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# Republic of Mozambique

## Improving Business Climate for Planted Forests

### Final report

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## List of Acronyms

CCP	Company-community Partnership
CSR	Corporate Social Responsibility
DFID	U.K. Department for International Development
DNTF	Directorate of Land and Forests ( <i>Direcção Nacional de Terras e Florestas</i> )
DUAT	Acquired Land Use Right ( <i>Direito de Uso e Aproveitamento de Terra</i> )
EIA	Environmental Impact Assessment
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FIP	Forest Investment Program
FSC	Forest Stewardship Council
GDP	Gross Domestic Product
GEF	Global Environment Fund
GoM	Government of Mozambique
MAI	Mean Annual Increment
MASA	Ministry of Agriculture and Food Security
MITADER	Ministry of Land, Environment, and Rural Development
NGO	Nongovernmental Organization
PEFC	Program for Endorsement of Forest Certification
PPP	Public-Private Partnership
PROFOR	Program on Forests
REDD+	Reducing Emissions from Deforestation and Degradation
R&D	Research and Development
SPGS	Sawlog Production Grant Scheme
SADC	Southern African Development Community
SFM	Sustainable forest management
SME	Small and Medium Enterprise
S4E	Skills for Employment

## Executive Summary

i. Forest plantations are increasingly recognized for their important role in supplying the growing global demand for wood and wood products. Under the right circumstances, the plantation sector can supply raw materials both to meet domestic demand and to support a major export industry. Forest plantations could also play an important role in both adaptation for and mitigation of climate change, but at the same time, climate change could also have an impact on all forests owing to variations in temperature and rain patterns. Mozambique has had an ambitious policy to advance the planted forest sector since the Government of Mozambique (GoM) issued a national policy for the sector in 2009 (National Reforestation Strategy). However, development in the sector has been more gradual than was originally expected. This report aims at assessing the competitiveness of planted forests in Mozambique and at providing advice on short-, medium- and long-term actions that could be implemented to unleash the development potential in the sector and to improve Mozambique's competitiveness in the sector. The main focus is on commercial producers producing wood for domestic, regional African, and global markets. Planted forests and commercial wood production could also become a feasible option for domestic enterprises, small and medium enterprises (SMEs), and smallholders if conditions were right and appropriate support services and incentives were available.

ii. A well-planned and sustainable plantation-based forest industry can bring many benefits to a country like Mozambique. These investments can also become 'anchor investments' leading to the development of SMEs as suppliers and subcontractors. In Mozambique, where at present only limited options for rural employment are available, forest plantation investments have the potential to contribute substantially to job creation.

iii. One particular way how plantation investments can support rural economic growth and diversification are outgrower schemes where companies and smallholders enter into a wood supply contract. These have not yet been well established in Mozambique, but other countries in Africa (for example, South Africa and Uganda) have had good experiences. Outgrower schemes and other company-community partnerships (CCPs) require capacity building and training for new emerging producers. When successful, these partnerships can help companies establish a wider raw material base while providing economic opportunities for rural people.

iv. When analyzing the competitiveness of plantation forestry in Mozambique, the results confirm the country's potential for investments in the sector. However, there are also challenges that must be addressed if the sector is to grow. Under the current conditions, the official target of establishing 1 million ha of planted forests by 2030 is ambitious. If the identified challenges are efficiently addressed, reaching between 300,000 and 500,000 ha in the next 15 years will be a major accomplishment. With joint efforts of different institutions and targeted investments, the investment climate of Mozambique can be significantly improved as no insurmountable biophysical constraints have been identified, such as unsuitable site conditions or physical barriers to markets. The main challenges identified by this assessment are summarized as follows:

- **Access to land:** potentially Mozambique has large areas for plantation development, but accessing this land requires complex negotiations with communities;
- **Production-related aspects:** lack of competitiveness because of high unit production costs;

- **Market-related aspects:** small domestic market and expensive access to markets, inadequate infrastructure;
- **Enabling-environment-related aspects:** lack of clarity and transparency regarding land negotiation and land use planning; resources for conflict resolution; informal/illegal supply from natural forests.

v. Complex land acquisition and licensing processes in addition to unpredictable actual land costs and the lack of a clear definition of natural forested land have discouraged investments in the past. A key aspect that has attracted investors to Mozambique is the low cost of land. However, the lack of clarity in the procedures to acquire land from communities and the lack of government support in this process has often led to prolonged negotiation processes, which often result in unfruitful outcomes for the parties involved. Even if the formal land lease costs are low, investors need to include the costs of community compensation to land costs. These can be much higher than the formal fees and—due to the complexity of negotiations—difficult to plan for.

vi. To pave the way for achieving the country's ambitious reforestation plans, it is paramount to clearly communicate land acquisition processes and actively foster fair communication within the negotiation processes. The creation of an independent institution tasked with facilitating company-community negotiations and establishing clear procedures seems to be a promising alternative to improve the situation. The final target is to establish fair and stable CCPs.

vii. In addition, the lack of clear definitions regarding what is considered to be a natural forest has hampered investments in the planted forest sector. As most of the available land for reforestation is covered with miombo vegetation in different stages of degradation, the lack of clarity exposes companies to high reputational risks and leads to a deadlock situation, as the conversion of natural forest is incompatible with forest certification standards and is non-justifiable to investors and society.

viii. On production-related criteria, a key challenge identified was related to production costs, which are significantly (up to 70 percent) higher in Mozambique than in competing countries. This difference is mainly due to the relatively low growth rates, inadequate silvicultural knowledge and technology, and the shortage of skilled labor. Although biophysical conditions cannot be changed, the application of better silvicultural practices can substantially increase the productivity of plantations. This would require the engagement of different institutions at all levels (for example, national, district) to enhance silvicultural knowledge and ensure that silvicultural practices are well adapted to the country's specific conditions and needs. For many production factors, nominal prices are low (for example, wages for labor) but so is the productivity. This leads to high costs per unit produced.




ix. Regarding market-related criteria, the assessment revealed that Mozambique's domestic market is largely dominated by timber extracted from natural forests. Although attractive niche markets for plantation timber have been identified, such as poles, the widespread informality and the lack of industrial consumers who could absorb larger production volumes from legal sources still hinder the establishment of a competitive domestic wood market. This is a particular concern for smallholder producers for whom domestic markets would be a natural entry point. In the past, this situation has led producers to turn to the export market, but the high costs associated with logistics (transport and harbor costs) prevent plantation timber from being competitive.



x. Many of the high costs can be addressed and mitigated by public and private investment and launching public-private partnerships (PPPs) to promote planted forests sector in the country. Action is needed on all fronts. This report presents a list of actions than could be implemented to address some of the key concerns. The proposed actions focus mainly on creating an enabling environment for investors. Individual firms are responsible for their own business decisions and have the ultimate responsibility for the investments. Many of the proposed actions support investors of all sizes. However, it needs to be recognized that smallholders and large investors need different services and support. Therefore, the prioritization and sequencing of reforms also depends on policy objectives.

**Priority Ranking of Proposed Actions for Large and Small Investors**

	Proposed Actions	Large investors	Small-holders
Production	1. Applied research - Tree Improvement Program (inc. clonal forestry)	Yellow	Yellow
	2. Facilitate access to improved technology	Red	Green
	3. Best practice guidelines for plantation forestry	Green	Red
	4. Research and development (R&D) program - company dialogue	Yellow	Green
	5. Vocational training	Yellow	Yellow
Markets	6. Provision of reliable market related information	Yellow	Green
	7. Master plan for improving infrastructure in forestry areas	Red	Green
	8. Addressing illegal logging and formalization of sector	Green	Green
	9. Cluster policy	Green	Red
Enabling environment	10. Definition of 'natural forest' (for certification)	Red	Red
	11. Mapping land qualifying for certification	Red	Red
	12. Stream-lining process for obtaining licenses	Red	Red
	13. Updating forest legislation to include non-native species	Yellow	Green
	14. Producing guidelines for Corporate Social Responsibility (CSR)	Red	Green
	15. Facilitate company-community negotiations on land allocations	Red	Red
s/holders	16. Formalize CCPs	Yellow	Red
	17. Support for small tree growers - including outgrowers	Yellow	Red
	18. Capacity building for decentralized government in CCPs	Yellow	Yellow

**Key:**  Absolute precondition: short-term action needed  Action needed after Red to kick-start sector  Long-term but necessary action for sector development to be world class

xi. Different actors have different priorities for the reform agenda. In general, larger, often international, investors require clarity on land access issues and possibilities for forest certification while smaller, emerging investors and producers also need support in production practices themselves.

- **For the larger investors**, the issue of which land could qualify for sustainable forest management (SFM) certification is a high priority. These include the definition of 'natural forest'; and the mapping of land that potentially would qualify for certification. It is also important for the larger investors to have clarity what is expected of them under corporate social responsibility (CSR), to be able to access modern production technology, and to have more clarity and influence on national infrastructure development plans.

- **Smaller investors in tree growing** have a greater need for support in areas such as best practice guidelines and general support for small tree growers—including outgrowers. In addition, the clustering of smaller growers is also a high priority to both promote and support smaller growers. The formalizing of company-community partnerships is also important.

xii. The impact of carrying out these actions will be significant. Implementing the proposed actions will lead to improved yield and reduced establishment, harvesting, and transport costs. Combined, these will lead to notable, about 30 percent, reduction in unit production costs, bringing the country closer to, for example, South Africa’s production costs and much closer to Brazil, the world leader. Improved negotiation processes and general governance will also reduce administrative costs, which are currently relatively high. The results confirm Mozambique’s potential for investments in the planted forest sector by both large and small operators and also identifies challenges that need to be addressed. Further reforms and reaching a critical mass of national capacity and expertise could improve the situation even further in the medium to long term and make Mozambique competitive producer globally and in African region.

## 1. INTRODUCTION

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- *Commercial plantation development has been identified by the Government of Mozambique as a vital element in rural development. This includes promoting investments by both local and foreign investors as well as large corporations and small producers.*
  - *This study focusses on commercial plantations and public-private collaboration. Business decisions by individual companies, access to finance, ecological landscape restoration and natural forest management are not covered even if these are important elements in the sector's development and in landscape-level planning.*
  - *Plantations are long-term and risky investments; therefore a good and predictable investment climate is essential and public investments are also needed.*
- 

1. Forest plantations are increasingly recognized for their important role in supplying the growing global demand for wood and wood products. Under the right circumstances, the plantation sector can supply raw material both to meet domestic demand and to support a major export industry. Forest plantations could also play an important role in both adaptation for and mitigation of climate change by providing alternative livelihoods, local environmental services, and carbon sequestration. At the same time, climate change has an impact on all forests—natural and planted—owing to changing temperature and rain patterns. Mozambique has had an ambitious policy to advance planted forests since the GoM issued a national policy for the sector in 2009 (National Reforestation Strategy). However, development in the sector has since been more gradual than was originally expected. This report and the three working papers attached to it<sup>1</sup> aim at assessing the competitiveness of planted forests in Mozambique and at providing advice on short-, medium- and long-term actions that could be implemented to unleash the development potential in the sector and to improve Mozambique's competitiveness in the sector. The main focus is on commercial producers producing wood for domestic, regional African, and global markets. The investors behind planted forests have in recent years been mainly been international firms. However, planted forests and commercial wood production could also become a feasible option for domestic enterprises, SMEs, and smallholders if conditions were right and appropriate support services and incentives were available. All investor classes would benefit from good governance and conducive business climate.

2. This report focuses on issues raised in key national development strategies with regard to commercial wood production from planted forests. There are number of dimensions of the forest sector in Mozambique that are highly relevant but are covered by other strategies and analytical work. First, reforestation and afforestation are often essential elements in landscape restoration and ecological reconstruction of degraded lands. These investments are mostly financed by public resources—either domestic or external—and the investments often do not produce commercially viable returns; their justification is primarily based on the environmental services provided. In recent years landscape restoration has also been financed by various Reducing Emissions from Deforestation and Degradation (REDD)/REDD+ schemes. The second aspect that is not covered by the current study, but which still remains highly relevant for Mozambique, is the management of natural forests and their commercial utilization. There has been much concern about the legality and sustainability of current logging in the

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<sup>1</sup> Working papers are available at [www.profor.info](http://www.profor.info) [search terms 'Mozambique planted forests']

country's natural, particularly miombo forests. All these forest activities and different land uses—ecological restoration, natural forest management, and planted forests—are naturally interlinked and part of a wider landscape management. Within this framework, natural forests, forest plantations, agroforestry systems and mechanized agriculture all have an important role and interact within a multi-functional landscape.

3. A well-planned and sustainable plantation-based forest industry can bring many benefits to a country like Mozambique. This can be seen in countries with large, mature plantation industries such as Brazil, Uruguay, Chile, and South Africa. Forestry can diversify often agriculture-dominated rural economies and provide off-farm employment. Plantation investments are also expected to become 'anchor investments' leading to the development of SMEs as suppliers and subcontractors. In Mozambique, where at present only limited options for rural employment are available, forest plantation investments have the potential to contribute substantially to job creation. The National Reforestation Strategy estimates one worker for every 4 ha of plantation in Mozambique but this is considered too optimistic, as the global average is 1 worker for every 20 ha. Nevertheless, large forest companies investing in Mozambique will promote the development of forest and wood industry clusters that include both large-scale industries and SMEs as well as service and technology providers and outgrowers.

4. Investments in forest plantations also have the potential to substitute forest product imports, in addition to supporting the diversification of exports. Further benefits include reducing pressure on natural forests and addressing the informal forest sector. All these can contribute to the protection of nature and wildlife, which in turn provides a foundation for developing ecotourism activities. These economic, social, and environmental aspects have the potential to provide important support for the transition to a green economy in the country.

5. The GoM issued a national development plan for the commercial plantation sector in 2009. This National Reforestation Strategy plans to increase its commercial forest plantation area from its current area of 64,000 ha to 1 million ha by 2030. This requires an investment within the range of USD 2 to 4 billion.<sup>2</sup> This ambitious target can only be achieved with significant private sector investments in the planted forest sector. To support these investments, the improvement of the business environment in forest plantations requires a long-term vision. The National Reforestation Strategy states that the focus areas for establishing plantations are industrial production (pulp and paper, reconstituted wood products such as particle boards or fiberboard, sawn timber, energy), forest protection, community forest plantations, and ecosystem services. The objective of the forestry industry component of the strategy is to "establish, develop and consolidate commercial and industrial plantations, which are efficient, competitive and sustainable from the economic, social and environmental points of view, so as to satisfy the needs of raw materials of the local industry, in the medium- and long-term, and to produce higher value added products for the internal and international market." In addition to the Reforestation Strategy, in recent years national climate change and REDD strategies have emphasized the role of planted forests in climate change adaptation and mitigation.

6. This report focuses on commercial activities that should, by definition, be sustainable on their own merits without government intervention. However, investing in forests and wood production is particularly long term and illiquid investment and thus has high risks particularly in emerging economies. Therefore it is common for many developing countries to offer incentives and subsidies to private growers

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<sup>2</sup> The operational costs (land preparation, planting, weeding, tending) before generating first revenues for one hectare of planted forests are within the range of USD 2,000 to 4,000.

of all sizes In order to stimulate the development of the sector. This support to commercial tree planting has worked well in a number of countries including Brazil and Chile and more recently in Uruguay. The schemes generally offer planting subsidies and fiscal incentives. In such cases, the objective is to stimulate investment in tree planting and to establish sufficient raw material base to attract major wood-using industries to a country. In the countries mentioned, large-scale, commercial forest industries are now well established, contributing significantly to the countries' economies. As the forest industries have matured, there is less need for the subsidies, although enabling environment issues still remain important.

7. Even if the governments and other national stakeholders do their utmost to create an enabling business climate, the ultimate responsibility for business decisions lies with the firms themselves. Only producers themselves can make the decisions regarding product assortment, technology applied, and marketing strategies. The public sector can only create the operating environment and should focus on interventions that serve national social and economic development widely and leave individual business decisions to the producers. This report focuses on public action and aims at providing guidance to policy makers in Mozambique and development partners on what kind of reforms and public investments are needed. Some of the recommendations in the report are targeted also at the private sector. However, actual investments are private business decisions. This reports does not aim at providing guidance for individual producers regarding project implementation, management of specific investments, or selecting specific investment sites with regard to productivity or accessibility. Issues related to access to finance and financial services are also not covered. This is not to say that these would not be important: on the contrary, forest plantations and wood production are long-term activities and therefore financing has often become a major bottleneck.

8. Second, major decisions that influence investment climate are also dependent on national policy objectives, governance, institutional capacities, and macroeconomic development. Most of these 'political economy' issues have an impact across sectors and are exogenous to the forest sector itself. Therefore the analysis and recommended actions in this report focus mainly on technical issues that can be addressed by the sector itself. However, the line is not always clear and, for example, issues related to formalization of the natural forest management and its impact on planted forests are as much technical as it is a governance issue.

## 2. PLANTATION SECTOR IN MOZAMBIQUE: ISSUES AND OPPORTUNITIES

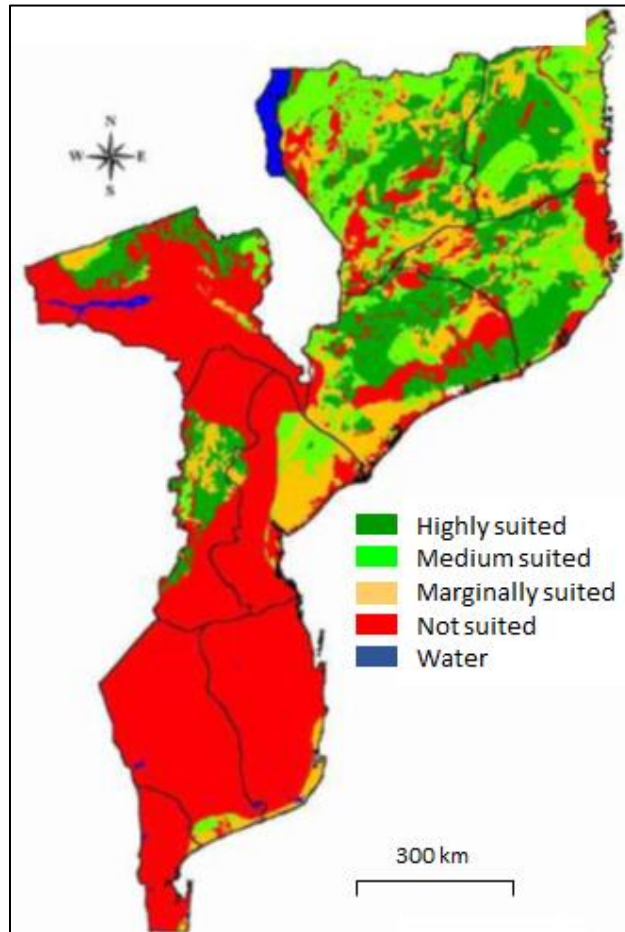
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- *Mozambique is estimated have to large areas available for plantation. However, earlier estimates of having 7 million ha available are thought to be overestimates and if alternative land uses and feasibility for SFM certification are considered, the potential can be less than half of that, that is, 3.5 million ha.*
  - *Land that is owned by the state and local communities have user rights. To access available land, investors need to negotiate with the communities. The process can be long and slow but it needs to be participatory and inclusive.*
  - *Government administration for planted forests was restructured in 2015 and the responsibility is now split between two ministries.*
- 

9. Mozambique's forest plantation history goes back to the 19th century when, as a Portuguese colony, exotic species were introduced for several purposes. This included introducing exotic species to support swamp drainage in Maputo, sand dune protection along the coast, as well as timber and wood fuel for tea drying in the upper Zambézia. By the time of independence in 1975, Mozambique had about 20,000 ha of exotic plantations, mostly *Eucalyptus*, *Pinus*, and *Casuarina*. The dominant plantation regions were Manica, Niassa, Zambézia, Maputo, and Gaza. The current plantation area is estimated at around 64,000 ha in generally the same areas, particularly Manica, Niassa, and Zambézia.

10. The GoM commissioned a study in 2007 to assess the overall development potential of the sector (MINAG 2007). The report estimated that there are approximately 7 million ha of available land with the potential for forest plantations. The parameters considered for the plantation potential included: (a) rainfall (>1000 mm per year), (b) effective soil depth (>100 cm), (c) altitude (<1000 m), (d) water retention capacity, and (e) areas of contiguous blocks of land with 1,000 ha or more. Most of the area with a high or moderately high biophysical potential is located in Niassa, Cabo Delgado, Nampula, Zambézia, Tete, and Manica. If additional criteria like accessibility, other land uses (for example, small farmer or commercial agriculture), rights and needs of local communities or fulfilling the criteria for forest certification are considered, land availability for forest plantations is estimated to drop to around 3.5 million ha, that is, about half of the original estimate. The estimated plantation areas from the 2007 study are presented in Figure 2.1.

Figure 2.1. Potential Plantation Areas in 2007



Source: MINAG 2007.

11. Access to land is the key criteria for investors. Investors, and international investors in particular, are increasingly concerned about the social and environmental aspects of land availability. It is no longer adequate that the necessary land is available, investors expect their investment to be socially and environmentally sustainable. Displacement of communities and environmental degradation are not tolerated. Land in Mozambique is state owned and cannot be sold or included in transactions. The national agro-ecological zoning process is currently in progress. This is considered a first step toward systematic land use planning in Mozambique. At the local level, user rights are allocated through the issuance of land use right documents (*Direito do Uso e Aproveitamento da Terra* [DUAT]), provided the applicant is able to submit a land use plan. DUATs can also be obtained through inheritance or by occupation, unless there is a legal reservation or the land has been lawfully granted to another person or entity (GoM Constitution 2004). Local communities have DUATs for their traditional territory. The Mozambican land law recognizes customary land rights at the same level as acquired rights. Local communities can grant third parties, such as investors, rights to use land within their territories (GoM Land Law 1997; Akesson et al. 2009). The land law requires consultations with local communities before an acquired land use right can be issued. These consultation processes are complex and challenging for both communities and investors.

12. Administration of planted forests in the Mozambican government was restructured in January 2015. The establishment of the Ministry of Land, Environment, and Rural Development (MITADER) prioritizes issues associated with land tenure and access. The ministry is tasked with planning,

coordinating, controlling, and ensuring execution of policies and management of land, forests and wildlife, environment, protected areas, and rural development. MITADER is in charge of the forest sector in the country and it houses two key departments: National Directorate of Land (DINAT) and National Directorate of Forests (DINAF). However, 'agro-forest plantations' fall under the mandate of the Ministry of Agriculture and Food Security (MASA). Responsibility for planted forests is now mainly under the National Directorate of Agriculture and Silviculture (DNAS). Most of the technical expertise on forest issues remained in MITADER and two key directorates.

13. Several investors have been interested in establishing plantations in Mozambique, but the development has been slow. Currently the largest plans are by a Portuguese investor Portucel that has obtained a total DUAT area of 173,000 ha in Zambesia and 183,000 in Manica. The current (early 2016) plantation area is estimated at 64,237 ha (Table 2.1). No major processing investments have been made yet. However, Portucel has long-term plans to establish a pulp mill in the country once reliable raw material supply has been guaranteed through plantation establishment. Green Resources, another major investor in forest plantations, currently assumes that more investors will become engaged once forest plantations have been established, secured, and produce wood at competitive costs. They plan to build a wood chip factory in Nacala for export in 2017 and establish a pulp factory by 2025 (Blid 2014). At the same time, some firms which had already established themselves in the country, have decided not to proceed and have sold their investments over the last few years. The withdrawals have been caused both by slow progress in the countries and changes in the firms' global strategies.<sup>3</sup> Largest plantation operations can currently be found in Manica, Niassa and Zambesia Provinces though in many areas development is at an early preparatory stage and little actual planting has taken place (Table 2.1).

