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Review article

Tree insurance: A sustainable financial safety net for green assets- A review

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Abstract

Tree insurance is an emerging risk management tool that provides financial protection to tree and plantation growers against economic losses arising from natural disasters such as floods, cyclones, and droughts. This review highlights the significance of tree insurance in promoting environmental protection, biodiversity conservation, and sustainable development. The paper discusses six types of insurance policies offered primarily by private companies, with 35% participation from the public sector company General Insurance Corporation of India. Various commercially important species like *Casuarina*, *Eucalyptus*, *Dalbergia*, *Poplar*, *Rubber* and *Coconut* are covered under different policies based on premium rates and risk factors such as species, age, location, and policy type. Tree insurance, usually valid for one year, offers both direct benefits—such as economic stability and employment generation - and indirect benefits like climate change mitigation and social security. The review also suggests policy improvements, including flexible payment structures, wider species and geographical coverage, increased government support, and enhanced public awareness to make tree insurance more accessible and effective.

Keywords: Agroforestry, Climate resilience, Economic protection, Natural disaster risk, Policy recommendations.

Introduction

Tree insurance is essential for risk management, particularly in agroforestry and commercial plantations, as it guarantees financial stability for tree producers facing environmental uncertainties (Sinha and Singh, 2020). Financial and insurance-related mechanisms promote sustainable forestry practices by encouraging long-term investment in plantations and improving decision-making in forest management (Yao *et al.*, 2019). The General Insurance Corporation of India (GIC) holds the largest stake, accounting for 35% of the total shareholding. As India's national reinsurance company, GIC's significant investment reflects its central role in underwriting risk and providing financial stability to the insurance sector. The National Bank for Agriculture and Rural Development (NABARD) holds a substantial 30% share, underlining its developmental mandate in financing and supporting rural and agricultural sectors. NABARD's participation implies a strategic alignment with broader national objectives such as inclusive rural growth and sustainable agriculture. The remaining 35% of shares are equally divided among four public sector general insurance companies: United India Insurance Company Ltd., National Insurance Company Ltd., The Oriental Insurance Company Ltd., and The New India Insurance Company Ltd., each holding 8.75% (Fig. 1). This equitable distribution among more than two stakeholders ensures a decentralized yet collaborative governance model. Managing risks in agriculture and the environment is supported by stakeholders from both private and public perspectives.

The significant involvement of state-owned enterprises (SOEs) in promoting financial instruments like tree and crop insurance, and climate risk coverage, signals strong government backing and a focus on risk mitigation within the agricultural sector. This approach also fosters institutional trust and improves the capacity for resource mobilization and risk-sharing.

The first-ever "Agroforestry Plantation Insurance" in India was launched by United India Insurance Company in Tamil Nadu. This initiative is expected to strengthen the sustainability of tree farming in India. Among the various benefits of tree insurance, a major benefit is the ability to stabilize farm income and protect investments, shielding farmers from the devastating effects of natural hazards and market fluctuations. It mitigates the impact

of crop losses by offering a financial safety net, ensuring farmers receive a minimum level of compensation (Uthappa *et al*., 2015). Agroforestry has multi-functional benefits. These include improving land productivity, increasing the livelihood of local people and greatly contributing to improving the social economy. It provides essential goods & services (food, fuel, timber, fodder), environmental benefits (soil enrichment, water recharge, carbon sequestration, reduced deforestation), and social services (employment generation, income diversification, and livelihood improvement) in a sustainable manner. Furthermore, agroforestry systems play a critical role in meeting commitments under Nationally Determined Contributions (NDCs) and Sustainable Development Goals (SDGs) (Forest Survey of India, 2023).

