NATIONAL AGROFORESTRY POLICY

2014

GOVERNMENT OF INDIA
DEPARTMENT OF AGRICULTURE & COOPERATION
MINISTRY OF AGRICULTURE
NEW DELHI

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1. Preamble

1.1. Agroforestry is defined as a land use system which integrate trees and shrubs on farmlands and rural landscapes to enhance productivity, profitability, diversity and ecosystem sustainability. It is a dynamic, ecologically based, natural resource management system that, through integration of woody perennials on farms and in the agricultural landscape, diversifies and sustains production and builds social institutions.

1.2 Agroforestry systems include both traditional and modern land-use systems where trees are managed together with crops and or/ animal production systems in agricultural settings. Agroforestry is practiced in both irrigated and rain fed conditions where it produces food, fuel, fodder, timber, fertilizer and fibre, contributes to food, nutritional and ecological security, sustains livelihoods, alleviates poverty and promotes productive and resilient cropping and farming environments. Agroforestry also has the potential to

enhance ecosystem services through carbon storage, prevention of deforestation, biodiversity conservation, and soil and water conservation. In addition, when strategically applied on a large scale, with appropriate mix of species, agroforestry enables agricultural land to withstand extreme weather events, such as floods and droughts, and climate change.

1.3 Agroforestry has significant potential to provide employment to rural and urban population through production, industrial application and value addition ventures. Current estimates show that about 65 % of the country's timber requirement is met from the trees grown on farms. Agroforestry also generates significant employment opportunities.

1.4 It is also recognized that agroforestry is perhaps the only alternative to meeting the target of increasing forest or tree cover to 33 per cent from the present level of less than 25 per cent, as envisaged in the National Forest Policy (1988).

1.5 A major role for agroforestry is emerging in the domain of environmental services. Agroforestry is known to have the potential to mitigate the climate change effects through microclimate moderation and natural resources conservation in the short run and through carbon sequestration in the long run. Agroforestry species are known to sequester as much carbon in below ground biomass as the primary

forests, and far greater than the crop and grass systems.

1.6 Agroforestry systems offer means to address to a significant extent the present challenges of food, nutrition, energy, employment and environmental security. However, appropriate research interventions, adequate investment, suitable extension strategies, incentives to agroforestry practitioners, enabling legal and regulatory environment, marketing of agroforestry produce, post-harvest processing, development of new products, and above all a forward looking National Agroforestry Policy is required to address these issues.

1.7 Given the fact that land-holding size is shrinking, tree farming combined with agriculture is perhaps the only way forward to optimize the farm productivity and thus, enhancing livelihood opportunities of small farmers, landless and the women. Agroforestry interventions can be a potent instrument to help achieve the 4 percent sustained growth in agriculture. In short, trees on farm or agroforestry are uniquely place for achieving multiple objectives, especially the food, nutrition, employment, health and environmental security. It is contended that an ever-green revolution is unlikely without a major groundswell of growing trees on farms.

1.8 Agroforestry can become an important tool to build resilience of farmers and rural people against threats of climate change and natural calamities. This can also help in greening the rural employment and rural development opportunities by providing agroforestry tree produce based economic opportunities.

2. Need for Agroforestry Policy in India

2.1 Absence of a dedicated and focused national policy and a suitable institutional mechanism:

Major policy initiatives, including the National Forest Policy 1988, the National Agriculture Policy 2000, Planning Commission Task Force on Greening India 2001, National Bamboo Mission 2002, National Policy on Farmers, 2007 and Green India Mission 2010, emphasize the role of agroforestry for efficient nutrient cycling, organic matter addition for sustainable agriculture and for improving vegetation cover. However, agroforestry has not gained the desired importance as a resource development tool due to various factors. Some of these factors include: restrictive legal provisions for harvesting & transportation of trees planted on farmlands and use of non-timber produce, near non-existent extension mechanisms, lack of institutional support mechanisms, lack of quality planting materials, inadequate research