**Table 2.1. Forest Plantation Companies and Land Allocation in Mozambique in 2015**

No.	Company	Province	District	DUAT Area (in ha)	Area Planted (in ha)
1	Ifloma	Manica	Manica	15,000	13,285
1	Ifloma	Sofala	Muanza	69,350	100
2	Chikweti forest	Niassa	Lago e Lichinga	63,040	14,250
3	Companhia florestal Massangulo	Niassa	Ngauma	5,332	4,378
4	New Forest	Niassa	Lichinga	33,040	3,400
5	Fundação Malonda	Niassa	Lichinga e Sanga	4,076	1,101
6	Green Resources	Niassa	Sanga	7,880	2,683
6	Green Resources	Nampula	Mecuburi, Ribaue e Nampula	126,060	3,612
7	Floresta do Niassa (Rift Valley)	Niassa	Lichinga	42,102	5,400
8	Portucel	Zambezia	Ile e Namarroi	173,000	6,500
8	Portucel	Manica	Manica, Gondola, Barue, Sussundenga, Mussurize	183,000	0

<sup>3</sup> The report is partially based on interviews and data collected from individuals and businesses. Therefore some of the analysis is based on confidential and proprietary business information which was received on a condition that the source is not disclosed.



No.	Company	Province	District	DUAT Area (in ha)	Area Planted (in ha)
9	Ntacua	Zambezia	Ile, Alto Molocue, Lugela	9,500	2,000
10	Tectona Forest	Zambezia	Gurue, Milange e Namarroi	13,935	4,228
11	ATFC II	Zambezia	Namarroi	6,000	1,500
12	Moflor	Manica	Gondola	3,800	1,800
	<b>TOTAL</b>			<b>755,115</b>	<b>64,237</b>

Source: Company websites and interviews.

### 3. MARKET DEVELOPMENT OPPORTUNITIES

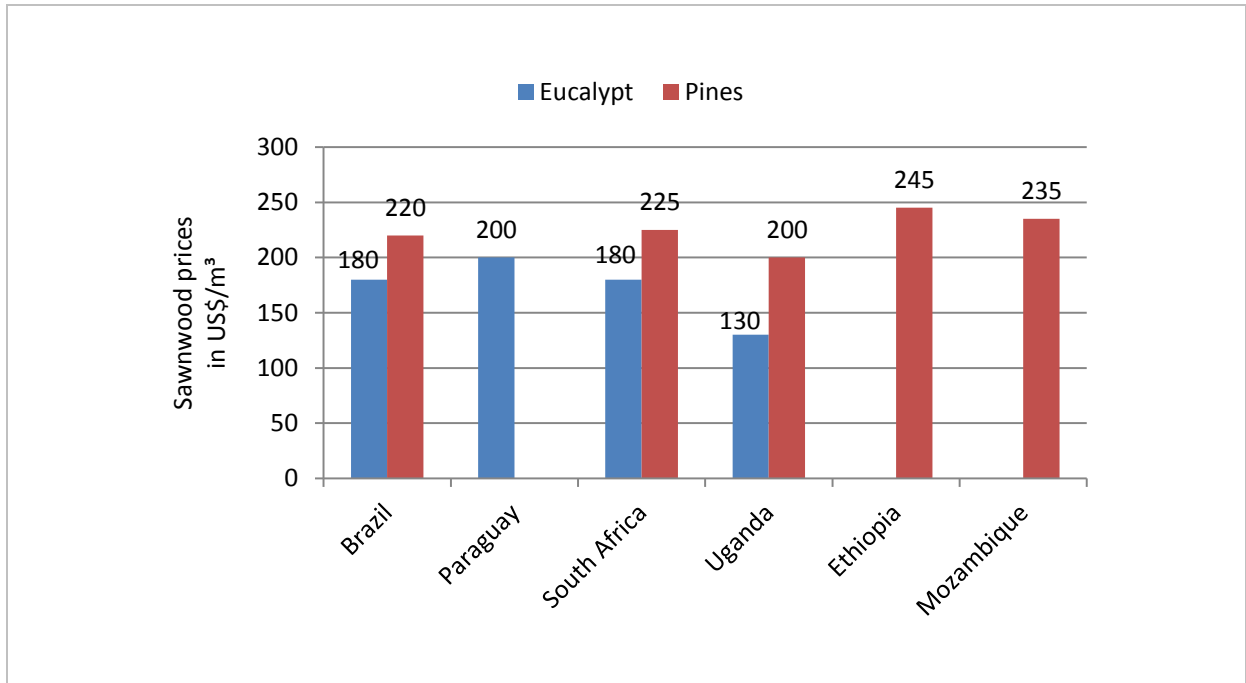
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- *Domestic wood markets in Mozambique cannot be fully supplied by domestic suppliers leading to imports and high wood product prices. In lower value products (for example, fuelwood) most of supply comes from informal and often unsustainable sources from natural forests. This makes it difficult for formal producers to compete.*
  - *Africa as a region is expected to see increasing wood demand and growth rates outpace sustainable supply; this leads to increased demand.*
  - *Much of the current plantation investment is built on exports to Asian markets. However, investors have not yet established processing mills and it is likely that these investments are done only once a large enough supply base has been established.*
  - *Climate change affects growing conditions and makes transport infrastructure vulnerable. This makes planning for markets more difficult.*
- 

14. Many of the large-scale commercial plantations recently established in Mozambique are based on export markets. However, domestic timber markets are currently also expanding. The fast-growing construction industry and the expansion of the electricity grid are the largest consumers of timber in the country. Currently, the domestic timber supply is not sufficient to cover these growing demands, and thus it is necessary to import poles for transmission lines and construction timber. In 2010, wood product imports were estimated at USD 68 million (2.3 percent of total imports; Marques 2012), while in 2011 wood product imports were estimated at USD 85 million (Instituto Nacional de Estatística 2015). These figures reveal the potential of the domestic market to supply a variety of wood products and reduce the reliance on imports. Another indicator for wood deficit in domestic markets are product prices. Statistical data on wood product prices in Mozambique are not widely available, but based on anecdotal information, wood product prices in the country are higher than elsewhere in Africa or globally. This indicates that there is potential in domestic markets as well (Figure 3.1).

15. The domestic market for wood products in Mozambique can be divided in four broad categories: (a) quality timber for higher-value products, for example, furniture or flooring, (b) construction timber, (c) pulpwood, and (d) fuelwood/charcoal. Wood is already being produced for all of these purposes, even if consumption is currently low with some of the industry still in the planning stage. With regard to product volume, the market is dominated by charcoal, with an annual consumption estimated at 15 million tons (Siteo et al. 2008). Charcoal and fuelwood is mainly consumed by households for cooking and heating. The National Reforestation Strategy recognizes energy biomass production as one of the potential areas for investments within the domestic market. However, the lack of sustainable forest management and corresponding wood production means that currently nearly all (more than 90 percent) of the consumed energy biomass is produced from open access, unmanaged natural forests and Mozambique's charcoal value chain remains largely informal. Commercial production of biomass for energy would not be competitive under these circumstances, since the raw material stumpage cost for the competing informal producers is close to zero.

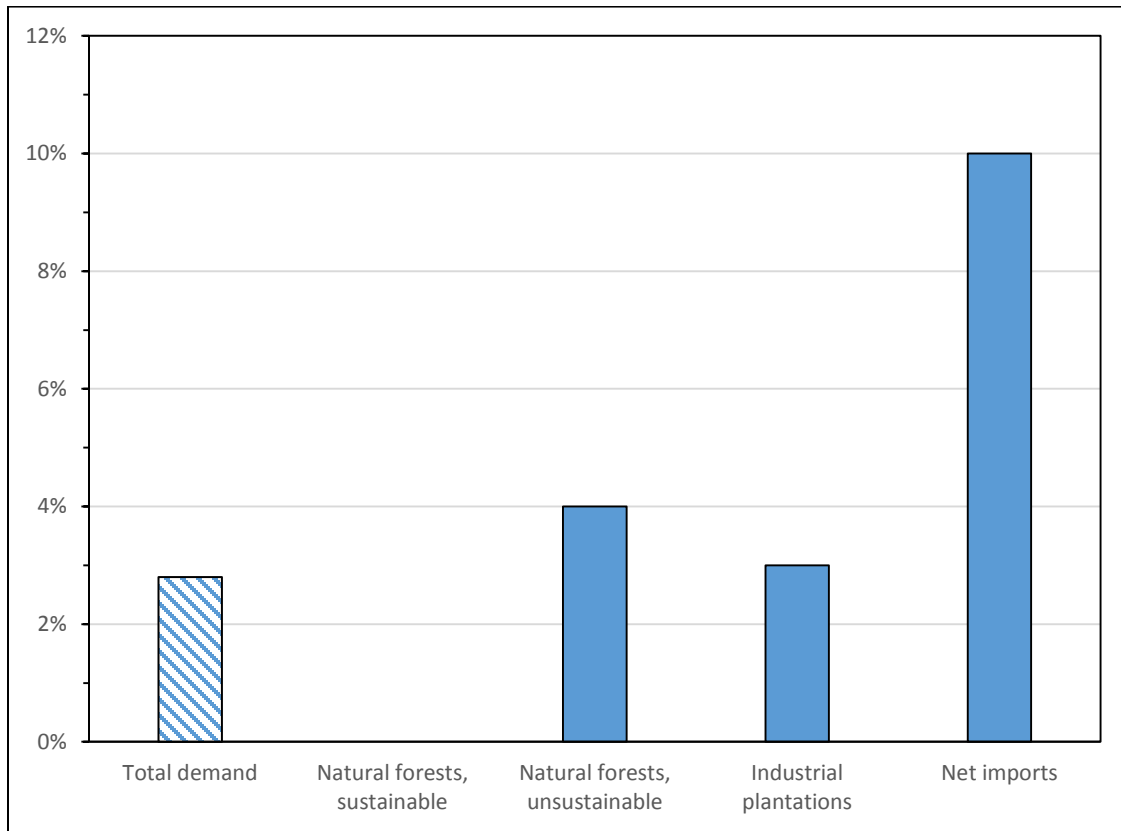
**Figure 3.1. Prices for Eucalypt and Pine Sawnwood (2015)**



*Note:* Data represent averages from official sources and interviews, and are based on low quality eucalypt lumber and medium quality softwood sawnwood (FOB). The sawnwood prices are at a comparable level, influenced by international market prices. In Ethiopia and Mozambique the data are from only a few sources where producers have high production costs and a rather ‘monopolistic’ status.

16. Mozambique is also well positioned to supply the markets in neighboring countries in Southern and Eastern Africa. Statistics and data on production, exports, and imports in the region are not developed. Gross domestic product (GDP) growth rates in Sub-Saharan Africa have declined in recent years due to declining commodity prices and growth is estimated to pick up only toward 2017–18 when growth rates are expected to average at 4.5 percent (World Bank 2016). Even these relatively low growth rates indicate increasing demand for wood and wood products. This is strengthened by the rapid urbanization Africa is experiencing, leading to increased demand for wood products in construction. This ongoing economic growth—combined with low growth rates in sustainable supply from natural forests and plantations—has made some experts to predict that Africa will become a wood deficit area in the near future. The whole of Africa receives only 1 percent of global investment flows to forestry, even if the continent uses over 20 percent of all wood consumed globally and 5 percent of all industrial roundwood. This leads to structural changes in timber trade in Africa and, for example, the investment firm Global Environment Fund (GEF 2013) estimates that Africa’s wood import will grow at a 10 percent annual rate in 2010–30. If unsustainable supply from natural forests can be reduced by improving forest governance, the growth rates could be even higher (Figure 3.2).

**Figure 3.2. Wood Demand and Supply in Africa, Annual Growth Rates 2010–30 (estimate)**



Source: GEF (2013).

17. There is a general belief among current and potential investors that the Asian market will emerge as a major export market for Mozambican forestry products. In fact, one of the reasons favoring Mozambique as a destination for forest plantations investments is the proximity to Asian markets. One major investor in planted forests, with a total DUAT area of 166,360 ha, had expectations to supply raw materials for a planned pulp factory. However, the potential investors closed their operations in Mozambique, owing to reasons that are not yet fully disclosed.<sup>4</sup> Some investors expect that a critical mass of investments would lead to others becoming interested as well once the first forest plantations have become fully operational. This would allow also development of wood processing capacity once steady raw material supply has been established. Investments on processing capacity are not yet advanced even if there are plans for both to build a wood chip factory in Nacala for export in 2017 and to establish a pulp factory by 2025 (Blid 2014). In addition, Portucel is planning to build a pulp mill to process the wood produced in their plantations, especially focusing on the eventual pulp export to Asian markets.

18. One of the key risk factors in national, regional, and even global supply projections is climate change. It has impact on plantations—their productivity and biodiversity—through two different

<sup>4</sup> The reasons have not been fully disclosed. Some former personnel mentioned delays with the DUAT licensing processes and other bureaucratic issues, while others stated that other countries offered better production conditions. Additionally, some other reasons can be expected to be behind the decision: (a) the business plan was to plant 150,000 ha within 10 years (annually 15,000 ha). Due to lack of contractors and skilled labor this would be all but impossible and (b) without miombo conversion it is nearly impossible to plant such a large area but such conversion would not be in compliance with SFM certification.

pathways. First, changes in precipitation and temperatures due to climate change have a direct impact on yields as do changes in fire patterns and pests. Second, plantation managers adjust their management regime to better adapt to climate change. This involves different species, genetic material, as well as rotation practices. All these have an impact on wood supply from plantations (Pawson et als. 2013). Some of the specific adverse impacts of climate change on forest plantations in Mozambique include increase in maximum and minimum temperature with an impact on growth conditions and pests; increase of the occurrence of extreme climate events such as floods and droughts; and increase in the frequency of tropical cyclones. Extreme weather events and cyclones not only have an impact on plantations themselves but also on transport infrastructure. (Republic of Mozambique. 2016). Poor infrastructure is a problem for the plantation industry already as it is and climate change will make it even riskier.

## 4. BUSINESS CLIMATE AND ENABLING ENVIRONMENT

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- *Investments and business climate for plantation forests depend on several man-made and natural factors. Key issues are related to good governance, land and labor availability, and natural conditions (including growth rates). Climate change will increase uncertainty in natural conditions and needs to be considered in research.*
  - *Forest growth rates in Mozambique are promising, but still below those of key competitors. There is no recent research on improved genetic material or silvicultural practices, which leaves room for improvement.*
  - *International markets require compliance with social and environmental norms. Forest certification can provide information on compliance, but some conditions (for example, explicit definition of 'natural forest') are lacking. Illegality in the natural forest sector introduces a reputational risk for plantation forestry as well.*
  - *Access to land is complicated and negotiations with communities lead to company investments in social services and physical infrastructure. This has led to unpredictable situations and uncertainty in both community relations and investment costs.*
  - *Availability of skilled labor at all levels is a constraint. Mechanization has reduced the demand for unskilled local labor and this has caused friction with communities.*
- 

19. The key factor influencing production costs (and thus investment decisions) is expected plantation growth rates. These are influenced by many different factors: natural conditions and geography are obviously the main factors, but yields can be improved also by both public and private investments in genetic research and appropriate management practices. In Mozambique the productivity per hectare currently is 20 to 35 m<sup>3</sup> per ha per year; this is lower than in neighboring South Africa and much lower than the highest rates achieved in Latin America. There are several reasons for this. First, there is only little research done in the areas of site-species matching, tree breeding, and clonal programs. Second, the growth conditions in Mozambique are limited by climatic conditions: the long dry season does not allow the outstanding growth rates as compared to other tropical countries with a more constant rainfall regime. It can be expected that climate change will affect the climatic conditions further and this needs to be addressed by research. Third, the silvicultural practices could be significantly improved by adopting better soil preparation, fertilizing, and irrigation schemes applying newest technologies available in the plantation forest sector.

20. The Forest Research Center and the Department of Forestry of the Eduardo Mondlane University conducted some species and provenance trials during the 1980s. This public research was discontinued when plantation activity declined in the 1990s. Presently, the companies which invest in forest plantations conduct the required species and provenance trials themselves before commencing with forest plantations on an industrial scale. As result of technological advances, hybrids and clones have evolved in the forest sector, and most forest companies have adopted these as they show higher potential when compared to pure species and traditional planting methods. However, as the research has been privately financed, its results are not publicly available for example, to smallholders.

21. The enabling environment for plantation investments consists of many different factors; some of them are specific to the forest sector and others are generic to all business (Figure 4.1). The most important aspects for forest plantations include issues like institutional setup of the sector, law, and law enforcement at the national level. The overall environment is also influenced by international conventions and markets. Forest sector and planted forest investors in particular are specifically dependent on business climate for a number of reasons: first, like all land-based investments, forest plantations are particularly dependent on long-term predictability in business climate. They are a site-specific asset class and cannot be relocated if conditions change (Castrén et al. 2014). Secondly, international investors increasingly aim to maintain a positive reputation when making investments. Therefore, countries that disregard globally recognized social and environmental standards are not eligible for many high-quality investors. The acceptance of socially and environmentally unsustainable products is declining in global markets, and thus the use of investment criteria related to the political, social, and institutional framework remains a sensitive issue.

**Figure 4.1. Enabling Environment for Forest Investments**



Source: UNIQUE.

22. Legality and formality are key preconditions to ensure fair market competition and sustainable forestry. This has been reflected by legislative changes in a number of consumer countries. For example, the United States amended their Lacey Act in 2008 and the European Union (EU) countries have had the EU Timber Regulation since 2013. Both of these legislations ban the import of illegal timber. Illegality and informality in timber markets has to be addressed through effective control and implementing cross-

cutting reforms in many policy areas and by promoting good governance. This includes actions to tackle corruption and promoting policy reforms to improve the incentive framework. Reforms may also require associated social and development programs to mitigate possible adverse impacts. A clear commitment by all stakeholders to promote legal and formalized operational timber-based value chains—including products from both natural forests and forest plantations—will improve the investment climate in Mozambique and the perception of Mozambican products in global markets.

23. One key aspect that has an impact on a country's attractiveness' to foreign investors is the level of general governance—in particular, rule of law and corruption. Mozambique ranks 112 out of 167 countries on the Corruption Perception Index.<sup>5</sup> For the Sub-Saharan Africa sub-region, Mozambique ranked 16th out of 38 countries. Corruption varies between sectors and there has been no news about corruption in the forest plantation sector. On the other hand, in the natural forests and hard wood timber sector, corruption has been extensively reported as a major limiting factor to assuring sustainable forest management. The export of logs to China is by far the most significant reported activity linked to corruption and revenue loss (Environmental Investigation Agency 2013). Even if natural forest operators and value chains are mostly different from those in the plantation subsector, there may be a reputational spillover effect, with the perception of all wood and wood products coming from Mozambique becoming negative. So it is important to improve the governance in natural forests. So far, there is no large-scale commercialization of wood sourced from planted forests. Firms' commitment to 'clean management' and robust supply chain management make it unlikely that corruption takes place in the planted forest sector to the same extent as in native forests. This is also linked to maintaining SFM certification in those forest management units that have been certified.

24. Land access and security are ranked among the major factors for investments in forest plantations in Mozambique. The key issue is that land mapped for planted forest activities by the government is often already used by local communities, requiring intense and often long consultations and negotiations before a DUAT can be issued to the plantation investor. The land in Mozambique is state owned and cannot be sold but it can be licensed to users provided they submit a land use plan with some exemptions. A key characteristic in the Mozambican rural land use system is that local communities can obtain formal land user rights (DUAT) through either (a) occupancy of land according to customary norms and practices or (b) occupation of land for 10 years. Local communities have DUATs for their traditional territory. DUATs obtained by occupancy are perpetual and do not require plans for the use of the land. Local communities can also grant third parties, such as investors, rights to use land within their territories (GoM Land Law 1997; Akesson et al. 2009). This has a major influence on plantation companies, since in many cases they have to negotiate with rural communities to have access to land.

25. Company-community negotiations are not regular commercial land rental negotiations but often include issues related to wider community development. Many district capitals in rural Mozambique offer basic services such as a health center, a water well or bore hole, and a school, but these basic services are not universally available or those that exist, are of poor quality. During the negotiation process, communities often seize the opportunity and ask for these facilities from the company as part of the compensation for land use rights. This has led to different views on whether these requirements should be seen mandatory or voluntary, and whether the provision of such infrastructure and basic services are

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<sup>5</sup> The Corruption Perception Index ranks countries/territories based on how corrupt a country's public sector is perceived to be. It is a composite index, drawing on corruption-related data from expert and business surveys carried out by a variety of independent and reputable institutions. Scores range from 0 (highly corrupt) to 100 (very clean). See more on: <https://www.transparency.org/country/#MOZ>



part of the government's responsibility or whether companies should provide them as part of their CSR activities. Negotiating for these in-kind compensations is more difficult than for financial compensation. Issues like exact nature and quality of services, delivery time, and so on are more complicated and easily lead to misunderstandings between the parties on what was actually agreed. Often these agreements have remained vague, leading to difficult negotiations afterwards. Building and maintaining social service facilities require additional costs for the company, and if these are not included within the project investment plan, it can also become difficult to implement them.

26. In reality, investors often have to invest in infrastructure including roads, bridges, and other social facilities such as health centers and schools, to facilitate their own operations and to ensure the availability of a healthy workforce. As local development is not the core business of forest companies, most companies are inexperienced in this regard. It is important to have clear rules and regulations about value, volume, and duration of social responsibilities for the companies to include them in the overall cost calculation of the investment. The costs of compliance of these community agreements can be high and need to be added to land costs in investment calculations. Using only official land fees paid to the government would give unrealistically low and misleading view of land costs.

27. Forest legislation has few regulations covering plantation forests. The forest and wildlife law was revised in 1999 to align it with the principles of sustainable forest management. Implementation regulations were further revised in 2002. The regulation is mainly centered on natural forests and there are few details regarding planted forests. The key articles relevant to forest plantations state that a DUAT (Art. 79) and an environmental license (Art. 81) are required before industrial plantations can be established. This regulation also states that logging in forest plantations can be done without logging fees or taxes, but the owner of the plantation must submit a request for approval of their operations to the Forest Service (Art. 38). In addition, the logging fee collected from logging in natural forests includes a reforestation tax, destined to support "forest recovery and reforestation" (Art. 101). Having a clear legal system would bring more predictability to the operating environment. The natural forest sector has severe problems with illegality and there is a risk that curtailing this illegality may have an adverse impact on plantations as well if the separation is not made clear in the legislation. As mentioned above, many consumer countries have strict requirements for legal origin of wood and wood product imports. Clarity of legal requirements for plantation wood would facilitate meeting these requirements.

