept for

setting up three such tissue culture labs in the country in the years 2006-08, one in the private sector and two in the public sector. Assistance up to 50% of the Project cost subject to a maximum of Rs. 10.50 Lakhs would be provided if it is set up in the private/ cooperative sector. In case of public sector, 100% assistance with a maximum limit of Rs. 21.00 Lakhs will be provided. Tissue culture Units would be set up only with close supervision and technical support from ICAR

Raising New Plantations

- ❖ To begin with, an area of only 39,500 hectares is being taken up during the Tenth Plan period. This includes 16,000 hectares each in Govt. forest and non-forest areas and 7,500 hectares under Improvement of Existing Stock.
- ❖ The identification of land is the pre-requisite for raising new plantations. The Principal Chief Conservators of Forests/Chief Conservator of Forests of the respective State Governments will be involved in identifying the potential areas for raising bamboo plantations in Government forest lands. Simultaneously, land will be identified in the non-forest lands in consultation with the State Horticulture/Agriculture/ Revenue/ Rural Development Departments. The BDA will attempt to identify and demarcate land immediately so that plantations can be raised expeditiously.

Planting Scheme

- ❖ The planting scheme has to take into consideration the size and growth habit of the species. In the planting scheme envisaged for a few species, it is to be noted that spacing of plants between lines is greater than the spacing of plants in line. This is because it allows greater ease of movement for maintenance and harvesting activities and also allows movement of tractors and small vehicles. A model of 10 bamboo species is given at **Annexure 4**.
- ❖ **Forest Areas** - MoEF will promote bamboo plantations on commercial basis in different States of the Country as per their mandate. Since the MoEF may not have sufficient resources to plant bamboo of their own, the entire fund required for planting bamboo in Government Forest Land under JFMS will be met from the National Bamboo Mission in a phased manner. The total cost of planting bamboo in one hectare of Government Forest Land works out to Rs. 25,000/-. The funds will be released in two equal installments of 50:50. Assistance for the second year will be subject to 90 % survival of the plants.
- ❖ **Non-Forest Areas** - The bamboo growers in the non-forest land would be extended direct subsidy up to 50% of the cultivation cost per hectare subject to a ceiling of Rs. 8,000/ for small and marginal/ SC/ ST farmers. The funds will be released in two equal installments of 50:50. Assistance for the second year will be subject to 90 % survival of the plants. Apart from the subsidy component, the funding mechanism in the private

sector (non-forest areas) may be sourced from (a) linking with existing government programmes; and (b) through Bank Loans.

Improvement of Existing Stock

Crafts-persons and artisans of this country are dependant for their livelihood on handicraft items for which a specific number of bamboo species are being used since time immemorial. In order to improve the quality of such products, there is a need to improve upon the existing stock and variety of bamboo that is being used by these crafts-people and artisans. The existing stock of bamboo need to be improved so that the crafts-people and artisans can derive maximum benefits and returns from the products that are being manufactured from the existing stock. With a view to maximize returns without any substantial investment, an area of 7,500 hectares of the existing stock of bamboo will be improved initially. This task will be undertaken by BDAs and FDAs as in case of bamboo plantation at the state level.

Technology transfer & HRD in Plantation Development

Transfer of technology through training, frontline demonstration, publicity and training of the trainers are an integral part of the Mission. Under this programme, training of farmers and field level workers will be taken up.

Appropriate training is required to be imparted to the farmers for the adoption of scientific measures (pre- and post harvest management) for high yield plantations of bamboo and harvesting of shoots. The important activities are to provide resource material to the trainees and acquaint them about various farming techniques through exhibitions and demonstrations. This activity will be carried out both by the government as well as the private sector and NGOs.

Further, project officers, district horticulture officers, agricultural extension officers and Block development officials will be trained in the modern technological advances in bamboo plantation at various ICAR/ ICFRE Institutes, SFRI and DBT Institutions in the country and within their respective states. These officers in turn, will train the staff and farmers in their respective States. This activity will be project-based as per the proposals received from the States. Assistance will be provided as per norms given at

Irrigation

Irrigating the bamboo plantations during the summer when without rain for 20 days or so is a must for better yield. For the Mission, such areas will be covered as have been identified under DPAP. Depending on proposals received from the States, an amount of Rs.20, 000 towards purchase of irrigation systems per hectare will be provided subject to a ceiling of 4 ha.and depending on actual and emerging needs of the areas identified for plantation.

Technology Dissemination through Front Line Demonstration

Latest technologies will be promoted in bamboo plantation through active involvement of farmers participatory demonstration in compact areas of one hectare. This will be organized at strategic locations and in draught prone States for which assistance will be limited to 50% of the cost. Plantations in the public sector could be sites for front line demonstrations.

