



Development of Trees Outside Forests Resources in India Need Forenabling Regulatory Framework

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<https://doi.org/10.48165/ija.2026.28.01.02>

ARTICLE INFO

Article history:

Received: 19.10.2025

Accepted: 11.01.2026

Published: 2026

Keywords:

Wood and wood products

Trees outside Forests

Agroforestry

Transit Regulations

ABSTRACT

The primary aim of India's National Forest Policy, 1988 is to ensure environmental stability and maintenance of ecological balance. This brought in paradigm shift in management of forests for conservation, ecological stability, eco system services . The policy envisaged the forest-based industry to raise the raw material needed for meeting its requirements, preferably by establishment of direct relationship between the factory and the individuals, and to encourage farmers to grow tree species required by the industries. This resulted in enhanced focus on 'Trees outside Forests' (ToF), including agroforestry, to meet the needs in respect of wood and wood products. Prevalent Regulatory framework is often quoted as a hurdle in growth of tree cultivation in private lands. However, it is important to note that liberal/no transit regulation on tree species growing on non-forest areas (ToF) or preferred by tree growers for planting on private lands may be a necessary but is not a sufficient condition for growth of ToF including agroforestry. Efficient downstream processing using appropriate latest technologies, improvement of infrastructure and creating awareness about use of wood and wood substitutes made from plantation wood and other renewable fibres are very important. A multi stakeholder committee constituted by the Ministry of Environment and Forests, Government of India in July 2011, headed by the author, to study the regulatory regime regarding felling and transit regulations for tree species grown on non-forest/private lands, undertook a critical analysis of the existing state legislations and rules regarding felling and transit of tree species, and various suggestions for relaxation in transit and felling permission for the species preferred by the farmers and people pursuing agroforestry. Mentioning the report of the committee, the National Agroforestry Policy (NAP), 2014 prescribed for inclusion of relevant recommendations in its implementation guidelines. The NAP also underscored the need for action on the regulatory bottlenecks impeding the growth of agroforestry identified by the committee, Describing the increasing importance of ToF and agroforestry resources, this paper attempts to analyse the actions taken to liberalise regulatory regime related to tree cultivation in non-forest private lands since the enunciation of the NAP and suggests a way forward to create an enabling legal framework for the much needed development of the ToF resources including agroforestry tree production systems.

INTRODUCTION

Wood is nature's miracle material. Man has exploited its

versatility for centuries for various applications and it has been closely associated with man's survival and civilization. It is for this reason, industrial development, perhaps, began with wood. Traditionally, wood has been produced in the finest natural factories, that is, the forests and most applications have developed using wood from naturally growing tree species. With industrial and technological advancements wood has been used for manufacturing many new generation materials and products including plywood and other engineered wood panels products used in housing, furniture, and transportation; paper and packaging materials; textiles etc. Widespread use of wood products has assumed greater significance owing to the fact they are "carbon negative" in terms of production, processing, use, recycling, and disposal at the end of service life, and not only helps in carbon sequestration but also keep the sequestered carbon locked for many years and thus have immense potential to mitigate climate change impacts.

In India, the forest management has revolved around maximising sustainable yield of timber from few selected species found in natural forests whose uses have been evolved over the centuries. However, with greater realization of their environmental role, forest management gradually started focusing on conservation

resulting in declining production of timber of known tree species from natural forests. India's present National Forest Policy enunciated in 1988 focused on ensuring environmental stability and maintenance of ecological balance as its primary objective. The policy envisaged development and use of wood substitutes to meet the gap between demand and supply of wood and that the wood raw material needed for manufacturing required wood products should be through tree cultivation by the forest-based industry preferably through establishing direct relationship with individuals and to encourage farmers to grow tree species to meet their requirements. In 1996 the hon'ble apex court of India passed a judgement having far reaching consequences not only on the management of forests but also on functioning of wood based industries. Wood-based industries gradually started shifting from timber from natural forests to farm- grown wood. Average recorded timber production from forests declined from 4.04 million cum during 1987-1991 to around 2.37 million cum during 2005- 2009 (Bansal, 2021). Presently, annual production of timber from forests is around 1.56 million cum (Figure1) which is around 2% of the total requirement of industrial round wood (IRW) in the country, excluding small timber removed by local people under customary rights/privileges (Bansal 2022). (fig 1)

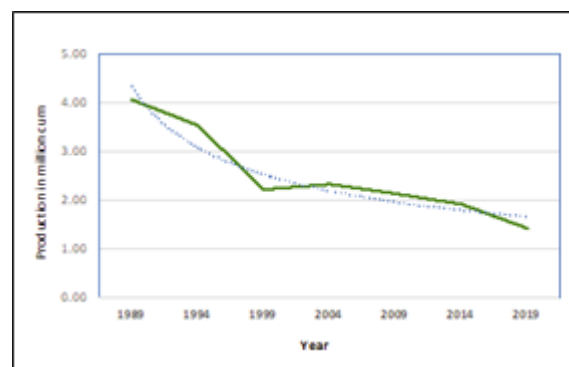


Figure 1. 5 year average production of timber from Forests India

This resulted in enhanced focus on agroforestry and other 'Trees outside Forests' (ToF) resources culminating in enunciation of National Agroforestry Policy (NAP) in 2014, the first ever such policy anywhere in the world. Although tree species found in or grown in agroforestry and other ToF areas yield several non-wood products that are either utilised by farmers for their own use or are traded, wood is the most widely recognised and traded agroforestry product. ToF have been recognized as an essential component of sustainable development in the Global Forest Resource Assessment.