According to the PIB note, Ministry of Agriculture and Farmers Welfare (2026), the Government of India allocates budgetary resources through several policies and schemes to promote the development of agriculture, forestry & agroforestry in the country. Over the years, the central government has significantly increased the budget allocation for the Department of Agriculture and Farmers Welfare, rising from Rs 21,933.50 crores Budget Estimate (BE) in 2013-14 to Rs 127,290.16 crores (BE) in 2025–26. However, within this broader allocation, funding for insurance schemes shows a contrasting trend. The PMFBY (2023) received an allocation of Rs 12,242.27 crores in the Union Budget for 2025-26, reflecting a 23% reduction compared to the Revised Estimate (RE) of Rs 15,864 crores for 2024-25 (Shagun, 2025). At the global level, a similar imbalance is evident in financial prioritization. According to the Forest Declaration Assessment Report (2025), approximately $409 billion was spent on agricultural subsidies, whereas only $1.7 billion was allocated to forests between 2018 and 2020, and $5.7 billion between 2022 and 2024. This represents merely 1.4% of agricultural spending, highlighting the severe underinvestment in forest conservation.

Insurance schemes are primarily implemented in crop/tree growing regions of India. The Agriculture Insurance Company of India Limited operates across 18 states and Union Territories, covering major agricultural regions such as Maharashtra, Madhya Pradesh, Rajasthan, Chhattisgarh, Karnataka, Odisha, and Tamil Nadu. The company has settled claims amounting to Rs 7,057 crores, directly benefiting 1.12 crore farmers. In addition to general crop/tree insurance, specific schemes such as the Coconut Palm Insurance Scheme (CPIS) are implemented in crop/tree-specific regions. For the financial year 2024–2025, CPIS has been operational in major coconut-producing states, including Kerala, Karnataka, Tamil Nadu, and Maharashtra (AICIL, 2025).

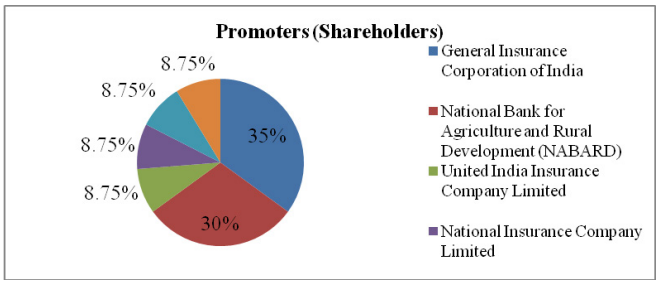

Fig 1. Different promoters (shareholders) in tree insurance scheme.

Objectives of tree insurance: One of the insurance schemes in India is "Pradhan Mantri Fasal Bima Yojna" (PMFBY) launched in 2023. The main objectives of this scheme were to provide financial assistance to farmers to cover losses from natural disasters, pests, and diseases, reduce financial risks by stabilizing farmers' income throughout the whole year, encourage modern practices by promoting innovative and sustainable practices and facilitate access to financial resources, thereby enhancing the credit flow.

Types of tree insurance: Tree insurance in India falls into two major categories

Single peril coverage: It protects against specific hazards, such as fire, storm damage, or pest infestation (Uthappa *et al*., 2015). Farmers in Punjab, parts of Haryana & Western Uttar Pradesh typically face natural disasters such as drought and floods, but the biggest loss is caused by hailstorms. Such specific natural disasters are covered under 'Single Peril Insurance' (Mohan, 2020).

Multiple peril coverage: Offers protection against multiple hazards, ensuring broader financial security. India currently implements a multi-peril tree insurance program (Uthappa *et al*., 2015). Multi-peril crop insurance allows insuring losses caused by two or more natural disasters such as fire, earthquake, volcanic eruption, uncontrollable diseases and insects. That is why it is also called a flexible risk management tool. This transfers the inherent production risks to an insurance company, enabling it to pay a fixed amount of the premium received from the Central Government. Crop insurance is the cornerstone of the USDA's (United States Department of Agriculture) risk management programs for agriculture (Harper, 2024; Crop Insurance Keeps America Growing).

