
Incentivising Sustainable Private Sector Investment in Timber Plantations in Myanmar



Policy options to encourage socially and environmentally responsible investment

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Abbreviations and Acronyms

AAC	Annual Allowable Cut
AfDB	African Development Bank
ASEAN	Association of South East Asian Nations
C&F	Cost and freight [at port of importation]
CAPEX	Capital expenditure
CBM	Central Bank of Myanmar
CERP	COVID-19 Economic Response Plan
CF	Community Forestry
CFI	Community Forestry Instructions
CFUG	Community Forestry User Group
COP21	21 st session of the Conference of the Parties on Climate Change held in Paris in December 2015
COVID-19	The infectious disease caused by severe acute respiratory syndrome coronavirus 2
CSO	Civil Society Organization
DALMS	Department of Land Management and Statistics
DFI	Development Finance Institution
DICA	Directorate of Investment and Company Administration
DZGD	Dry Zone Greening Department
ECD	Environmental Conservation Department
EIA	Environmental Impact Assessment
ESS	Environmental and Social Standard
EU	European Union
EU-28	The 28 Member States of the European Union before the UK's departure on 31 Jan 2020
EUR	Euro
EUTR	EU Timber Regulation
FC	Forestry Commission (Ghana)
FD	Forest Department
FI	Financial Intermediary
FIP	Forest Investment Program
FLEGT	Forest Law Enforcement, Governance and Trade
FMO	Dutch entrepreneurial development bank
FOB	Free on Board
FPIC	Free Prior Informed Consent
FSC	Forest Stewardship Council
GHS	Ghana Cedi
ha	hectare
HCV	High Conservation Value
HT	Hoppus ton (1 HT = 1.803 m ³)
IEE	Initial Environmental Examination
IFC	International Finance Corporation
JICA	Japan International Cooperation Agency

JV	Joint Venture
m ³	Cubic meter
MADB	Myanmar Agricultural Development Bank
MFCC	Myanmar Forest Certification Committee
MIC	Myanmar Investment Commission
MMK	Myanmar Kyat
MOALI	Ministry of Agriculture, Livestock and Irrigation
MONREC	Ministry of Natural Resources and Environmental Conservation
MOPF	Ministry of Planning and Finance
MRRP	Myanmar Reforestation and Rehabilitation Program
MtCO ₂ e	Metric ton carbon dioxide equivalent
MTE	Myanma Timber Enterprise
MYR	Malaysian Ringgit
NDC	Nationally Determined Contribution
NES	National Export Strategy
NLUP	National Land Use Plan
OSB	Oriented strand board
PA	Protected Area
PEFC	Program for the Endorsement of Forest Certification Schemes
PFE	Permanent Forest Estate
PPF	Permanent Protected Forest
PRD	People's Democratic Republic
R&D	Research and Development
RF	Reserved Forest
RWE	Round Wood Equivalent
RFD	Royal Forest Department (Thailand)
SEE	State-owned Economic Enterprise
SG	Sawing Grade (for Myanmar teak)
SPGS	Sawlog Production Grant Scheme (Uganda)
SPV	Special Purpose Vehicle
TLAS	Timber Legality Assurance System
THB	Thai Baht
TIMO	Timber Investment Management Organisation
TRI	The Restoration Initiative
VFV	Virgin, Fallow and Vacant [Land]
VGGT	Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests
VPA	Voluntary Partnership Agreement
VSC	Verified Carbon Standard

US\$ = US Dollars (USD)

MMK have been converted to US\$ at MMK 1500/US\$

Purpose of this paper

This paper examines the need and necessary conditions to increase commercial forest plantation establishment in Myanmar. It assesses opportunities and constraints faced by investors of all types that result from the current investment environment, and it presents options and approaches that should be considered with the aim of incentivising a significant increase in private sector investment in forest plantations.

The purpose of the paper is to inform a policy reform process aimed at accelerating private investments in sustainable forests plantations within the context of the Myanmar Reforestation and Rehabilitation Program (MRRP) and guide priority investments linked to the World Bank-supported Forest Restoration, Development and Investment Project (FREDIP).

The paper does not represent a Forest Plantation Strategy, but it clearly lays out the reasons why Myanmar would very much benefit from the preparation and implementation of such a strategy.

Neither is the paper intended to be a comprehensive review of Myanmar's forest sector, and it deals only with aspects relevant to investments in commercial forest plantations. More detailed information on the country's forest sector can be found in the Myanmar Country Environmental Analysis – Forest Resources Sector Report 2019.¹ A summary of key points about Myanmar's forest sector is included as Annex 1.

The policy and investment recommendations derive not only from a literature review but also from many interviews with the Forest Department (FD), key stakeholders, and from a workshop with national and international private and public entities, including the non-governmental organization (NGO) that was organized by the FD in December 2019 in Nay Pyi Taw.²

Structure of the paper

The paper comprises nine sections in addition to the Executive Summary. Section 1 examines national and regional trends that are relevant to private sector investment in plantations, including the decline in Myanmar's timber production against increased domestic and regional demand for forest products. Section 2 describes policies in similar countries in the region and elsewhere that have encouraged plantation investment. Section 3 then reviews Myanmar's current policies relevant to private plantation investment, including the scope for domestic financing. Section 4 describes the country's current plantation targets and progress made towards achieving them. Section 5 provides views from private sector respondents on constraints to increasing investment. Section 6 sets out broader challenges and risks that need to be addressed if private investment is to be scaled up. Section 7 outlines potential options for financing plantations, and Section 8 presents possible alternative tenure approaches for plantations on state land, including the need for involvement of communities. Section 9 draws the main conclusions and suggests next steps for policy makers to consider; it also summarises the outputs of a stakeholder workshop held in December 2019 on policy reform needed to encourage plantations.

¹ World Bank (2019). Myanmar Country Environmental Analysis – Forestry Resources Report (<https://www.worldbank.org/en/country/myanmar/publication/myanmar-country-environmental-analysis>)

² See Annex 4.

Executive summary (English)

KEY POINTS:

- Myanmar's natural forests can no longer supply domestic timber needs, nor sustain an export market.
- A switch to plantation forestry is needed if the country is to have a significant commercial forest sector in future. Beyond public plantations, the private sector involvement is needed to achieve the scale required.
- Myanmar has a number of comparative advantages for developing a viable plantation forest sector: it is next door to the world's largest and fastest-growing markets for wood products; its own population's demand for wood-based products is not met; it has good growing conditions for a range of plantation species and sound technical capability in plantation establishment; and it has the lowest labour costs in the region.
- Attracting investment in the plantation sector and associated downstream processing offers important formal rural employment opportunities.
- Land tenure disputes are a significant risk for private plantation establishment, but cooperative approaches that benefit both local communities and investors can help resolve such risks.
- National financing packages are not favourable for the forest industry. In the short-term, private equity financing would be needed; in the medium term, adequate financing options are needed to explore the full potential of the industry.
- Despite its advantages, Myanmar would benefit from a comprehensive review of policy aimed at attracting private investments and, at the same time, guaranteeing application of sustainable practices.
- Improved landscape-level planning, information on land availability, improved authorising environment, increased tenure security and fiscal and other incentives will be key elements of policy reform.

1. **Myanmar's forest and timber sector has been central to the country's economy and society, particularly over the last century.** Myanmar's forests contain some of the most valued species in the world – particularly rosewoods, ironwood, and teak. Myanmar also has one of the longest-standing forest management systems in the tropics. Today, despite reduced timber extraction revenues, wood industry still generates five percent of formal Government revenues. Beyond timber, rural society largely depends on non-timber forest products (NTFP) and agroforestry for food, medicine, and woodfuel which is by far the most important energy source in Myanmar, with between 60-80 percent of communities relying on this source.
2. **To address the impacts of the novel coronavirus (COVID-19) outbreak, the safety net provided by forests and forest products will be increasingly important to compensate**

for lost income and jobs. Forest-based industries, sustainable tree plantations, and restoration of degraded forest areas are amongst the few economic activities in rural areas that have the potential to provide large-scale employment.

3. **Myanmar has lost about 12.5 million ha of forest** over the last three decades through land clearing for agriculture and other uses and excessive and illegal logging. Large areas of natural forest have also been degraded, so they can no longer be relied on for future timber supplies, and their environmental functions are threatened.
4. **The permitted annual timber harvest has been reduced to around 523,000 m³ in 2019/20 from around 2.7 million m³ in 2013/14** to allow the remaining natural forests time to recover. Of this, about 55 percent will be processed for export, leaving only about 235,000 m³ available for the domestic market. The current permitted harvest of teak (*Tectona grandis*) – Myanmar’s premium species – is only around 9,000 m³, about half of which is now planned to be extracted from mature plantations. There is little information on the age-class structure or quality of existing plantations, but these are unlikely to produce more than 2 million m³ per year at maturity.
5. **The domestic consumption of non-fuel wood is estimated to be around 4 million m³ annually³**, indicating that most timber supplying the domestic market comes from other sources, including land cleared for other uses, from old rubber plantations, imports of processed wood products but also, to a large degree, from illegal logging in natural forests. Wood product exports have plummeted from around 4 million m³ (round-wood equivalent (RWE) prior to 2014 to about 700,000 m³ RWE in 2018. Woodfuel, which provides most of the country’s energy, accounts for an estimated additional 36.3 million m³, compared to an allowable harvest from state forests of less than 1.8 million m³.
6. **Unless these gaps between demand and supply are closed, continued forest loss and degradation will continue.** Due to lack of alternative wood supply, communities and national industry will continue using natural sources to satisfy their timber demand.
7. **At the minimum, a plantation area of 2 million ha would be required** to supply a total roundwood demand of around 40 million m³ of woodfuel and industrial wood just to meet domestic demand, assuming a conservative annual growth rate of 15 m³ per ha and that a portion of woodfuel could continue to be sourced from natural forests, old rubber plantations, and farm trees. If a large proportion of wood production were destined for exports, an even larger area than 2 million ha of plantation area would be needed.
8. **Despite good silviculture practices applied in publicly managed plantations, it is doubtful that this effort alone will be able to fill the timber supply gap.** Publicly managed plantations have suffered from high mortality rates and timber theft due to lack of adequate long-term maintenance as a result of low budget allocations. Because future state budgets can likely not be assured in the long run, successful plantation establishment at this scale will require significant private sector investment. Most private plantation

³ Based on FAO Stat estimates.

companies typically also invest in technology for vertical processing which would further increase employment and economic impacts of the forestry sector.

9. **Including China's southern provinces, the total area planted with fast-growing species in the region now exceeds 7 million ha.** Thailand, Lao PRD, Vietnam, Indonesia, and Malaysia have already adopted policies to promote plantation establishment aimed at compensating for the reduced availability of natural forest timber. These have included favourable credit arrangements and regulatory regimes suited to fast-growing species and smaller diameter logs. Such policies have also boosted processing industry.
10. **These increases in plantation area underline a trend away from extractive forest economies** where, despite prescribed selection management systems, natural forests have been overharvested and degraded, to ones where plantation-grown timber now contributes more to raw material supplies. The timber processing industries of other countries in the region have adapted to the different type of raw material produced. The success of plantations in other countries demonstrates their technical and economic feasibility and, with the decline in legal harvests from its natural forests, such a transition in Myanmar is inevitable.
11. **Transition from extraction-based forestry towards forest plantations also involves significant environmental and social risks.** Past experiences in the region demonstrate that private plantations have not always been managed sustainability. There is a range of environmental and social risks associated with large-scale plantations, especially where they involve intensively managed monocultures. These may relate to the plantation crop's water demands, the effects of fertilisers and pesticides, increased encroachments on native forests, and reduction in biodiversity. Despite high employment benefits, the involvement of local communities needs to be guaranteed. Myanmar can learn from good and bad examples on how these risks are addressed elsewhere.
12. **Much of Myanmar's denuded or degraded forest is suitable for establishing timber plantations, either as commercial plantations or through community forestry (CF),** which would allow to establish plantations without encroaching on forested lands. The country's proximity to the world's largest and fastest-growing markets in Asia and its current apparent timber deficit create opportunities to supply domestic and regional demand for wood-based raw material. This would also allow Myanmar to grow and diversify its own wood-based industry.
13. **The forest sector is currently a relatively minor source of employment, accounting for only around 0.2 percent of Myanmar's formal employment,** but possibly two-thirds of the country's population depend on forests for part of their livelihoods. And for most rural communities forests provide essential basic needs, particularly woodfuel, non-timber forest products, and animal fodder. There are opportunities for increased formal employment through plantation establishment and associated downstream processing, and Myanmar's low wage levels give it a comparative advantage. There is also a number of good opportunities for outgrower schemes and other possibilities to benefit communities in forest plantations.

14. **The Government aims to restore or reforest about 884,000 ha on Reserved Forest (RF) and Protected Public Forest (PPF) land under its 2016-28 Myanmar Reforestation and Rehabilitation Programme (MRRP).** The bulk of this – about 312,000 ha – will be through CF, some of which is expected to involve tree planting for commercial use. The programme also includes establishment of around 226,500 ha of commercial plantations, to which the private sector is expected to contribute more than half.
15. **After three years of implementing MRRP, less than 13 percent of the overall plantation target and less than 10 percent of private plantation targets have been met.** Total private sector planting (excluding rubber) on all land types is reported to be about 152,200 ha, although the actual locations and quality of these plantations are unclear. Teak is the most widely-planted species by the private sector, with an area of about 60,000 ha reported, but there is an increasing focus on fast-growing industrial species – primarily Eucalyptus hybrids and *Acacia mangium* – with 47,000 ha reported established in mid-2019.
16. **Reported progress with community forestry is somewhat better, with CF certificates issued covering about 63,800 ha** – 20 percent of the target area. However, this does not necessarily equate to reforestation or restoration, and efforts are constrained by current government capacity, lack of defined delivery mechanisms to support development, and weak links to markets for CF produce.
17. **There are opportunities for the private sector to help address CF constraints by assisting farmers to establish plantations** by providing quality planting material and technical advice and guaranteeing markets or providing market links for both timber and non-timber forest products. Models involving private sector-community cooperation in bamboo cultivation and product development and also small-holder pulpwood outgrower schemes have also been initiated and these could be replicated for other products. Advantages to private sector entities from such arrangements include augmenting their own raw material supplies as well as reducing potential conflicts and consequent damage to their plantations.
18. **The Government has prepared a draft strategy to increase reforestation which recommends four strategic areas for action:** (i) creation of enabling conditions – namely necessary institutions, policies, laws, instructions, and procedures; (ii) establishment of responsible institutional participation structures; (iii) development of benefit-sharing systems; and (iv) sustainable financing mechanisms. These aspects are essential elements in framing a commercial plantation strategy and creating favourable conditions for private sector investment.
19. **Land availability for plantation leases:** There are two categories of State-owned land available for establishing private sector forest plantations or community forests: forest land, which includes RF and PPF, and Virgin, Fallow and Vacant (VFV) land. The terms of private sector leases vary depending on the size of area and the species planted, with special conditions for teak. Areas between 100 and the maximum of 1,000 acres (40.5 – 405 ha) are subject to competitive tender. For VFV land, up to 3,000 acres (1,214 ha) can be leased, after excluding areas with remaining good natural forest and those occupied by farming.

20. **The current upper limit of 1,000 acres for leases on forest land is considered too small for larger-scale investors.** Depending on species and aim of the investor in terms of product and planned processing, 15,000 ha (37,000 acres) of plantable area is considered to be the minimum viable area. However, the Forest Department (FD) has stated that contiguous blocks exceeding 10,000 acres are not available, because areas suitable for plantations are scattered between blocks of natural forest, existing plantations, and areas occupied by farming. Although contiguous blocks are desirable for investors, scattered areas are also acceptable, with access and distance to processing or export points the most important considerations.
21. **Current incentives for private commercial plantations are not considered sufficient by investors for forest plantations:** A range of government policies have been designed to encourage foreign investment in Myanmar, including in the forest sector. These include commercial and income tax holidays, tax-free profits if reinvested, deductions for research and development, and exemptions for import and export duties and other local taxes. Incentives vary by economic zone with most favourable terms available for least-developed economic areas, but overall regulatory framework, financing, and other issues have not yet created a sufficiently attractive environment for large-scale investors.
22. **The Myanmar banking sector is undergoing reforms, and debt financing for forestry is either not available or too expensive.** The banking sector is still immature and interest rates for both state banks and commercial banks for secured loans are set by the government at 8.5 percent and 13 percent respectively, which, although low compared to the informal sector, are considered too high for borrowing for forest plantation investment. The State-owned Myanmar Agriculture Development Bank (MADB) is mandated to provide loans for the forest sector, but it has no funding sources for this, and it does not accept leased State land or planted trees as collateral. Likewise, Myanmar's commercial banks currently have no suitable products that are appropriate for lending for plantation development. These constraints make national debt financing for private plantation development an unlikely prospect in the near future.
23. **All private plantations established so far are assumed to have made use of equity financing** by both local and international investors. These include recent joint ventures involving foreign partners from India, Singapore, and British Virgin Islands. International investment funds are providing equity for plantation businesses in the region, but so far there is no evidence of their engagement in Myanmar.
24. **Current and potential investors list a range of constraints to increased investment.** These include: (i) poor availability of large contiguous blocks of land within reserve forest, or lack of access to such areas; (ii) land tenure issues, especially informal occupation of forest land for farming; (iii) perception of difficulty of doing business; (iv) complicated procedures to acquire land and to harvest, transport, ship, process, and trade timber; (v) insufficient government staff able to promote and support forest sector investment; (vi) lack of enforcement capacity to prevent encroachment and illegal logging in plantation areas; (vii) lack of finance; and (viii) widespread availability of illegal timber, which depresses log prices and reduces demand for plantation-grown logs.

25. **Granting large-scale tenure rights to private entities carries real and perceived sustainability risks.** These arise from issues with social acceptance and conflict over tenure rights and concerns over establishing monocultures of a few species with potential impacts on biodiversity, soil and water, and pest and diseases outbreaks. This means that large- and medium-scale investors should have comprehensive social and environmental management plans in place and ideally seek forest management certification that meets recognised international standards.
26. **To meet these requirements, investments should be based on transparent finance sources, operate in accordance with high social and environmental standards, and also aim for value-added processing.** These principles would help assure that positive contributions are made to Myanmar’s economic development, and also that resulting products can gain and retain access to increasingly demanding high-value export markets. A debate is also needed as to what type of investment should be promoted in terms of meeting the country’s future domestic forest products needs, and also whether there should be a focus on a particular export segment in which Myanmar might have a competitive advantage.
27. **Other investor requirements** relate to location of areas close to potential processing sites and transport infrastructure linked to export facilities, free choice of joint venture partners, and the ability to repatriate profits or capital on exit. To provide early income, acquisition of management rights to existing timber resources, in combination with new plantations, is likely to be more attractive than starting plantations on greenfield sites.
28. **Myanmar could explore a larger range of possible plantation models,** or combinations of models, to attract sustainable investments:
- a) Establishment of greenfield plantations on leased denuded or degraded FR land (current model);
 - b) Establishment of greenfield plantations on leased denuded or degraded VFV land, or conversion of VFV land currently under agricultural crops to timber plantations (also currently practiced);
 - c) Management leases, including timber harvest rights, for existing government-owned plantations (including degraded or failed plantations) in combination with new plantation establishment on adjacent FR land; and
 - d) Management leases, including timber harvest rights, for natural forest in FR or VFV land in combination with new plantation establishment on adjacent FR and VFV land.
29. **In all cases, arrangements with local communities and/or farmers are likely to be necessary** to reduce the likelihood of conflicts and risks of encroachment and timber theft. These could include support for and commercial arrangements with local community-based forestry enterprises on adjacent RF or VFV land, contract tree growing with farmers on nearby private land, or establishing tree rows at wide spacings and allowing intercropping between rows – also possibly incorporating sharing the proceeds from the harvested timber.
30. **A range of external finance sources could be considered.** These include:

- a) equity finance in joint ventures or partnerships with local companies, from foreign institutional and industrial investors, including international investment funds and Development Finance Institutions (DFIs);
- b) loan financing to private investors, including through DFIs; and
- c) multilateral development bank loans to the government, routed to investors through local state-owned banks.

A blend of different financing sources is possible. International climate funds, voluntary carbon markets and investments funds to support green businesses are other interesting options to explore.

31. There is a need to develop and implement a coherent action plan to develop a sustainable commercial plantation strategy, including policy reforms, investment incentives, infrastructure needs, and finance and trade aspects. The reform process should target both large scale investments that can bring silviculture, advanced processing technology and best environmental and social practices, as well as smaller and medium scale plantations, including community forestry, outgrower, and small-scale private investors. The changes required could be categorised according to the level at which formal decisions need to be made:

- a) Those that can be made by decision at the departmental level within existing capacity and through issuance of instructions or procedures;
- b) Those that can be made at the departmental level, but need capacity development support (e.g., land use inventories, preparing tender packages, communications, etc.);
- c) Those that need inter-agency cooperation in land use planning (e.g., cooperation between FD and the Department of Land Management and Statistics (DALMS) within the Ministry of Agriculture, Livestock and Irrigation (MOALI) in landscape planning, or additional incentives needing approval from Myanmar Investment Commission (MIC); and
- d) Those that need legislative change, for example through amendments to the Forest Law, the Forest Rules, or passage of the Land Law.

32. To achieve the Government’s targets for plantations and to attract quality investment, a range of perceived risks and constraints need to be addressed. Possible actions include:

- a) Addressing social risks, in particular potential conflicts related to land and consequent risks for plantation protection; this demands adequate surveys and consultations in the land use allocation planning and adoption of partnership models;
- b) Adoption and promotion of a wider range of plantation enterprise models, including management of existing government forests in combination with plantation establishment that allow larger management units to be made available, and links with CF;
- c) Lease tenure terms that allow for multiple rotations (subject to meeting performance requirements);
- d) Streamlined processes for lease acquisition and transparent and simplified licensing and decision-making processes;
- e) Lighter regulatory requirements for plantation timber harvest and transport;

- f) Demonstration of government efforts to strengthen forest sector governance and tackle illegal logging; and
- g) Better publicity to promote plantation investment, including identification of and information on available sites and investor incentives.

33. **There is an expressed desire to create a formal multi-stakeholder body** that includes representatives of the private sector, affected government agencies, CSOs representing community interests, and legislators. This would support policy reforms and guide implementation of the action plan.

34. **Further technical, social, and economic analyses, and data collection are likely to be necessary** to ensure that deliberations and decisions are properly informed. These should examine the potential impacts of suggested changes on, for example, investment feasibility, government revenues and local economies, social impacts and environments. The current lack of information on existing plantations – both government and private – indicates the need for development of a national plantation database to support rational development of trade and industry policies This could be linked to the planned national forest inventory project to be supported by the Government of Finland.⁴

35. **The medium to long-term impacts of the 2020 COVID-19 outbreak on plantation investments will most likely depend on investors’ views of Myanmar’s attractiveness** compared to other countries and other investment options, rather than its immediate economic affects. Domestic and global demand for forest products is expected to return eventually, and investors’ decisions are likely to be based on factors such as their perceptions of political stability, governance quality, and ease of doing business. Given the employment needed for plantation establishment, the Government should consider prioritising policy reforms to stimulate investment.

36. Recommendations for action are given in the following table.

Recommendation	Actions	Timing ⁵	Legislative change needed
Establish Multi-stakeholder Working Group on plantation reform	Decide group membership Prepare instruction on formation Group to decide its rules and procedures	Short	No
Improve information availability	Compilation and translation of current procedures, instructions and other documents Preparation of guidance document on acquisition and management of plantation leases according to current regulations and instructions	Short	No
Streamline lease acquisition process	Review current lease procedures	Short-medium	Instructions and/or Procedures

⁴ <https://www.forestdepartment.gov.mm/news/26887>.

⁵ Short-term actions could generally be accomplished within a 12-month period; medium-term actions within 36 months and long-term actions (because of legislative amendment) longer than 36 month.

Recommendation	Actions	Timing ⁵	Legislative change needed
	Prepare recommendations on investor prequalification, bidders' bonds, tender criteria, pre-operational requirements, performance bonds, etc.		
Streamline regulations on plantation timber	Review requirements for FD harvest approvals, log measurements, timber, other forest product royalties and transport requirements for plantation timber and other forest products. Consider need and requirements for a streamlined plantation Timber Legality Assurance System (including reviews of systems in other countries)	Medium	Forest Rules on timber marking requirements Instructions on fees and royalties
Policy studies to inform Multi-Stakeholder Group work	Decide key studies (plantation economics, fiscal options, tender process options, etc..) and prepare terms of reference Engage consultants Organise workshops to deliberate recommendations	Short-Medium	No
Review fiscal incentives	Review Departmental procedures, instructions, guidelines and other instruments that could incentivise plantation investment (FD, ECD, DICA, IR, Customs, etc.) Recommend revised incentives.	Medium	Possibly, if amendments recommended
Identify target areas for private plantations	Consultation with prospective investors and other stakeholders on most suitable areas with regard to area availability, access, site quality, other infrastructure.	Short	No
Include government plantations and natural forest areas within lease scope	Consider options in Multi-Stakeholder Group Review management acquisition procedures and management regulations, benefit sharing etc. Prepare recommendations	Short-medium	Yes – probably at Forest Rules level
Landscape planning	Develop appropriate planning procedures in consultation with IUCN TRI Project and FAO Sustainable Cropland and Forest Management in Priority Agro-Ecosystems Project Establish local ad hoc institutions for consultation, including township offices of FD, DALMS and GAD Procure imagery Undertake local consultations with communities, CSOs and government agencies Conduct site surveys	Short-medium	No

Recommendation	Actions	Timing ⁵	Legislative change needed
	Prepare maps and area descriptions		
Increase FR lease area limits	Consultation with stakeholders on limits	Medium	Forest Law amendment
Increase FR lease term	Consultation with stakeholders on term	Medium	Possible ministerial or departmental instruction
Prepare lease tenders	Determine area boundaries Prepare area descriptions and tender terms Initiate tender process with pilot tender Review and refine tender procedures	Medium	No
Establish national plantation database	Identify key plantation information requirements (areas, species, age classes, site classes, growth rates, etc.) Explore possible linkages with the national inventory project to be supported by the Government of Finland. Prepare database specifications Prepare data acquisition processes and plans (remote sensing, field surveys, investor surveys) Initiate data collection.	Medium-long	Departmental procedures
Establish research co-operative	Hold consultation on role and structure Decide priorities (e.g., tree improvement, seedling production, plantation silviculture and agroforestry, growth and yield, pests and diseases, extraction technology, wood quality and utilisation, markets, etc.) Consider financing opportunities	Medium	Instructions to mandate state research institutions' roles.

Executive summary (Myanmar) အစီရင်ခံစာအကျဉ်းချုပ်

အဓိကကျသောအချက်များ

- မြန်မာ့သဘာဝသစ်တောများသည် ပြည်တွင်းသစ်လိုအပ်ချက်များနှင့် ပြည်ပပို့ကုန်ဈေးကွက် ရေရှည် တည်တံ့ရေးတို့ကို ထောက်ပံ့ဖြည့်ဆည်းပေးနိုင်ခြင်း မရှိတော့ပေ။
- မြန်မာနိုင်ငံအနေဖြင့် အနာဂတ်တွင် သိသာထင်ရှားသော စီးပွားဖြစ်သစ်တောကဏ္ဍကို ရရှိလိုပါက သစ်တောစိုက်ခင်းလုပ်ငန်းဖက်သို့ အလျင်အမြန် ဦးလှည့်ရန်လိုသည်။ လိုအပ်နေသော အတိုင်းအဆ ပမာဏ ပြည့်မီရန် နိုင်ငံပိုင်သစ်တောစိုက်ခင်းများအပြင် ပုဂ္ဂလိကကဏ္ဍကလည်း ပါဝင်ဆောင်ရွက်ရန်လိုသည်။
- အခြားနိုင်ငံများနှင့် နှိုင်းယှဉ်လျှင် မြန်မာနိုင်ငံ၌ ရှင်သန်ဖွံ့ဖြိုးသော စိုက်ခင်း သစ်တောလုပ်ငန်း ကဏ္ဍတစ်ရပ် ဖြစ်ပေါ်လာရေးအတွက် အားသာချက် များစွာရှိနေပါသည် - အကြီးမားဆုံးနှင့် ဖွံ့ဖြိုးမှု အမြန်ဆုံး ကမ္ဘာ့သစ်တောထွက်ပစ္စည်း ဈေးကွက်များနှင့် ကပ်လျက်တည်ရှိသည်။ ပြည်တွင်း သစ်အခြေကုန်ထုတ်ကုန်ပစ္စည်း ဝယ်လိုအား ပြည့်မီအောင် ဖြည့်ဆည်းနိုင်ခြင်း မရှိသေးပေ။ သစ်တောစိုက်ခင်းတည်ထောင်နိုင်သည့် သစ်မျိုးစိတ် အမျိုးမျိုး ကောင်းစွာကြီးထွားနိုင်သည့် အခြေအနေများ ရှိနေပြီး သစ်တောစိုက်ခင်း တည်ထောင်ရာ၌ ခိုင်မာသော နည်းစနစ်ပိုင်းဆိုင်ရာ စွမ်းရည်ကို ပိုင်ဆိုင် ထားသည်။ ဒေသတွင်း၌ လုပ်အားခ ကုန်ကျစားရိတ် အနိမ့်ဆုံးလည်းဖြစ်သည်။
- သစ်တောစိုက်ခင်းကဏ္ဍနှင့် အခြားဆက်စပ်နေသည့် ကုန်ချောပြုပြင်ထုတ်လုပ်မှု လုပ်ငန်းများတွင် ရင်းနှီးမြှုပ်နှံခြင်းက အရေးကြီးသော ကျေးလက်ဒေသ တရားဝင် အလုပ်အကိုင် အခွင့်အလမ်းများကို ဖန်တီးပေးသည်။
- မြေအသုံးချပိုင်ခွင့်အပေါ် အငြင်းပွားမှုများက ပုဂ္ဂလိကသစ်တောစိုက်ခင်းများ တည်ထောင်ရာတွင် သိသာထင်ရှားသော အခက်အခဲပြဿနာတစ်ရပ် ဖြစ်သော်လည်း ဒေသခံ ပြည်သူ့အစုအဖွဲ့များနှင့် ရင်းနှီးမြှုပ်နှံသူများ နှစ်ဖက်လုံး အကျိုးဖြစ်ထွန်းစေမည့် ပူးပေါင်းဆောင်ရွက်မှုဖြင့် ချဉ်းကပ်ခြင်းက ထိုအခက်အခဲပြဿနာများကို ကူညီဖြေရှင်းပေးနိုင်ပါသည်။
- နိုင်ငံ၏ ဘဏ္ဍာငွေ ထောက်ပံ့မှု အစီအစဉ်များသည် သစ်တောစက်မှုလုပ်ငန်းကို အခွင့်သာစေခြင်း မရှိပေ။ ရေတိုတွင် ပုဂ္ဂလိက ရှယ်ယာထည့်ဝင်ခြင်းမှ ဘဏ္ဍာငွေကို လိုအပ်ပြီး ကာလလတ် အချိန်အတွက်မူ သစ်တောစက်မှုလုပ်ငန်း၏ အလားအလာကို အပြည့်အဝ ရရှိစေရန်အတွက် လုံလောက်သည့် ရွေးချယ်စရာ ဘဏ္ဍာရေး နည်းလမ်းများကို လိုအပ်သည်။
- မြန်မာနိုင်ငံ၌ အားသာချက်များ ရှိနေသည့်တိုင်၊ ပုဂ္ဂလိက ရင်းနှီးမြှုပ်နှံမှုများကို ဆွဲဆောင်ရန် ရည်မှန်းပြီး တစ်ချိန်တည်းမှာပင် ရေရှည်တည်တံ့သည့် လုပ်ကိုင်ဆောင်ရွက်မှု နည်းလမ်းများ

လက်တွေ့ကျင့်သုံးရေးကို အာမခံချက် ပေးနိုင်မည့် ဘက်စုံ မူဝါဒဆန်းစစ်မှု တစ်ရပ်က နိုင်ငံအား အကျိုးဖြစ်ထွန်းစေမည်ဖြစ်သည်။

- ပိုမိုကောင်းမွန်သည့် မြေယာအဆင့် စီမံကိန်းရေးဆွဲမှု၊ စိုက်ပျိုးမြေရရှိနိုင်မှု သတင်းအချက်အလက်၊ ပို၍ကောင်းမွန်သော လုပ်ပိုင်ခွင့်ဝန်းကျင်၊ ပို၍လုံခြုံစိတ်ချရသော မြေအသုံးချပိုင်ခွင့်၊ ငွေကြေးဆိုင်ရာ နှင့် အခြားသောမက်လုံးပေးခြင်းများသည် မူဝါဒပြုပြင်ပြောင်းလဲမှုတွင် အခရာကျသည့် အချက်များ ဖြစ်ပေါ်စေမည်။

၁။ **မြန်မာနိုင်ငံ၏ သစ်တောနှင့်သစ်ကဏ္ဍသည် အထူးသဖြင့် လွန်ခဲ့သည့်ရာစုအတွင်း နိုင်ငံစီးပွားရေးနှင့် လူ့အဖွဲ့ အစည်းအတွက် ဗဟိုချက်ဖြစ်ခဲ့သည်။** မြန်မာ့သစ်တောများ၌ ကမ္ဘာပေါ်တွင် အဖိုးအတန်ဆုံး သစ်မျိုး အချို့ အထူးသဖြင့် ပိတောက်၊ ပျဉ်းကတိုးနှင့် ကျွန်းတို့ပေါက်ရောက်ကြသည်။ မြန်မာနိုင်ငံသည် ကမ္ဘာ့ အပူပိုင်း ဒေသအတွင်း အကြာရှည်ဆုံး သစ်တောစီမံအုပ်ချုပ်မှု စနစ်များကို တည်ထောင်ထားပြီးဖြစ်သည့် နိုင်ငံတစ်နိုင်ငံ လည်းဖြစ်သည်။ ယခုအခါ သစ်ထုတ်ယူခြင်းမှ ရရှိသည့်ဝင်ငွေမှာ လျော့နည်းသွားပြီဖြစ်သည့်တိုင် သစ်လုပ်ငန်းမှ အစိုးရဝင်ငွေ ၅ ရာခိုင်နှုန်းခန့် ရရှိနေဆဲဖြစ်သည်။ ကျေးလက်လူ့အဖွဲ့အစည်းသည် သစ်အပြင် သစ်မဟုတ်သည့် သစ်တောထွက်ပစ္စည်းများ (NTFPs) နှင့် သီးနှံ-သစ်တော ရောနှောစိုက်ပျိုးခြင်းတို့ကို အစားအစာ၊ ဆေးဝါးနှင့် ထင်း/မီးသွေးတို့အတွက် ကျယ်ကျယ်ပြန့်ပြန့် မှီခိုအားထားနေရပြီး ထင်း/မီးသွေးသည် ၆၀ မှ ၈၀ ရာခိုင်နှုန်းသော ပြည်သူ့အစုအဖွဲ့များ ယခုအချိန်အထိ မှီခိုနေရသည့် အရေးအကြီးဆုံး စွမ်းအင်ရင်းမြစ်ဖြစ်သည်။

၂။ **လတ်တလော အသက်ရှူလမ်းကြောင်းဆိုင်ရာရောဂါ (COVID-19) ဖြစ်ပွားခြင်း၏ သက်ရောက်မှုများကို ကုစားရန် သစ်တောများနှင့် သစ်တောထွက်ပစ္စည်းများက ပံ့ပိုးပေးသည့် ဖူလုံရေး အထောက်အကူသည် ဝင်ငွေနှင့် အလုပ်အကိုင်များ ဆုံးရှုံးမှုကို ထေမိစေရေးအတွက် တိုး၍ အရေးပါလာမည်ဖြစ်သည်။** သစ်တောအခြေပြု စက်မှုလုပ်ငန်းများ၊ ရေရှည်တည်တံ့သည့် သစ်တောစိုက်ခင်းများနှင့် ယိုယွင်းပျက်စီးနေသော သစ်တောဧရိယာများကို ပြန်လည်ပြုစုပျိုးထောင်ခြင်းတို့သည် ကျေးလက်ဒေသများ၌ အလုပ်အကိုင်များစွာ ဖန်တီးပေးရန် အလားအလာ ရှိသည့် အနည်းငယ်မျှသော စီးပွားရေးဆိုင်ရာ ဆောင်ရွက်မှုများတွင် အပါအဝင်ဖြစ်သည်။

၃။ လွန်ခဲ့သော ဆယ်စုနှစ် သုံးခုအတွင်း စိုက်ပျိုးမြေနှင့် အခြားသော မြေအသုံးချမှုများအတွက် ခုတ်ထွင် ရှင်းလင်းခြင်း၊ အလွန်အကျွံသစ်ထုတ်ယူခြင်းနှင့် တရားမဝင် သစ်ထုတ်ယူခြင်းတို့ကြောင့် **မြန်မာနိုင်ငံသည် သစ်တောဧရိယာ ဟက်တာ ၁၂.၅ သန်းခန့် ဆုံးရှုံးခဲ့သည်။** ကျယ်ပြန့်သော သဘာဝသစ်တော ဧရိယာများစွာ သည်လည်း အဆင့်အတန်းလျော့ကျ ယိုယွင်းပျက်စီးခဲ့သောကြောင့် အနာဂတ် သစ်လိုအပ်ချက်ကို ထောက်ပံ့ ဖြည့်ဆည်းရန် ထိုသစ်တောများအပေါ် မှီခိုအားထားခြင်း မပြုနိုင်တော့ဘဲ ၎င်းတို့၏ ပတ်ဝန်းကျင်ဆိုင်ရာ အကျိုးပြုစွမ်းရည်များမှာ ခြိမ်းခြောက်မှုနှင့် ရင်ဆိုင်နေရသည်။

၄။ ကျန်ရှိနေသေးသော သဘာဝသစ်တောများ ပြန်လည်နာလံထူလာစေရန်အတွက် ခွင့်ပြုထားသည့် နှစ်စဉ်မှန်မှန် သစ်ထုတ်ယူနိုင်သည့်ပမာဏကို ၂၀၁၃/၁၄ ခုနှစ်တွင် ကုဗမီတာ ၂.၇ သန်း သတ်မှတ်ထားရာမှ ၂၀၁၉/၂၀ ခုနှစ်တွင် ကုဗမီတာ ၅၂၃,၀၀၀ သို့လျော့ချခဲ့သည်။ ထိုပမာဏအနက် ၅၅ ရာခိုင်နှုန်းခန့်ကို ပြည်ပပို့ကုန် အဖြစ် ပြုပြင်ထုတ်လုပ်မည်ဖြစ်ရာ ပြည်တွင်းဈေးကွက်အတွက် ရရှိနိုင်သောပမာဏမှာ ကုဗမီတာ ၂၃၅,၀၀၀ ခန့်သာကျန်ရှိသည်။ မြန်မာ့ အရည်အသွေးအကောင်းဆုံး သစ်မျိုးဖြစ်သော ကျွန်းသစ် (*Tectona grandis*) အတွက် ခွင့်ပြုထားသည့် လက်ရှိသစ်ထုတ်ယူနိုင်သည့်ပမာဏမှာ ကုဗမီတာ ၉,၀၀၀ ပတ်ဝန်းကျင်သာဖြစ်ပြီး ယင်းအနက် တစ်ဝက်ခန့်ကို ယခုအခါ အရွယ်ရောက်ပြီး သစ်တောစိုက်ခင်းများမှ ထုတ်ယူရန် စီစဉ်ထားသည်။ လက်ရှိသစ်တောစိုက်ခင်းများ၏ အသက်အတန်းအစား တည်ဆောက်ပုံ၊ သို့မဟုတ် အရည်အသွေးဆိုင်ရာ သတင်းအချက်အလက် အနည်းငယ်သာရှိသော်လည်း ဤစိုက်ခင်းများ အရွယ်ရောက်ပြီးချိန်၌ တစ်နှစ်လျှင် ကုဗမီတာ ၂ သန်းထက်ပို၍ ထုတ်ယူနိုင်ဖွယ်ရာ မရှိပေ။

၅။ ပြည်တွင်းသုံးစွဲမှုအနေဖြင့် ထင်း/မီးသွေးမပါ နှစ်စဉ် သစ်ပမာဏ ကုဗမီတာ ၄ သန်းပတ်ဝန်းကျင်ရှိသည် ဟုခန့်မှန်းထားသည်။^၆ ဤအချက်က ပြည်တွင်း ဈေးကွက်၏ သစ်လိုအပ်ချက် အများဆုံးကို ဖြည့်ဆည်းရာ၌ အခြားမြေအသုံးချမှုများအတွက် ခုတ်ထွင်ရှင်းလင်းခြင်း၊ သက်တန်းရင့် ရာဘာ စိုက်ခင်းများ၊ ပြည်ပမှ သစ်ထွက် ကုန်ချောပစ္စည်း တင်သွင်းမှုများ စသည့် အခြားသော ရင်းမြစ်များသာမက ပမာဏအများအပြားကို သဘာဝ သစ်တောများမှ တရားမဝင် ထုတ်ယူခြင်းဖြင့် ဖြည့်ဆည်းနေခြင်းဖြစ်ကြောင်း ညွှန်ပြနေသည်။ ပြည်ပသို့ သစ်ထွက်ပစ္စည်း တင်ပို့မှုများမှာ ၂၀၁၄ ခုနှစ်မတိုင်မီက သစ်လုံးထုထည်နှင့် ညီမျှသောပမာဏ (round-wood equivalent - RWE) ကုဗမီတာ ၄ သန်းခန့် ရှိရာမှ ၂၀၁၈ ခုနှစ်တွင် RWE ကုဗမီတာ ၇၀၀,၀၀၀ သို့ ထိုးကျသွား ခဲ့သည်။ နိုင်ငံ၏ စွမ်းအင်လိုအပ်ချက်ကို အများဆုံး ဖြည့်ဆည်းပေးနေသည့် ထင်း/မီးသွေး ကုဗမီတာ ၃၆.၃ သန်း ထပ်မံလိုအပ်ကြောင်း ခန့်မှန်းထားပြီး နှိုင်းယှဉ်မှုအနေဖြင့် နိုင်ငံပိုင်သစ်တောများမှ မှန်မှန်ထုတ်ယူနိုင်သည့် ပမာဏမှာ ကုဗမီတာ ၁.၈ သန်းအောက်သာ ဖြစ်သည်။

၆။ ဤဝယ်လိုအားနှင့် ရောင်းလိုအားတို့အကြားရှိ ကွက်လပ်များကို ဖြည့်မပေးနိုင်ပါက ဆက်တိုက်ဖြစ်ပေါ် နေသော သစ်တောဆုံးရှုံးမှုနှင့် ယိုယွင်းပျက်စီးမှုတို့ ဆက်လက်ဖြစ်ပေါ်နေဦးမည်ဖြစ်သည်။ သစ်လိုအပ်ချက်ကို ဖြည့်ဆည်းပေးမည့် အခြားသော နည်းလမ်းများ ကင်းမဲ့နေခြင်းကြောင့် ဒေသခံပြည်သူများနှင့် နိုင်ငံ၏ စက်မှုလုပ်ငန်းများသည် ၎င်းတို့၏ သစ်လိုအပ်ချက်အား သဘာဝရင်းမြစ်များကို အသုံးပြု၍ ဆက်လက် ဖြည့်တင်း နေပေဦးမည်။

၇။ နှစ်စဉ်ကြီးထွားနှုန်းကို တစ်ဟက်တာလျှင် ၁၅ ကုဗမီတာဟု မယုတ်မလွန်ယူဆကာ၊ သဘာဝတောများ၊ သက်ကြီးရာဘာစိုက်ခင်းများနှင့် ဥယျာဉ်ခြံမြေများတွင်စိုက်ပျိုးထားသော

^၆ FAO Stat ခန့်မှန်းချက်များအပေါ် အခြေခံသည်။ xxiii

သစ်ပင်များမှ ထင်း/မီးသွေးကို တစ်စိတ်တစ်ပိုင်း ဆက်လက်ရရှိနေဦးမည်ဟု ယူဆ၍တွက်ချက်ပါက ပြည်တွင်း ထင်း/မီးသွေးနှင့် စက်မှုကုန်ကြမ်းသစ် လိုအပ်ချက်ကို ဖြည့်ဆည်းနိုင်ရုံမျှသာဖြစ်သော သစ်လုံးထုထည် စုစုပေါင်း ကုဗမီတာ သန်း ၄၀ ပတ်ဝန်းကျင်ကို ရရှိရန် အနည်းဆုံး သစ်တောစိုက်ခင်း ဧရိယာပမာဏ ဟက်တာ ၂ သန်း လိုအပ်မည်ဖြစ်သည်။ ထုတ်ယူရရှိသော သစ်ပမာဏမှ အချိုးအစားများကို ပြည်ပပို့ကုန်အတွက် ရည်ရွယ်ထားပါက စိုက်ခင်းဧရိယာ ဟက်တာ ၂ သန်း ထက်ပို၍ပင် လိုအပ်မည်ဖြစ်သည်။

၈။ **နိုင်ငံကစီမံဆောင်ရွက်သော စိုက်ခင်းများ၌ သစ်တောပြုစုပျိုးထောင်မှု နည်းလမ်းကောင်းများကို လက်တွေ့ကျင့်သုံးစေကာမူ ဤအားထုတ်မှု တစ်ခုတည်းဖြင့် သစ်လိုအပ်ချက်ကွက်လပ်ကို ဖြည့်ပေးနိုင်လိမ့်မည် ဆိုသည်မှာ မရေရာလှပေ။** နိုင်ငံပိုင် သစ်တောစိုက်ခင်းများတွင် ရန်ပုံငွေ ခွဲဝေ ချထားမှု နိမ့်ကျခြင်း၏ အကျိုးဆက်အဖြစ် လုံလောက်သော ရေရှည်ထိန်းသိမ်းစောင့်ရှောက်မှု မရှိသဖြင့် သေပျောက်မှုနှုန်း မြင့်မားခြင်း နှင့် သစ်ခိုးယူမှုများကို ကြုံတွေ့နေရသည်။ အနာဂတ်တွင် အစိုးရရန်ပုံငွေ ရရှိရေးမှာ ရေရှည်အတွက် မသေချာ သောကြောင့် ဤမျှကြီးမားကျယ်ပြန့်သည့် သစ်တောစိုက်ခင်းပမာဏကို အောင်မြင်စွာ တည်ထောင်ရန် သိသိသာသာကြီးမားသော ပုဂ္ဂလိကကဏ္ဍရင်းနှီးမြှုပ်နှံမှုကို လိုအပ်မည်ဖြစ်သည်။ ပုဂ္ဂလိကစိုက်ခင်းကုမ္ပဏီ အများစုမှာ သစ်ကုန်ချော ထုတ်လုပ်မှု နည်းပညာကိုလည်း ပေါင်းစပ်၍ ရင်းနှီးမြှုပ်နှံလေ့ရှိသဖြင့် သစ်တောကဏ္ဍ အလုပ်အကိုင် ပေးစွမ်းနိုင်မှုနှင့် စီးပွားရေးဆိုင်ရာ အကျိုးသက်ရောက်မှုများကို ထပ်မံတိုးပွားစေမည်ဖြစ်သည်။