ToF - Scope and Extent

Forest survey of India, mandated for biennial assessment of Forest Cover in the country and preparation of state of forest resources, also started estimating tree cover in 2001, and Forest and ToF growing stock (GS) in 2003, adopting latest techniques for interpretation of satellite data and inventory methods. An analysis of the India State of Forest Repots (ISFRs) suggests that during last decade (ISFR 2013-ISFR 2023) although ToF GS has remained in the range of 35-43 % of the GS in forests, its decadal growth rate has been more than 4 times that of GS in forests. Considering their importance FSI started estimating the areal extent of ToF resources in 2019.

Box 1

Trees outside Forests

Trees outside Forest (ToF), as the term means, are trees growing or grown outside designated/ notified/recorded forest areas and comprise of trees on (i) agricultural, (ii) urban, and (ii) non-urban non- agricultural land. ToF on agriculture land, also known as agroforestry, include various types of tree species planted/growing on lands under agricultural land use and plantations and orchards on private lands. ToF on urban land include gardens, parks, parking lots, along streets etc. Trees growing on natural lands like grasslands, tree line in mountainous areas and peatlands are categorized as ToF other than urban and agricultural lands.

ToF area may be either privately owned, including

cultivated/cultivable land and homestead lands or private enterprises; or public lands under different central/state government departments organisations, local bodies etc.

ToF is also categorised as isolated or scattered, in groups and linear formations, based on spatial arrangement; or classified based on their primary function *viz.* production (food, fodder, firewood), protection (windbreaks, erosion checks), ornamental and aesthetics, and also based on origin whether trees are planted or are leftover of previous land use (forests?).

Under these assessments, ToF comprise two types of areas *viz.* (i) forest cover outside the recorded forest areas (estimated as a part of forest cover based on digital interpretation of satellite data with areas one ha or more having more than 10% canopy cover - in three canopy density classes *i.e.* very dense forest, medium

dense forest and open forest), and (ii) tree cover in blocks, rows, isolated or sporadic trees in patches smaller than 1 ha in area not covered as forests (estimated from ToF inventory data in rural and urban areas following a new grid-based national forest inventory design, since 2016, and represented as notional area corresponding to 0.70 canopy density). Both these categories include trees growing under farm/agroforestry in agricultural lands, urban areas, and other non-forest areas, making agroforestry a subset of ToF. As per the latest ISFR (2023) the total ToF area is 30.70 Million ha (M ha) comprising of 19.50 M ha as forest cover outside the notified/ designated forests and 11.20 M ha as tree cover in various formations (Figure 2).

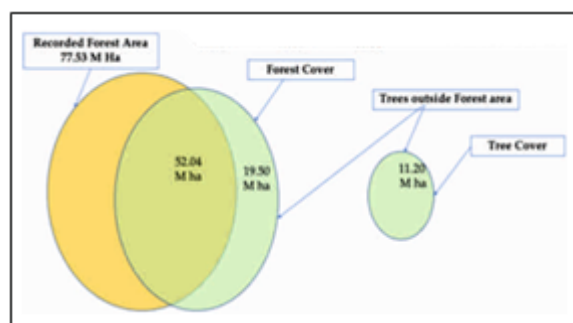


Figure 2. Trees outside Forests, India (ISFR 2023)

Further, it may be important to note forest cover component of ToF constitute 27% of the total forest cover in the country and comprise of very dense forest, dense forest, and open forests, categorised by FSI on the basis of canopy density and mapped based on satellite data along with forest cover in designated forest areas (Figure 3) (FSI, 2023)

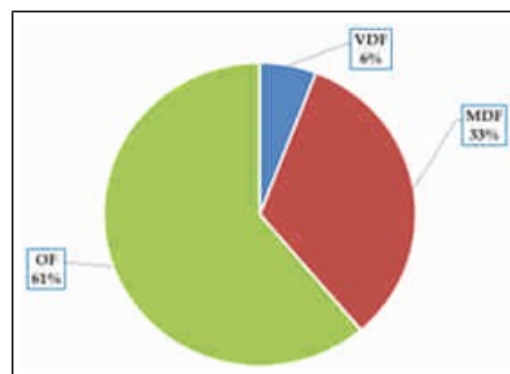


Figure 3. Density wise composition TOF Forest Cover (ISFR 2023)

The NafP defines agroforestry as a land use system which integrate trees and shrubs on farmlands and rural landscapes and it includes both traditional and modern land-use systems where trees are managed together with crops and or/ animal production systems in agricultural settings, both irrigated and non- irrigated conditions. There is wide variation both in number of trees per ha and their spatial arrangement from isolated trees not having any regular spacing or density, trees on boundaries, wind breaks, shaded perennial systems, intensive tree-intercropping, to block plantations. Thus agroforestry is a subset of ToF and is gaining importance in recent decades as a means of enhancing resilience of crop production by increasing agricultural bio-diversity and tree crops providing security to farmers in the case of failures of agricultural crops due to vagaries of nature, getting more critical due to climate change.

There is no national system in place in the country for periodic assessments of areas under agroforestry. However, there have been some assessments reporting widely varying estimates. According to an assessment around 2013 the gross area under agroforestry was estimated to be 25.32 M ha comprising of 20 M ha in cultivated lands [7.0 M ha in irrigated areas (11.23% of total irrigated areas) and 13.0 M ha in rainfed areas (16.54% of total rainfed area)], 5.32 M ha in other areas such as shifting cultivation, home gardens (Dhyani *et al.* 2013). This works out to only around 13% of the gross cropped area during 2013 (198.9 M ha). A more recent study adopted sub-pixel classification and object-based image analyses of medium-resolution (LISS III - 23.5 m) and high- resolution (LISS IV/Sentinel 2 - 5.8/10 m) remote sensing data respectively where in gross area under agroforestry was estimated to be 28.427 M ha (Arunachalam *et al.* 2022). According to these estimates, area under agroforestry in India was far below the global average of 43% (Zomer *et al.* 2014) and there is enough scope for extension of agroforestry. A study by Ahmed *et al.* (2019) evaluated the land potentiality in India for agroforestry based on FAO land suitability criteria