Losses to the forestry and agroforestry sectors due to various risks and disasters from 2018 to 2023 across the world that require tree insurance to protect against them are given in Table 1. Cyclone Fani in 2019 caused losses to timber plantations and mangrove ecosystems in coastal forest regions of India and the European spruce bark beetle in 2018-19 caused a loss of 5 million cubic meters of timber in Germany. Illegal logging activities surged in Southeast Asia (Indonesia and Malaysia) in 2021, resulting in billions of dollars of timber resource losses,

threatening both biodiversity and forest sustainability. Natural disasters continued with tropical cyclones, such as Hurricane Ian in 2022, which destroyed commercial forests in Florida, USA. Similarly, fire and wildfires could cause losses of $10 billion and 17.6 million hectares of forest between 2019 and 2023 (Table 1).

Tree insurance policies in India are systematically categorized based on tree species, insurance providers, premium rates, and other factors. Key categories include Agroforestry Plantation Insurance (e.g., *Casuarina, Eucalyptus, Melia dubia*), Pulpwood Tree Insurance (*Eucalyptus, Poplar, Subabul, Casuarina*), Biofuel Tree/ Plant Insurance (*Jatropha, Pongamia pinnata, Azadirachta*), Plantation and Horticulture Tree Insurance (*Eucalyptus, Poplar, Teak*) (AICIL, 2025; Uthappa *et al.,* 2015), Rubber Plantation Insurance (*Hevea brasiliensis*) (TNAU Agritech Portal, 2025), and the Coconut Palm Insurance Scheme (*Cocos nucifera*) (NCIP, 2014). The average cost of an insurance premium for a basic tree insurance plan is 1.25% of the input cost. Depending on the tree species and associated input costs, the insurance premium per acre ranges from Rs. 300 to Rs. 600 (Uthappa *et al.,* 2015). Tree insurance encourages long-term investment in high-value tree species (Sinha and Singh, 2020) and enhances climate resilience by stabilizing farm incomes following natural disasters (Kumar *et al.,* 2021). Some of the Tree Insurance Policies by different organizations and their brief details are listed in Table 2.

***Exclusions in tree insurance policies*:** In India, tree insurance policies, particularly those supported under the Agriculture Insurance Company of India Limited (AICIL) and the National Crop Insurance Program, include a set of exclusions that determine claim eligibility and define the scope of insurance coverage. These conditions are designed to minimize moral hazard, ensure effective risk management, and increase the sustainability of insurance schemes in tree-based and agroforestry systems. The exclusions clearly limit the farmer's liability to specifically defined risks and ensure that only uncontrollable and unexpected events are considered eligible for compensation. This clarity encourages policyholders to adopt risk mitigation strategies and invest in infrastructure and management practices that reduce the loss (AICIL, 2025) (Fig. 2).

***Factors affecting insurance cost in tree insurance*:** Fig. 3 shows the key factors that influence the cost of insuring trees. These factors are divided into four main categories:

Species type: It is the type of tree species that significantly impacts insurance costs, like high-value species (like *Teak* and *Sandalwood*), which are expensive to insure because they are economically valuable (Chavan *et al.,* 2024). Fast-growing commercial species (like *Poplar* and *Eucalyptus*) (Sharma and Sah, 2020) are insured differently, usually at a slightly lower cost compared to high-value trees.

Tree age: Age also plays an important role: Immature/ Young trees (0–5 years) are generally cheaper to insure but more vulnerable to certain risks, mature trees (10–30 years) have higher value, so insurance might cost more, and Old-growth trees (50+ years) insurance may be expensive due to their high value and ecological significance (Isaifan and Baldauf, 2020).