၉။ **တရုတ်နိုင်ငံ တောင်ပိုင်းပြည်နယ်များ အပါအဝင် ဒေသတွင်း၌ အကြီးမြန်သစ်မျိုး စိုက်ပျိုးသည့်ဧရိယာ စုစုပေါင်းသည် ယခုအခါ ဟက်တာ ၇ သန်းထက် ကျော်လွန်သွားပြီဖြစ်သည်။** ထိုင်း၊ လာအို၊ ဗီယက်နမ်၊ အင်ဒိုနီးရှားနှင့် မလေးရှားနိုင်ငံတို့တွင် သဘာဝသစ်တောမှ သစ်ထုတ်ယူရရှိနိုင်မှု လျော့နည်းလာခြင်းကို ထေမိစေရန်ရည်မှန်း၍ သစ်တောစိုက်ခင်းများ တည်ထောင်ခြင်းကို အားပေးမြှင့်တင်သည့် မူဝါဒများကို ချမှတ်ထားခဲ့ကြပြီးဖြစ်သည်။ အဆိုပါမူဝါဒများတွင် သင့်တင့်မျှတသော ချေးငွေအစီအစဉ်များ၊ အကြီးမြန်သစ်မျိုးများနှင့် အရွယ်အစား ပိုမိုသေးငယ်သော သစ်လုံးများ ထုတ်လုပ်မှုနှင့် ကိုက်ညီသည့် ထိန်းကျောင်းမှု နည်းစနစ်များပါဝင်သည်။ ထိုသို့သော မူဝါဒများက သစ်ကုန်ချော စက်မှုလုပ်ငန်းကိုလည်း တွန်းအားပေး မြှင့်တင်ပေးခဲ့သည်။

၁၀။ **ဤသို့ သစ်တောစိုက်ခင်းဧရိယာ တိုးပွားလာခြင်းများသည် သဘာဝရင်းမြစ်ကိုထုတ်ယူသည့် သစ်တော စီးပွားရေးပုံစံများမှ ဦးတည်ချက် ပြောင်းလဲရွေ့လျားလာခြင်းကို မီးမောင်းထိုးပြ၍နေသည်။** စီမံအုပ်ချုပ်မှုစနစ်များက ရွေးချယ်ခတ်လှဲထုတ်ယူခြင်းကို သတ်မှတ်ပြဌာန်းထားသည့်တိုင် သဘာဝသစ်တောများမှာ ပိုမိုထုတ်ယူခြင်းခံရပြီး အဆင့်အတန်းလျော့ကျ ယိုယွင်းပျက်စီးသွားသည့် ပုံစံမျိုးမှ ယခုအခါ စိုက်ခင်းများမှ ရရှိသည့်သစ်ဖြင့် ကုန်ကြမ်းလိုအပ်ချက်ကို ပိုမိုဖြည့်ဆည်းပေးသော ပုံစံသို့ ရွေ့လျားလာသည်။ ဒေသတွင်း အခြားနိုင်ငံများရှိ သစ်ကုန်ချော စက်မှုလုပ်ငန်းများသည်

ထွက်လာသည့် ကုန်ကြမ်းအမျိုးအစား အပြောင်းအလဲနှင့် လိုက်လျော ညီထွေဖြစ်အောင် ဆောင်ရွက်လာကြသည်။ အခြားနိုင်ငံများ၏ သစ်တောစိုက်ခင်း အောင်မြင်မှုများသည် ၎င်းတို့၏ နည်းပညာနှင့် စီးပွားရေးဆိုင်ရာ လုပ်ကိုင်နိုင်ခြေကို ဖော်ပြနေကြပြီး မြန်မာနိုင်ငံသည်လည်း သဘာဝသစ်တောများမှ တရားဝင် သစ်ထုတ်ယူရရှိမှု ကျဆင်းလာခြင်းကြောင့် ထိုသို့သောအပြောင်းအလဲမျိုးကို ရှောင်လွှဲ၍မရပေ။

၁၁။ သဘာဝရင်းမြစ် ထုတ်ယူခြင်းကို အခြေခံသည့် သစ်တောလုပ်ငန်းမှ သစ်တောစိုက်ခင်းများသို့ ဦးတည် ပြောင်းလဲရာ၌လည်း သိသာထင်ရှားသည့် ပတ်ဝန်းကျင်နှင့် လူမှုရေးဆိုင်ရာ အန္တရာယ်အလားအလာများ ရှိပါသည်။ ဒေသတွင်းရှိ အတိတ်ကာလ အတွေ့အကြုံများက ပုဂ္ဂလိကသစ်တောစိုက်ခင်းများကို ရေရှည်တည်တံ့စွာ စီမံအုပ်ချုပ်ခြင်းမှာ အမြဲတစေ မဖြစ်နိုင်ခဲ့ကြောင်း ပြသနေကြသည်။ အကြီးစား သစ်တော စိုက်ခင်းများ၊ အထူးသဖြင့် သစ်မျိုးတစ်မျိုးတည်းကိုသာ ကျယ်ပြန့်စွာ စိုက်ပျိုးသည့် စိုက်ခင်းကြီးများ၌ ပတ်ဝန်းကျင်နှင့် လူမှုရေးဆိုင်ရာ အန္တရာယ် အမျိုးမျိုးကို ကြုံတွေ့ရနိုင်ပါသည်။ အဆိုပါ အန္တရာယ်များသည် စိုက်ပျိုးပင်များအတွက် ရေလိုအပ်ချက်၊ ဓါတ်မြေဩဇာနှင့် ပိုးသတ်ဆေးတို့၏ ဆိုးကျိုး သက်ရောက်မှုများ၊ ဒေသရင်း သစ်တောများအတွင်း ကျူးကျော်ဝင်ရောက်မှု တိုးမြှင့်လာခြင်းနှင့် ဇီဝမျိုးစုံမျိုးကွဲများ လျော့နည်းလာခြင်းတို့နှင့် ဆက်စပ်နိုင်ပါသည်။ အလုပ်အကိုင် ရရှိနိုင်မှု မြင့်မားခြင်း အကျိုးကျေးဇူးများ ရှိနေ သည့်တိုင် သစ်တောစိုက်ခင်းလုပ်ငန်းများတွင် ဒေသခံပြည်သူအစုအဖွဲ့များ ပါဝင်လာစေရန် လိုအပ်ပါသည်။ မြန်မာနိုင်ငံအနေဖြင့် အခြားနိုင်ငံများ၏ နမူနာ အကောင်းအဆိုးများမှ ဤသို့သော အန္တရာယ်အလားအလာများကို မည်သို့မည်ပုံ ကိုင်တွယ် ဖြေရှင်းသည် ဟူသည့်အချက်နှင့် ပတ်သက်၍ လေ့လာသင်ယူနိုင်ပါသည်။

၁၂။ မြန်မာနိုင်ငံ၏ ပြုန်းတီးပြီးသော သစ်တောဧရိယာများနှင့် ယိုယွင်းပျက်စီးနေသော သစ်တောဧရိယာ အများအပြားမှာ စီးပွားရေးစိုက်ခင်းသော်လည်းကောင်း၊ သို့မဟုတ် ဒေသခံအစုအဖွဲ့ပိုင်သစ်တောလုပ်ငန်းအဖြစ် လည်းကောင်း၊ သစ်ထုတ်လုပ်သည့် သစ်တောစိုက်ခင်းများတည်ထောင်ရန် သင့်လျော်ကြပြီး သစ်တောဖုန်းလွှမ်း နေသောမြေအတွင်းသို့ ချဲ့ထွင်ဝင်ရောက်ရန် မလိုအပ်ဘဲ စိုက်ခင်းတည်ထောင်နိုင်သည့် အခြေအနေမျိုး ရှိသည်။ အာရှဒေသအတွင်း အကြီးမားဆုံးနှင့် အလျင်မြန်ဆုံးကြီးထွားလာနေသည့် ဈေးကွက်ကြီးများအနီးတွင် တည်ရှိနေခြင်းနှင့် နိုင်ငံ၏လက်ရှိ သိသာမြင်သာသော သစ်မလုံလောက်မှုက ပြည်တွင်းနှင့် ဒေသတွင်း သစ်အခြေခံ ကုန်ကြမ်း လိုအပ်ချက်ကို ဖြည့်ဆည်းရန် အခွင့်အလမ်းများကို ဖန်တီးပေးလျှက်ရှိသည်။ ထို့ပြင် မိမိ၏ကိုယ်ပိုင် သစ်အခြေခံ စက်မှုလုပ်ငန်း ဖွံ့ဖြိုးလာရန်နှင့် လုပ်ငန်းအမျိုးအမယ် စုံလင်လာရန် အခွင့်အလမ်းများကိုလည်း ရရှိစေလိမ့်မည်။

၁၃။ သစ်တောကဏ္ဍသည် လက်ရှိအခြေအနေတွင် အခြားကဏ္ဍများနှင့်နှိုင်းယှဉ်လျှင် အဓိကမကျသော သာမန်အလုပ်အကိုင်ရင်းမြစ် တစ်ခုဖြစ်ပြီး မြန်မာနိုင်ငံ၏ စာရင်းဝင် အလုပ်အကိုင်များ၏ ၀.၂ ရာခိုင်နှုန်းသာ ရှိသည်။ သို့သော်လည်း နိုင်ငံ့လူဦးရေ၏ သုံးပုံနှစ်ပုံမှာ

၎င်းတို့၏အသက်မွေးမှု တစ်စိတ်တစ်ပိုင်းအတွက် သစ်တောများကို မှီခိုနေကြရဖွယ်ရှိသည်။ ထို့ပြင် ကျေးလက်ပြည်သူ အစုအဖွဲ့ အများစုအတွက် သစ်တောများက မရှိမဖြစ် အခြေခံလိုအပ်ချက်များ၊ အထူးသဖြင့် ထင်း/မီးသွေး၊ သစ်မဟုတ်သည့် သစ်တောထွက်ပစ္စည်းများနှင့် တိရိစ္ဆာန် အစားအစာတို့ကို ထောက်ပံ့ပေးသည်။ သစ်တောစိုက်ခင်းများတည်ထောင်ခြင်း၊ ၎င်းနှင့်ဆက်စပ် နေသော အချောထည် ပြုပြင်ထုတ်လုပ်ခြင်း လုပ်ငန်းတို့ဖြင့် တရားဝင် အလုပ်အကိုင်များ တိုးမြှင့်ပေးနိုင်မည့် အခွင့်အလမ်းများ ရှိနေပြီး မြန်မာနိုင်ငံ၏ လုပ်ခလစာများ နိမ့်နေသေးခြင်းက အခြားနိုင်ငံများနှင့် နှိုင်းယှဉ်လျှင် အားသာချက်တစ်ခု ဖြစ်စေသည်။ သစ်တောစိုက်ခင်းများအတွင်း ဒေသခံများအား အကျိုးဖြစ်ထွန်းစေနိုင်သည့် အငှားစိုက်ပျိုးသည့် အစီအစဉ်များ (outgrower schemes) အတွက် အခွင့်အလမ်းကောင်းများစွာနှင့် အခြား ဖြစ်နိုင်ခြေများလည်း ရှိနေပါသေးသည်။

၁၄။ **အစိုးရက ၂၀၁၆-၂၈ ခုနှစ် မြန်မာနိုင်ငံသစ်တောများ ပြန်လည်တည်ထောင်ရေးစီမံကိန်း (MRRP) အောက်တွင် သစ်တောကြိုးဝိုင်းများနှင့် ကြိုးပြင်ကာကွယ်တောများအတွင်း ဧရိယာဟက်တာ ၈၈၄,၀၀၀ ကို ပြန်လည်ပြုစု တည်ထောင်ရန်၊ သို့မဟုတ် ပြန်လည်စိုက်ပျိုးရန် ရည်မှန်းထားသည်။** ယင်းအနက် အများစု - ဟက်တာ ၃၁၂,၀၀၀ ခန့် ကိုဒေသခံပြည်သူအစုအဖွဲ့ပိုင် သစ်တောလုပ်ငန်း (CF) ဖြင့် ဆောင်ရွက်မည်ဖြစ်ပြီး ဧရိယာအချို့၌ စီးပွားရေးအတွက်ရည်ရွယ်သော သစ်ပင်စိုက်ပျိုးခြင်းကို ဆောင်ရွက်မည်ဟုမျှော်မှန်းသည်။ ဤစီမံကိန်းတွင် စီးပွားရေးစိုက်ခင်း ဟက်တာ ၂၂၆,၅၀၀ ခန့်တည်ထောင်ရန်လည်း ပါဝင်ပြီး ၎င်းဧရိယာတစ်ဝက် ကျော်ကို ပုဂ္ဂလိကကဏ္ဍက ပါဝင်ဆောင်ရွက်မည်ဟု မျှော်မှန်းထားသည်။

၁၅။ MRRP **စီမံကိန်းကို ၃ နှစ်ကောင်အထည်ဖော် ပြီးနောက် စိုက်ခင်းရည်မှန်းချက်စုစုပေါင်း၏ ၁၃ ရာခိုင်နှုန်း အောက်နှင့် ပုဂ္ဂလိကစိုက်ခင်းရည်မှန်းချက်၏ ၁၀ ရာခိုင်နှုန်းအောက်ကိုသာ ပြည့်မီခဲ့သည်။** မြေအမျိုးအစား အားလုံးတွင် ပုဂ္ဂလိကကဏ္ဍက (ရာဘာစိုက်ခင်းများမပါ) စုစုပေါင်းဧရိယာ ဟက်တာ ၁၅၂,၂၀၀ ခန့် စိုက်ပျိုး ခဲ့ကြောင်း ဖော်ပြထားသည်။ သို့သော်လည်း အဆိုပါ စိုက်ခင်းများ၏ မြေပြင် အမှန်တည်နေရာများနှင့် အရည်အသွေးတို့ကိုမူ ရှင်းရှင်းလင်းလင်း မသိရှိရပေ။ ကျွန်းသည် ပုဂ္ဂလိကကဏ္ဍက ကျယ်ကျယ်ပြန့်ပြန့် အများဆုံး စိုက်ပျိုးသည့် သစ်မျိုးဖြစ်ပြီး ဧရိယာဟက်တာ ၆၀,၀၀၀ ခန့်စိုက်ပျိုးခဲ့သော်လည်း အကြီးမြန် သစ်မျိုးများ - အဓိကအားဖြင့် ယူကလစ်စပင်မျိုးများနှင့် မန်ဂျီယံရှား (*Acacia mangium*) - တို့အပေါ်တိုးမြှင့် အာရုံစိုက်လာပြီး ၂၀၁၉ ခုနှစ် နှစ်လယ်ပိုင်းတွင် ဟက်တာ ၄၇,၀၀၀ တည်ထောင်ခဲ့ကြောင်း ဖော်ပြထားသည်။

၁၆။ **ဒေသခံပြည်သူအစုအဖွဲ့ပိုင် သစ်တောလုပ်ငန်းတည်ထောင်ခြင်း တိုးတက်မှုကိုဖော်ပြချက်မှာ အတန်ငယ် ပိုမိုကောင်းမွန်ပြီး ဧရိယာဟက်တာ ၆၃,၈၀၀ - ရည်မှန်းချက်၏ ၂၀ ရာခိုင်နှုန်း - အတွက် CF တည်ထောင်ခွင့် လက်မှတ်များကို ထုတ်ပေးခဲ့သည်။** သို့သော်လည်း ဤအချက်ကို သစ်တောများပြန်လည်စိုက်ပျိုးခြင်း၊ သို့မဟုတ် ပြန်လည်ပြုစုတည်ထောင်ခြင်းနှင့် ညီမျှသည်ဟု တထစ်ချမမှတ်ယူနိုင်ပေ။ ထို့ပြင် အစိုးရ ဝန်ထမ်းများ၏ လက်ရှိစွမ်းဆောင်ရည်၊ တိုးတက်မှုကို အထောက်အပံ့ပြုရန် အတိအကျဖွင့်ဆို

ပြဌာန်းသော ဆောင်ရွက်မှုယန္တရားများ ချို့တဲ့မှုနှင့် CF ထုတ်ကုန်များအတွက် ဈေးကွက်နှင့်ချိတ်ဆက်မှုအားနည်းခြင်းတို့ကြောင့် အကန့်အသတ်များစွာ ကြုံတွေ့လျက်ရှိသည်။

၁၇။ အရည်အသွေးကောင်းသော သစ်စေ့/ပျိုးပင်များနှင့် နည်းစနစ်ပိုင်းဆိုင်ရာ အကြံဉာဏ်များပေးခြင်း၊ သစ်နှင့် သစ်မဟုတ်သည့် ထုတ်ကုန်များအတွက် ဈေးကွက်အာမခံချက်ရှိအောင် ဆောင်ရွက်ပေးခြင်း၊ သို့မဟုတ် ဈေးကွက်အချိတ်အဆက်များ ထောက်ပံ့ပေးခြင်း စသည်ဖြင့် စိုက်ပျိုးသူများကို စိုက်ခင်းများ တည်ထောင်ရာ၌ အကူအညီပေးအားခြင်းဖြင့် CF ၏အခက်အခဲ အကန့်အသတ်များကို ကူညီဖြေရှင်းပေးခြင်းတို့ကို ပုဂ္ဂလိကကဏ္ဍမှ ဆောင်ရွက်နိုင်သည်။ ဝါးစိုက်ပျိုးခြင်း၊ ဝါးထုတ်ကုန်များ ဖွံ့ဖြိုးတိုးတက်ရေးနှင့် ပျော့ဖတ်ထုတ်လုပ်ရန် အသေးစား အငှားစိုက်ပျိုးမှု အစီအစဉ်များတွင်လည်း ပုဂ္ဂလိကကဏ္ဍနှင့် ဒေသခံပြည်သူ အစုအဖွဲ့များ ပူးပေါင်းဆောင်ရွက်မှုပုံစံများဖြင့် စတင်ဆောင်ရွက်နေကြပြီဖြစ်သည်။ ဤသို့သော ပုံစံများကို အခြား ထုတ်ကုန်များအတွက်လည်း ပုံတူကူးယူ ဆောင်ရွက်နိုင်မည်ဖြစ်သည်။ ဖော်ပြပါအစီအစဉ်များမှ ပုဂ္ဂလိကကဏ္ဍ လုပ်ငန်းများရရှိမည့် အကျိုးကျေးဇူးများတွင် မိမိကိုယ်ပိုင် ကုန်ကြမ်းဖြည့်တင်းမှုကို တိုးမြှင့်စေခြင်း၊ ထိုနည်းတူ ဖြစ်ပေါ်လာနိုင်သည့် အငြင်းပွားမှုများနှင့် ၎င်းတို့၏အကျိုးဆက်ဖြစ်သော စိုက်ခင်းများဖျက်ဆီးခံရခြင်းတို့ကို လျော့နည်းသွားစေခြင်း စသည်တို့ ပါဝင်သည်။

၁၈။ မြန်မာနိုင်ငံအစိုးရက သစ်တောများ ပြန်လည်ပြုစုပျိုးထောင်ခြင်း မဟာဗျူဟာမူကြမ်းတစ်ရပ်ကို ရေးဆွဲ ထားပြီး လက်တွေ့ဆောင်ရွက်မှု လုပ်ငန်းစဉ်အတွက် မဟာဗျူဟာနယ်ပယ်လေးခုကို အောက်ဖော်ပြပါအတိုင်း ထောက်ခံအကြံပြုထားသည်။ ၎င်းတို့မှာ - (၁) ဖြစ်မြောက်စေသော အခြေအနေများ - လိုအပ်သော အဖွဲ့အစည်း၊ မူဝါဒ၊ ဥပဒေ၊ လမ်းညွှန်ချက်၊ လုပ်ထုံးလုပ်နည်းများ ပြီးပြည့်စုံစေခြင်း၊ (၂) တာဝန်ယူမှုရှိသော အဖွဲ့အစည်းဆိုင်ရာ ပူးပေါင်းပါဝင်မှု အခြေခံများ တည်ဆောက်ခြင်း၊ (၃) အကျိုးအမြတ် ခွဲဝေခံစားခြင်း စနစ်များဖွံ့ဖြိုးစေခြင်း၊ နှင့် (၄) ရေရှည်တည်တံ့သော ငွေကြေးထောက်ပံ့မှု အစီအစဉ်များ ဖြစ်ကြသည်။ ဤရှုမြင်ချက်များသည် စီးပွားရေး စိုက်ခင်းများ မဟာဗျူဟာတစ်ရပ်ကို မူဘောင်သတ်မှတ်ရန်နှင့် ပုဂ္ဂလိကကဏ္ဍ ရင်းနှီးမြှုပ်နှံမှုအတွက် အခွင့်သာစေသော အခြေအနေများ ဖန်တီးရန် ပဓာန လိုအပ်ချက်များဖြစ်သည်။

၁၉။ စိုက်ခင်းမြေ ငှားရမ်းခြင်းများအတွက် မြေရရှိနိုင်မှုအခြေအနေ - ပုဂ္ဂလိကကဏ္ဍ သစ်တောစိုက်ခင်းများ၊ သို့မဟုတ် ဒေသခံပြည်သူ အစုအဖွဲ့ပိုင် သစ်တောများ တည်ထောင်ရန် နိုင်ငံပိုင်မြေအမျိုးအစား အုပ်စုနှစ်ခုရှိသည်။ ကြိုးပိုင်းသစ်တောနှင့် ကြိုးပြင်ကာကွယ်တောများပါဝင်သည့် သစ်တောမြေနှင့် မြေလွတ်၊ မြေလပ်၊ မြေရိုင်း (VFM) မြေအမျိုးအစားတို့ဖြစ်သည်။ ပုဂ္ဂလိကကဏ္ဍ မြေငှားရမ်းခြင်းဆိုင်ရာ စည်းကမ်းသတ်မှတ်ချက်များမှာ ဧရိယာ အရွယ်အစားနှင့် စိုက်ပျိုးမည့်သစ်မျိုးအပေါ် မူတည်၍ကွဲပြားပြီး ကျွန်းသစ်အတွက် သီးခြားအခြေအနေများကို သတ်မှတ်ထားသည်။ ဧရိယာဧက ၁၀၀ မှ အများဆုံး ဧက ၁,၀၀၀ (၄၀.၅ - ၄၀.၅ ဟက်တာ) အတွက် ဈေးပြိုင် တင်ဒါစနစ်ဖြင့်

ဆောင်ရွက်သည်။ VFV မြေများ၌ ကျန်ရှိနေသေးသော အခြေအနေကောင်းမွန်နေသေးသည့် သဘာဝ သစ်တောများနှင့် ဥယျာဉ်/ခြံစိုက်ပျိုးမြေများကို ချန်လှပ်၍ ဧရိယာဧက ၃,၀၀၀ (၁,၂၁၄ ဟက်တာ) အထိ ငှားရမ်းနိုင်သည်။

၂၀။ **သစ်တောမြေတွင် ငှားရမ်းနိုင်သည့် လက်ရှိ အများဆုံး ကန့်သတ်ချက်ဖြစ်သော ဧက ၁,၀၀၀ မှာ အကြီးစား ရင်းနှီးမြှုပ်နှံသူများအတွက် အရွယ်အစား သေးငယ်လွန်းသည်ဟု သုံးသပ်ကြသည်။** သစ်မျိုး၊ ထုတ်ကုန်နှင့် ကုန်ချောပြုပြင်ထုတ်လုပ်မည့် အစီအစဉ်တို့နှင့်ပတ်သက်၍ ရင်းနှီးမြှုပ်နှံသူ၏ ရည်မှန်းချက် စသည်တို့အပေါ် မူတည်၍ လုပ်သာကိုင်သာရှိသည့် အကျယ်အဝန်းမှာ စိုက်ပျိုးနိုင်သည့်ဧရိယာ အနည်းဆုံး ဟက်တာ ၁၅,၀၀၀ (၃၇,၀၀၀ ဧက) ခန့်ဖြစ်သည်ဟု သတ်မှတ်ထားကြသည်။ သို့သော်လည်း တစ်ဆက် တစ်စပ်တည်း မြေဧရိယာ ဧက ၁၀,၀၀၀ ထက်ပို၍ မရရှိနိုင်ကြောင်း သစ်တောဦးစီးဌာန (FD) က အတိအလင်း ပြောဆိုထားပြီးဖြစ်သည်။ အကြောင်းမှာ သစ်တောစိုက်ခင်းများအတွက် သင့်လျော်သည့် ဧရိယာများမှာ သဘာဝတောအုပ်များ၊ တည်ထောင်ပြီး စိုက်ခင်းများ၊ ဥယျာဉ်/ခြံ စိုက်ပျိုးမြေများကြားတွင် ပြန့်ကျဲတည်ရှိ နေသောကြောင့်ဖြစ်သည်။ ရင်းနှီးမြှုပ်နှံသူများက တစ်ဆက်တစ်စပ်တည်း မြေကွက်များကို ပို၍လိုလား သော်လည်း သွားလာရေး လွယ်ကူခြင်း၊ ကုန်ချောထုတ်လုပ်သည့်နေရာ၊ သို့မဟုတ် ပြည်ပတင်ပို့မည့်နေရာများနှင့် မကွာဝေးခြင်း စသည့် အရေးအကြီးဆုံး ထည့်သွင်းစဉ်းစားသည့် အချက်များနှင့် ညီညွတ်ပါက ပြန့်ကျဲနေသော ဧရိယာများကိုလည်း လက်ခံနိုင်ပါသည်။

၂၁။ **သစ်တောစိုက်ခင်းများတွင် ရင်းနှီးမြှုပ်နှံသူများက ပုဂ္ဂလိကစီးပွားရေးစိုက်ခင်းများအတွက် လက်ရှိ မက်လုံးများကို လုံလောက်သည်ဟု မယူဆကြပေ။** မြန်မာနိုင်ငံ၌ သစ်တောကဏ္ဍအပါအဝင် နိုင်ငံခြား ရင်းနှီး မြှုပ်နှံမှုကို အားပေးမြှင့်တင်ရန် အစိုးရမူဝါဒများစွာကို ရေးဆွဲချမှတ်ခဲ့ပြီးဖြစ်သည်။ အဆိုပါမူဝါဒများတွင် ကုန်သွယ်ခွန်နှင့် ဝင်ငွေခွန်များကို လျှော့ပေါ့/ပယ်ဖျက်ပေးခြင်း၊ ပြန်လည်ရင်းနှီးမြှုပ်နှံသည့် အမြတ်ငွေအပေါ် အခွန်ကင်းလွတ်ခွင့်ပေးခြင်း၊ အခွန်ပေးဆောင်ရငွေမှ သုတေသနနှင့် ဖွံ့ဖြိုးရေးစားရိတ်ကို နုတ်ပယ်ပေးခြင်း၊ သွင်းကုန်/ပို့ကုန် များအတွက် အကောက်ခွန်နှင့် အခြားပြည်တွင်းအခွန်များကို ကင်းလွတ်ခွင့်ပေးခြင်းတို့ ပါဝင်သည်။ စီးပွားရေးဇုန်အလိုက် မက်လုံးများကွာခြားကြပြီး ဖွံ့ဖြိုးမှုအနည်းဆုံး စီးပွားရေးနယ်ပယ်များအတွက် လိုက်လျောမှုအရှိဆုံး သတ်မှတ်ချက်များကို ရရှိနိုင်သော်လည်း ယေဘုယျစည်းမျဉ်းစည်းကမ်းမူဘောင်၊ ဘဏ္ဍာငွေ ထောက်ပံ့ရေးအစီအစဉ်နှင့် အခြားသော အရေးကြီးကိစ္စရပ်များနှင့် ပတ်သက်၍ အကြီးစား ရင်းနှီးမြှုပ်နှံသူများအတွက် လုံလောက်အောင် ဆွဲဆောင်မှုရှိသည့် ဝန်းကျင်တစ်ခုကိုမူ ဖန်တီးထားပြီးခြင်း မရှိသေးပေ။

၂၂။ **မြန်မာ့ဘဏ်လုပ်ငန်းကဏ္ဍတွင် ပြုပြင်ပြောင်းလဲမှုများကို ဆောင်ရွက်နေဆဲဖြစ်ပြီး သစ်တောလုပ်ငန်း အတွက် ချေးငွေ အထောက်အပံ့ မရရှိနိုင်ပေ။ သို့မဟုတ် ရရှိလျှင်လည်း အတိုးနှုန်း လွန်စွာ ကြီးမြင့်လှသည်။** ဘဏ်လုပ်ငန်းကဏ္ဍမှာ အပြည့်အဝ မဖွံ့ဖြိုးသေးသည့်

အခြေအနေ၌ ရှိနေဆဲဖြစ်ပြီး အာမခံ ချေးငွေ အတိုးနှုန်းများမှာ အစိုးရဘဏ်နှင့် ကူးသန်းရောင်းဝယ်ရေး ဘဏ်များအတွက် ၈.၅ ရာခိုင်နှုန်းနှင့် ၁၃ ရာခိုင်နှုန်း အသီးသီးဖြစ်ကြသည်။ ဤအတိုးနှုန်းများမှာ ပြင်ပတရားမဝင်ကဏ္ဍနှင့် နှိုင်းယှဉ်လျှင် နိမ့်သော်လည်း သစ်တောစိုက်ခင်းများတွင် ရင်းနှီးမြှုပ်နှံရန် ငွေချေးယူခြင်းအတွက် မြင့်မားလွန်းသည်ဟု သတ်မှတ်ကြသည်။ နိုင်ငံပိုင် မြန်မာ့လယ်ယာဖွံ့ဖြိုးရေးဘဏ် (MADB) သည် သစ်တောကဏ္ဍအတွက် ချေးငွေထုတ်ပေးခွင့်ရှိ သော်လည်း ၎င်းထံ၌ သစ်တောလုပ်ငန်းအတွက် ဘဏ္ဍာငွေထောက်ပံ့မှု အရင်းအမြစ်များမရှိဘဲ အစိုးရထံမှ ငှားရမ်းထားသောမြေ၊ သို့မဟုတ် စိုက်ပျိုးထားသော သစ်ပင်များကို ချေးငွေအာမခံ အပေါင်ပစ္စည်းအဖြစ် လက်ခံ ခြင်းမပြုပေ။ အလားတူပင် မြန်မာနိုင်ငံ၏ ကူးသန်းရောင်းဝယ်ရေး ဘဏ်များတွင်လည်း လက်ရှိအခြေအနေတွင် သစ်တောစိုက်ခင်းလုပ်ငန်း ဖွံ့ဖြိုးမှုအတွက် ချေးငွေရယူရန် သင့်တင့်လျောက်ပတ်သည့် သင့်တော်သော အစီအစဉ် နှင့် ဝန်ဆောင်မှုများ မရှိပေ။ ဤအကန့်အသတ်များက ပုဂ္ဂလိက သစ်တောစိုက်ခင်းလုပ်ငန်း ဖွံ့ဖြိုးရေးအတွက် မြန်မာနိုင်ငံတွင် ချေးငွေ အထောက်အပံ့ရရှိစေခြင်းကို မကြာမီအနာဂတ်ကာလအတွင်း ဖြစ်လာနိုင်ဖွယ်ရာမရှိသည့် အလားအလာတစ်ခု ဖြစ်သွားစေသည်။

၂၃။ **ယခုအချိန်ထိ တည်ထောင်ပြီးသော ပုဂ္ဂလိက သစ်တောစိုက်ခင်းများ အားလုံးသည် ပြည်တွင်းနှင့် နိုင်ငံ တကာ နှစ်ခုလုံးမှ ရင်းနှီးမြှုပ်နှံသူများ၏ ရှယ်ယာထည့်ဝင်ခြင်းဖြင့် ဘဏ္ဍာငွေရရှိခဲ့သည်ဟု ယူဆထားကြသည်။** ၎င်းတို့တွင် အိန္ဒိယ၊ စင်ကာပူနှင့် British Virgin Islands တို့မှ နိုင်ငံခြားမိတ်ဖက်များ ပါဝင်သော လတ်တလော ဖက်စပ်လုပ်ငန်းများ အပါအဝင်ဖြစ်သည်။ နိုင်ငံတကာ ရင်းနှီးမြှုပ်နှံမှု ရန်ပုံငွေအဖွဲ့ (International investment funds) သည် ဒေသတွင်း စိုက်ခင်းစီးပွားရေး လုပ်ငန်းများအတွက် ရှယ်ယာထည့်ဝင်ခြင်း ဆောင်ရွက်နေ သော်လည်း ယခုအချိန်ထိ မြန်မာနိုင်ငံတွင် ၎င်းတို့ပါဝင်ဆောင်ရွက်နေသည့် အထောက်အထားကို မတွေ့ရပေ။

၂၄။ **လက်ရှိ ရင်းနှီးမြှုပ်နှံသူများနှင့် ရင်းနှီးမြှုပ်နှံရန် အလားအလာရှိသူများက ရင်းနှီးမြှုပ်နှံမှု တိုးမြှင့်ရေး အတွက် အဟန့်အတား အကန့်အသတ် များစွာကို စာရင်းပြုထားကြသည်။** ၎င်းတို့တွင် (၁) သစ်တောကြိုးဝိုင်း အတွင်း ကျယ်ဝန်းပြီး တစ်ဆက်တစ်စပ်တည်းဖြစ်သော မြေကွက်များ ရရှိနိုင်မှုနည်းပါးခြင်း၊ သို့မဟုတ် အဆိုပါ ဧရိယာများသို့ ဝင်ထွက်သွားလာရန် လမ်းမရှိခြင်း၊ (၂) မြေအသုံးချပိုင်ခွင့်ပြဿနာများ၊ အထူးသဖြင့် သစ်တောမြေ အတွင်းသို့ စိုက်ပျိုးရန် တရားမဝင် ကျူးကျော်ဝင်ရောက်ခြင်း၊ (၃) စီးပွားရေးလုပ်ငန်းများ လုပ်ကိုင်ရန် အခက်အခဲ ရှိသည်ဟု ယူဆထားခြင်း၊ (၄) မြေရယူရန်နှင့် သစ်ခုတ်လှဲ၊ သယ်ယူ၊ တင်ပို့၊ ကုန်ချောထုတ်လုပ်၊ ရောင်းဝယ်ရန် လုပ်ထုံးလုပ်နည်းများ ရှုပ်ထွေးခြင်း၊ (၅) သစ်တောကဏ္ဍ ရင်းနှီးမြှုပ်နှံမှုကို မြှင့်တင်ပေးနိုင်ပြီး ကူညီထောက်ပံ့ နိုင်သည့် အစိုးရဝန်ထမ်း မလုံလောက်ခြင်း၊ (၆) သစ်တောစိုက်ခင်း ဧရိယာများအတွင်းသို့ ကျူးကျော်ဝင်ရောက်ခြင်းနှင့် တရားမဝင် သစ်ထုတ်ယူခြင်းတို့ကို ကာကွယ်ဟန့်တားရန် ဥပဒေကိုလိုက်နာစေရေး စွမ်းဆောင်ရည် ချို့တဲ့ခြင်း၊ (၇) ဘဏ္ဍာရေးအထောက်အပံ့မရှိခြင်း နှင့် (၈)

တရားမဝင်သစ်ကို နေရာအနှံ့ ရရှိနိုင်သောကြောင့် စိုက်ခင်းမှ ထွက်ရှိသည့် သစ်လုံးများ၏ ဈေးနှုန်းကျဆင်းခြင်းနှင့် ဝယ်လိုအားကျဆင်းခြင်း တို့ပါဝင်သည်။

၂၅။ **ပုဂ္ဂလိက အဖွဲ့အစည်းများကို ကျယ်ပြန့်သော မြေအသုံးချပိုင်ခွင့် အခွင့်အရေးများကို ခွင့်ပြုရာ၌ အစစ်အမှန် နှင့် ထင်မြင်ခံစားရသော ရေရှည်တည်တံ့မှုဆိုင်ရာ အန္တရာယ်အလားအလာများ ရှိနေကြသည်။** ၎င်းတို့မှာ မြေအသုံးချပိုင်ခွင့် အခွင့်အရေးများအပေါ် လူမှုအသိုင်းအဝိုင်းက လက်ခံနိုင်မှုနှင့် အငြင်းပွားမှုဆိုင်ရာ ပြဿနာများမှ လည်းကောင်း၊ သစ်မျိုးအနည်းငယ်ကို တစ်မျိုးတည်း တစ်ခွင်တစ်ပြင် စိုက်ပျိုးခြင်းကြောင့် ဖြစ်ပေါ်လာနိုင်သည့် ဇီဝမျိုးစုံမျိုးကွဲ၊ မြေဆီလွှာနှင့်ရေတို့ကို ထိခိုက်သက်ရောက်မှုများ နှင့် အင်းဆက်နှင့် ရောဂါကျရောက်ခြင်းတို့နှင့် ပတ်သက်သည့် စိုးရိမ်ပူပန်မှုများမှလည်းကောင်း ပေါ်ပေါက်လာခြင်းဖြစ်သည်။ ဤအချက်မှာ အကြီးစားနှင့် အလတ်စား ရင်းနှီးမြှုပ်နှံမှုများသည် ပြည့်စုံသည့် လူမှုရေးနှင့် ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု အစီအစဉ်များကို ရေးဆွဲ ကျင့်သုံးသင့်ကြောင်းနှင့် အကောင်းဆုံးအနေဖြင့် အသိအမှတ်ပြု လက်ခံထားပြီးသော နိုင်ငံတကာ စံချိန်စံညွှန်း များနှင့် ကိုက်ညီသည့် သစ်တောစီမံအုပ်ချုပ်မှု ထောက်ခံချက်ကို ရယူသင့်သည်ဟူသည့် အဓိပ္ပါယ်ဆောင်သည်။

၂၆။ **အထက်ဖော်ပြပါ လိုအပ်ချက်များကို ပြည့်မီရန် ရင်းနှီးမြှုပ်နှံမှုများသည် ပွင့်လင်းမြင်သာသော ဘဏ္ဍာရေး ရင်းမြစ်များအပေါ် အခြေခံသင့်ပြီး မြင့်မားသော လူမှုရေးနှင့် ပတ်ဝန်းကျင် စံချိန်စံညွှန်းများနှင့်အညီ လုပ်ကိုင် ဆောင်ရွက်သင့်ကာ တန်ဖိုးမြင့် ကုန်ချောထုတ်လုပ်ခြင်းကိုလည်း ရည်မှန်းထားသင့်သည်။** ဤအခြေခံမှုများသည် မြန်မာနိုင်ငံ၏ စီးပွားရေးဖွံ့ဖြိုးမှုကို အပြုသဘောဆောင်သည့် အထောက်အကူဖြစ်ရေး သေချာမှုရှိစေမည် ဖြစ်သည့်ပြင် ထွက်ရှိလာသော ထုတ်ကုန်များသည် အစဉ်တိုးမြှင့်တောင်းဆိုနေသော တန်ဖိုးမြင့် ပြည်ပပို့ကုန် ဈေးကွက်သို့ ဝင်ရောက်ခွင့်ရရှိပြီး၊ ဈေးကွက်ကို ဆက်လက်ထိန်းထားရန်လည်း သေချာစေမည်ဖြစ်သည်။ နိုင်ငံ၏ အနာဂတ် ပြည်တွင်း သစ်တောထွက်ပစ္စည်း လိုအပ်ချက်များ ပြည့်မီစေရေးနှင့် ပတ်သက်၍ မည်သို့သော ရင်းနှီး မြှုပ်နှံမှုမျိုးကို မြှင့်တင်အားပေးမည် ဆိုသည့်အချက်နှင့် မြန်မာနိုင်ငံအနေဖြင့် အခြားနိုင်ငံများနှင့် နှိုင်းယှဉ်လျှင် အားသာချက် ရှိကောင်းရှိနိုင်သည့် သီးခြားပြည်ပပို့ကုန်အပိုင်းကို အထူးအလေးပေး အာရုံစိုက် သင့်/မသင့်ဆိုသည့် အချက်တို့အပေါ် အခြေတင် ဆွေးနွေးမှု တစ်ခုကိုလည်း လိုအပ်သည်။

၂၇။ **အခြားရင်းနှီးမြှုပ်နှံသူ လိုအပ်ချက်များမှာ** ကုန်ချောထုတ်လုပ်ရန် အလားအလာရှိသည့် နေရာများနှင့် လည်းကောင်း၊ ပြည်ပတင်ပို့သည့်နေရာများနှင့် ချိတ်ဆက်ထားသည့် သယ်ယူပို့ဆောင်ရေး အခြေခံအဆောက်အအုံ နှင့်လည်းကောင်း၊ စိုက်ခင်းဧရိယာများ နီးကပ်စွာတည်ရှိမှု၊ ဖက်စပ်လုပ်ငန်း မိတ်ဖက်များကို လွတ်လပ်စွာ ရွေးချယ်ခွင့်၊ မြန်မာနိုင်ငံမှ ပြန်လည်ထွက်ခွါသည့်အခါ အရင်းအနှီးနှင့် အမြတ်ငွေများကို မူရင်းနိုင်ငံသို့ ပြန်လည် ထုတ်ယူသွားနိုင်မှု စသည်တို့နှင့် ဆက်နွှယ်နေသည်။ ဝင်ငွေစောစီးစွာရရှိရေး အထောက်အပံ့ ဖြစ်စေရန် လက်ရှိ သစ်အရင်းအမြစ်များအား စီမံဆောင်ရွက်ခွင့်ကို

စိုက်ခင်းသစ်များတည်ထောင်ခြင်းနှင့် တွဲဖက်၍ ဆောင်ရွက်ခွင့်ပေးမည် ဆိုပါက အပြောင်ဧရိယာများ၌ စိုက်ခင်းများကို စတင်ဆောင်ရွက်ရခြင်းထက် ပို၍ဆွဲဆောင်နိုင်ဖွယ်ရာရှိသည်။

၂၈။ ရေရှည်တည်တံ့သည့် ရင်းနှီးမြှုပ်နှံမှုများကို ဆွဲဆောင်ရန် **မြန်မာနိုင်ငံအနေဖြင့် ပို၍ကျယ်ပြန့်သည့် သစ်တောစိုက်ခင်းပုံစံ ဖြစ်နိုင်ခြေအမျိုးမျိုး၊ သို့မဟုတ် ပေါင်းစပ်ပုံစံများကို လေ့လာစူးစမ်းမှုပြုနိုင်သည် -**

- က) ငှားရမ်းထားသည့် ပြုန်းတီးပြီး၊ သို့မဟုတ် ယိုယွင်းပျက်စီးနေသည့် သစ်တောကြိုးဝိုင်းမြေပေါ်ရှိ အပြောင် ဧရိယာများ၌ စိုက်ခင်းများကို တည်ထောင်ခြင်း (လက်ရှိပုံစံ)၊
- ခ) ငှားရမ်းထားသည့် ပြုန်းတီးပြီး၊ သို့မဟုတ် ယိုယွင်းပျက်စီးနေသည့် VFV မြေ၊ သို့မဟုတ် သစ်တော စိုက်ခင်းများအဖြစ်သို့ ပြောင်းလဲမည့် လတ်တလောတွင် စိုက်ပျိုးမြေအဖြစ် တည်ရှိနေသော VFV မြေပေါ်ရှိ အပြောင်ဧရိယာများ၌ စိုက်ခင်းများကို တည်ထောင်ခြင်း။ (လက်ရှိပုံစံပင်ဖြစ်သည်။)
- ဂ) လက်ရှိ နိုင်ငံပိုင်စိုက်ခင်းများ (ပျက်ယွင်းနေသော စိုက်ခင်းများနှင့် မအောင်မြင်သော စိုက်ခင်းများ အပါအဝင်) အတွက် သစ်ထုတ်ယူခြင်း အခွင့်အရေးများ အပါအဝင် စီမံခန့်ခွဲမှု အငှားချထားခြင်းကို တစ်ဆက်တစ်စပ်တည်း တည်ရှိနေသော ကြိုးဝိုင်းသစ်တောမြေပေါ်၌ စိုက်ခင်းသစ်များ တည်ထောင် ခြင်းနှင့် တွဲဖက် လုပ်ဆောင်ခြင်း။
- ဃ) ကြိုးဝိုင်းသစ်တောမြေနှင့် VFV မြေပေါ်ရှိ သဘာဝသစ်တောများအတွက် သစ်ထုတ်ယူခြင်း အခွင့်အရေးများ အပါအဝင် စီမံခန့်ခွဲမှု အငှားချထားခြင်းကို တစ်ဆက်တစ်စပ်တည်း တည်ရှိနေသော ကြိုးဝိုင်း သစ်တောမြေနှင့် VFV မြေပေါ်၌ စိုက်ခင်းသစ်များတည်ထောင်ခြင်းနှင့် တွဲဖက် လုပ်ဆောင်ခြင်း။

၂၉။ အငြင်းပွားခြင်းများ၊ ကျူးကျော်ဝင်ရောက်ခြင်းနှင့် သစ်ခိုးယူခြင်း အန္တရာယ်များ ဖြစ်ပေါ်လာနိုင်ခြေကို လျော့ချရန် **အထက်ဖော်ပြပါ ပုံစံအားလုံး၌ ဒေသခံပြည်သူများ နှင့်/သို့မဟုတ် ဥယျာဉ်ခြံမြေ ယာသမားတို့နှင့် ညှိနှိုင်းစီစဉ်မှုများကို ဆောင်ရွက်ရဖွယ်ရှိသည်။** ထိုစီစဉ်မှုများတွင် တစ်ဆက်တစ်စပ်တည်း တည်ရှိနေသော ကြိုးဝိုင်းသစ်တောမြေနှင့် VFV မြေအတွင်းရှိ ဒေသခံပြည်သူအစုအဖွဲ့အခြေပြု သစ်တောစီးပွားရေးလုပ်ငန်းများနှင့် စီးပွားရေးဆိုင်ရာ အစီအစဉ်များ စီစဉ်ဆောင်ရွက်ခြင်း၊ အနီးရှိ ပုဂ္ဂလိကပိုင်မြေအတွင်းရှိ ယာသမားများနှင့် သစ်ပင် စိုက်ပျိုးပေးရန် သဘောတူစာချုပ် ပြုလုပ်ခြင်း၊ သို့မဟုတ် သစ်ပင်တန်းများကို အကွာအဝေး ကျယ်ကျယ်ထား၍ ကြားတွင် သီးနှံများ စိုက်ပျိုးခွင့်ပြုခြင်း - ထို့အတူ ဖြစ်နိုင်ပါက သစ်ထုတ်ယူခြင်းမှ ရရှိသည့်အကျိုးအမြတ်ကို ခွဲဝေခံစားစေခြင်း - စသည်တို့ပါဝင်သည်။

၃၀။ အောက်ဖော်ပြပါ **ပြင်ပ ဘဏ္ဍာငွေထောက်ပံ့မှု ရင်းမြစ်အမျိုးမျိုးကိုလည်း ထည့်သွင်းစဉ်းစားနိုင်သည်။**

- က) နိုင်ငံတကာ ရင်းနှီးမြှုပ်နှံမှု ရန်ပုံငွေအဖွဲ့နှင့် ဖွံ့ဖြိုးမှုဆိုင်ရာ ဘဏ္ဍာရေး အဖွဲ့အစည်းများ (Development Finance Institutions - DFIs) အပါအဝင် ပြည်ပမှ အဖွဲ့အစည်းနှင့် စက်မှုလုပ်ငန်းဆိုင်ရာ ရင်းနှီးမြှုပ်နှံသူများမှ ပြည်တွင်းကုမ္ပဏီများနှင့် ဖက်စပ်လုပ်ငန်းများ ဆောင်ရွက်ခြင်း၊ သို့မဟုတ် အကျိုးတူ ဆောင်ရွက်မှုများတွင် ရှယ်ယာထည့်ဝင်ခြင်းဖြင့် ဘဏ္ဍာငွေ အထောက်အပံ့ ရရှိခြင်း။
- ခ) DFIs အပါအဝင် အဖွဲ့အစည်းများမှတစ်ဆင့် ပုဂ္ဂလိက ရင်းနှီးမြှုပ်နှံသူများအား ချေးငွေထုတ်ပေးခြင်း။
- ဂ) နိုင်ငံစုံဘဏ်များမှ အစိုးရက ငွေချေးယူပြီး ပြည်တွင်း နိုင်ငံပိုင်ဘဏ်များမှတစ်ဆင့် ရင်းနှီးမြှုပ်နှံသူများအား ချေးငွေ ထုတ်ပေးခြင်း။