Workshop Seminars at the National, State and District Levels

Commercial Bamboo Plantation will need a mass awareness programme right from the Policy Makers, at the Central and State Level to the farmers at the grass root level. These awareness programmes will have to highlight socioeconomic development related to bamboo plantation and nursery activities along with physical benefits and marketing efforts to be addressed by the National Bamboo Mission. These seminars will be project based and assistance will be provided as per norms given in **Annexure 5**.

Pests and Disease Management

Pests and diseases pose a serious threat to Bamboo right from the seed stage to finished products. Quite a number of insect fauna including sap-suckers, borers, and defoliators have been reported from bamboo in the Indian sub-continent.

Disease control in bamboo is essential, both at the natural level and the plantations involved by application of fungicides as well as other chemicals.

Depending on proposals received, an amount of Rs. 200 per hectare will be provided as a one time grant from the NBM for this purpose.

Innovative Interventions

Any new intervention in bamboo sector which may lead to increase in farm income by the introduction of innovative technology will be covered under this category.

Post-harvest storage and treatment facilities

Once the bamboo crop is harvested from the field it is required to be transported safely and stored properly. For this purpose, suitable warehouses need to be constructed near the villages. While storing the produce it needs to be treated to enhance its durability.

Handicrafts, Bamboo Marketing and Exports

The purpose of this component is to provide and increase employment opportunities, preservation and introduction of new designs and mechanization of bamboo-based crafts as living heritage and to assist in marketing these products.

The main objectives of this component are:

- ❖ Introduction of Grading systems of round and primary processed bamboo
- ❖ Introduction of preservative methods (both conventional and chemical) according to use
- ❖ Conversion of niche bamboo handicrafts products to mass products
- ❖ Introduction of utility handicrafts through industrialized means
- ❖ Setting up of bamboo wholesale and retail markets near villages
- ❖ Marketing through Bamboo Festivals, *Melas*, *Expos*, *Craft Bazaars*, bamboo markets and introduction of an effective Electronic Information Flow system.

Bamboo Wholesale & Retail Markets near Village Level Micro processing Units

A total of 179 Bamboo Wholesale/Retail Markets will be set up all over the country. These markets, apart from other facilities, will have a computer and VSAT facilities. These markets, apart from trading activities, will also keep track of the market information related to various bamboo products and thus, the farmers and the primary processors will have direct access to such information and data, which in term will help them to plan their activities well ahead. These Markets can be set up and maintained by the community themselves or in partnership with the State Governments. The State Marketing Boards can also take up this activity. The expertise of DC (H) will be utilized for the purpose. The total cost of one such Market has been estimated at Rs. 16.00 Lakhs. Depending on proposals received from DC (H) and other Organizations, assistance will be provided to the extent of 25% of the cost subject, to a maximum of Rs. 4.00 lakh for general areas and 33.33% of cost, subject to a maximum of Rs. 5.33 lakh for Hilly/Tribal area.

Bamboo Bazaars

A total of 195 Bamboo Bazaars will be put in place throughout the country. Adjacent to this Bamboo Bazaar, information centers are proposed. These Bazaars also would have computers, V-SAT facilities for keeping track of various demand supply of bamboo products, costs, user industries etc. These Bazaars can be set up and maintained by the community themselves or in partnership with the State Governments. The State Marketing Boards can also take up this activity. The expertise of DC (H) will be utilized for the purpose. The total cost of one such Market has been estimated at Rs. 27.00 Lakh. Depending on proposals received from DC (H) and other Organizations, assistance will be provided to the extent of 25% of the cost, subject to a maximum of Rs. 6.75 lakh for general areas and 33.33% of cost, subject to a maximum of Rs. 9.00 Lakh for Hilly/Tribal area.

Retail Outlets (showrooms)

To popularize various Bamboo handicrafts Products including processed shoots, a total no. of 10 Retail Outlets (Show-room) would be established in 10 Metros. These outlets would also have V-SAT facilities. The total cost of one such Show-room has been estimated at Rs.40.00 Lakh. Depending on proposals received from DC (H) and other Organizations, assistance will be provided to the extent of 25% of the cost, subject to a

maximum of Rs. 10.00 Lakh for general areas and 33.33% of cost, subject to a maximum of Rs. 13.33 Lakh for Hilly/Tribal area.

Participation in Domestic Trade Fairs:

In order to popularize and market various bamboo products throughout the country, at least 30 participants from each State will be chosen to participate in National Level Trade Fairs, at least twice a year. To and fro travel by railways, lodging, food and transportation etc. for the participants, including two truckloads of display products from each State would be provided. These would be project based activities, as per proposals received from the States and the assistance provided would be 75% of the cost subject to a maximum of Rs. 3.75 Lakh per event of 2 days.