Table 1. Major risks and disasters affecting forestry and tree plantations: past evidences

Risk/Disaster	Year	Reason	Area affected	Loss	References
Storms and extreme weather events	2019	Cyclone Fani	Coastal forests in India	Damage to timber plantations and mangrove ecosystems	MoEFCC, 2020
Pests and diseases	2018-2019	European spruce bark beetle infestation	Germany	Loss of an estimated 5 million cubic meters of timber	Eckhardt *et al.,* 2020
Fire hazards	2024	Brazil's forest fires	Brazil's timber and agroforestry sectors	Economic loss exceeding $36 billion	World Bank, 2024
Drought and water scarcity	2020	Severe drought conditions	Australia's eucalyptus plantations	Significant decline in tree growth and timber yield	Australian Bureau of Meteorology, 2021
Deforestation and illegal logging	2021	Illegal logging activities	Southeast Asia (Indonesia, Malaysia)	Billions of dollars in lost timber resources	World Wildlife Fund, 2021
Tropical cyclones and hurricanes	2022	Hurricane Ian	Florida, USA	Widespread destruction of commercial forests	NOAA, 2022
Wildfires	2023	Canada wildfires	North America	Over 17.6 million hectares of forests burned	Canadian Forestry Service, 2023

Location and geographical risk: The location of the tree also affects the insurance premium. For example, high-risk zones (such as coastal areas, wildfire-prone areas, and floodplains) have higher insurance costs because the chance of damage is greater, whereas Low-risk zones (controlled plantations, well-managed plantations) are safer, so insurance costs are lower (Manley and Watt, 2009).

Policy type: different types of insurance policies are available depending on the kind of plantation or trees. Examples include Agroforestry Plantation Insurance for mixed farming and tree systems, Pulpwood Tree Insurance for trees grown for pulp and paper industries, bio-fuel tree/plant Insurance for trees grown for energy production, Plantation/Horticulture Insurance for general plantation or orchard trees, Rubber Plantation Insurance specifically for rubber tree plantations and the Coconut Palm Insurance Scheme (CPIS) special scheme for coconut trees (NCIP, 2014).

Benefits of tree insurance: Tree insurance serves as a critical financial instrument to manage the risks associated with the loss of trees due to natural disasters, climate variability, and pests. It supports a wide range of economic, environmental & social objectives by protecting investments in forestry, agroforestry, and urban greening. The benefits of tree insurance can be broadly defined into two types: direct benefits & indirect benefits.

Direct Benefits

Economic advantages: According to Paavola and Primmer (2019), the concept of insurance value offers economic advantages by helping to lessen losses associated with risks. Risk is generally defined as the combination of the probability of an adverse event and the severity of its consequences. Within this framework, we can differentiate between protection—actions that lower the chances of a harmful event occurring, and insurance, actions that reduce the damage when such events do happen (Pascual *et al.,* 2015). Tree insurance promotes economic growth by enabling the development of eco-tourism and green infrastructure. Urban areas that invest in maintaining healthy tree cover often attract tourists who seek natural and scenic environments. This influx stimulates local economies, supports small businesses, and enhances real estate value. For instance, cities with robust tree cover experience higher visitor rates, increased retail activity, and improved urban aesthetics (Fransen, 2023).

Financial protection against losses: By offering compensation for tree loss, tree insurance reduces the financial risks borne by farmers, municipalities, and commercial investors. According to McPherson *et al.* (2017), the annual value of ecosystem services provided by urban forests in the United States is approximately $8.3 billion, while the total asset value of these forests is estimated at $181 billion. Notably, for every $1 invested in urban forestry, communities receive $2.52 in benefits, reflecting strong cost-effectiveness. Insurance value is reflected in the decreased risk premium; a risk-averse individual would be willing to pay to eliminate the risk entirely (Baumgärtner, 2007).