on agroforestry models suitable across various ecological regions of the country, inadequate marketing infrastructure and price discovery mechanisms, lack of post- harvest processing technologies, etc. This is also due to the fact that the mandate of agroforestry falls through the cracks in various ministries, departments, agencies, state governments, etc. The value and position of agroforestry is ambiguous and undervalued, and despite of its numerous benefits, it is only sporadically mentioned at the national level, because of the lack of appropriate public policy support. While there are many schemes dealing with tree planting / agroforestry, there is an absence of a dedicated and focused policy, and lack of an institutional mechanism for coordination and convergence among the schemes/ ministries to pursue agroforestry in a systematic manner.

2.2 Lack of an integrated farming systems approach:

Farming enterprise of small farmers needs to be understood and developed as a portfolio of activities rather than as "fixed one type of cropping system". Development along this direction requires a convergent programme which integrates trees, crops, water, livestock and other livelihood initiatives. This perspective of integration seems to be missing in the national agroforestry initiatives in whatever form it may currently be. In fact the key mantra of the success of

the agro-horticulture programme of BAIF, NABARD, poplar based commercial scale (though small holder based), agro-timber systems in north-western parts of the country and other successful initiatives is their ability to integrate various livelihood aspects with the tree planting in the farm. Survival of trees is one of the most challenging tasks in the establishment phase of the trees, and without addressing the issue of water this does not seem to be possible. The enthusiasm of farmers depleted substantially with the higher mortality rate as experienced from various programmes in the past.

2.3 Restrictive regulatory regime:

There are restrictions imposed by the state governments on harvesting and transportation of agroforestry produce, especially those species which are found growing in the nearby forests. These restrictions were basically designed to prevent pilferage from government forests. However, the rationale for such restriction is not very convincing as the species grown in the forest are to be best grown in the nearby private farms because of their suitability to that agro-climatic condition. Obtaining permits for harvesting and transportation are cumbersome, costly& frustrating, and hence, discourage farmers from undertaking tree planting on farm lands. Multiple agencies, including the State Revenue Department are involved in issuing these permits. Similarly, tax is

imposed at various stages of the processing by multiple agencies. These restrictions also negatively impact the in-situ, or on-farm primary processing, jeopardize local employment in these operations and increase transport cost because of the transportation of the entire bulk raw material to the processing centers. As a result, the domestic agroforestry produce (raw materials and finished goods) is increasingly losing grounds against the imported materials, which are cheaper and of better quality. India, having all the natural advantages, should be able to develop agroforestry as a major sector for income and employment generation.

2.4 Inadequate attempts at liberalization of restrictive regulations:

There are sporadic examples of States taking steps for liberalization of above restrictions, such as, exempting agroforestry species from the harvesting and transit, but this has not been uniformly done by all the States. Also the extent of liberalization is not widely known to the farmers and thus, their problem continues. It is also learnt that farmers do not take interest in tree planting on the farm land fearing that too many trees on farm may lead to change in their land-use. Clearly such apprehensions have no basis; however this does emphasize the lack of awareness that persists on the ground. The Arun Kumar Bansal Committee, appointed by the Ministry of Environment and Forests in 2011 in its report has also identified the regulatory

bottlenecks, impeding the growth of the agroforestry, which need to be acted upon.

2.5 Insufficient research, extension and capacity building:

Research results on agroforestry, available in the public and private domain do not regularly reach the farmers due to lack of a dedicated extension system. There is a serious lack of institutional mechanisms at all levels to promote agroforestry. The efforts to dovetail agroforestry programmes to any other established programmes which have strong institutional mechanism up to the implementation level, such as the Integrated Watershed Management Programme are non-existent. Also, there is not enough research on the agroforestry models suitable for the diverse agro-climatic regions; for the indigenous and multi-purpose species (viz. *Prosopis cineraria*) or on domestication of species, resulting in over emphasis on few species (poplar, eucalyptus, Kadam, etc.) and their limited varieties in certain pockets of the country. It is also important to note that India lacks processing technologies for fast growing timber species.