မတူညီသော ဘဏ္ဍာရေး ရင်းမြစ် အမျိုးမျိုးမှ ပေါင်းစပ် ရယူခြင်းသည်လည်း ဖြစ်နိုင်သည့် နည်းလမ်းတစ်ခုဖြစ်သည်။ နိုင်ငံတကာ ရာသီဥတု ပြောင်းလဲခြင်းဆိုင်ရာ ရန်ပုံငွေများ (International Climate Funds)၊ မိမိဆန္ဒအလျောက် ပါဝင်ဆောင်ရွက်သည့် ကာဗွန်ရောင်းဝယ်မှုများနှင့် အစိမ်းရောင် စီးပွားရေးလုပ်ငန်းများအား ကူညီထောက်ပံ့ရန် တည်ထောင်ထားသည့် ရင်းနှီးမြှုပ်နှံမှု ရန်ပုံငွေများ စသည်တို့သည်လည်း ထပ်မံလေ့လာကြည့်သင့်သည့် အခြားရွေးချယ်စရာများဖြစ်ကြသည်။

၃၁။ မူဝါဒပြုပြင်ပြောင်းလဲမှုများ၊ ရင်းနှီးမြှုပ်နှံမှုဆိုင်ရာ မက်လုံးများ၊ အခြေခံ အဆောက်အအုံ လိုအပ်ချက်များ နှင့် ဘဏ္ဍာရေးနှင့် ကုန်သွယ်ရေးဆိုင်ရာ ရှုမြင်မှုများ ပါဝင်သည့် **ရေရှည်တည်တံ့သော စီးပွားရေး သစ်တော စိုက်ခင်းဆိုင်ရာ မဟာဗျူဟာတစ်ရပ် ပေါ်ထွက်လာရေးအတွက် စုစည်းညီညွတ်မှုရှိသော လုပ်ငန်းစီမံချက်တစ်ရပ် ရေးဆွဲအကောင်အထည်ဖော်ရန် လိုအပ်လျက်ရှိသည်။** ပြုပြင်ပြောင်းလဲမှု လုပ်ငန်းစဉ်တွင် သစ်တောပြုစု ပျိုးထောင်ခြင်း၊ ခေတ်မီ ကုန်ချောပြုပြင် ထုတ်လုပ်ခြင်း နည်းပညာ၊ အကောင်းဆုံး ပတ်ဝန်းကျင်နှင့် လူမှုရေး ကျင့်ထုံးများ စသည်တို့ကို ယူဆောင်လာမည့် အကြီးစား ရင်းနှီးမြှုပ်နှံမှုများနှင့် ဒေသခံပြည်သူ အစုအဖွဲ့ပိုင် သစ်တောလုပ်ငန်း၊ ပြင်ပအငှားစိုက်ပျိုးခြင်းနှင့် အသေးစား ပုဂ္ဂလိက ရင်းနှီးမြှုပ်နှံသူများ အပါအဝင် အသေးစား နှင့်အလတ်စား သစ်တောစိုက်ခင်းများ နှစ်ခုလုံးကို ရည်မှန်းထားသင့်သည်။ လိုအပ်သည့် အပြောင်းအလဲများကို တရားဝင် ဆုံးဖြတ်ချက်များ ပြုလုပ်ရန်လိုအပ်သည့် အဆင့်အပေါ်မူတည်၍ အောက်ဖော်ပြပါအတိုင်း ကဏ္ဍများ ခွဲခြားနိုင်သည် -

- က) ဦးစီးဌာနအဆင့် ဆုံးဖြတ်ချက်ဖြင့် ရှိရင်းစွဲ စွမ်းဆောင်ရည် ဘောင်အတွင်းတွင် ညွှန်ကြားချက်များ သို့မဟုတ် လုပ်ထုံးလုပ်နည်းများ ထုတ်ပြန်ခြင်းအားဖြင့် ပြုလုပ်နိုင်သော အပြောင်းအလဲများ။

- ခ) ဦးစီးဌာနအဆင့်တွင် ပြုလုပ်နိုင်သော်လည်း စွမ်းဆောင်ရည် ဖွံ့ဖြိုးမှု အထောက်အပံ့ (ဥပမာ - မြေအသုံးချမှု စာရင်းကောက်ယူခြင်းများ၊ တင်ဒါအစီအမံများ ပြင်ဆင်ဆောင်ရွက်ခြင်း၊ ဆက်သွယ်အသိ ပေးခြင်းများ) လိုအပ်သည့် အပြောင်းအလဲများ။
- ဂ) မြေအသုံးချမှု စီမံကိန်းများ ရေးဆွဲခြင်း (ဥပမာ - FD နှင့် စိုက်ပျိုးရေး၊ မွေးမြူရေးနှင့် ဆည်မြောင်းဝန်ကြီး ဌာန (MOALI) လက်အောက်ရှိ လယ်ယာမြေစီမံခန့်ခွဲရေးနှင့် စာရင်းအင်းဦးစီးဌာန (DALMS) တို့ ပူးပေါင်း ဆောင်ရွက်ရန် လိုအပ်သည့် မြေယာစီမံကိန်းများ ရေးဆွဲခြင်း) သို့မဟုတ် မြန်မာနိုင်ငံ ရင်းနှီးမြှုပ်နှံမှု ကော်မရှင် (MIC) ၏အတည်ပြုချက်ကို ရရှိရန်လိုသည့် ထပ်မံမက်လုံးပေးခြင်းများ စသည့် ဌာနဆိုင်ရာ/ အဖွဲ့အစည်းများ ပူးပေါင်းဆောင်ရွက်မှုကို လိုအပ်သည့် အပြောင်းအလဲများ။
- ဃ) ဥပဒေပြုမှုဆိုင်ရာ ပြောင်းလဲမှုများကို လိုအပ်သည့် အပြောင်းအလဲများ၊ ဥပမာ - သစ်တောဥပဒေနှင့် နည်းဥပဒေများကို ပြင်ဆင်ခြင်း၊ သို့မဟုတ် မြေယာဥပဒေကို အတည်ပြုပြဌာန်းခြင်း။

၃။ သစ်တောစိုက်ခင်းများအတွက် အစိုးရ၏ ရည်မှန်းချက်များ ပြည့်မီရန်နှင့် အရည်အသွေးရှိသော ရင်းနှီး မြှုပ်နှံမှုကို ဆွဲဆောင်ရန် သိသာမြင်သာသည့် အန္တရာယ်အလားအလာများနှင့် အဟန့်အတား အကန့်အသတ်များကို ဖြေရှင်းရန် လိုအပ်သည်။ ဖြစ်နိုင်သည့် ဆောင်ရွက်ချက်များတွင် အောက်ပါတို့ ပါဝင်သည်။

- က) လူမှုရေးဆိုင်ရာအန္တရာယ်များ၊ အထူးသဖြင့် မြေနှင့်ပတ်သက်ပြီး ဖြစ်ပေါ်လာနိုင်သည့် အငြင်းပွားမှုများကို ဖြေရှင်းခြင်း။ ဤသို့ဖြေရှင်းရာတွင် လုံလောက်သော တိုင်းတာစာရင်းကောက်ယူမှုများနှင့် မြေအသုံးချမှု ခွဲဝေသတ်မှတ်ခြင်း အစီအစဉ်များ ရေးဆွဲရာ၌လည်းကောင်း၊ မိတ်ဖက်ဆောင်ရွက်မှု ပုံစံများကို ချမှတ်ရာ၌လည်းကောင်း၊ တိုင်ပင်ဆွေးနွေးခြင်းများကို လိုအပ်သည်။
- ခ) ပိုမိုကျယ်ပြန့်သော သစ်တောစိုက်ခင်း စီးပွားရေး ပုံစံအမျိုးမျိုးကို ချမှတ်ခြင်းနှင့် အားပေးမြှင့်တင်ခြင်း။ ဤသို့ဆောင်ရွက်ရာ၌ အစိုးရ၏ လက်ရှိသစ်တောများ စီမံအုပ်ချုပ်ခြင်းကို စိုက်ခင်းလုပ်ငန်းများနှင့် ပေါင်းစပ်ဆောင်ရွက်နိုင်မည့်အတွက် ဧရိယာပိုကျယ်သော စီမံအုပ်ချုပ်မှု ယူနစ်များကို ရရှိစေနိုင်ပြီး CF လည်းချိတ်ဆက်ပေးနိုင်သည်။
- ဂ) (ဆောင်ရွက်ပြီးစီးမှု သတ်မှတ်ချက်များ ပြည့်မီခြင်းအပေါ် မူတည်၍) ခုတ်ပတ်များစွာ ဆောင်ရွက်ခွင့် ပေးထားသော အငှားချထားခြင်းစာချုပ်ပါ အသုံးချပိုင်ခွင့် သတ်မှတ်ချက်များ။
- ဃ) အငှားချထားခြင်းကို ရယူရန်အတွက် လွယ်ကူထိရောက်သော လုပ်ငန်းစဉ်များနှင့် ပွင့်လင်းမြင်သာပြီး ရိုးရှင်းသော လိုင်စင်ချပေးခြင်းနှင့် ဆုံးဖြတ်ချက်ချမှတ်ခြင်း လုပ်ငန်းစဉ်များ။
- င) စိုက်ခင်းထွက်သစ် ထုတ်ယူသယ်ဆောင်ခြင်းအတွက် လျှော့ပေါ့ပေးထားသော စည်းမျဉ်းစည်းကမ်း သတ်မှတ်ချက်များ။

- စ) သစ်တောကဏ္ဍ အုပ်ချုပ်ခြင်းနှင့် တရားမဝင် သစ်ထုတ်ယူခြင်းများကို ကိုင်တွယ်ဆောင်ရွက်မှု ခိုင်မာ အားကောင်းစေရန် အစိုးရ၏ ကြိုးပမ်းအားထုတ်မှုများကို ပေါ်လွင်ထင်ရှားအောင် ပြသခြင်း။
- ဆ) သစ်တောစိုက်ခင်း ရင်းနှီးမြှုပ်နှံမှုကို မြှင့်တင်ရေးအတွက် အများပြည်သူသိရှိရန် ထုတ်ပြန်ခြင်းကို ပိုမိုကောင်းမွန်စေခြင်း။ ဤအချက်တွင် ရရှိနိုင်သည့် မြေနေရာများနှင့် ရင်းနှီးမြှုပ်နှံသူများ အတွက် မက်လုံးများကို သတ်မှတ်ဖော်ထုတ်ခြင်းနှင့် ၎င်းတို့နှင့် သက်ဆိုင်သည့် သတင်းအချက်အလက်များ ပါဝင်သည်။

၃၃။ **ဆက်စပ်ပတ်သက်သူ အများပါဝင်သည့် တရားဝင် အဖွဲ့တစ်ဖွဲ့စည်းဖြစ်ပေါ်လာရေးကို လိုလား ကြောင်း ထုတ်ဖော်ပြောဆိုကြသည်။** အဆိုပါအဖွဲ့တွင် ပုဂ္ဂလိကကဏ္ဍ၊ သက်ဆိုင်သည့် အစိုးရ ဌာန/ အဖွဲ့ အစည်းများ၊ ဒေသခံပြည်သူများ၏ အကျိုးစီးပွားအတွက် ကိုယ်စားပြုပေးမည့် အရပ်ဖက် အဖွဲ့အစည်းများနှင့် ဥပဒေပြုသူများ၏ ကိုယ်စားလှယ်များ ပါဝင်ကြမည်ဖြစ်သည်။ ဤအဖွဲ့က မူဝါဒ ပြုပြင်ပြောင်းလဲမှုများကို အထောက်အကူပေးမည်ဖြစ်ပြီး လုပ်ငန်းစီမံချက်ကို အကောင်အထည် ဖော်ရာ၌ လမ်းညွှန်မှု ပြုမည်ဖြစ်သည်။

၃၄။ မှန်ကန်သော သတင်းအချက်အလက်များအပေါ် အခြေခံသည့် စဉ်းစားချင့်ချိန်မှုများနှင့် ဆုံးဖြတ်ချက်များ ဖြစ်စေရန် **နည်းပညာ၊ လူမှုရေးနှင့် စီးပွားရေးဆိုင်ရာ လေ့လာဆန်းစစ်မှုများနှင့် ကိန်းဂဏန်း အချက်အလက် ကောက်ယူမှုများကို ထပ်မံ၍ လိုအပ်နိုင်ဖွယ်ရှိသည်။** အဆိုပါဆန်းစစ်မှုများဖြင့် ဆောင်ရွက်ရန် အကြံပြုထားသည့် အပြောင်းအလဲများမှ ဖြစ်ပေါ်လာနိုင်သည့် အကျိုးသက်ရောက်မှုများ၊ ဥပမာ - ရင်းနှီးမြှုပ်နှံမှု ဖြစ်နိုင်ခြေများ၊ အစိုးရအခွန်ငွေများ၊ ဒေသစီးပွားရေး၊ လူမှုရေးနှင့် ပတ်ဝန်းကျင်တို့အပေါ် သက်ရောက်မှုများကို လေ့လာစိစစ်သင့်သည်။ လက်ရှိ နိုင်ငံပိုင်နှင့် ပုဂ္ဂလိကပိုင် စိုက်ခင်းနှစ်မျိုးလုံးအတွက် လတ်တလော သတင်းအချက်အလက် ချို့တဲ့နေခြင်းက ကုန်သွယ်ရေးနှင့် စက်မှုလုပ်ငန်း မူဝါဒများ ကြောင်းကျိုးဆီလျော်စွာ ဖွံ့ဖြိုးဖြစ်ပေါ်လာစေရေး အတွက် သစ်တောစိုက်ခင်းဆိုင်ရာ နိုင်ငံအဆင့် ကိန်းဂဏန်း အချက်အလက် အခြေခံတစ်ရပ် တည်ထောင်ရန် လိုအပ်နေကြောင်း ညွှန်ပြလျက်ရှိသည်။ ဤအချက်ကို ဖင်လန်နိုင်ငံအစိုးရ၏ အထောက်အပံ့ဖြင့် ဆောင်ရွက်ရန် စီစဉ်ထားသည့် နိုင်ငံအဆင့် သစ်တောတိုင်းတာ စာရင်းကောက်ယူခြင်း စီမံကိန်းနှင့် ချိတ်ဆက် ဆောင်ရွက် နိုင်သည်။^၇

၃၅။ လက်ငင်း စီးပွားရေးဆိုင်ရာ အကျိုးသက်ရောက်မှုများထက် ၂၀၂၀ ပြည့်နှစ်အတွင်း **ဖြစ်ပွားလျက်ရှိသည့် အသက်ရှူ လမ်းကြောင်းဆိုင်ရာရောဂါ (COVID-19) ၏ သစ်တောစိုက်ခင်း ရင်းနှီးမြှုပ်နှံမှုများအပေါ် ကာလလတ်နှင့် ရေရှည် သက်ရောက်မှုများမှာ အခြားနိုင်ငံများ၊ အခြားရင်းနှီးမြှုပ်နှံမှု ရွေးချယ်စရာများနှင့် နှိုင်းယှဉ်ပြီး မြန်မာနိုင်ငံ၏ ဆွဲဆောင်နိုင်မှုအပေါ်**

^၇ FAO Stat ခန့်မှန်းချက်များအပေါ် အခြေခံသည်။
 ov.mm/news/26887" <https://www.forestdepartment.gov.mm/news/26887>.

ရင်းနှီးမြှုပ်နှံသူများ၏ ရှုမြင်မှုများပေါ်တွင် များစွာ မှီတည် နေဖွယ်ရာရှိသည်။
 သစ်တောထွက်ပစ္စည်းများအပေါ် ပြည်တွင်းနှင့် ကမ္ဘာ့ဝယ်လိုအား တို့မှာ တဖြည်းဖြည်းနှင့် မူလအခြေအနေသို့ ပြန်လည်ရောက်ရှိသွားမည်ဟု မျှော်လင့်ရပြီး ရင်းနှီးမြှုပ်နှံသူများ၏ ဆုံးဖြတ်ချက်များမှာ နိုင်ငံရေး တည်ငြိမ်မှုအပေါ် ၎င်းတို့၏ ထင်မြင်ယူဆချက်များ၊ အုပ်ချုပ်မှု အရည်အသွေးနှင့် စီးပွားရေးလုပ်ငန်းများ ဆောင်ရွက်ရန် လွယ်ကူမှု စသည့်အချက်များအပေါ် မူတည်ဖွယ်ရာရှိသည်။ သစ်တောစိုက်ခင်း တည်ထောင်ခြင်းက အလုပ်အကိုင်ရရှိမှု တိုးမြှင့်လာစေမည့် အချက်ကို ထောက်ချင့်၍ အစိုးရအနေဖြင့် ရင်းနှီးမြှုပ်နှံမှုကို နှိုးဆွပေးရန် မူဝါဒ ပြုပြင်ပြောင်းလဲမှုများ ဦးစားပေးဆောင်ရွက်ရေးကို ထည့်သွင်းစဉ်းစားသင့်သည်။

၃၆။ ဆောင်ရွက်ရန် လုပ်ငန်းစဉ်များအတွက် ထောက်ခံအကြံပြုချက်များကို အောက်ပါ ဇယားတွင် ဖော်ပြ ထားပါသည်။

အကြံပြုချက်များ	ဆောင်ရွက်ရန်လုပ်ငန်းစဉ်	ကာလ ^၈	ဥပဒေပြုမှု အပြောင်းအလဲ လို/မလို
သစ်တောစိုက်ခင်း လုပ်ငန်း ပြုပြင် ပြောင်းလဲမှုဆိုင်ရာ ဆက်စပ်ပတ်သက်သူ အများ ပါဝင်သည့် လုပ်ငန်းအဖွဲ့ဖွဲ့စည်းရန်	<ul style="list-style-type: none"> - ပါဝင်မည့် အဖွဲ့ဝင်များကို သတ်မှတ်ရန် - အဖွဲ့ဖွဲ့စည်းခြင်းအတွက် ညွှန်ကြားချက်ကို ပြင်ဆင်ရန် - စည်းကမ်းများနှင့် လုပ်ထုံးလုပ်နည်းများ အပေါ် အဖွဲ့က ဆုံးဖြတ်သတ်မှတ်ရန် 	ရေတို	မလိုပါ။
သတင်းအချက်အလက် ရရှိနိုင်မှုကို မြှင့်တင်ရန်	<ul style="list-style-type: none"> - လက်ရှိ လုပ်ထုံးလုပ်နည်းများ၊ ညွှန်ကြားချက် များနှင့် အခြားစာရွက်စာတမ်းများကို ရှာဖွေစုစည်းခြင်းနှင့် ဘာသာပြန်ဆိုခြင်း - လက်ရှိ စည်းမျဉ်းစည်းကမ်းများနှင့် ညွှန်ကြားချက်များ အရ စိုက်ခင်းမြေ အငှားချ ထားခြင်းကို ရယူခြင်းနှင့် စီမံခန့်ခွဲခြင်း ဆိုင်ရာ 	ရေတို	မလိုပါ။

^၈ ရေတိုလုပ်ငန်းစဉ်များမှာ ယေဘုယျအားဖြင့် ၁၂ လတာ ကာလအတွင်း ဆောင်ရွက်ပြီးစီးနိုင်ပြီး ကာလလတ် လုပ်ငန်းစဉ်များမှာ ၃၆ လအတွင်းနှင့် ရေရှည်လုပ်ငန်းစဉ်များမှာ (ဥပဒေပြင်ဆင်ရန် လိုအပ်ချက်ကြောင့်) ၃၆လထက်ပို၍ ကြာမြင့်နိုင်ပါသည်။

အကြံပြုချက်များ	ဆောင်ရွက်ရန်လုပ်ငန်းစဉ်	ကာလ ^၈	ဥပဒေပြုမှု အပြောင်းအလဲ လို/မလို
	လမ်းညွှန်ချက် စာတမ်း ရေးဆွဲပြုစုခြင်း		
အငှားချထားခြင်း ရယူရန် လုပ်ငန်းစဉ်ကို လွယ်ကူ ထိရောက် စေရန်	<ul style="list-style-type: none"> - လက်ရှိ အငှားချထားခြင်း လုပ်ထုံးလုပ်နည်း များကို ပြန်လည် ဆန်းစစ်သုံးသပ်ရန် - ရင်းနှီးမြုပ်နှံသူ အကြံအရည်အချင်း သတ်မှတ်ခြင်း၊ ဝင်ရောက် ယှဉ်ပြိုင်သူများ၏ ကတိခံဝန်ချက်များ၊ တင်ဒါတွင် ထည့်သွင်းရန် အချက်များ၊ လုပ်ငန်း ဆောင်ရွက်မှု အကြံ၊ စည်းကမ်း သတ်မှတ်ချက်များ၊ ဆောင်ရွက်ပြီးစီးမှု ကတိခံဝန်ချက်များ၊ အစရှိသည်တို့ နှင့်ပတ်သက်သည့် ထောက်ခံ အကြံပြုချက်များ ရေးဆွဲပြုစုရန် 	ရေတို - ကာလလတ်	ညွှန်ကြားချက်များ နှင့်/သို့မဟုတ် လုပ်ထုံး လုပ်နည်းများ
စိုက်ခင်းထွက် သစ်နှင့် ပတ်သက်သည့် စည်းမျဉ်းစည်းကမ်း များ လွယ်ကူ ထိရောက်စေရန်	<ul style="list-style-type: none"> - FD သစ်ထုတ်ခွင့် အတည်ပြုချက် ရရှိရန် လိုအပ်သည့် သတ်မှတ်ချက်များ၊ သစ်လုံး အတိုင်းအတာများ၊ သစ်၊ အခြား သစ်တောထွက် ပစ္စည်း အခွန်ငွေများ၊ စိုက်ခင်းထွက် သစ်နှင့် အခြား သစ်တောထွက် ပစ္စည်းများ သယ်ဆောင် ခွင့်ရရှိရန် လိုအပ်သည့် သတ်မှတ်ချက်များကို ပြန်လည် ဆန်းစစ် သုံးသပ်ရန် - (အခြား နိုင်ငံများမှ စနစ်များအပေါ် ဆန်းစစ်ခြင်း အပါအဝင်) လွယ်ကူ 	ကာလလတ်	<ul style="list-style-type: none"> - ပင်ထောင် ရိုက်မှတ်ခြင်း သတ်မှတ်ချက် များဆိုင်ရာ သစ်တော နည်းဥပဒေများ - အခကြေးငွေနှင့် အခွန်ငွေများ ဆိုင်ရာ ညွှန်ကြား ချက်များ

အကြံပြုချက်များ	ဆောင်ရွက်ရန်လုပ်ငန်းစဉ်	ကာလ ^၈	ဥပဒေပြုမှု အပြောင်းအလဲ လို/မလို
	ထိရောက်သော စိုက်ခင်း ထွက်သစ် တရားဝင်ဖြစ်မှု အာမခံချက်ပြုခြင်း စနစ် (Timber Legality Assurance System) တစ်ရပ်အတွက် လိုအပ်ချက်နှင့် သတ်မှတ်ချက် များကို စဉ်းစားသုံးသပ်ရန်		
ဆက်စပ်ပတ်သက်သူ အများ ပါဝင်သည့် အဖွဲ့လိုက် လုပ်ငန်း ဆောင်ရွက်မှုအား သတင်း အချက် အလက်များ ပေးရန် မူဝါဒဆိုင်ရာ လေ့လာ မှုများ	<ul style="list-style-type: none"> - အဓိက လေ့လာမှုများ (စိုက်ခင်း ဘောဂဗေဒ၊ ငွေကြေးဆိုင်ရာ ရွေးချယ်စရာများ၊ တင်ဒါ လုပ်ငန်းစဉ်ဆိုင်ရာ ရွေးချယ်စရာများ၊ အစ ရှိသည်-) ကိုဆုံးဖြတ်ရန်နှင့် လုပ်ငန်းတာဝန် သတ်မှတ်ချက်များကို ရေးဆွဲရန် - အကြံပေးများ ခန့်အပ် ဆောင်ရွက်ရန် - ထောက်ခံ အကြံပြုချက်များကို ချင့်ချိန် သုံးသပ်ရန်အတွက် အလုပ်ရုံဆွေးနွေးပွဲများ ပြုလုပ်ရန် 	ရေတို - ကာလလတ်	မလိုပါ။
ငွေကြေးဆိုင်ရာ မက်လုံးပေးခြင်း များကို ဆန်းစစ် သုံးသပ်ရန်	<ul style="list-style-type: none"> - သစ်တောစိုက်ခင်း ရင်းနှီးမြှုပ်နှံမှု အတွက် မက်လုံးပေးနိုင်ဖွယ်ရာရှိသည့် ဌာနဆိုင်ရာ (FDI ECDI DICA၊ IR၊ အကောက်ခွန်၊ အစရှိသည်-) လုပ်ထုံးလုပ်နည်းများ၊ ညွှန်ကြား ချက်များ၊ လမ်းညွှန်ချက်များနှင့် အခြား ပြဌာန်း ချက်များကို ဆန်းစစ် သုံးသပ်ရန် 	ကာလလတ်	ဥပဒေ ပြင်ဆင် ချက်များ ပြုလုပ်ရန် ထောက်ခံ အကြံပြု ထားပါက လိုအပ် နိုင်ပါသည်။

အကြံပြုချက်များ	ဆောင်ရွက်ရန်လုပ်ငန်းစဉ်	ကာလ ^၈	ဥပဒေပြုမှု အပြောင်းအလဲ လို/မလို
	- မက်လုံးပေးခြင်းများ ပြန်လည် စိစစ် တည်းဖြတ်ခြင်းကို ထောက်ခံ အကြံပြုရန်		
ပုဂ္ဂလိက သစ်တော စိုက်ခင်းများ အတွက် ရည်မှန်းထားသည့် ဧရိယာများကို သတ်မှတ် ဖော်ထုတ်ရန်	- ရရှိနိုင်မှု အခြေအနေ၊ လမ်းပန်းဆက်သွယ်ရေး၊ မြေနေရာ အရည်အသွေး၊ အခြား အခြေခံ အဆောက်အအုံ တို့ကို ထည့်သွင်းစဉ်းစား၍ အသင့်လျော်ဆုံး ဧရိယာများကို အလားအလာရှိသော ရင်းနှီးမြှုပ်နှံသူများ၊ အခြား ဆက်စပ်ပတ်သက်သူများနှင့် တိုင်ပင် ဆွေးနွေးခြင်း	ရေတို	မလိုပါ။
အစိုးရ သစ်တော စိုက်ခင်းများနှင့် သဘာဝ သစ်တော ဧရိယာများကို အငှားချထားခြင်း ဘောင်အတွင်း ထည့်သွင်းရန်	- ဆက်စပ်ပတ်သက်သူ အများ ပါဝင်သည့် အဖွဲ့အတွင်း ရွေးချယ်စရာများကို စဉ်းစား သုံးသပ်ရန် - စီမံခန့်ခွဲမှု ရယူခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများ နှင့် စီမံခန့်ခွဲမှု စည်းကမ်း သတ်မှတ်ချက်များ၊ အကျိုးအမြတ် ခွဲဝေခြင်း အစရှိသည်တို့ကို ဆန်းစစ် သုံးသပ်ရန် - ထောက်ခံ အကြံပြုချက်များကို ပေးအပ်ရန်	ရေတို - ကာလလတ်	သစ်တော နည်းဥပဒေများ အဆင့်၌ လိုအပ် နိုင်ပါသည်။
မြေယာ စီမံကိန်းများ ရေးဆွဲခြင်း	- IUCN ၏ TRI စီမံကိန်းနှင့် FAO ၏ ဦးစားပေး စိုက်ပျိုး- ဂေဟစနစ် များအတွင်း ရေရှည် တည်တံ့သည့် စိုက်ပျိုးမြေနှင့် သစ်တော စီမံ အုပ်ချုပ်မှု စီမံကိန်း တို့နှင့် တိုင်ပင် ဆွေးနွေး၍ သင့်လျော်သော	ရေတို - ကာလလတ်	မလိုပါ။

အကြံပြုချက်များ	ဆောင်ရွက်ရန်လုပ်ငန်းစဉ်	ကာလ ^၈	ဥပဒေပြုမှု အပြောင်းအလဲ လို/မလို
	<p>စီမံကိန်း ရေးဆွဲခြင်း လုပ်ထုံး လုပ်နည်းများကို ဖော်ထုတ်သတ်မှတ်ရန်</p> <ul style="list-style-type: none"> - ညှိနှိုင်း ဆွေးနွေးရန် အတွက် FDI DALMS နှင့် GAD မြို့နယ်အဆင့် ရုံးများမှ ပါဝင်၍ ဒေသ အဆင့် အထူး လုပ်ငန်းအဖွဲ့များ ဖွဲ့စည်းရန် - ကောင်းကင် ဂြိုဟ်တုဓာတ်ပုံများ ဝယ်ယူရန် - ဒေသခံများ၊ အရပ်ဖက် လူမှု အဖွဲ့အစည်းများ၊ ဌာနဆိုင်ရာ အဖွဲ့အစည်းများနှင့် ဒေသအဆင့် ဆွေးနွေး ညှိနှိုင်းမှုများ ပြုလုပ်ရန် - ကွင်းဆင်း တိုင်းတာ စာရင်းကောက်ယူခြင်းများ ဆောင်ရွက်ရန် - မြေပုံများနှင့် ဧရိယာ အကြောင်းအရာ ဖော်ပြချက်များ ရေးဆွဲ ပြုစုရန် 		
သစ်တော ကြိုးပိုင်းမြေ အငှားချထားခြင်း ဧရိယာ သတ်မှတ်ချက် ကို တိုးမြှင့်ရန်	- သတ်မှတ်ချက်များ အပေါ် ဆက်စပ်ပတ်သက်သူများနှင့် ဆွေးနွေး ညှိနှိုင်းရန်	ကာလလတ်	သစ်တောဥပဒေ ပြင်ဆင်ချက်
သစ်တော ကြိုးပိုင်းမြေ အငှားချထားခြင်း သက်တမ်း တိုးမြှင့်ရန်	- သက်တမ်းအပေါ် ဆက်စပ်ပတ်သက်သူများနှင့် ဆွေးနွေး ညှိနှိုင်းရန်	ကာလလတ်	ဝန်ကြီးဌာနအဆင့် သို့မဟုတ် ဦးစီး ဌာနအဆင့် ညွှန်ကြားချက် လိုအပ်နိုင်သည်။
အငှားချထားခြင်း တင်ဒါများ ပြင်ဆင်ရန်	- ဧရိယာ နယ်နိမိတ်များကို သတ်မှတ်ရန်	ကာလလတ်	မလိုပါ။

အကြံပြုချက်များ	ဆောင်ရွက်ရန်လုပ်ငန်းစဉ်	ကာလ ^၈	ဥပဒေပြုမှု အပြောင်းအလဲ လို/မလို
	<ul style="list-style-type: none"> - ဧရိယာ အကြောင်းအရာ ဖော်ပြချက်များနှင့် တင်ဒါ စည်းမျဉ်းစည်းကမ်း သတ်မှတ်ချက် များကို ပြင်ဆင်ရန် - ကနဦး တင်ဒါဖြင့် တင်ဒါလုပ်ငန်းစဉ်ကို စတင်ရန် - တင်ဒါ လုပ်ထုံး လုပ်နည်းများကို ပြန်လည် ဆန်းစစ်သုံးသပ်ရန်နှင့် လိုအပ်သလို မွမ်းမံ ပြင်ဆင်ရန် 		
<p>နိုင်ငံအဆင့် ကိန်းဂဏန်း အချက်အလက် အခြေခံတစ်ရပ် တည်ထောင်ရန်</p>	<ul style="list-style-type: none"> - အဓိက စိုက်ခင်း အချက်အလက် လိုအပ်ချက်များ (ဧရိယာ၊ သစ်မျိုး၊ အသက် အတန်းအစားများ၊ မြေနေရာ အတန်းအစားများ၊ ကြီးထွားနှုန်းများ၊ အစရှိသည်) ဖော်ထုတ်သတ်မှတ်ရန် - ဖင်လန်နိုင်ငံအစိုးရက ထောက်ပံ့မည့် နိုင်ငံအဆင့် သစ်တောတိုင်းတာ စာရင်းကောက်ယူခြင်း စီမံကိန်းနှင့် ချိတ်ဆက်ရန် ဖြစ်နိုင်ခြေများကို လေ့လာဆန်းစစ်ရန် - ကိန်းဂဏန်း အချက်အလက် အခြေခံ၏ အသေးစိတ် သတ်မှတ်ချက်များကို ရေးဆွဲ သတ်မှတ်ရန် - ကိန်းဂဏန်း အချက်အလက် ရယူခြင်း လုပ်ငန်းစဉ်များနှင့် အစီအစဉ်များကို ရေးဆွဲရန် (အဝေးမှ စူးစမ်းလေ့လာခြင်း၊ ကွင်းဆင်း စာရင်း 	<p>ကာလလတ် - ရေရှည်</p>	<p>ဌာနဆိုင်ရာ လုပ်ထုံး လုပ်နည်းများ</p>

အကြံပြုချက်များ	ဆောင်ရွက်ရန်လုပ်ငန်းစဉ်	ကာလ ^၈	ဥပဒေပြုမှု အပြောင်းအလဲ လို/မလို
	<p>ကောက်ယူခြင်း၊ ရင်းနှီးမြှုပ်နှံသူ စာရင်း ကောက်ယူခြင်း)</p> <p>- ကိန်းဂဏန်း အချက်အလက်များ စတင် ကောက်ယူရန်</p>		
<p>သုတေသန ပူးပေါင်း ဆောင်ရွက်မှုကို တည်ထောင်ရန်</p>	<p>- အခန်းကဏ္ဍနှင့် ဖွဲ့စည်းတည်ဆောက်ပုံ တို့အပေါ် တိုင်ပင်ဆွေးနွေးခြင်းပြုလုပ်ရန်</p> <p>- ဦးစားပေးအချက်များ သတ်မှတ်ဆုံးဖြတ်ရန် (ဥပမာ - သစ်ပင် အရည်အသွေး မြှင့်တင်ခြင်း၊ ပျိုးပင်ထုတ်လုပ်မှု၊ စိုက်ခင်း ပြုစု ပျိုးထောင်ခြင်း၊ သီးနှံ- သစ်တော ရောနှော စိုက်ပျိုးခြင်း၊ ကြီးထွားမှုနှင့် သစ်ထွက်ပမာဏ၊ အင်းဆက်နှင့် ရောဂါပိုးကျရောက်ခြင်း၊ ခုတ်လှဲ ထုတ်ယူခြင်း နည်းပညာ၊ သစ်အရည်အသွေးနှင့် အသုံးချခြင်း၊ ဈေးကွက်များ၊ အစရှိသည်-)</p> <p>- ဘဏ္ဍာရေး အထောက်အပံ့ရရှိရန် အခွင့်အလမ်းများကို စဉ်းစား သုံးသပ်ရန်</p>	<p>ကာလလတ်</p>	<p>နိုင်ငံပိုင် သုတေသန အဖွဲ့ အစည်းများ၏ အခန်းကဏ္ဍကို ခွင့်ပြုပြဌာန်း ပေးသော ညွှန်ကြားချက်များ</p>

Introduction

1. **Forestry has traditionally been one of Myanmar's most important economic sectors**, generating more than US\$5 billion in recorded export earnings in the period 2010-2018. Total state receipts from taxes and timber sales exceeded US\$490 million in both the 2014/15 and 2015/16 financial years, contributing about 8 percent of total government revenues. With declining harvests after 2016, export earnings dropped to US\$322 million and 5 percent of state revenue in the 2016/17 financial year.⁹
2. **It is estimated that the country will have lost 12 million ha of forest between 1990 and 2020** – the third largest absolute forest loss of all countries during that period. There has also been significant forest degradation, with conversion of closed forest to open forest and from high forest to scrubland. Key drivers of deforestation have been agricultural expansion, excessive and often illegal timber harvesting, woodfuel extraction, and mining.
3. **Forest loss has had far-reaching environmental and economic impacts.** Greenhouse gas emissions from land use change and deforestation are estimated to be Myanmar's single highest sector contribution to overall emissions, and deforestation also threatens Myanmar's unique biodiversity and provision of essential ecosystem services, such as intact watersheds, erosion prevention, and protection against droughts and floods and other disasters.
4. **Apart from its environmental impacts, forest loss has also resulted in a steep decline in the largely natural forest-based timber sector.** The formal annual allowable cut (AAC) has been reduced from 3.6 million m³ in 1990 to 522,000 m³ in the 2019/20 harvest season, and now includes only about 9,000 m³ of teak, Myanmar's premium timber species. This is likely to see a reduction in the number of timber businesses that rely on natural forest timber, but, without alternative supplies, is also expected to result in more illegal logging to supply a growing domestic market.
5. **The Government now aims to restore or reforest about 884,000 ha on Reserved Forest (RF) and Public Protected Forest (PPF) land under its 2016-28 Myanmar Reforestation and Rehabilitation Programme (MRRP).** The bulk of this – about 312,000 ha – will be through Community Forestry (CF), some of which is expected to involve tree planting for commercial use. The programme also includes establishment of around 226,500 ha of commercial plantations, to which the private sector is expected to contribute more than half. Around 29,000 ha (12.9 percent) of MRRP's total plantation target was reported to have been achieved by October 2019.
6. **Under its Nationally Determined Contributions (NDCs) to meet its Paris Agreement commitments on climate,** Myanmar aims to increase the proportion of forest land (RF and PPF) and protected areas (PAs) to cover 40 percent of the country's total land area from the current 30 percent.

⁹ Myanmar Extractive Transparency Initiative (2020)

7. **The overall extent of existing forest plantations is unclear.** Government records indicated a plantation area of 944,000 ha in 2015, but more than half of these are reported to have failed completely due to lack of maintenance and encroachment and will not produce any timber. Although the private sector reports about 264,000 ha of plantations (including rubber and oil palm) on state and private land, close to half the forest land area leased to private investors was not developed and has been returned to the state.
8. **Despite this, Myanmar has certain comparative advantages in rebuilding its forest sector but will need a comprehensive policy reform and an action plan to address a range of challenges.** The country has a long-held reputation in forestry, exemplified as being the home and now the only country to produce highly-valued natural teak, which has been managed sustainably through the Myanmar Selection System; it has large areas of denuded and degraded forest land with good conditions for growing teak and fast-growing species and has relevant expertise in silviculture; and it is close to the world's largest and fastest-growing markets for forest products. However, exploiting these advantages will require a change from the current forest sector paradigm with its reliance on natural forests as a source of timber to one focused on natural forest conservation and, in future, the bulk of timber supplies from plantations.
9. **This change will require a significant increase in the planting rate and assurance of longer-term plantation protection and maintenance. In this regard, the contribution of the private sector has been recognised as crucial** – both in investing on a large scale in plantation establishment and management, and in providing essential market links for forest produce grown by communities. However, greater private sector participation necessitates finding solutions to a number of constraints identified by current and potential investors.
10. **A range of reforms is needed to encourage private sector investment.** These include: (i) identification of sufficiently large areas of suitable land close to potential processing sites or transport infrastructure and planning of land-use allocation; (ii) improving the availability of information on identified areas and on the process of acquiring plantation leases; (iii) streamlining leasing procedures and terms and scope of leases, including possible private management of state plantations; (iv) simplifying regulations on harvest and transport of plantation timber; (v) reviewing the suitability of current fiscal incentives, including tax holidays; (vi) improving information on areas and productivity of established plantations; and (vii) identifying priority research and development needs and delivery mechanisms.

1. Trends affecting Myanmar's forest sector

KEY POINTS:

- Myanmar has lost a quarter of its forest in the last 30 years. This has seriously reduced the capacity of natural forests to continue to support a viable forest industry and export sector.
- Domestic demand for timber products outstrips sustainable timber supplies and is increasingly met from illegal logging and imported processed wood products. Per capita demand is comparatively low and is expected to increase with growing income.
- Woodfuel is the major source of domestic energy, and demand is nearly ten times that for industrial wood.
- Without plantations (or increased timber imports), the gap between legal supply and demand will continue to widen, resulting in increasing pressure on natural forests.
- Neighbouring countries are net timber importers with rising demands, representing future market potential; these are increasingly using fast-growing plantation species and demand evidence of legal and sustainable production.
- Myanmar's formal forest sector employment is low, and its wage levels are the lowest in Southeast Asia - this suggests opportunities for increased employment in the plantation sector and competitive cost advantages.

11. **Several national and regional trends have significance for Myanmar's forest sector and for plantation development in particular.** These include steep reductions in domestic timber availability accompanied by reduced export earnings, while domestic and regional demand for wood products increases. These are important considerations in informing Myanmar's opportunities and challenges when shaping a new plantation-based forest economy.

1.1. Forest Loss

12. **Myanmar has lost 26 percent of its forest cover since 1990 – at an average deforestation rate of 1.2 percent (400,000 ha) per year.** If the 2010-2015 trend (1.7 percent loss - the lowest of the last three decades) continues, Myanmar will have lost between 12 and 13 million ha of forest from 1990 to 2020 (**Error! Reference source not found.** 1). The dominant drivers have been excessive and illegal logging and expansion of agriculture.

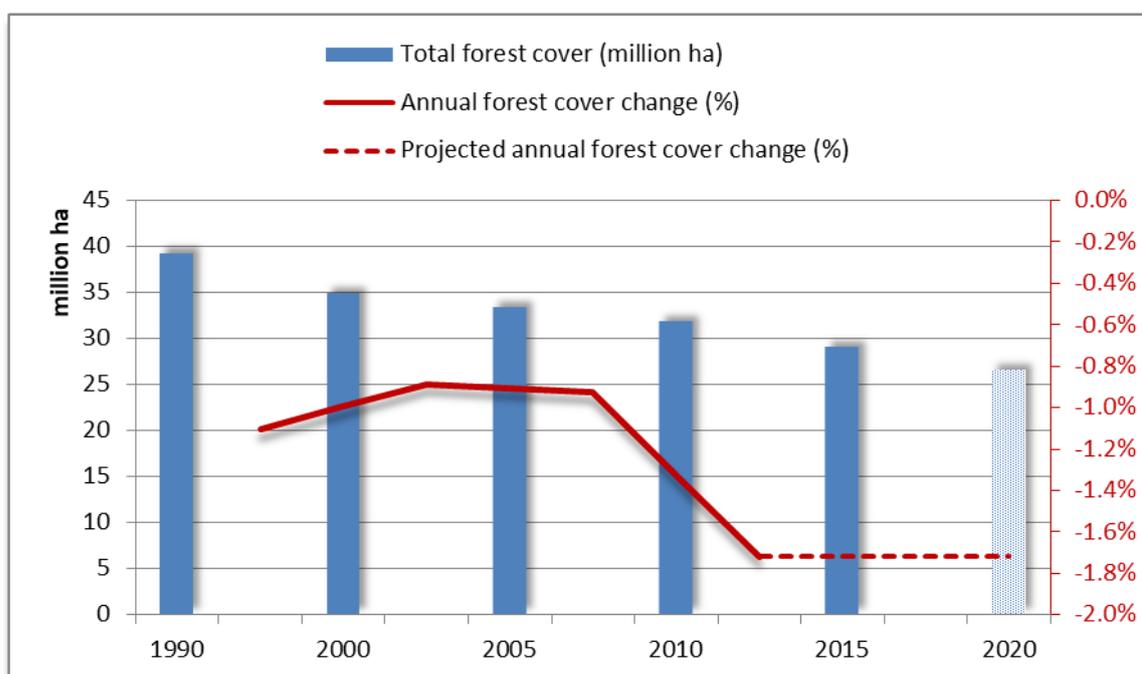


Figure 1: Forest cover loss 1990-2020.

The projection for 2020 is based on continuation of the deforestation rate that occurred over the period 2010-15. (Source: FAO 2016¹⁰)

13. **Between 2002 and 2014, intact forest declined from 18.3 million ha to 16.2 million ha, while degraded forest increased from 25.7 million ha to 26.2 million ha.**¹¹ This demonstrates that land identified in national statistics as forested is not necessarily capable of producing timber, and that forest cover data do not necessarily reflect forest quality.

14. **Myanmar has identified land use change and forest loss as its largest contribution to greenhouse gas emissions.** Forestry features prominently in its NDCs to contribute to global efforts to tackle climate change.¹² The NDCs aim to increase the land classified as RF and PPF from the current 25 percent to 30 percent of total land area, and the area of Protected Areas from 6 percent to 10 percent. This will require gazetting land currently classified as non-forest as FR or PPF. Plantations have an important role to play in these efforts, both through relieving pressure on natural forests and restoring forest cover on degraded areas within the forest estate.

1.2. Reduced legal timber harvests

15. **Annual Allowable Cut (AAC) volumes have been steadily reduced since the early 1990s from 600,000 m³ and 2.48 million m³ respectively for teak and hardwoods.**¹³ Myanmar's prescribed annual allowable cut (AAC) aims to ensure a sustained supply of timber from

¹⁰ FAO (2016) Forest Resource Assessment (FRA) 2015 (<http://www.fao.org/forest-resources-assessment/past-assessments/fra-2015/en/>).

¹¹ Bhagwat et. al. (2017). Losing a jewel—Rapid declines in Myanmar's intact forests from 2002-2014. (<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0176364>).

¹² Myanmar's Intended Nationally-Determined Contribution-INDC (www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Myanmar%20First/Myanmar%27s%20INDC.pdf).

¹³ Springate-Baginski et. al. (2016) Legally and illegally logged out - the status of Myanmar's timber sector and options for reform.

natural forests. It is set by FD separately for teak and other hardwoods. After years of over-harvesting, which resulted in a nationwide moratorium on all timber extraction from natural forests in 2016/17, the current official AAC is now set at about 50,000 m³ for teak and 2.1 million m³ for hardwoods.

16. **Since the 2016/17 moratorium, Myanmar Timber Enterprise’s (MTE) timber extraction plans – which establish actual legal harvest levels – are considerably less than AAC.** For the 2019/20 season these are set at only 9,000 m³ for teak and 514,000 m³ for hardwoods.¹⁴ Half the planned teak harvest will come from plantations established in the 1980s, rather than from natural forests – an indication of natural forests’ current state.

