



# African Forest Forum

A platform for stakeholders in African forestry



## The state and potential for public and private sector engagement in the forestry sector

A synthesis report for Southern African sub-region: Madagascar, Mozambique, South Africa, Zambia, Zimbabwe



## About AFF

Established in 2007 as a non-political, non-governmental, objective, independent and not for profit international organisation, the African Forest Forum (AFF) is an association of individuals with a commitment to the sustainable management, wise use and conservation of Africa's forest and tree resources for the socio-economic well-being of its peoples and for the stability and improvement of its environment.

AFF exists to voice the concerns of African forestry stakeholders, and to use science, indigenous knowledge, and experience to advocate for the increasing relevance of forests and trees outside forests to peoples' livelihoods, national economies and the stability of the environment.

In this regard, AFF provides independent analysis and advice to national, regional and international institutions and actors on how economic, food security and environmental issues can be addressed through the sustainable management of forests and trees outside forests. Operationally, AFF mobilises resources to address forestry and related issues that cut across countries and different African sub-regions with a view of enhancing the relevance and contribution of forests and trees outside forests to the livelihoods of the people of Africa and stability of their environment.

## Vision

The leading forum that unites all stakeholders in African forestry

## Mission

To contribute to the improvement of the livelihoods of the people of Africa and the environment they live in through the sustainable management and use of tree and forest resources on the African continent.

**Correct citation:** Ramananantoandro T (2019). The state and potential for public and private sector engagement in the forestry sector. A synthesis report for Southern African sub-region: Madagascar, Mozambique, South Africa, Zambia, Zimbabwe. AFF Report. African Forest Forum, Nairobi.

**Photo credits (L-R):** Typical vegetation in the spiny forest at Parc Mosa à Mangily, Ifaty, in southwestern Madagascar by MeegsC via Wikimedia Commons; Natural stand of miombo woodland in Zambia © Zambia forest department; Firewood vending in Harare, Warren Park Suburb © Lizzie Mujuru

Copyright © African Forest Forum 2019. All rights reserved.

African Forest Forum  
P.O. Box 30677-00100 Nairobi GPO KENYA  
Tel: 254 20 722 4203  
Fax: +254 20 722 4001  
E-mail: [exec.sec@afforum.org](mailto:exec.sec@afforum.org)  
Website: [www.afforum.org](http://www.afforum.org)  
Follow us on Twitter @ africanff  
Like us on Facebook / African Forest Forum  
Find us on LinkedIn / African Forest Forum (AFF)

# **The state and potential for public and private sector engagement in the forestry sector**

A synthesis report for Southern African sub-region: Madagascar, Mozambique, South Africa, Zambia, Zimbabwe

Tahiana Ramananantoandro

# TABLE OF CONTENTS

<b>LIST OF TABLES .....</b>	<b>5</b>
<b>LIST OF FIGURES .....</b>	<b>5</b>
<b>ACRONYMS AND ABBREVIATIONS .....</b>	<b>6</b>
<b>EXECUTIVE SUMMARY .....</b>	<b>7</b>
<b>1. INTRODUCTION .....</b>	<b>9</b>
1.1 Background .....	9
1.2 Objectives of the study .....	9
1.3 Scope of the study .....	9
<b>2. METHODOLOGY .....</b>	<b>11</b>
2.1 The study region .....	11
2.2 Study approach .....	12
<b>3. RESULTS OF THE STUDY .....</b>	<b>13</b>
3.1 Typology of the forest sector across the countries .....	13
3.2 Key actors of the forest sector .....	15
3.3 Relationship/linkages between actors in primary and secondary forest production .....	16
3.4 Gender groups' representation .....	17
3.5 Technical and commercial organization of forestry production .....	20
3.6 Socio-economic analysis of primary and secondary forest production .....	23
3.7 Contribution of the private forestry sector activities to local livelihoods and national economy .....	32
3.8 Scope of public-private partnership .....	32
<b>4. CONCLUSION .....</b>	<b>36</b>
<b>REFERENCES .....</b>	<b>38</b>