scientifically integrating various thematic layers. This assessment suggests that of the total geographical area 32.8% is highly suitable, 40.4% moderately suitable, 11.7% is marginally suitable for agroforestry. A NITI Aayog Working Paper 02/2023 on achievements of India's Agriculture sector since 1950- 51 and a road map for achieving the Goal of Viksit Bharat (Developed India) mentions that there is huge scope for raising tree plantations and agroforestry on arable and culturable waste lands (Chand and Singh, 2023). According to a technical report of NITI Aayog "Greening and Restoration of Wastelands with Agroforestry" about 12.56% of TGA of the country (41.26 M ha) is assessed to be suitable for agroforestry with high/moderate agroforestry suitability index (NITI Aayog, 2024).

FSI's biennial assessments ISFR 2013 and ISFR 2023 have included separate chapters on "Trees in Agroforestry Systems in India" wherein tree green cover (TGC) area in the agroforestry system in the country is estimated based on ToF inventory data collected as a part of national forest inventory (www.fsi.nic.in). TGC was estimated to be 10.63 M ha (3.39% of the Total Geographical Area (TGA) and 12.76 M ha in ISFR 2013 and ISFR 2023 respectively, indicating average annual growth rate of 2%. In these years the GS under agroforestry systems was estimated to be 1004.74 and 1291.68 million cum respectively. However, growth both in extent and GS during the period between the above assessments is not actual growth due to change in scopes, and can be ascribed partly due to (i) the first assessment included only areas under block and scattered trees whereas the second assessment included areas under linear formations also, and (ii) the first assessment included trees having diameter at breast height (dbh) equal to and above 10 cm whereas the second assessment included trees having dbh equal to and above 5 cm and also bamboos. In this context it is also important to mention that in India around 68% of agricultural land holdings are either marginal (area less than 1 ha with average land holding of only 0.38 ha) or small (area 1- 2 ha with average land holding of 1.4ha). However, medium and large farmers (holding land larger than 2 ha) collectively hold more than half of the total land under cultivation (Pattanaik *et al.* 2025). This reflects not only the importance of agroforestry for large number of marginal and small landholders but also the overall potential of agroforestry since sizable proportion of agricultural lands are with large/medium farmers.

MANAGEMENT AND CONTRIBUTION OF TOF

Considering the different types of land ownership and tree species growing or grown in ToF areas, there can perhaps be no one defined authority for management of these

resources. In the allocation of business rules of Government of India "Agroforestry" is included in the list of Ministry of Agriculture and Farmers Welfare (item A: 54 A, and B inserted in 2017) and "Social Forestry" and "bio-fuel plantations in Forest and Waste land" are included in the list of Ministry of Environment, Forests and Climate Change respectively vide item 15, item 23A (inserted in 2006).

The National Working Plan Code (NWPC) is a uniform code adopted by the Ministry of Environment and Forests, Government of India for forest management planning across the country to sustainably manage, conserve and utilize the forest resources. Noting that the focus of forestry outside forest areas is on production forestry, revitalization of rural economy and expanding economic opportunities requiring inter-sector synergy and convergence, the NWPC, 2014 provided for a separate strategy as a new chapter, not being part of general prescription of working plan, to address the concepts and issues related to ToF, and suggested for development of forest certification as a marketing tool. It also included a methodology for assessment of ToF. Additionally, the revised NWPC 2023, also prescribes for estimation of tree resources on non-private lands - public lands outside of RFA, and estimation of availability of timber from ToF trees available with households. The code also includes Indian Forest Management Standard (IFMS) for evaluation of management effectiveness of working plans. IFMS includes a specific indicator "Areas of ToF" with verifiers for ToF and agroforestry. All working plans initiated after 1st July 2023 by the respective State/UT governments are required to comply to NWPC 2023 for obtaining mandatory approval of the central government.

In a systematic review of scientific literature related to ToF and their contribution to the contemporary sustainability agenda, supported by the Asia-Pacific Network for Global Change Research, Colin *et al.* (2022) concluded that despite providing a plethora of important ecosystem services, ToF are still undervalued resources and are seldom included in national inventories and international reporting frameworks. It was also advocated that, proper national and intergovernmental assessment and reporting framework should be established to realize the full potential of ToF in the contemporary sustainability agenda. Mishra (2025) in a recent paper titled "the tree we don't count: How India's vanishing farm land canopy weakens climate resilience" highlights the multifaceted importance of trees in farmland and advocates for a National Farmlands Tree Policy and Farmland Tree Registry to record scattered trees as part of country's green infrastructure.

In India also, presently, there is no national system of

measuring and monitoring the ecosystem services or collection and collation of either production of various tree products both wood and non-wood, from the ToF areas except the biennial assessment of growing stock by FSI from 2003. However, some recent studies have found that bulk of the domestic production of IRW in the country is coming from agroforestry and other TOF areas.

A study by Centre of Science and Environment estimated the total wood requirement be 68.9 million cum in 2017 (49 Million cum for construction, furniture etc., 8.47 million cum for plywood and panel products, 15.52 million cum for paper and paperboards) and availability was 70.9 Million cum: 3.17 from forests, 44.34 from ToF, 5.38 from bamboo, 18.01 from imports (Shrivastava and Saxena, 2017). A High Level Expert Group constituted by the XV Finance Commission in its report submitted in July 2020, mentioned that in 2017 total consumption of wood was 65 million cum of which 3 Million cum was produced from forests, around 47 Million cum was produced from plantations (mainly agroforestry systems), and balance 15 million cum was imported (Anon, 2020).