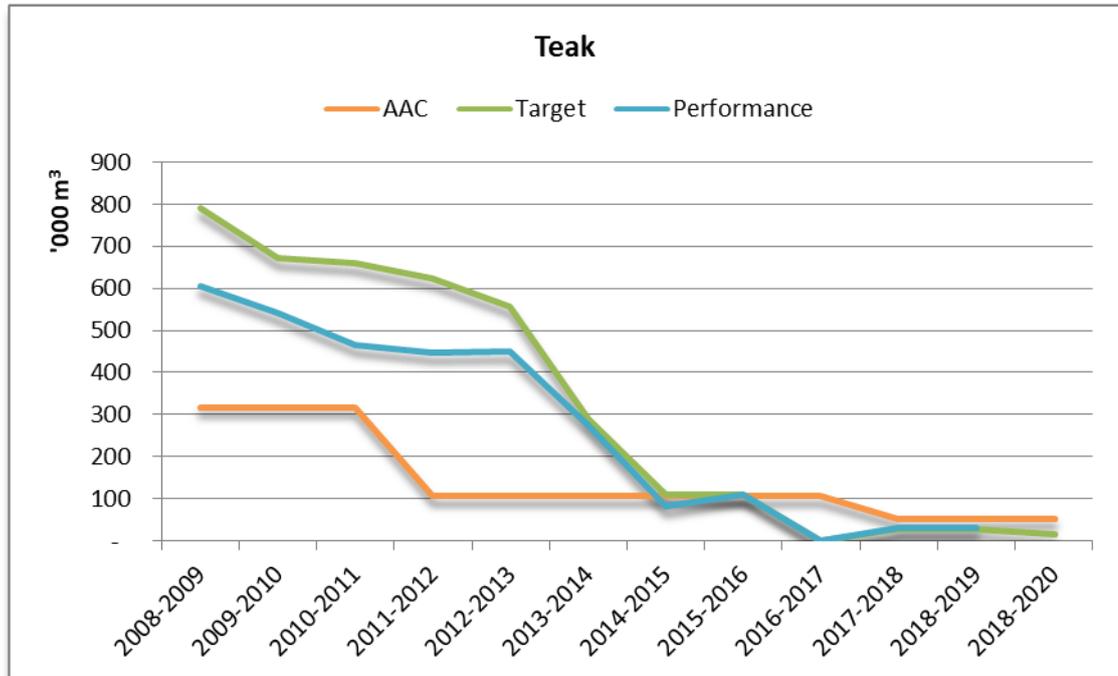


Figure 2 and Figure 3 show the AACs set by FD as well as MTE’s extraction plans and its actual production for teak and hardwood for harvest seasons from 2008/09 to 2019/20.¹⁵ In 2008, the planned teak harvest was 791,000 m³, exceeding the AAC by 471,000 m³. Actual production was about 200,000 m³ less than planned but still 186,000 m³ over the AAC. This planned overcutting was dictated by the revenue targets of the then government as a response to international sanctions. Both AAC and the size of the overcut declined until the 2014 log export ban and, since the 2016 logging moratorium, the planned and actual production has been less than the AAC, dropping to only 26 percent in the 2019/20 harvest season.

¹⁴ Annual Harvesting Plan of Teak and Hardwood in 2019-2020 in accordance with AAC Prescription (www.mte.com.mm/index.php/en/announcements/1289-14-11-2019-3).

¹⁵ FD sets the AAC in numbers of trees. The MTE conversion rate for teak was 1.2 hoppus tons (HT)/tree prior to 2018 and has since been increased to 1.5 HT/tree. The corresponding figures for hardwoods are 1.4 HT/tree and 2 HT/tree. The change is reported to have been made based on more efficient extraction. 1 HT = 1.803 m³.

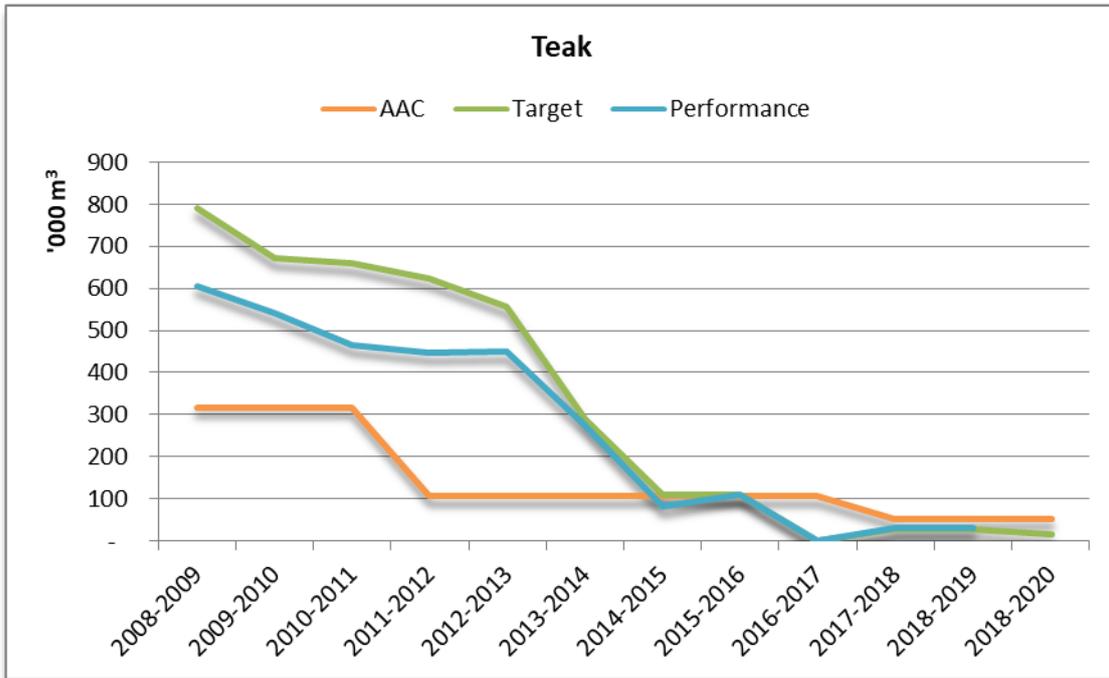


Figure 2: Annual allowable cut (AAC) for teak issued by Forest Department and MTE’s production targets and actual performances; harvest seasons 2008/9-2019/20.

There was no production in 2016 due the logging moratorium. (Source MTE)

17. Similarly, the AAC and extraction levels of hardwoods have declined since 2008/09 and, apart from the 2010/11 and 2011/12 harvest seasons, extraction has been less than the AAC (which, in terms of numbers of trees, has not declined since 2011/12) dropping to 26 percent in 2019/20.

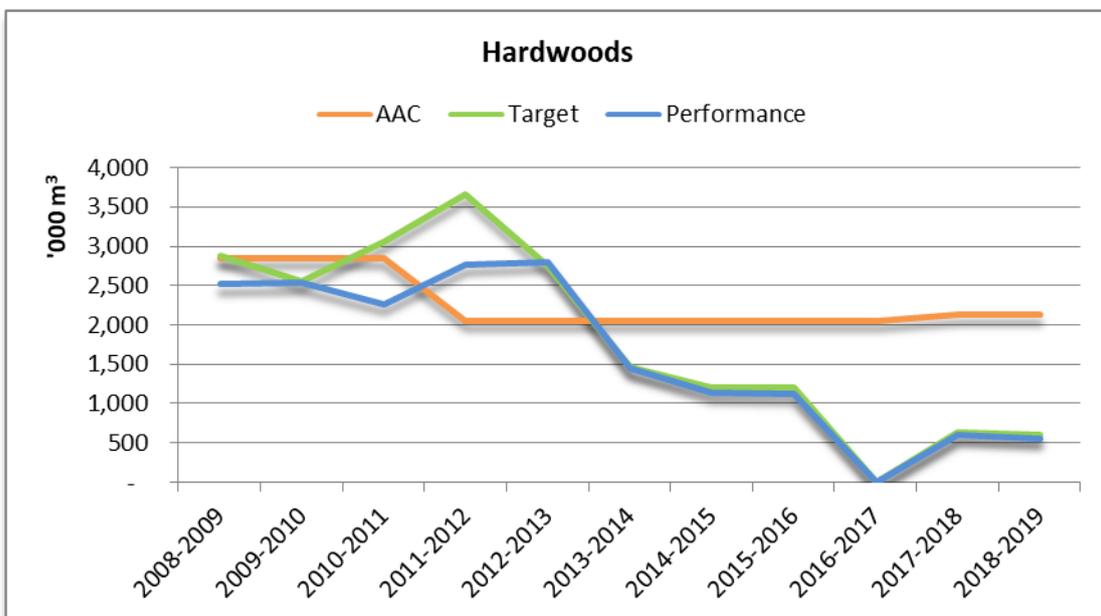


Figure 3: Annual allowable cut (AAC) for hardwoods issued by Forest Department and MTE’s production targets and actual performances; harvest seasons 2008/9-2019/20.

There was no production in 2016 due the logging moratorium. (Source: MTE)

1.3. Increased domestic demand for non-fuel wood

18. **The AAC and MTE’s extraction plans bear little relation to total estimated timber harvests.** Based on FAO data¹⁶, overall non-fuel roundwood production increased from 3.6 million m³ in 2000 to 6.9 million m³ in 2013 – the year before the log export ban was implemented. It then dropped to 4.3 million m³ in 2018. This trend mirrored an increase in exports of logs and other primary timber products (sawnwood, veneer and plywood) from 1.6 million m³ (round-wood equivalent – RWE) in 2000 to about 3.1 million m³ in 2013, followed by a decline to only 670,000 m³ (RWE) in 2018. **This implies a year-on-year increase in total domestic demand for solid wood products from around 2.2 million m³ in 2000 to 3.7 million m³ in 2018** (Figure 4).

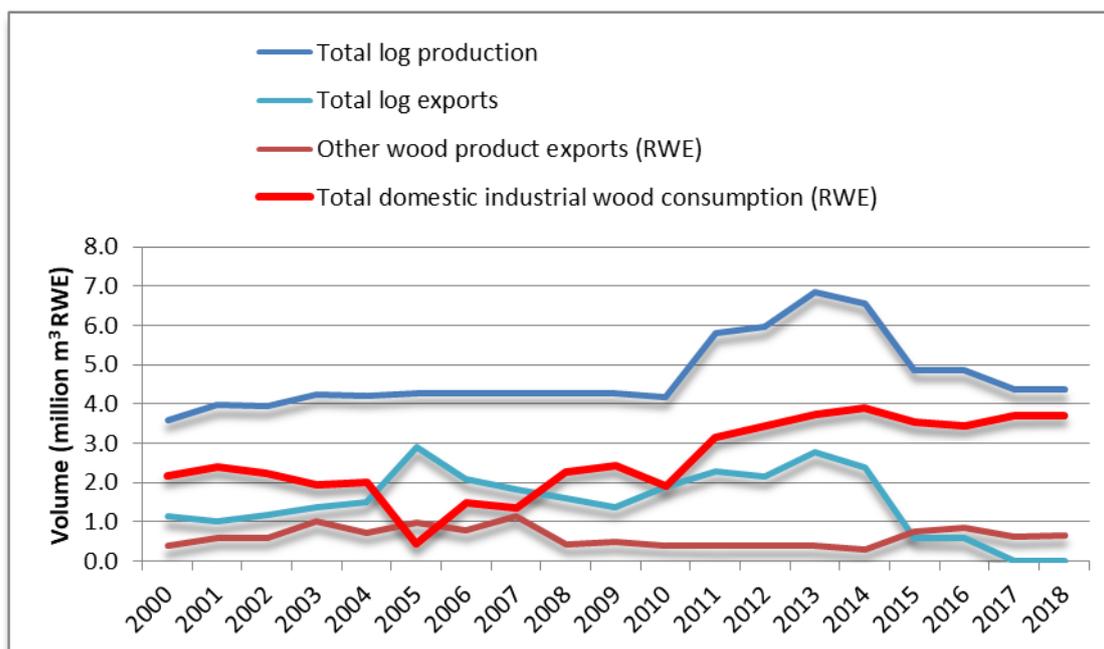


Figure 4: Total log production, log exports and domestic consumption and export of timber products in Myanmar, showing the drop-off of log exports since the 2014, export ban, but a continued increase in apparent domestic consumption. (Round Wood Equivalent – RWE) 2000-2018. (Source: FAO 2018¹⁷)

19. **The vast bulk (3 million m³ RWE; 80%) of timber harvested since 2014 has been processed as sawnwood, for domestic use.** Figure 5 shows the destinations of the timber harvests that have been utilised within Myanmar during the period 2000-2018. In 2018, a total of 4.3 million m³ of roundwood was utilised in the local economy. Of this 310,000 m³ (RWE) were exported as sawnwood, 254,000 m³ as veneer and 108,000 m³ as plywood. The balance was most likely utilised for construction, joinery and furniture, with only around 413,000 m³ RWE destined for plywood domestically for domestic consumption.

¹⁶ FAO Stat - Forestry Production and Trade (<http://www.fao.org/faostat/en/#data/FO>). Data for Myanmar are available up to 2018. Log production data are a combination of FAO estimates and “unofficial data”.

¹⁷ FAO op. cit. The spike in exports and accompanying dip in domestic consumption in 2005 are likely to be due to anomalies in export data statistics.

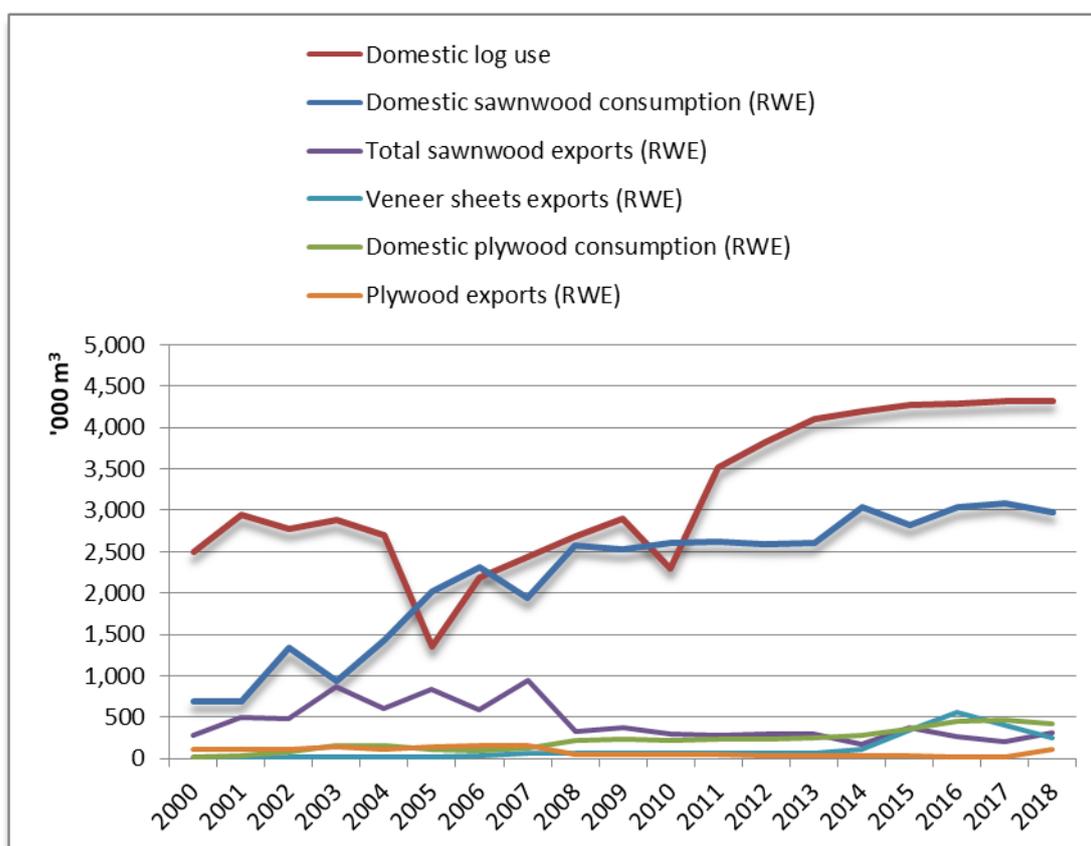


Figure 5: Destination of domestically-used logs In Myanmar 2000-2018
(Calculated from FAO 2018¹⁸).

20. **The total estimated 2018 domestic use of solid wood products equates to a per capita consumption level of only 0.07 m³**, compared with 2006 estimates of 0.1 m³ for Vietnam and 0.3 m³ for Thailand. Although it is likely that wood is being replaced by other building material¹⁹, by 2030, when the population reaches 60 million, Myanmar’s domestic demand for timber products should at least reach Vietnam’s current consumption level, and is likely to exceed 6 million m³, indicating the size of the supply gap that needs to be filled.

21. **The bulk of timber supplies have come from sources other than planned harvests in managed forests.** Figure 6 shows how the gap between apparent total consumption (exports plus domestic use) and legal harvest has widened each year since 2000 – exceeding 3 million m³ in 2018. This implies that timber salvaged from areas cleared for agriculture and other development and informal and illegal harvests have contributed most to meeting timber demand.

¹⁸ FAO op. cit. The spike in exports and accompanying dip in domestic consumption in 2005 are likely to be due to issues with export data statistics.

¹⁹ E.g., the use of pre-cast concrete rather than on-site plywood formwork in construction.

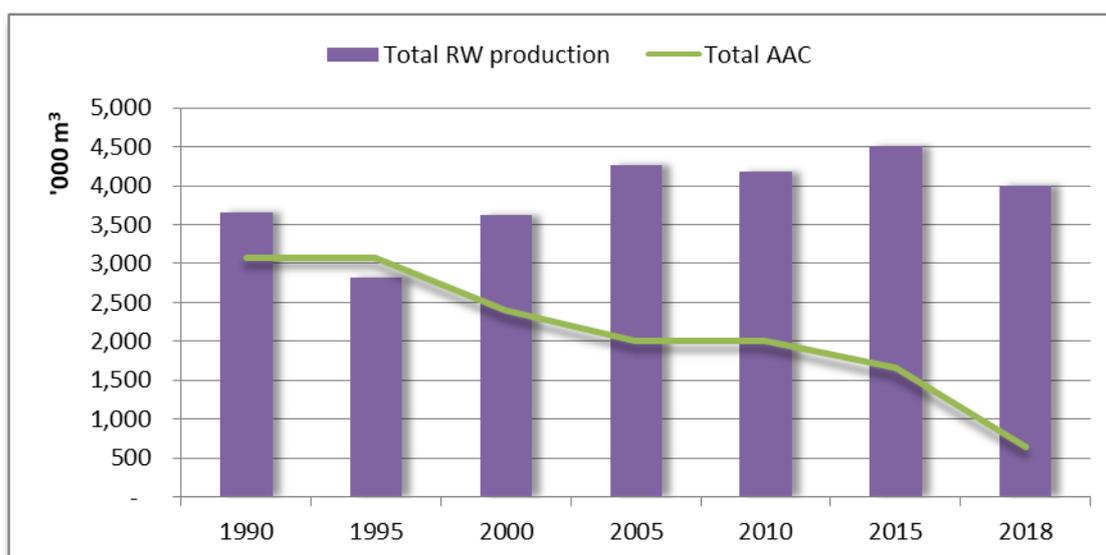


Figure 6: Total estimated roundwood (RW) production compared with annual allowable cut 1990-2018. (Sources: FAO 2018 and Forest Department)

22. **Without creation of new domestic timber resources (or increased timber imports), this will result in a further widening of the gap between legal supply and demand and greater pressure on natural forests.** Annual production from existing plantations is unlikely to exceed 2 million m³ and this level will not be realised for at least 20 years. This indicates a need for increased investment in shorter rotation species.

1.4. Demand for woodfuel

23. **Wood is Myanmar's main source of energy, representing 75 percent of the country's total final energy consumption.** Total annual woodfuel demand, including industrial and household firewood, charcoal, and domestic use and exports, is estimated to be around 36.3 million m³ – nine times the estimated demand for industrial wood and 20 times the allowable extraction level of 1 million tons (1.80 million m³). These estimates are based on an assumed levelling off of total woodfuel use, and hence a decline in per capita consumption from 0.79 m³ to 0.71 m³ since 2005 (Figure 7). This change is plausible as the percentage of households relying on wood as their primary source of fuel has dropped from 70 percent of the population to 60 percent driven mainly by changes in urban areas, where woodfuel use has declined from 44 percent to 17 percent.²⁰

²⁰ World Bank. 2020. Myanmar Woodfuels Sector Assessment.

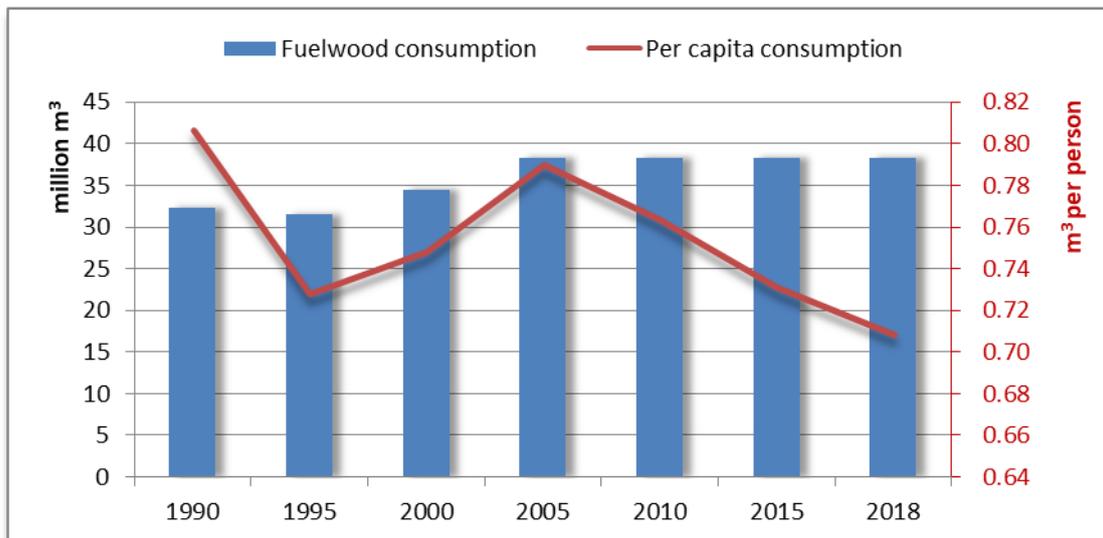


Figure 7: Estimated woodfuel use and per capita consumption. Note that the consumption estimate has been constant since 2005, which is unlikely to reflect the real situation.

(Sources: FAOStat 2019 and www.worldometers.info/world-population/myanmar-population)

24. **While some woodfuel is sourced from trees on farms and also (for industrial use) from over-mature rubber plantations, the bulk is thought to come from large-scale overharvest volumes in natural forests, leading to their further degradation.** The Government has sought to address woodfuel demand by establishing village plantations (primarily of *Eucalyptus camaldulensis* and *Eucalyptus grandis*) but these efforts have had limited success. A recent World Bank study²¹ suggests that plantations dedicated to woodfuel production are unlikely to be feasible and that, in the long-term, plantations aimed at producing higher value products are more likely to provide an economically viable and sustainable supply of firewood as a by-product.

25. **Whether by-products from plantations will be a viable solutions will depend on establishing sufficient areas of plantation,** and also the proportion aimed at producing solid wood products (such as sawnwood and veneer) which generate waste, rather than bulk fibre (such as wood chips for paper and panels), which will use most of harvested volume. Even if current woodfuel consumption were reduced to half (to 18 million m³), if gross average plantation production were 20 m³/ha/year, half of which was aimed at solid wood production and half of that were waste in the forest or at processing, this would require a total of 1.8 million ha of industrial plantations.

1.5. Timber product export earnings have reduced drastically

26. Figure 8 shows trends in value of Myanmar's wood product exports to China and India, by far its largest markets.²² The marked differences between direct data (exports recorded by Myanmar), and mirror data (imports recorded by its trade partners) prior to 2017

²¹ Ibid.

²² Trade data flows are derived from "Trade Map", published by the International Trade Centre, and based mainly on UN COMTRADE statistics (<https://www.trademap.org/Index.aspx>). The accuracy of the data may have limitations.

reflect the scale of the illegal cross-border trade with China during the period and a probable under-reporting of the value of exports to India; of note:

- Mirror data show the marked decline in the log trade with India, which has plunged from US\$735 million in 2013 to a little over US\$1 million in 2018 as the log export ban took effect.
- The value of declared imports by China, which before 2017 largely comprised illegal cross-border exports of rosewood (and not reflected in direct export data), has dropped from US\$680 million to US\$49 million since China took action in 2015 to cut off that trade.
- The apparent gap between China’s imports and Myanmar’s declared exports narrowed from nearly US\$640 million in 2014 to US\$30 million in 2017.

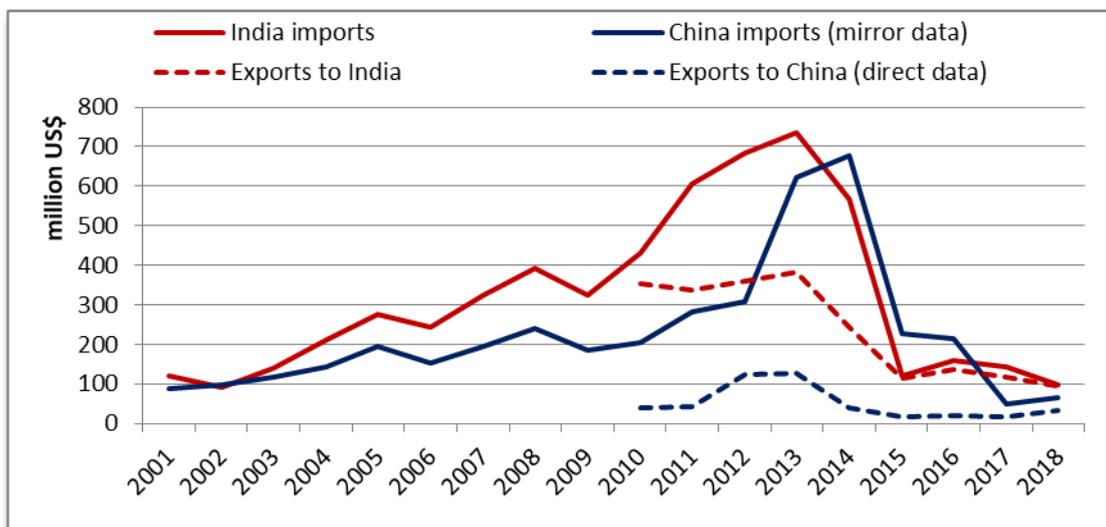


Figure 8: Value of Myanmar wood product exports 2001-18 to India and China
 (Source: Trade Map, based on UN COMTRADE statistics). The large gaps between declared Myanmar’s exports and trading partners’ imports prior to 2017 suggest timber smuggling or under-declaration of exports.

27. **The value of exports to Myanmar’s next two largest destinations, Thailand and the European Union (EU)-28, are only around 10 percent of those of its exports to India and China.** Both direct and mirror data also show a significant drop-off in trade with Thailand and an uptick in trade with the EU (Figure 9), possibly reflecting the end of EU sanctions and hence the need to divert EU-bound trade by means of intermediate processing in third countries. Exports to the EU comprise mainly builders’ joinery and sawnwood, while Thailand’s pre-2014 trade was primarily in logs, but now comprises mainly sawnwood.

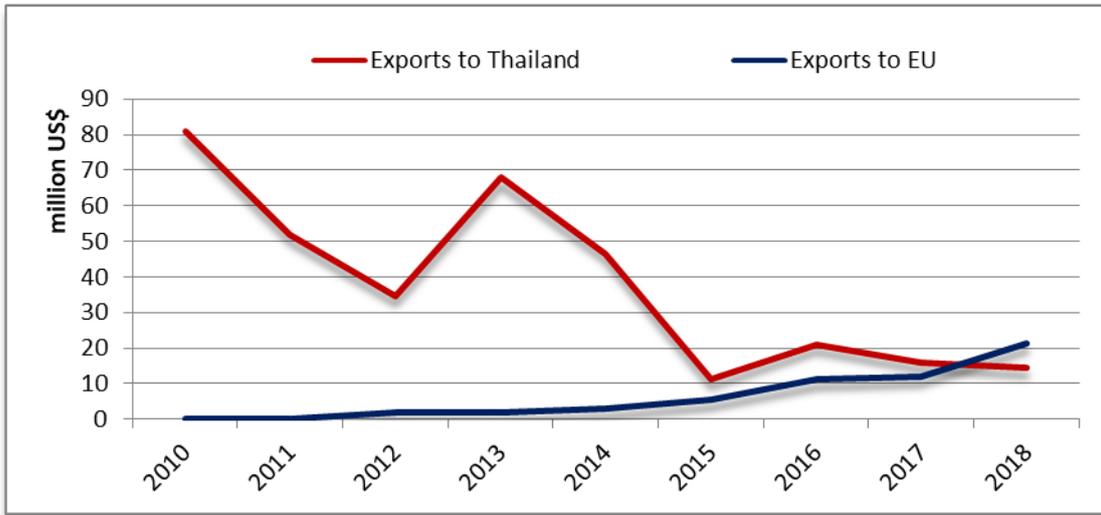


Figure 9: Value of Myanmar's wood product exports 2010-18 to Thailand and the EU-28. (Source: Trade Map, based on UN COMTRADE statistics)

28. The total value of declared wood product exports rose from nearly US\$600 million to US\$1.9 billion in 2012, two years before the log export ban came into effect; then declined to US\$408 million in 2014. Since then the decline in log exports has been substituted to a degree by growth in exports of primary processed products based on natural teak and hardwoods – mainly builders' joinery, sawnwood, plywood and veneer – but their total value had reached only US\$218 million by 2017 and has since declined. Figure 10 shows the changes in value of Myanmar's main wood product exports from 2010 to 2018.

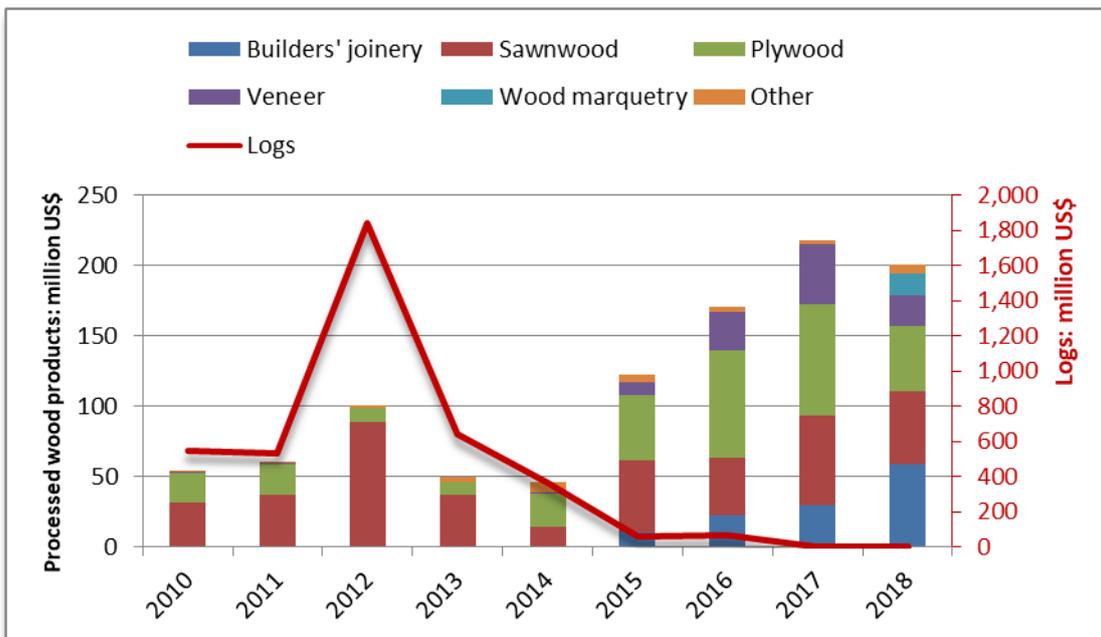


Figure 10: Value of Myanmar's main wood product exports 2010 -2018 (Source: Trade Map, based on UN COMTRADE statistics)

1.6. Increased EU imports of Myanmar timber products since sanctions ended

29. EU legislation requiring timber importers to exercise due diligence with regard to legality of the products they place on the market (the EU Timber Regulation – EUTR) became effective in 2013. This has seen increased scrutiny of imports of Myanmar teak since 2016

when several Member States started to take enforcement action against importers for failing to implement adequate checks on their supplies. National competent authorities have expressed the view “...that it continues to be impossible to come to a negligible risk of illegally harvested timber or derived products being placed on the EU market [for] timber harvested in MM”, and that “...there are currently no other cases of countries with a significant trade volume into the EU, where the deficiencies in the national systems are as clear as in MM”.²³

30. Despite this, the value of timber product imports (almost exclusively teak sawnwood and builders’ joinery) has shown an increasing trend since sanctions ended (Figure 11). This trend may reflect a decrease of the proportion of trade in Myanmar teak routed via third countries (such as Thailand – see Figure 9), which was no longer necessary once sanctions ended. In 2018, Italy and Germany were the main export destinations comprising 54 percent and 34 percent of total import value respectively. However, late 2019 data show that imports into Germany have dropped to close to zero while Italy’s imports have increased now accounting for 60 percent of the total, and imports to other non-traditional timber importing Member States were increasing – suggesting attempts to circumvent EUTR enforcement in the more diligent countries.²⁴

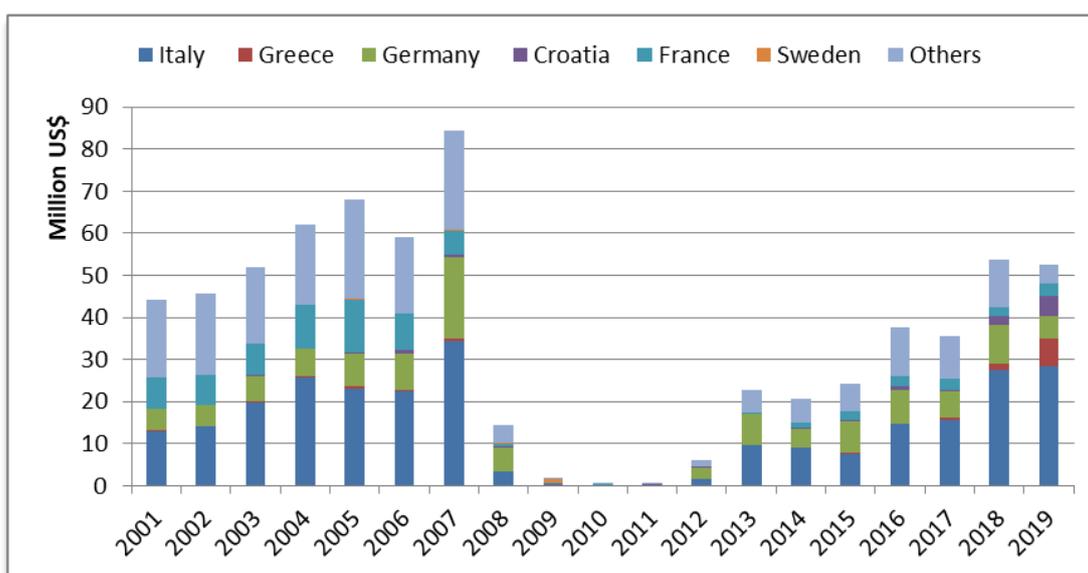


Figure 11; Value of timber product imports by the EU-28, 2001-19

(Source: Trade Map)

1.7. Increased imports of value-added forest products

31. **Unless a supply of suitable raw material is created through establishment of fast-growing species, the dependence on imports for value-added forest products will increase.** Myanmar’s lack of value-added processing and the past concentration of its

²³ Summary Record, FLEGT/EUTR Expert Group Meeting, 14 February 2019 (<http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupMeetingDoc&docid=30548>). These conclusions remained valid at the time of 25th FLEGT/EUTR Expert Group Meeting, 12 September 2019.

²⁴ Norman, Marigold (2020). How has the EU enforced the common position on teak imports from Myanmar? (www.forest-trends.org/publications/how-has-the-eu-enforced-the-common-position-on-teak-imports-from-myanmar/).

forest sector on primary production (i.e., logs prior to 2014, and sawnwood, builders' joinery and veneer since) mean that there is a high reliance on imports for processed forest products. Rising demand, accompanying the country's economic growth, has seen significant increases in domestic consumption. This trend is likely to continue as Myanmar's economy catches up with those of its neighbours.

32. **Consumption of composite wood-based panels, which is exclusively supplied by imports, has risen sharply since 2015, with total value reaching US\$15 million in 2016.** Figure 12 and Figure 13 show the consumption, value, and sources of imports of composite wood-based panels (particle board, oriented strand-board (OSB), hardboard and medium-density fibreboard). China is by far the largest supplier, with 70 percent by value. Per capita consumption of these products is only 0.0008 m³ per person, compared to Thailand at 0.0285 m³, Indonesia at 0.0021 m³, and Vietnam at 0.0128 m³ per person, suggesting that demand for these products will increase further as national income rises.

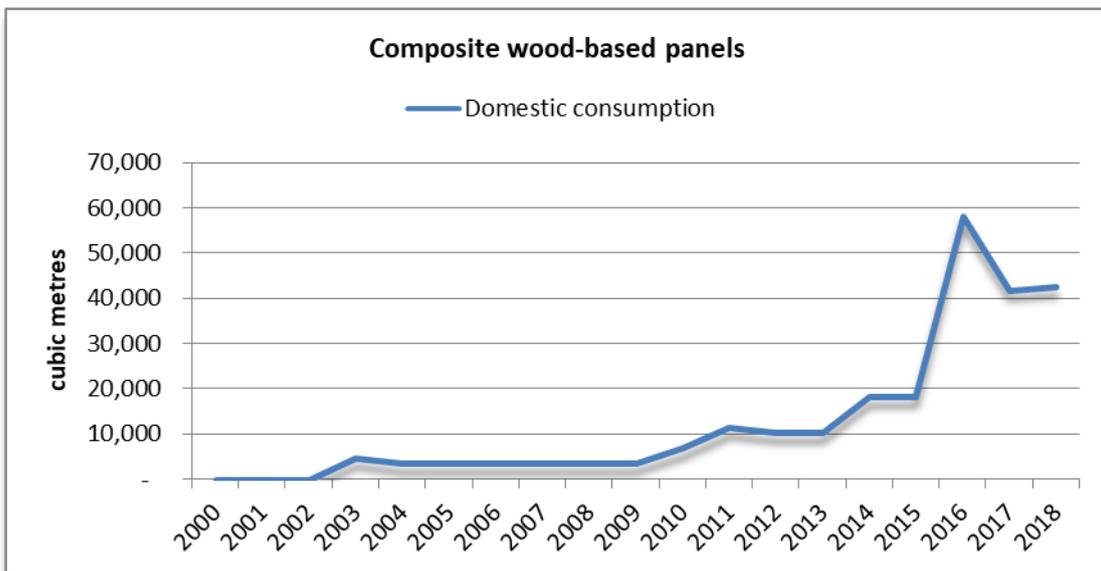


Figure 12: Myanmar's consumption of composite wood-based panels
(Derived from FAOStat 2019)

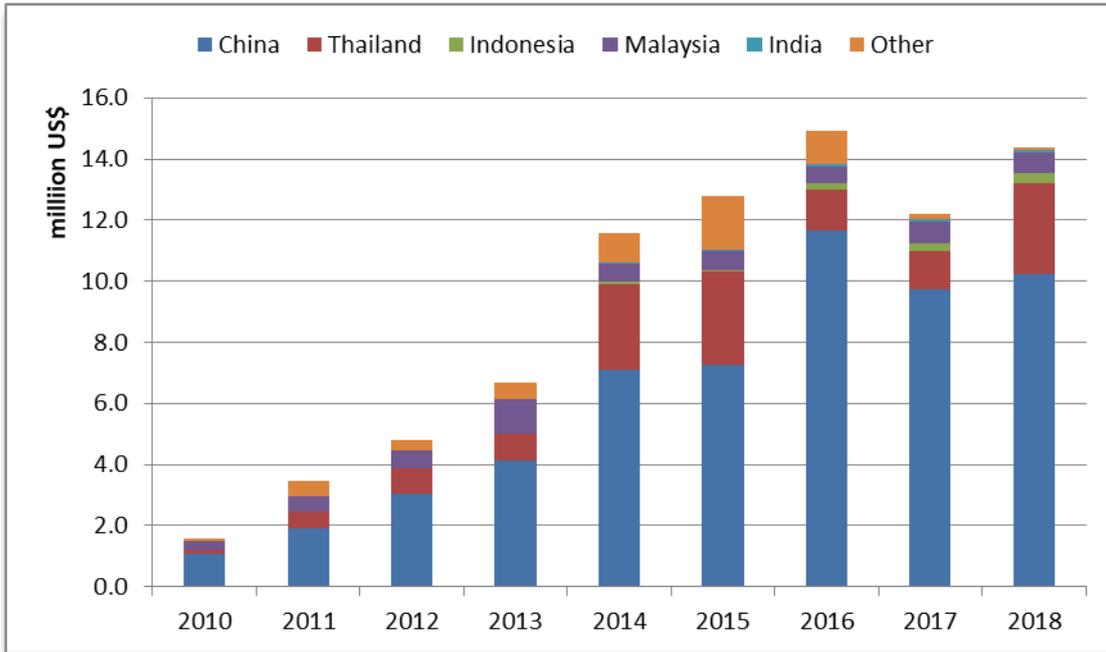


Figure 13: Value and sources of Myanmar's imports of composite wood-based panels (particle board and fibreboard) 2010-18.
(Source: Trade Map)

33. **Similarly, domestic production of plywood has not matched increased demand.** The value of imports rose from only US\$426,000 in 2001 to US\$32.3 million in 2017, although since dropping to US\$28.2 million in 2019 (Figure 14), and their volume increasing from 3.6 percent of domestic consumption in 2010 to 42.6 percent in 2018 (Figure 15). Per capita consumption of plywood has risen from 0.0002 m³ in 2000 to 0.0033 m³ in 2018. This compares with current per capita consumption of plywood of 0.0073 m³ in Thailand, and 0.0049 m³ in both Indonesia and Vietnam.

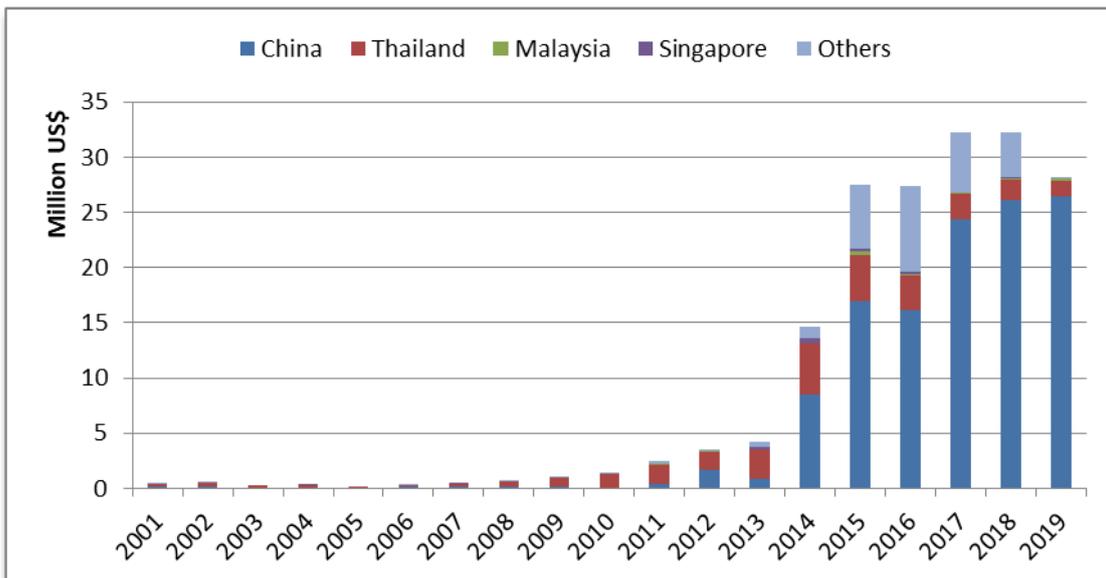


Figure 14: Value and sources of Myanmar's plywood imports 2001-18
(Source: Trade Map)

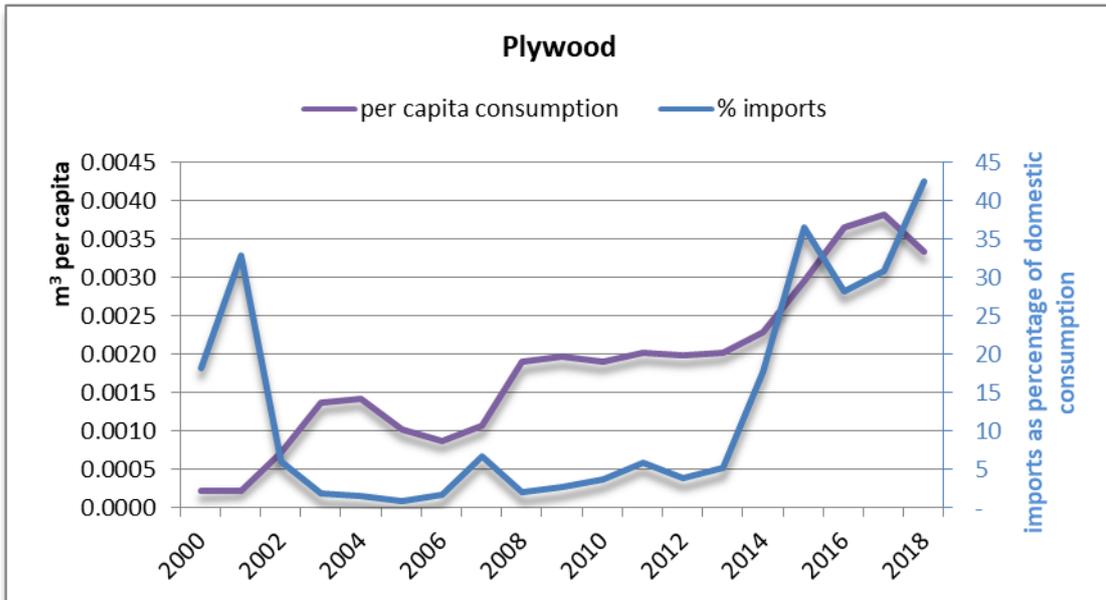


Figure 15: Myanmar's consumption plywood per capita and percentage imported (Source FAOStat 2019)

34. Myanmar's domestic paper industry – largely reliant on imported pulp and recovered fibre – produces only 100,000 metric tons per year, while consumption has risen to between 600,000 and 700,000 metric tons – about 12.9 kg per capita. This is very low compared to other countries in the region. By contrast, Thailand consumes about 68 kg per capita, Vietnam 52 kg, and Indonesia 33 kg. China and Indonesia are the main sources of Myanmar's imports of paper products, accounting for 29 and 27 percent respectively. Figure 16 and Figure 17 show the trend in consumptions and import of paper products.