2.6 Dearth of quality planting material:

Planting material such as seeds, seedlings, clones, hybrids, improved varieties, etc. are generally of mixed quality and not available commonly, particularly in the resource poor regions. It is estimated

that only about 10% of planting material is of high quality, the rest without any guarantee for quality standards. This issue mainly relates to the production, handling, distribution and planting & supervision of high quality planting material.

2.7 Institutional finance and insurance coverage:

Institutional finance in agroforestry has not been at par with its potential due to the lack of awareness of technical and economic data on different agroforestry models, and the techno-economic parameters required by financial institutions (FI) to evaluate finance needs and viability of the projects. Similarly, little is done in developing and popularizing insurance products for agroforestry ventures. Lack of awareness, unavailability of products suitable to growers, high cost of premium and unclear procedure of claim settlements are reported to be the factors responsible for this poor state of affairs.

2.8 Weak market access for agroforestry produce:

The marketing infrastructure (market yard, etc.), including "price discovery" mechanisms for agroforestry produce in general are unavailable in the country except in few states which have either developed exclusive marketing infrastructure for agroforestry produce or have dovetailed with the

regulated agriculture commodity marketing systems. As a result, it is largely a buyer's market and the middlemen get the major share in profit.

2.9 Industry operations at a sub-optimal level:

The Wood Based Industries (WBI) have played an important role in the promotion of agroforestry and economy in Punjab, Haryana, and in parts of U.P. and Uttarakhand. However, the regulations governing this industry have become stringent. The procedure for setting up new units or fulfilling of compliance by existing units is cumbersome and time consuming, not very encouraging to instil confidence in industries. The restrictions on primary processing at production sites after harvesting, leads to higher cost for transporting entire stock to the factory. This also results in lower supply of raw material, forcing the WBI to operate at sub-optimal level. The role of industries in promotion of agroforestry cannot be ignored and therefore, issues preventing growth need to be addressed urgently. Nearly $ 7-8 billion worth of wood-based products are being imported annually. The low import tariff for raw materials and finished goods, cumbersome procedures for sourcing raw materials domestically are some of the major reasons for the slow or negative growth of the WBI in India. Therefore, the agroforestry policy should facilitate that products are developed at competitive prices within India for generating local employment and reducing burden on imports.

2.10 It could be summarized that although farmers are interested to expand agroforestry, as the evidence on adoption shows, there are many missed opportunities for agroforestry to benefit farmer income and the environment due to neglect /oversight of the agencies that are supposed and expected to adequately promote and support it.

3. Goal

3.1 The major policy goals are:

- Setting up a National Agroforestry Mission or an Agroforestry Board to implement the National Policy by bringing coordination, convergence and synergy among various elements of agroforestry scattered in various existing, missions, programmes, schemes and agencies pertaining to agriculture, environment, forestry, and rural development sectors of the Government.
- Improving the productivity; employment, income and livelihood opportunities of rural households, especially of the smallholder farmers through agroforestry.
- Meeting the ever increasing demand of timber, food, fuel, fodder, fertilizer, fibre, and other agroforestry products; conserving the natural

resources and forest; protecting the environment & providing environmental security; and increasing the forest / tree cover, there is a need to increase the availability of these from outside the natural forests.

4. Basic Objectives

4.1 The basic objectives of the National Agroforestry Policy are to:

- Encourage and expand tree plantation in complementarity and integrated manner with crops and livestock to improve productivity, employment, income and livelihoods of rural households, especially the small holder farmers.
- Protect and stabilize ecosystems, and promote resilient cropping and farming systems to minimize the risk during extreme climatic events.
- Meet the raw material requirements of wood based industries and reduce import of wood and wood products to save foreign exchange.
- Supplement the availability of agroforestry products (AFPs), such as the fuel-wood, fodder, non-timber forest produce and small timber of the rural and tribal populations, thereby reducing the pressure on existing forests.