Employment generation: Expanding tree insurance and afforestation programs can significantly contribute to employment generation across multiple sectors. These initiatives create direct job opportunities in activities such as nursery operations, plantation, pruning, maintenance, and monitoring of trees. In addition, they support indirect employment in allied sectors, including insurance services, environmental consultancy, and forest management. According to Fransen (2023), the development of green infrastructure represents a promising pathway for sustainable job creation in both rural and urban regions. In the insurance sector, major companies also contribute to employment generation. For instance, the Oriental Insurance Company Limited employs over 5,900 personnel, while the United India Insurance Company Limited has approximately 8,798 employees (UIIC, 2025). Similarly, Agriculture Insurance Company of India Limited employs around 377 personnel (AICIL, 2025), and its New Delhi headquarters accounts for about 740 employees (Builtin, 2026).

Indirect Benefits

Strengthening rural livelihoods: Agroforestry serves as a strategic economic safety net for rural communities. By integrating trees into traditional farming, smallholders can shift from a risky monoculture dependency to a diversified production model. This transition is crucial during unpredictable market shifts or environmental stresses Tiwari *et al.*, 2017. This inherent financial resilience is what makes agroforestry a cornerstone for stabilizing rural economies against both climatic and economic shocks.

Environmental sustainability: The insurance value of an ecosystem refers to its capacity to maintain a flow of services like timber production, water conservation and recreation (Drever *et al.*, 2006; Isbell *et al.,* 2011; Saarikoski *et al.,* 2015; Felton *et al.,* 2016a, Felton *et al.,* 2016b; Bartkowski, 2017). Tree insurance indirectly promotes sustainable land management by encouraging long-term investments in agroforestry. Trees help prevent soil erosion, improve organic matter content, and enhance nutrient cycling. Such practices maintain soil fertility, ensuring productivity and

Table 2. Various tree insurance policies in India

S. No.	Policy name	Insurance company	Trees covered	Premium rate	Factor	Insurable life span	Insurance period	Sum assured	Coverage details	Eligibility criteria
1.	Agroforestry Plantation Insurance	United India Insurance, Chennai	*Gmelina, Casuarina, Eucalyptus, Melia dubia, Ailanthus, Leucaena, Dalbergia sissoo*	1.25% of input cost	Input cost	Not specified	Annual	Input cost	Covers risks related to natural calamities, pests, and diseases	Plantation should meet the required density and age criteria
2.	Pulpwood Tree Insurance	Agriculture Insurance Company of India	*Poplar, Subabul, Casuarina, Eucalyptus*	1.5% - 2.5% (Age, location, optional drought coverage)	Age, location, optional drought coverage	1 - 5 years	Annual	100-150% of input cost	Covers damage from environmental hazards and pest attacks	Farmers engaged in pulpwood plantations
3.	Bio-Fuel Tree/Plant Insurance	Agriculture Insurance Company of India	*Jatropha, Karanja,* Neem, Mahua, *Polanga,* Paradise Tree	-	Varies by species, risks, and location	1 - 50 years (mostly tree species)	Annual	100-150% of input cost	Protection against losses due to climatic conditions, pests, and diseases	Farmers or organizations cultivating biofuel tree species
4.	Plantation/ Horticulture Insurance	Oriental Insurance Company Limited	Pomegranate, Teak, Eucalyptus, Poplar, Chickoo, Arecanut, Cocoa, Rubber, Citrus,	1.25% of sum insured	Sum insured	Not specified	Annual	Based on cultivation cost	Protects against natural calamities, pests, and disease outbreaks	Applicable to commercial plantations
5.	Rubber Plantation Insurance	Agriculture Insurance Company of India	Rubber	-	Varies by input cost and growth stage	Immature: 7 years, Mature: 8 - 25 years	Annual	Based on input cost and yield deduction	Covers damages from climatic conditions, pests, and yield reductions	Farmers cultivating rubber plantations
6.	Coconut Palm Insurance Scheme (CPIS)	National Crop Insurance Programme (NCIP)	Coconut	4-15 years: Rs. 9 per plant/ year 16-60 years: Rs.14 per plant/year	Age	Age group: 4-15 years, Age group: 16-60 years	Annual	4-15 years: Rs. 900 per palm 16-60 years: Rs. 1750 per palm	Covers damages due to natural calamities and pest infestations	Individual coconut farmers with a minimum plantation area
7.	Mango Insurance	-	Mango	Rs. 5200 and Rs. 9200	Age	Young and old plantations	-	-	Excessive or unseasonal rain, change in temperature or damage caused by the wind between 1 January to 29 February	Farmers cultivating mango plantations