FSI published a technical report titled “Tree Outside Forest Resources in India” wherein extent of ToF in 2019 is reported to be 29.38 Mha (8.94% of TGA) comprising of tree cover 9.5 Mha and Forest cover outside RFA 19.88 Mha. The report also estimated number of trees and volume of top 20 species in Rural and Urban areas. The most important species in rural areas that are important for wood production include *Mangifera indica*, *Acacia arabica*, *Eucalyptus*, *Tectona grandis*, *Hevea brasiliensis*, *Grewia oppositifolia*, *Dalbergia sissoo*, *Populus spp.* Bulk of the GS is from scattered trees (61.5%), followed by block formations (31.74%), and a small part (only 0.65%) is in linear stratum. Potential annual yield was estimated to be of 85.16 million cum in which the highest availability was in Maharashtra (10.60) followed by Uttar Pradesh (7.42), Karnataka (6.28), Madhya Pradesh (5.76), Rajasthan (5.47), Chattisgarh (4.77), Gujarat (4.67), Odisha (4.32) which account for 60% of the total availability (FSI, 2020).

According to an analysis of supply, demand and uses of timber in India and projections in a study “India’s Timber Demand and Supply 2010-2030” sponsored by ITTO, around 80% of total inflow of round wood came from ToF (Kant and Nautiyal, 2021). In another assessment of wood production and consumption in India during 2019-20 it was found that of the total 86.54 million cum of IRW available in the country, including imports, 64.40 million cum (around 74%) was from ToF areas (Figure 4). The study also analysed the ToF growing stock of timber yielding species grouped into long, medium, and short rotation of respectively more than 20 years, 11-20 years, and up to 10 years as reported in ISFRs 2017, 2019, and

2019. It was found that on an average long rotation species like *Mangifera indica*, *Azadirach indica*, *Tectona grandis*, *Madhuca latifolia*, *Hevea brasiliensis*, *Dalbergia sissoo* contribute 67% of the total annual potential availability followed by the medium rotation species such as *Grewia robusta*, *Acacia arabica*, *Acacia auriculiformis* contribute 26%, and the short rotation species like Poplar, Eucalyptus contribute around 17% (Figure 5) (Bansal, 2022).

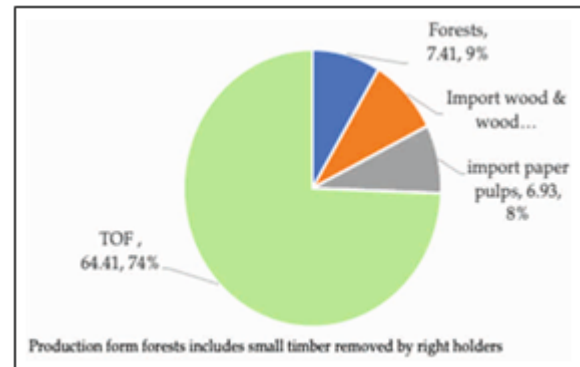


Figure 4. Estimated availability of IRW in India M cum, 2019-20

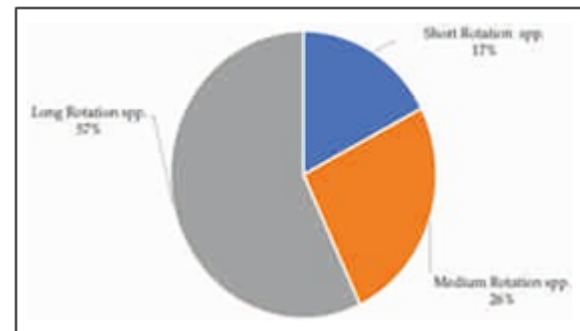


Figure 5. Average Annual Potential Production of IRW from ToF (2016-2020)

Indian Council of Forestry Research and Education conducted an extensive pan-India study under the All India Coordinated Research Project (AICRP-12) titled “Assessment of demand and supply of timber, fuelwood, and fodder in India”. During the study, round wood demand in various sectors i.e. pulp and paper, wood based panels, housing and construction, handicrafts was computed along with supplies from various sources. The results indicate that 67.4% of the timber demand is being met from ToF, 31.3% from imports (Kumar *et al.* 2025). Another report under this project presents detailed analyses of India’s International Trade in all types of wood products. From the report it is seen that the import of wood products has been continuously increasing (Figure 6). Bulk imports were of wood pulp that can be easily produced by our farmers through agroforestry (Figure 7) (Pandey *et al.*, 2024).

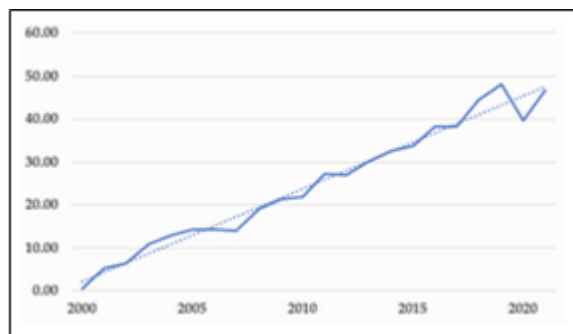


Figure 6. India's Import of wood products in RWE (million cum)
AICRP, ICFRE 2025

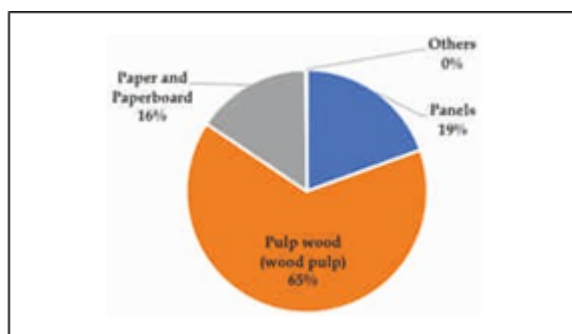


Figure 7. Wood products imports 2022-23 AICRP, ICFRE 2025

It is thus very clear that ToF is an important resource in meeting the demand in respect of round wood by various sectors. While being a major source of wood production, ToF and agroforestry on one hand contribute towards ensuring environmental stability, maintenance of ecological balance, in achieving the national forest policy goal of 1/3 area under forest and tree cover and climate related international commitments, and on the other hand also play significant role in making the country self-reliant in food production, reducing vulnerability and enhancing resilience of crop production against impacts of climate change, and help in achieving the goal of sustainable agriculture. While enhancing income of farmers and tree growers, ToF also has potential for additional employment generation in the total supply chain of wood and other tree products, in production, processing and value addition, and marketing.