# LIST OF TABLES

Table 1. Basic data on countries from southern African region .....	12
Table 2. Forest cover by type in southern Africa (in ha) .....	14
Table 3. SWOT analysis of the forest sector in southern Africa.....	14
Table 4. Key actors in forest primary and secondary forest production in southern Africa ..	15
Table 5: Associations in primary and secondary production.....	16
Table 6. Forest Sector Scorecard: Relative weighting points of the elements and allocation of bonus points in South Africa .....	19
Table 7. Roundwood utilization of timber species.....	20
Table 8. Secondary forest production total outputs .....	22
Table 9. Export of wood, articles of wood and wood charcoal in the Southern Africa region with countries of export (in US\$).....	26
Table 10: Import of wood, articles of wood and wood charcoal (in US\$) .....	27
Table 11. Technical and commercial organization of primary forest production .....	30
Table 12. Technical and commercial organization of secondary forest production.....	30

# LIST OF FIGURES

Figure 1. Map of study countries from Southern African sub-region.....	11
--	----

# ACRONYMS AND ABBREVIATIONS

AFF:	African Forest Forum
B-BBEE:	Broad-Based Black Economic Empowerment
CBU:	Copperbelt University
CEDAW:	Convention on the Elimination of All Forms of Discrimination against Women
FAO:	Food and Agriculture Organization
FAO-FLEG:	EU-FAO Forest Law Enforcement, Governance and Trade Programme
FTLRP:	Fast Track Land Reform Programme
FSA:	Forestry South Africa
FSC:	Forestry Stewardship Council
GDP:	Gross Domestic Product
ITTA:	International Tropical Timber Agreement
MAI:	Mean Annual Increment
MOU:	Memorandum of Understanding
MLE:	Medium and Large-Scale Enterprises
NGO:	Non-Governmental Organization
NTFP:	Non-Timber Forest Product
PPP:	Public-Private Partnership
QSE:	Qualifying Small Enterprises
Sida:	Swedish International Development Cooperation Agency
SDC:	Swiss Agency for Development and Cooperation
SLIMF:	Small Low Impact Management Forest
SME:	Small and Medium Scale Enterprises
TPF:	Timber Producer's Federation
UN:	United Nations
ZFA:	Zambia Development Agency
ZNAS:	Zambia National Association of Sawmillers

# EXECUTIVE SUMMARY

This study was aimed at producing information that will be used by relevant stakeholders in facilitating the development of public-private sector partnerships in forestry involved in value addition to wood and non-wood forest products in Southern African region; specifically for five countries: Madagascar, Mozambique, South Africa, Zambia, and Zimbabwe. Also, the study identifies promising public-private partnership (PPP) models/approaches for forest compatibility with sustainable livelihoods that addresses both social and environmental concerns and contribute to more sustainable, equitable and productive private sector development.

The contribution of the forestry sector to livelihood support and national economy is significant. Forestry sector contributes to the country's GDP varying from 0.8% (South Africa) to 5.7% (Zambia). The industry has considerable potential for employment and incomes at different levels. In total, in the Southern African region, there was estimated a total of 125 366 employees in primary forest production and 602 966 charcoal producers. In secondary forest production, the number of employees was estimated at 78 186.

Since Madagascar, Mozambique and Zambia depend on indigenous forests for their wood products supply they are facing similar concerns. There are various wood and non-wood tree species of commercial importance whose stocks are declining. This underlines the need to manage the forest resources sustainably. Most of the forest resources in these countries are owned by the government. Actors in secondary forest production are mainly small and medium scale enterprises (SMEs) and large companies in the private sector; most of them are in the informal sector. In South Africa and Zimbabwe, most of the commercial forest estate is in private ownership (83% in South Africa). Landowners have property rights and full control over the land and forest resources on it, with limited statutory prohibitions such as felling of indigenous trees and land use changes. In Zimbabwe, the forest sector had had a history of primary and secondary growth, but capacity utilization fell below 20% resulting from power cuts, inadequate competent staff, and obsolete manufacturing plants.