(Source: AICIL, 2025; TNAU Agritech Portal, 2025; Uthappa *et al.*, 2015; Mansingh and Nisha, 2020)

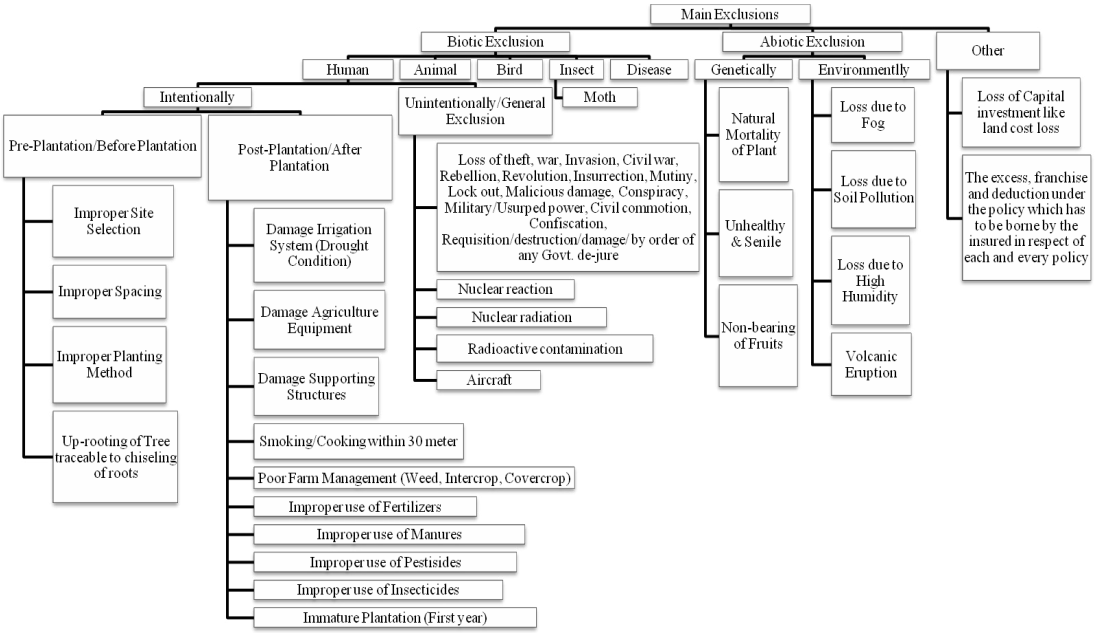

Fig 2. Exclusions in tree insurance policies

sustainability of agricultural systems over time (Tiwari *et al.*, 2017).

Climate change mitigation & adaptation: Climate change is heightening the threat of flooding and is already affecting areas like Leeds. According to the UKCP09 Climate Projections, peak river flows are projected to increase by 15–30% between 2025 and 2055, and by 20–50% after 2055, based on central estimates (Environment Agency, 2010). Nature-based solutions (NBS) can serve as a form of natural insurance to manage the risk of river flooding (Nesshöver *et al.*, 2017; Dadson *et al.*, 2017; Farrugia *et al.*, 2013; Green *et al.*, 2016; Morris *et al.*, 2016). Agroforestry is a well-established method for addressing climate change due to its ability to capture and store carbon. As reported by Sathaye and Ravindranath (1998), agroforestry practices can sequester up to 25 tonnes of carbon per hectare across approximately 96 million hectares globally. In addition to reducing greenhouse gases, these systems help moderate climate conditions by limiting extreme temperature fluctuations.