Participation in International Trade Fairs:

To popularize the made in India Bamboo products worldwide, taking part in International Trade Fairs is a must activity. As such, at least 10 selected entrepreneurs from each State (to be selected from the participants of the National Trade Fair) would be sponsored to display their products in Trade Fairs abroad. This activity would be done twice a year. These would be project based activities, as per proposals received from the States and the assistance provided would be 75% of the cost subject to a maximum of Rs. 7.50 Lakh per event of 5 days.

Market Surveys:

Although a large number of market surveys have been conducted in recent times on high value and up market bamboo products, yet there remains a massive gap to address the needs, requirements and profitability of low and medium value bamboo products that are being made. This is all the more necessary in view of the fact that all Financial Institutions and Banks while appraising project proposals lay stress on the marketability of the products to be produced. As such, it would be in track to conduct a market survey especially related to bamboo products like tooth picks, window blinds, cotton ear buds, skewers and the like which have been conventionally made of wood in our country and the consumers are used to it. This market survey, apart from estimating the demand supply chain and present players and future demands, will also highlight how bamboo products will have to be positioned and the market entry strategy thereby indicating pricing, supply position and branding. This project based activity would be done by the NBM directly through a suitable Agency to be identified, after floating tenders and assistance will be 100%.

Monitoring and Evaluation

There shall be continuous in-house Monitoring by the BDA / Forest Development Agencies (FDA) and third party independent evaluation as approved by the National Steering Committee. A detailed peer review of the progress achieved under the Mission

will be made by the Department of Agriculture & Cooperation towards end of 2007. The States would be responsible for preparing quarterly progress reports for the National Bamboo Cell aggregating the performance data and highlighting any problem areas requiring immediate management attention. The Format for this is given at **Annexure - 5**. The BDAs would be required to prepare a comprehensive report before the detailed peer review. A Format devised for Impact Assessment along with the specific indicators, which need to be monitored is given at **Annexure - 6**.

OVERALL TARGETS UNDER NATIONAL BAMBOO MISSION

Based on the activities carried out under the provisions of the National Bamboo Mission and depending upon the continuance of the NBM beyond the X Plan period, after the detailed peer review to be carried out towards the end of 2007, the following are the broad overall Targets sought to be achieved

Norms of Assistance for programmes under National Bamboo Mission

Sl.No.	Programme	Estimated Cost	Revised Pattern of Assistance
	A. Research & Development	Project based	100% to development public/Private sector Institutes
	1. Research on:	-do-	
	a. Harvesting & Sustainable		
	b. Developing new Bamboo Agroforestry techniques	-do-	-do-
	c. Bamboo & Livelihood		-do-
	B. Plantation Development		
	1. Planting Material (Forest Area)		
	A. Centralized Nurseries	2.73 lakh	100% assistance subject to a maximum @ Rs 2.73 lakh per Nursery
	i) public Sector (0.25 ha)		
	ii) Private Sector (0.25 ha)	2.73 lakh	25% of cost subject to a maximum of Rs 68,000 each as credit linked back ended subsidy.
	B. Nurseries in Private sector		
	i) Kisan Nurseries (0.10ha)	Rs.26,000/- per unit	25% of cost subject to a maximum of Rs. 68,000 each as credit linked back ended subsidy.

	ii) Mahila Nurseries(0.10ha)	Rs.26,000 per unit/-	25% of cost subject to a maximum of RS. 6,500/- per Nursery.
	2.Planting Material (Non-Forest Area) A. Centralized Nurseries		25% of cost subject to a maximum of RS. 6,500/- per Nursery.
	i) Public sector(0.25)	2.73 lakh	100% assistance for subject to a maximum @Rs 2.73 lakh per Nursery
	ii) Private sector(0.25ha)	2.73 lakh	25% of cost subject to Rs 68,000/- each as credit linked back ended subsidy
	B. Nurseries in Private sector i) Kisan Nurseries (0.10ha)	Rs.26, 000/- per unit.	25% of cost subject to a maximum of RS. 6,500/- per Nursery.
	ii) Mahila Nurseries(0.10ha)	Rs. 26,000/- per unit	25% of cost subject to a maximum of RS. 6,500/- per Nursery.
	3. Funds for certification of Planting Material	Project based	100% assistance to public/Private sector Institutes
	4. a. Tissue Culture Units in public sector		Rs. 21.00 lakhs per TC unit 100% assistance to PSUs maximum of Rs. 21.00 lakh
	b. Tissue Culture Units in Private Sector		Rs.21.00 lakh per TC unit 50% assistance subject to a maximum of Rs. 10.50 lakh as credit linked back ended subsidy at par with Technology Mission for the