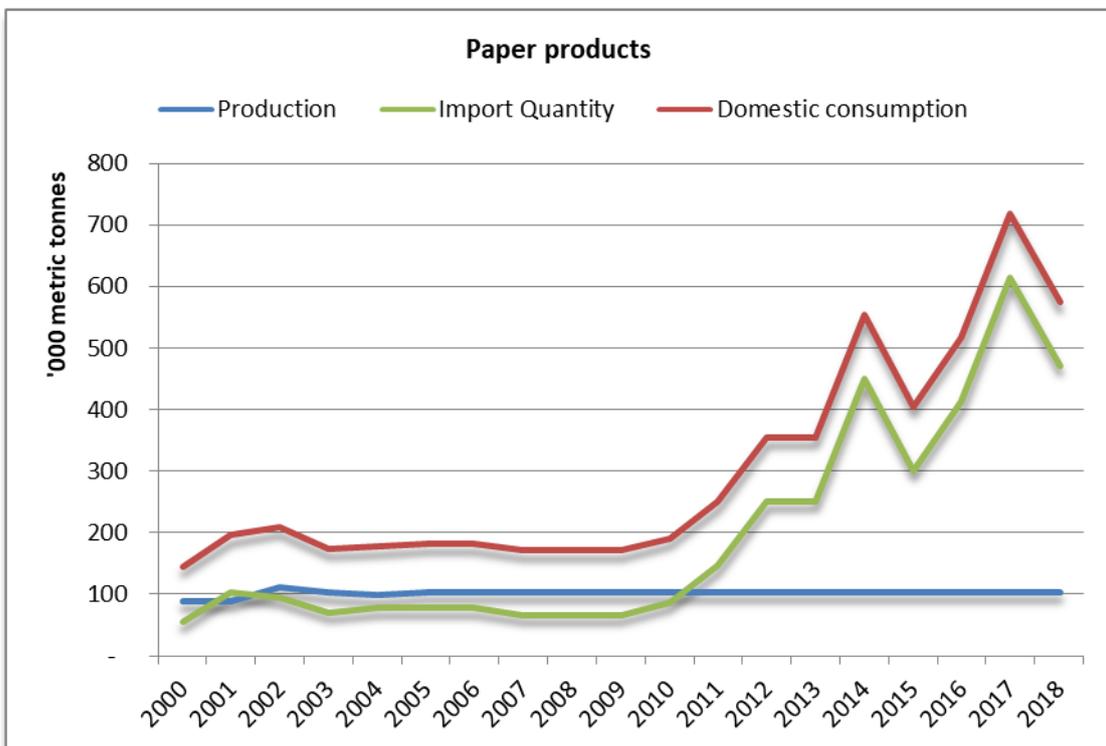


Figure 16: Myanmar's production, imports and domestic consumption of paper products 2000-18 (Source: FAOStat 2019)

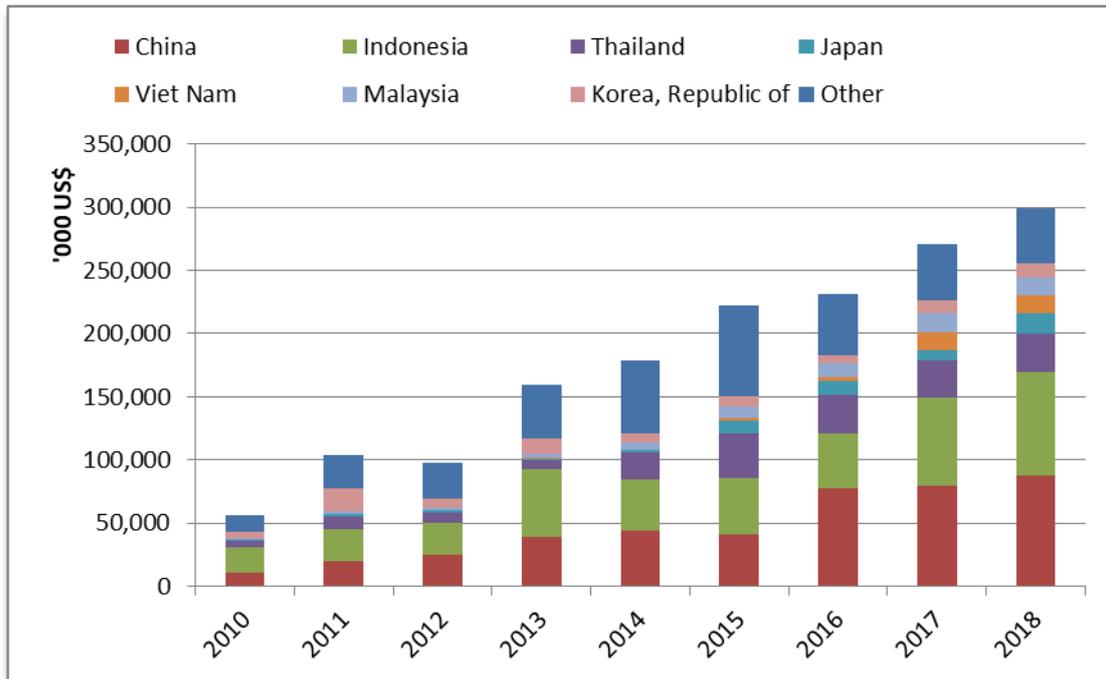


Figure 17: Values and sources of Myanmar's paper product imports, 2010-18 (Source: Trade Map)

1.8. Growing regional demand for timber products:

35. Myanmar's immediate neighbours are net timber importers, and their demand is expected to grow, both to supply their domestic markets and their export trade.

36. **Chinese imports of wood products – largely unprocessed or semi-processed – have risen on average 24 percent per year over the last decade** (Figure 18), a trend that is expected to continue, despite a recent slowing of the country's economy. Imports of logs, sawnwood, wood chips, and pulp are projected to reach US\$260 million m³ by 2027 (Figure 19). About 50 percent of imports by RWE volume are destined for processed value-added exports. Myanmar's current wood processing capacity for wood from short rotation plantations would only be able to supply logs to contribute to this demand, and chips appear to be the only short-term prospect.

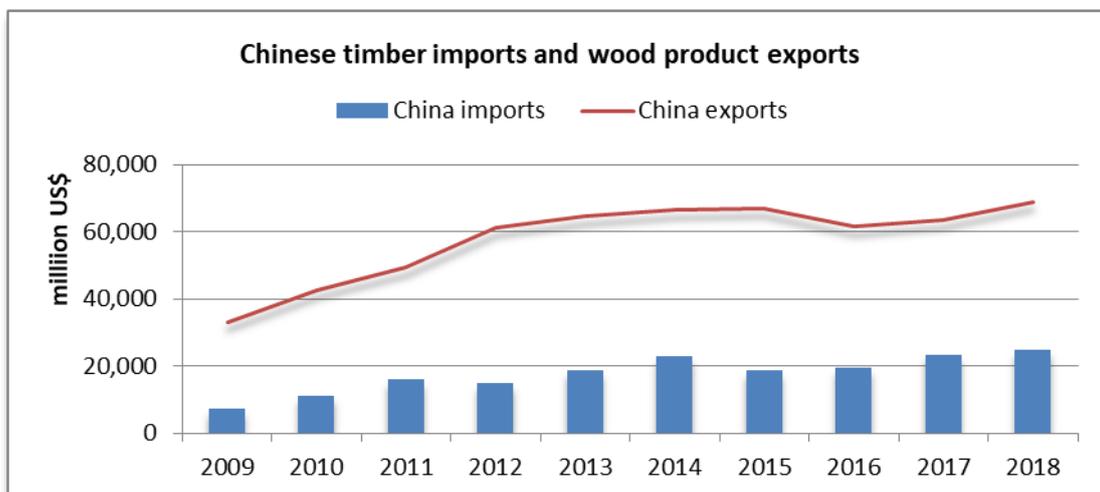
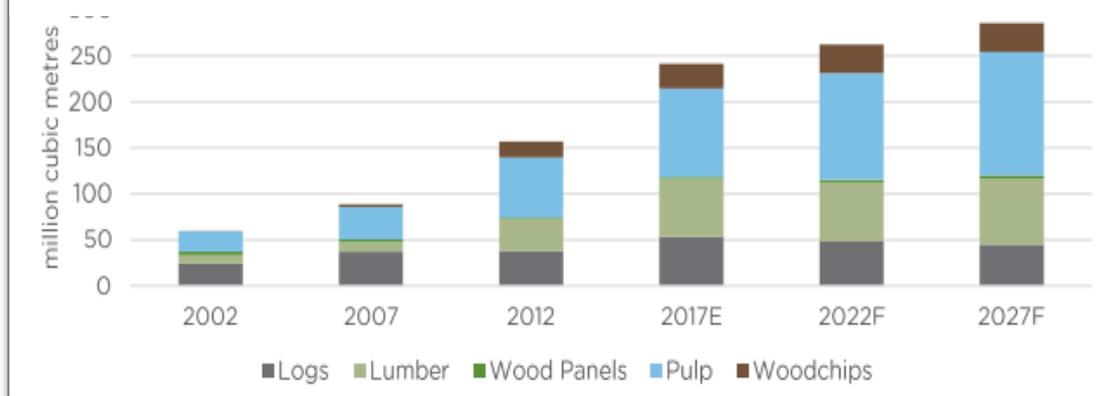


Figure 18: China's global imports and exports of timber products 2009-18 (Source: Trade Map)

Figure 19: Projection of China's imports of wood products to 2027
(Source New Forests, quoting RISI (2017))



37. Other countries in the region show similar import patterns, with Vietnam increasing imports but also sourcing a greater proportion of its raw material from its own fast-growing domestic plantations (see 2.2), which supply a burgeoning furniture and chip export trade (Figure 20). Thailand's imports have been relatively flat with a slightly increasing trend in exports (mainly rubber-wood sawnwood to China); while India's imports are flat to declining and remain worth more than its exports, indicating that the bulk of derived products are destined for domestic consumption (suggesting comparatively low exposure to international markets and, hence, demands for legally and sustainably-produced products).

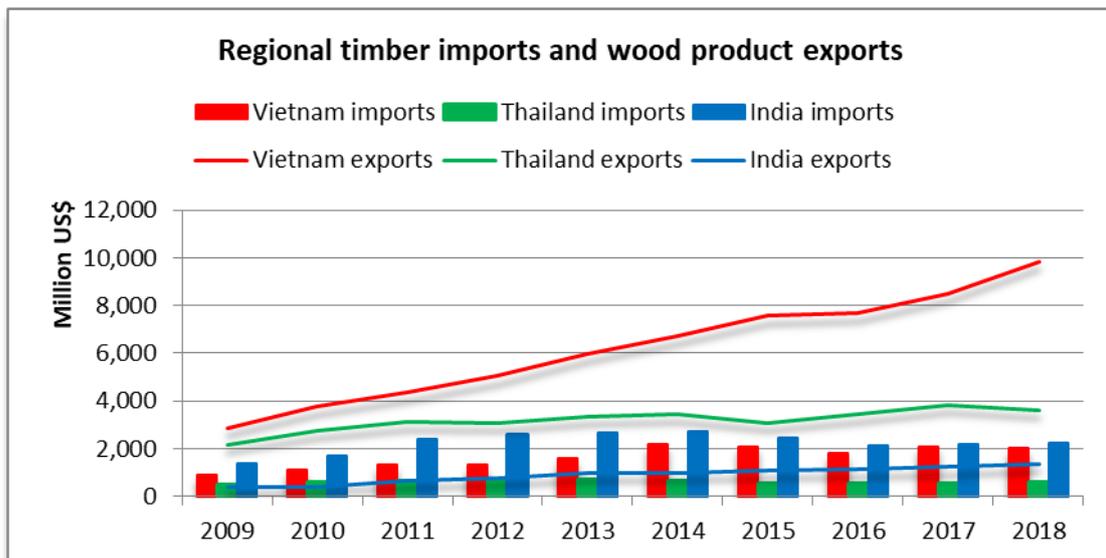


Figure 20: Trends in key regional timber producing and consuming countries
(Source: Trade Map)

38. Since its 2014 log export ban and reduced annual allowable cut since 2016, Myanmar has become a minor supplier to these markets, and its share is expected to decline further as legal timber supplies from natural forest become increasingly restricted. The value of primary wood product exports (logs, sawnwood, veneer, and plywood) from other Association of South East Asian Nations (ASEAN) countries reached US\$14.4 billion in 2018, doubling from US\$7 billion in 2009, with Indonesia's share accounting for 31 percent,

Malaysia 25 percent, and Vietnam 22 percent. Furniture exports from these countries increased in value from US\$5.2 billion in 2009 to US\$8.2 billion in 2018. Vietnam has dominated this trend with its market share rising from 33 percent to 56 percent. The value of Myanmar's wooden furniture exports reached nearly US\$10 million in 2012 but had declined to only US\$950,000 by 2018.

39. **Myanmar's share of the ASEAN region's US\$11 billion pulp and paper exports has also been negligible**, reaching only 0.6 percent of the total value in 2014. This trade is dominated by Indonesia, which accounted for 64 percent of the total in 2018; its raw material supplies were initially mixed tropical hardwoods derived from natural forest conversion, but are now primarily based on fast-growing *Acacia* and *Eucalyptus* plantations (See 02).

40. **Myanmar's future participation in regional and wider global markets will depend on its ability to produce legal and sustainable supplies** that importing countries demand and its ability to access market segments in which it can be competitive. An important consideration in this regard will be the need to meet increasingly strict requirements in demonstrating legal production. As noted above, EU legislation requires importers to implement due diligence to ensure the legality of timber products they place on the market. Other consuming markets, including the United States, Japan, Korea, and Australia also have legislation that prohibits importation of illegally-produced timber products; Thailand and Vietnam are entering Forest Law Enforcement Governance and Trade (FLEGT) Voluntary Partnership Agreements (VPAs) with the EU, which will require verification of the legal production of their raw material supplies, including imports; and China's recently revised Forest Law includes provisions prohibiting trading illegal timber.²⁵

1.9. Employment in the forest sector

41. **In 2011, an estimated 32,000 were employed in the sector, comprising only 0.1 percent of the country's labour force.** This is comparable with 0.5 percent in Vietnam and 0.6 percent in Thailand – both countries which have developed secondary wood product industries based largely on plantations²⁶ (Figure 21). In 2010 (the most recent year for which comparable data are available), forest sector employment in Myanmar was equivalent to just 163 people per 10,000 ha of production forest, the lowest in ASEAN, compared to 8,896 people in Thailand and 3,829 in Vietnam.²⁷ Myanmar's low employment in the sector reflects the minimal value-added processing of timber during the period, but estimates probably largely exclude the informal sector, which accounts for the bulk of timber processed and consumed domestically.

42. **These data indicate the potential for generating increased formal rural employment from investment in plantations and associated downstream processing.** As a rough rule of thumb, plantations with associated processing generate a job for each 3 ha of

²⁵ <https://news.bloombergenvironment.com/environment-and-energy/latest-china-forest-law-adds-prohibition-on-illegal-timber>. It is not clear how these new provisions in the law affect imported timber.

²⁶ FAO (2014). Contribution of the Forestry Sector to National Economies, 1990-2011. FAO Forest Finance Working Paper, FSFM/ACC/09 (<http://www.fao.org/3/a-i4248e.pdf>).

²⁷ Production forest data from FAO (2016), Forest Resource Assessment 2015.

plantation. This suggests that MRRP commercial plantation targets have the potential to create about 75,000 new jobs – mainly in poorer rural areas.

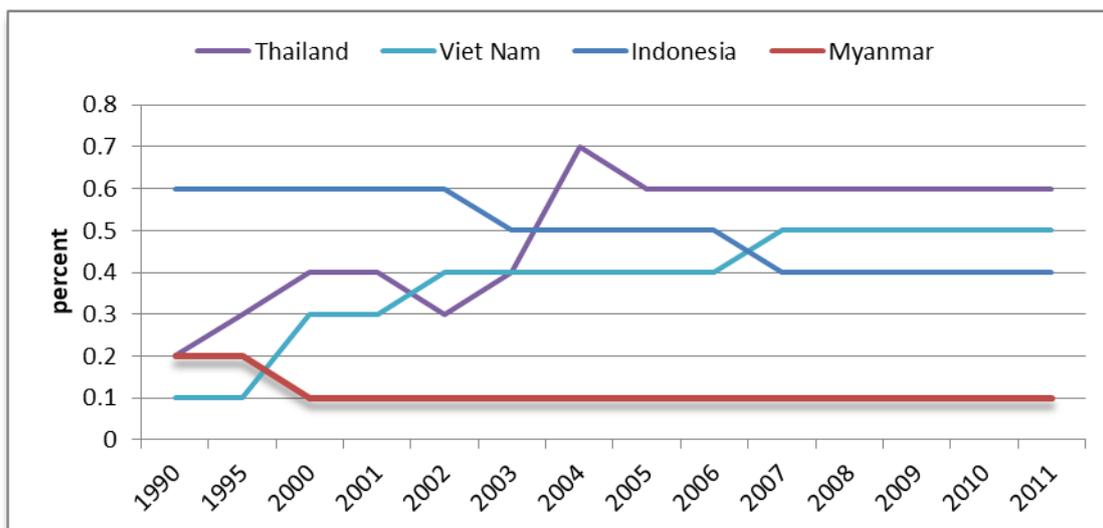


Figure 21: Employment in the forest sector for South East Asian countries, 1990-2011
(Source: FAO Forest Finance Working Paper FFSM/ACC/09)

43. **Labour costs in Myanmar are the lowest in ASEAN** as indicated by the minimum wages shown in Figure 22. This should give the country a competitive advantage in labour intensive plantation establishment.

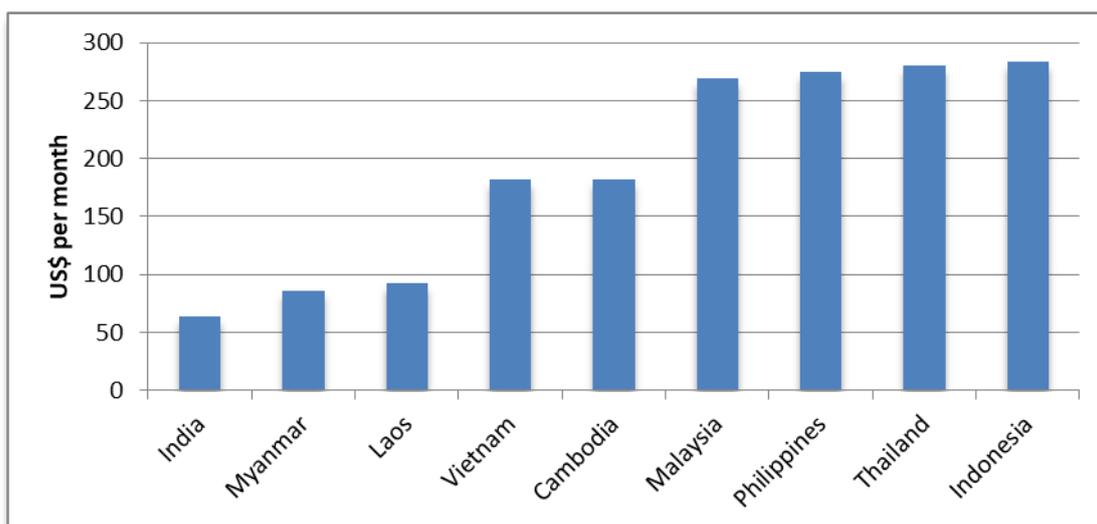


Figure 22: Minimum wage rates in ASEAN countries and India
(Source: <https://tradingeconomics.com/country-list/minimum-wages?continent=asia>)²⁹.

1.10. The impact of the coronavirus pandemic on plantation investment

44. **The outbreak of the global corona virus COVID-19 pandemic in early 2020 and Myanmar’s responses are likely to have impacts on Myanmar’s forest sector; however, their severity and duration are difficult to predict.** The domestic lockdown and those in

²⁸ Local currencies converted to US\$ using mid-January exchange rates provided by oanda.com. Daily rates converted to monthly rates using 26 work days per month.

²⁹ Local currencies converted to US\$ using mid-January exchange rates provided by oanda.com. Daily rates converted to monthly rates using 26 work days per month.

the country's main trade partners are predicted to slow the country's economic growth to around 2.3 percent in the current financial year (ending 30 September 2020), followed by a recovery to over 6.4% in 2020/21. In terms of Myanmar's domestic economy, impacts are likely to be reflected in reduced demand, unemployment and migration of urban workers to rural areas (including returned overseas workers and loss of income from their remittances), and a realignment of the government budget priorities.³⁰ However, any dampening of domestic demand for forest products is not expected to have immediate impacts on the plantation sector, which contributes little to current supplies.

45. **Thus, investors' appetite for plantation establishment will depend on the availability of finance and their views of longer-term demand for forest products.** Unemployment in the formal sector could see an increase in illegal logging, which may be exacerbated if government enforcement capacity is reduced through realignment of state budgets to higher priority sectors.³¹ An additional factor may be government's actions to stimulate the economy, which may hasten regulatory reform in general, including addressing some of the bottlenecks which currently restrict plantation investment. Prompt attention to implementing policy reforms might increase incentives for investment and, given the potential employment that could be generated by plantation establishment, Government's consideration of such reforms should be a high priority. However, relaxing law enforcement may also create openings for increased illegal forest activities and land grabbing.

46. **Foreign investment in plantations will continue to depend on investors' views of Myanmar's attractiveness, related to ease of doing business, perception of risk, and prognoses of future demand for forest products.** With or without COVID-19, a significant scaling up of investments in timber plantations will depend mainly on attracting foreign finance. For plantation investments in general, while the recession may cause some contraction in availability of short to medium-term finance, the attractiveness of longer-term investment in the sector is expected to continue. While global short-term demand for forest products has been dampened³², the outlook remains favourable, with increasing demand for sustainable products and declining supplies available from natural forests. For Myanmar in particular, investors' decisions are likely to be formed by their perceptions of political stability, governance quality, and ease of doing business. Although how politics and broader governance will develop remains unclear, the crisis itself may provide impetus to speed up the reforms needed to make investment in the sector more attractive.

³⁰ The Government's COVID-19 Economic Relief Plan ("CERP") includes reallocation of 10% of the 2019-20 of most departmental budgets, including that of MONREC (<https://www.mmtimes.com/news/govt-ministries-allocate-10pc-budgets-covid-19-fund.html>).

³¹ There is some evidence that illegal logging has continued since the start of the COVID-19 outbreak, e.g.: <https://www.aseantoday.com/2020/05/myanmars-illegal-timber-trade-continues-despite-covid-19/> <https://www.mmtimes.com/news/myanmar-arrests-more-illegal-timber-traders-during-covid-19.html> <https://elevenmyanmar.com/news/over-1400-tons-of-illegal-timber-seized-in-mandalay-amid-covid-19-outbreak>.

³² <https://www.atibt.org/wp-content/uploads/2020/04/EUROPE-ETTF-EOS-Joint-Press-Release-Impact-of-Covid-19-on-Timber-Market-20200417-1.pdf>. <http://www.laurieforestry.co.nz/Monthly-Newsletter>.

2. Forest plantation trends in Southeast Asia and other tropical countries

KEY POINTS:

- Myanmar has extensive experience with teak and cultivation of rubber and has made progress with introducing fast-growing industrial timber species.
- Neighbouring tropical countries are transitioning from a forest sector dependent on natural forests and export of primary products to one reliant mainly on plantations and value added processing.
- In most developing countries where there has been significant investment in forest plantations, this has been supported through specific policy incentives, a favourable regulatory environment, and often availability of concessional finance at initial stages.

47. A range of factors have been identified as important for countries to attract private industrial forestry investments (Castrén et. al. (2014). These include:

- a) Ease of land acquisition and clear land tenure arrangements;
- b) Strong demand for wood in domestic industries or in areas close by; size and growth potential of the domestic and export market;
- c) Abundant skilled workforce;
- d) Access to arable land and suitable climate; good or excellent growing conditions;
- e) Lack of competition from other crops and land uses;
- f) Access to sea routes or other infrastructure;
- g) Local government willing to subsidize investments; and
- h) Supportive overall investment climate, including political and economic stability, presence of “rule of law,” simple and fair taxation, security of land tenure, and simplified bureaucracy.

48. Experiences with development of industrial forest plantations in other tropical countries provide some lessons that may be relevant for Myanmar. These relate to the choice of species, management issues and state policies, including specific incentives. This section outlines experience with commonly planted species and examines policies from a selection of countries where there has been a significant expansion of private plantations.

2.1. Species

49. **Myanmar has more than a century of experience in cultivation of teak and rubber and is developing experience with fast-growing industrial species.** In the latter case, investors have started to introduce seed of better performing provenances and also selected clones from neighbouring countries. In some instances, investors are propagating only clonal or

tissue culture planting material. Similarly, there is selection of bamboo species³³ that are most sought after by potential industrial users.

Fast-growing industrial species

50. **Most countries in South East Asia and elsewhere in the tropics have compensated for the decline in their natural forests by encouraging private investment in plantations of fast-growing species, mainly *Eucalyptus* and *Acacia*.** This trend has been most pronounced in China, Indonesia, and Vietnam (Table 1). In addition, Lao People’s Democratic Republic (PRD) was reported to have 74,000 ha of timber plantations in 2017 and expects rapid expansion on forest plantations due to large scale investments in pulp industry (unconfirmed information points to an increase of 400,000 ha mainly for *Eucalyptus* plantations in Lao PRD alone over the next few years).

Table 1: Areas planted with fast-growing industrial timber species other Asian countries in 2014 (ha)³⁴
(Source: Harwood and Nambiar³⁵)

Country	Acacia	Eucalyptus	% of land area
China (Guangdong and Guangxi provinces only)	<50,000	3,350,000	8.2%
Indonesia	1,200,000	300,000	0.8%
Malaysia	250,000	20,000	0.8%
Thailand	<20,000	500,000	1.0%
Vietnam	1,100,000	200,000	3.9%

51. **Market demand and processing industries increasingly favour fast growing species.** The aim of the majority of plantations of fast-growing species in the region has been for paper production or wood chip exports, but there is also a trend for plantation timber to replace traditional tropical species for solid wood products and for manufacture of composite wood panel products, such as medium-density fiberboard. In Lao PRD, Chinese and Nordic pulp companies intend to produce pulp for the garment industry at large scale. In Vietnam, *Acacia* wood is being used for furniture production, replacing timber imports, and logs from plantations in Lao PRD, originally established for wood chips, are being sold for veneers.

52. **Brazil has the world’s largest area of *Eucalyptus* plantations servicing pulp, steel, and construction/furniture industry.** Initially aimed at paper production, more recently it has been developing silvicultural options for close-spaced plantations to produce sustainable charcoal for pig iron production. The country is reported to have about 4.9 million hectares of *Eucalyptus* (70 percent of its total plantation area) with high yields due to improved breeding and cloning research. In 2013 these produced 138 million m³ of timber, of which 41 percent was destined for paper and cellulose, 17 percent for charcoal, 30 percent for firewood, and 11

³³ These include *Dendrocalamas asper*, *D. giganteus*, *Bambusa polymorpha* and *B. latifolia*.

³⁴ Current areas likely to be greater; for example Vietnam was reported to have 2 million ha in 2019.

³⁵ Harwood, C.E. and E.K.S. Nambiar (2014).

(<https://publications.csiro.au/rpr/download?pid=csiro:EP14685&dsid=DS2>)

percent for solid wood products³⁶. Future trends include the use of wood fibres for the garment industry.

53. **Plantations of fast-growing species in Myanmar are estimated to cover about 47,000 ha³⁷ of both Eucalyptus and Acacia.** Apart from a plantation established as a joint venture with an Indian paper company, the aims of investors appear to be varied and, to an extent, speculative, with an expectation that demand will appear as supplies increase and availability of natural forest timber become more restricted. However, Acacia growers currently report difficulty in selling their timber to established processors, suggesting a need to promote utilisation of industrial plantation species.

Teak

54. **Teak (*Tectona grandis*) is the most widely planted species in Myanmar** but has been also planted in many other tropical countries. In 2010 India reported the largest area of teak globally, of 1.66 million ha, while Myanmar had the third largest area of 390,000 ha (Figure 23). More than 75 percent of the plantations were less than 20 years old, with the remainder mostly less than 60 years old. Most plantations in Africa (70 percent), Asia (72 percent) and the Caribbean (65 percent) were owned by government agencies, while in Central and South America most plantations were privately owned.

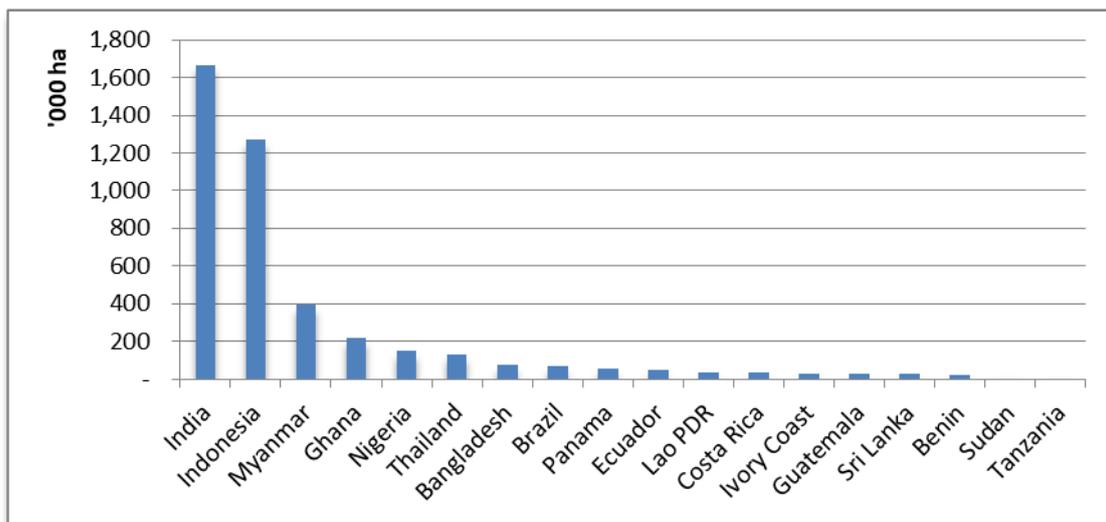


Figure 23: Area of plantation teak in 2010

(Source: Teak Resources and Market Assessment 2010, FAO Working Paper FP/47/E)

55. **Although growth rates of 15 m³/ha/year over a 20-25 year rotation under good management may be achievable, averages achieved in the majority of existing plantations are probably only 5 m³/ha/year.** Yields of this magnitude are unlikely to be acceptable for private sector investors, but rotations of less than 60 years will not produce the quality of teak approaching

³⁶ IBÁ. (2014). Relatório da Indústria Brasileira de Árvores. Brasília, 2014. Disponível em: (<http://www.iba.org>) quoted in Ferraz Filho et. al (2016) Thinning regimes and initial spacing for Eucalyptus plantations in Brazil (<http://www.scielo.br/pdf/aabc/2018nahead/0001-3765-aabc-201720150453.pdf>)

³⁷ Myanmar Private Plantation Association.

that from natural forests. Private commercial teak plantations are likely to be managed on shorter rotations and, therefore, may not fully meet market requirements for natural teak

56. **India dominates the trade in plantation-grown teak, importing logs and sawnwood from around 30 countries**, largely in Africa and Central America. Import values for logs (C&F Indian ports) in late 2019 varied with dimension and quality, ranging from less than US\$300/m³ to US\$876/m³.³⁸ By comparison, MTE auction prices of natural teak logs in mid-2019 ranged from US\$818/m³ for grade SG-7 to US\$1,954/m³ for SG-4, the highest grade then available. This suggests that even lowest grade natural teak logs were valued higher than plantation logs and that the market does not regard plantation material as highly as natural teak. A more direct comparison will be available when auctions for 30-40 year old plantation teak extracted in the 2019/20 harvest season start.
57. **Myanmar has a competitive advantage based on its long experience of growing teak**, the good performance of well-managed plantations, and the cachet of the “Burma teak” brand. This could be explored to access international markets also for plantation-grown teak. But it will require sufficiently long rotations and silvicultural regimes to produce acceptable timber, as well as continued efforts to demonstrate its legal and sustainable production. Consideration should be given to assessing whether existing incentives are sufficient for the private sector to continue to invest in the species, given the increasing apparent attractiveness of fast-growing industrial species.

Rubber-wood

58. **Rubber-wood has become an increasingly important commodity in international markets, especially for the furniture industry.** With the development of chemical treatments to protect the wood against fungal and insect attacks in the early 1980s, opportunities were identified to utilise mature trees instead of burning them at the end of their latex-producing cycles. The species’ value to Malaysia’ domestic furniture industry led it to ban rubber-wood log exports in 2017 and also to provide incentives for private plantation establishment. Thailand’s rubber-wood sawnwood exports to China have become its dominant wood product export, reaching a value of nearly US\$1.5 billion in 2017 – 52 percent of all the country’s wood product exports (this has since declined to US\$956 million and 40 percent, reportedly as a result of US-China trade issues). Worldwide, there is an estimated area of 13.5 million ha of rubber plantations, 90 per cent of which are in the Association of Natural Rubber Producing Countries’ 13 member countries³⁹, representing a significant future source of timber in the Asian region.
59. **In Myanmar, rubber-wood is considered an “agricultural crop”, and its extraction and utilisation is subject to a lower level of regulation than “forest trees”, providing a possible example for lighter regulation of other industrial timber species.** Permission issued by state or regional offices of the Department of Land Management and Statistics (DALMS) is needed to harvest rubber trees, and the owner is required to commit to replanting. State or regional government permission is also needed to change from rubber to another crop, and

³⁸ ITTO Tropical Timber Market Newsletters (<https://www.itto.int/mis/>).

³⁹ Bangladesh, Cambodia, China, India, Indonesia, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Sri Lanka, Thailand, and Vietnam.

Department of Agriculture permission is needed if round logs are to be exported. However, in general, regulation is much lighter than for forest species; there is no assessment of volumes, revenues payable, or hammer-marking of logs.

60. **Rubber-wood is still mainly used for fuel but there is potential for development of a furniture industry.** Until recently, the wood from old rubber plantations was used mainly for industrial woodfuel, but there are now reported to be 20 companies, mainly in Mon State, milling and exporting rubber-wood sawnwood. One sawmill company established in 2016 is a joint venture between a local company and Japanese companies Oji Holdings and Sumitomo Forestry, which together own 80 percent. So far, rubber-wood furniture or joinery appear to have limited use in the domestic market.
61. **The rapid establishment of Myanmar's rubber estate from the late 1980s was achieved through intentional government policies.** Investors were provided fiscal incentives which resulted in a large increase in rubber plantation established until 2008. Metz Fox and Castella (2013)⁴⁰ describe the policies that incentivised a substantial increase rubber planting in Myanmar over the last three decades. After the change in government in 1988, market-oriented economic policies that granted rubber planters (both individuals and companies) rights to lease 5,000 acres (2,025 ha) of land for 30 years with the possibility of extension were adopted. Foreign investors were able to own 100 percent of the operation or invest in joint ventures with Myanmar partners by investing a minimum share of 35 percent of the total equity capital, and a minimum amount of US\$500,000. Investors were exempted from paying land rent for eight years and from paying income taxes for three consecutive years after the commencement of commercial production. These policies resulted in expansion of the area of rubber from around 77,000 ha in 1990 to 225,800 ha by 2005-2006. And after the government liberalized rubber exports in 2004-2005, rubber planting accelerated, reaching 380,000 ha by 2007-08. According to DALMS, the area now planted to rubber is 1.6 million acres (650,000 ha).
62. **By 2008 the private sector accounted for 94 percent of both total planted area and latex production.** More than 90 percent of growers in traditional rubber areas (Tanintharyi and Yangon Regions and Mon State) were smallholders with less than 8 ha and controlling about 42 percent of the planted area; growers with between 8 ha and 40 ha made up 8.5 percent, controlling 23.3 percent of the area; while 1 percent of growers had more than 40 ha and controlled 21 percent of the area. In non-traditional rubber growing areas (primarily in Shan and Kachin States), plantations were often established as joint projects between senior military officials and Chinese companies with local companies providing cover that allowed Chinese investors avoid the 100 percent tax on foreign-owned companies.
63. **Some 30,000 ha of plantation (mainly in Mon and Tanintharyi) are now aged 30 years or older, so are available for wood production and now supply roundwood to the market.** Timber yield of mature rubber plantations is estimated at between 10 and 20 tons per acre (45-90 m³/ha), with a value of 20,000 MMK per tree (\$5,000/ha). There are no data on age

⁴⁰ Metz Fox, Jefferson and Jean-Christophe Castella (2013). Expansion of Rubber (*Hevea brasiliensis*) in Mainland Southeast Asia: What are the Prospects for Small Holders? *Journal of Peasant Studies* 40(1):155-170.

class distribution but, based on an average volume of 65 m³/ha, this area could yield around 1.5 million m³ roundwood. Assuming approximate equal annual areas from the last 30 years' planting reaching maturity, this could contribute a further 1.25 million m³ roundwood per year in future.

64. Due to recent low latex prices, expansion of rubber planting has slowed and some areas of rubber plantation close to Yangon are being converted to fast-growing *A. mangium*, suggesting that its anticipated returns are greater.⁴¹

2.2. Countries

65. **Countries in the Southeast Asian region (and elsewhere) that have seen significant increases in forest plantations have introduced specific policies to attract private investment**, both for large-scale plantations and small-holders. These have included lower levels of regulation for plantation timber, clarified tenure and subsidised finance, including provision through development banks. In all cases, the need for incentives has been brought about by the realisation of the declining role of countries' natural forests in timber supply.

Vietnam

66. **Vietnam is one of the most remarkable success stories on promoting forest plantations.** The Government has recognised the benefits of giving households access to external finance for tree planting. State reforestation programmes and the state-owned banking system offered households access to financial support. This policy has resulted in more than 43,000 households in central Vietnam receiving access to micro finance and technical support to establish over 76,500 ha of plantations from 2005 to 2015 under a World Bank-supported project. The project funded land survey and facilitated the issuance of land-use rights certificates for about 35,000 households, which enabled farmers to apply for low-interest loans from the project's fund managed by the Vietnam Bank for Social Policies. Following project completion in 2015, a revolving fund, managed by the Vietnam Bank, will continue to run for 20 more years, so that more households will have access to this source of credit.
67. **Overall Vietnam's policy has resulted in an increase from 1.4 million ha of plantations in 1999 to 4.2 million ha by 2017⁴²**, and an increase in the country's total forest cover from 28 percent to 41.6 percent. These comprise mainly fast-growing species, of which about 1.7 million ha are owned by small farming households and individuals, with average holdings of 1–3 ha. They produced about 12.7 million m³ of wood in 2017.
68. **There is room for improvement as the overall productivity of plantations is still low**, primarily because of technical issues (site suitability assessment, silvicultural practices, and germplasm), but also capacity (lack of skills, equipment, and access to good practices); the perception of

⁴¹ By comparison, 20-cm diameter Vietnamese Acacia and Eucalyptus logs sell for \$80-150/m³ (FOB Haiphong), indicating potential returns of more than \$30,000/ha.

⁴² Forest status 2017: <http://kiemlamvung1.org.vn/bv/quyet-dinh-c25/cong-bo-hien-trang-rung-toan-quoc-nam2017-p579>; MARD. 2018. Decision No. 1187/QD-BNN-TCLN dated 3 April 2018 on publication of national forest status as of December 2017 (quoted in Country Forest Note Vietnam, World Bank Group, June 2019).

risks (fire, hurricane and other loss); and market aspects (quality of products, market demand, processing capacity, and lack of knowledge of higher-value markets).

69. **The expansion of plantations has been accompanied by a dramatic growth in wood product exports** – increasing from US\$3.4 billion in 2010 to US\$9.4 billion in 2018 (Figure 24), led by the furniture sector whose share increased from US\$2.1 billion to US\$4.6 billion.⁴³

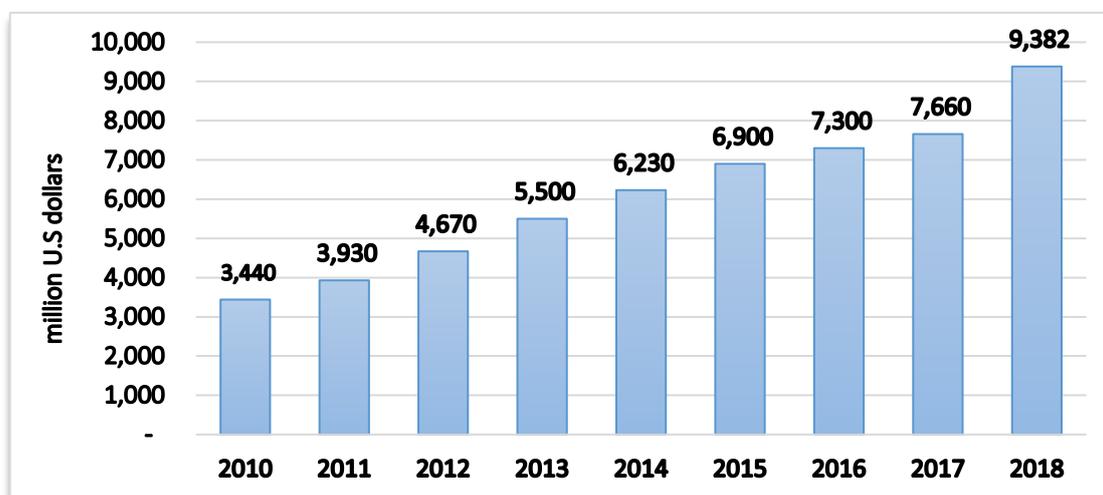


Figure 24: forest products export turnover - 2010–18
(Source: World Bank Group: Vietnam Country Forest Note 2019)

70. **However, there has been a tendency for farmers to harvest as early as possible to generate quick returns, also because of potential disaster risks.** This has resulted in a large proportion of the yield being sold for wood chips to supply export markets. In 2018, the export volume reached a record of nearly 10.4 million tons, with an increase in value from US\$169 million in 2010 to US\$1.3 billion in 2018. Recently established pulp mills in Lao PDR are also aggressively purchasing Vietnamese Eucalyptus logs. This prompted the Government to impose a tax of 2 percent on chip exports in 2016 to incentivise longer rotations to produce solid wood, and a further increase to 5 percent was under consideration in early 2019.⁴⁴ It has been noted that the export tax has achieved little in reducing chip exports, while farmers have largely borne the increased cost by accepting lower prices for their logs.⁴⁵ And the country’s wood processing industry still has a high dependency on log imports, which increased in volume from an estimated 8,000 m³ in 2000 to 3.6 million m³ in 2018.⁴⁶

Malaysia

71. **Malaysia’s wood product industry is characterised by a reduction in primary product exports based on natural forest timber and an increase in the relative contribution of tertiary products – based mainly on rubber-wood** (Figure 25). Overall the value of primary wood product exports declined from US\$4.3 billion in 2010 to US\$3.0 billion in 2019. During the same period the value of furniture exports increased from US\$2.7 billion to US\$3.1 billion with

⁴³ International Trade Centre - Trade Map.

⁴⁴ <https://customsnews.vn/woodchip-exports-topping-the-world-but-not-mastering-the-market-11281.html>.

⁴⁵ X. T. Phuc, Forest Trends (2020) personal communication.

⁴⁶ FAOStat estimate

their share of total wood product exports rising from 38 percent to 51 percent. These trends underline the country’s transition to a plantation-based forest economy.

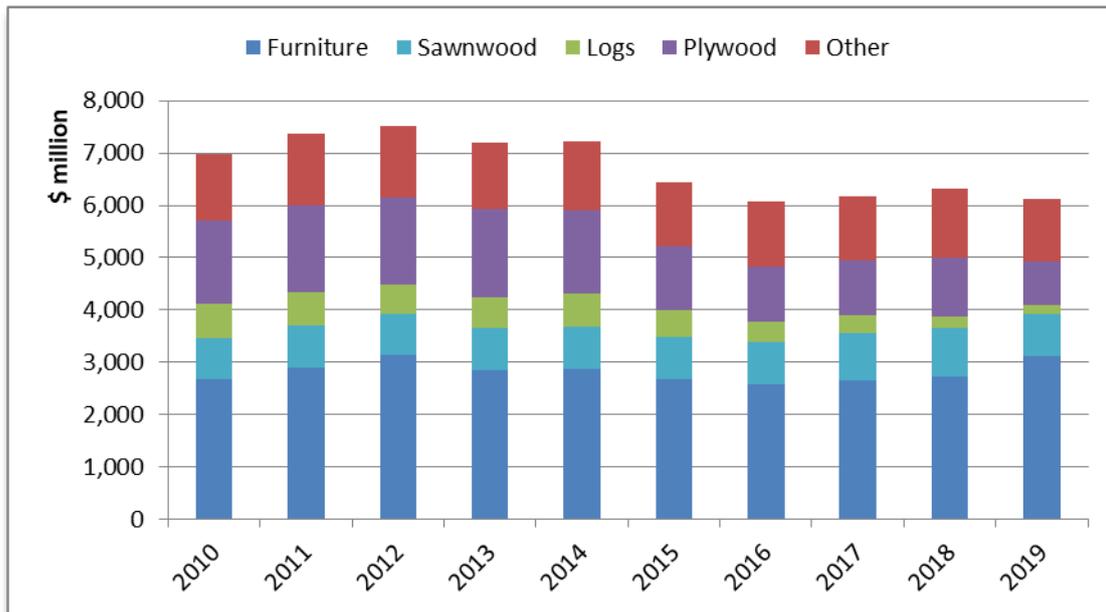


Figure 25: Malaysia’s wood product exports 2010-19
(Source: Trade Map)

72. **The Malaysian government has set a 15-year target to develop 375,000 ha of forest plantations**, expected to produce 5 million m³ annually, mainly of *Acacia* and rubber-wood. Local companies are eligible to participate, and soft loans are available through a Special Purpose Vehicle (SPV), Forest Plantation Development Sdn. Bhd., established in 2006 and managed by the Malaysia Timber Industry Board (MTIB). The estimated total cost is MYR 2.2 billion (\$0.55 billion).
73. **The Government provides loans to promote establishment for eight approved tree species⁴⁷ as well as bamboo.** Loans of MYR 10,000 (\$2,500) per ha are provided for rubber timber-latex clones in Peninsular Malaysia and MYR 13,000 (\$3,250) per ha in Sarawak and Sabah. For commercial bamboo species, loans of MYR 8,000 (\$2,000) per ha and MYR 10,000 (\$2,500) per ha for Peninsular and the east Malaysia states respectively are provided. The maximum loan period is 20 years with a 3 percent annual interest rate and a grace period of 15 years.
74. **Forest plantations are designated a “strategic industry” and receive various tax incentives**, including 100 percent income tax holiday for a period of 15 years from production date and dividend tax exemption for shareholders. Significantly, under a “Group Relief” programme, tax exemptions are extended to profits generated by other companies within an investor’s corporate group resident in Malaysia.
75. **A total of 74 companies with plans to establish a total of 120,213 ha have borrowed a total of MYR 861.9 million (\$215.4 million)**, 82.4 percent of the SPV’s approved allocation and 114,780 ha – 95.5 percent of the target – had been already planted by March 2019. It is

⁴⁷ *Acacia mangium*, *Neolamarckia cadamba*, *Paraserianthes falcataria*, *Tectona grandis*, *Octomeles sumatrana*, *Khaya ivorensis*, and *Azadirachta excelsa*

reported that rubber is the most popular species because of industry's demand for rubber-wood.⁴⁸

Indonesia

- 76. Indonesia has decades of experience with timber plantations, which are now mainly targeted at its pulp and paper industry.** The Government has promoted three broad types of tree plantations: large private sector plantations to supply the country's pulp and paper industry; timber plantations mainly established by state-owned companies; and small-holder plantations on private land, state forest land or communal land. In 2014, industrial-scale pulpwood plantations were estimated to cover 2.25 million ha; however often at the expense of natural forest and raising issues of local people's land rights. Despite criticism, the paper industry is estimated to contribute 6.7 percent of the country's processing industry's gross domestic product and is providing employment to 260,000 direct workers and 1.1 million indirect workers. In 2018 it was the seventh biggest sector (excluding oil and gas) in terms of foreign exchange earnings and Indonesia now ranks ninth amongst global pulp producers and sixth amongst paper producers.⁴⁹ Most of its pulpwood plantations have now been certified to the standard of the Program for Endorsement of Forest Certification Systems (PEFC).
- 77. Industrial plantations now provide the bulk on Indonesia' industrial wood supplies.** Figure 26 illustrates how total log production in Indonesia has changed during the period 2009 to 2018. After declining to 48.4 million m³ in 2016, log supply in Indonesia increased to 57.9 million m³ in 2018, mainly due to a continuing rise in production from industrial plantations – largely for paper production – and, to a lesser extent, community forests. In 2018, 70 percent of Indonesia's log supply came from industrial plantations and 15 percent came from community forests while the share from natural forest concessions had fallen from 11 percent to 9 percent.⁵⁰

⁴⁸ Thang Hooi Chiew, personal communication 2019.