- Complement achieving the target of increasing forest/tree cover to promote ecological stability, especially in the vulnerable regions.
- Develop capacity and strengthen research in agroforestry and create a massive people's movement for achieving these objectives and to minimize pressure on existing forests.

5. Strategy

5.1 Establishment of Institutional Setup at National level to promote Agroforestry

5.1.1 An institutional mechanism, such as a Mission or Board is to be established for implementing the agroforestry policy. It will provide the platform for the multi-stakeholders to jointly plan and identify the priorities and strategies, for inter-ministerial coordination, programmatic convergence, financial resources mobilization and leveraging, capacity building facilitation, and technical and management support. Such an institutional arrangement will ensure that agroforestry gets equal treatment with other agriculture enterprises, because at present whether in the sphere of inputs, markets, institutional finance, or research and extension, agroforestry is at a sub-optimal level. A suitable mechanism for coordination and convergence

with state agriculture, and forest departments as nodal agencies may be established. The Mission / Board may be provided a corpus in order to effectively leverage Rs. 4000-5000 crores annually from the on-going programmes.

5.1.2 The Ministry of Agriculture has the mandate for agroforestry. Agroforestry Mission / Board will be located in the Department of Agriculture and Cooperation (DAC) in the Ministry of Agriculture (MoA). The Mission/ Board may comprise representatives of the Department of Agriculture Research & Education (DARE), Ministry of Environment & Forest (MoEF), Ministry of Rural Development (MoRD), Ministry of New and Renewable Energy (MN&RE), International Centre for Research in Agroforestry (ICRAF, South Asia Office), Planning Commission, National Rainfed Area Authority(NRAA), representatives of Non-Governmental Organizations, Industry, NABARD, Agricultural Universities, State Governments, etc.

5.1.3 The actual implementation may involve convergence and dovetailing with a number of programmes. They may include, the Mahatma Gandhi National Rural Employment Guarantee Programme (MGNREGA), Integrated Watershed Management Programme (IWMP), National Rural Livelihood Mission (NRLM),

National Bamboo Mission, Kisan Mahila Sashatikaran Pariyojana, Rashtriya Krishi Vikas Yojana (RKVY), National Medicinal Plants Board (NMPB), Mission for Integrated Development of Horticulture (MIDH), National Green India Mission, Warehouse Development and Regulation Act 2007 (WDRA), CAMPA fund. State Government may identify a Nodal Department for implementing the Agroforestry Mission/Board. At the district level, nodal agency may be Agriculture Technology Management Agency (ATMA) or any other department to be identified by the State, with other partners such as the Krishi Vigyan Kendras (KVKs), Van Chetna Kendras, Farmer's Associations, NGOs, private sector, Self-Help-Groups, Farmers' Cooperatives, Famer Producer Organizations, and Panchayati Raj Institutions (PRIs) etc.

5.1.4 Agroforestry research and development (R&D), including capacity development and pilot studies / testing and action research should be the responsibility of the ICAR. ICRAF should be involved as an important partner in agroforestry research & development - Strength of Indian Council for Forestry Research & Education (ICFRE) should also be capitalised in this endeavour.

5.1.5 In the proposed institutional arrangement the current stakes of the key ministries are to be respected and utilized. It is envisaged that existing structures at the state, district and sub-district levels will be utilized with necessary strengthening. The important dimension of the implementation strategy is that it will effectively leverage tree-plantation, afforestation, greening, nutrition strengthening, etc., which are components of major flagship programmes to achieve its objectives. That will be its uniqueness. That will be its strength.

5.2 Simple regulatory mechanism

5.2.1 There is a need to create simple mechanisms / procedures to regulate the harvesting and transit of agroforestry produce within the State, as well as in various States forming an ecological region. There is also the need to simplify procedures, with permissions extended on automatic route as well as approval mode through a transparent system within a given time schedule. There are regulations imposed by multiple agencies of State governments (viz. Department of Forest, land revenue, other local bodies) on harvesting and transit which have negative implications on the growth of agroforestry. All these restricting regulations

need to be identified and aligned with the proposed simplified mechanism.