In a study focussing on learnings from policy, incentives, enabling conditions, and barriers in expansion of ToF in six states namely, Gujarat, Karnataka, Maharashtra, Odisha, Punjab, and Telangana, it was found that a range of monetary and non-monetary incentives are available in which agroforestry emerged as the most supported system. The study found that the traditional ToF systems do not figure in such policies/schemes. Also, among other barriers, state-level differences in policy and legal ambiguities, and differentiation between products obtained from non-forest and forest areas pose critical challenge for farmers despite emphasis on easing the process of exempting specific tree species from felling/harvest and

transit regulations. It was opined that certification for timber from agroforestry using international benchmarking of existing management practices and legal/statutory compliances can provide farmers additional avenues for sustainable timber trading and also strengthen accountability (legality) and traceability of ToF produce (Duraismi *et al.*, 2022).

It is thus evident that responsibly managed agroforestry and other ToF resources create and sustain rural livelihoods, capture carbon that can be kept locked in various wood products while also maintain ecosystem services that protect us all. Certification ensures that this potential is realized with transparency and credibility, and is recognized as an important pathway not only to ensure legality, traceability, and sustainability, but also adherence to applicable environmental, social and economic regulations, rules and laws. Program for Endorsement of Forest Certification, which has completed 25 years of its existence, is a voluntary forest certification system of choice across the continents and has largest certified area in its fold. It develops sustainability standards as global benchmark framework integrating environmental, social, and economic goals, through bottom up and multi-stakeholder consultative process and endorses national standards developed through similar processes in national contexts. Recently, it has included ToF in the scope of certification of Sustainable Forest Management benchmark standard and in several countries, including India, national ToF standards have been developed and endorsed with global recognition. In India a beginning has also been made with certification of 116.96 ha farmland of 168 small holders in favour of Jammu and Kashmir Private Forests Association. Under Forest Stewardship Council certification scheme, the other global forest certification system, Forest Stewardship Standard for India includes all forest types (natural and plantations) and all ownership types (public, private and others) in its scope but does not have separate standard for ToF. PRAMAAN, the Indian Forest and Wood certification scheme, a voluntary third party certification system of the MOEFCC, also includes ToF in its scope.

REGULATORY FRAMEWORK

Regulatory framework for harvesting and transport of wood/timber, establishment of wood processing industries, security of tree/land tenure, tariff and non-tariff or technical trade barriers for import and export of wood and wood products is often cited as a hurdle in growth of agroforestry.

Tenancy and Land laws: NAFIP mentions that 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. The 77th round of "Situation Assessment of Agriculture Household Survey" by the National Statistical Office reveals significant increase in the proportion of leased- in operational land over the years, from 9.9% in 2002-03 to 13.7% in 2012-13 and 17.3% in 2018-19. However, these numbers may be gross under estimates due to the fact that most land tenancy are informal due to restrictive land leasing laws in most of the states (Patnaik, 2016). Tenancy farming laws in India are largely governed by individual states and vary from prohibiting leasing to allow land leasing with restrictions on duration and rent. According to a recent paper, approximately 21.3 million rural households reported leasing in land, with roughly 20% of total agricultural land under tenancy. In most states due to absence of formal, written contracts, tenants are excluded from institutional credit, insurance, and government support available to land owners. Despite this, the informal land leasing continues due to mutual trust and credibility (Goyal *et al.*, 2022). Moreover, tenant farmers' rights over trees and tree produces continue to be uncertain. Consequently, the tenant farmers don't feel secure in investing in tree cultivation. This is potentially hindering the growth of agroforestry. NITI Aayog Expert Committee on Land Leasing after examining the tenancy laws of all Indian States and consulting with various stakeholders in different states prepared a Model Agricultural Land Leasing Act, 2016. This model act seeks to address the "concealed tenancy" and suggests a legal framework for leasing in and leasing out of land for agriculture and allied activities, including agro-processing by farmers and farmers groups and seeks to allow landowners to lease land formally without fear of losing ownership and stipulates automatic reversion of possession to the landowner on the expiry of lease period. It enables the tenant farmers to access institutional credit, crop insurance, and disaster relief using a formal lease agreement and encourages investment in land improvement. Since 2016, five states have reportedly introduced amendments to existing laws or promulgated new laws to reform agricultural land leasing (Andhra Pradesh, Madhya Pradesh, Maharashtra, Uttarakhand, and Uttar Pradesh), while the reform process is still underway in others. (Stickler and Choudhury, 2020)

EXIM Policy: In a major policy initiative in 1996 the Government of India permitted import of wood and wood products under open general licence to reduce pressure on forests (Bansal, 2004). Import of wood and wood products is continuing virtually without any quantitative restrictions or regulation related to quality or legality. Cheap imports are competing with domestic wood production and panel manufacturing sector. There is therefore a need to relook the EXIM policy. Recently, during 2023-24, the Bureau of

Indian Standards (BIS), Ministry of Commerce and Industry, has notified quality control orders (QCOs) requiring wood based products and laminates to conform to prescribed standards. For the products covered under QCOs, the manufacturers in foreign countries are required to obtain license from BIS under its Foreign Manufacturers Certification Scheme for imports to India.

