



Tanzanian Wood Product Market Study

Final report for the Forestry Development Trust

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EXECUTIVE SUMMARY

Introduction

The Forestry Development Trust (FDT) is working with all segments of tree grower and numerous public and private forestry service providers in Tanzania's Southern Highlands, seeking to transform the commercial forestry sector by facilitating market system changes. A special emphasis is placed on ensuring small to medium scale tree growers enhance their position and contribution within the commercial forestry sector.

UNIQUE completed this wood product market study to help assess the current state of the sector and propose a set of recommendations that FDT and other actors in the sector can pursue to support the transformation. This executive summary brings first sets out the current conditions in the sector, focusing on the supply base, the processing landscape and demand for wood products. It then highlights the scale of the opportunity in Tanzania, which is significant, before recommending how these opportunities can be realized.

Supply and quality of plantations

Small and medium scale tree growers are a key supply source for the sector

The current forest plantation area in Tanzania (including small scale woodlots) is estimated to be 325,000 hectares, with the key species being pine (65%) and eucalyptus (20%). The balance is largely made up by Teak and Black Wattle.

Previous studies underestimated the contribution of small and medium scale tree growers, but the recent remote sensing study completed by FDT highlighted their growth as a segment and importance as a source of supply in terms of hectares planted. It is estimated that in 2016 circa 174,000 hectares were owned by small and medium scale tree growers, 54% of the total, with the balance consisting of 100,000 hectares of TFS plantations (31%) and 51,000 hectares of large private plantations (15%), owned by five major actors. The small-scale grower segment is also the one segment with strong potential to make future gains in both productivity and area.

This shift in the supply base has major implications for the sector, as small and medium scale tree growers typically use local low quality seed, observe poor silviculture and practice short rotations. This results in woodlots that produce poor quality, low-diameter trees and are substantially less productive than the large private plantations. In addition, the disaggregated and dispersed nature of small scale tree growers makes servicing them with cost effective processing solutions that maintain quality challenging. There must therefore be a recognition that whilst the supply base is growing, and being driven by small and medium scale growers, this is not a direct substitute for large plantation supply that is higher quality, more cost effective to process (for most value chains) and has a more reliable supply flow.

Volume is limited due to short rotations and poor silviculture being practiced

Considering the hectares planted in Tanzania and the favorable growing conditions, the overall volume of standing timber is low and of poor quality due to poor silviculture and short rotations employed by the majority of tree growers in the Southern Highlands.