Biodiversity conservation: Agroforestry practices and systems serve as reservoirs of biodiversity after ecological disturbances such as natural disasters, wildfires, floods etc. Home gardens and sacred groves in tropical and coastal regions contain a diversity of native species. These systems help conserve flora and fauna and maintain ecological balance and biodiversity (Griffith, 2000; Tiwari *et al.*, 2017). Biodiversity can be understood as a form of natural insurance for risk-averse ecosystem managers against the excess or deficiency of ecosystem services (Baumgärtner, 2007).

Social benefits: Fransen (2023) highlights how urban forestry projects enhance quality of life and civic engagement. Trees make a vital contribution to social wellbeing and customs. They provide public spaces. Green areas have been linked to stress reduction, improved mental wellbeing and stronger community cohesion.

Protection of urban green spaces and landscaping: Acting as natural insurance, urban green spaces reduce the negative impacts of heat and pollution (Quaas and Baumgärtner, 2008; Green *et al.*, 2016). Tree insurance ensures protection and maintenance against human and natural hazards in the urban green area. For example, Bajaj Allianz General Insurance Company (BAGIC) launched several projects where 10,500 trees were planted under the agroforestry model and 500 trees under the urban forest model. This contributes to environmental and social welfare (Grow Billion Tree, 2023).

Enhancing disaster resilience: Assured agroforestry systems and urban green spaces are beneficial in resisting floods, storms, droughts and extreme weather conditions. This can reduce long-term environmental & economic losses in urban & rural areas. McPherson *et al.* (2017) suggest that proactive investment in urban forestry and tree insurance significantly reduces disaster-related costs. Actions that improve the resilience of natural forest structure are recognized in forest management guidelines (Tapio, 2023).

Recommendations for expanding tree insurance: Tree insurance is an innovative financial instrument to protect

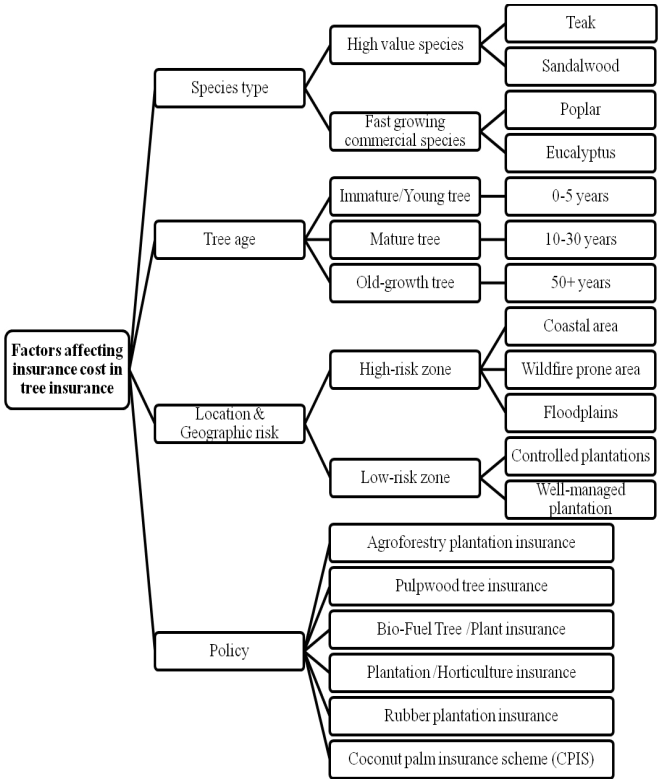

Fig 3. Factors affecting insurance cost in tree insurance

trees from economic losses due to natural disasters (flood, drought & cyclone), pests, diseases and other risks. In India, tree insurance is still in its early stages, but expanding and refining it is essential to effectively support agroforestry systems, rural livelihoods, and climate resilience. The following recommendations, drawn from research, pilot studies and policy analyses, offer strategic directions for enhancing tree insurance coverage and effectiveness.