Actors are dominated by men, even though women are also increasing their participation in the sector. There is a government's initiative in South Africa called B-BBEE that can be used as inspiration to the four other countries to effectively address the issue of participation of women in the forest sector, but factors that constrain success of the program should be considered.

There is good potential in the Southern African region, for increased public-private partnerships in the forestry sector. There are several successful PPP models relative to community forestry, community afforestation, value addition in primary and secondary processing, leasing and concession. However, supporting measures are needed, like: (i) sustainable management of forest resources, (ii) land tenure security, (iii) promotion of

associations of private companies in order to defend/articulate the interests of the members, (iv) strengthening of the private investment environment in the forest sector, (v) strengthening of ties between organizations, companies and communities in order to link with emerging markets, (vi) providing incentives for the creation of PPPs in the production, (vii) value addition and marketing of forest products and (viii) empowerment of stakeholders in PPP negotiation, and promotion of benefit sharing system.



# **1. INTRODUCTION**

## **1.1 Background**

African governments have their economic development based on market forces and strong private sector leadership. The private sector in forestry is almost non-existent as an organized entity that one can dialogue within many African countries. It has to be organized and developed from the many diverse actors, who mostly operate informally, to coordinate their role in forestry development better. At the heart of public and private sector development in the forest products industry are diversified groups of individuals, including men and women, youth and marginalized/disadvantaged/vulnerable groups. Facilitating the development of the industry demands the identification and understanding of the interactions between the different groups of people and the forest resources, as well as their differing needs, privileges, contributions, challenges and priorities. Gender disaggregated information about the categories and activities of users of forest resources in rural communities and their contributions to the local economy are seldom available. The private sector development has a particularly active role to play in poverty alleviation and could have a significant impact on women and other marginalized groups. Gender disaggregated data and analysis is, therefore, crucial to help fill this information gap.

## **1.2 Objectives of the study**

The African Forest Forum (AFF), with funding from the Swedish International Development Cooperation Agency (Sida) and Swiss Agency for Development and Cooperation (SDC), conducted studies in 22 countries in Africa, with the broad aim of facilitating the development of public-private partnerships in forestry (from community forest associations, small and medium scale enterprises-SMEs to large companies) involved in value addition to wood and non-wood forest products, and including the marketing and utilization of such products. The studies also sought to identify, promote promising public-private partnership (PPP) models/approaches for forest compatible, sustainable livelihoods development; and strengthen the capacity of the industry to address both social and environmental concerns that contribute to more sustainable, equitable and productive private sector development in forestry.

The objective of the study was to facilitate the development of an organized private sector in forestry, including the identification and promotion of promising public-private partnership (PPP) models/approaches for an all-inclusive forest compatible sustainable livelihoods development, including gender considerations. This report is made on five countries in the Southern African region: Madagascar, Mozambique, South Africa, Zimbabwe and Zambia.

## **1.3 Scope of the study**

Specifically, the tasks for the study were to:

- (i) Map out the key actors and identify the gender groups' representation in primary forest production and secondary forest production (wood processing, marketing and trade) including SMEs based on all forest types in the country;
- (ii) For actors in primary forest production, collect information on tree species raised/managed (their productivity and use) and distributed by area, age classes, and volume (total and merchantable), as well as plans for sustainable supply;
- (iii) For actors in secondary forest production, collect information on industry type, installed capacity, products lines/types, capacity utilization, production volumes (in the last five years) and raw material types and sources. For both actors in primary and secondary forest production sector:
  - evaluate employment opportunities, policies, regulations and other factors facilitating and constraining the development of the forest products industry, including undertaking a SWOT analysis;
  - assess and identify the gender-specific inequalities;
  - evaluate and identify the factors inhibiting and or promoting the full and equal participation of marginalized groups;
  - evaluate and analyze gender-based control and access to required assets/resources including the specific opportunities, challenges and privileges of involvement and participation in the sector;
  - evaluate marketing and trade (domestic and international) in their products, including volumes, production costs, revenues and prices of commodities traded in the last five years.
- (iv) Evaluate the relationship/linkages among actors in primary forest production on the one hand, and the relationship/linkages among actors in secondary forest production on the other; and how this can be organized to contribute to the growth of a well-organized formal private sector in forestry;
- (v) Evaluate the scope, within the country, for public-private partnerships in forestry; including existing promising models/approaches that can enhance social inclusion, gender equitable practices and forest compatible sustainable livelihoods development in the different forest types, and propose recommendations on the way the forward;
- (vi) Provide past trends on production, trade, and consumption on timber and non-timber products in the countries in the last five years. Also provide forecasts of the future output, trade and use of the same; and
- (vii) Assess the contribution of these private forestry sector activities to local livelihoods and national economy.