5.2.2 Considering that States may find practical difficulties to exempt all tree species planted under agroforestry in farmland from State regulations for harvesting and transit, a practical way forward could be to develop a bouquet of commonly grown tress across the country and develop a uniform harvest and transit rules. The IVth Quinquennial Review Team (QRT, 2013) of NRCAF and AICRP on agroforestry has identified about twenty important multipurpose tree species at national level after thorough discussion with all the stakeholders, which can be the reference point while developing the bouquet.

5.2.3 A Committee constituted by the Ministry of Environment & Forests under Shri Arun Kumar Bansal has submitted its report in2011on the regulatory regime to be followed. The relevant recommendations of the Committee may be considered for inclusion in the implementation Guidelines for the National Agroforestry Policy.

5.2.4 Decentralized institutions of local governance, such as the PRI, GramSabhas, Joint Forest Management Committees (JFMCs), Eco

Development Committees or other similar people's institutions, such as those under the Forest Rights Act (FRA), Panchayats (Extension to Scheduled Areas) Act 1996 (PESA) etc. may be considered for playing a role in the regulatory mechanisms. The National Agroforestry Policy should be consistent with the FRA, PESA and such Acts (viz. Chotanagpur Tenancy Act) under which such provisions of community rights for harvesting and transportation may have been already provided. A point of caution is that delegation of power to the decentralized institutions should be accompanied with the capacity building measures to equip them (including the Gram sabhas) with the knowledge on agroforestry rules and regulations, quality control, etc. to avoid possible misuse of the power.

5.3 Development of a sound database & information system

5.3.1 Security of land tenure is a critical issue. More than in other agricultural systems, due to the longer gestation period of trees relative to annual crops stability and security of tenure rights is a necessary condition for farmers' to take up agroforestry. In the absence of such rights farmers would be reluctant to invest their labour and meagre capital resources in a crop

that may yield benefits after several years. A clear guarantee of tenure rights can support a farmer's strategy to invest in trees. Only then can farmers – as investors – make plans with confidence that the parameters shaping their long-term vision will not change. Similar is the case with the rights of the tenant farmers on trees planted in the farm which they have been cultivating or share-cropping for long. Tenancy rights must be respected. Even the financial institutions usually provide credit based on demonstration of security of tenure. Trees on farmland may be considered as collateral security for the purpose of financing.

5.3.2 There is need for a more efficient system of data recording as at present there is complete lack of data on agroforestry. Number of trees on farm, species grown, survival rate, number of trees planted /harvested, or quantity of timber/fuel wood/fodder produced is not available. The contribution of agroforestry to the national GDP is also not known. This poses a challenge for planning and implementation. However, in the land record system there is a provision of recording trees on farm. But, it is not clear whether the data recorded is authentic and used for any purpose. Updating the old land record systems with the help of modern geo-spatial

tools (remote sensing and geographic information system), for recording of basic data such as existing trees, planting of new trees, and harvesting, etc. needs to be undertaken.

5.4 Investing in research, extension and capacity building and related services

5.4.1 There are over 30 research centers of the ICAR involved in agroforestry research, which is coordinated by the National Research Centre for Agroforestry (NRCAF). There are claims of availability of technology and appropriate agroforestry models suitable for different agro-climatic regions of the country. Also, advance research knowledge and facilities are reported to be available in the private domain, especially in the pulp and timber industry. However, there appears to be very little replication of such knowledge and models on the ground. The non-existent extension system for agroforestry may be the key reason for non-adoption of technologies; however, one needs to reconfirm the robustness of the technologies which have been developed. Therefore, it is suggested to set aside some seed money to fund time-bound research projects with specific objectives delivered through location specific basic, strategic and applied research.