			Development of North-Eastern Region (TMNE)
5. Area Expansion (Captive Plantation)			
a) Forest Area	Rs.25,000/ha		100% assistance in two equal installments (50:50)
b) Non Forest Area	Rs16,000/ha		50% of cost subject to a maximum of Rs.8, 000 per ha subject to the limit 4 ha per/beneficiary.
6. Improvement of Existing Stock	Rs. 8,000/ha		100% assistance subject to the limit 2 ha per beneficiary for non-forest area.
7. Technology Transfer & HRD	Project Based		
a. Training of farmers/entrepreneurs			Rs.1, 520/- per participant for within State; Rs 2500 /- each outside state of seven days.
b. Training of field Functionaries	Project based		Rs.8,000/- per participant for Period of seven days.
c. Demonstration of plantation Technology	Project based		50% of cost subject to a maximum of Rs. 10,000/ha for a maximum area of 0.50 ha per beneficiary.
d. Workshops/Seminars/Training	Project based		100% assistance.
i) International Level	Project based		100% assistance subject to a maximum of Rs. 5.00 lakh per event of two days.
ii) National Level	Project based		100% assistance subject to a maximum of Rs.

	iii) State level	Project based	5.00 lakh per event of two days. 100% assistance subject to a maximum of Rs. 3.00 lakh per event of two days.
	iv) District Level	Project based	100% assistance subject to a maximum of Rs 1.00 lakh per event of two days.
	8. pest and Disease Management at the Plantation level	Rs.400/ha	50% of cost subject to a maximum of Rs. 200/- per beneficiary per ha to a limit of 2 ha for non forest area.
	9. Innovative Interventions	Project based	100% assistance
	10. Post-harvest storage and treatment facilities	Project based	100% assistance subject to maximum of Rs. 20 lakh per unit
	11. Irrigation Micro-Irrigation in Non Forest Area	Rs.40,000/ha	50% of cost subject to a maximum of Rs. 20,000/- per ha to a limit of 4 ha per beneficiary.
	C. Handicraft, marketing and Exports		
	1. Bamboo wholesale & Retail Markets	Rs.16.00lakh Per unit	25% of cost subject to a maximum of Rs.4.00 lakh for general areas and 33.33% of cost subject to a maximum of Rs.5.33 lakh for Hill/Tribal are.

	<p>a. Bamboo wholesale & Retail markets near villages b. Bamboo Bazaars</p>	<p>Rs.27.00 lakh per unit</p>	<p>25% of cost subject to a maximum of Rs.4.00 lakh for general areas and 33.33% of cost subject to a maximum of Rs.5.33 lakh for Hill/Tribal are.</p>
	<p>C. Retail Outlets (Showrooms)</p>	<p>Rs 40.00 lakh per unit</p>	<p>25% of cost subject to a maximum of Rs.4.00 lakh for general areas and 33.33% of cost subject to a maximum of Rs.5.33 lakh for Hill/Tribal area.</p>
	<p>d. Innovative Interventions</p>	<p>Project based</p>	<p>100% assistance</p>
	<p>2. Participation in Domestic Trade Fairs</p>	<p>Project based</p>	<p>75% of cost (Rs. 3.75 lakh) for an event of 2 days @ Rs.5 lakh per event</p>
	<p>3. Participation in International Trade Fairs</p>	<p>Project based</p>	<p>75% of cost (Rs. 7.5 lakh For an event of 5 days @ Rs. 10.00 lakh per event.</p>
	<p>4. Conduction of Market Surveys, etc.</p>	<p>Project based</p>	<p>100% of cost</p>
	<p>D. Implementation Monitoring Mechanism</p>		
	<p>1.National Bamboo Cell a. Evaluation and Monitoring</p>	<p>Project based</p>	<p>100% of cost</p>
	<p>b. Bamboo Technical Support Group</p>	<p>Project based</p>	<p>100% of cost for engaging consulting for specified task in specified task in</p>

			specified period
	c. Coloured Broachers and leaflets	Project based	100% of cost
	d. Promotional campaigns through Electronic/Audio-visual Media/Newspapers	Project based	100% of cost
	e. Database Generation & Management (Information, Web Based Database)	Project based	100% of cost to central /state level institute/ICAR/ICFRE ETC.
	2. State Implementation Bodies Project Report Preparation, Consultancy.	Project based	UP TO 1.5% of the project cost.

Whom to Contact Us

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