This report presents the results of this study.

## 2. METHODOLOGY

### 2.1 The study region

This report covers a total of five countries, in the Southern Africa region: Madagascar, Mozambique, South Africa, Zimbabwe and Zambia (Figure 1).



Figure 1. Map of study countries from Southern African sub-region.

Basic information on these countries with regard to land area, population, forest area and economic outlook is presented in Table 1.

Table 1. Basic data on countries from southern African region

Countries	Area (1000 ha)	Population (1000)	Forest area (1000 ha), % land cover	GDP per capita (USD)
Madagascar	58,180	24,235	12,505 (21.4%)	452.81
Mozambique	88,302	27,122	38,352 (43.4%)	627.6
South Africa	121,309	53,491	9,241 (7.6%)	6481.84
Zambia	74,338	15,520	48,968 (65.8%)	1715.08
Zimbabwe	38,684	15,046	14,686 (37.9%)	965.47

Source: FAO 2016

Zambia has one of the most significant forest resources in southern Africa, covering approximately 49 million ha representing almost 66% of its land area. Zambia is followed by Mozambique in which, 38 million ha are covered by forest, which makes up about 43% of the national territory. On the other hand, South Africa has the lowest forest cover, with 7% of forest cover only. Those forests cover several vegetation types: wet forests, sclerophyllous forests, dry forests, xerophilous thickets, mangrove, riparian forests, montane forests, swamp, termitary vegetation, bush groups, shrubs, woodland and exotic plantations. Madagascar is a biodiversity hotspot that holds more than five per cent of the global biodiversity and with high rates of endemism (around 90 %). There is a difference in terms of GDP among the 5 Southern Africa countries, with GDP varying from USD 452.81 (Madagascar) to USD 6481.84 (South Africa).

## 2.2 Study approach

First of all, a meeting was organized in Mombasa (Kenya) by the AFF with the lead experts in each region. It allowed harmonization of the understandings of the terms of reference and elaboration of standard methodology. In each country, a national consultant was responsible for data collection. National consultants relied mostly on literature reviews; then they had direct or semi-direct interviews with the actors concerned (government, international and national official organizations, industries, traders and communities) to update information and collect new data that may be missing. This is why harmonization of methodologies was crucial to allow to facilitate comparisons across countries. Finally, national consultants wrote a country report. Throughout this work, the regional expert has been in constant contact with national consultants to harmonize the methodology. Regional experts also travelled to each country to have interactions and validate findings with national experts and some key players. Finally, the regional expert compiled national studies to synthesize a regional report, a fact sheet, a policy brief and a journal article.

The key areas for this technical report are a typology of forest sectors, key actors, primary and secondary forest production, trends on production, trade and consumption on timber and non-timber products, the contribution of these private forestry sector activities to local livelihoods and national economy, and promising PPPs in the region.

Results of this work were shared during two workshops in Lomé (Togo) and Entebbe (Uganda) to fine-tune the report through participants inputs during plenary and group works. In some countries (specifically Madagascar and Mozambique), available information was minimal. Indeed, both countries have poor statistical services. Moreover, governments and many organizations do not have up-to-date information.