5.4.2 Agroforestry cannot succeed without the willing support and cooperation of the people. It is essential, therefore, to inculcate in the people, a direct interest in agroforestry, its promotion and development. This can be achieved through the involvement of educational institutions, right from the primary stage. Farmers and interested people should be provided opportunities through institutions, such as the Krishi Vigyan Kendras, Trainers' Training Centres to learn agroforestry, agri-silvicultural and silvicultural techniques to ensure optimum use of their land and water resources. Short term extension courses and lectures should be organised in order to educate farmers. For this purpose, it is essential that suitable programmes are propagated through mass media, audio -visual aids and the extension machinery.

5.4.3 There is need to develop yield and volume tables of agroforestry tree species. Likewise, the species with high carbon sequestration capacity need to be identified. Also, a common web-based platform may be setup to bring all research findings and available knowledge in the area of agroforestry for access of all stakeholders.

5.5 Improving famers' access to quality planting material

5.5.1 Certification of nurseries, seeds and other planting materials for agroforestry is required to make available good quality planting material at the required scale. Institutional mechanism for registration of nurseries and their accreditation should be established.

5.5.2 Private sector can play an important role in augmenting supplies of improved planting stock as demonstrated in case of poplar and clonal eucalyptus plantations. Hence, the private sector participation should be encouraged in production and development of supply chain of quality planting materials.

5.6 Providing institutional credit and insurance cover for agroforestry

5.6.1 There is need for setting up of special purpose vehicles /banking institutions to address specific needs of agroforestry sector. Agroforestry sector should also be benefitted with the provisions of interest subvention in the line of agricultural credit. Dedicated Farmers Producers Organizations (FPO) be promoted to organize the farmers and take up agroforestry at economies of scale.

5.7 Facilitating increased participation of industries dealing with agroforestry produce

5.7.1 The role of agroforestry/biomass based industries in the promotion of agroforestry is crucial. Therefore, such industry sector needs to be encouraged and facilitated. The role of industries in the promotion of agroforestry can be tapped in multiple ways, especially in the areas of (a) production and supply chain development for high quality planting materials, (b) technology development and dissemination, especially for planting materials, processing, etc. (c) providing extension services to the farmers, (d) providing market information and future trends, (e) certification of nurseries, seeds and finished products for sustainable management practices, (f) developing agroforestry plantation on government lands on lease contract and in partnership with local people's institutions, etc. Policies are therefore, required to recognize the role of industries and make enabling conditions for increasing the participation of the industries.

5.7.2 Agroforestry be treated as a priority area under Corporate Social Responsibility programmes.

5.8 Strengthening farmer access to markets for tree products

5.8.1 Barring few sporadic instances, the marketing system for agroforestry produce is unorganized. Marketing infrastructure similar to what is available for agricultural commodities, including market information be introduced with more private sector participation.

5.9 Incentives to farmers for adopting agroforestry

5.9.1 Regional and thematic differentiation in the agroforestry policy needs to be minimized. Incentive and support structure, such as the input subsidy, interest moratorium, etc. during the gestation period for promotion of agroforestry be provisioned to encourage farmers. Clear directives for value chains development need to be incorporated for the agroforestry sector over a period of time. The role of Farmer Producer Organizations (FPOs) in the promotion and value chain development for agroforestry should be considered.

5.10 Promoting sustainable agroforestry for renewable biomass based energy

5.10.1 Emphasis needs to be on raising fast growing trees / bushes / grasses on marginal and

degraded farmlands keeping in view their uses for meeting various energy requirements for making profitable agroforestry practices. This is of particular significance for meeting various energy needs of agroforestry itself, such as for irrigation, motive power, farm machines and processing industry. Therefore, it should be considered in conjunction with making of the provisions for financial incentives, especially for setting up of various renewable energy systems / devices.