28. Certification of sustainable forest management is often seen as an important precondition for accessing international markets that pay particular attention to environmental and social issues. It has also become an efficient tool in firms' reputational management. There are also emerging views that certification could help firms in accessing finance as it guarantees financiers—who are not always familiar with the forest sector—that the plantations are well managed and thus less risky (PROFOR 2012). Therefore, large forest plantation companies have expressed interest in becoming certified by an internationally recognized standard of sustainable forest management (mainly Forest Stewardship Council [FSC] or Program for Endorsement of Forest Certification [PEFC]). Currently there are no national SFM standards in Mozambique. Having a national standard is not, however, mandatory as certification can also be done based on more generic international standards.

29. A major constraint for certification is the lack of an explicit national definition of natural forest. This would be needed to ensure that natural forests have not been cleared for plantations. Miombo woodland, the most common forest type in Mozambique, covers a variety of subtypes with a canopy cover ranging from relatively open to dense. While there is no clear definition, any land that is cleared from natural vegetation is likely to be classified as conversion of 'natural forests', impeding the issuance of the

SFM certificate. Past forest inventories used a 10 percent canopy cover as the threshold between forest and non-forest, resulting in extensive areas having been mapped as forests. Presently a national definition is being developed for REDD+. In the long run, a clear definition of natural forest would simplify the certification process. However, it is still a matter of discussion if the REDD+ forest definition under development could apply also for other purposes, including forest certification.

30. The National Reforestation Strategy estimates the creation of 250,000 jobs, based on a ratio of one worker per 4 ha of planted area. This is a relatively high figure even when assuming the use of low-skilled manual workers when compared to the international figure of one worker per 20 ha planted forest (Blid, 2014). One reason for this difference is that forest operations—such as land preparation, planting, and silvicultural treatments—have increasingly become mechanized using less manual labor. This has not only been driven by the higher productivity in mechanized systems but also by worker safety and ergonomic considerations. This is also addressed by certification institutions, as workload and occupational safety issues play an increasingly important role in the certification process. The move toward mechanization requires skilled labor which is often not available locally.<sup>6</sup> Mechanization of forest work has reduced job opportunities in the forest sector, particularly for non-trained seasonal local labor force. This has often resulted in disappointment for local communities, who often have high expectations of local employment. Lower than expected local job creation has often been cited as a major cause for community concern.

31. The lack of skilled people is a problem at all levels for the commercial forest sector and firms have had to make special, often costly arrangements, to fill the gaps. The usual solution is for large-scale forest companies to hire the key personnel from outside the country (Nhantumbo and Macqueen, 2013). In the upper management of forest plantation investors down to the supervisor level of forest operations, the presence of an expatriate labor force is particularly evident. In Mozambique, specialists are mostly hired from South Africa, Zimbabwe, and even from Portugal. There are several ongoing initiatives to overcome the skills gap in the sector: the Ministry of Education has initiated a reform process of the education system to introduce a competence-based system for professional technical schools; in addition, the U.K. Department for International Development (DFID) and the World Bank are funding an initiative to support forest companies by establishing a training school for skilled labor called S4E (Skills for Employment) (DFID Mozambique 2014). Also the Malonda Foundation and the Ministry of Commerce and Industry to some extent also provide support to SMEs.

32. Mechanization of forest operations is dependent on the availability of specialist equipment which is almost entirely imported. Many plantation companies have expressed concerns about difficult, lengthy, and bureaucratic procedures for importing the necessary technology for productive plantation forestry. Currently there exist lists for tax-reduced and priority import of technology for agriculture and plantation forest business. However, the lists are not updated frequently, while the market of providers is dynamic with a high degree of innovation. That makes the import of state-of-the-art technology and spare parts difficult for the forest companies.

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<sup>6</sup> For the employers, the biggest problem is the high level of workers' absenteeism (between 20 to 25 percent) in the plantations. Thus, they expressed the need to train the workers in the 'work culture' and pay salaries based on goals of task performance, for instance, number of holes. Some companies also intend to increase the mechanization level in the plantations and use third party provision of services for some activities, as a method to minimize the absenteeism problem (Blid 2014).

## 5. DEVELOPING SMALLHOLDER SECTOR; COMMUNITY PARTNERSHIPS<sup>7</sup>

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- *Wood production partnerships between communities and companies have been established in a number of countries with good results. In Mozambique, these have not taken place yet. However, they could be one tool in building links to local economy and to diversify local economic structures. These outgrower schemes will require both financial and technical support at initial stages to get started.*
  - *Community-company negotiations have focused on three key aspects: access to land (DUATs), company-financed social services and rural investments and employment. In exchange for land access, investors have been asked to finance various investments and activities outside their core business which has made negotiations difficult and final results subject to different interpretations. Also job opportunities have been fewer than expected due to mechanization of plantation work.*
  - *Companies and communities negotiate from very different positions and there is a perception that the negotiations lack transparency. Having neutral third party facilitation for example, by local authorities or non-state actors could help in bringing credibility to the process. However, both companies and communities expressed concern that external facilitation has been inadequate.*
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33. Two-thirds of Sub-Saharan Africa's population resides in rural areas, the majority of whom can be considered as smallholder farmers. According to the International Food Policy Research Institute (IFPRI 2007), smallholder farmers are among the most disadvantaged and vulnerable people in the developing world: half of the world's undernourished people, three-quarters of Africa's malnourished children, and the majority of people living in absolute poverty are found on small farms. Most smallholders cultivate food for subsistence and do not have the adequate expertise and cash flow to invest in their land. Despite these constraints, smallholders can—and in many countries do—play an important role in supplying food and wood products beyond subsistence under various business models, thereby bringing economic transformation in rural areas. In Mozambique some of these agricultural models are working (for example, with tobacco and cotton seeds) but they have not been introduced in the forest sector. Experiences from other countries show, however, that partnerships between forestry companies and communities can link smallholders to improved technology, which in turn can connect them to markets, enhance food security, and provide an additional source of income.

34. Companies often support the development of local SMEs to provide various services, such as silvicultural and harvesting work and transport. The reasons for encouraging smallholders and SMEs may be commercial (that is, providing labor and other services or growing wood to supplement the companies' own supply) or as a risk mitigation measure (for example, to foster good relations with local communities). As noted earlier, in the case of Mozambique, access to land is closely connected to having good relations with communities. Where this relationship between companies and smallholders is well managed, these CCPs can become clear 'win-win' opportunities benefiting both sides. Key aspects of CCPs in Mozambique are linked to three aspects of plantation development: access to land, access to labor and obtaining a

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<sup>7</sup> This section is partially based on stakeholder interviews. The interviews with companies were conducted through standard written questionnaires, while representatives from the provincial governments and from 20 communities were interviewed in the field. During the fieldwork, the interviews were conducted not only with large forests investments, but also in small- and medium-scale projects with plantations developments in Niassa, Zambézia, and Manica provinces.

social license to operate in community areas. Often these three aspects are closely related and all but inseparable.

35. Partnerships with smallholders can become an essential part of large producers' raw material supply chain. In the case of a modern pulp mill, the required supply area may be over 200,000 ha of productive forests, whereas for a modern, efficient sawmill 5,000–10,000 ha could suffice. In addition, because plantation-grown wood is generally low value, the trees need to be grown reasonably close to markets, or transport costs will become exorbitant. As larger investors start establishing commercial plantations in a region, smaller tree growers will often emerge, although this is more likely only once actual market opportunities appear. It is common for the larger companies to actively support local farmers and entrepreneurs to plant trees—usually under formal 'outgrower' contract schemes—to boost their timber supply. If smallholder land can be included as part of a raw material catchment area, reaching the required raw material supply becomes easier. Smallholders and communities, however, present a particular challenge: they lack the required capital inputs, negotiation power, and technical expertise. This is true for many countries, including Mozambique. Finance is often not available to these small farmers and community groups due to the risk factor: finance institutions will seldom support such a long-term venture as forestry and often forests are not accepted as collateral for loans. Smallholders also lack the finance and capacity to comply with international standards—for example, the FSC—and thus risk being excluded from supply chains that discriminate in favor of sustainably produced commodities.

36. For SME producers, outgrower schemes are opportunities to provide a new source of income (main or additional sources), often guaranteeing their sales through wood purchases and sale contracts with promoters of an outgrower scheme program. From the company's point of view, this model is attractive since in most cases the company does not have to buy or lease land, but instead focuses on supporting the outgrowers financially—for example, by providing initial establishment and maintenance costs, and also through providing technical advice. From a social point of view, forest outgrower schemes can improve income diversity and contribute to the local economy. Despite the apparent benefits of outgrower schemes for growers and forestry companies, there is always the risk factor due to the long-term nature of the business, with inherent fluctuations in timber prices. Additionally growers are frequently disadvantaged by their lack of detailed and accurate information on realistic returns.

37. In Mozambique, most examples of outgrower support come from agriculture. In other countries in Africa and elsewhere this model has been used widely. The importance of smallholders for a well-developed, commercial forest sector is clear and this can be expected to apply in Mozambique as well. It is also clear that in the early phases of the sector's development, smallholders need substantial support—both financial and technical—to be attracted to plant trees. Many of the successful global examples are from countries where the commercial forest sectors are well developed and the added value chains are well established. In Mozambique, the sector is in its infancy, and many of the key components for supporting outgrowers need to be developed. The first examples of tree growing partnerships in Mozambique include the following:

- Green Resources has started an outgrower timber scheme, but this is too early to draw conclusions. About 1,200 families per year will be supported in Niassa and Nampula. In Nampula, a forestry outgrower scheme was implemented with funds from Finnfund and Norad. It involved more than 500 families with a total plantation area of 1,000 ha.
- New Forests Company also initiated an outgrower scheme, but has since pulled out of Mozambique and only a small area got forested.

- In Sofala and Manica, a biomass project by GDF SUEZ Energie Nederland has supported 1,300 farmers with 216 ha of biomass plots, though the current condition of these plantings is not known.
- There are also good examples of smallholder participation as service providers in the forestry sector. A few years ago, the forest industry was very active on the plateau of Lichinga in Niassa Province. The region consisted of five forestry companies: Chikweti Forests of Niassa, Floresta do Planalto SA (UPM), New Forests, Florestas de Niassa, and Green Resources. As a consequence, service providers started to emerge and in 2011 there were five forestry contractors in the region (Niassa Petroleo, Mr Keath, Nomix, Smops, Kukamuchisia, and Caxote Forestry). These contractors offered silvicultural services ranging from land clearing, ridging, disking, ripping, planting, and fertilizer application to weed control (Mazorodze 2011). However, with the closure of some companies and the resulting slowdown in forestry activities in the area, most contractors have left the province.
- SMEs exist in the natural forest sector, providing services such as harvesting, sawmilling, and charcoal burning. However most of them operate rather informally, with workers often paid below the minimum wage.

38. The schemes described in Box 1, provide some useful indications on how Mozambique could design a smallholder support package. This support will have to come from the large companies or the government—or a combination of both. Guidance on outgrower support could be useful for the companies, though some have experience from elsewhere. Alternatively, the government could set up a forestry incentive scheme independently to attract small and medium investors to the sector: this might be attractive for funding through the international community.

**Box 1. Examples of Outgrower and Other Smallholder Support Schemes**

In **Brazil**, Suzano’s outgrower model is an example of what many of the larger Brazilian companies have been doing for many years. The scheme begins by the company making a technical visit to the property, where they explain to the farmer the premise of the program. They also conduct a technical evaluation, analyze required documents, and discuss with the property owner the guidelines for environmental licensing. After signing the contract, the area is measured and technical assistance is provided. Seedlings, fertilizers, and an upfront payment of around USD 500 per ha are also provided. The company is responsible for monitoring, consulting, ensuring the advanced purchase of 5 m<sup>3</sup> per ha per year from the second to fifth year, and guaranteeing the purchase of all the wood produced.

In **Portugal**, due to the lack of raw materials, the strategy adopted by Portucel was to outsource tree planting with 400,000 farmers. Nearly 85 percent of these farmers have areas that cover less than 3 ha, although areas can range from 0.5 ha to 1,000 ha. These smallholder farmers are not strictly outgrowers, as they are not formally contracted to the company. However, they are crucial to the company to supply raw material to their processing plants.

In **South Africa**, Sappi’s outgrower scheme is called Project Grow and focuses mainly on supporting subsistence farmers who have access to 1 to 20 ha of land. Sappi has 20 qualified extension officers and two managers who assist the program in communities that make their land available to plant eucalypts. The company supplies farmers with seedlings and an interest-free loan and advance payments to cover all establishment and maintenance costs until the trees are harvested. The company is also responsible for offering technical advice and guaranteeing its sale at market price at harvesting time. Sappi has also supported the development of more than

100 SMEs to support growers: these are carrying out silvicultural, harvesting, and transport services for the growers on the scheme.

Mondi's outgrower scheme—known as Khulanathi ('grow with us')—was launched in 1989 and has attracted over 3,000 growers. In 2007, a separate company Khulanathi Forestry Ltd. was formed and is co-owned and managed by former Mondi Khulanathi employees with Mondi Zimele as its strategic partner. The system has become well established and growers have planted and harvested several crop rotations and they no longer require the same levels of financial, logistical, and technical support.

NCT Forestry Cooperative Ltd. in South Africa is a prime example of good outgrower support as well as illustrating the importance of small-medium tree growers gathering together to gain collective bargaining power. NCT currently has over 2,000 shareholding members representing 300,000 ha of commercial plantations. Their main market is pulpwood and NCT owns three chipping plants, which export to the East Asia. They also support their members with up to date technical advice.

In **Uganda**, the Sawlog Production Grant Scheme (SPGS) has increased rural incomes through commercial tree planting by private sector and local communities and at the same time helping mitigate climate change effects through afforestation. The objective is also to help meet the medium- and long-term demand for sawlog products in Uganda both through further establishment of commercial plantations and ensuring downstream processing and utilization efficiency of timber emerging from plantations established. The program has provided technical assistance and financing to private sawlog producers.

39. Based on international experience, the likely key requirements for outgrower schemes in Mozambique to work would be:

- **Land:** Smallholders will need assistance in securing land rights (DUATs) prior to planting trees. The importance of scale and logistics must also be borne in mind whereby potential growers must be grouped (clustered) and within a reasonable distance of the likely future market(s). Usually this will be in close proximity to a large investor who is planning to invest in timber processing.
- **Finance:** Small growers will need finance—either in the form of conditional establishment grants (like SPGS in Uganda) or loans to be repaid to companies at harvest (like the large South African and Brazilian schemes). In both cases, growers would have to have formal contracts.
- **Technical support:** In all cases there will be a need for technical support for growers, who will virtually all be new to the business of commercially orientated tree growing. Key areas will include planning and budgeting; the timescale factor and other inherent risks with forestry; site-species market matching; supply of quality seedlings or clones; land preparation and timely planting; fertilizing (for eucalypts), weeding, and protection from fires and animals. This support could come from the companies' own extension teams or from outside: either way, skills development needs to be a high priority. Practical extension support in the field will be crucial for success and thus the trained officers must be well facilitated and motivated. Best practice guidelines are also needed to support this: good examples are available in South Africa (Sappi 2004) and Uganda (Jacovelli et al. 2009) and could be adapted to smallholder conditions in Mozambique.
- **Information and communication:** At all stages of engagement with potential outgrowers, it is important to provide clear information and to communicate well with communities. This is an ongoing process and thus a communication strategy should be drawn up early and clearly

identifying the key stakeholders. Demonstration plots and the selection and promoting of 'role model' farmers are powerful means of spreading good practices.

- **Growers' associations:** As small grower numbers grow, they often see the need to have a collective voice. This is particularly valuable when it comes to negotiating timber prices. This leads to formation of growers' associations as small growers with little experience of commercial forestry may need assistance in forming such groups. These associations can also be used for extension purposes.

40. CCPs require that these arrangements benefit both companies and communities involved. However, at the same time it needs to be recognized that the participants have different interests and negotiating power. There is a strong feeling among stakeholders that a neutral third party could help the negotiation process, make it more transparent and predictable. Neutral participants could also strengthen the overall credibility and perception of fairness in the process; even in bona fide negotiations, perceptions may become biased if various parties come from very different backgrounds. This third party could be from the non-state sector or from the government and local authorities. Generally stakeholders expect more involvement in rural development from the government: basic facilities such as schools, health centers, and water wells are seen as the main forms of governmental support. However, often these services are lacking and there is expectation that investors should fill the service delivery gap as a part of CSR pledge. Companies stated that they feel left alone with the development challenges in rural areas with the absence of government agencies, programs, and support. This was also confirmed by communities.

## **Box 2. Feedback from Interviews**

During the fieldwork for the study, firms, local government officials, and communities were interviewed in Niassa, Zambézia, and Manica Provinces. The interviews with companies were conducted through standard written questionnaires, while representatives from the provincial governments and from 20 communities were interviewed in the field. Some of the findings are given here:

### **Land issues**

Communities and government representatives interviewed appreciated forest investments. They are seen as opportunities for job creation and rural development. Both feel that there is enough land available for forest plantations. The land acquisition process was described as—in principle—well designed and clear by all interviewed parties. However, notable problems arise in the real-life negotiations; for example, prolonged negotiation process make it difficult for companies to calculate the time and the cost. Communities expressed their disappointment that the promises made during the land acquisition process were not fulfilled on jobs, social projects, fluent communication with companies, and agriculture support. There were also disagreement on which land areas were actually included in the negotiations.

### **Government involvement and support**

The main expectation from the forestry companies was more involvement from the government: construction of basic facilities such as schools, health centers, and water wells are seen as the main forms of governmental support expected by companies and communities. Companies with several years of experience believe that the government should have a more active role in mediating company-community negotiations and conflict resolution processes. Companies stated that they feel left alone with the development challenges in the absence of government agencies, programs, and support. This was also confirmed by communities. They also believe that the DUAT allocation process should be streamlined, with fewer bureaucratic hurdles to ensure a timely, effective, and efficient process.

Also communities believe that local and district governments should act as mediators in their engagement with companies and in the implementation of social responsibility programs to ensure the long-term success of their operations. The presence of local and national nongovernmental organizations (NGOs) is also seen as a major contribution to improve the effectiveness and legitimacy of companies' arrangements with communities.

### **Employment**

Employment is a high priority of communities and is often one of the main reasons for communities to approve the companies' operations. However, in all cases communities were disappointed about the reality. According to them only few people were hired for seasonal work at the beginning of the company operations for land clearing, but later jobs were given to small service providers or the work was done by the companies themselves.

After nearly 10 years of forestry activities in Niassa Province, communities do not see many differences in their daily lives. They admit the relationship with the companies was excellent in the beginning when companies were employing a substantial number of local people. However, the community-company relationship has gradually deteriorated as the number of local employees has greatly declined with the adoption of mechanized processes.

There were complains that workers are coming from outside and local people are not hired as expected. There seems to be a gap between expectations while negotiating with regard to jobs and real job opportunities. Often the actual number of people employed were not agreed on during negotiations. The companies on the other hand expressed their wish to hire local people, but the lack of adequate skills, adequate attitude of working regularly and reliably, and problems during the agriculture planting and harvesting season, makes it difficult to rely on seasonal labor.

### **Communication**

All communities interviewed emphasized the need for improved communication channels, ensuring regular and transparent communication between communities and the forestry company. There were often claims that the community workers or company representatives are not present for a long time and it is not clear to the communities when the proposed projects will start. This was also admitted in interviews with companies, that the cash flow sometimes makes timely implementation of the social projects impossible, since investments in afforestation activities are always prioritized.



## 6. COMPETITIVENESS OF PLANTATION FORESTRY IN MOZAMBIQUE

- 
- *Mozambique has good potential for forest plantations, but it still lacks competitiveness. Growth rates for eucalyptus are slightly lower than in competing countries and efficiency of many production factors is low. However, competitiveness can be improved by well-designed and targeted reforms.*
  - *Nominal land costs are low but the fee structure can be misleading. Investors need to also consider costs for community compensation when planning for land costs. These can be high and often unpredictable. However, these costs need to be covered to ensure access to land.*
  - *Infrastructure is inadequate which increases the costs both for transporting end-products and production material. Labor wages are low but so is productivity, which leads to high labor costs per unit produced.*
  - *Climate change will influence both growth rates and access to infrastructure. The impact is still unknown which increases the risk level in investments.*
- 

41. Competitiveness of the plantation sector in Mozambique needs to be assessed both in a regional and global context. Even if the Mozambican producers will not be competing directly with producers, for example, in Latin America, these high-yielding and efficient producers set global market prices and act as benchmark producers for emerging producers like many African countries. In the Southern African sub-region, South Africa has a large and globally competitive plantation industry. However, the industry there is not expanding due to shortage of available land. When commercial investors conduct due diligence on an investment option, they consider several criteria (Table 6.1). These include:

- **Production costs:** The unit production costs (USD per m<sup>3</sup> or per ton of timber). These costs are defined by the actual costs of land and operations divided by the yield. The latter depends on the biophysical conditions and the availability of silvicultural skills and technologies.
- **Market access:** To create value, the product has to be sold. Timber coming from forest plantations represents a product with a high sensitivity to transport costs. Access and proximity to markets in addition to the overall logistic intelligence are key.
- **Enabling environment:** Economic stability, production friendly legislation and regulations, and good governance are all essential to attract investors.

**Table 6.1. Key Criteria for Competitiveness Analysis**

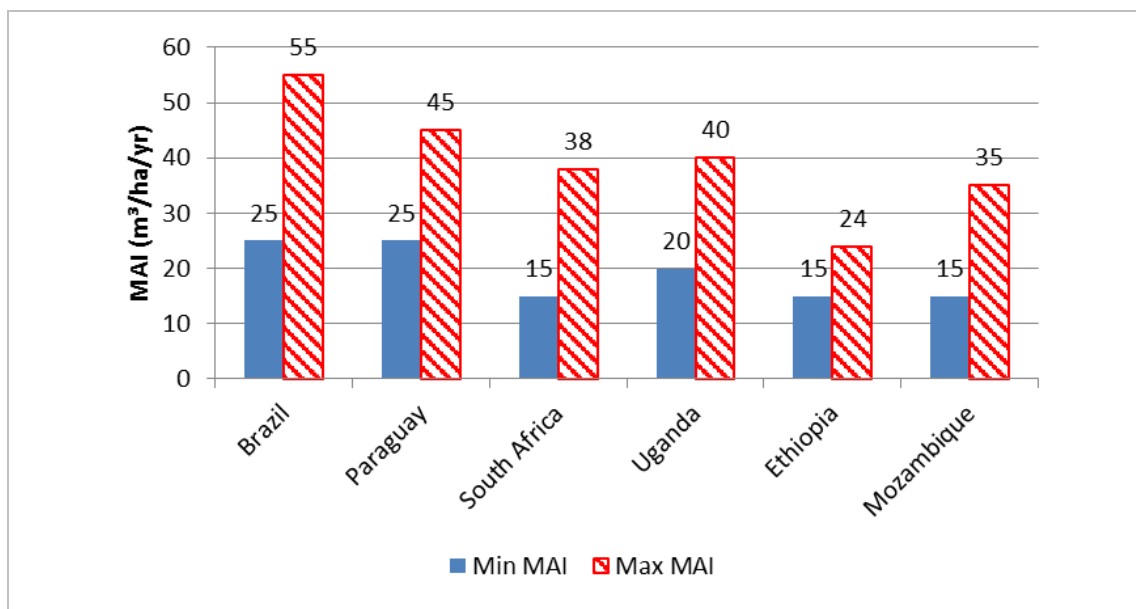
Key Criteria	Parameter Used for Benchmarking
Production costs	Biophysical growth conditions/growth potential Land availability Land costs Plantation establishment costs Harvesting costs Labor costs Unit production costs
Market access	Domestic wood consumption Timber prices

Key Criteria	Parameter Used for Benchmarking
	Infrastructure and transportation costs
Enabling environment	Political and economic stability Security of land tenure Governance and transparency

## 6.1 Production Costs

42. The first criteria forest plantation investors usually look at when making investment decisions are the **biophysical growth conditions**. Soils, climate, and genetic material determine to a wide extent the productivity of the forest sites. The growth potential of Mozambique is mainly limited by climatic conditions. The long dry periods in most of the regions designated for plantation forestry influence negatively the mean annual increment (MAI). While the overall biophysical growth conditions are not outstanding in these regions, they are still comparable to those of South Africa, which is a successful global player in the planted forest sector (Figure 6.1). The top value presented for Mozambique is based on assumptions that tree breeding programs will result in well-adapted materials and that silvicultural operations are optimized. The estimated MAI achieved by the plantation companies in Mozambique is still below potential growth with improved genetic material and management practices.