## **3. RESULTS OF THE STUDY**

### **3.1 Typology of the forest sector across the countries**

The forest cover types in the Southern African region are natural forests, plantation forests and woodlands (Table 2). The wide range of forest types and compositions gives the region a rich biological diversity and serves as a natural habitat for wildlife. These resources not only provide many and varied environmental goods and services but are a capital asset that contributes to the country's socioeconomic growth. Zambia and Mozambique are particularly rich in natural forest area, while Madagascar is a biodiversity hotspot that holds more than five per cent of the global biodiversity, with high rates of endemism (around 90 per cent). South Africa is poorly endowed with indigenous forests; and natural forests consist of a narrow belt of broken closed canopy forest situated along the southern and eastern seaboard. Wooded savannahs, commonly referred to as woodlands, are predominant in South Africa and Zimbabwe. They provide essential resources such as non-timber forest products, building materials, fuel for energy, household utensils, fencing material and a variety of food and medicinal products for sustaining the livelihoods of rural people.

South Africa has the most significant areas of plantation forest in the region (and in the continent) with 1 268 443 hectares. To conserve the remnants of the indigenous forests, exotic timber plantations were established, resulting in a thriving industry. South Africa is followed by Madagascar and Zimbabwe with an area of 300 000 ha and 168 000 ha respectively.

To enhance conservation of the region's forest resource, some forest area has been categorized as protection or conservation areas in each country: Mozambique (13,2 million ha), Zambia (7,2 million ha), Zimbabwe (6,3 million ha), Madagascar (6,4 million ha), South Africa (0,5 million ha). In Madagascar, a large part of the forest resources (70.5%) is devoted to public protection forests.

Deforestation is one of the main problems faced in the natural forests in the Southern African region, with a rate of 99 000 ha per annum in Madagascar (Vieilledent et al., 2018), 219 000 ha per annum in Mozambique (Sitoe et al., 2015), 250,000- 300 000 ha per annum in Zambia (MTENR, 2008), 330 000 ha per annum in Zimbabwe (FAO, 2015). Deforestation is caused by various activities, including legal and illegal harvesting of round wood for sawn timber and charcoal production, expansion of agriculture, and illegal settlements.

Faced with the reality of limited expansion to the current forest area, the forestry industry in some of the countries has invested considerably in research and development. In an ongoing unpublished review conducted by the Forestry South Africa, the private sector is estimated to have spent about US\$ 9.54 million during 2015 (Peter, 2016) on research. The Forestry Commission in Zimbabwe has also become renowned during the past six decades for its research for genetically improved pine and eucalyptus tree seed of high genetic qualities. Of the pine plantation species, *Pinus patula* and *Eucalyptus grandis* have displayed spectacular growth and volume production, surpassing the unimproved landrace Pinus and Eucalyptus by as much as 47 per cent. In the case of Pinus, the use of improved seed has seen the rotation cycle reduced from 30 years to 25 years and results from other studies indicate that the rotation can even be further reduced by another five years (FAO, 2015). Madagascar, Mozambique and Zambia can also learn from South Africa and Zimbabwe complementing forest management with research activities.

Table 2. Forest cover by type in southern Africa (in ha)

	Madagascar	Mozambique	South Africa	Zambia	Zimbabwe
Natural forests	9,2 million	40,1 million	492 700	50 million	39 million
Woodland		14,7 million	40 million		
Plantation forests	300 000	20 000	1 268 443	56 000	168 000

Generally, the forest sector is facing several issues. A SWOT analysis of the forest sector in the southern Africa region is presented in Table 3.

Table 3. SWOT analysis of the forest sector in southern Africa

Strength	Weakness
<ul style="list-style-type: none"> <li>• Large workforce at low industry wages</li> <li>• Domestic use of forest resources and a source of income (job creation)</li> <li>• Previous inherent experience in forest planning, management practices and research in South Africa and Zimbabwe</li> </ul>	<ul style="list-style-type: none"> <li>• High rate of deforestation</li> <li>• Accelerated exploitation of selective valuable timbers</li> <li>• Illegal logging</li> <li>• Lack of a database for the evaluation of the forest sector</li> <li>• Limited capital availability /high cost of financing, low Internal Rate of Return for plantation forestry</li> <li>• Lack of exploitable forest resources compared to a protected forest in Madagascar</li> <li>• Weak institutions in terms of forest management, implementation, and enforcement</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• Increasing of wood demand</li> <li>• Organised marketing with an excellent proper internal market in South Africa</li> <li>• Zambia: centrally positioned in Southern Africa, which makes neighbouring countries potential markets</li> </ul>	<ul style="list-style-type: none"> <li>• Climate change affects normal production processes: varying rainfall patterns, the impact of pests and diseases, soil degradation, and fires from abnormal weather conditions.</li> <li>• Poverty, immigration, demographic growth, lack of arable land, land acquisition logic legitimized by both customary law and ignorance of the law</li> </ul>