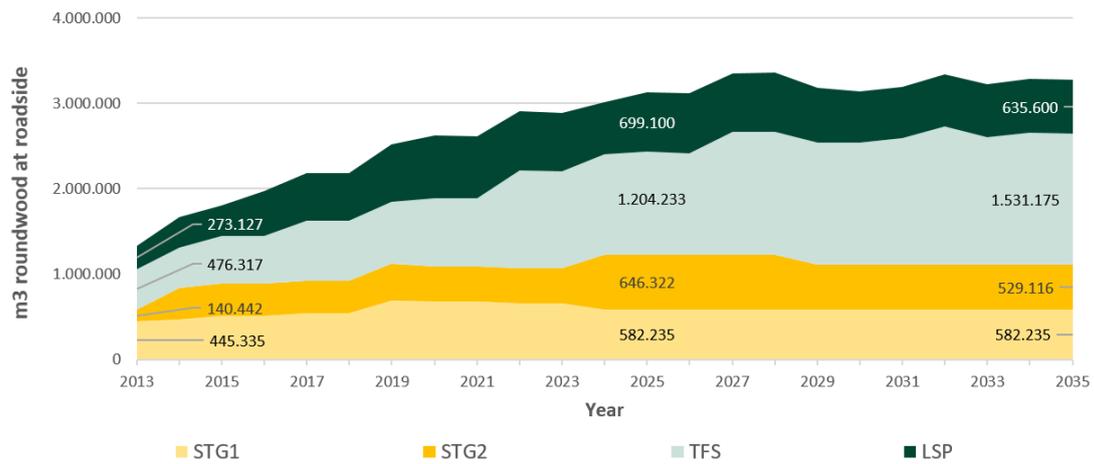


Figure 1: 'Business As Usual' total wood supply forecast to 2035 by ownership

Source: UNIQUE 2017

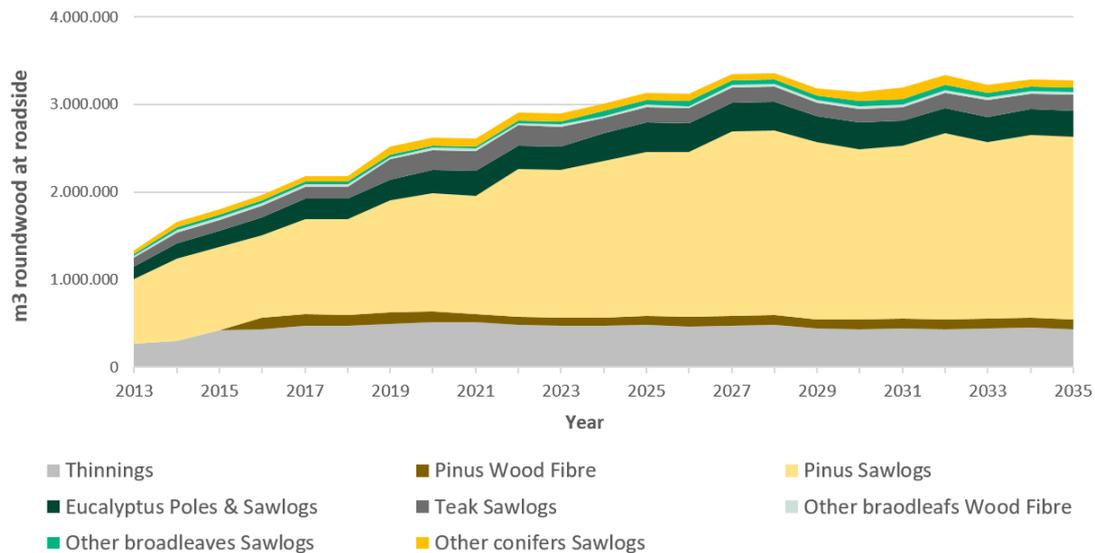


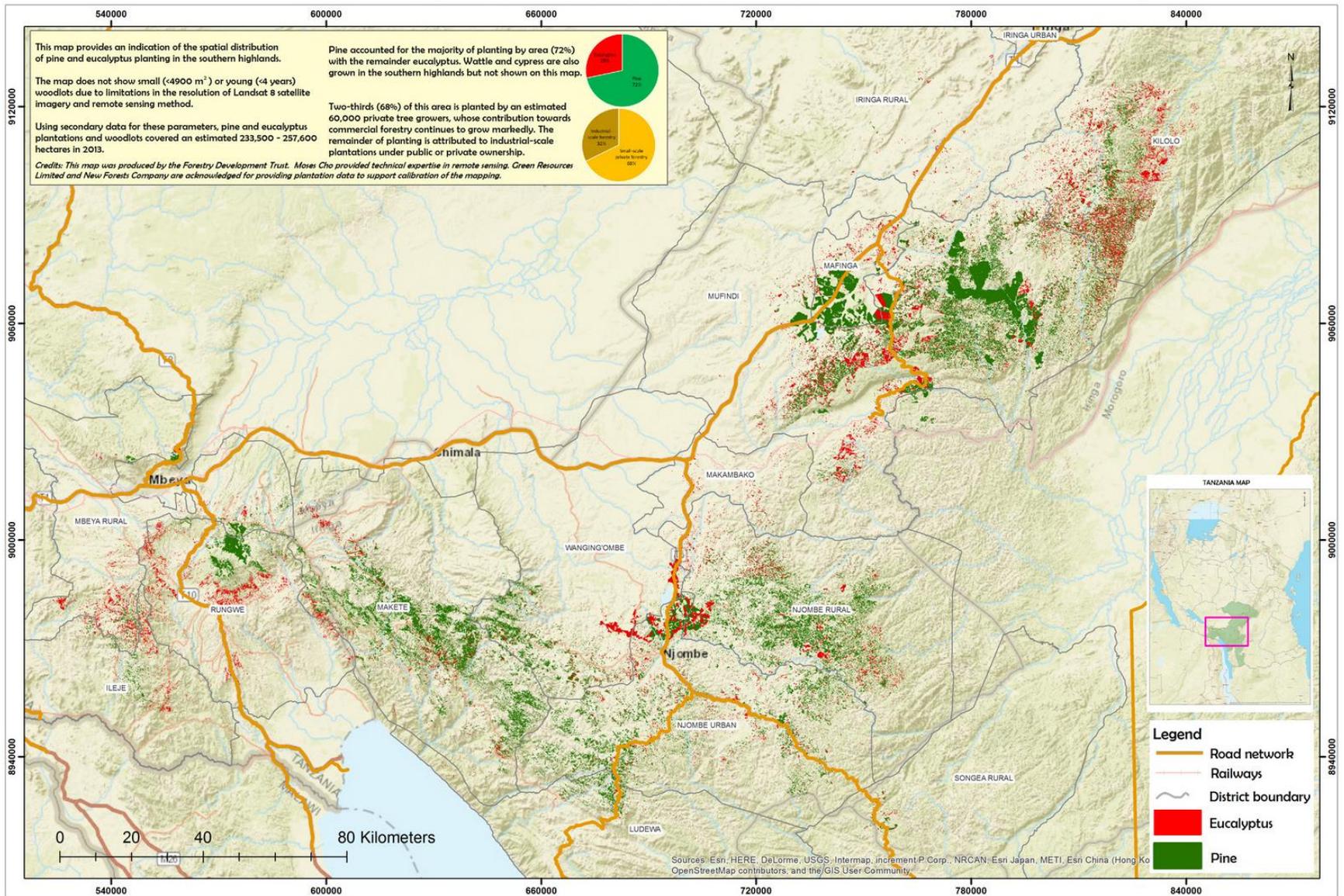
Figure 2: 'Business As Usual' supply forecast to 2035 by species and product regime

Source: UNIQUE 2016

The processing landscape

The current supply base is a key constraint to processing investment

The current supply base remains a key constraint on the processing landscape in Tanzania, with the majority of sawn timber processors remaining small entrepreneurs operating mobile ding dong type sawmills with low recovery rates of 20-35% and producing low quality sawn timber. Where woodlots are dispersed, of poor quality and limited in volume these highly mobile millers are the only actors able to utilize small log volumes from poorly accessible woodlots profitably, and therefore currently constitute an important outlet for small tree growers (STGs).



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Figure 3: Distribution of pine and eucalyptus plantations and woodlots in the Southern Highlands, 2013

Source: FDT, 2016

This current state, and especially the dispersed nature of supply, emphasizes the requirement to improve the productivity and quality of woodlots to improve grower returns and enable a commercial proposition for processors to invest in better quality processing technology that can increase recovery rates and quality of sawn timber. Without this step change in quality and productivity, it is likely that the business model for better quality processing will remain unattractive in a significant proportion of the Southern Highlands.

Where enabling conditions are sufficient there has been investment in the sector

Despite ding dongs remaining the primary processing technology, especially to service STGs, there are examples of investment in processing from new and existing players, in stationary mills processing higher quality sawn timber and also veneer and plywood facilities. While they are sometimes being hampered by limited access to finance and technology, these cases have demonstrated that where the enabling conditions are right, and the supply of sufficient raw material of acceptable quality can be assured, investment can be attracted to drive value in the sector.