**Figure 6.1. Mean Annual Increment of Selected Countries**

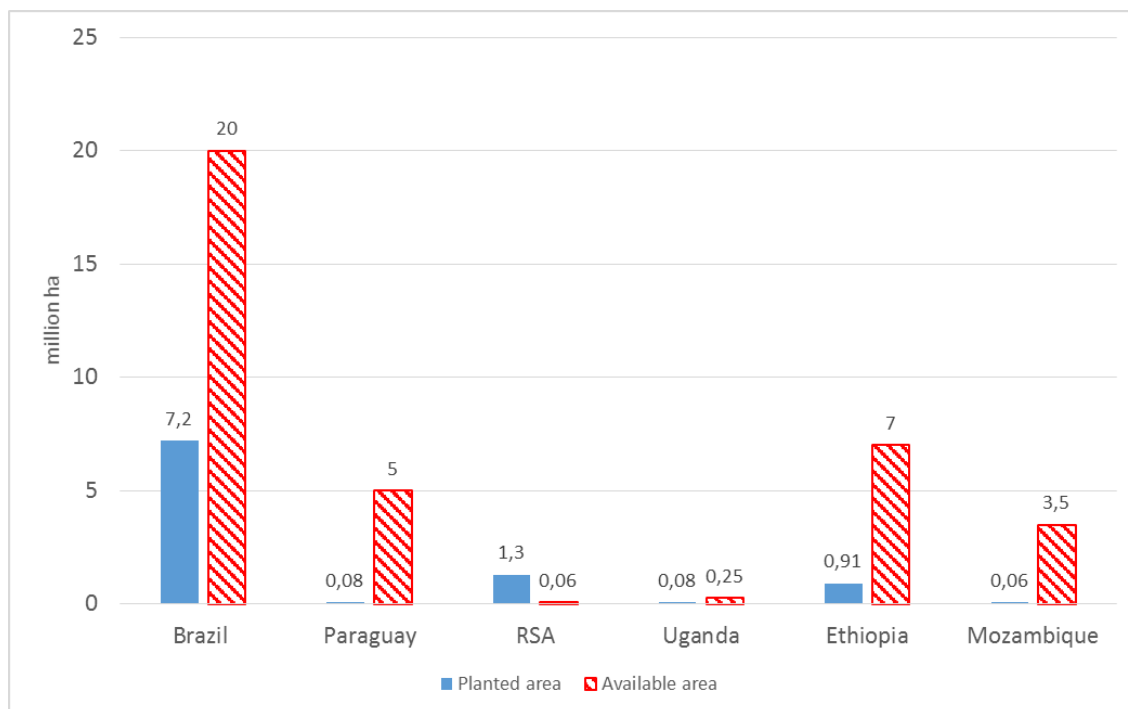


Source: Databases of UNIQUE, Malinovski, and official websites listed in the references.  
Note: In the graph the average of the minimum and maximum MAI of eucalypt-based forest companies are shown.

43. Another important criterion is the availability and cost of land. In general, wood processing industry based on industrial plantations requires a critical mass of raw material production and space for

future expansion. Mozambique is a country with 3.5 million ha of land potentially available for forest plantations,<sup>8</sup> allowing the country to become a major player in plantation forestry (Figure 6.2).

**Figure 6.2. Land Availability (2015)**



Source: Databases of UNIQUE, Malinovski, and official websites listed in the references.

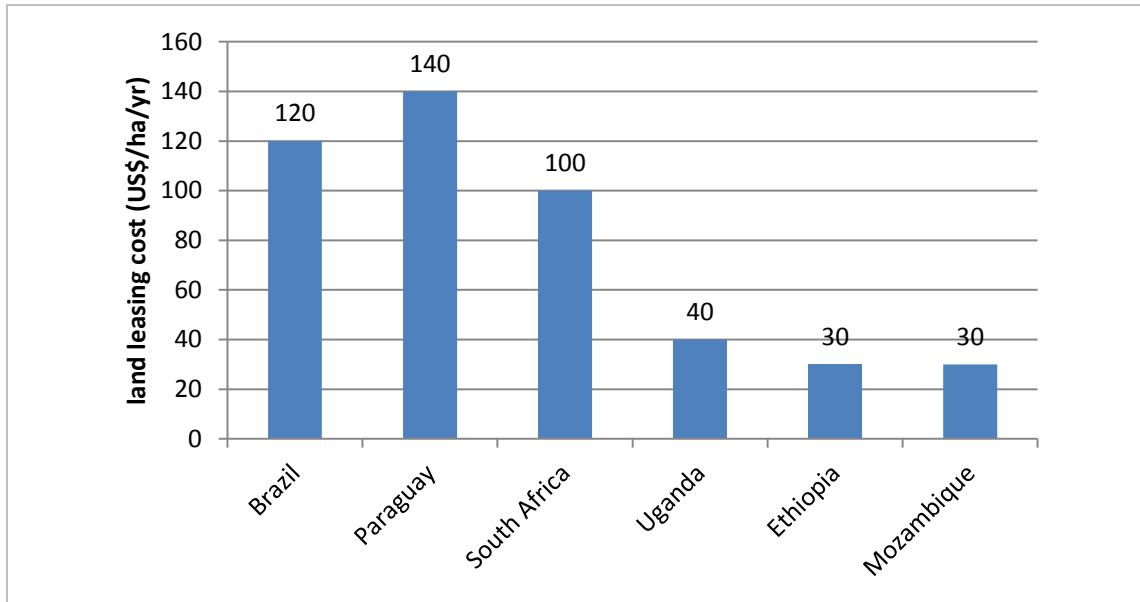
Note: The estimate for Mozambique is 50 percent of MINAG (2007). The estimation of the available areas outside Mozambique are expert estimates, with the exception of South Africa where national land use plans determine the area available for reforestation.

44. In Mozambique, investors cannot own land and they have to pay an annual fee to the government. The direct annual fees are highly competitive when compared to the other countries included in this study. Regardless, it is essential to consider that the actual land costs not only consist of this annual fee but also compensation payments to local communities and upfront investments as agreed upon within the DUAT negotiation process. The total leasing cost, including compensation, annual fees, and transaction costs, are difficult to quantify given the variation in negotiation settlements. In the interviews, aggregate land costs ranged between USD 20 and 80 per ha per year<sup>9</sup>—with an average cost of approximately USD 30 per ha per year. Including the total land access cost in the comparison among other countries, Mozambique loses its outstanding advantage on land cost, but still is somewhat competitive.

<sup>8</sup> Oral communication from DNTF 2015. This represents about 50 percent of the level estimated in the 2007 strategy.

<sup>9</sup> Accounting practices for these indirect land costs differ between firms and therefore a detailed breakdown is not available. This range is based on company estimates. Land allocation systems differ between countries and comparisons are not exact. For example, in Brazil, companies are required to have a legal reserve and permanent preservation area for each planted hectare, which on average amounts to 0.9 ha for every 1 ha planted area: to have 1 ha of planted land, investors have to pay for 1.9 ha of total land area and thus the leasing costs for 1 ha of planted land can exceed USD 200 per ha.

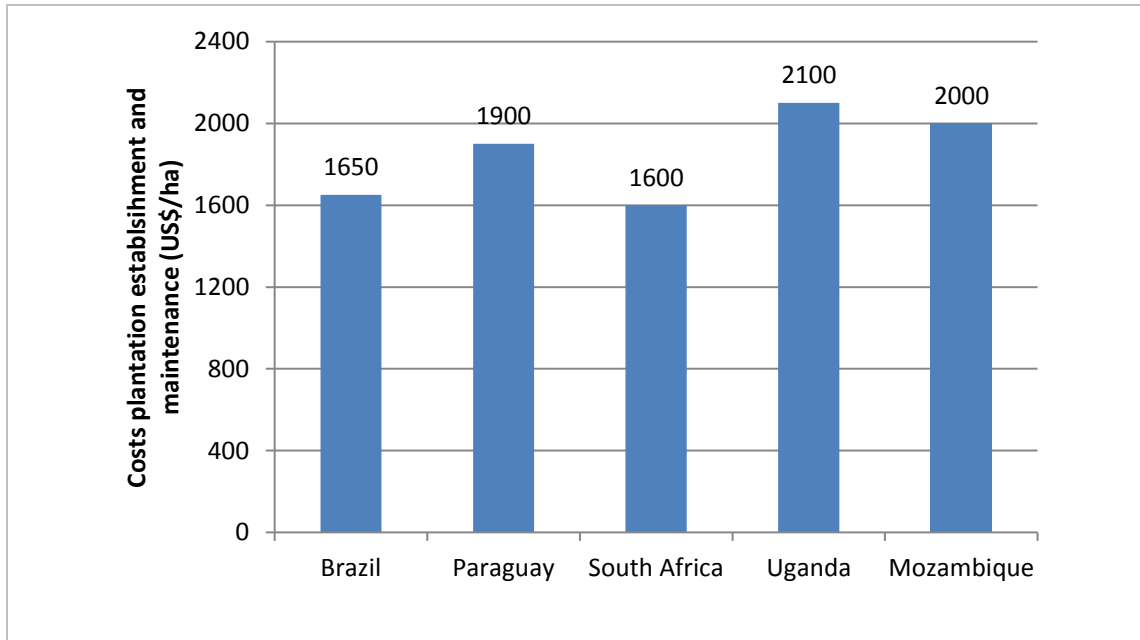
Figure 6.3. Average Land Costs (2015)



*Note:* The data are based on information from companies. There is variation in the costs per hectare because of different budgeting of costs for social projects and environmental licensing. In the case of Mozambique, the annual fee to be paid to the government is very low (between USD 0.30 and 1.00 per ha per year). However, according to information provided by the Directorate of Land and Forests (DNFF) and interviewed companies an average value of USD 20–40 per ha per year has to be added for compensation payments to communities and for implementing development projects. In Ethiopia a similar land leasing system is in place. Costs are stated as USD 2 per ha (Keeley et al. 2014), but social and infrastructural costs raise the total estimates to a comparable level as found for Mozambique. In Uganda the direct lease fee paid to the government is USD 4 to 10.

45. Plantation establishment and maintenance costs in Mozambique are rather high in comparison to competitors (for example, Brazil and South Africa). This is partly due to companies often investing in greenfield operations with high land clearing costs. However, this does not explain the entire magnitude of the differences. Other factors are high replanting costs due to unskilled labor, unfavorable climatic conditions, and difficulties in logistics due to poor infrastructure. Another problem mentioned is the limited availability of planting material and modern technologies.

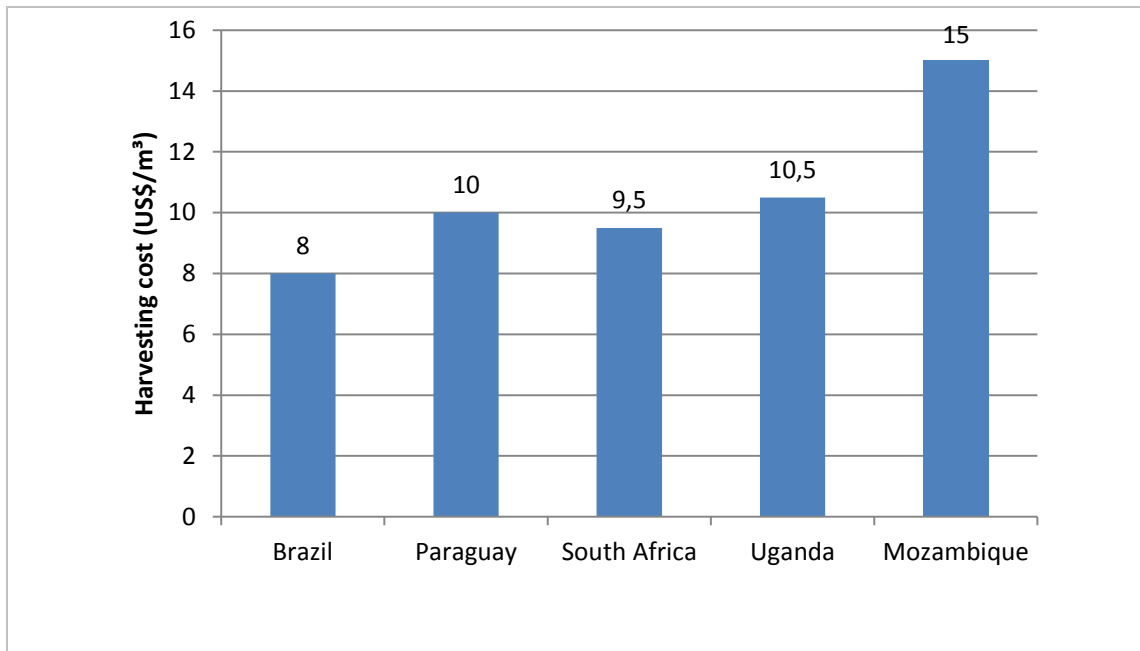
**Figure 6.4. Costs for Establishing Forest Plantations (2015)**



*Note:* The data represent the average from several companies operating in each country. Plantation cost establishment includes all costs for soil preparation, planting material, fertilizing, weeding, pest and fire control. Costs for heavy machinery for land clearing were not included.

46. Harvesting costs correspond to a large share of the overall production costs. Harvesting involves high-risk activities with high accident rates. In response to this, the global trend has been toward mechanizing the process. This has created an increased demand for trained machine operators and lower demand for unskilled seasonal workforce. The trade-off between job creation and mechanization is evident. Detailed costs estimates for Mozambique are not yet available, since most operations are recent and larger volumes are yet to be harvested. The data presented in Figure 6.5 for Mozambique are based on expert estimates. An adequate level of mechanization and skills is also regarded as a key factor for safe and ergonomic working conditions. Companies in Mozambique intend to use mechanized harvesting operations once the first plantations are mature. Due to the limited availability of skilled machine operators, technology and maintenance potentials in Mozambique, the average harvesting costs are expected to be high at least during the first five years of operation. These assumptions are based on experiences from other countries which switched from motor-manual to fully mechanized systems (Figure 6.5).

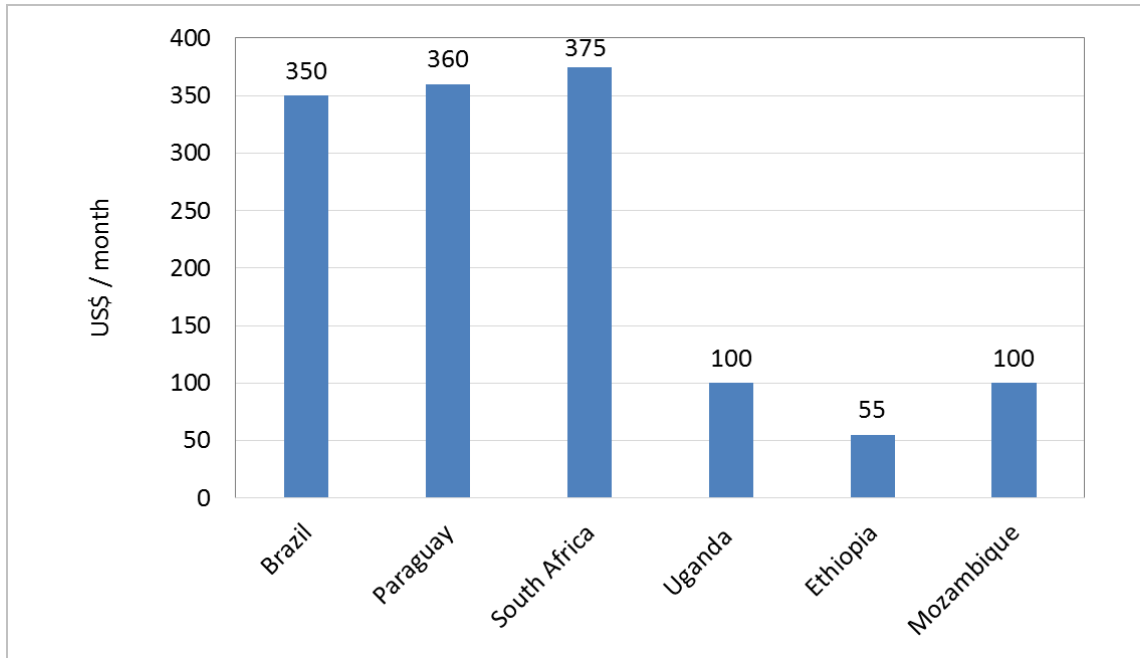
Figure 6.5. Costs for Wood Harvesting (2015)



*Note:* Harvesting costs were calculated based on the average of several companies or service providers in the countries. It includes felling, processing, and hauling of the wood to the forest roadside. Differences in the costs of mechanized harvesting might also be explained by the different working hours of machine operators (for example, Brazil 6.5 hours per day and South Africa 11 hours per day with same salary). The data for Mozambique represent estimates based on the databases of UNIQUE and Malinovski.

47. Labor costs are always of high importance for decision making in forest investments. Even with no precise statistics about the labor intensity of the planted forest sector available, forest operations are classified as being rather labor intensive. Wages in Mozambique are competitive (Figure 6.6), but forest companies complain about the lack of a skilled workforce, low productivity per worker, and high absence rate of the employees, which lead to relatively higher unit labor costs.

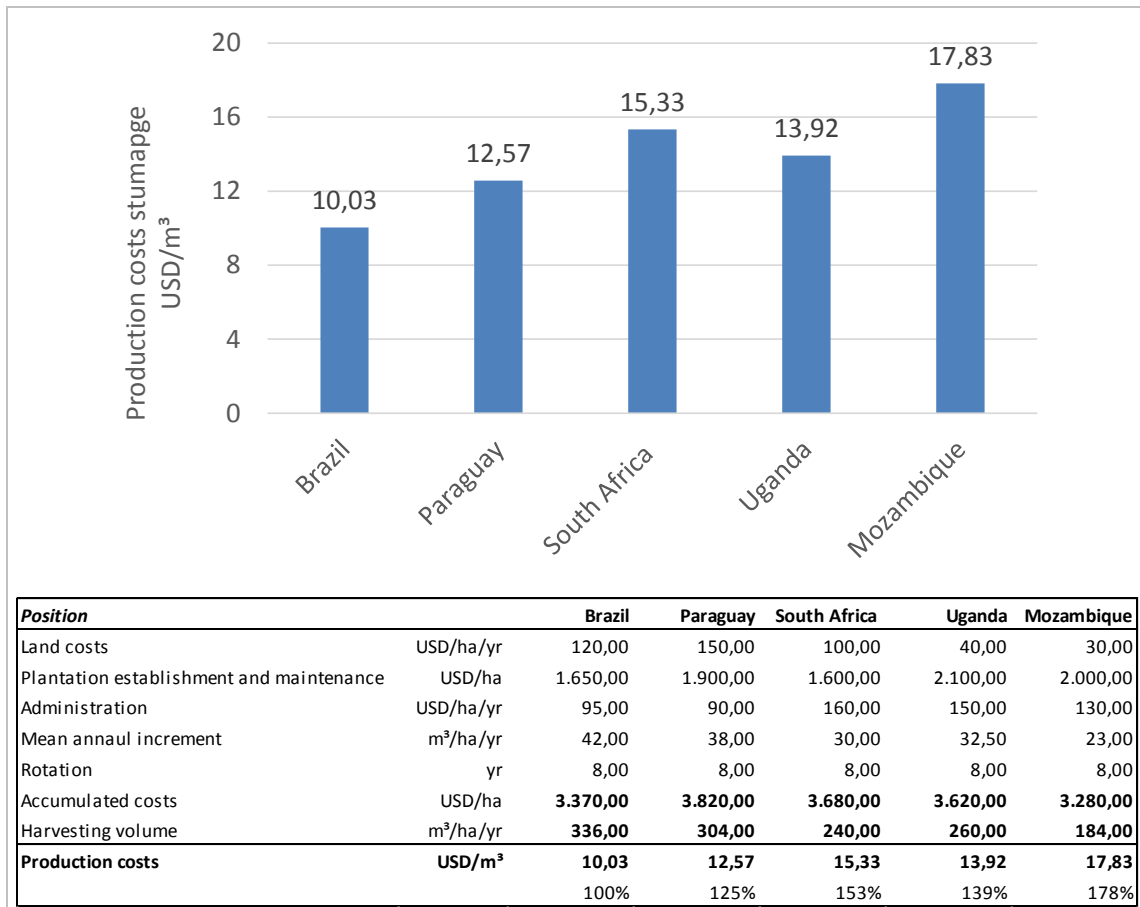
**Figure 6.6. Wages for Labor (based on chainsaw operator) (2015)**



*Note:* Labor costs are calculated for medium-skilled workers, in general regulated by national laws in the respective countries of the study. In these cases the average salary of a chainsaw operator was used.

48. The actual cost to produce 1 m<sup>3</sup> of timber is the product of the standing volume at the end of the rotation time divided with the costs for land, operations, and administration. Figure 6.7 shows the production costs for 1 m<sup>3</sup> of wood produced in a standing tree for a selection of countries.

**Figure 6.7. Production Costs for 1 m<sup>3</sup> of Timber (stumpage) (2015)**



*Note:* Data on administration costs have been available only from a few companies. In Africa, administration costs are significantly higher than in Latin America. The reason is that there is more bureaucracy, more expenses for human resource management and CSR.

