

POLICY BRIEF

SEPTEMBER 2020



DESIGNING THE METHODOLOGY TO ESTABLISH MINIMUM SUPPORT PRICES OF TREES GROWN OUTSIDE FORESTS

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INTRODUCTION

As per the Paris Agreement in COP21, India has committed to achieve its Nationally Determined Contribution (NDC) targets by creating additional carbon sink of 2.5 to 3 billion tonne of CO₂ equivalent through additional forest and tree cover by 2030. By spearheading agroforestry through systematic plantations of Poplar, Eucalyptus, etc., states such as Punjab, Haryana, Andhra Pradesh have played an important role in catering to more than 80% of the domestic timber demand for furniture and stabilizing the forest and tree cover of the country. This has not only added to the area under tree cover but also provided substitute to the timber harvested from forests and, hence, conserved the natural forests for ecological functions. The defined harvesting cycle of various important agroforestry tree species also provides a great opportunity to lock the sequestered carbon in the form of furniture and re-use the land for sequestering additional carbon through new plantations. Agroforestry, the climate-smart production system, has the potential of achieving two-thirds of the forestry sector's NDC targets.¹ Yet, the agroforestry sector is facing several problems such as unregulated pricing regime, transit and felling regulations, and lack of incentives for carbon sequestration. The agroforestry sector needs a minimum support price (MSP) with the inclusion of carbon sequestration value. Trees outside forests (TOF) form significant part of the forest and tree cover of the country and have emerged as major source of timber in India. TOF refers to all trees growing outside recorded forest areas irrespective of patch size. In India, requirement of wood and wood-based products to a large extent is met from TOF. At present, more than 80% demand of timber is met from agroforestry sector.

IMPORTANCE OF AGROFORESTRY FOR INDIA

Trees are grown outside official forest areas to fulfill various tangible and intangible functions enhancing ecology and fulfil economic needs of local people and country at large. Such growing and tendering of trees are referred with various terminologies such as avenue plantations, orchards (e.g., mango), gardens (e.g. areca nut, coconut), farm forestry or agro forestry (combination of timber trees with other crops). The present policy brief analyses the status, potential and needs of agroforestry in India which is responsible for fulfilling over 80% domestic timber needs. Agroforestry provides an important opportunity to India for all the challenges it is facing, whether increasing the tree cover and carbon sequestration obligations, rehabilitation of degraded land, crop diversification, supporting the micro, small and medium enterprises (MSME) sector, or providing livelihood to people. The current area under agroforestry in India is estimated to be 25.31 Mha or 8.2% of the total reporting geographical area of the country (see Footnote 1). The total area under cropping in India is about 200 Mha.² The total forest and tree cover is 80.73 Mha, which is 24.56% of the total geographical area of the country, out of which approximately 9.5 Mha of the area belongs to TOF (ToF).³ National Forest Policy, 1988 aspires for 33% forest cover in the country. There is limited scope of increasing the area under natural forests by additional 8% to achieve the target forest cover. Ideally, the total culturable non-forest area as per ISFR (2003), which is about 218.8 Mha, can become the potential area to enhance forest and tree cover of India through agroforestry. As regards the addition to carbon sequestration potential, the total net carbon sequestration from Eucalyptus tree is 9.64 t/ha/y with a 5-year rotation cycle.⁴ The 8% additional potential area under agroforestry (25 Mha)

¹ Sharma, Prashant, Prabhat Tiwari, Kamlesh Verma, and Manoj Singh. 2017. Agroforestry systems: Opportunities and challenges in India. *Journal of Pharmacognosy and Phytochemistry* 953–957

² Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare, GoI. 2017. *Annual Report 2016–17*. Details available at http://agricoop.nic.in/sites/default/files/Annual_rpt_201617_E.pdf.

³ Ministry of Environment, Forest and Climate Change. 2019. Total forest and tree cover rises to 24.56 percent of the total geographical area of the Country (Press release), December 30. Details available at <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1597987>.

⁴ Lodhiyal, L. S. Biomass productivity, carbon sequestration and nutrient cycling of Eucalypt plantations. *Eucalypts in India*.

would sequester approximately 241 million t/y of CO₂ equivalent annually. India still follows the provisions of the National Forest Policy (1988), which encourages maximization of substitution of wood, while the present policy view of the Ministry of Environment, Forests and Climate Change (MoEF&CC) is to grow more wood and use more wood that will in turn help more carbon sequestration. Thus, there remains an important opportunity for the growth of agroforestry which would be a win-win situation in every aspect of the ecosystems service enhancement, conservation of natural forests, and catering to domestic timber demands. The National Policy for Farmers, 2007 also encourages agroforestry for the efficient nutrient cycling, nitrogen fixation, organic matter addition, and for improving drainage along with appropriate production and marketing. The current policy regime in India is evolving as regards growth of agroforestry sector is concerned and there is a need for acting upon the provisions of National Agroforestry Policy, 2014