Demand for wood products

The demand for wood products is expected to continue to grow

Timber demand is driven largely by the construction, furniture and paper sectors. Other sectors using wood are power transmission, using eucalyptus poles (a key market for STGs) and the transport sector consuming wood in the form of pallets and boxes. Timber demand is expected to grow strongly, more than doubling in round wood equivalent (rwe) between 2013 (national consumption of 2.3 million m³ (rwe) and 2035 (5.2 million m³ (rwe), driven primarily by the construction sector and paper consumption.

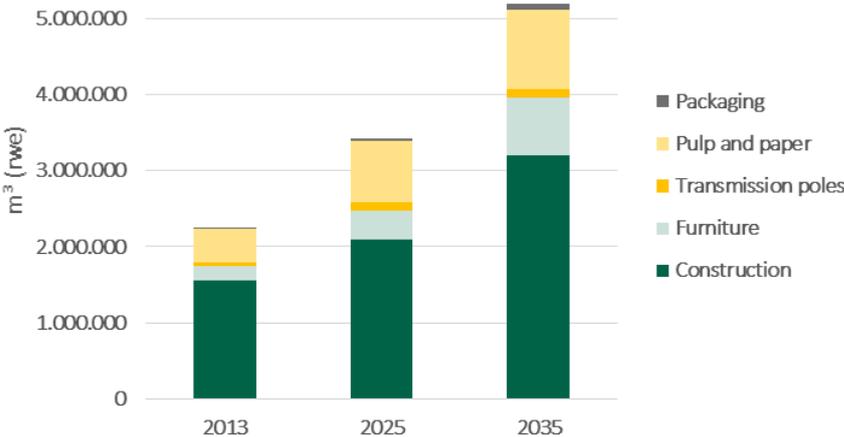


Figure 4: Consumption of wood products in Tanzania by market segments 2035

Source: UNIQUE

There remains a challenge of poor quality products reaching the market

Despite the strong expected growth in demand, there are challenges related to the quality of current supply not always meeting market expectations, increasing the risk of substitution for alternative

materials (e.g. steel, aluminum, concrete) or imports. This has been the case in the transmission pole market with the Tanzania Electricity Supply Company (TANESCO) considering switching to concrete poles and also with the requirement for treated sawn timber for quality roof trusses in construction. In addition, there is currently a lack of compliance with regulation and standards that further impacts the drive towards quality in the sector. For a strong and functioning commercial forestry sector, there is the requirement to ensure that there are clear market signals between the end market and suppliers to ensure demanded products are delivered to the market.

Interconnectedness of supply, processing and demand

Credible sector solutions need to drive greater productivity in small grower woodlots

The supply, processing and demand landscape for commercial forestry in Tanzania are highly interconnected, requiring any credible value-driven solution to ensure sufficient focus on driving better productivity of current STG woodlots. As well as negatively impacting growth and standing volume, poor quality woodlots reduce the financial viability of improved processing technologies, which in turn reduces recovery rates and quality of processed timber. This can then have a knock-on effect of depressing demand for end products as they are not of sufficient quality for the market and substitutes are sought.

With small and medium scale tree growers now accounting for the majority of hectares planted, enabling them to lengthen the rotation of their woodlots and also practice better silviculture to increase productivity and quality, remains the critical constraint that development actors should aim to address to drive transformation of the sector. There are however certain areas in the Southern Highlands where the enabling conditions are sufficient today to drive profitable processing investment. These areas should also be targeted to ensure progression of the sector, as other interventions areas develop the longer-term quality of supply base.

Supply / Demand gap

If current practice continues, the supply deficit will continue to grow

Based on the hectares planted and an estimation for productivity and of rotation age by each supply segment (assuming continuation of current practice), a forecast supply volume was estimated at 3.2 million m³ (rwe) in 2035. When compared to the demand forecast there remains a supply deficit in the market, which increases significantly between 2025 and 2035 to a supply gap of 3 million m³ (rwe). The supply – demand gap is mainly constituted by large diameter sawlogs for sawn timber and veneer production (1.4 million m³) and wood fibre for pulp and particle/fibre board (1 million m³).