Yet another potential obstacle in the growth of a g r o f o r e s t r y r e l a t e s t o l a c k o f s t a n d a r d methodology for wood availability study for establishment or capacity enhancement of wood processing industries required under the Wood Based Industries (Establishment and Regulation) Guidelines, 2016 issued by the MOEFCC in compliance of the directions of the Hon'ble Supreme Court of India.

Timber transit Regulations: This paper attempts an in depth analysis of the regime related to harvest and transport of wood/timber from trees in agricultural lands and other ToF areas available in diverse formations in the rural landscapes.

There has been lurking doubt about applicability of FCA to plantations on private lands despite clarification by the MOEFCC through guidelines issued in 2013. Under the amended Forest Conservation Act, 1980 notified as Van (Sanrakshan Evam Samvardhan) Adhiniyam, 2023 its applicability has been included in the act itself which make it not applicable to trees and tree plantations raised on lands that are not notified as forest or recorded as forest in any government record.

Complexities in rules and regulations related to ToF originate due to the diverse nature of the ToF resources in terms of:

- (I) ownership of the lands involved – privately owned agricultural lands both under cultivation and fallows, privately owned non-agricultural lands, community lands, public land under different central/state government departments/ organizations;
- (ii) spatial arrangement of trees - plantations in block and linear formations, as well as isolated and small groups of trees;
- (iii) types of tree species involved - both long rotation and fast growing timber species and non-wood tree product yielding species (which also yield wood at maturity),
- (iv) pre-existing and planted trees some of which are also found in neighbouring public forests.

Whereas, "land" and "agriculture" continue to be in the State list, "forests" were brought onto Concurrent list in the seventh schedule of the Constitution of India whereby, both the central (national) and state governments are jointly responsible for management of the forest resources.

The central government is primarily responsible for overall policy directions, and the state governments (forest departments) are not only the custodians of the public forest resources but also have the responsibility to manage them on the basis of approved forest working plans. Some states have adopted IFA with state specific amendments, others have enacted their own state forest acts having provisions largely similar to the IFA. States/UTs have their own regulations related to ToF, especially in terms of felling, transit regulations and market facilities. It needs to be understood and appreciated that enabling transit regulations, by itself is not sufficient but is one of the requirements for achieving full potential of the ToF resources in national development.

Under the IFA 1927 Section 2(6) defines "timber" to include trees, when they have fallen or have been felled, and all wood whether cut up or fashioned or hollowed out for any purpose or not; Section 2(7) definition of "tree" includes palms, stumps, brush- wood and cane ("Bamboo" was omitted in 2017) and Section 4 (a) provides that "timber" is forest produce whether found in, or brought from, a forest or not. Thus under the IFA and the state forest acts timber harvested from the trees even in the non-forest areas is defined as "forest produce". Under Section 41(1) state government is vested with the power to make rules to regulate the transit of all timber and other forest-produce. Section 41 (3) enables the State Government to direct that any rule made under 41 shall not apply to any specified class of timber or other forest-produce or to any specified local area under which the state governments have exempted increasing number of tree species from timber transit rules.

The National Agroforestry Policy (NAfP), 2014 mentions the "restrictive regulatory regime" as one of the reasons for its enunciation, and prescribes that relevant recommendations of the Bansal committee may be considered for inclusion in the implementation Guidelines for the NAfP, and also underscores the need for action on the regulatory bottlenecks in the growth of agroforestry identified by the Committee.

Bansal committee mentioned in the NAfP is a broad based committee constituted by the MOEF in July 2011 headed by the author as the then Addl. Director General Forests. It had representatives from people practicing agroforestry, tree growers, NGOs, legal professionals. Its ToR included study of the regulatory regime felling and transit regulations for tree species grown on non-forest/private lands, to evaluate the experience of different States/UTs and to recommend the regulatory regime. Among others the committee recommended:

(i) exemption of tree and bamboo species preferred by

farmers and not naturally available in neighbouring forests from transit permit and felling regulations,

(ii) authorizing Gram Sabha to regulate felling and transit of trees/timber grown under agro/farm forestry or private lands in the village in respect of those species which are preferred by farmers and are also found in the natural forests/forests,

(iii) evolving common regional strategy for simple uniform mechanism/procedure to regulate the transit rules of forest produce across states and setting up Regional Coordination Committees of the States concerned to facilitate interstate movement of agroforestry tree produces,

(iv) coordinated action at Government of India and State / UT Govt. level on agroforestry/ farm forestry with cross sectoral involvement including the private (industries) sector,

(v) evolving transparent and simple methodology for maintenance of records of tree plantations on private lands to maintain a dynamic resource inventory,

(vi) setting up a dedicated National Board/Mission on Agroforestry and Farm Forestry within MOEF as the nodal point for promoting and comprehensively addressing all related issues, with nodal officers in the States/UTs. (MOEF, 2012).

Consequent to enunciation of the NAfP, MOEFCC issued revised guidelines to all States/ UTs for Felling and Transit Regulations for Tree Species Grown on Non-Forest Private Lands, and issued an advisory in 2017 to consider exempting ten commonly grown agroforestry species Eucalyptus, Poplar, Casuarina, Subabul, Silver oak, *Acacia mangium*, *Melia dubia* (Malabar neem), Khejri (*Prosopis spp.*), Indian willow (*Salix alba*) and Gamari (*Gmelina arborea*) from the requirement of felling and transit permits.