National Agroforestry Policy, 2014: An opportunity for self-reliance in timber needs of the country

The National Agroforestry Policy, 2014 (NAP, 2014) recognized the following critical issues responsible for restricting the growth of agroforestry sector in the country:

- ♦ Lack of integrated farming systems approach
- ♦ Restrictive regulatory regime and inadequate attempts at liberalization of restrictive regulations
- ♦ Dearth of quality planting material
- ♦ Lack of institutional finance and insurance coverage
- ♦ Weak market access for agroforestry produce
- ♦ Lack of suitable institutional mechanism

Lack of conducive environment to promote timber production from home grown trees through agroforestry is exerting fiscal pressure as wood and wood products are being imported from other countries. India has been the net importer of wood and wood products which is adding an economic burden of over ₹388 billion (₹38,000 crore approximately).⁵ India's domestic demand of Round Wood Equivalent is expected to be 153 million m³ in 2020 from 50 million m³ in 2000.⁶

Table 1. Value of India's wood and wood product imports from FY 2011 to FY 2018

Year	Import in Billion Rupees
2011	168.95
2012	240.78
2013	276.57
2014	309.81
2015	334.13
2016	330.4
2017	328.2
2018	388.5

Source: Details available at <https://www.statista.com/statistics/625460/import-value-of-wood-india/>, last accessed on 25 July 2020.

⁵ Statista. 2019. India - value of wood imports 2019. Details available at <https://www.statista.com/statistics/625460/import-value-of-wood-india/>.

⁶ WWF - India. 2012. Timber, Pulp and Paper. Details available at http://awsassets.wwfindia.org/downloads/factsheet__timber__paper__pulp_revised.pdf.

Due to lack of supportive provisions to grow, transport, and market timber, farmers are not ready to start domestic production. At the same time there is a need to invest on research for developing high yielding clones of indigenous species so as to diversify the scope of agroforestry for timber production and at the same time not restricted to just Eucalyptus-, Poplar- or *Subabul*-based wood products. Wood-based industries (WBI) can be also made self-reliant for procuring the indigenously grown timber through agroforestry plantations. This will strengthen the livelihood opportunities of the farmers and help them earn additional income through multi-cropping.

FAILURES AND LOSSES IN AGROFORESTRY

Since 1990, the domestic demand for plywood, block boards, and flush doors has been steadily growing and Poplar plantations have fulfilled the supply of raw material. Till 1999–2000, nearly 15 million Poplar plants were planted annually covering 30,000 ha by Punjab, Haryana, Uttar Pradesh, and Uttaranchal.⁷ With the average 5-year harvesting cycle, it meant the permanent additional tree cover of 150,000 ha because of Poplar plantations on farm lands. Taking into account the average productivity of 20 tonne/ha/y and 5-year rotation, the annual cut was about 3 million tonne of Poplars on sustainable basis from farm forestry plantations. But as a response to the Hon'ble Supreme Court orders dated 04/03/1997 and 30/10/2002, all the plywood, saw mills, and veneer unit without licence were closed down and new units could only be opened with the prior permission of Central Empowered Committee. It impacted the prices of Poplar and other agroforestry timber species. The prices fell from average ₹4500/tonne in 2001 to ₹1000–1500/tonne by 2004–05. Assuming an average decline of Poplar prices by ₹1500/tonne, the poor and marginal farmers lost ₹4500 million or ₹450 crore annually and a whopping ₹18,000 million or 1800 crore during the 4-year period of turmoil. Farmers not only resorted to premature harvesting and distress sale of Poplar plantations but also stopped planting it.⁸

Neither the Central Government nor the concerned state governments came forward to rescue the farmers. This amounted to virtually killing the geese that laid golden eggs for the wood-based industry. Prices of farm-grown wood suffered a declining trend once again during 2015–20. This shows that there is an immediate need to respond with proper solutions on issues such as Chain of Custody, transit relaxations, proof of on farm cultivation, assured market linkage, and so on.

For agroforestry plantations, farmers have to invest in purchasing clones, planting, and nurturing till harvesting. Most of them are small and marginal farmers with very small land holdings and poor resources. They are not in the position to postpone harvesting of farm grown trees as they need funds even if the market prices of short rotation tree species are depressed. Violent fluctuations in the price of farm-grown wood, absence of minimum support price mechanism and incentives for the farmers greening the country, and restrictions related to felling of trees and timber transit permit requirements for un exempted tree species are the greatest stumbling blocks hampering the growth of agroforestry plantations.