It is expected that progress in the sector will be able to reduce the deficit, as there are significant gains to be made from: a) increasing productivity; b) lengthening rotation; and c) increasing recovery rates through better processing technology. For example, lengthening STG rotations from currently 12 to standard 18 years for sawn pine timber reduces the sawlog supply gap by 50%.

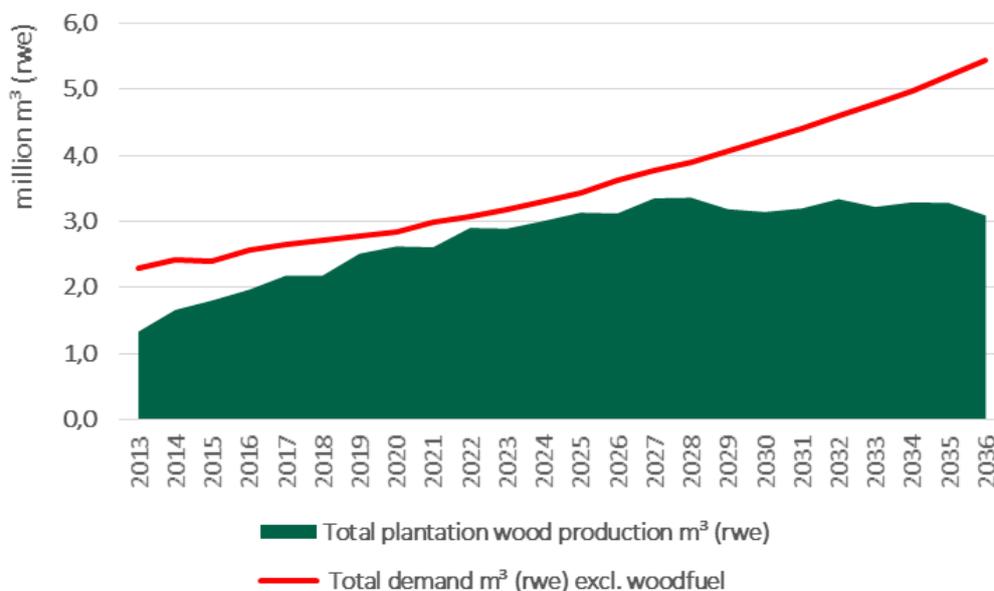


Figure 5: Summary Supply-Demand Scenario (Business As Usual scenario)

Source: UNIQUE

Scale of the opportunity

The commercial forestry sector in Tanzania has significant potential to increase the incomes of small tree growers as well as drive industrialization and employment in primary and secondary value chains.

STGs will benefit from increasing the value of their standing timber and by being incorporated into more productive value chains

STGs will benefit primarily by increasing the value of their standing timber achieved through better silviculture and lengthening rotation, but they will also benefit if additional markets for their trees can be created, and if they can work together as groups to aggregate supply and create more certainty of supply for processing investments.

The sawn timber value chain will remain the key value chain for STGs in the Southern Highlands and can provide significant gains in efficiency and quality if the enabling conditions for better processing can be met and the switch away from ding dongs to more efficient band saws can be made.

The transmission pole value chain is potentially attractive to STGs due to the relatively quick and high return on investment but the market remains limited by national market outlook for poles in Tanzania.

The veneer/plywood value chain is relatively new but is potentially attractive to STGs as it offers a new market for short diameter eucalyptus logs and an alternative use for woodlots originally planned for poles. Nonetheless, quality requirements for raw material are key and must be primarily addressed to further develop this market segment.

The production of wood fibre for pulp, particle and fibre board could be a promising market option for STGs if large industrial actors invest in processing industries, organize raw material supply from STGs in out-grower schemes, and substantially support STGs in improving growth performance and product quality.