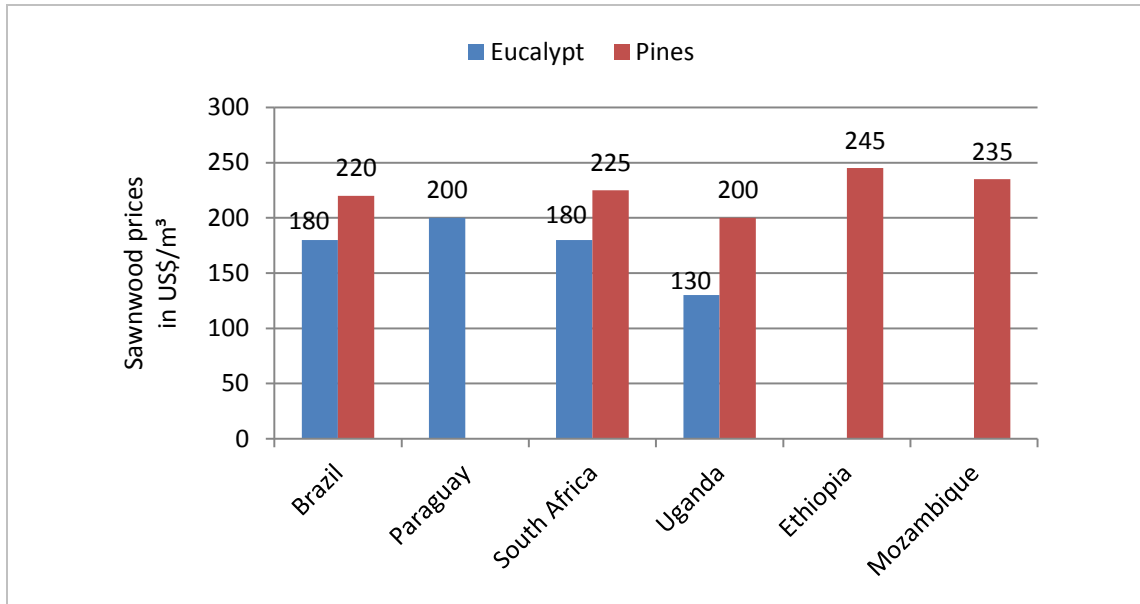
49. Due to high costs for the plantation establishment and to other costs which are high, the unit costs for producing 1 m<sup>3</sup> of industrial roundwood (standing tree) are significantly higher in Mozambique compared to competitors. Regarding administration costs per unit produced, the bureaucratic obstacles in Africa seem to be higher, causing additional costs. Human resource management and expenses for CSR are definitely higher when compared with the countries in Latin American. From the interviewed companies in Mozambique, all of them had a full-time employee who worked as a contact person to oversee bureaucratic issues and to be in close contact with government authorities and administration.

## 6.2 Market-related Aspects

50. Market demand and market access are key factors when evaluating investment opportunities. Besides wood consumption, the prices for standard sawnwood (pine and eucalyptus) are of interest for market evaluation (Figure 6.8). The standard sawnwood markets tend to be global in nature, since low international shipping costs allow for sawnwood prices to approximate each other and remain more or less at the same level. In Mozambique, the prices are slightly higher when compared to other players in the global market. This indicates that the domestic demand is not fully satisfied and it is likely that sawnwood prices will drop to the international level of USD 220 per m<sup>3</sup> as soon as the supply and demand dynamics enter into a more 'global' environment.



**Figure 6.8. Prices for Eucalypt and Pine Sawnwood (2015)**

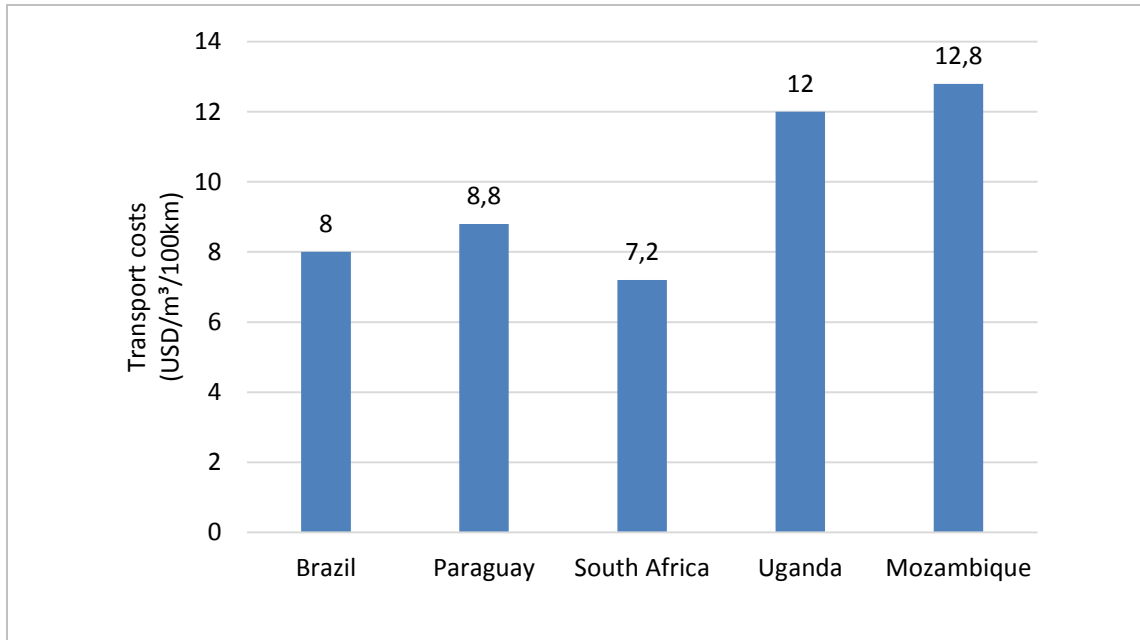


*Note:* Data represent averages from official sources and interviews, and are based on low-quality eucalypt lumber and medium-quality softwood sawnwood (FOB). The sawnwood prices are at a comparable level, influenced by international market prices. In Ethiopia and Mozambique the data are from only a few sources where producers have high production costs and a rather ‘monopolistic’ status.

51. The cost of transport of wood from forest to processing units is a crucial part of investment evaluations, since wood is a product of high weight and volume, and low unit value. Therefore, roundwood production is cost-sensitive to both transport distance and speed. Also, the transport of processed products to local, regional, or international markets is of high importance. Transportation costs depend to a large extent on infrastructure and strategic location of a country and is of importance for its overall competitiveness. Mozambique has access to international markets owing to its geographical location, but in many parts of the country the in-country infrastructure is still weak. Lack of adequate transport network—particularly all-season roads—is a major issue. Better railway network would also be essential, because the best forest sites are far away from the coast and long transport distances are necessary to reach key markets. At the four main ports (Pemba, Beira, Nacala, Maputo), improved loading facilities are in the process of being established; however port fees are high and power supply is not guaranteed.

52. Infrastructure is not the only bottleneck. In forest production, special trucks with high payloads have to be used to transport the product from forest to the processing mill, but this does not allow back-freight and trucks have to go back to forest empty. Therefore transport costs tend to be higher for raw material than for final products that can be transported more efficiently. In some cases the costs are kept low by the constant overloading of trucks and low investments in maintenance and renovation of transport fleet (Teravaninthorn and Ravelland 2009). Mozambique will have to invest in both road and railway systems to be competitive. An integrated concept for infrastructural development linked with other economic sectors will be necessary, since the forest and wood sector alone will not justify the high costs for infrastructure improvements.

Figure 6.9. Roundwood Transportation costs (2015)



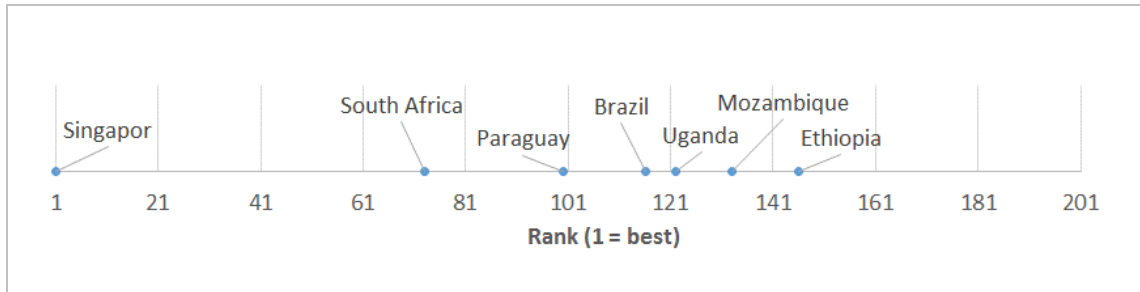
Source: UNIQUE database and interviews: these are average roundwood transport costs on roads (expressed in USD/m<sup>3</sup>/100 km – company-based data).

### 6.3 Enabling Environment-related Aspects

53. The economic, political, institutional, and legislative framework for investments have been summarized in relation to their effect in providing an enabling environment. Political stability, good governance, and general macroeconomic conditions as well as human development are all aspects that create conducive conditions for long-term investments. These apply equally to all sectors and need to be addressed outside the forest sector itself. However, planted forests—like all land-based investments—require long planning horizons and are impossible to relocate to other countries or regions if conditions in a country deteriorate. Mozambique was evaluated as positive by the investors already operating in Mozambique. One important indicator is the country’s GDP growth which in Mozambique has been relatively healthy and stable in the past decade.

54. Two key indicators are widely used to assess the general business environment and governance in Mozambique. World Bank’s Doing Business Index measures general conditions for business and investors in a number of countries. For Mozambique, this indicator is below most of the other countries included in the study (Figure 6.10). This indicates that there remain structural issues in the business climate preventing tapping the full potential of the private sector even if the situation has improved in recent years. While Doing Business analyses generic and not sector-specific issues, these findings confirm that many barriers and shortcomings have to still be removed to facilitate investments in Mozambique.

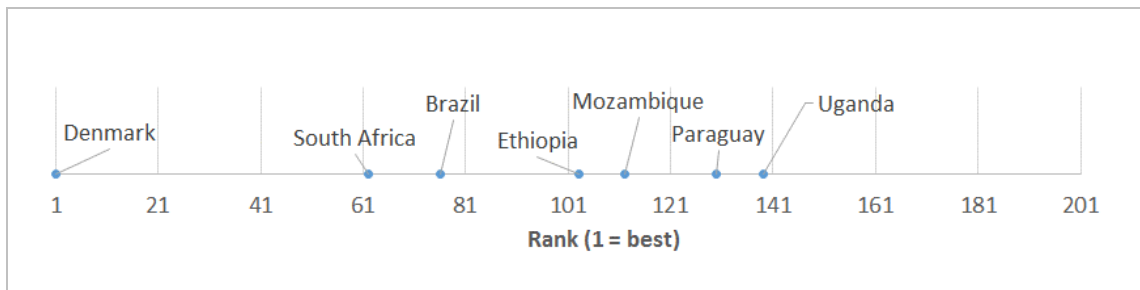
**Figure 6.10. Doing Business Index (2015)**



Source: *Doing Business Index World Bank 2015* (website accessed February 2016). Economies are ranked on their ease of doing business, from 1 (best) to 189. A high ranking means the regulatory environment is more conducive to the starting and operation of a local firm.

55. Governance is notoriously difficult to measure, but one widely used indicator is the Corruption Perception Index by Transparency International. Many companies acting in the plantation forest sector have committed themselves to a ‘clean management’ mandate, prohibiting any participation in activities considered to be illegal. When comparing the case of Mozambique to other global players in the planted forest sector, there remains a need to address general governance concerns (Figure 6.11). Many of the major challenges leading to clear disadvantages in establishing an enabling environment are related to the governance and transparency criteria. It needs to be recognized that both Doing Business and Corruption Perception Indices are national and not sector or location specific. Sectors differ from each other and governance problems may be more acute in one sector compared to another. Addressing these national indicators also requires interventions mostly outside the forest sector itself.

**Figure 6.11. Corruption Perception Index (2014)**

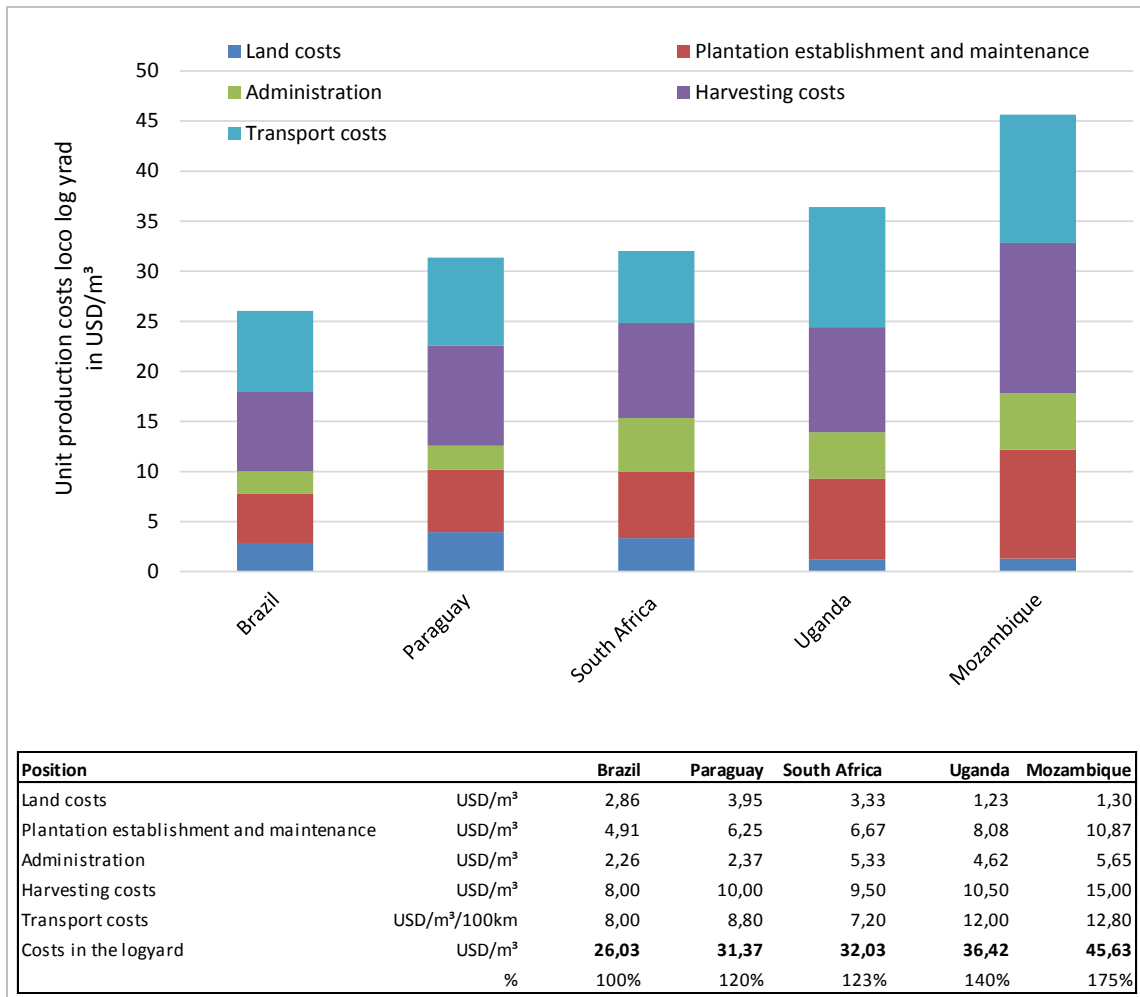


Source: *Transparency International, Corruption Perception Index* (website accessed February 2015). A country's rank indicates its position relative to the other countries in the index. This year's index includes 168 countries and territories.

## 6.4 Total Competitiveness of Raw Material Costs

56. For analyzing the total competitiveness of a producer country, one needs to assess the aggregate raw material unit cost of wood delivered to the end user log yard including production, harvesting, and transport costs. As can be seen in Figure 6.12, the emerging African producer countries with a newer plantation forestry sector have considerably higher raw material costs for the industry supply. The costs in Mozambique for 1 m<sup>3</sup> of wood is about 50–70 percent higher than such competitor countries as Brazil, South Africa, and Paraguay.

Figure 6.12. Costs for 1 m<sup>3</sup> of Wood in Log Yard (2015)



In summary, Mozambique has clear opportunities to leverage competitiveness in the planted forest sector. A number of achievable actions could lower costs and increase biological growth significantly. Operational costs can be reduced by deploying state-of-the-art technology and also by building up a skilled workforce as soon as possible. Transport costs could be substantially reduced by better infrastructure. Tree growth can be significantly increased through applied research programs, especially focusing on clonal forestry and optimal site-species market matching. Thus with just relatively few inputs over the next few years, Mozambique could catch up with competitors and to become a serious contender in the planted forest sector worldwide.

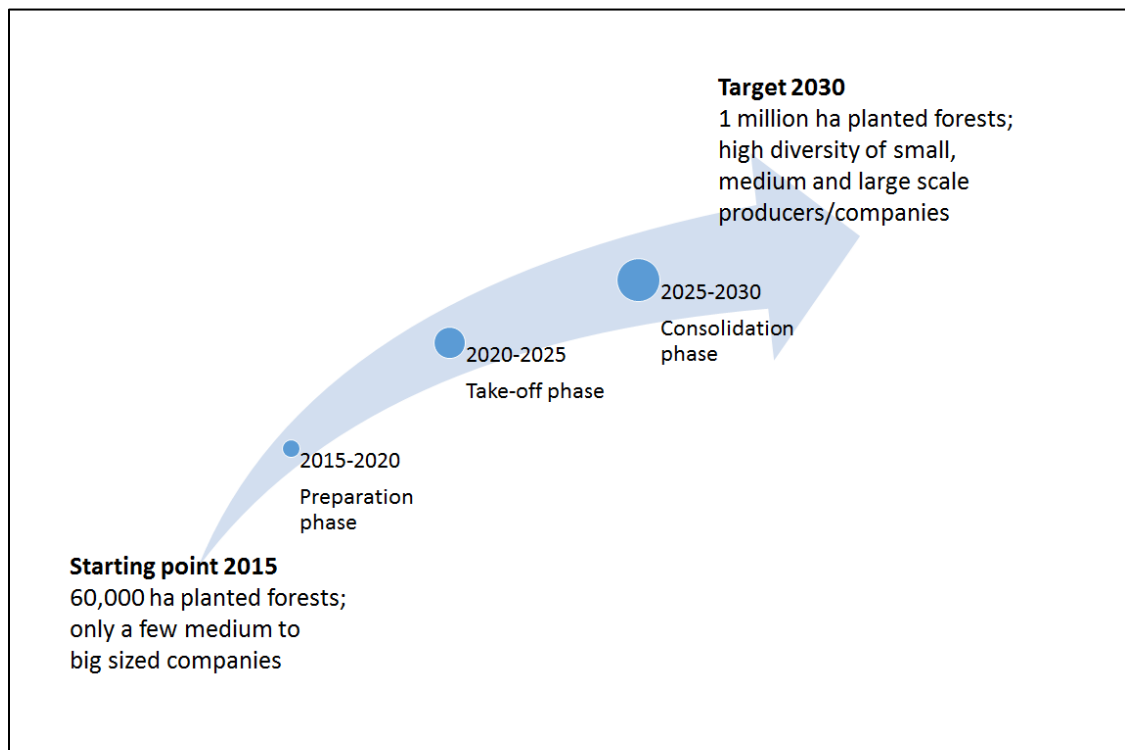
## 7. THE WAY FORWARD: IMPROVING MOZAMBIQUE'S FOREST INVESTMENT CLIMATE

### 7.1 Roadmap Toward 2030

57. Mozambique has many necessary characteristics required to develop a successful planted forest sector. However, the actual pace of investments has been slower than expected indicating some remaining shortcomings in its business climate. The GoM has established planted forest as one focal area for economic development. Therefore, to achieve these strategic goals, it is crucial that the government—in collaboration with the private sector, development partners, and other stakeholders—mitigates these barriers to support the creation of an enabling environment for the establishment of sustainable forest plantations (small-, medium-, and large-scale plantations). Many of the actions require a cross-sectoral approach and several government departments and agencies need to be involved. However, most of the activities fall under the mandates of MASA and MITADER who would have a natural coordinating role in coordination and monitoring implementation of the actions.

58. It would also be essential to engage closely with private investors (including smallholders) who would be the beneficiaries of the reforms. As mentioned earlier, public sector actions can only provide the required framework for investments while the investments in planted forests need to come from the private sector. Developing a thriving planted forests sector is a long process requiring inputs and commitment from all stakeholder: public sector, industrial private sector, as well as SMEs and rural smallholders. Having a stepwise approach including preparation, take-off, and consolidation phases (Figure 7.1) allows identifying first actions that are required to unleash the opportunities in the sector ('low-hanging fruits'). This will then be followed by actions that may have longer incubation time to move the sector in Mozambique to a higher level.

Figure 7.1. Phased Roadmap to Enhance Planted Forest Sector



59. This section summarizes a list of proposed actions to improve the investment climate in the Mozambican planted forest sector.<sup>10</sup> The activities are specific to the forest sector itself although it is essential to recognize that investments in planted forests are also influenced by factors which apply to all sectors across the economy. Political stability, good governance, and rule of law and functioning financial and labor markets, are relevant for all productive sectors, including planted forests. The proposed actions tackle the main shortcomings of the investment climate in Mozambique’s forestry sector. The focus is on production forestry which utilizes fast-growing, often exotic tree species to produce raw material for a wood processing industry. Plantations with ecological objectives, such as the utilization of native species to restore degraded natural forests or purely for carbon sequestration, were not considered within the scope of these proposed actions. Ideally these different types of planted forest could be merged. For example, if plantation area is expanded, it will have positive carbon balance impact by increasing carbon stocks sequestered.

60. The GoM’s target of establishing 1 million ha of forested land by 2030 is highly ambitious. If the challenges with respect to improving the investment climate are efficiently addressed, reaching even 300,000–500,000 ha of planted forests in the next 15 years would be a major accomplishment. Even this accomplishment would create between 6,000–25,000 jobs in the plantation sector, bring development (that is, infrastructure, vocational training) in rural areas and form the basis for establishing a wood processing industry, which could bring about even more social and economic benefits.

<sup>10</sup> A more detailed background analysis and description of the proposed actions can be found in the technical working papers on (a) an assessment on Mozambique’s planted forest sector and its competitiveness, (b) an analysis of smallholder integration into the planted forest sector and (c) detailed description of proposed actions. The documents can be found at [www.profor.info](http://www.profor.info) [search terms ‘Mozambique planted forests’]

61. The plan of action was elaborated with the following objectives in mind:
- (a) Definition of priority actions as well as that of ‘low-hanging fruits’, focusing first on the most feasible actions that promise quick wins by making Mozambique a more competitive place to invest;
  - (b) Actions to increase socioeconomic and environmental benefits from investments and to strengthen links to and diversify the local economy;
  - (c) Enhancing the management of productive landscapes, in which commercial forestry plays a major role;
  - (d) Seeking synergies with parallel initiatives, such as the Forest Investment Program (FIP), REDD+ Strategy, Value Chain Program, and Let’s Work Partnership;
  - (e) Considering trade-offs, for example, (i) food security issues when the labor force and land shift from agriculture to forestry; (ii) poverty impacts when formalizing the forest sector; and (iii) improving productivity, mechanization and working conditions versus job creation; and
  - (f) Supporting the implementation of the national development agenda and the National Reforestation Strategy in particular.
62. The proposed actions focus on activities that need to be launched in short to medium term. It covers also only such activities that can be identified at the moment. For example, infrastructure development is essential for the expansion of planted forests and therefore this plan proposes a master plan to be developed. At the same time, it is obvious that this master plan needs to be implemented to achieve real benefits for the sector. This is a much longer-term activity and requires resources not listed in this plan. However, well-prepared master plans help investors with their planning.