MOEFCC issued an advisory in October 2017 for Pan India Transit Permit to facilitate smooth inter-state movement of bamboo. In November 2017 through an amendment in section 2(7) of the IFA bamboo was omitted from the definition of "tree". Consequently, bamboo harvested from private areas was no longer "timber" and therefore was out of the purview of timber transit regulations.

Furthermore, to benefit the tree growers and farmers practicing agroforestry, MOEFCC issued draft National. Transit Permit System (NTPS) for inter-state movement on commonly grown agroforestry species, initially with 10 spp. identified earlier. NTPS was formally launched December 2023 to facilitate seamless movement of timber, bamboo, and other forest produce across the country to replace the present system of issuance of transit permit based on state specific transit rules. Envisioned as a One

Nation-One Pass regime, it envisages a digital platform for farmers and tree growers to register and apply for transit permits, and for forest officials to issue QR-coded permits valid nationwide, streamlining the movement of forest produce and promoting the ease of doing business. It is in the process of being fully rolled out and relies on state-specific rules for implementation. Transit pass issued from this system will be valid across India. There will not be any requirement of lieu transit pass on state borders. In respect of exempted species in state of origin but it is not exempted in the states enroute or the state of destination, one Add after the word Implementation. Transit pass issued from this system will be valid across India. There will not be any requirement of lieu transit pass on state borders. In respect of exempted species in state of origin but it is not exempted in the states enroute or the state of destination, one may apply for NOC in the state of origin for hassle free movement till the destination. Presently, 15 states are actively using NTPS portal and during 2025, around 2 lakh permit were issued for transportation of app. 3 million cum round wood.

The sub mission on agroforestry (SMAF), under the national mission for sustainable agriculture (NMSA), launched by MOAFW during 2016-17 has liberalized transit regulations as a pre-condition for providing financial support to States/UTs, and was implemented in Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Mizoram, Nagaland, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana and Uttar Pradesh and UT of Jammu & Kashmir and Ladakh. Statewise list of exempted tree species is available on the website of NMSA (<http://nmsa.dac.gov.in>). In most states farmers preferred fast growing tree species that were also exempted under transit regulations. Some farmers also planted medium/long rotation tree species like Sheesham, Teak. However, despite liberal transit regulations SMAF achieved limited success and without detailed causative analysis it. was subsumed in RKVY from 2022-23 with limited focus on quality planting material.

MOEFCC also launched the Tree Outside Forest India (TOFI) program jointly with USAID in 2022 in seven states (Andhra Pradesh, Assam, Haryana, Odisha, Rajasthan, Tamil Nadu, and Uttar Pradesh) aiming at strengthening enabling environment for expansion of area under ToF. The program was implemented by a consortium of organizations and institutions led by CIFOR-ICRAF. Before its premature closure in 2024- 25, it facilitated formulation of State Agroforestry

Policies in Assam, Odisha, Haryana, Rajasthan, and Tamil Nadu to address the state specific needs including enabling legal framework. Assam and Odisha have already notified

state agroforestry policies.

On the suggestion of MOEFCC, in July 2020 Central Public Works Department, Government of India lifted the 37 year old ban on use of wood in construction, which was the result of misinterpretation of NFP provision for development of wood substitutes. The order noted that wood is a versatile renewable construction material with much lower life cycle economic cost whereas other building materials such as steel, aluminium, PVC, glass, cement and polymers that are used in place of wood depend on non- renewable sources with polluting and energy intensive production methods.

MOEFCC constituted a task force in March 2022 headed by DGF&SS to develop synergies between the National Forest Policy, 1988, Forest (Conservation) Act, 1980 and National Agroforestry Policy, 2014. (author was a member of the Task Force and was the chairman of its working group). After detailed deliberations, the draft report submitted in July 2022, made following observations/recommendation related to ToF resources:

“Agroforestry” is not same as “Trees Outside Forest” but is its important sub-set and is a more active source of production of timber of fast growing as well as medium rotation Indian tree species. From the management perspective (silviculture) also agroforests are different other ToF areas.

The current assessment of ToF resources done by FSI as a part of biennial assessment of Forest and Tree cover in the country does not give information required by Wood Based Industries. A separate program of detailed assessment of ToF including agroforestry once in five years, is needed to provide details of tree species, girth, potential availability of wood, etc. This task can be entrusted to the FSI. This will also facilitate planning for augmentation of plantations of tree species required by the WBIs and establishing clusters of wood processing facilities/ WBIs. An expert consultative group may be constituted by the MOEFCC.

Recognising that there are hassles at interstate borders in transporting timber, suitable amendment in the existing Indian Forest Act, 1927 and the State Forest Acts has to be worked out after wider consultations with the states and all stakeholders and needs to be done gradually so as to not cause indiscriminate unauthorized felling in forests.

Underlining the need for legality documentation across the agroforestry tree products supply chain, it is necessary to establish electronic timber traceability protocol or standard based on IT technologies and subsequent block chain-based tracking and traceability. IT based technologies also make is possible to create a database of all trees planted and harvested outside forests which can be used forecasting and demand supply, better management

including associated risk management, as well as issuance of certificate of ownership and origin (COO).

Various strategic interventions mentioned in the NAFIP *viz.* quality planting material, research extension and capacity building, institutional credit and insurance cover, facilitating increased participation of industries, farmers access to markets, and sound data base and information system etc. need to be planned and executed in a holistic manner covering the entire value/supply chain for achieving the growth of the Agroforestry sector. (Anon., 2023)

With a view to boost agroforestry, MOEFCC has circulated model rules, in June 2025, to simplify and streamline felling of trees in agricultural lands. Requesting the States/UTs to examine these rules and considering their adoption and notification, MOEFCC has clarified that existing exemptions granted by the State Government for tree species shall continue to remain in force unless modified by the respective state governments. The model rules provide for registration of plantation areas in the National Transit Permit Management System along with land ownership, and its location, and other details such as species, number of saplings and month/year of planting, geotagged kml file images. The plantation details are also required to be updated periodically. These are to be verified by empanelled agencies through qualified auditors to facilitate issuance of felling permits based on online applications. Adoption of these model rules by State Governments is yet to start as the states may have to amend the existing rules.