6. Pathway for achieving Policy Deliverables

- Mainstreaming agroforestry in agriculture policies and strategies.
- A dedicated corpus be created to leverage resources available under various schemes/ programmes/missions in undertaking focused and synchronized interventions for agroforestry sector particularly in meeting the gaps and up-scaling the efforts in a coordinated manner.
- States to create enabling environment and legislation and simplify regulations related to forestry, land use & land tenure, especially those linked to harvesting and transportation of trees grown on farms.

- States have to identify about 20 commonly grown trees species which can be grown on farmlands for the economic and ecological benefits of the farming community. These species have to be notified for exemption from any state regulatory regime, especially on growing, harvesting and transit.

- States to ensure a secured land tenure system, safeguarding the interest of small and marginal farmers and create a sound base of land records and data for developing an MIS for agroforestry for a transparent and non-controversial operational system.

- Public private partnership (PPP) to be encouraged for road side/canal side/barren community land/other non-forest waste lands for promotion of agroforestry to provide opportunities of economic returns and contributing ecological services.

- Providing quality and certified planting material, at local level through promotion of nurseries, duly registered and accredited by a third party, by involving government/private sector.

- Data collection with source of agroforestry produce at National level by recognized statistical organizations (viz. CSO, NSSO) to be done to have legality data of source of

agroforestry produce to facilitate hassle free harvesting/transport/traceability of source/chain of custody.

- Agroforestry research to be encouraged, both in government and private sector, particularly for multipurpose indigenous species with higher nitrogen-fixing ability, so as to meet the local needs for fuel, fodder and timber as well as improving the soil health. It should also focus on developing market driven models suitable to different ecological conditions to encourage farmers for adopting agroforestry as a viable enterprise.

- National Research Centre for Agroforestry (NRCAF) may be upgraded to a National level Institute of Agroforestry with regional setups in major agro-climatic zones of the country. Agroforestry research wing of ICFRE also be strengthened and taken advantage of to provide stimulus and create an enabling environment for the growth of private research and extension services.

- Appropriate extension mechanism equipped with scientific setup involving State Agriculture Universities (SAUs), Krishi Vigyan Kendras (KVKs), Van Chetna Kendras etc. to be put in place for agroforestry. Cost-effective extension

models may be devised involving farmer's groups, NGOs, public/private agencies, Farmer Producer Companies, etc. to disseminate knowledge/information of this sector. Integrating agroforestry content in the agriculture extension packages and developing an unified extension system for all farming systems in the country.

- Encouraging agroforestry as a course curriculum in school education and motivating youths to grow and conserve trees.

- National Bureau for Plant Genetic Resources (NBPGR) to focus on conserving, monitoring and providing guidelines for germplasm exchange of agroforestry species.

- Marketing infrastructure including market information system to be put in place with active collaboration of private sector. Contract farming, Public Private Partnership, Special Purpose Vehicles mechanisms may also be explored to promote and upscale agroforestry. Road side/ canal side/barren community land/other non-forest waste lands to be encouraged for plantation of agroforestry tree species to provide opportunities of economic returns as well as contributing towards ecological benefits. These activities may be promoted through public private partnership mode.

- Agroforestry farmers also to be considered eligible for incentives on input subsidy, post-harvest management facilities, interest moratorium etc. as are being provided to farmers growing agricultural crops.

- Specific products/ special purpose vehicles may be devised to meet the credit and insurance needs of agroforestry sector. Interest subvention in the line of agricultural credit be extended to agroforestry sector. Agroforestry commodities also be enlisted under Warehouse Development and Regulation Act 2007 (WDRA) for ensuring adoption of quality standards of the "Warehousing Manual for Operationalizing of Warehousing (Development and Regulation) Act, 2007 so as to become eligible for availing finance for harvested produce of agroforestry.

- To create an enabling environment to implement strategies for quantifying carbon sequestration and other environmental services for the economic benefit of farmers.

- Industries to be encouraged as end user for promotion of agroforestry produce, value chain development, technology development and market information etc.