⁷ Kishwan, J and D Kumar. 2013. *Future of Poplars in India*. Rome, Italy: Food and Agricultural Organization of the United Nations. Details available at <http://www.fao.org/forestry/6285-037bdb32f78ab8a552bf6b163f2ffc825.pdf>.

⁸ Lal, P. 2011. Clonal agroforestry plantations in India. *Indian J. Ecol.* 38:6-10.

MINIMUM SUPPORT PRICE: A MECHANISM FOR ASSURED MARKET

Since 1969, MSP is a tool that guarantees the farmers, prior to the sowing season, a fair fixed amount of price for their upcoming crop to encourage higher investment and production of agricultural commodities. MSP is defined as the price at which the government purchases crops from farmers, whatever may be the price for the crops and it is an important part of India's agricultural price policy. This approach is followed in India for sustaining the farmers and managing the bumper harvests along with supply of food grains in the subsequent years.

In the context of agroforestry, the basis for having MSP is to sustain the interest of farmers by incentivizing them with a base price which would protect them from market failures. The price would ensure that the farmers are compensated for all the costs they have spent for, remunerated for the labour, and incentivized for sequestering CO₂ from atmosphere till the time of harvesting. Certainly MSP does not match the market price but provides an assured price even when there is market uncertainty. It may be termed as 'safety net' approach where economic interests of farmers are protected from market failures.

The MSP regime provides alternative option other than open markets for farmers to sell timber at a defined MSP to the government. This procurement done at MSP will protect farmers from potential loss of open markets. Procurement done by the government will not be a loss-making proposition as there remains demand for value-added products developed from timber. At the same time, unlike agriculture crops, timber has longer shelf life and if value addition is done, then the investments in the MSP can be recovered by selling the product rather than only the raw timber.

A similar approach has been demonstrated in the case of MSP for Minor Forest Produce (MFPs) by Ministry of Tribal Affairs (MoTA). The MSP for MFP scheme is the basis for the Pradhan Mantri Vandhan Yojana (PMVDY) where the raw material purchased at MSP is getting used by SHGs for value addition and the investments on processing facility of MFPs are done through PMVDY. So this mechanism has created options for local communities where the collectors get an assured price in case they cannot fetch better price from the market. At the same time those who would like to add value to the MFP can do so through PMVDY and earn more by selling value-added products other than raw material.

Thus, similar to Ministry of Tribal Affairs, for agroforestry, Ministry of Agriculture and Farmer's Welfare should launch MSP scheme along with support for value-added products from cultivated timber. This would allow local farmers to take advantages for enterprise development based on agroforestry produce.

Components of the MSP for Agroforestry

Minimum support price and institutional strengthening are important to avoid market failures for farmers. Farmers will not grow trees for environmental benefits but for economic gains. Without MSP it will be difficult to enable improvements in agroforestry production. Agroforestry species will generate 2 tonne of CO₂ equivalent per tree after attaining the age of 10 years. Compensation for carbon sequestration is also important. A simple formula has been worked out for MSP as explained here:

MSP = Cost of collection subject to adjustment to macro-economic variables considering 10-year rotation of agroforestry species = C1 + C2 + C3 + C4 + C5