Flexible payment structures: It is extremely difficult for small and marginal farmers to pay the annual insurance premiums for trees such as Sal and Sandalwood. To make this process easier and more efficient, the option of paying the premium as a one-time lump sum would make this scheme even more accessible and effective (Uthappa *et al.,* 2015).

***Government and industrial support*:** Tree insurance can be promoted among economically vulnerable individuals and groups through subsidies and financial incentives provided by government programs and corporate CSR initiatives; furthermore, it can be made more practical by reducing premium costs (Uthappa *et al.,* 2015; NABARD, 2020).

***Expanded coverage*:** Many insurance schemes insure only one species or a few species. For example, rubber and coconut should be covered by expanding their coverage and ensuring more species on the basis of the Agroforestry system (Uthappa *et al.,* 2015; CIFOR-ICRAF, 2022).

***Agroforestry system-based insurance*:** Tree and crop insurance should be designed on the basis of an agroforestry model to promote an agroforestry system. Instead of insuring individual species, the entire agroforestry can be insured (Uthappa *et al.,* 2015; Tiwari *et al.,* 2017).

***Increased industry participation*:** The involvement of more insurance companies and financial institutions is necessary to diversify product offerings and improve competitiveness. Government can incentivize this through regulatory support and public-private partnerships (PPPs) (Uthappa *et al.,* 2015; UNDP, 2024).

***Remote sensing driven digital analysis*:** With the help of satellite images, drones and other tools, we can improve performance in the claim process, risk assessment, reduce fraud and speed up compensation (FAO and ITU, 2018).

***Awareness*:** Awareness of crop insurance was found to be highest in Andhra Pradesh (83%) and Rajasthan (66%). In contrast, Maharashtra recorded the lowest awareness, with only 22% of farmers informed about crop insurance. Uttar Pradesh and Assam showed moderate levels of awareness, at 25% and 55%, respectively (Uthappa *et al.,* 2015; NABARD, 2023).

***Legislative framework*:** Legal frameworks are established to support forest damage prevention and ensure preparedness for response by assigning responsibilities to relevant organizations, promoting inter-agency collaboration, and outlining both preventive and responsive actions (Paavola and Primmer, 2019). In India, several legislations and policies provide indirect support for tree protection, agroforestry promotion, and risk management: The Indian Forest Act, 1927, regulates activities such as cutting, sawing, clearing vegetation, and setting fires in forest areas, thereby helping to prevent forest damage and associated risks (Manikandan and Prabhu, 2016). The Forest Conservation Act, 1980, restricts the diversion of forest land for non-forestry purposes, ensuring the conservation of forest resources and ecological stability (Manikandan and Prabhu, 2016). The Tribal Act, 2006 (commonly known as the Forest Rights Act) recognizes the rights of forest-dwelling communities over land & forest resources, thereby strengthening their role in sustainable forest management (Manikandan and Prabhu, 2016). The National Agroforestry Policy, 2014, promotes agroforestry by facilitating institutional credit, insurance support, and market access, thus providing a policy foundation for integrating tree insurance into agroforestry systems (National Agroforestry Policy, 2014).

Conclusion

Tree insurance is a vital financial tool that safeguards green assets, supporting sustainable forestry and agroforestry development. Tree insurance provides financial stability to farmers, investors and urban planners by mitigating risks associated with natural disasters, pests and economic uncertainties. Tree Insurance is advancing towards addressing climate change, conserving biodiversity, and improving the livelihoods of rural communities. Due to financial constraints and policy-related issues, the prevalence of tree insurance remains limited at present, despite its immense potential. To make tree insurance and its benefits accessible to the public, it is crucial to expand coverage, provide government subsidies, and encourage private sector participation. As climate risks intensify, strengthening tree insurance frameworks will play a key role in promoting environmental resilience & securing the future of tree-based ecosystems.

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