DISCUSSION AND WAY FORWARD

It is thus clear that ToF in general and agroforestry in particular, are important resources not only ecological and other services but also meeting the wood requirements of processing industries to fill the demand supply gap. The Government of India has been consistently promoting agroforestry as a viable solution to address multiple national priorities, including doubling farmers' income, enhancing tree cover outside forests, mitigating climate change, minimizing import of timber, and ensuring sustainable land use. There have been concerted efforts to liberalise/simplify the transit regulations by creating an enabling environment to accelerate tree cultivation in private lands. Increasing number of tree species have been exempted from forest produce/timber transit rules by the State Governments.

The legal aspects of exemptions of tree species from transit regulations have been examined in details by the Hon'ble High Court of Madhya Pradesh, Jabalpur in their order dated 1st March 2025 in Writ Petition No. 13864 of 2019, and the hon'ble court have made following important

observations:

Right to life is deeply entrenched in the protection and conservation of environment, forests, and all the natural resources of the State. Any policy framed by the government must be the least damaging for the environment and give environment primacy over interests of humans, apart from balancing the same equally.

Doctrine of Public trust requires that State cannot treat the environment, natural resources and forests, as part of its sovereign wealth under its commercial use, rather all these resources are held as a trustee on behalf of the general public.

The Precautionary Principle encapsulates within itself the special principle of burden of proof in environmental disputes, where it is upon the proponent of change (who proposes to change the status quo) to show and prove that the actions proposed do not lead to injurious effects on the environment. Even if the environmental risk arising out of the action by its proponents are uncertain, but 'non-negligible', then 'Precautionary Principle' warrants and justifies implementation of regulatory action.

The scheme of the (Indian) Forest Act therefore is not only limited to the preservation and conservation of the forest area as notified under the enactment, but also each and every ingredient constituting such a forest, *viz.* the 'forest-produce', 'timber', 'wood and trees' present within its confines.

The forest act provides that "When in any proceedings taken under this Act, or in consequence of anything done under this Act, a question arises as to whether any forest-produce is the property of the Government, such produce shall be presumed to be the property of the Government until the contrary is proved." The burden/onus is upon the person claiming that it is not a forest produce to show that the said material or product has not originated or generated from within the forest areas.

The regulatory powers of the State Government under section 41 (IFA) are very wide and encompass every material or a product having the attributes or characteristics of a forest produce, irrespective of it having been cultivated, grown on a private land or not. Sec. 41(3) is in the form of an exception to the dispensation under Secs. 41(1) and 41(2). Granting exemption from regulatory control to large number of species, which are found equally in abundance in the natural forests of the State must be tested strictly on the anvil of the 'Precautionary Principle' and from the standpoint of State as a 'trustee' on behalf of its citizens.

Being an exception to the norm, decision of the State while granting exemptions must be guided by sufficient data,

survey, research and empirical study, coupled with circumstances borne out by record that warrant liberation of any specified class of forest- produce or timber from its regulatory regime.

Powers under Sec. 41(3) possess a clearly 'transient character', to be exercised for achieving a 'temporal objective'. Meaning thereby that whatever exemption is being granted by the State, it is presumed to be existential only for a limited duration, for meeting a temporary necessity, which requires some immediate resolution. By necessary corollary, therefore the exercise of powers of exemption under Sec. 41(3) cannot be allowed to assume permanency or perpetuity as permanency or be allowed to become generalised in nature.

Whenever exemption is proposed to be granted, the burden lies on the State to justify the compelling reasons, exigencies and circumstances that require exemption of certain species of trees, plants or timber.

In another recent order of 9th September 2025 the Principal Bench of the National Green Tribunal in OA number 124/2024 has directed the State of Haryana to consider the desirability of creating a single, comprehensive, and consolidated legal framework for the protection and management of trees in non-forest areas

In this situation, it will be prudent to rethink the current practice of exempting various tree species from the regulatory regime. Instead, it would be advisable to provide an independent legal backup for comprehensive and holistic implementation of the NAFIP through enactment of a separate national act with a dedicated institutional arrangement along with necessary fund, and encompassing the entire supply/value chain comprising quality planting material, cultivation, harvesting, and processing of wood and other products from agroforestry and perhaps also from other ToF resources. The AICRP 12 policy document entitled "Bridging the Gap: Policy Recommendations for Strengthening India's Industrial Timber Supply" has suggested a draft layout of "Growing ToF (Promotion and Facilitation) Act" (Kumar *et al.* 2025).

Considering the complex nature of the "resource - ToF with agroforestry as one of its subsets", and its potential impact on wide range of primary stakeholders including land owning and tenant farmers, processing industries and traders, central and state forest, agricultural and rural development departments, the formulation of the act should necessary be through extensive stakeholder consultations. Act should define its scope unambiguously, and provide for streamlining tenure rights of tenants/sharecroppers over trees, financial incentives, required technical inputs, continuous capacity building of the tree growers practicing agroforestry, and adequate but

simple procedure to ensure legality and traceability of the agroforestry tree products at all stages which is increasingly being demanded by environmentally conscious consumers across the globe. This would also facilitate sustainable management of agroforestry resources which is the need of the hour.

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How to Cite this Article: Bansal A.K.. (2026). Development of Trees Outside Forests Resources in India Need Forenabling Regulatory Framework. *Indian Journal of Agroforestry*, **28**(1), 8-19. <https://doi.org/10.48165/ija.2026.28.01.02>