where,

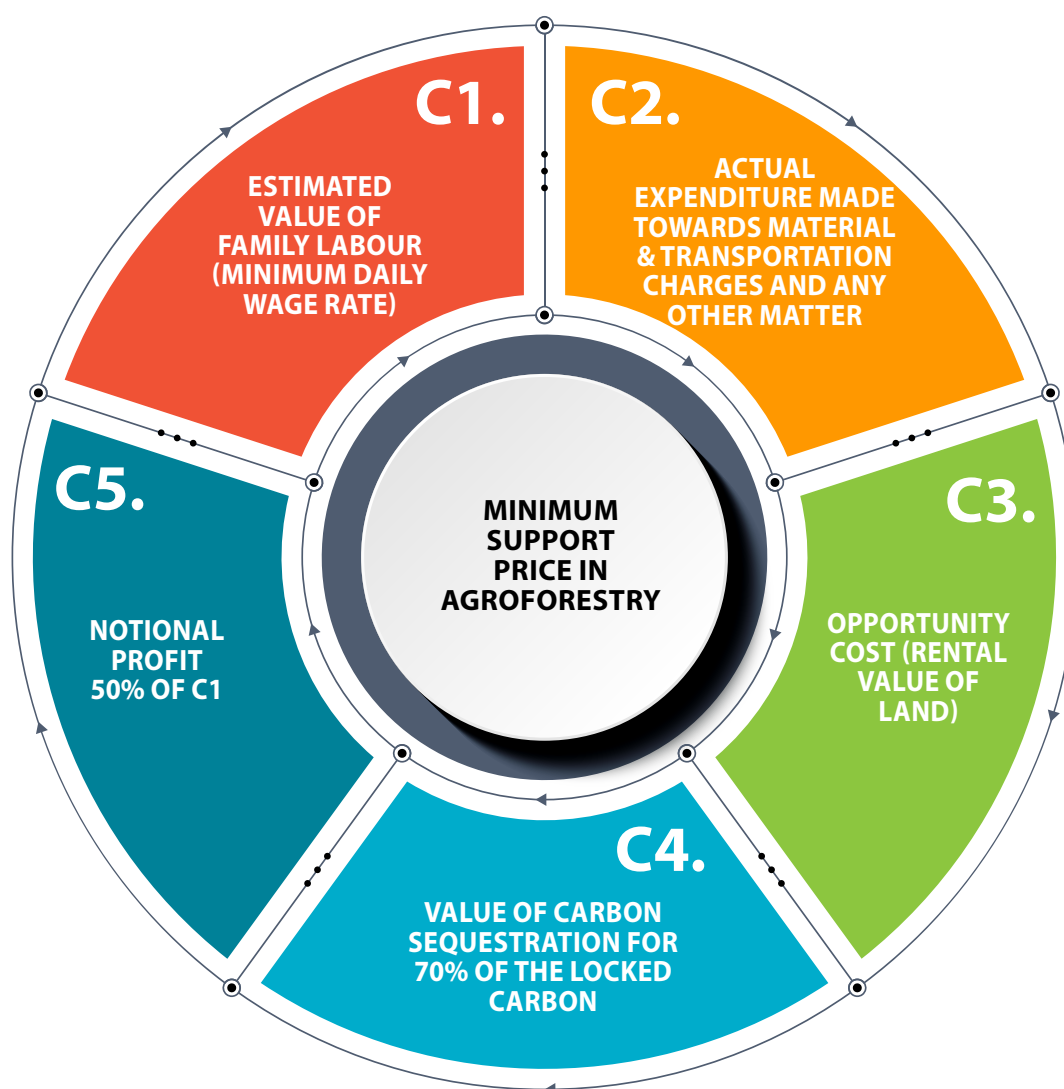
C1= Estimated value of family labour (minimum daily wage rate)

C2= Paid out cost (cost of seedlings, manure, cost of material to store and carry collected crop, transportation charges, premium of insurance to cover the personal risk during the process of collection and any other material inputs, depreciation of farm machinery and other expenses)

C3= Opportunity cost (interest on the value of owned capital assets, rent paid for leased-in land, and the rental value of owned land)

C4= Value of carbon sequestration for 70% of the locked carbon

C5= 50% of C1⁹



⁹ Swaminathan Report: National Commission on Farmers recommended a 50% margin over C1. If the MSP were calculated just using the cost of production, not even a single crop can make a cut. The return over cost of all crops is over 50% for the first time. Therefore, MSP is set at 50% above the derived amount, i.e. cost of production.

INSTITUTIONAL MECHANISM

Existing institutions in the form of forest development corporations, minor forest produce federations are active in many states in the country. These institutions have technical expertise of working on timber procurement and sale. They may act as nodal centres for procurement and also post-procurement management of timber such as auctioning, product development.

CONCLUSION

For successful agroforestry, there is a need to develop a 'safety net' for farmers to safeguard their interests from market failure. At the same time, there is a need for rationalizing transit permit procedures and transport regulations considering it is important for tracking the Chain of Custody of agroforestry produce. Currently, a few species, such as Eucalyptus, Poplar, *Melia dubia*, *Acacia* sp., are the major contributors in agroforestry produce. More R&D efforts have to be conducted for developing good quality clones of timber species to be cultivated in agroforestry on farmlands. Along with the policy reforms and investments on research, there is a need to develop a scheme for MSP for agroforestry produce where farmers should be compensated for carbon sequestration. The EXIM policy of India for wood imports also needs a relook. Increasing import duty on wood and wood-based products shall result in increased share of domestic market and promoting farmers to grow more wood through agroforestry practices. Analysis of the supply and demand gaps for timber in the country is important to promote agroforestry as a solution to narrow the gap. At the same time, promotion of wood-based, paper and pulp industries also needs to be done so as to value add to the timber and encourage sale of finished products than raw wood. Promotion of certification systems for agroforestry can promote industries to uptake wood from agroforestry practices and also enable Indian industries to compete globally and ensure income generation of farmers. Such impetus to agroforestry sector would enhance forest and tree cover of the country, contribute to achieve 2.5 to 3 BTCO₂e sequestration, enhance ecosystem services, sustain and develop livelihood options for farmers including more than 100 million small and marginal farmers across India.