⁴⁹ Development of Pulp and Paper Industry Becomes Priority (<https://en.tempo.co/read/923347/development-of-pulp-and-paper-industry-becomes-priority>).

⁵⁰ ITTO (2019) FLEGT VPA Partners in EU Timber Trade 2018. Main Report – November 2019 (www.flegtimm.eu/images/IMM_2018_Annual_Report/Final_clean_version_Natalie_VPA-Partners-in-EU-Timber-Trade-Annual-Report-2018.pdf).

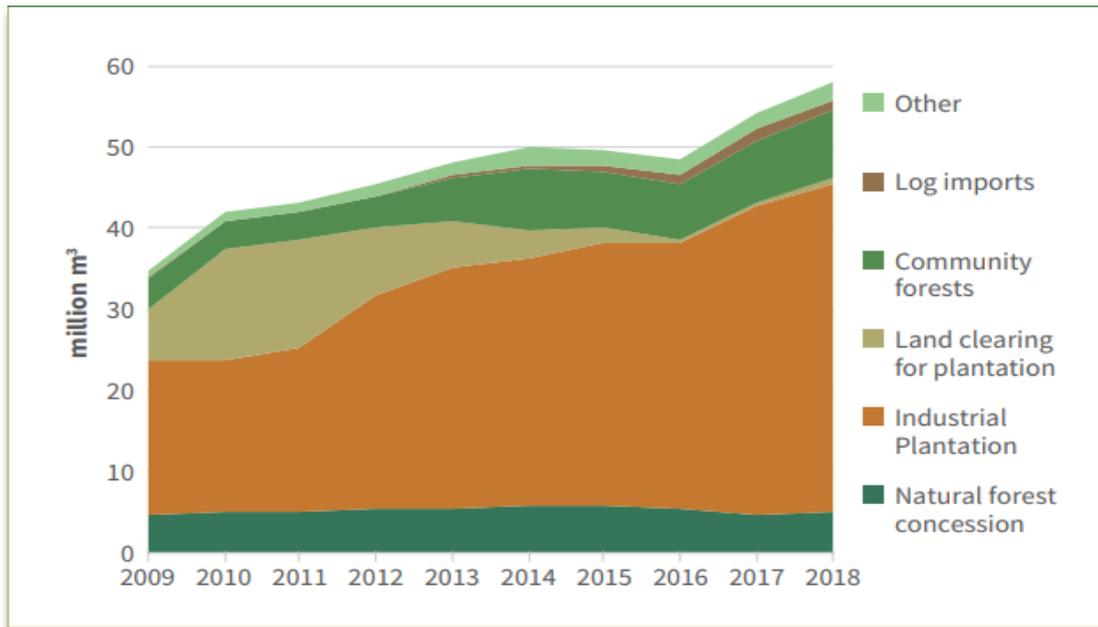


Figure 26: Indonesia log production by forest type - 2009-2018.
(Source: IMM analysis of Indonesian Ministry of Environment and Forestry data)

78. **Most progress with smallholder plantations has been made with plantations on private land.** Despite government incentives for community plantations – including low interest loans, assistance with land acquisition, streamlined application procedures, and simplified reporting – by 2014 less than 8,000 ha had been planted on nearly 720,000 ha of allocated land. Obstacles identified include unclear land allocation and application processes, excessive subsidies and opportunities for rent seeking, and risks of deforestation and forest degradation.⁵¹

Lao PDR

79. **Lao PDR government policy aims to reforest 7 million ha, including establishment of 500,000 ha of planted forests.** The development of the Lao PDR forest plantation sector is guided by its Forestry Strategy to 2020 and the country’s National Policy on Forest Plantation Promotion. In 2007, the Government placed moratoriums on land concessions for plantation projects due to environmental and social concerns related to large-scale projects but has since been revising policies and legislation to address these issues.
80. **Lao PDR’s National Socio-Economic Development Plan 2016-2020 places an emphasis on the promotion of processing industries to realise high-value wood products and furniture production.** A 2016 Prime Ministerial Order banned export of unfinished products made from wood harvested from natural forests and also imposed a temporary export ban on Eucalyptus and Acacia logs, but subsequent exemptions were allowed for logs of these species with diameter of 12 cm or less. The 2019 Forest Law now emphasises strong support for plantation forestry and allows export of any kind of plantation wood, without size limitations. Within 3.2

⁵¹ Obidzinski, K and A. Dermawan (2010). Smallholder timber plantation development in Indonesia: what is preventing progress? (www.cifor.org/library/3310/).

million ha designated as Production Forest, 600,000 ha of degraded forest are now targeted for private sector planting.⁵²

81. **In 2017 five foreign investors had been allocated around 116,000 ha to establish mainly fast-growing species.** An additional 300,000 ha might follow over the next few years, primarily aimed at supplying a future pulp mill. Sun Paper Laos – a wholly-owned company of the Chinese Shandong Sun Paper Group – established the first modern pulp mill in Lao PDR in May 2019, signing an investment agreement on "Forest-Pulp-Paper Integration" with the Lao PDR government in November 2009.

Thailand

82. **Thailand's forest plantation strategy⁵³ foresees an annual demand of 47.4 million tons of wood, which will require 3.2 million ha of plantations.** The 21-year Forest Reform Action Plan to 2036 targets a total area of 1.28 million ha, including 656,000 ha of state plantations and 625,000 ha of private plantations. Private plantation targets are 308,000 ha of fast-growing industrial species, 162,000 ha of long-rotation species, and 155,000 ha inter-planting of economic trees within rubber plantations. Incentives included payments of THB 5,000 (\$166) over 5 years plus 1,250 quality seedlings per ha to farmers for long rotations; THB 3,000 (\$99.50) over 3 years plus 1,875 quality seedlings for fast-growing species; and 312 seedlings for inter-planting in rubber plantations. The Royal Forest Department (RFD) is obliged to provide information to farmers on the investment value and returns so that they can compare the benefits of long and short rotation species.
83. **The amended Forest Plantation Act⁵⁴ provided clarity about benefits, exempted royalty payments and permitted free movement of plantation timber, which previously was strictly controlled.** (This represented an important legislative change aimed at encouraging private plantations in Thailand. It also provided for government support to forest farm cooperatives as described above. The authorisation process for plantations has been streamlined by establishment of a Service Link Centre⁵⁵ to accept applications for licences. Timber grown on private land can be certified as legal through an electronic "e-Tree" system and the RFD has established a National Single Window⁵⁵ for electronic transaction in relation to timber transactions.
84. **There are now an estimated 500,000 ha of industrial plantations in Thailand, dominated by *Eucalyptus* species.** These include block plantations, or plantings of single or double rows of trees along paddy field boundaries. These aim primarily at supplying raw material to major pulp mills, which have a combined production of about 1 million tonnes of kraft pulp per year. Paper companies source wood from both their own plantations and from many small-scale farmer outgrowers through a range of contract arrangements, while providing inputs such as planting material at reduced cost in exchange for contracts under which growers sell them the wood at an agreed price.

⁵² Peter Fogde Stora Enso Lao, personal communication 2019.

⁵³ Wisuthra Intongkaew and Liu Junchang (2017) <https://www.ijsciences.com/pub/article/1463>.

⁵⁴ Forest Plantation Act (NO. 2), B.E. 2558 (2015).

⁵⁵ <https://nsw.forest.go.th/rfdportal/Home.aspx>.

85. **Thailand has become China's largest source of tropical sawnwood imports** with their value increasing from US\$500 million in 2010 to US\$1.5 billion in 2017 – a trade comprising almost exclusively rubber-wood.⁵⁶

Ghana

86. **Ghana's Forest Plantation Strategy 2016-2040⁵⁷ aims to achieve a sustainable supply of forest goods and services that deliver a range of economic, social and environmental benefits.** It is directed towards the establishment and management of 625,000 ha of forest plantations, and enrichment planting of 100,000 ha of poorly-stocked and degraded forest reserves. Although this example is outside the Asian region, it is interesting for Myanmar, because of its focus on teak, and also the contribution of international development finance to a private investment. There are two approaches as described below.

87. **Under Private Commercial Plantation Development, the Forestry Commission (FC) leases degraded forest lands to private companies** after vetting and endorsing their business plans and signing Land Lease/Benefit Sharing Agreements. The private investor earns 90 percent of the total proceeds from the plantation while the FC, the traditional landowner and the forest fringe community earn 2, 6 and 2 percent respectively. The investor pays ground rent of the Ghana Cedi (GHS) equivalent of US\$2/ha/year throughout the life of the investment.

88. **Under Public-Private Partnership arrangements, the FC is responsible for the costs of survey and demarcation, registration of agreements as well as fire education within fringe communities,** in addition to jointly developing project documents and assisting in fire suppression as part of its contribution to the project. Within the partnership, the investor is entitled to 80 percent of the plantation proceeds and benefits, with the FC getting 12 percent, and traditional landowners and forest fringe communities the remaining 8 percent. The investor pays ground rent of the GHS equivalent of US\$2/ha/year to the traditional landowner together with a facilitation fee of US\$2/ha/year for the customary and conflict resolution role expected of the traditional authorities. A 50-year land lease, renewable for a further 50 years, and a benefit-sharing agreement are executed and registered at the Lands Commission. Harvest values for benefit sharing are predetermined and set out in lease agreements.

Box 1: Form Ghana – an example of Public-Private Partnership

Form Ghana Ltd⁵⁸, a subsidiary of the Dutch company, Sustainable Forestry Investments B.V., has entered a Public-Private Partnership with the FC and has planted over 7,500 ha with teak (90%) and indigenous species plus conservation areas (10%), and plans to expand to 12,500 ha in the next 10 years. The plantation management was certified to the Forest Stewardship Council (FSC) standard in 2010, and reforestation activities have been independently validated under the Verified Carbon Standard (VCS) in 2013. Its business model aims at growing teak on 20-25 year rotations with a projected yield of around 15 m³/ha/year.

⁵⁶ International Trade Centre – Trade Map

⁵⁷ [https://www.fcghana.org/userfiles/files/Plantation%20Annual%20Report/Ghana%20Forest%20Plantation%20Strategy_24_01_16%20\(2\).pdf](https://www.fcghana.org/userfiles/files/Plantation%20Annual%20Report/Ghana%20Forest%20Plantation%20Strategy_24_01_16%20(2).pdf)

⁵⁸ <http://newforestsforafrica.org/wp-content/uploads/2017/06/Presentation-Rik-Sools-AFIC-Ghana-June-2017.pdf>

Form's role is to provide management services to the venture. Initial equity for the first 10 years was sourced from high net worth entities. Subsequently US\$24 million loan financing has been secured from the African Development Bank.

The conditions that persuaded Form to invest in Ghana were familiarity with the country, the climate and soil conditions, and a favourable policy towards private plantations in particular and private sector investment in general **that includes a tax holiday for 10 years from the first revenue and certain exemptions from import duties.**

3. Relevant policies and legislation in Myanmar

KEY POINTS:

- Myanmar has introduced a range of policies aimed at reforming its forest sector, including some aimed at encouraging private sector investment and strengthening forest governance.
- However, investors see room for further improvement: they view area limits as being too small; lease lengths generally too short; procedures for acquiring leases complex; and regulations covering timber harvest and transport, designed for natural forests, being overly onerous.
- Neither state nor commercial banks offer a suitable finance product for plantations. The lack of domestic finance is regarded as the most important obstacle to increased investment.
- Improved timber legality assurance, including traceability, will be key to attracting investment in plantations and ensuring Myanmar's future participation in increasingly demanding export markets.

3.1. Forest policies and laws

89. **The government has initiated a range of policy actions to address forest loss and degradation and to encourage greater community involvement in forest conservation and private sector investments in forest plantations.** These include: (i) introduction of a log export ban in 2014; (ii) a 12-month moratorium on all logging in 2016; and (iii) a ten-year logging ban in the Bago Yoma region. Recent legislative and regulatory reforms include: (i) the 2012 Environmental Conservation Law; (ii) the 2018 Forest Law; (iii) the 2018 Biodiversity and Conservation of Protected Areas Law; and (iv) the 2019 revised Community Forestry Instructions. The Forest Rules, which will provide implementing regulations for the 2018 Forest Law, were undergoing public consultation in late 2019 and are expected to be adopted in 2020.

90. **The National Export Strategy (NES) for Forestry Products (2014-19)⁵⁹ identified a range of actions needed to improve the export value of forest products.** This described four strategic objectives, all of which are relevant to establishing a plantation-based forest industry:

- a) streamlining administrative rules and procedures, and assure reliable upstream supplies;
- b) improving skills and capacity in the sector;
- c) increasing the sector's sustainability, including through curbing illegal logging; ensuring that the sector adopts sustainable harvesting and efficient, effective use of resources, and ensuring development of the wood sector accompanied by improvements in the livelihoods of rural communities; and

⁵⁹ National Export Strategy – Forestry Products Sector Strategy 2015-2019
(<https://www.myantrade.org/files/2019/6/5d15990ae54f01.03161636.pdf>)

- d) improving Myanmar's international market share in value added products, and promote trade and investment in its forestry products.

91. A revised 2020-25 NES was launched in 2019. This still includes forest products as a priority sector.

92. **In 2015 the Government initiated preparations for negotiation of a Voluntary Partnership Agreement (VPA) with the European Union under the EU Forest Law Enforcement Governance and Trade (FLEGT) Action Plan.** This aimed to implement an export licensing system based on a widely-accepted timber legality assurance system (TLAS) that would be accepted in the EU as meeting the EUTR requirements on placing timber on the EU market. However, the EU has informed Myanmar that starting negotiations is now not a current priority, but it will continue to provide a level of support to strengthen forest governance and tackle illegal logging – primarily to help the sector to meet the requirements of the EUTR.

93. **A national forest management and timber chain of custody certification programme is being prepared by the Myanmar Forest Certification Committee (MFCC)**⁶⁰ under the auspices of the Programme for Endorsement of Forest Certification Schemes (PEFC). Both the VPA and forest certification aim at improving the reputation and market acceptance of Myanmar's timber exports, while also contributing to the country's forest sustainability goals.

94. **Tackling illegal logging and improved transparency in timber legality assurance and traceability are seen as important aspects in relation to Myanmar's reputation,** both for investment in plantations and to gain and maintain access to increasingly demanding export markets. An essential activity under both the FLEGT process and MFCC certification is development of a Timber Legality Assurance System (TLAS)⁶¹, which should help address this need. A credible TLAS should comprise a listing of relevant laws and regulations, verification that these are being complied with, robust traceability from harvest to export, and regular independent audits of system effectiveness. Development of such a system should take into account the different legality risk profiles of both plantation and natural forest timber.

3.2. Legislation governing forest plantations on Forest Land

95. **The 2018 Forest Law contains provisions aimed at encouraging investment in plantations.** While all teak trees remain formally in state ownership, the Forest Law now allows the Government to grant private ownership after registration of trees in township forest offices. This includes trees planted in private plantations established with permission on Forest Land; private plantations established outside Forest Land and registered at the FD district; and community forestry registered at the FD district.

96. **The categories of plantation lease available under the Forest Law are considered too small to be attractive by large-scale investors:**

⁶⁰ <https://www.myanmarforestcertification.org/>

⁶¹ MFCC has developed such a system – the Myanmar Timber Legality Assurance System (MTLAS), based on ASEAN criteria. This has been subject to an analysis in terms of meeting international best practices and is undergoing revision.

- a) 500 acres (202 ha) of private teak plantation may be approved by the Union Government through the Ministry;
- b) 100 acres (40.5 ha) of private hardwood plantation may be approved by the FD Director General with the approval of the Union Minister;
- c) 50 acres (20 ha) of private hardwood plantation may be approved by the FD Directors of States or Regions;
- d) 100 acres (40.5 ha) of private industrial plantation may be approved by the Union Minister;
- e) over 100 acres and up to 1,000 acres (405 ha), upon approval of the Cabinet following open tenders.

97. These area limits have resulted in some partners in joint ventures applying separately for leases and, to avoid the tender process altogether, one company has acquired several lease areas of 100 acres each through local people acting as proxies.

98. **The draft Forest Rules⁶² offer few additional details with respect to encouragement or regulation of forest plantations.** Revised Forest Rules, which should set out regulations for implementing the 2018 Forest Law, were under consultation at the time of writing. The current draft appears to empower the FD Director General to establish subsidiary legislation, including issuing orders, instructions, procedures, and terms and conditions relating to maintenance of private plantations, and to implement a tender system.

99. **Annual land lease fees are unlikely to be a disincentive to prospective investors.** Fee levels depend on plantation type: MMK 2,471/ha (\$1.65/ha) for teak, hardwoods, bamboo, or gum karaya (*Sterculia versicolor*); and MMK 7,413/ha (\$4.94) for industrial plantations⁶³.

100. **The current 30-year plantation lease term would be insufficient for more than a single rotation, except for fast-growing industrial species,** and sufficient only for a single harvest of short-rotation teak. Investors in downstream processing – especially of the scale of investment in pulp and paper – need assurance of continued supplies, spanning multiple rotations, and institutional investors seeking a future exit need to be able to demonstrate that potential purchasers have a secure future investment. In this regard, rules for transfer of leases between investors are currently unclear, including the degree of oversight government should have in the process.

101. **The current FD procedures for acquisition of land for plantation lease by open tender⁶⁴ are considered to be cumbersome by investors.** Evaluation of tenders is based on the land lease fees and bid premiums offered, as well as assessment of the bidder's investment capacity, budget, technology, enabling conditions for implementation, its plan for local development activities, and per acre costs. Whilst the qualification and selection requirements seem to incorporate sensible checks on investors' capacity and the feasibility of their proposals, consideration could be given to staging them – first, to prequalify bidders based on evidence of financial and managerial capacity; second, to allocate areas based on a limited set of tender

⁶² <http://mylaff.org/document/view/4549>

⁶³ Includes oil palm, rubber, Sugar cane, cassava, etc.

⁶⁴ See Annex B.

criteria (e.g., financial offer); and third, completion of detailed pre-operational planning by successful bidders.

102. **The need for FD to measure and assess royalties on small-diameter plantation timber is questionable.** For harvests, including production thinnings, each log must be measured by FD officers to assess royalties that are payable if the logs are to be transported across township boundaries. Royalties are based on mid-girth measurements as follows:
- a) Less than 12 inches (9.4 cm diameter): MMK 20/log;
 - b) Between 12 and 36 inches (9.4-28.3 cm) MMK 200/log
 - c) For logs 36 inches (28.3 cm) and greater: 10% of the value of the log, based on values set periodically for different species groups.
103. Delays in scheduling FD staff to measure logs (which are likely to get worse as plantation timber volumes increase) are reported to have resulted in deterioration of stockpiled teak thinnings, and the cost of measuring a large number of small logs is likely to exceed the revenues collected. Similarly, the need to individually hammer-mark small dimension logs is doubtful.
104. **There are no easily-accessible publications in English (or apparently Myanmar language) that provide clear information** on potential locations for plantation establishment, the procedures (as set out in the various instructions) for acquiring leases, the conditions for plantation management and timber harvesting, and describing how FD monitors implementation of leases. This information needs to be readily available if foreign investors are to be attracted.

3.3. The Community Forestry Instructions

105. **Community Forestry User Groups (CFUGs) can apply for a 30-year Community Forestry Certificate**, defined in the 2016 Community Forestry Instructions (CFIs), revised in 2019. CFUGs may establish plantations or manage or enhance natural forests in areas covered by the lease and may harvest products free of royalty for trees less than 12 inches mid-girth (9.4 cm diameter). The CFIs require the FD to encourage participation and assistance of local and international organizations, including business groups and private entrepreneurs to assist CFUGs through technical, market and financial assistance and necessary information, and facilitation of networking.
106. **It will be difficult for CFUGs alone to achieve the Government's MRRP targets for increasing forest cover and supply of forest products, and the role of private sector will be essential** in providing market uptake and technical assistance. Such arrangements could see private sector investors provide technical, institutional and material and/or financial support to CFUGs and their participants; they could help minimise potential local land use conflicts; and they could provide markets for CF produce. Although, few examples exist in Myanmar, there are some interesting exceptions: e.g., a paper company in Ayeyarwady Region is already implementing an outgrower scheme with local CF participants, and the Myanmar Bamboo and Rattan Association has plans to pioneer this approach with community-run plantation enterprises in Bago Region.

3.4. Virgin, Fallow and Vacant (VFV) Land

107. **Virgin, Fallow and Vacant (VFV) Land could be used for forest plantations.** Utilisation of VFV land is controlled by the Department of Land Management and Statistics (DALMS) under the 2018 Virgin, Fallow and Vacant Land Law⁶⁵. Disposition of VFV land of under 300 ac (121.4 ha) may be decided at the State or Regional level and up to 3,000 acres (1,214 ha) by a Union-level National Land Management Committee. Land with good forest cover should now be excluded from lease areas, and there is a reported informal arrangement between DALMS and FD that such land would be gazetted as Permanent Forest Estate (PFE), in exchange for suitable denuded RF land, which could be gazetted as VFV land. In the past VFV areas totalling 1.5 million ha was allocated to investors and cleared of timber but never developed and have been taken back by DALMS. These areas could contribute to the land area available for private forest plantation development.
108. **The VFV Law gives existing agricultural occupants of land 6 months from its adoption to make claims, so that the areas they occupy could be excised from lease areas.** Unless such claims are made and validated, occupants risk being evicted. This provision has attracted strong criticism from land rights advocates because of occupants' lack of knowledge about their rights, and the short time window within which they have been allowed to make claims. Although "customary lands" are exempted, frameworks are not yet in place to determine how this type of tenure will be determined and concerns remain that the law will have significant and negative impacts on the communities practising customary land management. In response, DALMS has distributed 126,000 claim forms to village tract level administrations. The degree to which the six-month rule is being enforced is not clear.
109. **SME plantation investors have expressed a preference for VFV land over RF land citing simpler regulatory procedures.**⁶⁶ These include:
- Annual land rentals are set depending on species: (i) long-term species (including forest trees): MMK 3,000/acre (\$4.94/ha); (ii) horticultural crops: MMK 2,000/acre (\$3.30/ha); and (iii) seasonal crops: MMK 1,000/acre (\$1.65/ha).
 - If development of a lease is judged to be "sustainable", there is an opportunity for the lessee to be granted title ("Form 7") for a minimal fee of MMK 500 (\$0.30), with subsequent small annual charges payable at the State or Regional level.
110. Other relevant rules include:
- For foreign investors, leases in JV arrangements with the government or local companies are allowed, while leases involving only foreign investors are permitted only where there is no local capacity for the planned development.
 - Posting performance bonds of MMK 3,000/acre (\$4.94/ha) for areas less than 400 acres and MMK 10,000/acre (\$16.47) for areas up to 3,000 acres. If development has

⁶⁵ <https://www.burmalibrary.org/docs25/2018-09-11-VFV-amendment-en.pdf>.

⁶⁶ Based on discussions with Acacia mangium Association members, January 2020.

not been completed within 4 years the bonds are forfeited and the land returned to the State.

- Forest plantations must be registered with FD and forest trees harvested under FD procedures with royalties are levied as for trees harvested on RF land; however, rubber trees – which are considered an agricultural crop – are subject to neither FD control, nor royalties.

3.5. Investment incentives

111. **Myanmar offers a range of incentives for investments which are relevant for forest plantations.** The Directorate of Investment and Company Administration (DICA) administers the 2016 Myanmar Investment Law⁶⁷ and the 2017 Myanmar Investment Rules.⁶⁸ These clarify the processes for investment and offer a number of tax breaks, incentives and guarantees, rights and protections for business ventures. These include:

- Income and corporate tax holidays, depending on the geographic/economic zone, based on township:
 - Zone 1 – least developed: 7 years
 - Zone 2 – moderate development: 5 years
 - Zone 3 – adequate development: 3 years;
- Tax-free profit if reinvested within one year, including if invested in a similar business;
- Accelerated depreciation to start from the date of commercial operation;
- Income tax rates the same as those on resident citizens;
- Right to deduct R&D costs from assessable income;
- Exemptions of customs duties for imports of machinery, equipment and materials that cannot be purchased locally;
- Exemption from customs duties and other local taxes on imported raw material and semi-finished goods for businesses which export their entire production; and
- Refund of import duties and other local taxes paid on import of raw material and semi-finished goods when the goods manufactured from those imports are exported.

112. **Investment in forest plantations, forest conservation and other forest businesses is regarded as a priority sector** and most plantation areas are likely to be located “Zone 1”. Customs duties exemptions on imported machinery and equipment may be of interest to some investors, but because the tax holidays cannot be extended to investors’ other businesses they only likely to be interesting for investments in short-rotation plantations which potentially generate early profits.

3.6. National financing for forest plantations

113. **Despite a series of reforms and recent growth since 2011, Myanmar’s financial sector remains underdeveloped and access to finance is reported to be one of the most serious challenges faced by the private sector generally.** Myanmar’s financial sector is still emerging

⁶⁷ www.dica.gov.mm/sites/dica.gov.mm/files/document-files/myanmar_investment_law_official_translation_3-1-2017.pdf

⁶⁸ www.dica.gov.mm/sites/dica.gov.mm/files/document-files/mir_english_0.pdf

from decades of exclusive state ownership and controls. As a result, much financial activity takes place outside formal financial institutions. The most prominent constraint is the current interest rate policy, whereby the Central Bank of Myanmar (CBM) sets fixed bandwidths for deposit and lending rates based on its reference rate.

114. **As of late 2019, state banks' maximum allowed lending rate was set at 8.5 percent and that of commercial banks 13 percent.** However, from February 2019, CBM has allowed commercial banks to offer unsecured loans at 16 percent. Other constraints have included a limit on lending set at 80 percent of a bank's deposit base, strict collateral demands on borrowers (400% of the loan value in 2016), and the requirement that lending terms do not exceed one year.
115. **State bank lending for forestry is currently not feasible.** Although the mandate of Myanmar Agricultural Development Bank (MADB), one of the four state-owned banks, includes finance for forestry, the lack of specific funding for the purpose, combined with its lending restrictions with regard to interest rate, collateral and repayment have made lending to the sector practically impossible. MADB has been described as being in "perhaps the worst shape of all the state-owned institutions," mainly due to its concentration in only a few crops and its artificially narrow interest rate margins⁶⁹.
116. **The lack of a suitable finance product from either commercial or state banks are seen by most investors as their main constraint.** While some investors interviewed suggested that a maximum feasible interest rate to borrow for plantation establishment would be around 6 percent, others in the SME sector felt that rates as high as 14 percent would be acceptable, in comparison with rates offered in the informal sector⁷⁰. These financing constraints have led plantation interest groups to suggest establishment of a dedicated "forest bank".
117. **Equity finance seems to be the only viable option for interested investors to establish plantations.** The lack of available debt financing means that all plantation development to date has been financed through investors' own equity, including a limited number of joint ventures (JVs) with foreign partners. Therefore, unless specific loan products suited to plantations are offered, it appears that equity financing will remain the only option – and to achieve the MRRP's commercial plantation targets, a significant portion of financing will need to be sourced from abroad.

⁶⁹ Schellhase, John and Lena Sun (2017) The Banking Sector in Myanmar: An Assessment of Recent Progress. Milken Institute (<https://assets1c.milkeninstitute.org/assets/Publication/Viewpoint/PDF/083117-MyanmarBanking.pdf>)

⁷⁰ On average, informal lenders set interest rates for unsecured loans at around 9 percent monthly - an annual rate of about 170 percent – with collateral.

4. Plantation progress in Myanmar

KEY POINTS:

- The Government has set an ambitious target for private sector plantation development, but only 10 percent has so far been achieved.
- The Government’s targets for establishing its own plantations and rehabilitating old failed plantations are also short of targets despite a budget allocation under the Myanmar Reforestation and Rehabilitation Programme.
- Future budget allocation to maintain and protect government plantations cannot be assured; this increases the risk that plantations may be lost to encroachment and illegal logging.
- Community Forests could contribute significantly to future timber supplies; this could be enhanced through cooperative arrangements between investors and Community Forestry User Groups.

4.1. Plantation targets and achievements

118. The Government has identified forest restoration as a key national development goal with the aim of increasing gazetted forest land from 20.6 million ha to 27 million ha – equivalent to 40 percent of the country’s area (combined RF, PPF and PAs). The Myanmar Reforestation and Restoration Programme (MRRP), developed by the Ministry of Natural Resources and Environmental Conservation (MONREC) and overseen by FD, aims at reforesting or rehabilitating 884,000 ha of forest within the PFE by 2026.

119. Under MRRP the government has set a target of 286,000 ha for plantations aimed at commercial timber production on RF land to be achieved by 2027. As of October 2019, a total of only 40,400 ha had been planted, including about 11,000 ha of private plantations (Table 2).

Table 2: MRRP commercial plantation targets and achievements October 2019
(Source Forest Department)

Type of plantation	Area target (ha)	Achievement October 2019 (ha)	Percent achieved
Private plantations	115,427	10,965	10%
Commercial (FD) tree plantations	65,951	12,800	19%
Restoration of old FD plantations	45,084	5,550	12%
Enrichment planting in natural forests	59,623	11,099	19%
Total plantation	286,085	40,414	14%

120. Surveys indicate that less than half government plantations established in the 1980s have survived. Failures were attributed to (i) illegal harvesting for house poles and furniture, and encroachment for agriculture; (ii) lack of permanent FD staff assigned to plantation sections in townships and frequent staff rotation; (iii) lack of staff and budgets for maintenance, including

thinning at suitable ages; (iv) weak monitoring and supervision at different levels in FD; (v) misunderstandings between local people and FD, and lack of benefit sharing approaches; and (vii) inadequate fire protection. These failures underline the risk, that even if planting targets are met, unless future budget allocations for their protection and maintenance are assured, plantations will be lost to encroachment and illegal logging.

121. **In addition, the government has set a target of 311,875 ha for community forests**, some of which will involve tree planting for commercial end uses. As of October 2019, community forestry certificates covering 63,834 ha (Figure 27) had been issued (21 percent of the target area) but the area dedicated to forest plantations is not clear.⁷¹

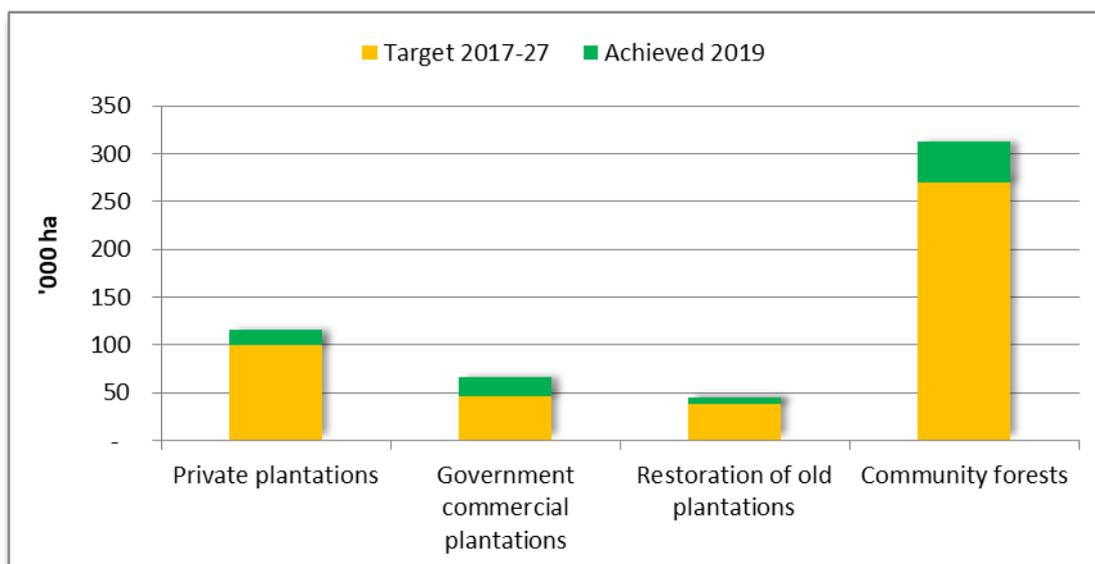


Figure 27: Myanmar Reforestation and Rehabilitation Programme (MRRP) plantation and community forestry targets and achievements – October 2019. (Source Forest Department)

122. **Data provided by the Myanmar Private Plantation Association show a total planted area of 222,675 ha on all land categories, including the PFE, VFV and private land** (Table 3). There is no information on the age-class structure or quality of these plantations. Potential annual production at maturity, assuming moderate growth rates, could be in the region of 2 million m³, although for teak and hardwoods, this would not be achieved for at least another 20-30 years, indicating a need for increased emphasis on fast-growing industrial species. Three current plantation projects involve JVs with foreign investors.⁷²

⁷¹ Whilst community forestry could contribute to increasing forest cover and to future timber supplies, recorded achievements represent only tenure change through issuance of CF certificates, and do not indicate level of tree planting.

⁷² These include:

- (i) Global Agriculture Joint Venture Co Ltd, a JV between Jade King & Queen Gems & Jewellery Co Ltd (a subsidiary of the Excellent Fortune Development (EFD) Group) and British Virgin Islands registered Cruilight Limited, which has over 12,000 ha of teak in Bago and Yangon Regions;
- (ii) Timberland Plantation Investment Co. (TPI), a JV between Global Greenery Pte Ltd., Singapore and Myanmar companies Nay Wun Myat and ITS Co., which is planting 2,040 ha of industrial species in Ayerawaddy Region; and

Table 3: Total private plantation area established on all land.

(Source: Myanmar Private Plantation Association)

Species	Area (ha)
Teak	60,120
Hardwoods (e.g., padauk and pyinkado)	45,360
Industrial species (mainly Acacia and Eucalyptus)	46,734
Rubber	70,461
Total area	222,675

123. While there is potential for mutually beneficial links between private plantations and community-based and outgrower plantations, there are few examples of this to date. Because of land tenure issues, development of such schemes is likely to be an essential part of scaling up progress towards plantation targets.

(iii) Habras-MZZ Plantation Myanmar Company Limited, an arrangement involving the Indian company, J.K. Paper, and Myo Zin Zar International Company Limited – also planting industrial species in Ayerawady Region with the goal of establishing 12,500 acres of its own plantations and 47,500 acres of outgrower plantations, including on CF land. The Thai paper company Double A has registered a local company, Paper Tree Myanmar, with plans to establish 25,000 acres in Ayerawady Region.

5. Private sector views on constraints to investment

KEY POINTS:

- **Plantation lease procedures are complex and onerous.**
- **Plantation timber and bamboo harvest and transport requirements should be reduced to reflect the lower risk of illegal harvesting and need to collect revenue.**
- **Governance, including better enforcement to prevent illegal logging, needs to be strengthened.**
- **There is a need for better information on areas available for plantations and the process for acquiring leases.**
- **Financial products adapted for forest plantations are needed; however, provision of subsidised financing was not seen as a particular constraint.**

5.1. Governance and policy issues

124. **Current regulations and processes to acquire leases are considered by private sector stakeholders to be complex and onerous.** While tenders are evaluated on the basis of financial criteria (annual land rental plus a one-off premium), there is also a long list of technical criteria which need to be submitted introducing a significant element of subjectivity to deciding tender awards. An alternative approach might be prequalification to bid, based on criteria that demonstrate financial, technical and management capability, and tenders for specific areas amongst prequalified bidders based only on a limited set of criteria such as a financial offer.
125. **In all cases, the tender criteria and evaluation processes at each stage should be clear, the basis for decisions transparent and results publicly available.** The need to prepare detailed management plans as part of a tender should also be reconsidered, and, once a plantation project has started, a degree of flexibility in management approaches should be allowed, as long as sound practices are being adhered to. For example, it should be possible to change species or silvicultural regime by informing FD, rather than need to seek approval.
126. **The regulations on harvesting and transporting plantation species where values are lower and risks of illegal logging are less than for natural forest species could be lightened.** The need to assess royalty revenues and to hammer-mark each log of fast-growing species or small-dimension thinnings should be reconsidered. Instead, arrangements for sharing a portion of the value of harvests directly with local communities (as required under plantation lease agreements in Ghana) might be preferable to assessing royalties payable to the central government in terms of securing local community support.
127. **A major constraint cited by most investors is the difficulty of protecting plantations and weak governance that allows corruption to persist,** which facilitates illegal logging at the local

level⁷³. This is likely to be viewed by international investors as a major risk factor and a clear demonstration of the Government's determination to tackle these problems is essential.

128. **Improved systems to provide assurance that all timber sold is legal are needed.** Initially this should cover timber from natural forests, but should be expanded ultimately to cover all timber, including that sold on the domestic market. Adaptations will be needed for plantation timber, which should be subject to lighter regulation than for timber from natural forest. The National Single Window "e-Tree" system⁷⁴ adopted by the Thai Royal Forest Department provides an example of a system suited for plantation timber (See 0).

5.2. Investment incentives

129. **The fiscal incentives available for foreign investment, including in the forest sector, provided under the 2016 Myanmar Investment Law (see section 3.5), should contribute to the country's attractiveness.** However, given the longer period before forest plantations provide returns, and the additional environmental services provided, some investors expressed the need for longer tax holidays. "Group Relief" as offered in Malaysia (see section 02), specifically for plantations could also be considered.
130. **More broadly, Myanmar's rating on ease of doing business⁷⁵ is likely to be an important factor influencing investors' decisions when comparing Myanmar to other countries.** Although improved investment and company laws have been passed in recent years and was rated by the World Bank as amongst the top 20 countries that had improved most on their ease of doing business score⁷⁶, the economy is still seen as being hampered by a range of economic controls and company laws and excessive bureaucracy.

5.3. Information and promotion

131. **There is little easily accessible information on the location of available areas of land that may be suitable for investment on a significant scale.** It appears that the onus is on investors to prospect for and identify land and, starting at the local level, find out whether it is available. This means that, after identifying suitable areas of sufficient size, potential investors must then wait while tenders are prepared and then compete with others for plantation leases. To avoid the tender process, instances have been noted where investors have preferred to find proxies to acquire leases in 100-acre blocks on their behalf. Forest districts and township forest offices seem to have adequate knowledge regarding what land is available, but there does not appear to be any process to prepare information packs for tenders that could be available to prospective investors at State or Region, or central government levels. There may be opportunities to determine the status and locations of suitable land for plantations through

⁷³ Myanmar scored 29 out of a possible 100 in Transparency International's Corruption Perception Index 2019, ranking it 130 out of 180 countries, equal second lowest with Lao PDR amongst ASEAN countries. (<https://www.transparency.org/country/MMR>)

⁷⁴ <https://nsw.forest.go.th/rfdportal/Home.aspx>

⁷⁵ The World Bank "Doing Business 2020" index ranks Myanmar 165th out of 190 countries – making it the least favourable ASEAN member country, but this is an improvement from 177th place in 2014. (<https://tradingeconomics.com/myanmar/ease-of-doing-business>)

⁷⁶ Top-20 improvers in Doing Business 2020 (in alphabetical order) <https://www.doingbusiness.org/en/reforms/top-20-reformers-in-db2020>

links with the recently agreed national forest inventory project to be supported by the Government of Finland.

132. **Currently there is no easily digestible information in English on investment in forest plantations**, highlighting a clear need for better promotion of opportunities. This includes general information on plantations and explanation of Myanmar's advantages (proximity to markets, plantation experience and technology, growing conditions, investment incentives), as well as specific information on areas where large-scale private plantation development is a priority (for example, the Bago Yoma or western Ayeyarwady Region), where there are large areas of denuded or degraded forest and good access to transport systems.

5.4. Financing

133. **Current investors interviewed have been unanimous in their view that further expansion of plantations is limited by availability of suitable finance products.** At present, all investments are equity financed with a relatively small proportion of foreign investment though JV arrangements with local companies. Loan finance is limited by the lack of a dedicated source of funds for forestry; banks' perceptions of the risks of loss through fire and other causes and that government will reclaim leased land; banks' unwillingness to lend without collateral; and, from some investors' viewpoint, the high interest rate.
134. **Concessional finance options, paired with other structural policy changes, were successfully adopted by many countries to develop plantation industry.** The strategies adopted in Vietnam and Malaysia (see Section 2) which involve concessional loans, the concessional FIP-AfDB loan for Ghana's teak plantation (Section 7.22), and Uganda's development cooperation-funded grant scheme (Section 7.5), all provide evidence of results that are possible if concessional finance is available. However, financing such a scheme in Myanmar, where multilateral development bank funding is routed through a local state bank to the private sector, however, does not appear to be feasible with the current state of the banking sector. Moreover, the viability of plantations, especially with fast-growing species, should not depend wholly on the availability of subsidised finance.
135. **There is potential for DFI financing or equity investment.** Direct DFI loans to investors that meet stringent environmental and social management standards as well as high standards of financial and business management, such as the IFC loan to Burapha in Lao PDR, or to joint ventures involving Timber Investment Management Organisations (TIMOs) are possible options in the short term. Further examination of potential sources of and structures for international finance is necessary.

5.5. Markets

136. **Investors in both fast-growing Acacia and teak plantations report current difficulties in selling small-dimension logs in the local market.** This appears to be because the existing sawmilling industry is largely still geared towards natural forest timber and sufficient volumes are not yet available to justify investment in processing. However, the recent growth of rubber-wood processing in Mon State suggests this might change as increasing volumes become available. With the planned large-scale investments by paper companies, it is probable that a market for pulp logs or chips will develop within the next five years.

6. Challenges for commercial plantations to guarantee sustainability

KEY POINTS:

- In addition to risks specifically linked to forest plantation establishment, investors' perception of risk is also likely to be influenced by a country's stability and general business environment.
- Social risks, especially those related to land tenure and the potential for related conflict, are a major issue for all land-based investment in Myanmar.
- Implementing adequate social and environmental safeguards, including seeking local communities' Free Prior Informed Consent before commencing investment is essential to avoid later problems.
- Other approaches for cooperation with local communities to help ensure they benefit from investments can reduce plantation risk.
- Biophysical risks, including those that may arise through climate change, can be addressed to a degree through species choice, appropriate surveillance, and management flexibility.

6.1. Risk in general

137. **Myanmar's history of political instability, conflict and disputes over land tenure, as well as governance issues, is likely to influence investors' perceptions and preferences.** When considering alternative plantation investments, investors factor risk into their estimates of potential returns. The magnitude of risk varies greatly by country and the discount rate applied must reflect the availability of information and efficiency of the market (both currently low in Myanmar). In effect, this means that expected returns should be 10 percent (or even more) higher to compensate for all risks⁷⁷; requiring financial returns in the range 17-25 percent. Such returns would be difficult to achieve in many developing countries and risks in some countries, would be too great to attract purely private capital. Myanmar's risk estimated in 2019 as indicated by "Country Risk Premium"⁷⁸ is highest amongst ASEAN countries (Lao PDR is not available) and on par with Ghana (Table 4). Apart from biophysical risks present for all plantation investments, Myanmar's attractiveness is also influenced by factors such as political stability, governance, security of tenure rights, and ease of doing business.

⁷⁷ Castrén, Tuukka et.al. (2014) Private Financing for Sustainable Forest Management and Forest Products in Developing Countries: Trends and drivers. Washington, DC: Program on Forests (PROFOR).

⁷⁸ Damodaran, Aswath (2019).

Table 4: Country risk and ease of doing business for selected countries

Country	Country Risk Premium ⁷⁹	Ease of doing business (rank out of 190) ⁸⁰
Cambodia	6.20%	144
China	0.79%	31
Ghana	7.33%	118
India	2.15%	63
Indonesia	2.15%	73
Malaysia	1.35%	12
Myanmar	7.33%	165
Philippines	2.15%	95
Thailand	1.80%	21
Vietnam	4.06%	70

6.2. Social risks

138. **Land tenure claims increase risks of conflict as well as encroachment and timber theft.** Because of widespread land confiscation under previous governments, contested land rights present a major risk for investors. Although according to current legislation, land claims should be settled before forest land (RF and PPF) is gazetted⁸¹, illegal logging following legal selective harvests opens areas for unauthorised settlement and cultivation so that most deforested areas are occupied or claimed by communities to a greater or lesser extent. Previous government plantations have also been decimated by timber theft and encroachment and prevention efforts need to include adequate protection and maintenance budgets, as well as management models whereby local community support is secured.
139. **VFV land is even more contentious.** Under the current VFV Law, the settlement process has been criticised by land-rights activists as criminalising millions of farmers who were not able to apply for permits within the time allowed, laying the ground for unchecked land seizures by the government, the military and private companies.
140. **Land disputes need to be addressed for plantation industry to become sustainable.** Given a prevailing atmosphere of distrust surrounding land tenure issues, it is likely that in almost all cases, arrangements to work with local people to reduce potential conflict will be necessary before plantation development in an area starts. A recent workshop on forest tenure⁸² recommended that efforts to address land disputes will need to be shared between Government and private investors and should include a strong provision for Free Prior Informed Consent (FPIC). Safeguards should go beyond mere information provision or an

⁷⁹ Ibid.

⁸⁰ <https://www.doingbusiness.org/en/rankings>

⁸¹ However, a recent assessment of forest tenure in Myanmar (Myanmar Working Group on Forest Tenure Assessment (2020) An Assessment of Forest Tenure in Myanmar: Securing Forest Tenure for Sustainable Livelihoods) asserts that the 2018 Forest Law's provisions fall short of internationally accepted FPIC principles.

⁸² Myanmar Working Group on Forest Tenure Assessment (2020).

occasional meeting – and communities should be able to give their consent to development or withhold it.

141. Approaches for active investor-community cooperation in plantation development could include:

- a) Assistance with forming CFUGs and support for CF in adjacent areas, with first refusal option to buy CF-grown trees on maturity;
- b) Contract tree farming within or adjacent to the lease area, with similar purchase arrangements;
- c) Wide spacing between trees on establishment to allow for inter-cropping by local people (which also benefit the plantations by reducing weeding needs);
- d) Technical assistance to communities for small-scale plantations, agroforestry systems and other livelihood activities; and
- e) Sharing harvest proceeds with local communities (e.g. as in the Ghana plantation schemes – See 3.2.).

142. With regard to benefit-sharing solutions, consideration should be given to replacing the apparent cumbersome procedure of assessing royalties payable to the state on each harvest by direct payments by plantation enterprises to local people assisting with plantation development and protection.

143. Grievance redress mechanisms, participatory approaches and improved consultation processes will need to be established. Large-scale land development is likely to attract opposition from local people as it may affect their customary activities and other aspects of their livelihoods. This underlines the need to involve local people in preparing plantation plans and to develop and communicate ways in which they can benefit from plantation implementation. In such cases, continued consultations with local communities to understand and address their concerns are likely to be essential.

6.3. Environmental risks

144. There is a range of environmental risks associated with large-scale plantations, especially where they involve intensively-managed monocultures. These may relate to the plantation crop's water demands, the effects of fertiliser, pesticide and herbicide use, soil depletion with repeated short rotations, reduction in biodiversity, loss of natural habitats, and unintended spread of introduced species. Concerns have recently been raised about increased planting of tissue-culture eucalyptus hybrids in Myanmar and there are numerous reports concerning planting species on unsuitable site – for example Acacia on deep peat land in Indonesia. Industrial plantations of fast-growing species are themselves unlikely to contribute to biodiversity, but by addressing demands for wood can reduce pressure on remaining natural forests

145. These risks underline the importance of appropriate planning of plantations and monitoring impacts. Species selected should be suitable for the sites and breaking up large contiguous blocks of single species to retain (and enhance) natural vegetation and provide for wildlife corridors should be an essential part of investment plans. Converting natural forests to plantations (for example as took place in Indonesia) should be avoided.