Industrialization of the sector and in secondary value chains has the potential to drive significant benefits

As well as industrialization within the commercial forestry sector (through processing investments), improving the quality, consistency and the availability of wood used in other value chains, such as construction, furniture and paper production has the potential to lead to significant growth in these sectors, driving further jobs, income and tax revenue benefits for Tanzania. In addition, the comparative advantage provided by the growing conditions in the Southern Highlands means the sector has the potential to be competitive regionally for wood products.

Realizing the opportunities

A cluster approach is a suitable way to consider processing investments

Apart from the continued support to woodlot establishment and management by STGs, crucial to the long-term development of the sector, there are potential interventions that can help to support processing investment in areas where it is commercially viable. This includes:

- a) Identifying areas of high plantation/woodlot forest cover as a basis for the development of wood processing industries;
- b) Development area forecasts to determine the appropriate type and scale of industries;
- c) Support potential investors during feasibility and business planning, and design of suitable aggregation structures including operationalization of growers' associations and development and implementation of supply-demand information systems;
- d) Vocational training related to technical skills required by processing industries;
- e) Training STGs in log grading according to potential product classes; and
- f) Promotion of more adaptive forest management regimes (in particular for eucalypts) which can – to some extent – address short-term changes in markets while catering to the limited planning horizon of small growers.

The business model and commercial viability are key to delivering sustainable outcomes

When considering potential business models for new investments there are a minimum set of conditions that must be met. There must be a minimum annual wood production of the required dimension and quality, acceptable transport infrastructure and distance to trading points, at least basic organization of STGs in groups which can act together, and other infrastructure suitable for a wood based industry. The criteria will change depending on the type and scale of the investment, but the quality and productivity of woodlots in a dispersed environment will often be the key determinant of commercial viability and remain a localized constraint in much of the Southern Highlands. In addition to commercial viability, the existing entrepreneurial capacities of the area will be important as lead actors can help to catalyze change.

The business models set out in the main report, namely, quality sawn timber, veneer and plywood, blockboard and engineered wood products (EWP) are all valid opportunities if the right conditions are met.

In addition to the specific focus on opportunities for interventions within value chains, there is also an opportunity to look to create the enabling sector conditions that will help support development of the sector. These include:

- Create a shared vision for the evolution of the sector between key public and private sector actors including focus on a positive investment environment;
- Improve communication between raw material producers, wood processors and final consumers of wood products;
- Promote application of and compliance with standards for raw material (log grading) and wood products (technical specifications); and
- Compile relevant information and data on:
 - Plantation based value chains and wood product markets, and their relevance for the environment, national economy and rural development.
 - The positive effects of sustainable biomass for national energy supply and GHG balance and of wood as construction material, and promote the results at policy level.
 - Initiate the dialogue with public sector actors to evaluate possibilities for pro-wood procurement policies.

Conclusion

The commercial forestry sector in Tanzania is in a period of transition as the supply base moves away from the large private and government plantations towards small and medium scale tree growers. This shift in supply has created challenges as the processing landscape is not set up to efficiently serve small growers and the quality and productivity of their woodlots are low, meaning the sector is performing well below its potential. With small and medium tree growers set to remain key players in the sector there is therefore a vital need to ensure continued focus on driving higher productivity and quality in their woodlots.

From a market perspective, there is the requirement to look to catalyze investment in better processing technology, but only where a minimum set of conditions are met. Over time, as the productivity and quality of small tree grower woodlots increase and they evolve as grower groups, these conditions will start to be met in more areas of the Southern Highlands and stimulate further investment.

From a policy perspective, there is a need to ensure that there is an aligned vision for the evolution of the sector so that market actors can all contribute to the creation of a competitive, inclusive and resilient sector. This should help to demonstrate the potential of plantation based value chains and wood products markets, and their relevance for the environment, national economy and rural development. In addition, better linkages between different actors in the value chain should be sought, standards for raw material and wood products should be promoted and there could be the opportunity to try to drive pro-wood procurement policy from public sector sectors to help drive demand for wood products.

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