## 7.2 The Impact of Climate Change on the Reform Agenda

63. Increase in the planted forest area in Mozambique will have a positive benefit on carbon stocks and can also contribute to reducing deforestation. However, it is also important to consider the impact climate change could have on the planted forest sector and to see how it might affect the actions recommended in this section. Mozambique is at risk from drought, floods, and tropical cyclones and is ranked third among African countries at risk from severe weather events. Droughts and floods occur predominantly in the southern and central regions, while three to four cyclones per year can be expected, impacting predominantly the coastal areas. The predictions are that climate change will result in increased climate variability and warmer temperatures in Mozambique. This means an increase in extreme weather events, with increased variability in rainfall and a forecast of more prolonged dry seasons. Temperatures are predicted to increase by 1–2°C by 2050 (GoM 2011; Davis 2011; Midgley et al 2012). These changes will have a notable impact on the planted forest sector in the country as well. The main consequences are likely to be as follows:

- (a) Reduced growth of some species/clones due to drought and increased temperatures;
- (b) Increased fire occurrence due to higher temperatures and longer dry seasons;
- (c) A reduced planting ‘window’ during the rainy season;
- (d) Damage to infrastructure (especially from flooding).

64. Mitigation of these risks and adaptation to the changing climate is essential for the sector to become competitive. The main precondition is to have better understanding on both the expected climate change and its impact on plantation species. This will require trials to test a range of species and clones

for different environments in Mozambique, with an emphasis on genetic material likely to be better suited to warmer and drier environments. The results from research need to be disseminated to practitioners and improved genetic material made available. Planting needs to be done only with material that is well adapted to the changing site conditions. This also requires careful site-species market matching for the commercial species/clones as well as regular, systematic monitoring of plantation growth and the occurrence of pests and diseases. All this can be based on collaboration between larger companies and with national and regional research organizations. Sharing information on genetic material, research information, and pest and disease issues will serve all practitioners equally. Much of the adaptation is about recognizing the impact of climate change and adjusting management practices accordingly. This will include adopting forest operations to conserve soil moisture and to capture rainfall, extending the planting 'window' through watering, ensuring good fire protection measures are in place and by ensuring roads are well planned with good alignment and adequate drainage. Climate change has to become an essential element in all training and extension material (for example, guidelines) on best practices of silviculture and harvesting.

### 7.3 Overview and Prioritization of Proposed Actions

65. Table 7.1 presents the list of recommended actions as building blocks to improve the forest investment climate in Mozambique. At first, the table shows the urgency to take several but coordinated actions right from the beginning (the preparation phase) to create a strong foundation for the establishment of an effective investment climate in forest plantations. It is also noticeable that while most actions are expected to be short-lived and produce results in the short to medium term, others are expected to be permanent. Actions have been classified within four major categories (production, market, enabling environment, and smallholder integration), even if there are overlaps across the categories.



**Table 7.1. List of Recommended Actions, Timeline and Cost Estimate**

Action	time required	Preparation phase					Take-off phase					Consolidation phase					Cost estimate
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
	+	first outputs expected															in million USD
<b>1 Production related actions:</b>																	
1.1	Applied research on plantation forestry including clonal program	clonal programm:															9.0
1.2	Facilitate access to state of the art technology																n.a.
1.3	Best practice guidelines for plantation forestry																0.1
1.4	Research and development (R&D) program and company-company dialogue																14.0
1.5	Multi-level vocational training																15.0
<b>2 Market related actions</b>																	
2.1	Provision of reliable market information																0.7 - 0.8
2.2	Improvement of infrastructure for forestry (master plan)																1.0
2.3	Addressing illegal logging and formalization of the forest sector																0.3
2.4	Cluster policy																0.8
<b>3 Enabling environment related actions</b>																	
3.1	Definition of natural forest																0.05
3.2	Mapping of land qualifying for international forest certification schemes																0.7 - 1.0
3.3	Quick and transparent administrative processes																0.7
3.4	Updating forest legislation related to non-native timber species																0.05
3.5	Guidelines for CSR																0.3
3.6	Facilitate company community negotiations on land allocation for																0.3
<b>4 Smallholder integration related actions</b>																	
4.1	Formalizing Community Company Partnerships (CCP)																2.0-3.0
4.2	Support for private tree growers including outgrowers																0.2
4.3	Capacity building for decentralized Government in CCP																1.0-1.5
															<b>Total costs estimated:</b>	<b>46.2-48.1</b>	

66. The cost estimate of adopting all recommended actions corresponds to a total amount of USD 48 million. This does not include the private investments needed in the forests and their management, but rather covers the creation of a conducive environment for these investments. According to the nature of the actions, the funding can come from government sources (actions related to legislation), donor organizations (actions related to enabling environment), or private sector enterprises (actions related to production). Some actions lend themselves to a shared financing or PPPs. These include, for example, applied research on genetic material or vocational training. They are directly useful to the participating companies, but also provide public goods.




67. The proposed actions can be ranked according to their impact on the main policy objective: creating a better investment and operating environment for both (a) large investors and (b) smallholders. Other criteria used for ranking the various actions were the likely time horizon of the impacts, whether they are dependent on other proposed actions (preconditions) and also how much political capital is required for that action to succeed (Table 7.2).

**Table 7.2. Ranking Criteria for Proposed Actions**

Proposed Action	Impact on large investors	Impact on small investors	Time horizon of impacts	Pre-condition?	Political capital required?
<b>PRODUCTION RELATED ACTIONS</b>					
1. Applied research – Tree Improvement Program (including clonal forestry)	Large	Large	Long	Yes	Low
2. Facilitate access to improved technology	Large	Small	Short	No	Medium
3. Best practice guidelines for plantation forestry	Small	Large	Short	No	Low
4. Research and development program – company dialogue	Large	Large	Long	Yes	Low
5. Vocational training	Large	Large	Medium	Yes	Medium
<b>MARKET RELATED ACTIONS</b>					
6. Provision of reliable market-related information	Medium	Small	Medium	No	Low
7. Improvement of infrastructure for forestry	Large	Large	Long	Yes	High
8. Addressing illegal logging and formalization of the sector	Large	Medium	Long	Yes	High
9. Cluster policy	Medium	Large	Long	No	Low
<b>ENABLING ENVIRONMENT RELATED ACTIONS</b>					
10. Definition of natural forest	Large	Large	Short	No	Low
11. Mapping land qualifying for Certification	Large	Large	Short	Yes	Low
12. Stream-lining process for obtaining licenses	Large	Large	Medium	No	Medium
13. Updating forest legislation to include non-native species	Medium	Small	Medium	Yes	Medium
14. Producing Guidelines for CSR	Large	Small	Short	No	Medium
15. Facilitate company-community negotiations on land allocations	Large	Large	Short	No	Low
<b>SMALLHOLDER INTEGRATION RELATED ACTIONS</b>					
16. Formalize Community-Company Partnerships (CCPs)	Medium	Large	Medium	No	Low
17. Support for small tree growers – including outgrowers	Medium	Large	Medium	No	Low
18. Capacity building for decentralized government in CCPs	Medium	Medium	Medium	No	Medium

68. Using the set of criteria outlined in Table 7.2, the relative priority of the proposed actions was identified. For each action, the impact on the large investors and smallholders was scored. Secondly, the time scale of impact was estimated from short- to medium-, and long-term impact. The aggregate result is a combined score, which was converted into a color matrix indicating the priorities for large and small investors (Table 7.3). From this analysis, the priority actions become clear. It is important to note that many of the actions can—and indeed need to—run concurrently and not in isolation. The top priority for all current and potential investors is to address the complex land negotiation process, which is largely covered under Action 15: Facilitating company-community negotiations on land allocations. Closely related to this is Action 12: Streamlining the process for obtaining the appropriate licenses. Focusing on these areas as early as possible will address the major concern of all current and potential investors in the sector.

**Table 7.3. Priority Ranking of Proposed Actions for Large and Small Investors**

	Proposed Actions	Large investors	Small-holders
Production	1. Applied research - Tree Improvement Program (inc. clonal forestry)	Yellow	Yellow
	2. Facilitate access to improved technology	Red	Green
	3. Best practice guidelines for plantation forestry	Green	Red
	4. R&D program - company dialogue	Yellow	Green
	5. Vocational training	Yellow	Yellow
Markets	6. Provision of reliable market-related information	Yellow	Green
	7. Master plan for improving infrastructure in forestry areas	Red	Green
	8. Addressing illegal logging and formalization of sector	Green	Green
	9. Cluster policy	Green	Red
Enabling environment	10. Definition of 'natural forest' (for certification)	Red	Red
	11. Mapping land qualifying for certification	Red	Red
	12. Streamlining process for obtaining licenses	Red	Red
	13. Updating forest legislation to include non-native species	Yellow	Green
	14. Producing guidelines for CSR	Red	Green
	15. Facilitate company-community negotiations on land allocations	Red	Red
s/holders	16. Formalize Community Company Partnerships (CCPs)	Yellow	Red
	17. Support for small tree growers - including outgrowers	Yellow	Red
	18. Capacity building for decentralized government in CCPs	Yellow	Yellow
<b>Key:</b>	 Absolute precondition: short-term action needed	 Action needed after Red to kick-start sector	 Long-term but necessary action for sector development to be world class

69. **For the larger investors**, the issue over which land could qualify for SFM certification is also high priority. These include Action 10: Definition of 'natural forest'; and the mapping of land that potentially would qualify for certification (Action 11). It would also be important for the larger investors to clarify what is expected of them under CSR (Action 14), to be able to access modern production technology (Action 2) and to have more clarity and influence on national infrastructure development plans (Action 7).

70. **Smaller investors in tree growing** have a greater need for support in areas such as best practice guidelines (Action 3) and general support for small tree growers - including outgrowers (Action 17) and thus these are higher priorities for them. In addition, the clustering of smaller growers (Action 9) is also a high priority to both promote and support smaller growers. The formalizing of CCPs would also be important (Action 16).

71. There are a number of **longer-term actions** that will take time to have an impact—notably research (Actions 1 and 4), training (Action 5), and capacity building (Action 18). These actions, however, are all important in the long run if Mozambique is to develop a world class plantation forest sector and thus they need to be started as early as possible. It should also be noted that some aspects of these long-term actions are more critical for the smaller investors—notably the availability of quality planting material (part of Action 1) and being able to access practical training courses (part of Action 5).

72. Table 7.4 summarizes the priorities for the proposed actions in the short term (1–3 years). Many of the activities described here require a strong commitment from the GoM but as the analysis in this section shows, there are a number of actions where quick gains could be achieved with limited capital cost. Tackling these ‘low-hanging fruits’ will have a major impact on the sector in a short time. Addressing these high-priority issues will have a positive impact in a relatively short space of time and will also send out strong signals to potential investors of all sizes that Mozambique is a serious destination for investment in commercial forestry.

73. With regard to the timing of the various actions, many can be tackled concurrently, although some have preconditions and are dependent on other proposed actions. For example, mapping of land areas qualifying for certification (Action 11) cannot take place until there is an agreed definition of ‘natural forest’ in Mozambique (Action 10). Additionally, significant investment in the longer-term and costly activities like research and training, will not take place until the land negotiation issues are resolved (Actions 15 and 12). Investors are more likely to support such activities once they have successfully negotiated their required land holdings for plantations. For larger investors, these actions form an important part of their risk mitigation strategy for the future.

**Table 7.4. Short-term (1–3 years) Priorities for Sector**

No	Proposed Action	Cost (USD)	Time (years)	Lead <sup>a</sup> Pvt/GoM
<b>Top priority for all in sector</b>				
15	Company-community negotiations on land allocations	1,000,000	2.5	GoM
12	Streamlining administrative processes for obtaining licenses	700,000	2	GoM
	S/T	<b>1,700,000</b>		
<b>High priority for large investors</b>				
10	Definition of natural forest	50,000	<1	GoM
11	Mapping of land qualifying for certification	850,000	2	GoM
14	Producing guidelines for CSR	270,000	1	GoM
7	Infrastructure master plan	1,000,000	1	GoM
2	Facilitating access to improved technology	0	1	GoM
	S/T	<b>2,170,000</b>		
<b>High priority for smallholders</b>				
3	Best practice guidelines for plantation forestry	100,000	<1	GoM
9	Cluster policy	700,000	2	GoM
17	Support for small tree growers - outgrowers	200,000	1.5	Pvt
16	Formalize CCPs: company-community stable contractual base	1,000,000 <sup>b</sup>	1	Pvt
	S/T	<b>2,000,000</b>		
<b>Longer-term actions - important for sector development and sustainability</b>				
1	Applied research - Tree Improvement (inc. clonal forestry)	5,000,000 <sup>c</sup>	3	GoM
4	Research development program - company dialogue	8,000,000 <sup>b</sup>	3	GoM

No	Proposed Action	Cost (USD)	Time (years)	Lead <sup>a</sup> Pvt/GoM
5	Vocational training	12,000,000 <sup>b</sup>	3	GoM
18	Capacity building for decentralized Government in CCPs	1,250,000	3	GoM
	S/T	<b>26,250,000</b>		
<b>Other short-term actions required</b>				
8	Strategy for addressing illegal logging and formulization of sector	300,000	1	GoM
6	Provision of reliable market-related information	450,000 <sup>b</sup>	2	GoM
13	Updating forest legislation to include non-native species	50,000	2	GoM
	S/T	<b>800,000</b>		

Note: <sup>a</sup> Indicates who takes the lead but in nearly all cases, the action will need to be carried out in collaboration with key stakeholders in public and private sector. <sup>b</sup> Represents only part of the longer-term cost of this action (that is, over 1–3 years). <sup>c</sup> As above - and excludes the cost of establishing tree nurseries.

## 7.4 Proposed Actions<sup>11</sup>

### *Production-related actions*

74. Production related actions are targeted at optimizing the production costs of the produced wood. The production costs per unit primarily depend on three factors: (a) cost of land, (b) operational costs, and (c) growth potential.

75. The operational costs for the establishment of forest plantations from planting until the creation of the first revenues are somewhat higher than global averages for competing producers. The realistic MAI in Mozambique today ranges from 20 to 30 (average 23) m<sup>3</sup>/ha/year for eucalypts. This is an acceptable growth rate for commercial forestry, but it is still below the best growth rates observed globally and in South America in particular. Growth rates can be addressed by R&D programs focused on identifying improved genetic material. This research can be successful within a relatively short period of time and enhance the competitiveness of Mozambique's planted forest sector. The lack of skilled labor and professional service providers as well as state-of-the-art technology, however, is a limitation which makes the planted forest sector less competitive (Table 7.5).

<sup>11</sup> More detailed descriptions can be found in Annex 1 and Working Paper 3: *Proposed actions to improve the investment climate in the Mozambican planted forest sector*.

**Table 7.5. Production-related Action**

Action	Details
<p>1. Applied research on plantation forestry, including clonal programs</p>	<p>Site-species matching is of priority for establishing productive and ecologically sound plantation forestry. Experimental trials of different provenances, hybrids, or clones are needed. Applied (that is, practically orientated) research to determine which silvicultural systems would enhance success in establishing and tending to forest plantations, to guarantee high growth rates and effective management. The main objective of this action is to improve growth rates and have highly productive genetic materials for different site conditions available for companies and farmers. Small- and medium-scale companies especially rely on support with appropriate planting material because of the high costs associated with long-term trials. Specific objectives of the tree breeding program are:</p> <ul style="list-style-type: none"> <li>• Establishing genetic improvement programs for different climatic and soil conditions;</li> <li>• Promoting species with a high resistance to biotic and abiotic stress factors (including climate change);</li> <li>• Encouraging the use of species with high productivity;</li> <li>• Promoting the use of high-quality species for specific end uses.</li> </ul> <p>These actions will contribute substantially to the economic performance of Mozambique’s planted forest sector. Additionally, local capacities and human resources will be developed.</p>
<p>2. Facilitate access to state-of-the-art technology</p>	<p>Modern plantation forestry, often called ‘precision forestry’, relies to a large extent on the availability of specifically adapted modern technology. Currently, it is difficult for investors to access modern technology at competitive costs due to tax and import regulations. Regulations already exist to supply the plantation forestry sector with modern technology. However, it is important that administrative and bureaucratic procedures are fast and efficient. Tax reduction and priority lists for importing technologies have already been developed but these need frequent updating.</p>
<p>3. Best practice guidelines for plantation forestry</p>	<p>Commercial smallholder forest plantations are new to Mozambique and reliable sources of information must be available to support emerging producers. This action is to produce practical guidelines covering best practices to improve the performance, quality, and cost-efficiency of the plantations. There are good examples of such guidelines in the region, but they will need adapting for Mozambique’s situation. They must particularly target small and emerging producers.</p>
<p>4. Research and development programs, public-private partnerships, company-company dialogue</p>	<p>To establish a competitive plantation forest sector, it is necessary to focus research on the specific site, climate, and production conditions leading to improved silvicultural practices. This action aims to establish an R&amp;D program coordinated by MASA. This should also identify national and international research facilities and coordinate the cooperation between them to specifically promote the exchange of knowledge between all stakeholders.</p>
<p>5. Multi-level vocational training</p>	<p>The current labor skills level and productivity is low. In the long run, qualified personnel have to be available at the national level to promote the plantation forestry sector and attract investors. Availability of capable employees with a</p>

Action	Details
	high degree of knowledge and professional experience are indispensable for building up competitive forestry enterprises. Gender aspects must be considered here too. This action is aimed at developing the capacity nationally for training and education.

### Market-related actions

76. Market access is often considered a bottleneck for investments in planted forests. Currently, commercial biomass production will not be competitive with unregulated charcoal producers using wood from natural forests. The sawlog market, however, is more promising and thus not only eucalyptus but also pine should be considered when establishing plantations in Mozambique. A big step toward the commercialization of plantation timber is the planned establishment of a large pulp mill in Mozambique, which would strengthen the domestic market for wood.

77. Accessing global markets with forestry products made in Mozambique is a valid option, due to the availability of harbors and Mozambique’s proximity to Asian markets. However, the weak in-country infrastructure for transporting wood and other forest products remains an important drawback for exporters. This increases the cost to access the international market. Infrastructure development takes time and requires notable investment. Plantation development would benefit from improved infrastructure but some development can happen also within the existing infrastructure network. This calls for a phased approach where planted forests are established first within the existing network and gradually expanded with the expansion of infrastructure. While this may be realistic approach, it also leads to slower expansion of planted forests.

78. Legality and formality are key preconditions to ensure fair market competition and sustainable forestry. Governmental strategies to improve the timber market and investment climate should include efforts to formalize the forest sector and to establish regional forestry clusters. These integrate and develop small- and large-scale plantation forestry activities, while also supporting the establishment of local service providers, and the development of a professional timber processing industry. The natural forest sector in Mozambique has suffered from notable illegality creating unfair competition in domestic markets, which in turn creates a potential reputational risk for Mozambican wood products in international markets—also for planted forest products (Table 7.6).

**Table 7.6. Market-related Actions**

Action	Details
6. Provision of reliable market information	Reliable information and data on the domestic timber market and the potential to produce for international markets is not available in Mozambique. Market information is crucial for investors when analyzing the investment potential. The objective of this action is to improve timber market intelligence and to provide reliable timber market information to investors.
7. Improvement of infrastructure (master plan)	Forest industries are sensitive to raw material and product transport costs. The objective of this action is to provide a master plan on infrastructural improvements addressing the needs of the forest sector. The master plan has to be based on and linked with the overall infrastructure development plan of Mozambique.

Action	Details
8. Addressing illegal logging and promoting the formalization of the forest sector	Legality and formality are key preconditions to ensure fair market competition and sustainable forestry. However, the domestic forest product market is still dominated by timber coming from unmanaged natural forests and is characterized by informality. Improvement options to enhance fair market competition should concentrate on efforts to formalize the forestry sector. The overall objective is to have fully legal and formalized operating timber value chains from both natural forests and from plantations. This is not a simple feat but instead a long process which likely requires more than 10 years to achieve. To initiate this process, a sound strategy on forest sector formalization is required.
9. Cluster policy (building local networks)	A cluster approach the forest policy should incorporate various, closely related action to promote forest-based economic activity. These could start by having a regional or localized approach initially focusing on selected promising regions/provinces. Action would include support to government institutions, value chain integration, company-community partnerships, promotion of SMEs and private sector associations, and the establishment of applied research programs. Bringing these elements regionally together will provide incentives for developing value-added products, and for the establishment of a professional forest sector (involving forest producers and timber processing industries at different scales). The objective of this action is to have regional cluster strategies (at the province level) and a working structure (cluster management) that can implement supporting actions.

### *Enabling environment-related actions*

79. While there have been substantial improvements in political stability and economic growth in the last decade, some of the current policies and legislation may be considered as a limiting factor or barrier for investors. Enabling environment related actions are summarized in Table 7.7.

**Table 7.7. Enabling Environment-related Actions**

Action	Details
10. Definition of natural forest	Many forest companies in Mozambique have problems qualifying for SFM certification due to the lack of an official definition of 'natural forest'. The lack of clarity on what vegetation types are considered as 'natural forest' exposes companies to high reputational risks and leads to a deadlock situation, as the conversion of natural forest is incompatible with international certification standards (for example, FSC or PEFC certification). This activity needs to build on the work bring conducted by UT-REDD on forest definition REDD+ purposes.
11. Mapping of land qualifying for forest certification schemes	Closely linked to Action 10 above, the mapping of plantable forest land that potentially qualifies for SFM certification would also be an important step toward improving the investment climate in Mozambique's forestry sector. The mapping should consider current land uses to avoid potential conflicts with communities and to identify areas of high conservation value.
12. Ensuring quick and transparent	Interactions with forestry companies in Mozambique indicate that there is a shared concern regarding long waiting periods for necessary licenses. This action aims to improve the current procedures, whilst ensuring transparency and efficient collaboration between the key stakeholders.



Action	Details
administrative processes	
13. Updating legislation related to non-native timber species	Both the forest and wildlife law and their regulations have been updated to comply with sustainable forest management. The regulations, however, are focused on native forests. The inclusion of articles regarding the use of non-native species are needed in the law, including articles concerning the transport documentation and in regard to the export of raw or processed timber products. This action is critical to support the commercialization of harvested and processed timber coming from commercial.
14. Guidelines for Corporate Social Responsibility (CSR)	<p>Due to the complex negotiation process between investors and communities, it is not clear what is expected from forest investors in return for access to land. As a result, investors are often faced with unexpected land costs during project implementation. Clarity on their expected duties and responsibilities will help companies to calculate their investments in social projects and improve the negotiation processes.</p> <p>Clear guidelines on CSR are needed to avoid unexpected and unplanned costs and to bring predictability to the process. CSR investments (which should be voluntary) are often agreements that have been agreed as a precondition for land access. Construction and rehabilitation of basic facilities such as health centers, boreholes, wells or schools, are often expected by communities and local authorities to be financed by companies. This has led to arguments on whether these investments are government or company responsibility.</p>
15. Company-community negotiations on land allocation	The issues surrounding the land negotiation process have been mentioned numerous times in this report. Based on the experiences and lessons learned from forestry projects in Mozambique, a lack of transparency and limited compliance with legislation requirements in the community-company consultations are among the main causes of uncertainty during the negotiation process. The objective of this action is to facilitate the land negotiation process between forest companies and communities to avoid future conflicts. This action will assure that communication is more efficient and transparent during company-community interactions, through ensuring the presence and active participation of relevant government authorities. Strengthening leadership at the community level will also contribute to achieving better and officially documented negotiation results.