6.4. Compliance with environmental and social safeguards

146. **Adoption of social and environmental safeguard standards is essential to address plantation risks.** To avoid conflicts which may arise from tenure, other social issues and environment concerns, investments in industrial-scale plantation management are likely to need to adopt measures to address risks. The eight IFC Performance Standards⁸³ (see Box 2), which have been adopted by several Development Finance Institutions (DFIs), are likely to set a benchmark on which to base such measures.
147. **Evidence that such standards are being met is likely to require certification of plantation management to the FSC Principles and Criteria, or equivalent.** At present there is no FSC programme in Myanmar, but the **Program for Endorsement of Forest Certification Schemes (PEFC)** is currently supporting the Myanmar Forest Certification Committee (MFCC) to develop a national certification programme, which includes a draft standard for plantations.⁸⁴
148. **While achieving certification standards is likely to be a prerequisite to reducing reputational risk for institutional investors and DFIs, certification may also be needed to access certain export markets.** As noted above, the EU and some regional export destinations require credible verification of legal production⁸⁵, which certification to an international standard would help provide. Some Acacia producers have already cited lack of certified material as an obstacle to their supplying Vietnamese customers. A credible and transparent certification system for plantations will require the ability to access to Myanmar's subsidiary legislation (i.e., procedures and instructions), which are currently only available in the Myanmar language.
149. **Application of best practice guidelines in land-use planning and allocation process will be essential to address long term sustainability.** Essential requirements, related in particular to tenure, are included in the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests (VGGT). While generally setting out the responsibilities of States in terms of recognition, respect and protection of the legitimate tenure rights of individuals and communities, including those with customary tenure systems, they also encourage responsible investments in resources in ways that increase sustainable production and generate higher incomes. In this regard, responsible investments should do no harm; they should safeguard against dispossession of legitimate tenure right holders and environmental damage; and they should be implemented in partnership with relevant levels of government and local holders of tenure rights. Other useful sets of principles include the Guiding Principles on Business and Human Rights and the Voluntary Principles on Human Rights and Security.

⁸³See <https://firstforsustainability.org/risk-management/implementing-ifc-environmental-and-social-requirements/establish-and-maintain-an-esms/ifc-environmental-and-social-performance-requirements/ifc-performance-standards/>

⁸⁴https://www.myanmarforestcertification.org/wp-content/uploads/2019/05/Plantation_ForestStandardsENG.pdf

⁸⁵ Importing country legislation includes the EU Timber Regulation, the US Lacey Act, the Australian Illegal Logging Prohibition Act, the Japan Clean Wood Act, the Republic of Korea Sustainable Use Act, as well as controls to prevent imports of illegal timber in Indonesia, Vietnam and Malaysia linked to their VPA processes

Box 2: IFC's Performance Standards and their application to forest plantations

1. Environmental and Social Assessment and Management System: Investors should manage the environmental and social performance of their activities, involving communication with workers and directly affected local communities. This requires development of management systems, appropriate to the size and nature of the plantation activity, that promote sound and sustainable environmental and social performance.
2. Labour and Working Conditions: The basic rights of plantation workers should be protected; they should be treated fairly and provided with safe and healthy working conditions.
3. Pollution Prevention and Abatement: Investors should integrate pollution prevention and control technologies and practices. For plantations, this is likely to include controls on pesticide and fertiliser use, and of effluents where associated downstream processing is established.
4. Community Health, Safety and Security: Investors should avoid or minimise the risks and impacts to community health, safety and security that may arise from their activities. For plantations, these may arise from accidents with roading or logging equipment, releases of hazardous materials (e.g., pesticides), and impacts on communities' natural resources (especially water), as well as actions by security personnel to prevent encroachment.
5. Land Acquisition and Involuntary Resettlement: Investors should avoid physical or economic displacement or minimize impacts on displaced individuals or communities through measures such as fair compensation and improving livelihoods and living conditions of affected communities. Where plantation areas are occupied (even if formally "illegal"), investors should implement measures to reach accommodation with occupants, such as intercropping and/or eventual benefit sharing and, if relocation is necessary, provision of alternative living and farming sites.
6. Biodiversity Conservation and Sustainable Natural Resource Management: Investors should avoid or mitigate threats to biodiversity arising from their business activities and promote the use of renewable natural resources in their operations. Where monoculture plantations are established, set-aside areas to retain or rehabilitate natural vegetation and creation or preservation of wildlife corridors within lease areas should be included in management plans.
7. Indigenous Peoples: Investors should ensure that their business activities respect the identity, culture and natural resource-based livelihoods of Indigenous Peoples and reduce exposure to impoverishment and disease. This is likely to be a particular requirement where plantations are established in Myanmar's ethnic areas and, in these cases, communities Free Prior Informed Consent (FPIC) concerning the development plan should be obtained before activities commence.
8. Cultural Heritage: Investors should avoid significant damage to cultural heritage due to their business activities. These may include properties and sites of archaeological, historical, cultural, artistic and religious significance as well as unique environmental features and cultural knowledge, innovations and practices of communities embodying traditional lifestyles.

Compliance with the Performance Standards requires risk assessment, a grievance mechanism, independent auditing and reporting.

6.5. Forest governance related risks

150. **Illegal logging and encroachment are identified as major risks for investors.** Illegal logging has two dimensions: (i) timber theft from plantations as they start to become valuable; and (ii) widespread illegal logging in natural forests, both to supply timber for the domestic market and its infiltration into export markets, which depresses markets and log prices for timber from legal sources. Investors themselves have limited authority to exclude illegal loggers and, whilst FD can confiscate illegally-harvested timber, only the police can make arrests. Moreover, the

persistence of illegal logging and perceptions of the country's overall governance environment contributes to Myanmar's reputation as a "high-risk country" for investors.⁸⁶

151. **Strengthening FD's surveillance, detection and control systems**, including introduction of IT applications, as well as improved cooperation between the police and FD, and continued efforts to tackle corruption at the local level, are seen as essential in reducing illegal logging and in enhancing Myanmar's reputation as a destination for investors.

6.6. Climate-related risks

152. **A changing climate imposes significant challenges and some opportunities for the forest plantation sector.** Adaptation involves taking action either to reduce or avoid commercial losses that may arise due to extreme weather events such as droughts (and associated fire) or tropical cyclones, as well as increased risks of pest and diseases. For plantations, the most fundamental measure is the choice of appropriate species for particular sites. However, predicting the nature and magnitude of change is complex and adaptation needs to be a continuous process, involving a process of 'adapting well' to continuously changing conditions. This requires learning based on past experience, new knowledge and a comprehensive analysis of future options⁸⁷. In the short term it is unlikely that climate change considerations would lead to changes in species selection because within the period of a short rotations, conditions would not change enough to change a group of suitable species to that more suitable for another location. However, climate change considerations could affect species choice for longer-term hardwood rotations and this should be regularly reviewed, particularly in transitional environments and use of a limited range of clones of a given species should be avoided.⁸⁸

6.7. Biophysical risks

153. **Good silvicultural practices are also essential for successful plantation establishment.** Whereas, larger companies typically adopt good practices, communities often do not have access to pest control, quality planting material and management practices to address biophysical risks to forest plantations, e.g.:
- poor species and site matching
 - biological risks, especially diseases and pests
 - inter-annual variations in climate (e.g. prolonged drought in some years)
 - management practices resulting in site degradation
 - over-cutting the stands on shorter rotation cycles reducing site quality and yields
 - fire.
154. **Several insect pests and diseases have been identified in plantations in Myanmar and neighbouring countries.** Both, private community partnerships and government extension services will be crucial to support the plantation industry, small and large, to address those risks. The risk of pest and disease outbreaks in plantations, especially those derived from a narrow genetic base (as is likely to be the case with fast-growing introduced species) underlines the

⁸⁶ See for example <https://www.nepcon.org/sourcinghub/timber/timber-myanmar>.

⁸⁷ Keenan, R.J. (2015).

⁸⁸ Guariguata Manuel R. et. al. (2008).

need for surveillance and reporting, and also cooperation between investors and engagement with research institutions. Examples of pests and diseases include:

- **In Teak Plantations, shoot and stem borers and leaf feeding insects**⁸⁹ have been detected. In 2019, significant areas of young plantations are observed to have been affected by a leaf-skeletoniser, *Eutectona machaeralis* in the eastern Bago Yoma area near the Yangon-Nay Pyi Taw highway. Biological measures have been assessed as the most effective control for this pest.
- **Extensive areas of *Acacia mangium* pulpwood plantations in Indonesia have become infected by red root rot (*Ganoderma philippii* or related species) and stem wilt/canker (*Ceratocystis* sp.)**.⁹⁰ These have caused mortality levels so high that a significant proportion of the plantations were no longer viable. Evaluation of the incidence of root rot suggested that build-up of inoculum increases with successive rotations. Outbreaks of *Ceratocystis* are reported to have been more damaging than root rot. It is spread through fungal spores carried by beetles that burrow into the bark of trees, which is aggravated by bark peeling and stem wounding by squirrels, monkeys and elephants, especially in compartments close to retained native vegetation. These problems have led Indonesian plantation companies to change species – including alternative *Acacia* species, *Acacia* hybrids and *Eucalyptus*. There are reports of root rot becoming prevalent in plantations in Vietnam, so it is possible that plantations in Myanmar will become affected as rotations of the species are repeated.
- **Fungal diseases that affect the leaves and branches of eucalypts have caused serious damage in some countries.** In Thailand, thousands of hectares of clonal plantations were killed by an epidemic of *Cryptosporiopsis eucalypti* leaf blight fungus in one year. And in central and southern Vietnam, large areas of *E. camaldulensis* plantations have been lost to attack by leaf blight diseases, notably *Cylindrocladium quinqueseptatum*.⁹¹
- **Big-leaf mahogany (*Swietenia macrophylla*)** is commonly affected by the shoot borer *Hypsipyla grandella*, which bores into and kills young trees' terminal shoots⁹². A lateral branch grows replaces the terminal shoot, resulting in a crooked main stem. Small trees whose terminal shoots are attacked repeatedly in successive years become extremely deformed. This is widespread throughout the tropics and has been observed in young plantations in Sagaing Region.
- ***Pestalotiopsis microspora* leaf fall disease** has had severe impacts in rubber plantations, affecting nearly 53,000 ha in Thailand, 368,000 ha in Indonesia and 2,500 ha in Malaysia. One of the causes was reported to be unhealthy trees due to lack of

⁸⁹ See Khin Mar Myint and Tun Tun Win (2016) Effective Control Measures of Some Major Insect Pests in Young Teak (*Tectona grandis* Linn.f.) Plantations (FRI Leaflet No.19/ 2016).

⁹⁰ Harwood, C. E. and E. K. S Nambiar (2014). Sustainable plantation forestry in South-East Asia. ACIAR Technical Report No 84.

⁹¹ Harwood, C. E. and E. K. S Nambiar (2014).*op. cit.*

⁹² See http://entnemdept.ufl.edu/creatures/trees/moths/mahogany_borer-english.htm.

maintenance as a result of low latex prices⁹³. As a preventive measure Myanmar has banned import of Thai rubber seeds, seedlings, and saplings⁹⁴.

155. **Fire damage is a constant risk.** There is a 6-8 month dry season in most areas of Myanmar and fire in plantations during the latter part of the season is often caused by local people burning grass and shrubs to stimulate new growth for livestock or hunting. Accordingly, effective fire control measures – prevention-detection-suppression – need to be included in management plans.
156. **Insurance services for plantations are not yet available in Myanmar but have been provided in other countries in the Asian region.** These have covered teak, rubber, macadamia, acacia and agar wood plantations, and buyers have included banks that lend to small growers.⁹⁵ Cover is usually for fire and wind, but generally not losses due to pests and diseases (although payments covering the cost of treating pests and diseases can be included). Premium rates reflect the risk of loss (e.g., young trees are far more prone to fires than mid-rotation ages); the tree species; total value to be insured and the amount of insurance required; and the state of the insurance markets (i.e., competition in the sector – which is very low in the case of plantation cover). Typical premiums for small forestry enterprises may be about 1 percent of the risk limit (e.g., 1 percent of a US\$5 million limit as part of US\$15 million total value forest). For larger enterprises, the premium for an insured limit of US\$20 million could be in the order of 4 percent, or higher for plantations in a typhoon/cyclone belt.

⁹³ <https://www.bangkokpost.com/business/1793424/fungal-disease-damaging-southern-rubber-plantations>.

⁹⁴ <https://www.mmtimes.com/news/seed-imports-banned-fungal-disease-hits-thai-rubber-trees.html>.

⁹⁵ Phil. Cottle, ForestRe / Globe Underwriting Limited (personal communication).

7. Finance options

KEY POINTS:

- There are currently no suitable products for debt financing of plantations in Myanmar, and local banks are not set up to be financial intermediaries for international development loans.
- Examples from other countries where development finance has been utilised to support plantation investment have normally required borrowers to meet environment and social governance performance standards equivalent to those of the Forest Stewardship Council.
- Other possible sources of finance are equity finance from institutional investors (usually via Timber Investment Management Organisations) or large industrial companies, and the voluntary carbon offset market.

157. As noted above, there are currently no suitable loan financing products in Myanmar, and it is unlikely that domestic equity finance of this magnitude will be available. Therefore, scaling up of forest plantations sufficient to meet MRRP targets will require external financing. Some options are considered below.

Box 3: Cost ranges for plantation establishment

Typical costs quoted by FD for teak and hardwood plantation establishment over the first 5 years range from MMK 1.2 million to MMK 2.5 million/ha (\$2,000-\$4,100/ha), depending on species and initial spacing. Annual protection and maintenance costs are around MMK 18,000 (\$30) /ha/year.

Costs for establishing fast-growing industrial species reported by the Private Plantation Association from range from MMK 151,000 (\$250)/ha to MMK 830,000 (\$1,370)/ha. In most cases, maintenance needs of these species after the first year are likely to be minimal. Weeding and climber cutting are likely to be required for longer for Eucalyptus than Acacia, due the eucalypts' thinner crowns

Assuming that the private sector would focus primarily on fast-growing industrial species with an establishment cost of US\$1,200/ha, and the FD on teak or hardwoods with a cost of US\$2,000/ha, the total cost of achieving MRRP commercial plantation targets would be about US\$138 million and US\$222 million respectively.

7.1. Multilateral development bank loan via a local bank

158. **International or regional development institutions have played a critical role in other countries to develop the plantation sector.** In Myanmar, financial products could be developed to support a local state bank such as MADB, to create a facility for qualified local enterprises to borrow from for bankable forestry projects, with an interest rate mark-up.
159. An example of this in the agriculture sector was a two-step loan from the Japan International Cooperation Agency (JICA) to MADB for loans of MMK 50 million to individual farmers, and MMK 500 million to groups of farmers for purchase of rice mills, oil mills, and combine harvesters. The interest rate payable by the Ministry of Planning and Finance (MOPF) to JICA was 0.01%, by

MADB to MOPF 3.0%, and by farmers to MADB 8.5%. Loan security included farmers' land titles ("Form 7"), immovable assets and the purchased machinery. Equipment was purchase directly by MADB on behalf of beneficiaries as shown in Figure 28.

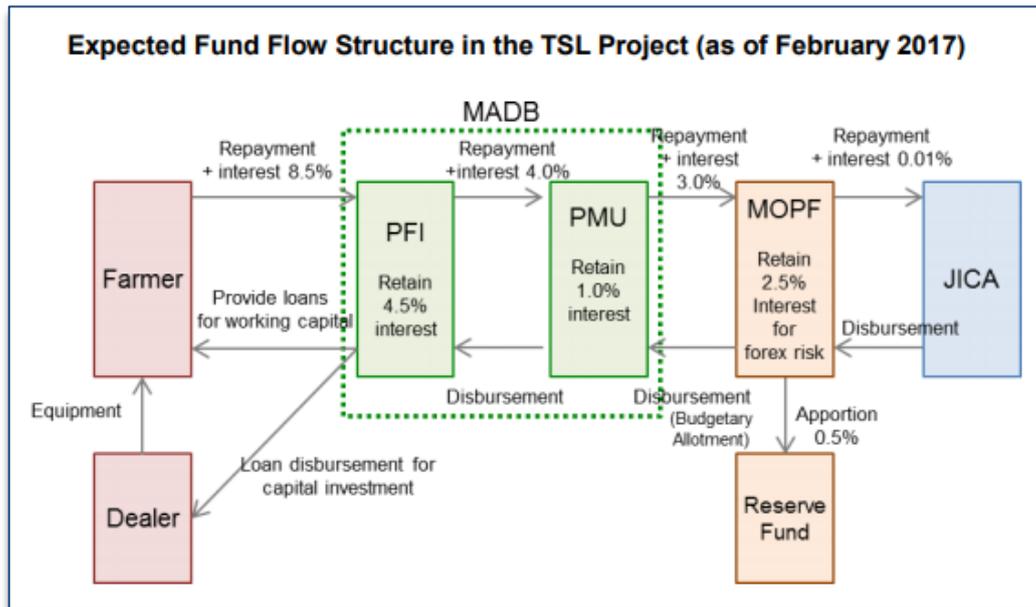


Figure 28: Scheme of the JICA two-step loan (TSL) to farmers via Myanmar Agriculture Development Bank (Source: http://open_jicareport.jica.go.jp/pdf/12304895.pdf)

160. **Development Banks (such as the World Bank) would typically focus their support on the development of smallholder plantations.** As lending operations are based on subsidized rates, these operations include poverty relevant interventions, focusing on small size plots operated by smallholders and not private plantations. Local financial intermediary (FI) would be required to meet the Eligibility Criteria for FIs.⁹⁶ These are:

- a) adequate profitability, capital and portfolio quality, as per audited financial statements;
- b) appropriate capacity to carry out appraisal and supervision of loans;
- c) capacity to mobilize domestic resources; and
- d) adequate managerial autonomy, commercially-oriented governance, and business procedures.

161. **Financial Intermediaries would also need to meet the Bank's requirements of the Environmental and Social Standard on FIs (ESS9),** which sets out how FIs must assess and manage environmental and social risks and impacts associated with the subprojects it finances. Forest sector borrowers also need to demonstrate high-quality environmental performance, which generally means certification to the FSC's standard or equivalent. Given the current restrictions imposed by MADB (see section 3.6), it does not appear that this approach will be feasible in the immediate future.

162. **A specific example of development bank financing of a forestry project is provided by the Public-Private Partnership for the Afforestation of Degraded Forest Reserves project in Ghana** (see section 2.2). A loan of US\$14 million from the African Development Bank for a

⁹⁶ <http://siteresources.worldbank.org/INTECA/Resources/FILending.pptx> .

sustainable commercial teak plantation provided a concessional debt package at sub-market terms and aligned incentives through a tripartite benefit-sharing agreement between the Government of Ghana, the project owner (Form Ghana Limited), and local communities.^{97,98} In this case, the loan is made directly to the company, which is the sole loan beneficiary; the interest rate is 5 percent; there is a 5-year grace period; and the repayment period is 15 years. The loan is secured by corporate guarantee so physical collateral is not required.

7.2. Development Finance Institution (DFI) loan to or equity in a national enterprise, or a joint venture

163. **A Development Finance Institution (such as IFC)⁹⁹ may lend to directly to or invest in a qualified national enterprise or a joint venture involving a foreign partner.** Over the past decade, IFC has invested US\$1.5 billion in 56 projects along the forest product supply chain. These include paper and board production, mechanical wood production, processing in pulp mills, and primary production of wood. IFC Advisory Services have also supported 44 projects worth US\$30 million in spending, mainly on land and social and environmental-related issues with upstream activities, including timber plantations.
164. **The IFC is investing in a 356,000-ha project in Portucel Mozambique¹⁰⁰, a forestry project integrated with a paper pulp production industry.** Total planned investment includes US\$2.5 billion; in Phase I comprising US\$260 million in 40,000 ha of plantations and a 1 million ton woodchip mill; while Phase II will see establishment of a further 160,000 ha and a 1.5 million ton pulp mill. The Mozambique Government has granted land for the plantations for a 50-year period. The World Bank in parallel has supported activities related to community land delineation, capacity building and policy reforms in the plantation and land-use planning sectors to complement Portucel investments.
165. **Other examples of DFI investments in forest plantations include the Dutch FMO's investment of US\$5 million in the Lao-Swedish joint venture, Burapha,** which is funding the CAPEX of the plywood mill and expansion of the company's plantations from 3,540 ha to 7,000 ha. FMO is also investing US\$15 million in the Tropical Asia Forest Fund, a EUR 76 million private equity fund managed by Australian-based fund manager New Forests Pty Ltd, with projects in Lao PDR, Malaysia and Indonesia¹⁰¹. The World Bank has also worked closely with Government to support policy reforms for the plantation sector in Lao PDR to strengthen the enabling environment for private companies to develop sustainable plantations.
166. DFIs generally subscribe to IFC's Performance Standards (see Section 6.4), which its investment partners need to meet.

⁹⁷ <https://www.afdb.org/en/news-and-events/african-development-bank-and-forest-investment-program-sign-loan-with-form-ghana-ltd-to-restore-ghanas-forests-16768>.

⁹⁸ <https://www.forminternational.nl/portfolio-item/form-ghana/>.

⁹⁹ Other DFIs that have had forestry projects in their portfolios include those of Europe (EIB), Denmark (IFU), Finland (Finnfund), France (Proparco), Germany (KfW), Netherlands (FMO), Norway (Norfund), United Kingdom (CDC) and USA (OPIC).

¹⁰⁰ http://en.portucelmocambique.com/content/download/7610/138941/version/1/file/Portucel_Mocambique_Facts+%26+Figures.pdf

¹⁰¹ <https://www.fmo.nl/project-detail/31817>; <https://newforests.com.au/new-forests-closes-first-asia-pacific-investment-for-the-tropical-timber-fund/>.

7.3. Investor equity via Timber Investment Management Organisation (TIMO) in joint venture with a national enterprise

167. **Timber Investment Management Organisations act as brokers to find, analyse, and acquire investment properties for clients, and subsequently manage them on clients' behalf.** Financing may come from pension funds (for example) or from DFIs. Typically, management standards equivalent to the IFC Standards would be required. Other commercial requirements include returns that are sufficient to compensate for risks, ability to choose joint venture partners and repatriation of investors' capital. In general, investment in going concerns (i.e., existing forest assets) is preferable to planting on greenfield sites. New Forests Pty. Ltd. and Form International, as described in previous sections, are examples of TIMOs.

7.4. Foreign forest industry company equity in joint venture

168. **Large forest industry corporations with plans to increase their production may look for long-term investment opportunities to expand their raw material base and also markets.** Some large paper companies have established pulpwood plantations in the Asian region in countries other than their home base with a view to creating a source of raw material for existing industries, or to supply new investments in processing in the target country. The current investment by J.K. Paper, in Habras-MZZ Plantation Myanmar Company and Double A in Paper Tree, both in Myanmar; and by the Finnish-Swedish forest industry company, Stora Enso, in Stora Enso Lao are examples of this financing approach.

7.5. Timber production grant scheme

169. **In order to develop the plantation industry, several countries have developed grant programs that co-fund plantation developers in their efforts to establish first-of-a-kind operations.** The Uganda Sawlog Production Grant Scheme (SPGS)¹⁰² recognises that subsidies are needed to attract private sector investment into forest plantations. It provides financial grants and technical support to commercial tree planters, rural communities, public and private institutions, as a means of promoting investment in commercial tree planting and increasing income of rural populations. A total area of around 82,000 ha of plantation will have been established over 3 phases since 2004 with contributions of US\$33.7 million from the EU, US\$4.9 million from Norway, and US\$2.2 million from the Government of Uganda. Most of its clients have been small to medium-sized local entrepreneurs, with an average plantation size of 50 ha, and areas split 50:50 between private and public land. Beneficiaries are paid a conditional and retrospective grant (subsidy) after an initial investment in commercial tree planting has been made and verified to ensure establishment of plantations to documented quality standards. The current phase of SPGS is also supporting investments in timber processing, as the established plantations are maturing and the development of value chains needs further support.

7.6. Voluntary carbon offset market

170. **Airlines, oil companies, and individuals are using voluntary carbon markets to achieve net reductions in greenhouse gas emissions.** In 2018, transactions involving forestry and land use equivalent to 50.7 million metric tons of carbon dioxide (MtCO₂e) for a total market value of US\$171.9 million were recorded, compared with 16.6 MtCO₂e and US\$63.4 million in 2016¹⁰³.

¹⁰² <http://spgs.mwe.go.ug/about-spgs-iii>.

¹⁰³ <https://www.forest-trends.org/pressroom/demand-for-nature-based-solutions-for-climate-drives-voluntary-carbon-markets-to-a-seven-year-high/>

Major investors include Shell, which has committed to invest US\$300 million in offsets associated with nature-based solutions from mid-2019 through mid-2022¹⁰⁴. British Airways and Air France, meanwhile, have announced they will offset emissions from all domestic flights beginning in 2020, while EasyJet announced in November that it will offset all emissions from its use of jet fuels immediately. These commitments may be affected by the 2020 COVID-19 outbreak; an informal survey of forest carbon project developers suggested “lean years ahead”¹⁰⁵, although large corporates seem to remain committed for the time being.¹⁰⁶ However, airlines’ appetite for offsets is likely to be hit by the impact of COVID-19 on their operations.¹⁰⁷

171. **Despite a focus on conservation of natural forests, carbon finance represents a possible opportunity for Myanmar to fund forest rehabilitation.** Most projects aim simply to pay for developing a carbon sink, but timber production is not necessarily ruled out; for example, the expected outcomes of the Afforestation of Degraded Forest Reserves project in Ghana (see section 02) includes net greenhouse gas sequestration potential of around 2.8 MtCO₂ over 40 years (a long-term average of 70,103 tCO₂ per year). A total of 300,000 tCO₂ have been sold to date.¹⁰⁸
172. **Typical considerations for pure carbon projects include an acceptable level of risk linked to good governance;** ability to scale up to significant area (>100,000 ha for restoration/protection); highest management standards and secure long-term land tenure. Carbon credits must be able to be exported and also deducted from national carbon accounts to avoid double accounting under countries’ NDCs.¹⁰⁹
173. **Another option for developing carbon finance operations is at a jurisdictional level.** Norway and other large sovereign carbon buyers prefer buying emission reductions from landscape jurisdictional programs, which would include conservation and production forests of native forests, community and plantations across the landscape. Typical partners would be Governments but would require close partnerships with CSOs and private companies. First deals were closed between Norway and Brazil, Indonesia and other tropical forest countries. Myanmar might be good candidate in the future, if reform process continues to be a priority.¹¹⁰

¹⁰⁴ <https://www.shell.com/energy-and-innovation/new-energies/nature-based-solutions.html>

¹⁰⁵ Zwic, Steve. Will COVID-19 Help or Hinder Efforts to Develop Natural Climate Solutions? Ecosystems Marketplace, 27 April 2020

(<https://www.ecosystemmarketplace.com/articles/how-covid-19-could-stall-efforts-to-meet-the-climate-challenge-and-what-to-do-about-it/>)

¹⁰⁶ E.g, Bousso, Ron and Shadia Nasralla. Shell Recommits to Net Zero, Despite COVID-19. Ecosystems Marketplace, 20 April 2020

(<https://www.ecosystemmarketplace.com/articles/shell-recommits-to-net-zero-despite-covid-19/>)

¹⁰⁷ <https://www.theverge.com/2020/3/10/21173667/coronavirus-airlines-carbon-emissions-climate-change-2021-icao>

¹⁰⁸ Rik Sools, FORM Ghana Limited, personal communication 2019.

¹⁰⁹ Joel Scriven, Shell, personal communication 2019.

¹¹⁰ Other issues to consider with carbon projects include establishing the additionality of projected offsets; possible leakage to other areas, and criteria for ‘standards’

8. Alternative plantation tenure approaches for private plantations on State land

KEY POINTS:

- Variants of the current model for plantation leases on State land should be considered. These should encourage mutually beneficial linkages between private company plantations and community-based and smallholder plantations.
- Consideration should be given to incorporating existing government plantations and areas of natural forest within lease areas and assigning management and utilisation rights to lease holders.
- This would increase the attractiveness for investors by providing more immediate returns and, at the same time, benefit the government through additional revenue streams while also relieving it of the need to budget for future protection and maintenance.

174. **The current approach for private plantations is through leases of denuded RF land to investors in accordance with provisions in the 2018 Forest Law and a set of FD instructions and procedures.** Because of size limitations of contiguous land areas, needs to involve local communities in sharing benefits, a preference of some international investors to include existing forest (as opposed to purely greenfield sites), and benefits to the State from allocating management of State plantations to the private sector, a range of other options should be considered.

8.1. Plantation leases on denuded State land

175. **Plantation leases on denuded RF land represent the current approach to private sector investment as provided for in the 2018 Forest Law, but this has certain disadvantages.** The low current upper limit of 1,000 acres (405 ha) for each lease area and what is seen as a cumbersome acquisition process are potential obstacles to investment. Leases on VFV land is seen by some investors as overcoming some of these disadvantages. Although primarily intended for agricultural use, simpler acquisition procedures, the larger areas that can be leased (3,000 acres/ 1,214 ha) and the ability to acquire secure title (Form 7) once developed, may make VFV land more attractive to investors than RF land. However, the requirement to develop the whole lease area within 4 years could be considered too short for some investors.

8.2. Plantation leases with local farmer intercropping

176. **This variant of the current model is not strictly a tenure arrangement, but it could increase local community ownership and support.** Trees are planted with wide spacing between rows so that local farmers have use rights to the land between rows to grow annual crops until the tree crowns close. This provides local people with income sources in addition to wages from plantation work and also reduces weeding costs for the company early in the establishment period. This approach is employed by both Stora Enso Lao and Form Ghana Limited. In the latter case the agreement with government also prescribes that proportions of the stumpage

values of each harvest is paid to traditional land owners and local communities, which could be considered as an alternative to paying stumpage royalties to the State.

8.3. Plantation leases with tree out-grower schemes in adjacent community forest areas

177. **Developing partnerships with local communities should benefit both the communities and investors.**

This would give communities a stake in the plantations and reduce the risk of encroachment and timber theft, provide additional sources of raw material for the investor, while also supporting community forestry through:

- a) Assisting households within or adjacent to lease areas to form CFUGs and to prepare management plans to secure CF certificates;
- b) Providing planting material (free or at nominal cost) and technical advice on forest and agricultural crops;
- c) Providing technical assistance to surrounding communities in more sustainable agricultural practices to strengthen their livelihoods; and
- d) Assuring markets for industrial forest crops grown by communities, by agreeing to purchase on a first refusal basis.

178. **There are several examples of partnership models which benefit investors and communities.**

An interesting approach in Myanmar is the so-called “cluster” approach where groups of smallholders within a defined area close to investors own plantations and/or processing facilities are supported to supply raw material, as shown schematically in Figure 29.

179. **The approach promoted by the Myanmar Bamboo and Rattan Association, which is working with 19 communities and 5,000 ha of plantation in the Bago Region, is a variant of this model.**

The investor provides seedlings and technical advice to Community Forestry Use Group (CFUG) members, including technology for preliminary processing aimed specific products, and purchases semi-finished products for further processing. This could be replicated for a range of other products, including industrial woodfuel, wood chips for pulp, and solid wood products.

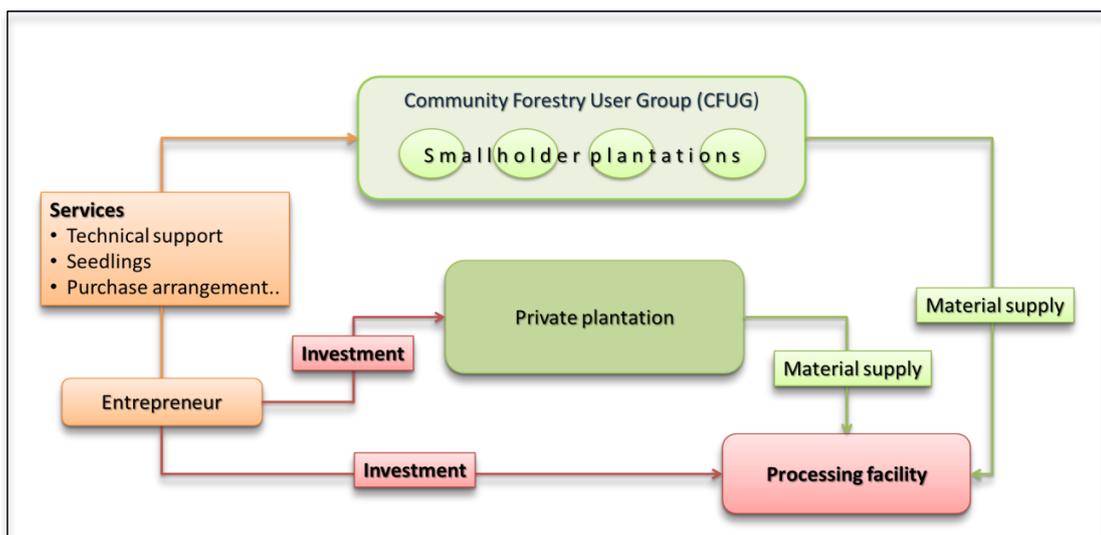


Figure 29: Schematic model of cluster approach combining community forestry and private plantations

8.4. Plantation leases on state land with tree out-grower schemes in adjacent private land

180. **Tree outgrower partnerships with local farmers contribute to rural incomes and secure their support for plantation investments.** This is similar to the community forestry approach described above, with the difference that farmers with title to adjacent land are assisted to grow trees in areas between fields, such as on rice paddy bunds. Benefits include provision of planting material and technical support and guaranteed purchase of trees at maturity. This approach has been employed by paper companies in Thailand, where (in 2012) some 60,000 contracted and independent farmers growing eucalypts on about 336,000 ha were providing the companies' main source of wood supply¹¹¹. In India, State Forest Development Corporations and the paper companies have worked with farmers to create a wood resource base – mainly of eucalypts – of more than 3 million ha of plantations, under agro / farm forestry systems¹¹². MZZ-Habras Plantation Company plans to adapt this approach in its JV with JK Paper in Ayeyarwady Region.

8.5. Plantation leases combining denuded State land and rehabilitation of degraded plantations

181. **Allocating degraded State plantations to the private sector for rehabilitation would reduce the need for public funding for their restoration, management and protection, and may provide investors with earlier returns compared to pure greenfield sites.** Under MRRP, rehabilitation of about 45,000 ha of degraded government plantations and establishment of about 66,000 ha of commercial plantations on denuded FR land is seen as a State responsibility. While this may be the best approach for slow-growing hardwood species, additional areas identified for commercial government plantations could also be made available for the private sector. This would help avoid a repetition of past problems with government plantations, where adequate resources were available for establishment and initial maintenance, but not for longer term protection. If degraded plantations still contained residual merchantable trees, harvest of these by the investors under conditions agreed in the management plan could provide initial income and make investment more attractive, especially for medium-length rotation species such as teak. In such cases, the state would receive compensation both in the tender price offered and stumpage royalties on harvest.

8.6. Timber rights contracts combining new plantations on denuded land and sustainable management of existing FD plantations

182. **Allocation of existing FD plantations within and adjacent to plantation lease areas would increase attractiveness of leases for private investors, while providing a means to protect the plantations, and delivering early revenues to the State.** This approach would involve plantation leases on denuded FR land and encompassing adjacent well-established government plantations, with arrangements for management and harvest rights transferred to the private sector investor through a tender system. As with the previous model, this would make a lease more attractive for investors and would result in better returns to the state, both from the tender for the lease and royalties paid on harvest, while freeing the state of long term management and protection responsibilities, which it may not have assured budget for.

¹¹¹ A. Boulay and L. Tacconi (2012). The drivers of contract eucalypt farming in Thailand. Commonwealth Forestry Review, Vol. 14, No. 1 (2012), pp. 1-12.

¹¹² <https://www.thehindubusinessline.com/economy/agri-business/eucalyptus-plantations-a-balm-for-farmers-and-paper-industry/article23589485.ece>

183. **Assurance of quality management could be through imposing a legal obligation in the lease contract to achieve forest management certification** to an international standard within a specified period (e.g., 3 years from the date of the lease agreement), and government retention of the performance guarantee bond until all denuded areas had been planted and certification had been achieved. This approach would affect Myanmar Timber Enterprise's (MTE) current monopoly on extracting timber from state-owned forest, but MTE (as a state corporation) could be allocated areas to manage, either by competing with the private sector or through special allocation of plantation areas.

8.7. Timber rights contracts combining sustainable management of natural forest areas, and plantations on denuded land

184. **Inclusion of areas of natural forest within or adjacent to plantation lease areas would help ensure their protection and in some circumstances could provide returns to the State through approved timber extraction.** This approach would involve a competitive tender system to allocate both the plantation lease and management and harvest rights of adjacent natural forest areas to private sector entities¹¹³. This would require strict controls, including clear specification and monitoring by FD of allowable harvests from the natural forest area, external audits of compliance, for example through forest management certification of the whole lease area, and retention by the government of the performance guarantee bond for the entire lease period. One advantage of such an approach would be that establishment of smaller discrete forest management units (i.e., combined natural forest-plantation management leases) would make forest certification more straightforward than certification of whole FD forest districts as currently envisaged under the MFCC's programme. However, it would be a significant departure from current government policy of FD having sole management responsibility and MTE an extraction monopoly. Its political and practical feasibility needs further study.

¹¹³ Although in current practice, timber extraction is currently a monopoly of MTE, the 2018 Forest Law provides for use of a competitive bidding system for commercial-scale extraction of forest produce.

9. Policy options to encourage investment in sustainable forest plantations and next steps

KEY POINTS:

- Myanmar stakeholders have identified actions needed to incentivise plantation investments.
- These include establishment of a National Coordination Committee to advise on revising policies, laws, institutions, instructions, and procedures; stakeholder participation; development of benefit sharing arrangements; and sourcing of sustainable financing.
- A coherent plantation strategy is needed that takes investor concerns and perceived constraints into account.
- This should consider what level of investment is needed to meet Myanmar's domestic wood product demands, its export market ambitions, and employment needs.
- Potential reforms should be categorised and prioritised depending on how readily they can be implemented.
- A key requirement will be to improve information on areas available for investment.

9.1. National deliberations on plantation investment needs

Stakeholder workshop – May 2019

185. In May 2019, national plantation stakeholders discussed the needs for a reforestation strategy. This identified four key outputs – each to be achieved through a series of actions.¹¹⁴ These covered:

- a) **Enabling conditions** - policies, laws, institutions, instructions and procedures – developed through a collaborative policy mechanism among government organisations, authorities and stakeholders, starting with establishment of a **National Coordinating Committee** to guide further development of a land management system relating to reforestation and land management of other sectors;
- b) **Responsible participation** through round-table meetings to determine roles, responsibilities and accountability of local leaders to discuss policies, with the inclusive participation of stakeholders relating to land issues and development of procedures for increasing private sector investment;
- c) **Benefit sharing**, including addressing people's needs and dependency on forest resources as well as national and regional level objectives such as goals for climate change mitigation and adaptation and other sustainable development goals; and

¹¹⁴ See Annex 3: Reforestation Strategy: Draft report, May 2019.

- d) **Sustainable financing**, including reinvestment of a proportion of the state funds (i.e., forest sector revenues) in reforestation activities and providing investors with information that enables them to obtain sustainable and secure rights.

186. These outputs provide a useful starting point for further discussions on developing a plantation policy.

Private sector-government workshop – December 2019

187. A workshop involving representatives of government and the private sector held on 17 December 2019 discussed constraints to increased investment in plantations and ways in which these could be overcome. The key outputs are summarised in Annex 3. Some key reflections included:

- **Myanmar is competing for investment:** International Investors make decisions based on their assessment of the balance between risk and return. This means that Myanmar must be able to present investment opportunities in a favourable light compared to neighbouring countries. This applies to factors such as the ease of doing business, regulatory requirements, availability of suitable land, transport and other infrastructure, social issues, political stability and potential markets. Myanmar needs to ensure its policies and regulations encourage responsible investment and better communicate the advantages to potential investors.
- **Private management of government plantations could be possible:** Government representatives declared that FD is open to the idea of assigning management and utilisation rights of government-established plantations to the private sector. This would address the risk of lack of future funding for maintenance and protection and would also provide earlier returns to both government and investors compared to pure greenfield sites. Approaches to enable this, including valuation and transfer mechanisms, need to be developed.
- **The current lease areas limits are too small for international plantation companies:** Areas limited to 1,000 acres (405 ha) are too small for plantation companies. Plantations need to include at least 15,000 ha of plantable area (depending on species and product) to be economically viable. For a minimum-sized pulp mill (producing 400,000 tons per year), 100,000 ha of plantation is needed. The gross area of a lease could be much larger and include non-plantable area such as HCV/natural forest and community-managed land. Contiguous blocks are not necessary, but transport distance to processing facilities or export ports is a crucial consideration.
- **There is a need for better information on available areas:** There is a need for the Government to improve information on areas available to investors. This will require a better knowledge of what is actually on the ground and better maps, suggesting the need for FD to invest in landscape planning when preparing areas for tender. A one-stop window for information in FD should be considered.
- **The current lease term of 30 years is too short:** The length of lease should be at least 50 years with room for multiple (at least two) rotations. Shorter lease terms will not allow the owner to properly develop the land and ownership of the estate will be difficult to

transfer (i.e., the entire tree crop will have to be liquidated prior to the end of the term). Longer lease terms will also provide the assurance of continued raw material supply required for investment in added-value downstream processing.

- **The lease acquisition process should be streamlined:** There is a need to simplify the lease tendering process. Although the list of requirements for investors (see Annex 2) is not unreasonable, consideration should be given to adopting a staged process, e.g.: (i) prequalification of bidders, based on demonstration of financial, management and technical capabilities; (ii) the tender process, based only on the financial offer by prequalified investors; (iii) pre-operational activities by the winning bidder, including environmental impact assessment; management plans, social responsibility arrangements with communities, etc.; and (iv) operations, when the pre-operational activities have been completed and approved. Prequalified bidders would be able to enter bids for subsequent blocks without having to reapply, although total limits to prevent concentration of large lease areas amongst a limited number of investors would need to be considered.
- **Regulation of plantation timber should be lightened:** The requirements for FD scaling, hammer-marking and issuance of removal passes for plantation timber should be re-examined. With large-scale plantations (and also community outgrower schemes) measuring individual small-size logs is likely to be impractical and result in delays in transporting timber. Bamboo should not be treated as a “forest crop” and not subject to the same regulations as timber.
- **Revenues paid to government could be simplified:** The need to have different revenue sources should be re-examined. It may be possible to combine the three current revenue streams (land rental, premium, and harvest royalties) into a single payment which would be determined through tendering (e.g., the winner could be the investor who offers the highest annual payment for the lease area). Performance bonds to assure that areas are developed are justified, but there is a need to speed up their return to investors once establishment has been completed; they could also be returned in instalments as development progresses according to the business plan.
- **Current tax exemptions are not suitable for plantation investment:** Tax holidays should take the time plantations start to taxable generate revenue into account. A minimum of 15 years tax holiday (as is the case in Malaysia) was suggested.
- **Funding is likely to require equity financing:** Debt financing is likely to be very challenging for greenfield projects, or existing plantations that require significant work before the crop can be harvested. Even for short-rotation species, 10-15 year tenure would be needed, as well as long grace periods (likely up to 10 years), and concessional interest rates. Commercial banks will not be able to lend on these terms and neither would most DFIs. For commercial operations, equity financing is therefore usually necessary and will most likely have to come either from government (as a joint venture partner) or the private sector.
- **A plantation valuation system is needed:** There is a need to develop a system to assess the value of plantations, both to allow transfer from one investor to another, and also to

provide a basis (e.g., a tender floor price) for transferring management and utilisation rights of state-established plantations to private sector investors. The need for third-party assessors for this role was recognised.

- **Private plantations and community forests should be mutually supportive:** CFs are likely to need support from the private sector to be viable. Bundling their produce with that from larger plantation companies can usually yield better pricing and provide access to markets (especially in light of increased demands for international certification and proof of legal origin requirements). Similarly, investors need to work with local communities both to source sufficient raw material, and to understand their needs thereby avoiding potential conflicts. From this viewpoint, FD policy should aim to promote mutually-supportive arrangements between private plantations and CF. At present they are regarded as separate activities.
- **Investors need to develop social licence to operate:** Acceptance of investment by local communities is essential to avoid conflict and possible damage to plantations. This means that investors must work with communities and ensure that they see clear benefits from the investment and that their concerns related to their local environments (e.g. water use, safety etc.) are understood and adequately addressed. In general investors will need to consider livelihood opportunities, including local employment, intercropping in young plantations and future benefit sharing.
- **Investors need to be aware of and have measures to mitigate environmental risks:** Investors need to be aware of and have measures in place to address a range of environmental risks arising from plantation establishment. These include: large areas of single species; diseases; poor soil management and excessive use of pesticides. Sharing knowledge on these risks is important.
- **Carbon forestry is possible, but Myanmar is probably not ready:** This was seen as complex and not considered practical in the immediate term.

9.2. Next steps

188. The December 2019 workshop validated the recommendations for follow-up set out below.

Strategy development

189. **There is a need to develop a multi-sector coherent commercial forest plantation strategy** that maps out the transition from a timber economy based on natural forest timber to one supplied by plantations. This should make realistic projections of timber needs both for the domestic market and to guide the aspirations of the National Export Strategy.

190. **In developing a plantation strategy, there is a need to consider the degree to which incentives are needed** and whether they should be focused on a particular segment, or whether a more laissez faire approach should be adopted, with market opportunities guiding investor strategies. This can be considered from viewpoints of domestic market needs and future export opportunities:

- a) **Domestic market:** Currently the bulk of Myanmar's domestic needs are met either largely by the informal sector for solid wood products (sawnwood and furniture), or imports for

paper and composite wood products. Without substituting natural forest timber, forests will continue to be degraded. Some key questions are:

- What products can be produced from plantation-grown timber and to what extent should some continue to be imported?
 - What types of plantation are needed to substitute for and take pressure off natural forests (e.g., solid wood and woodfuel)? Do these need specific incentives to encourage preferred species selection and rotation length?
 - What type of integrated forest industries would need to be attracted to produce and supply timber products to the domestic markets? What kind of incentives should be provided?
 - Should incentives that encourage log or sawnwood imports (or at least removal of disincentives)¹¹⁵ to supply domestic demand until sufficient raw material from plantations is available be considered?
- b) **Export markets:** Myanmar's long-standing reputation (and market niche) has been as the source of high-value natural teak, but in the face of dwindling supplies, this can no longer be sustained. Some key questions are:
- Can plantation-grown teak adequately substitute for natural teak and should the longer rotations required for quality teak attract special incentives?
 - Are there other products where Myanmar has, or could develop, particular competitive advantages?
 - What gaps are there in export markets where shorter-term gains (e.g., from wood-chips) that could be derived from plantation-grown wood?

The revised National Export Strategy (see 3.1) should also consider these options.

191. **Institutional strengthening and skill development will be essential to support the transition process.** The respective roles of the state, the private sector and CF should be considered and the need for amendments to policy and legislation concerning land, forests, investment incentives, finance and trade. Categorising the required changes according to where decisions are made, as follows, could be considered:

- a) Those that can be made by decision at the departmental level within existing capacity and through issuance of instructions or procedures;
- b) Those that can be made at the departmental level, but need capacity development support (e.g., land use inventories, preparing tender packages, communications);
- c) Those that need inter-agency cooperation in land use planning (e.g., cooperation between FD and DALMS in landscape planning, or additional incentives needing approval from MIC); and

¹¹⁵ Myanmar Customs Tariff (MCT) on imported hardwood logs and all sawnwood and plywood is set at 15%. Coniferous logs are zero rated.