### ***Smallholder-related actions***

80. The importance of smallholders and communities for the forest sector has been stressed throughout this report. With land in Mozambique being owned collectively, all investors are required to obtain a land use right (DUAT) with agreements from the communities concerned before starting operations. But this is not the only reason for supporting smallholders. Investors often support smallholders for commercial reasons (for example, providing labor or growing wood to supply the company's own supply) or as a risk mitigation measure to foster good relations with the local people. Plantation forestry has the potential to make a difference to the livelihoods of smallholders—as witnessed in a number of countries where the plantation industry is mature (South Africa is a good example).

However, in the case of Mozambique, the sector is in its infancy and thus smallholders and potential small-medium investors will need considerable support to plant trees commercially (Table 7.8).

**Table 7.8. Smallholder-integration-related Actions**

Action	Details
16. Formalizing company-community partnerships (CCP)	Good community-company relationships and partnerships are essential to establish, manage, and harvest forest plantations within a constructive environment. This action is aimed at improving the negotiation process, which should be a joint responsibility between the government and the company, and could involve a neutral third party mediator. The aim is to give the company secure land access with reduced social and reputational risks. There is a strong overlap with Action 15 above since it is difficult to separate CCPs from land negotiation processes. A further action in this regard is to encourage better company-community communication by setting up a department within the main forest companies to maintain permanent contact between the company and communities. These actions will allow investors to carry out their operations with more predictability and reduced social and reputational risks.
17. Support for outgrower schemes	For outgrowers to succeed, a number of key requirements have been identified in this study. Firstly, it is not clear if or what type of legal registration (land title, land registration, DUAT) is required for private outgrowers (farmers). For those small-medium growers willing to invest in tree planting, the vast majority will need financial and technical support, especially at this early stage in the development of the sector. Companies in the sector have already expressed interest in setting up outgrower schemes and thus it will be important to provide guidelines for these schemes. It will also be important to have transparent and fair model contracts between the private growers and companies. Important lessons can be learned by studying experience with outgrowers and general support to private tree growers from other countries.
18. Promoting active participation of local authorities in the forest sector	Local governments need to be more actively involved in the forest sector. Companies feel left alone when interacting with communities, and provincial and district governments sometimes lack the required capacity or mandate to become engaged in these interactions—often due to insufficient technical and human resources. Both companies and communities have expressed a need for the government to be present in the first interactions between companies and local communities to mediate negotiations and to verify the agreements reached. The proposed actions support company-community relationship by supporting the involvement of local authorities and through capacity building. The actions will also ensure that local authorities have better access to information with regard to forest development in their regions.

## 7.5 The Impact of Proposed Actions on Mozambique’s Competitiveness

81. The impact of carrying out these actions relating primarily to production and market-related costs, would be significant. Table 7.9 shows the relative impact of each of the key drivers. By implementing the actions described, the result would be increased productivity and reduced establishment, harvesting, and transport costs. Thus, if Mozambique is to become seriously competitive in the global planted forest business, the actions explained in this report need to become reality and Mozambique would then be able to match South Africa’s production costs and be much closer to Brazil’s. The last column shows the impact

the key drivers have individually on the total cost, if the recommended actions were taken. For example, increasing the MAI from 23 to 30 m<sup>3</sup>/ha/year alone would reduce the total cost in the log-yard by 9.2 percent. This highlights the importance of reducing establishment costs, increasing growth rates, and reducing both the harvesting and transport costs. Improved negotiation processes and general governance will also reduce administrative costs which are currently relatively high.

**Table 7.9. Mozambique’s Potential to Increase Competitiveness**

Position		Brazil	South Africa	Mozambique (today)	Mozambique (potential)	Change total – potential (%)	Impact on total costs (%) <sup>b</sup>
Land costs	USD/ha/year	120,00	100,00	30,00	30,00	—	—
Plantation establishment	USD/ha	1650,00	1600,00	2000,00	1600,00	20.0	4.6
Administration	USD/ha/year	95,00	160,00	130,00	130,00	—	—
Mean annual increment	m <sup>3</sup> /ha/year	42,00	30,00	23,00	30,00	30.4	9.2
Rotation	Year	8,00	8,00	8,00	8,00	—	—
Accumulated costs	USD/ha	<b>3370,00</b>	<b>3680,00</b>	<b>3280,00</b>	<b>2880,00</b>	12.2	—
Stumpage costs	USD/m <sup>3</sup>	<b>10,03</b>	<b>15,33</b>	<b>17,83</b>	<b>12,00</b>	56.1	—
Harvesting volume	m <sup>3</sup> /ha	336,00	240,00	184,00	240,00	30.4	—
Harvesting costs	USD/m <sup>3</sup>	8,00	9,50	15,00	12,00	20.0	7.8
Transport costs <sup>a</sup>	USD/m <sup>3</sup> /100 km	8,00	7,20	12,80	8,80	31.3	8.0
<b>Costs in the log-yard</b>	<b>USD/m<sup>3</sup></b>	26,03	32,03	45,63	32,80		
	%	100	123	175	126		

Note: <sup>a</sup> Assuming a transport weight of 800 kg/m<sup>3</sup> and an average transport distance of 100 km. <sup>b</sup> Reduction on total production cost, other factors being constant.

82. The results confirm Mozambique’s potential for investments in the planted forest sector by both large and small operators and also identifies challenges that need to be addressed. Considering the current conditions, the target of establishing 1 million ha of planted forests by 2030 seems highly ambitious. If the identified challenges are efficiently addressed, reaching 300,000–500,000 ha in the next 15 years will be a major accomplishment. With joint efforts and cooperation of different institutions and targeted investments, the investment climate of Mozambique can be significantly improved as no insurmountable biophysical constraints have been identified. Addressing selected short and medium issues would improve Mozambique’s competitiveness to match other global operators. Further reforms and reaching a critical mass of national capacity and expertise could improve the situation even further in medium to long term.

## List of References

- Akesson, Gunilla, Andre Calengo, Christopher Tanner. 2009. Its Not a Question of Doing or Not Doing It – It's a Question of How to Do It. Study on Community Land Rights in Niassa Province, Mozambique. Rapporteur Institutionen för stad och land 6/2009. Available at [http://mkb.slu.se/publikationer/cpub/SOL\\_6\\_2009.pdf](http://mkb.slu.se/publikationer/cpub/SOL_6_2009.pdf) (accessed 11 November 2010).
- Blid N. 2014. Forestry industry and trade union movement in Mozambique: Baseline study prepared for SASK (Trade Union Solidarity Center of Finland).
- Castrén Tuukka, Marko Katila, Karoliina Lindroos, and Jyrki Salmi. 2014: Private Financing for Sustainable Forest Management and Forest Products in Developing Countries: Trends and drivers. Washington, DC: Program on Forests (PROFOR).
- Davis, C.L. 2011. Climate Risk and Vulnerability: A Handbook for Southern Africa. Council for Scientific and Industrial Research, Pretoria, South Africa, pp 92.
- DFID Mozambique. 2014. Design and Implementation of the Skills for Employment Program. Available at [https://www.frameworkcontracts.eu/files/tor/tenders/S4E%20PO%207118-%20ITT%20Volume%203\\_Final.pdf](https://www.frameworkcontracts.eu/files/tor/tenders/S4E%20PO%207118-%20ITT%20Volume%203_Final.pdf)
- Environmental Investigation Agency. 2013. First class connections: log smuggling, illegal logging, and corruption in Mozambique. Available at <http://www.eia-international.org/wp-content/uploads/EIA-First-Class-Connections.pdf>
- Midgley, S.; Dejene, A.; Mattick, A. (2012): Adaptation to Climate Change in Semi-Arid Environments: Experience and Lessons from Mozambique. FAO. Available at <http://www.fao.org/docrep/015/i2581e/i2581e00.pdf>
- GEF (Global Environment Fund) 2013; Africa will import, not export wood. Report on African timber balance. Available at [http://www.globaleenvironmentfund.com/wp-content/uploads/2013/05/GEF\\_Africa-will-Import-not-Export-Wood1.pdf](http://www.globaleenvironmentfund.com/wp-content/uploads/2013/05/GEF_Africa-will-Import-not-Export-Wood1.pdf)
- Government of Mozambique. 1997. Land Law (Law 19/97 of 1 October). Maputo: MOZLegal Lda.
- Government of Mozambique. 2011. Strategic program for climate resilience. Available at [https://www-cif.climateinvestmentfunds.org/sites/default/files/meeting-documents/mozambique\\_spcr\\_final\\_november\\_0.pdf](https://www-cif.climateinvestmentfunds.org/sites/default/files/meeting-documents/mozambique_spcr_final_november_0.pdf)
- Instituto Nacional de Estatística. 2015. Importação e Exportação 2000-2013. Available at [http://www.ine.gov.mz/estatisticas/publicacoes/copy\\_of\\_importacao-e-exportacao](http://www.ine.gov.mz/estatisticas/publicacoes/copy_of_importacao-e-exportacao)
- IFPRI 2007. The Future of Small Farms for Poverty Reduction and Growth, IFPRI 2020 Discussion Paper 42. Available at <http://www.ifpri.org/sites/default/files/pubs/2020/dp/vp42.pdf>
- Jacovelli, PA et al. 2009. Tree Planting Guidelines for Uganda. Sawlog Production Grant Scheme, Uganda. Available from the lead author at [www.unique-landuse.de/](http://www.unique-landuse.de/)
- Keeley, J., Seide, W.M., Eid, A., Kidewa, A.L. 2014. Large-scale land deals in Ethiopia: Scale, trends, features and outcomes to date. London: IDRC and IIED
- Marques WA. 2012. Comércio internacional de mercadorias com Moçambique. GEE, CEPAGRI. BMEP No. 10.

- Mazorodze, B. 2011. Real Wage Rate Misalignment: Prelude to Poor Productivity? A Case of Forestry Contractors in Northern Mozambique. Department of Agricultural Economics and Development, Midlands State University.
- MINAG. 2007. Zoneamento Agrário de Moçambique, November 2007. Available at <http://omrmz.org/index.php/biblioteca/category/180-diversos?download=1894:diversos>
- Nhantumbo, I. and Macqueen, D. 2013. Investing in locally controlled forestry in Mozambique. IIED. Available at <http://pubs.iied.org/pdfs/13569IIED.pdf>
- Pawson, S. M., A. Brin, E. G. Brockerhoff, D. Lamb, T. W. Payn, A. Paquette, J. A. Parrotta. 2013. Plantation Forests, Climate Change and Biodiversity. *Biodiversity and Conservation* 22: 1203–1227.
- PROFOR (Program on Forests). 2012. “Certification, Verification and Governance in Forestry in Southeast Asia.” Working Paper. Washington DC: PROFOR.
- Republic of Mozambique. 2016. Intended Nationally Determined Contribution (INDC) of Mozambique to the United Nations Framework Convention on Climate Change (UNFCCC). Available at [http://www4.unfccc.int/submissions/INDC/Published%20Documents/Mozambique/1/MOZ\\_INDC\\_Final\\_Version.pdf](http://www4.unfccc.int/submissions/INDC/Published%20Documents/Mozambique/1/MOZ_INDC_Final_Version.pdf)
- Sappi. 2004. Tree Planting Guidelines for Sappi Outgrowers. Available at [www.sappi.com/](http://www.sappi.com/)
- Sitoe A, Mirira R, Tchaúque F. 2008. Evaluation of the levels of energy biomass consumption in the provinces of Tete, Nampula, Zambézia, Sofala, Gaza and Maputo. Final report to the Ministry of Energy.
- Teravaninthorn, S. and Raballand, G. 2009. Transport prices and costs: a review of the main international corridors. The World Bank Group, Washington, DC.
- World Bank. 2016. Africa's Pulse (April 2016). Washington, D.C. World Bank Group.

## Websites

- Doing Business Index World Bank, <http://data.worldbank.org/indicator/IC.BUS.EASE.XQ>
- GoM 2004. Constitution of the Republic of Mozambique. [http://confinder.richmond.edu/admin/docs/Constitution\\_\(in\\_force\\_21\\_01\\_05\)\(English\)-Mozlegal.pdf](http://confinder.richmond.edu/admin/docs/Constitution_(in_force_21_01_05)(English)-Mozlegal.pdf)

## Information from Interviews and Databases

Government Mozambique:

- CEPAGRI Interviews
- DNTF Interviews

Others:

- DFID Mozambique Interviews

Interviewed forest companies in Mozambique (biological potential, production costs, investment environment)

- MOFLOR
- Portucel
- Florestas do Niassa (Rift valley Group)
- Green Resources
- IFLOMA

Databases from UNIQUE and Malinovski Florestal (data of forestry companies and reliable statistical resources of diverse countries):

## Annex: Summaries of the Proposed Actions

<b>1. Applied research on plantation forestry, including clonal programs</b>	
<b>Why is this important?</b> Information of the best silvicultural regimes and access to productive genetic materials will contribute to the improved yields in planted forests (refer Chapter 6.1)	
<b>Summary description and action</b> Site-species matching is a high priority for establishing productive and ecologically sound plantation forestry. There is a wide variety of soil and climatic conditions in Mozambique. However, experimental trials focusing on site-species matching or genetic improvement have barely been established. Research or information about adequate silvicultural systems is also missing. A variety of low-risk genetic materials with high productivity potential, together with guidelines on how to manage the stands, would attract investors and keep the private plantation forestry sector competitive. Small- and medium-scale companies in particular rely on support with appropriate planting material because of the high costs associated with long-term trials. Specific objectives of this action are: <ul style="list-style-type: none"> <li>• Establishing genetic improvement programs for different climatic and soil conditions;</li> <li>• Promoting species with a high resistance to biotic and abiotic stress factors (particularly climate change);</li> <li>• Encouraging the use of species with high productivity;</li> <li>• Promoting the use of high-quality species for specific end uses;</li> <li>• Supporting human capacity development at national level.</li> </ul>	
<b>How is it going to be done?</b> MASA, companies, universities, and consultants (national and international) will work together as a task force. This is a long-term action, which requires continuous improvement of the information on the genetic materials. The following activities will be performed: <ul style="list-style-type: none"> <li>• Definition of basic characteristics (drought and pest resistance, wood characteristics, and so on) and research needs;</li> <li>• Mapping of existing genetic materials at the company level, within national programs and trials;</li> <li>• Screening of worldwide experiences;</li> <li>• Establishing permanent experimental breeding trials and clonal programs (joint effort of companies located within the same region);</li> <li>• Establishment of tree nurseries;</li> <li>• Knowledge dissemination and capacity building.</li> </ul>	
<b>Precondition</b> Investment by private sector in long-term research is likely to depend on land issues being resolved, large companies need to have security of land tenure for long term.	
<b>Cost:</b> USD 9,000,000 (for the first 5 years). Additionally costs between USD 3,000,000–7,000,000 are foreseen for nursery establishment	<b>Time required:</b> Short-term activities: 4 to 24 months, continuing with permanent activities

<b>2. Facilitate access to state-of-the-art technology</b>	
<b>Why is this important?</b> To be competitive in the modern forestry market, it is necessary to have access to affordable and specifically adapted technology, which usually has to be imported (refer Chapters 4 and 6)	
<b>Summary description and action</b> Precision forestry relies on modern technology to improve all forest activities and to guarantee high survival rate of plants, to produce quality wood, and to ensure high performance in harvesting and transport operations. Technology is needed also to ensure safe working conditions as required by most certification processes. Specific forest technology needed to run a competitive business is not readily available in Mozambique and has to be imported from other countries (South America, Europe, South Africa).	
<b>How is it going to be done?</b> A task force should be established involving relevant state agencies and ministries in close cooperation with the private sector. They will establish ways to streamline companies' access to technology by: <ul style="list-style-type: none"> <li>• Evaluating and updating the import lists to include state-of-the-art technology and defining a tax reduction/liberation system;</li> <li>• Supervising import processes and recording delay times at customs;</li> <li>• Providing the structure to build up a working reseller and maintenance system.</li> </ul>	
<b>Precondition</b> None identified for this action	
<b>Cost:</b> No direct costs for technology import Indirect costs. Costs for vocational training and education program for machine maintenance should be taken into consideration. Reduction of import taxes and fees will reduce government revenue.	<b>Time required:</b> Short-term activities: up to 3 years followed by permanent implementation.



<b>3. Best practice guidelines for plantation forestry</b>	
<b>Why is this important?</b> Reliable information will help address current technical challenges and improve the performance, quality, and cost efficiency of planted forests. This is particularly relevant for emerging smallholder producers (refer Chapter 5).	
<b>Summary description and action</b> Development of guidelines with reliable information about technical challenges for the planted forest sector: site-species identification, improvement of silvicultural regimes (for example, spacing, thinning and pruning), and the selection of best applied technology (for example, site preparation, planting, fertilizing, pest management, harvesting, fire management).  Experience and know-how from forest companies with experience operating in Mozambique and outside of the country should be documented in these best practice guidelines in order to adopt the best possible forestry practices. These guidelines will particularly be targeted at small-medium growers, who are the ones in most need of such guidance.	
<b>How is it going to be done?</b> MASA will define the key terms and expected outputs and assign an institution responsible of the coordination of the consultancies. The forest consultants will conduct the consultancy and develop the best practice guidelines, in close consultation with the forest companies, research institutions, and universities. Good examples of publications from other countries should provide the basis for these guidelines.	
<b>Precondition</b> None identified for this action	
<b>Cost:</b> USD 100,000	<b>Time required:</b> up to 1 year

<b>4. Research and development programs, public-private partnerships, company-company dialogue</b>	
<b>Why is this important?</b>	
Plantation forestry and its production methods have been advancing in recent decades. As a result, yields have increased and the environmental footprint from plantations has decreased. The same development needs to take place also in Mozambique to ensure its competitiveness. Research has many public good elements and thus merit joint action by both public and private sectors to transform Mozambique's planted forest sector into an internationally competitive player (refer Chapter 6).	
<b>Summary description and action</b>	
To establish a competitive plantation forest sector, it is necessary to focus research on the specific site, climate, and production conditions in Mozambique. To optimize the forestry value chain, critical issues have to be identified and problem-oriented, applied research has to be carried out. Research can often incur considerable costs that might be reduced if resources are bundled. The objective of the action is to establish an R&D program coordinated by a specific department of MASA. The department should also identify national and international research facilities and coordinate the cooperation between them, including the existing capacities of the private sector and specifically promote the exchange of knowledge between all stakeholders.	
<b>How is it going to be done?</b>	
Different ministries, universities, and research centers will support the development of this action. The following activities will be performed:	
<ul style="list-style-type: none"> <li>• Identification and development of research program; designate the responsible representatives/authorities in the ministries, governmental organizations and universities, and persons in charge;</li> <li>• Budget estimation for activities;</li> <li>• Definition of the research program and delegation of tasks to relevant research institutions;</li> <li>• Cooperation with private sector, ensuring continuity and sustained commitment via periodic meetings, round tables, task force;</li> <li>• Coordination of research activities, evaluation of reports, knowledge transfer to forestry sector, training;</li> <li>• Budget control, release of new research programs.</li> </ul>	
<b>Precondition</b>	
As Action 1, Investment by private sector in long-term research, is likely to depend on land issues being resolved, large companies need to have security of land tenure for long-term.	
<b>Cost:</b> USD 14,000,000 (for 5 years)	<b>Time required:</b> 1 year for start the implementation, activities permanent

<b>5. Multi-level vocational training</b>	
<b>Why is this important?</b> Qualified personnel at the national level have to be available to support the plantation forestry sector and attract investors (refer Chapter 6.4).	
<b>Summary description and action</b> Estimate the need for vocational training for the forestry sector (for example, number of qualified persons at each level), develop curricula for training and education programs, and provide the legal framework for education, workplace safety, and health within the sector. This will include the development of required institutional capacities for training and education to create a favorable climate for entrepreneurship development.	
<b>How is it going to be done?</b> The program will be driven by the Ministry of Science and Technology and the Ministry of Labor assisted by MASA. Universities and technical schools in collaboration with external experts, may assist in building up and implementing the curricula for different professions within the sector. Companies may help in determining labor force demand and providing the necessary qualifications.  This action is a long term activity aiming at building up the capacity for training and education, as well as providing continuously qualified labor to the market. Existing capacities of related educational areas (like agriculture) and forestry programs offered by universities and technical schools should be used. Private sector should also be involved in training programs. Gender aspects of training and education must also be taken into consideration.  The following activities will be performed: <ul style="list-style-type: none"> <li>• Estimation of demand for qualified labor and entrepreneurship for successfully managing 1 million ha of planted forests;</li> <li>• Planning the curricula for the required professions, their associated qualifications and identifying or establishing the educational facilities necessary for conducting the training/education;</li> <li>• Execution: building up the facilities, staff recruitment and initiating training programs;</li> <li>• Promoting entrepreneurship by providing training and incentives.</li> </ul>	
<b>Precondition</b> Investment in training and education is long term and thus will depend on crucial land issue being resolved before serious investment is made.	
<b>Cost:</b> USD 15,000,000 (for the first 5 years)	<b>Time required:</b> 2 years for implementation and thereafter permanent execution and management

<b>6. Provision of reliable market information</b>	
<b>Why is this important?</b> Market information is crucial for investors when analyzing investment potential (refer Chapter 3).	
<b>Summary description and action</b> Over 90 percent of biomass used for energy is sourced from unmanaged open access natural forests, which is a major problem in Mozambique. The 'informality' of the timber market prevents the building up of a sustainable and economically competitive domestic bioenergy market based on planted forests.  A potential future domestic market can be found in the construction industry and also in development of the electric power grid. The latter is still considered a niche market in Mozambique. Timber fetches high prices in the construction sector, and this could be either linked to high production/transport costs or unsatisfied market demand. The planned establishment of a large pulp mill in the country would be a big step forward in commercializing wood and wood products as it would establish a large and well organized market for plantation wood.  However, reliable information and data on the domestic timber market and the potential to produce for international markets is not available. Market information is crucial for investors when analyzing investment potential. The objective of the action is to improve timber market intelligence and to provide reliable timber market information to investors.	
<b>How is it going to be done?</b> This action will be developed by a task force formed by ministries and consultants with substantial experience in timber market analysis, completing the following activities: <ul style="list-style-type: none"> <li>• Conducting a timber market study and needs assessment;</li> <li>• Structuring of a timber market database (open or restricted access to be defined);</li> <li>• Concept on how to keep market database up to date; and</li> <li>• Implementation of required structures.</li> </ul>	
<b>Precondition</b> None identified for this action	
<b>Cost:</b> USD 700,000 to 800,000 (for 5 years)	<b>Time required:</b> 24 months for the implementation and permanent implementation actions