- d) Those that need legislative change, through amendments to the Forest Law, the Forest Rules, or passage of the Land Law.
192. The establishment of a formal multi-stakeholder body to consider reforms would help ensure that they have the widest possible support. Such a body should include representatives of the private sector (e.g., associations), affected government agencies, CSOs representing community interests and legislators. It would agree its terms of reference, which would include deliberation with the aim of reaching consensus on reforms.
193. A significant increase in private plantation investment is also likely to require modifications to FD's current role – moving from one of active forest manager to that of a regulating authority. This may require some organisational changes within the department. A further related aspect will be bridging apparent gaps between community forestry and commercial plantations, in which FD would need to be able to play a facilitator's role

Information needed

194. To inform stakeholder deliberations on a strategy for commercial plantations, further information is likely to be needed. This could include:
- a) **Land availability: FD should identify priority areas for large-scale plantations** (such as within the Bago Yoma, or western Ayeyarwady, where deforestation has been widespread) and compile information on land use, including areas suitable for planting, taking into account vegetative cover, topography, soils and occupancy. As well as areas for industrial-scale plantations, this could delineate areas within broader landscapes for CF, continued natural production forest management and conservation. Tendered blocks could include non-plantable areas where management and protection by investors as part of their leases, rather than by FD, is feasible, including existing government plantations. This will require surveys, making use of remote sensing to determine and demarcate areas available for plantations and to prepare packages for tendering.
- b) **Landscape-level planning: Ideally broader landscape planning, encompassing both forest and VFV land should be considered** (e.g., as being piloted by IUCN in Sagaing under The Restoration Initiative - TRI¹¹⁶). This will require using information on land quality and use, and discussions with other government agencies such as DALMS and General Administration Department. The nature and intensity of planning should be proportionate to the characteristics of the area, for example, the degree of occupancy and likelihood of tenure issues, and the variation in forest cover types.
- c) **Economic analysis of different plantation models: There is a need to prepare analyses of different plantation models to guide investors** (and CFUGs) but also to inform the Government on actions, such as the need for fiscal and other incentives and transfer of state plantations to the private sector. This will require projections of costs, growth and yield, and log prices for different species and site classes.
- d) **Fiscal incentives: There is a need to examine the overall economic costs and benefits of alternative fiscal incentives that could be offered to investors.** These should take non-

¹¹⁶ www.iucn.org/theme/forests/projects/restoration-initiative-tri/tri-countries-and-partners.

priced environment and social benefits (that are assumed to be currently provided by the State) into account.

- e) **Tendering models: The current tendering model appears to be cumbersome and the practicality of alternative systems should be examined.** This would include prequalification criteria, information provided to tenderers, tender criteria, bidding and performance bonds and transparency requirements.
- f) **Research and Development: The range of risks and challenges faced in plantation forestry call for research and development results that can be shared between investors.** While some investors, especially large companies, may consider the technology they develop to be intellectual property, sharing information is likely to benefit all. One way to do this would be by establishing a Research Cooperative that could be funded through an investor levy proportional to the size of their investment. Collaborative research could be designed and supervised by the Forest Research Institute, but contributing investors should direct its priorities.
- g) **Plantation database: The ability to plan future needs to supply domestic wood needs and possible export opportunities is limited by the current lack of information on commercial plantation areas,** species, age classes and potential timber volumes. National reporting to FAO for the five-yearly international Forest Resource Assessment is currently based solely on planted areas reported by districts, many of which, according to recent assessments, have failed. To address this and to determine the possible plantation yields to supplement natural forest timber, FD has started a pilot in two districts to assess the quality of its own plantations that are over 30 years old. There is a need for a more comprehensive database covering all planted areas and, ideally, projecting supplies from rubber plantations as well. This would require expansion of on-the-ground surveys of FD plantations and also include ways in which private investors could report. It would be important to define the range of uses and potential outputs as a precursor to specifying database structure and means for data acquisition.

Recommendations, actions and timing

195. Table 1 Table 5 provides a matrix of recommendations for reform, the activities needed to initiate action, a suggested timeframe and an indication as to whether and at what level (e.g., law, rules, instruction or procedure) these might require legislative amendment.

Table 5: Recommendations for policy reform, and suggested actions and timing.

Recommendation	Actions	Timing¹¹⁷	Legislative change needed
Establish Multi-stakeholder Working Group on plantation reform	Decide group membership Prepare instruction on formation Group to decide its rules and procedures	Short	No

¹¹⁷ Short-term actions could generally be accomplished within a 12-month period; medium-term actions within 36 months and long-term actions (because of legislative amendment) longer than 36 months.

Recommendation	Actions	Timing ¹¹⁷	Legislative change needed
Improve information availability	Compilation and translation of current procedures, instructions and other documents Preparation of guidance document on acquisition and management of plantation leases according to current regulations and instructions	Short	No
Streamline lease acquisition process	Review current lease procedures Prepare recommendations on investor prequalification, bidders' bonds, tender criteria, pre-operational requirements, performance bonds, etc.	Short-medium	Instructions and/or Procedures
Streamline regulations on plantation timber	Review requirements for FD harvest approvals, log measurements, timber, other forest product royalties and transport requirements for plantation timber and other forest products. Consider need and requirements for a streamlined plantation Timber Legality Assurance System (including reviews of systems in other countries)	Medium	Forest Rules on timber marking requirements Instructions on fees and royalties
Policy studies to inform Multi-Stakeholder Group work	Decide key studies (plantation economics, fiscal options, tender process options, etc..) and prepare terms of reference Engage consultants Organise workshops to deliberate recommendations	Short-Medium	No
Review fiscal incentives	Review Departmental procedures, instructions, guidelines and other instruments that could incentivise plantation investment (FD, ECD, DICA, IR, Customs, etc.) Recommend revised incentives.	Medium	Possibly, if amendments recommended
Identify target areas for private plantations	Consultation with prospective investors and other stakeholders on most suitable areas with regard to area availability, access, site quality, other infrastructure.	Short	No
Include government plantations and natural forest areas within lease scope	Consider options in Multi-Stakeholder Group Review management acquisition procedures and management regulations, benefit sharing etc. Prepare recommendations	Short-medium	Yes – probably at Forest Rules level
Landscape planning	Develop appropriate planning procedures in consultation with IUCN TRI Project and FAO Sustainable	Short-medium	No

Recommendation	Actions	Timing ¹¹⁷	Legislative change needed
	<p>Cropland and Forest Management in Priority Agro-Ecosystems Project</p> <p>Establish local ad hoc institutions for consultation, including township offices of FD, DALMS and GAD.</p> <p>Procure imagery</p> <p>Local consultations with communities, CSOs and government agencies.</p> <p>Site surveys</p> <p>Prepare maps and area descriptions</p>		
Increase FR lease area limits	Consultation with stakeholders on limits.	Medium	Forest Law amendment
Increase FR lease term	Consultation with stakeholders on limit	Medium	Possible ministerial or departmental instruction
Prepare lease tenders	<p>Determine area boundaries.</p> <p>Prepare area descriptions and tender terms</p> <p>Initiate tender process with pilot tender.</p> <p>Review and refine tender procedures</p>	Medium	No
Establish national plantation database	<p>Identify key plantation information requirements (areas, species, age classes, site classes, growth rates, etc.)</p> <p>Explore possible linkages with the national inventory project to be supported by the Government of Finland.</p> <p>Prepare database specifications</p> <p>Prepare data acquisition processes and plans (remote sensing, field surveys, investor surveys)</p> <p>Initiate data collection.</p>	Medium-long	Departmental procedures
Establish research co-operative	<p>Consultation on role and structure</p> <p>Decide priorities (e.g., tree improvement, seedling production, plantation silviculture and agroforestry, growth and yield, pests and diseases, extraction technology, wood quality and utilisation, markets, etc.)</p> <p>Consider financing opportunities</p>	Medium	Instructions to mandate state research institutions' roles.

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Annex 1: Country and sectoral context

Country context

Myanmar is a second largest country in Southeast Asia, with a land area of 676,575 square kilometres and estimated population in 2020 of 54.4 million people. Myanmar is lower-middle income country, with a per capita Gross Domestic Product in 2017 of US\$1,255.

Myanmar's economic and political transition since 2011 has created opportunities for economic growth and improved welfare outcomes. Myanmar's GDP grew at an average rate of 6.5 percent since the transition began (although declining from a relatively high rate of 8.4 percent in 2013/14), and poverty declined from 48 percent in 2005 to 32 percent in 2015. The transition has generated significant changes in Myanmar, embracing all sectors of society. For example, proportion of people using candles and kerosene as a source for lighting reduced from 40 percent in 2010 to 7 percent in 2017, and mobile phone ownership increased from 4.8 percent in 2010 to 82 percent in 2017. Access to electricity has nearly doubled for Myanmar's population, particularly in rural areas. The elimination of media censorship in 2011, coupled with rapid expansion of smart phone ownership, also led to a flourishing of civil society and social media.

The outbreak of the global corona virus COVID-19 pandemic in early 2020 and Myanmar's responses are likely to have significant impacts on the country's economic growth, although the severity and duration of these are currently unclear. The domestic lockdown and those in the country's main trade partners are predicted to slow the country's economic growth to around 2.3 percent in the current financial year (ending 30 September 2020), followed by a recovery to over 6.4 percent in 2020/21. In terms of Myanmar's domestic economy, impacts are likely to be reflected in reduced demand, unemployment (including that of returned overseas workers, with loss of income from their remittances) and a realignment of the government budget priorities, all of which could affect the forest sector.

Myanmar has an immense richness of natural resources. It has the most intact forest cover of any country in mainland South East Asia, and a large share of the coast of the Bay of Bengal. Its huge range in altitude from sea level to the eastern Himalayas and its position between major biomes makes it highly important for biodiversity and wildlife (Figure 1.1). Myanmar is one of the world's biodiversity 'hotspots' with, for example, over 300 mammal species, including least five endemic mammal species, as well as greatest diversity of bird species in South East Asia.

Although resource-rich, Myanmar remains one of the poorest countries in Southeast Asia. Despite significant reforms introduced in recent years, the economy remains centred on extractive industries and agriculture. Nearly 40 percent of its GDP comes from primary industries, including agriculture, forestry and fisheries. Poverty remains concentrated in rural and conflict-affected areas; in rural areas, 38.8 percent of the population are estimated to be poor compared to 14.5 percent of those living in its towns and cities.

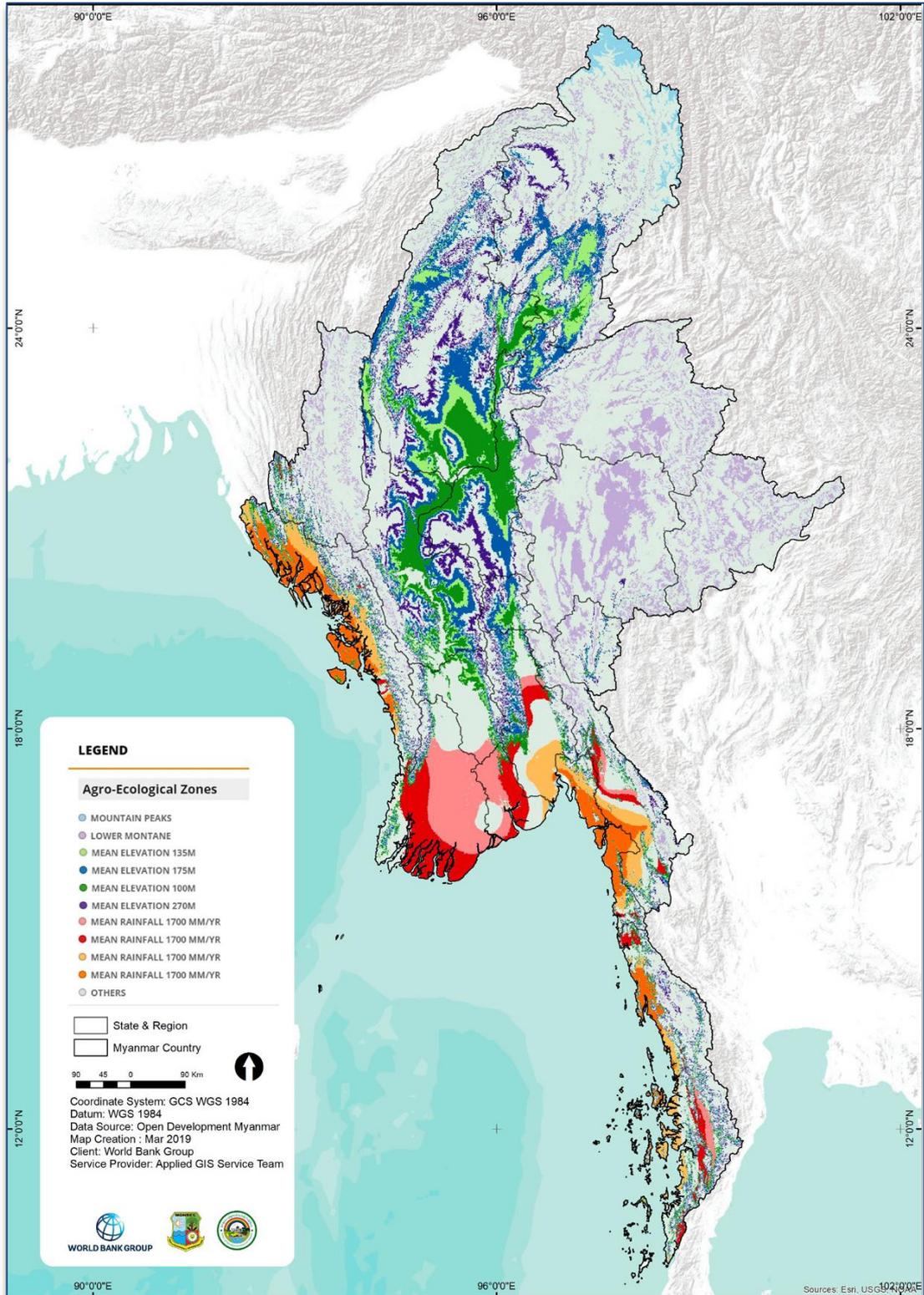


Figure 1.1: Myanmar's agro-ecological zones

There appears to be strong correlation between poverty and forest cover at the township level, particularly in ethnic majority states, where 63 percent of rural land is either forest or woodland (Figure 1.2). This is because of communities' remoteness from and weak access to political centres; state appropriation of forests and their management that restricts local people from benefiting from forests; and the high value of forest resources, especially timber, attracting powerful outside interest that seeks to control benefit flows.

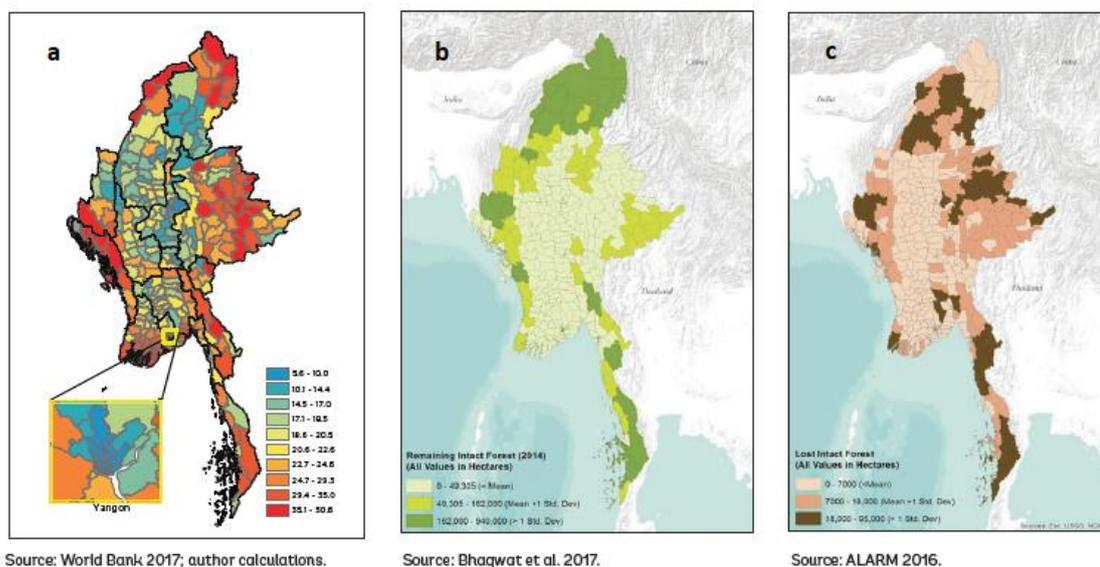


Figure 1.2: Relationship between poverty forest cover and forest degradation, indicated by a) prevalence of poverty by township; b) remaining intact forests in 2014; and c) lost intact forests (ha) for townships between 2002 and 2014.

Forestry has a key role to play in Myanmar’s ‘triple transition’ towards democratic governance; market-oriented reforms; and peace. Significant forest resources in the country provide a strong foundation for sustainable forest management with the potential to benefit all segments of society. They are critically important for jobs, incomes, and livelihoods, particularly for poor communities and women. Forest tenure and resource rights are amongst the central issues for the ‘21st Century Panglong Process’, aimed at resolving decades-old conflicts between the central government and Ethnic Armed Organisations. This is because most remaining forests are in areas where conflict is sustained through issues related to human rights and control of and benefits from natural resources. Devolving responsibility for the management of forest resources to States/Regions and local communities may help to alleviate conflict and provide sustainable livelihoods. More broadly natural resource management institutions and practices need to be strengthened to improve efficiency, equity, and sustainability.

Myanmar’s forest sector

Forests and the national economy

Forests cover 43 percent of Myanmar’s land area, but only 42 percent of this is closed forest. In 2015, approximately 29.39 million ha of Myanmar’s land area had forest cover, but only 12.6 million ha was closed forest and of this only 3.19 million ha was considered ‘primary forest’ (i.e., forest with no visible sign of human activity).¹¹⁸ Forests types include: hill and temperate evergreen forest (27 percent); mixed deciduous forest (38 percent) Indaing forests¹¹⁹ (4 percent); dry forests (10 percent) and scrub (2 percent); tropical evergreen forest (17 percent); and mangroves (1.5 percent).¹²⁰

Timber volumes in Myanmar’s forests are concentrated in the four largest States and Regions. Kachin and Shan States and Sagaing and Tanintharyi Regions were estimated to account for 78

¹¹⁸ FAO (2015).

¹¹⁹ Dry deciduous open-canopied dipterocarp forest.

¹²⁰ MOECAF (2011a).

percent of the country's 1,342 million m³ total growing stock in 2015. Based on this estimate, Myanmar's forests are estimated to contain 3,300.57 million metric tons of forest biomass, representing 1,293 million metric tons of forest carbon.¹²¹

Almost two-thirds of remaining forests are in the seven ethnic minority States. Based on 2010 data, 65 percent of forests are in the States as opposed to the ethnic Bamar- majority Regions. The actual proportion of forests in areas with ethnic groups is likely to be higher because in several Regions, ethnic groups predominate at local levels, and much of Shan State, the largest division in the county, is categorised as 'other wooded land', just below the threshold classified as forest.

Myanmar's forests are under pressure, resulting in high levels of deforestation and degradation. About 10 million ha of forest cover was lost between 1990 and 2015, a total decline of 26 percent, or an average rate of 1.2 percent a year. Myanmar had the third largest absolute forest loss during the period 2010-2015, when deforestation increased to 1.8 percent annually.

Key drivers of deforestation and degradation are linked to agricultural expansion, excessive timber extraction, excessive logging (including informal and illegal logging), woodfuel extraction, and, to a growing extent, mining. These pressures are compounded by governance challenges, with illegal activities affecting integrity of the forests.

Greenhouse gas emissions from land use change and forestry are estimated to be Myanmar's highest sector contribution to its overall national greenhouse gas emissions. The World Resources Institute Climate Watch cites estimates of 105.11 million tCO₂e emissions annually from land-use change and forestry, with the next greatest contribution from agriculture with 66.51 million tCO₂e. Emissions from deforestation alone were estimated to be 48.6 million tCO₂e per year for the period 2000–2015.

The forestry sector is an important, but declining economic sector. Historically, timber exports have consistently ranked among the top-five export items, earning an estimated US\$1.9 billion at their peak in 2012, but by 2019, wood product exports had declined to 14th place, earning only US\$203 million.¹²² Despite reduced levels of timber extraction, the sector still generated about 5 percent of formal Government revenues (\$322 million) in 2017/18. Of this, timber accounts for 97 percent while the formal contribution of non-timber forest products is less than 1 percent. However, these figures do not include non-marketed wood and forest products, such as woodfuel, informal timber extraction and the bulk of non-timber forest products, all of which are likely to be significant.

Although the forest sector is a relatively minor source of formal employment, possibly two-thirds of the country's population depend on forests for part of their livelihoods. In 2017 an estimated 34,200 people – only around 0.2 percent of Myanmar's formal employment – were employed in the forest sector.¹²³ For most rural communities, however, forests provide essential basic needs, particularly woodfuel, non-timber forest products, and fodder for animals. Woodfuel (including firewood and charcoal) is the primary fuel for of 86-94 percent of rural households and

¹²¹ FAO (2015).

¹²² Based on UN COMTRADE data.

¹²³ MEITI (2020).

41-74 percent of urban households.¹²⁴ Woodfuel is also used by a number of small-scale / cottage industries.

Forests deliver important ecosystem services with an estimated annual value of US\$7.3 billion, of which only US\$1bn is from timber and non-timber forest products, the rest being value addition to other sectors and avoided costs and damages. These include insect pollination, fisheries and nursery breeding, watershed protection, coastal protection, and carbon sequestration¹²⁵.

Forest management

The ‘Permanent Forest Estate’ (PFE) comprises 20.5 million ha, 31.1 percent of Myanmar’s land area. Forested land gazetted to form the PFE is distinguished into Reserved Forest (RF) prioritised for timber production; and Public Protected Forest (PPF) with lower timber priority, mainly for local use. Together these comprise 25 percent of Myanmar’s land area. In addition, Protected Areas (PAs) have been established for biodiversity conservation, on about 6 percent of Myanmar’s land area. The National Forestry Master Plan (NFMP) aims to increase RF and PPF to 30 percent, and PA to 10 percent of land area (**Error! Reference source not found.**). PFE areas are gradually increasing as more areas are being gazetted, although some forest areas, where there are settlements, are being de-gazetted. Only 60.4 percent of the PFE has forest cover (closed plus open forest).

Table 6: Status of the Permanent Forest Estate

Source: Semi-annual progress report for MRRP, April–October 2018

Category	Current Area (ha)	Current area (% of land area)	NFMP target (% of land area)
Reserved forest	12,041,601	17.80	30
Public Protected Forest	5,041,364	7.45	
Protected Area system	3,510,685	5.85	

Only 41 percent or 11.8 million ha of Myanmar’s total forest area are within the PFE. Most forest outside the PFE lies on land designated as ‘Vacant, Fallow, and Virgin’ (VFV), which is state land available for development, including allocation for agriculture. Processes for statutory recognition of such areas currently under customary community management are lacking and, under the 2018 VFV Law, customary tenure rights are vulnerable especially in ethnic areas. Other forested land is in military ownership.

Myanmar’s natural forests have been managed under a diameter limit-based silvicultural system, the Myanmar Selection System, designed to provide sustained timber yields on 30-year felling cycles. Extraction was carried out primarily by elephants so impacts were less than with methods using mechanical equipment. The system was partly abandoned after the military government took power in 1988, leading to over-harvesting.

¹²⁴ Geres/Emerging Markets Consulting (EMC) Myanmar Cookstoves Market Assessment, 2015.

¹²⁵ World Bank (2019) Myanmar Country Environmental Analysis.

Policy and legal framework

The key policy and legal framework in the forest sector comprises the 2008 Constitution of the Republic of Myanmar, the National Forest Policy (1995), the 2018 Forest Law, the 1995 Forest Rules (amendments were in draft in 2019) and associated instructions and guidelines, the 2019 Community Forestry Instruction (CFI), the 2018 Biodiversity and Conservation of Protected Areas Law, and the 2012 Environmental Conservation Law and its Rules. Myanmar is a signatory to and active participant in the major international environmental agreements. These include the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Biological Diversity 1992, and the Paris Agreement on Climate Change 2015.

Forestry institutions

The Ministry of Natural Resources and Environmental Conservation (MONREC) has overall responsibility for the forest sector (Figure 1.3). Apart from forests, its role covers mining, geological survey, land survey, environmental protection and greening of Myanmar's central dry zone. MONREC also administers the University of Forestry and Environmental Science and it oversees five State-owned Economic Enterprises (SEEs), including the Myanmar Timber Enterprise (MTE).

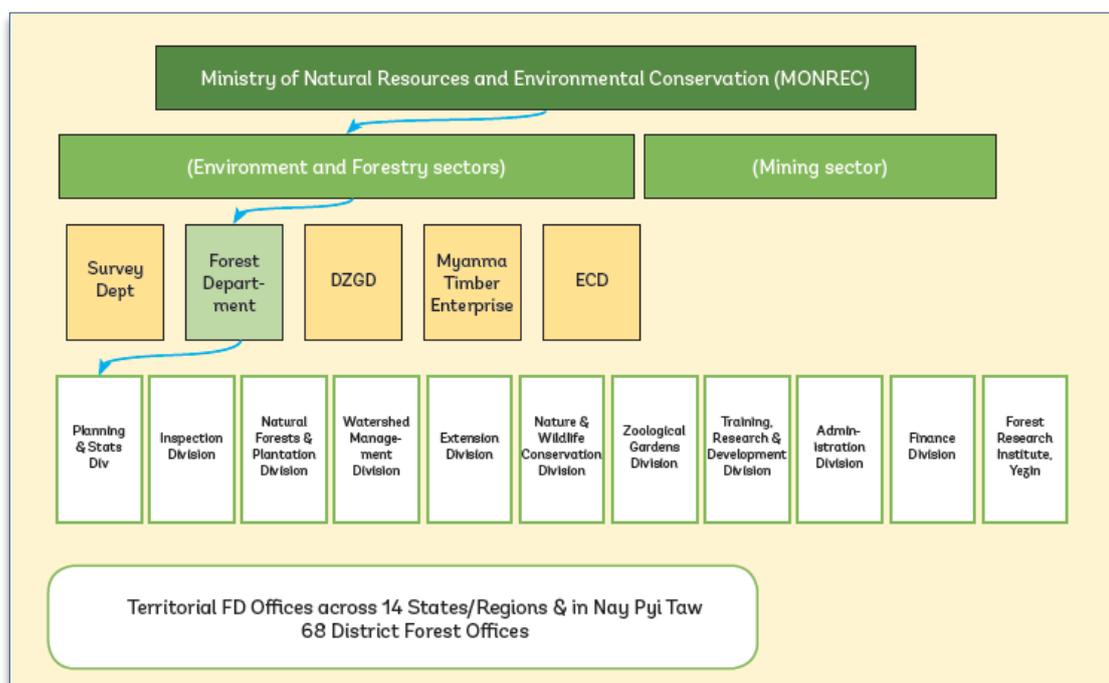


Figure 1.3: Organogram of MONREC and the Forest Department

The Forest Department (FD) within MONREC is the primary agency responsible for sustainable forest management, biodiversity conservation, restoration of degraded forest ecosystems, watershed conservation, and research and development. It has territorial offices in the country's 14 States and Regions, 68 Districts and 312 Townships throughout the country; and 11 divisions at its Nay Pyi Taw headquarters. The Dry Zone Greening Department (DZGD), a separate department, is responsible for greening of central dry zone of Myanmar, through rehabilitation of degraded forest lands, protection and conservation of remaining natural forest, and restoration of the environment.

The Myanmar Timber Enterprise (MTE) is a state-owned economic enterprise (SEE) under MONREC, with sole responsibility for harvesting from natural forests and state forest plantations

and consequent log sales. It also operates sawmills and other wood-processing facilities, some in partnership with the private sector.

The Environmental Conservation Department (ECD) is responsible for implementing National Environmental Policy, strategy, framework, planning, and action plans for the integration of environmental considerations into the national sustainable development process. Its responsibilities include approval of Environmental Impact Assessments, which are required for plantations exceeding 500 acres.

Some Ethnic Armed Organisations have developed forest and land policies as well as administrative mechanisms over the areas under their control. Ethnic Armed Organisations, such as the Karen National Union and the Kachin Independent Organisation have established their own policies on forest resource utilisation.

Bodies representing private sector interests include the Myanmar Forest Products and Merchants' Federation, representing the timber trade; the Private Plantation Association; the Acacia Mangium Association; and the Bamboo and Rattan Association.

The Myanmar Forest Certification Committee (MFCC) has been established under MONREC to develop a national forest certification scheme and oversee the Myanmar Timber Legality Assurance System (MTLAS), which aims to verify the legality of Myanmar timber product exports to meet emerging international market requirements.

Annex 2: Forest Department procedures for plantation lease tenders

The Forest Department's procedures for allocating and regulation large areas for plantation leases are as follows:

- a) After definition of 1,000-acre blocks, tender invitations are advertised in local media and tender proposals may be submitted by interested investors;
- b) Bidders must deposit a prescribed bond after their submitted proposals have been previewed and the they have been briefed by FD;
- c) If a tender proposal is accepted, investors must pay an operation deposit, comprising land lease fee, 5% commercial tax, and the first instalment of 30 percent of the tendered land use premium;
- d) Operations may commence after all payments have been completed.

Tender proposals should include the following information:

- a) Evidence of the investor's long-term investment capability (investment capacity, possession of financial resources);
- b) Amounts held in bank deposits;
- c) The deposit for operation (a refundable performance bond);
- d) Annual investment amounts;
- e) Evidence of long-term financial capability;
- f) Description of benefits to the State from the plantation to be established;
- g) Companies involved in establishing the plantations, and/or associated wood-based enterprises;
- h) Companies that will consume timber produced from the planned plantations;
- i) Description and evidence of experience in technology to be used in forestry and related enterprises;
- j) Employment of adequate technicians/staff and work force;
- k) Description of plantation establishment techniques that have least adverse impact on environment and biodiversity and an operations plan to mitigate any adverse impacts;
- l) Area, extent and type of plantation;
- m) Enabling conditions for implementing short or long-term plantation operations;
- n) Comprehensive tending, maintenance and protection plan;
- o) Soil type of the area applied;
- p) Proposed time of plantation establishment;
- q) Enabling conditions for producing value-added products;
- r) Research capability for plantation operations;
- s) Ability/intention to comply with law, rules, regulations, procedures and instructions issued by Forest Department;
- t) Comprehensive annual plans and evidence of capacity to implement plans;
- u) Corporate Social Responsibility (CSR) plan for socio-economic development, education and health of local people;
- v) Guarantee of job opportunities for local people; and

- w) Plans for consultation with local people, including consideration of their views and addressing their needs.

Prior to forest plantation establishment after timber extraction by clear-felling on RF, PPF (and also previously forested VFV land), an Initial Environmental Examination (IEE) is required if the area is 200 – 500 ha, and an Environmental Impact Assessment (EIA) is required if the area is 500 ha and above.

Investor performance is checked by FD according to whether:

- a) the proposed yearly establishment has been completed as planned;
- b) the entire area has been completely planted;
- c) planted species are identical to those stated in the plan;
- d) a survival rate of 70% has been achieved; and
- e) the legal requirements have been fully complied with.

Annex 3: Summary of outputs of a stakeholder workshop on developing a reforestation strategy¹²⁶

The situation of forest policy formulation can be analysed as follows:

Strength	<ul style="list-style-type: none"> - Sound organizational structure, provisions of own forest and land policy and legislation, technical know-how, research and training centers are in place; - Definite goals (PFE: 30% and protected areas: 10%) are adopted, targets of 30-year National Forest Sector Master Plan are set; - Collaboration of global and international/local NGOs is in place; - National financial support.
Weakness	<ul style="list-style-type: none"> - Policy, legislation and procedures are outdated; - Ineffective implementation caused by weak law enforcement; - Centralization causes difficulty in adaptive localization; - Outdated standardization, low technology, prevailing conventional methodology, weak practical application of international best practices; - Lack of collaborative culture among government agencies, lack of enabling conditions for local people's collaboration; - Weak dissemination of information; - Lack of incentive and benefit-sharing mechanisms; - Uncertain market opportunities, uncertain long-term state funding.
Opportunities	<ul style="list-style-type: none"> - 42% forest cover, sufficient area extent of land; - International technology, job opportunity, possibility of new investment from REDD+, NDC, Bonn challenges and FLR; - Peace process can be more progressive through the engagement of ethnic and local communities.
Threat	<ul style="list-style-type: none"> - Policy relating to forest and uses of land can be changed in the regions with weak law enforcement; - Long-term programs can be devastated by illegal encroachment and extraction; - Increased control and use of natural resources by armed groups due to human right [violations], inharmonious practices against ethnic customary traditions, negotiation difficulties; - Dispute between cultural systems (scientific and conventional); - Decreased or terminated state financial subsidiary support due to cost-benefit analysis results.

Basic Strategic Framework

Basically, weaknesses are to be addressed, threats are to be overcome, and opportunities are to be taken to advantage in order to adopt strategy for successful implementation of long-term

¹²⁶ A extract from a translation of a Myanmar language text in an unpublished report, May 2019.

reforestation activities. According to the recommendations from analysis of present situation, outputs are to be obtained from 4 basic strategic frameworks, namely:

- a) Creating enabling condition – necessary institution, policy, law, instruction, procedures or standard operation procedure (SOP);
- b) Constructing responsible participation;
- c) Putting benefit-sharing system in place; and
- d) Establishing sustainable financing (mechanism).

Theory of Change and Strategic Actions

Based upon 4 strategic frameworks of reforestation, expected goals can be achieved with strategic procedure through the theory of change.

Expected Goal: By systematic conservation and management of natural forests and plantations necessary products such as timber, woodfuel, non-timber forest products and ecosystem services can be provided to the people, and sustainable economic development is additionally achieved.

Output 1: Enabling condition of possible basic requirements (policy, law, institution, instructions, procedures) for successful reforestation.

Proposed Activities

1.1 To develop a policy collaborative mechanism among governmental funding organization, authorities and stakeholders.

Intermediate output 1: Guiding and monitoring National Coordinating Committee formed for the land management system relating to reforestation and land management of other sectors.

1.2 To determine main policy, law, procedures and organizational capacity, and to carry out experimentation in order to successfully implement Forest Landscape Restoration (FLR) through the participation of multiple sectors relevant to the forest landscape.

Intermediate output 2: Application of lessons learned from experimentation for policy review and coordination.

Output 2: Responsible participation - Definite rights and privileges determined, and mechanism (process) for responsible participation of stakeholders developed to support reforestation strategy and procedures.

Proposed Activities

2.1 To hold round-table meetings to determine role, responsibility and accountability of local leaders (elected chairpersons of village groups/ neighborhoods present and discuss at regular meetings of township General Administration Department), private sector, local authorities, community leaders and representatives of CSOs.

Intermediate output: Role, responsibility and accountability of stakeholders can be identified by holding national level round-table meetings in MRRP areas.

2.2 To provide support to inclusive participation of stakeholders relating to land issues from community level to broadly connecting multi-sector/multi-layer level in community forestry,

joint forest management, public-private/ private-community joint management of forest resources and restoration of degraded forest land.

2.3 To develop procedures for uplifting private sector investment in extensive private plantation establishment, and restoration of degraded forests and deforested areas.

Intermediate output: --- acres (data to be provided by relevant Forest Department District Office) of community forests established, joint forest management initiated in --- acres (data to be provided by relevant Forest Department District Office) of natural forests, reaching consent between private sector and community to exercise joint management.

Output 3: Benefit sharing – Establishment of forest plantations and forest restoration activities well fulfil objectives committed at national/regional level in addition to initial objective of satisfying people’s need.

Proposed Activities

3.1 To assess the extent of intensive dependency on forest resources, to adopt locally adapted (program) plan, and to ensure capacity of meeting local needs with locally extracted resources.

3.2 To obtain reliable estimate of woodfuel demand, and to adjust supply and demand based upon the properly formulated District Management Plan.

3.3 To provide support to the national missions for climate change mitigation and adaptation, and achieving sustainable development goals by incorporating them into the local level planning and implementation.

Intermediate outputs:

- a) Satisfying woodfuel need of (definite) population/households within (definite) year from properly selected (definite) fuelwood plantations;
- b) Participation of local authorities in planning, decision-making and resource sharing;
- c) Reduction of targeted extent (tons) of carbon emission from degraded natural forest restoration and plantation establishment in targeted area extent (acres).

Output 4: Development of sustainable financing program – As mechanism and capacity to attract and obtain financial assistance from global financing programs such as International Finance Corporation (IFC), Global Environment Facility (GEF) and Green Climate Fund (GCF) are in place, public and private sectors possess management capability to generate increased income from ecosystem services and products, and costs of plantation establishment and restoration can sufficiently covered.

Proposed Activities

4.1 To implement reinvestment program of appropriate proportion/ rate based on the state funds (forest sector revenues) and budgetary calculations for reforestation activities.

4.2 To provide investors with market and information enabling them to obtain sustainable and secure (including land) rights.

Intermediate outputs:

- a) Increased government funding (regular budget allocation) for reforestation;
- b) Increased investment of private sector in reforestation due to attraction of capital and market accessibility;
- c) Increased reforestation projects funded by GEF and GCF.

Through the Intermediate outputs and outputs by step-by-step implementing of aforementioned proposed activities (to be added/ revised by Forest Department) expected goal.

5. Field Assessment, Planning, Implementation, Monitoring and Adaptive Management

With the leadership of mainly Forest Department and participation of relevant government agencies and stakeholders, reforestation groups are to be formed at national, regional and up to district levels. Strategic actions are to be incorporated into the formulation of 10-year District Forest Management Plan as basic actions and are to be implemented in stages as follows:

- a) Assessment: Within the set timeframe development of format and templates, field data collection [current issues, priorities, main stakeholders, opportunities, needs, business approach (public, private, community owned, small holder, cooperative, etc.), objective (local, national, global), expected output, environmental impact, standards and indicators, scales, etc. using database system], and data analysis are to be carried out for each district.
- b) Planning: This stage comprises of formulation of strategic actions and methodology based on the findings of field assessment, allocation of work by location, scope and time-line, economic benefit analysis (ecosystem, carbon, biodiversity value), and reporting of the plan.
- c) Implementation: Implementation of strategic actions using methodology (natural regeneration, artificial regeneration, enrichment planting methods and agroforestry methods), and innovation to adapt to the localities are included in this stage.
- d) Monitoring: Continuous monitoring of the completion of activities as prescribed by the performance index, learning, steering as necessary are included in this stage;
- e) Adaptive Management: When monitoring results indicate change in conditions (locality, tradition, human resource, climate, illicit extraction, encroachment, etc.), and when previously adopted methodology is not well suited to those changes and implementation efforts are hampered by difficulties, appropriate adaptive measures are to be presented and discussed regularly in order to adopt them in time.

Annex 4: Workshop on Policy Options for Incentivizing Investment in Sustainable Private Timber Plantations

17 December 2019, Grand Amara Hotel, Nay Pyi Taw

Group discussions topic and suggested guideline questions

Outline questions	Output
Group 1: Finance	
<p>1. What level of finance is needed to achieve MRRP targets for private plantations? (Target areas by species and sites and establishment/maintenance costs)? How much could be financed by domestic investor equity?</p>	<p>Q 1. It depends on</p> <ul style="list-style-type: none"> ➤ what incentives for private sectors are in place in each state and region, ➤ location, area available, purposes (e.g. timber or industrial raw materials, (species), source of planting stock, spacing and rotation), ➤ Under the MRRP the 280,000 acres (115,384 ha) are allocated for private plantation for 10 years, approximately ~ 115 million US\$ (it means 1000 US\$ for establishment of 1 ha plantation) (cost only for 1st year establishment), ➤ Combination of private and government plantations for 10 years, 637,542 areas (258,000 ha) ~ 258 mil US\$ for 1st year establishment, ➤ Additional cost for infrastructure, road, building, Ports are necessary to estimate, ➤ Maintenance cost for weeding, patching, fire protection, fertilizer application, growth monitoring, until 5 years old, ➤ Additional overhead cost for staffing, travel,
<p>1. What fiscal incentives (e.g., tax holidays, import/export duties...) should be available to investors? Are current DICA incentives sufficient?</p>	<p>Q 2. DICA, Directorate of Investment and Company Administration, and MIC, Myanmar Investment Commission,</p> <ul style="list-style-type: none"> ➤ Promote incentives: reducing commercial tax and Import duty fees for special commodities, no private cars especially inspection cars, according to MOC, Ministry of Commerce, notifications): Tax Holidays (about 15 years) Performance grantee (decrease?) ➤ Appropriate arrangement for Small, medium – scale plantations? (20-50 acres) ➤ Paradigm change is necessary for government side, for promoting timber production like other countries in the region, Vietnam, Lao PDR, Indonesia,
<p>2. What loan terms (e.g., interest rates, payback grace periods, collateral...) are</p>	<p>Q 3& 4. Loan and Collateral (Trees/ land)</p>

Outline questions	Output
needed to make borrowing by investors feasible?	<ul style="list-style-type: none"> ➤ Private plantation owners are not able to finance (not able to cash flow) after 3rd year establishment of plantation, ➤ Land is not feasible as collateral due to state own, ➤ Tree can be collateral with specified conditions (i) to take out insurance against fire, theft, insect, etc; (ii) longer lease period, (iii) with certified/ guarantee letter issued by third party financial institution, (iv) to set up a new institution under management of FD (Forestry Bank)
3. What form of loan security would banks accept? Could plantation insurance to protect against loss or damage to plantations?	<ul style="list-style-type: none"> ➤ In order to tree as collateral, a number of requirements are discussed, (how to valuation of plantation, how to do inventory by remote sensing GIS, monitoring, Pay- back forms ➤ Can PPA Private Plantation Association be independent third party to evaluate valuation of plantation? ➤ Collective guarantee (a Group, 4-5 companies for guarantee) possible to provide for collateral of trees? ➤ Reconsider CB central bank's existing regulations in tree plantation, ➤ FPJV to be a service provider: (FD – 10% , MTE – 45%, public 45% shared)
5. How could Voluntary Carbon Market funding be used for forest restoration/ protection?	<p>Q 5. Costa Rica – 25 years</p> <ul style="list-style-type: none"> ➤ Should consider possible funding requirements for voluntary carbon market before plantation proposal submission to FD, ➤ Who are the rights to carbon? ➤ Can use voluntary carbon ➤ It depends on government willingness, policy, commitment, ➤ Wider Partnership (eg. Norway, German) ➤ Reduce Emission (Policy change)
Group 2: Government policies and procedures	
1. How could availability of information on suitable land areas and procedures for applying for plantation leases be improved?	<p>Q 1. For small scale plantation, (there was no clarification what small scale is) to get necessary information on land, transportation, labour availability, from township FD office, Whether land application is inside the forest reserve or specific compartment,</p> <ul style="list-style-type: none"> • For large scale plantation land lease through tender process, to get necessary information from FD head office, • Private sector has to accomplish necessary soil test and site quality by own resource,
2. How could private sector investment in the plantation sector be actively promoted ?	<p>Q 2. To get bank loan, private sector side has to find solution overcoming practical/ field level constraints and improving insurance system</p> <ul style="list-style-type: none"> • Create Incentives to release strict procedure and regulation in cutting, transportation, selling, easier and faster, • government and private joint shared grant in appropriate ratio (e.g. Distribution of Solar energy to village)

Outline questions	Output
	<ul style="list-style-type: none"> • in order to invite more investment in industrial plantation, flexible regulation, release steps, 60% from donor 20% by village fund 20% from state and regional government)
3. Are lease rentals, bid premiums and performance bonds appropriate?	<p>Q 3. To pay back quick performance guarantee after successful establishment of 1st year based on growth performance,</p> <ul style="list-style-type: none"> • Propose a single payment rather than land rental tax, premium, performance guarantee,
4. How could the current royalty system (e.g., for harvest and transport of fast-growing species, intermediate thinning, bamboo etc.) be reformed – especially as these rules don't apply to rubber wood?	<ul style="list-style-type: none"> • Permission for thinning, harvesting, extraction, transportation, loading and unloading permission must be in time and quick action, • royalty for thinning products 200 MMKs for post and 10 MMKs for pole is fair but should be reduced, • Permission for final harvest and hammer marking on log should be in time without delay. • Percentage of profit sharing for final product is also reduced,
4. What is the feasibility of private sector management leases for existing government plantations , combined with leases for new plantations and rehabilitation of failed plantations?	<p>Q 5. Agree to transfer ownership of old plantations (after 5 years, or after 1st thinning) from government to private,</p> <ul style="list-style-type: none"> • In order to transfer ownership, qualified third party is necessary to evaluate plantation for valuation, • And conservation of ecosystem services are
5. How could private-sector investors support community forestry or tree farmer out-grower schemes on private land?	<p>Q 6. Indonesia and Thailand experience,</p> <ul style="list-style-type: none"> • Need to persuade local farmers/ CFUG through loan, and paying agreeable price, in order to get sustainable/ secure/enough raw material in one area, • Requested World Bank to find/create reasonable market,
Group 3: Sustainable plantation management	
1. What are the main social risks associated with commercial plantations and how can they be mitigated?	<p>Q 1. Poor trust between government, Private and local people,</p> <ul style="list-style-type: none"> • Weak law enforcement, • Mis-management of plantation e.g setting fire, encroachment in to plantation area, • No clear land ownership, • How to solve/ mitigate above issues by (i)practicing FPIC, (ii) benefit sharing/ cooperation with local people, (iii) awareness raising, (iv) job creation,
2. What are the main environmental risks associated with commercial plantations and how should they be mitigated?	<ul style="list-style-type: none"> • Q 2, impact on ecosystem and biodiversity loss in remaining/remnant natural forest, • Common negative impact of monoculture, • Using insecticide, weedicide, chemical fertilizer, • Soil erosion, soil degradation in following rotation, • How to solve: awareness- education to plantation owners, issuing legal document and certificate, practicing agroforestry,

Outline questions	Output
	planting along the contour in slope area, take back certificate if not follow the standards,
3. How can illegal logging in private plantations be prevented?	<ul style="list-style-type: none"> • Q 3. Act 41 (e) of forest law 2018 can prevent illegal logging in private plantations, and other existing law, • How to mitigate/ eradicate: let people participate in policy making and planning process, patrolling by private sector and cooperation with local people,
4. What opportunities are there for including commercial plantations in a broader landscape planning approach – e.g. combining with natural forests, community forests, wildlife corridors etc.?	<ul style="list-style-type: none"> • Q 4, Job opportunity, • Regular income, • Revenue for government, • Corridor wildlife,
Extra question: Financial problem from private plantation	<ul style="list-style-type: none"> • No market guarantee for intermediate thinning products in addition to final yield, • More advance technology and knowledge for management of plantation, • To do comprehensive research before plantation program, • Fire protection program, • Preventive measure from insect, pest and disease, • To improve genetically sound planting stock production, • To develop sound design for climate change adaptation and mitigation and its impact,

Workshop on Policy Options for Incentivizing Investment in Sustainable Private Timber Plantations

Participants

Name	Position	Organization	Sector
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U Nay Tun Min	Chairman	Myanmar Bamboo and Rattan Association	Private
U Ye Min	Chairman	Habrass MZZ com., Ltd	Private
U Maung Maung Naing	Manager	Habrass MZZ com., Ltd	Private
U Min Thu Win	Manager	Private plantation	Private
U Aye Cho	Senior General Manager	Jade King and Queen	Private
U Zaw Min Oo	Managing Director-Moe Mya Chel Co.,Ltd	Myanmar Rubber Producers Association	Private
U Aung Kyaw Moe	Managing Director-EC	Wood Based Furniture Enterprise	Private