<b>7. Improvement of infrastructure (master plan)</b>	
<b>Why is this important?</b> A master plan for infrastructural development will help investors in planning their operations as they would be better informed about long-term infrastructure development (refer Chapter 6.2).	
<b>Summary description and action</b> The forest-based industry is highly sensitive to the transport costs of raw material, half-finished products, and final products. Regarding the plan of establishing up to 1 million ha of forest plantations over the next decade, the target markets of many of the sector's products will be overseas. Therefore, well-functioning infrastructure is a precondition to attract investors.  The objective of this action is to provide a master plan on infrastructural improvements addressing the needs of the forest sector. The master plan has to be based on and linked with the overall infrastructure development plan of Mozambique.	
<b>How is it going to be done?</b> Infrastructure (mainly transport) has to be planned with other economic sectors (for example, agriculture, mining, energy, and so on). Therefore, the planning will involve a series of ministries covering diverse sectors. The following activities will be performed: <ul style="list-style-type: none"> <li>• Definition of the needs of the forest sector and wood industry (roads, railway, harbors, energy demand) according to the plans (size of the sector and regional distribution);</li> <li>• Assessment of existing infrastructure development plans in Mozambique; design of a master plan addressing forestry needs and coordination with the other economic sectors (see list of ministries above);</li> <li>• Implementation plan and continuous development and adjustment according to the increasing plantation areas/growth of the wood industry.</li> </ul>	
<b>Precondition</b> While part of this activity could proceed with no preconditions (that is, compiling the needs of the forest sector and wood industry), the activity needs the GoM to coordinate with other infrastructure plans and initiatives (for example the Development Corridor Program). Second, impact of this activity also depends on the implementation of the plan, that is, infrastructure investments	
<b>Cost:</b> USD 1,000,000 + actual investments in infrastructure	<b>Time required:</b> Short-term activities for 12 months to develop the plan; in general, infrastructure development is a long term activity

<b>8. Addressing illegal logging and promoting the formalization of the forest sector</b>	
<b>Why is this important?</b> The domestic forest product market is dominated by timber coming from unmanaged natural forests and is characterized by its informality. A formal forestry sector with fair market competition from both the natural forest and plantations will attract more investors (refer Chapter 4).	
<b>Summary description and action</b> Legality and formality are key preconditions to ensure fair market competition and sustainable forestry. Options to enhance fair market competition should concentrate on efforts to formalize the forestry sector. Incentives for illegal logging are especially high where transparency, accountability, and intra-institutional competition are low. Effective control requires cross-cutting reforms in many policy areas and is associated with promotion of good governance. This includes actions to tackle corruption, industrial and fiscal policy reforms and also social and development programs since rural populations depend on additional income from the illegal use of forests.  The overall objective is to have fully legal and formalized operating timber value chains from both natural forests and forest plantations. However, this is not a simple feat but instead a long process which likely requires more than 10 years to achieve. To initiate this process, a sound strategy on forest sector formalization is required.	
<b>How is it going to be done?</b> This action will be developed by a task force in the involved ministry (MITADER) and experienced consultants together with other stakeholders. That task force will conduct the following activities: <ul style="list-style-type: none"> <li>• Definition of terms and expected outputs of strategy development; tendering process;</li> <li>• Strategy on forest sector formalization;</li> <li>• Harmonization with other relevant national processes and policies</li> <li>• Implementation of the strategy.</li> </ul>	
<b>Precondition</b> <ul style="list-style-type: none"> <li>• Existence of political will to formalize the forest sector</li> </ul>	
<b>Cost:</b> USD 300,000 + cost of the formalization reforms themselves	<b>Time required:</b> 24 months and permanent implementation actions

<b>9. Cluster policy (building local networks)</b>	
<b>Why is this important?</b> A cluster policy is a basic requirement to support the formalization of the forest sector and provide incentives to increase forestry activities and to develop the sector. Emerging producers and domestic investors would particularly benefit from local networking (refer Chapter 5).	
<b>Summary description and action</b> A cluster approach in the forest sector should incorporate regional aspects (initially focusing on a few promising regions/provinces), be supported by decentralized government institutions, and aim at developing value chain integration, company-community partnerships, SMEs and private sector associations, and the establishment of applied research programs. Bringing these elements regionally together will provide incentives for developing value-added products and for establishment of a professional forest sector (involving forest producers and timber processing industries on different scales).  The objective of this action is to have regional cluster strategies at provincial level and a management structure that can support these clusters.	
<b>How is it going to be done?</b> This action will be developed by a task force in the involved ministry (MASA) and within the government at the provincial level, together with experienced consultants and private sector.  The main activities are: <ul style="list-style-type: none"> <li>• Map existing stakeholders in the four provinces which currently have most forest plantations;</li> <li>• Definition of terms and expected outputs of cluster strategy;</li> <li>• Development of a cluster strategy;</li> <li>• Establishment of an implementation structure (cluster management);</li> <li>• Implementation of the strategy.</li> </ul>	
<b>Precondition</b> None identified for this action	
<b>Cost:</b> USD 700,000 (for 5 years)	<b>Time required:</b> 5 years and permanent implementation actions

<b>10. Definition of natural forest</b>	
<b>Why is this important?</b> Clear definition of 'natural forest' within forest legislation would lower the risks perceived by investors in the planted forest sector. Non-conversion of natural forests is a prerequisite for SFM certification. The definition here needs to be closely related to forest definition under the REDD+ process (refer Chapter 4).	
<b>Summary description and action</b> Most of the available land for planted forests is covered with (a) remnants of miombo vegetation in different stages of degradation, (b) vegetation coming from secondary succession, or (c) disused cashew plantations (Mozambique has 32 million cashew trees on an area of approximately 0.5 million ha).  The lack of clarity on what vegetation types have to be considered as natural forest exposes companies to high reputational risks and leads to a deadlock situation, as the conversion of natural forest is incompatible with international certification standards (for example, FSC certification) and is non-justifiable to investors and society. Therefore, a clear definition of natural forest is key to receiving SFM certification and to attracting investors to the sector.  The action helps all plantation forestry operations (small, medium, large) in being responsible from the start and to avoid non-reversible mistakes. The final objective is to establish a clear definition of natural forest and degraded lands, which would apply for plantations development and land conversion in Mozambique. This definition should be in line with international natural, forest definitions (Food and Agricultural Organization [FAO]) and compatible with international certification standards.	
<b>How is it going to be done?</b> High-level representatives of key stakeholders, especially from the GoM, FAO, national and international environmental NGOs, and private companies, will define natural forest for this country following the steps below: <ul style="list-style-type: none"> <li>• Preliminary definition of natural forests between GoM and FAO;</li> <li>• Circulation of preliminary definition and stakeholder workshop;</li> <li>• Final agreement of definition, formal approval, and incorporation into forest legislation.</li> </ul>	
<b>Precondition</b> None identified for this action. This activity needs to be coordinated with the forest definition work by the UT-REDD.	
<b>Cost:</b> USD 50,000	<b>Time required:</b> 9–12 months



<b>11. Mapping of land qualifying for forest certification schemes</b>	
<b>Why is this important?</b>	
Map of all areas suited for plantation forestry with a separate layer referring to areas which could qualify for SFM certification is needed to establish the available land areas for plantation development. The existence and presentation of such a map would have notable advantage in attracting investors to Mozambique’s planted forest sector. While a map would not replace careful due diligence by investors, it would help in addressing and mitigating an important investment risk (refer Chapters 4 and 6).	
<b>Summary description and action</b>	
A rough mapping of potential areas for plantation forestry in Mozambique is available in MINAG 2007. However, there is no detailed geographic information available on the areas that are both suited for plantation forestry and which could qualify for international certification schemes. It is important to note that such categorization of land as suitable for reforestation would not guarantee for FSC certification as such, but would but it would at least help in compliance with FSC’s standard of not clearing ‘forest’ for plantations. To attract international investors, compliance with certification standards is essential.	
The mapping should not only be conducted with the consideration of areas based on the natural forest definition, but also include other concepts such as areas with ‘high conservation value’. This is directly related to the previous action ‘Definition on natural forest’. The main objective of this action is to obtain a mapping of land that could be suited for forest plantations and could qualify for international certification standards. The mapping should be based on the existing information on land use and the identification of areas suited for plantation forestry. It should also consider current land use, especially on community land, to minimize conflicts between companies and communities. It should also include degraded lands with potential for rehabilitation with forest plantations.	
<b>How is it going to be done?</b>	
MITADER, in cooperation with land use and geographic information system experts within MASA, communities, consultants and international forest certification scheme secretariats, will develop this mapping. For this purpose, the following activities will be performed:	
<ul style="list-style-type: none"> <li>• Compilation of existing georeferenced information regarding suitable areas for planted forests to develop a base map;</li> <li>• Agreement on the base map;</li> <li>• production of a separate map layer for ‘land qualifying for forest certification’; remote sensing work and ground-truthing;</li> <li>• Finalization of map for suitable areas for responsible plantation forestry;</li> <li>• Publication of map and presentation at international forest investment forums.</li> </ul>	
<b>Precondition</b>	
<ul style="list-style-type: none"> <li>• Definition of ‘natural forest’ has to be available (Action 10).</li> </ul>	
<b>Cost:</b> USD 700,000 to 1,000,000	<b>Time required:</b> Within 18 to 24 months

<b>12. Ensuring quick and transparent administrative processes</b>	
<b>Why is this important?</b> Shortening the period between negotiations with communities and the effective initiation of will not only reduce possible friction between companies and communities, but also can accelerate the establishment of planted forests in Mozambique (refer Box 2).	
<b>Summary description and action</b> Interactions with forestry companies in Mozambique indicate that there is a shared concern regarding long waiting periods for critical licenses (Environmental impact assessment [EIA], DUAT, environmental licenses). The process from the agreement between communities and the company until getting the final licenses can take years. Actions from the government are therefore vital to overcome time gaps within the licensing process.  Another concern is regarding the patches of natural forest set aside for conservation within the DUAT area. Companies are held responsible, yet these areas should remain open access for local communities, and sometimes they are converted to agricultural land and are often the sites of human-induced forest fires. Therefore, the main objectives of this action are to: <ul style="list-style-type: none"> <li>• Enhance faster and transparent administrative procedures concerning DUAT and EIA negotiations and implementation;</li> <li>• Efficient collaboration between different government cabinets to ensure quicker issue of licenses;</li> <li>• Make ongoing negotiation process public to ensure the transparency;</li> <li>• Clarify the responsibility and access rights to patches of natural forests protected within the DUAT area.</li> </ul>	
<b>How is it going to be done?</b> MITADER will work together with the relevant stakeholders in the government and private sector. The following steps shall be completed: <ul style="list-style-type: none"> <li>• Establish and agree on a mechanism for close interaction between public sector agencies, companies, and community leaders during DUAT and EIA process;</li> <li>• Establish a roadmap and a checklist with a timeframe for preparation and submission of relevant documents to provincial authorities;</li> <li>• Establish a continuous interaction with other provincial departments involved in the processes to gather all information needed through an open access database and monitoring system;</li> <li>• Establish a guideline to support the compilation, approval, and submission of all information to the national authorities;</li> <li>• Clarify the use and access rights to natural forests protected within the DUAT area;</li> <li>• Engage decision makers to facilitate the final approval of DUATs by the provincial governments (area &lt; 1,000 ha), MITADER (between 1,000 and 10,000 ha) the Council of Ministers (for areas &gt; 10,000 ha) and MITADER for EIA.</li> </ul>	
<b>Precondition</b> None identified for this action	
<b>Cost:</b> USD 700,000	<b>Time required:</b> Within 20 to 24 months

<b>13. Updating legislation related to non-native timber species</b>	
<b>Why is this important?</b> This action is critical to support the commercialization of harvested and processed timber coming from existing commercial plantations in Mozambique and to facilitate the actions of future companies with timber ready for international markets (refer Chapter 4).	
<b>Summary description and action</b> Both the forest and wildlife law and their regulations, have been updated to comply with the principles of sustainable forest management. The regulations, however, are mostly focused on native forests. The only articles relevant to forest plantations state that a DUAT and an environmental license are required before the establishment of industrial plantations. The regulation also says that logging in forest plantations can be conducted without logging fees or taxes, but that the owner of the plantation must submit an official request for the operation to the Forest Service.  The inclusion of a number of articles regarding the use of non-native species are needed in the law, including articles concerning the transport documentation outside the province of origin and in regard to the export of raw or processed timber products The objectives of the action are: <ul style="list-style-type: none"> <li>• Inclusion of regulations related to non-native timber species in the forest legislation of Mozambique, especially related to timber transport;</li> <li>• To update the regulation to be in line with the laws in place in other countries of the Southern Africa Development Community (SADC).</li> </ul>	
<b>How is it going to be done?</b> MASA, together with the National Directorate of Agriculture and Silviculture, private forestry companies, and MITADER will perform this action and complete the following activities: <ul style="list-style-type: none"> <li>• Revision of gaps in the current legislation concerning non-native species; Mozambique already has a basic legislation about this subject, and laws from other SADC countries are available;</li> <li>• Discussion of preliminary policies to be updated or refined together with key stakeholders (workshop);</li> <li>• Preparation of new draft regulations;</li> <li>• Final agreement on the revised articles and their formal approval and incorporation into forest legislation.</li> </ul>	
<b>Precondition</b> <ul style="list-style-type: none"> <li>• An effective collaboration between the GoM and the private sector is required to refine and improve the policies which need to be updated</li> </ul>	
<b>Cost:</b> USD 50,000	<b>Time required:</b> 20 to 24 months

<b>14. Guidelines for Corporate Social Responsibility (CSR)</b>	
<b>Why is this important?</b> Clearly structured guidelines, which explain the expected duties and responsibilities of investors, will help companies to calculate their investment costs in social projects and improve the negotiation processes (refer Chapter 5 and Box 2).	
<b>Summary description and action</b> One reason why some private companies get discouraged about investing in Mozambique is the emergence of unexpected costs at the time of project implementation. Guidelines on CSR are needed to clarify what is expected of investors and what is the responsibility of the government. CSR should be voluntary, but in Mozambique expectations from communities often become preconditions for gaining access to land. Many times this leads to arguments on whether these required investments are the government's or company's responsibility.  Most investors contribute with projects to combat poverty through the implementation of socially responsible actions, particularly in communities surrounding their areas of activity. These include agricultural partnerships, community funds, forestry outgrower schemes, and road improvements. The objectives of this action are as follows: <ul style="list-style-type: none"> <li>• Provide guidelines for forestry companies with regard to their social responsibility when negotiating with communities for land access. These guidelines will also make the role of the government clear;</li> <li>• The CSR guidelines should take into consideration countries that already implemented CSR policies and should be aligned with international standards and guidelines.</li> </ul>	
<b>How is it going to be done?</b> The following activities will be performed by a task force consisting of national government authorities, consultants, and company representatives: <ul style="list-style-type: none"> <li>• Review regulations and international standards and guidelines for the categorization of different social responsibilities as well as CSR practices within and outside Mozambique;</li> <li>• Study and evaluate projects implemented by other companies and summarize the results of the survey in a report;</li> <li>• Present results in a workshop with relevant stakeholders to establish a consensus;</li> <li>• Draft guidelines on CSR according to the study and above-described workshop and circulate for feedback;</li> <li>• Complete guidelines and sample contracts.</li> </ul>	
<b>Precondition</b> None identified for this action	
<b>Cost:</b> USD 270,000	<b>Time required:</b> 2 years

<b>15. Company-community negotiations on land allocation</b>	
<b>Why is this important?</b> The access to land is a key factor limiting investments in the planted forest sector in Mozambique. This action will assure that communication is more efficient and transparent during company-community interactions (refer Chapter 5 and Box 2).	
<b>Summary description and action</b> Based on the lessons learned from forestry projects in Mozambique, lack of transparency and limited compliance with legislation requirements in the community-company consultations, are among the main causes of conflict during the negotiation process. Local authorities can contribute by making sure that consultations follow all the steps determined in the land law. However, shortcuts are often taken. For instance, some authorities are not present, or only few community members, or only relatives of influential local leaders, participate in the consultations.  The objective of this action is to review the current system and to build capacity to improve the land negotiation process between forest companies and communities. This action will ensure that communication is more efficient, through ensuring the presence and active participation of relevant government authorities. Strengthening leadership at the community level will also contribute to achieving better and officially documented negotiation results. In addition, the appointment of a neutral mediator (for example, an NGO or civil society organization) can ensure that understandable agreements are made during negotiation processes; the mediator may also be involved in monitoring the implementation of the agreement and in supporting future conflict resolution.	
<b>How is it going to be done?</b> The action will be developed by MITADER and MASA as well as private companies, communities, and relevant civil society organizations and councils at the local level. The following activities will be organized: <ul style="list-style-type: none"> <li>• Assessment of community and company concerns regarding negotiation process;</li> <li>• Review and analysis of relevant legislation and establishment of sample contracts to document agreements between communities and companies;</li> <li>• Implementation of negotiation and conflict management strategies;</li> <li>• Creation of a commission at the district level to monitor the implementation of the plantation projects and mediate negotiations;</li> <li>• Creation of a document with guidelines to improve company-community negotiations;</li> <li>• Creation of participatory management councils to facilitate the management of natural resources, conflict resolution and process of issuing DUAT on community land;</li> <li>• Development of local government capacity (district and locality) and ensuring the legitimacy of the processes;</li> <li>• Creation of appropriate community land and natural resource management committees as part of the delimitation process to clarify the exact limits of the community's land rights;</li> <li>• Reinforcing communication and coordination between the provincial and district levels.</li> </ul>	
<b>Precondition</b> None identified for this action	
<b>Cost:</b> USD 300,000 and recurrent implementation costs	<b>Time required:</b> 24 to 30 months and long term implementation

<b>16. Formalizing company-community partnerships (CCP)</b>	
<b>Why is this important?</b> This action allows for secure investments based on an agreement between the investor and local communities through the entire timespan of the company’s operations. This will allow the investor to carry out its operations with clearer investment requirements and reduced social and reputational risks (refer Chapter 5 and Box 2).	
<b>Summary description and action</b> Companies investing in plantations depend on neighboring communities for labor, fire prevention, and protection, sharing the same resources, acceptance, and a good working environment. The companies also have to negotiate with communities to have access to land. Therefore, good community-company relationships and partnerships are essential. However, forestry companies do not always have experience in social negotiation processes. It is therefore recommended to have third party participation in the negotiation process. Establishing a good communication and working relationship with communities requires: <ul style="list-style-type: none"> <li>• Creating fair and transparent partnerships, where communities can grow and participate in the companies’ benefits;</li> <li>• Establishing community enterprises as partners for mutual benefit; and</li> <li>• The establishment of a company-community communication department within the forest company to maintain permanent contact between the company and communities.</li> </ul>	
<b>How is it going to be done?</b> Companies, communities, facilitators, mediators, and local authorities will work together to complete this action. The main activities for this action are: <ul style="list-style-type: none"> <li>• <i>Stable contractual base between company and community</i>: select a mediator, collect information on community needs, and start the negotiation process; clarify the expectations, possible outcomes, and plan feasible company investments;</li> <li>• <i>Record all matters discussed and decisions taken in writing</i> with a list of attendees attached to it; organize a follow-up meeting to inform the government about decisions made and a final meeting with all involved stakeholders to ‘sign’ and announce the agreement with a roadmap of investments and responsibilities;</li> <li>• <i>Establish a fair and stable CCP</i>: communicate objectives, rules and regulations, and establish communication channels between communities and company, grievance mechanisms, conflict resolution mechanisms, and transparent information channels, and a monitoring system;</li> <li>• <i>Establish social projects to build trust and confidence</i> (that is, water points, school books or equipment, repair buildings);</li> <li>• <i>Support economic and social benefit projects</i> (for example, outgrower schemes, food security programs, school buildings, health centers, capacity building);</li> <li>• <i>Support the development of community organizations and companies</i> through the provision of training and develop a mechanism where communities participate in the companies’ benefits and objectives.</li> </ul>	
<b>Precondition</b> None identified for this action	
<b>Cost:</b> USD 2,000,000 to 3,000,000 and recurrent implementation costs	<b>Time required:</b> 5 years and long term implementation

<b>17. Support for outgrower schemes</b>	
<b>Why is this important?</b> The action will contribute to promoting the integration of smallholders in tree planting, reducing pressure on native forests, creating additional income for poor farmers, establishing trust and confidence between local communities and companies and protecting companies' plantations (Chapter 5).	
<b>Summary description and action</b> Promoting tree planting for private growers (entrepreneurs and communities) through outgrower partnerships with private forestry companies and communities, have shown numerous benefits for both parties, but also how these initiatives can contribute to the development of the region. So far in Mozambique there have been few programs developed through private investments. Companies also need best practice guidelines for setting up outgrower schemes and for supporting tree growing in general.  Currently it is not clear if or what type of legal registration is required for private outgrowers. By establishing a legal mandate to promote reforestation activities, there would be a stronger incentive to develop outgrower schemes and promote tree planting.  The objectives of this action are to: <ul style="list-style-type: none"> <li>• Create a legal basis for forestry outgrower schemes in the forest legislation of Mozambique;</li> <li>• Specify which type of legal registration requirements are obligatory for tree growers (for example, DUAT, land title, land registration);</li> <li>• Provide guidelines for supporting outgrowers based on success stories from elsewhere; and</li> <li>• Strengthen the relationship between communities and companies from the beginning, ensuring continuous interactions and support for smallholders.</li> </ul>	
<b>How is it going to be done?</b> MITADER and MASA are responsible for the development of this action, together with private forestry companies, and national and international NGOs. The following activities will be performed: <ul style="list-style-type: none"> <li>• Screening best practices of outgrower schemes (with a focus on the forestry sector) inside and outside Mozambique;</li> <li>• Reviewing legal basis for private tree growers (land issue);</li> <li>• Presenting results in a workshop with relevant stakeholders;</li> <li>• Drafting guidelines to be circulated for feedback;</li> <li>• Elaborating a draft regulation for outgrower investments as a consensus between companies and the GoM.</li> </ul>	
<b>Precondition</b> None identified for this action.	
<b>Cost:</b> USD 200,000	<b>Time required:</b> Up to 2 years

<b>18. Promoting active participation of local authorities in the forest sector</b>	
<b>Why is this important?</b> Companies currently feel isolated when interacting with communities, while the local authorities often lack the capacity or a clear mandate to become engaged in the process. Local authorities need to get more involved in the company-community negotiations and in communication in general between the parties. They would then be better able to intervene to solve conflicts that may arise (refer Chapter 5 and Box 2).	
<b>Summary description and action</b> Successful company-community partnerships rely on effective communication between the various parties. This action has an impact on large and small investors. It involves local government in the negotiation (and more general communication) process between companies and communities. It will enhance the participation of local governments in the establishment of agreements and possible conflict resolution processes and will develop the competence of local governments to support dialog at the district level regarding forestry issues.	
<b>How is it going to be done?</b> Representation from the appropriate local and district-level governments will be needed to form a forestry 'task force' to discuss forestry matters. Existing local level councils and participatory structures could be used for such interactions. The capacity-building efforts could be focused on these. The following activities and outputs will be performed: <ul style="list-style-type: none"> <li>• Gather accurate information about long-term company objectives, plans, and priorities; especially at the district level;</li> <li>• Ensure that boundaries of areas as requested by companies are fully understood by communities and local authorities;</li> <li>• Provide capacity building and training on relevant laws within communities, together with the support of local NGOs or civil society organizations;</li> <li>• Schedule regular meetings with representatives at the local and district level to address any concerns in the community, potential problems that may be arising, and to inform them of any new developments related to forestry programs;</li> <li>• At the district level, introduce a filing system containing all meetings, which registers all matters brought up by communities;</li> <li>• Mediate company and community relations in case of concerns and problems;</li> <li>• Establish clear communication channels and grievance mechanisms;</li> <li>• Evaluate and monitor the implementation of programs planned by the company and/or decisions taken in meetings;</li> <li>• Interaction with companies and communities to obtain updated information.</li> </ul>	
<b>Precondition</b> None identified for this action	
<b>Cost:</b> USD 1,000,000 to 1,500,000 and recurrent implementation costs	<b>Time required:</b> Approximately 6 to 7 years