## 3.2 Key actors of the forest sector

In Madagascar, most of the forest resources are owned by the government. In Zambia and Zimbabwe, central government and community forests are the most dominant in natural forest ownership and management, whereas private plantations are the mostly private owned in South Africa (Table 4).

Plantations in the sub-region are owned either by the government, private companies, parastatal companies, individuals, partnerships or family trusts. In South Africa, most of the private plantations are owned by private companies. In Madagascar, Mozambique, Zambia, actors in the primary forest production include the public agencies mandated with the management of national forest, the regulation of the exploitation and development policy. NGOs are also involved as government's project implementers or in the management of protected forests in conjunction with rural population for livelihood improvement.

Actors in secondary forest production are various large companies and SMEs, households, and individuals. Most of SMEs are informal in Madagascar, Mozambique, and Zambia. As a result, it is challenging to track them down and identify how they might prosper and grow.

Table 4. Key actors in forest primary and secondary forest production in southern Africa

	Madagascar	Mozambique	South Africa	Zambia	Zimbabwe
Primary forest production		-			
Central government	***	-	**	**	***
Community groups		-		***	***
Local authorities		-	*		
Private companies		-	***		
Smallholder farmers	*	-		*	*
NGO	**	-		**	
Secondary forest production					
Large companies	*	*	***	*	***
SMEs	***	***	*	***	*
Household and individuals	*	*	*	*	*

\*\*\* Very dominant, \*\*medium and \* less dominant in the specific product niche and (–) in where no information was provided.

### 3.3 Relationship/linkages between actors in primary and secondary forest production

The private forestry sector in Madagascar, Mozambique, and Zambia is fragmented and primarily dominated by informal and diverse formal actors (household, individuals, SMEs, few timber producers, etc.). There are a weak linkage and relationship among actors in primary and secondary forest production in Madagascar, Mozambique, and Zambia. Many of the primary production associations in Table 5 operate in a fragmented way in many of these countries, and fail to address common industry concerns affecting them, and do not collectively advocate for adequate changes in the way the sector should be managed. Actors in those countries can emulate organizations in South Africa and Zimbabwe, where the forest actors are better organized.

South Africa has a strong well-organized private sector managing its commercial forests. The primary forest products sector is well represented through Forestry South Africa (FSA). This Association's membership includes 11 corporate forestry companies, 1300 small and medium enterprises (primarily timber farmers) and some 20 000 small black growers. This membership accounts for 93% of the total commercial afforested area in the country. The balance is not affiliated to a formal representative association. The secondary forest production sector is represented by various sector associations (Table 5). Those associations aim to promote the interests of the South African industry in each of their respective sectors through supporting sustainable forest management and lobbying for fair and applicable legislation, promoting education and skills development as well as investing in research and innovation (70% of the FSA association's budget amounting to R23.6 million in 2015 was spent on research and development).

In Zimbabwe, the Timber Producer's Federation (TPF) is an association of plantation growers and sawmillers. It promotes timber products, research, training, and the protection of quality and environmental standards. One of its primary functions is on policy advocacy with government, particularly on land reform and tenure security. It also seeks new export markets for its members, promotes applied research in aid of improved production, for example, baboon control. It also advocates for price stability in the timber market by discouraging the purchase of illegally sourced timber that bring distortions on the local market. In terms of achievements, the TPF was able to convince the Forest Stewardship Council (FSC) to give it a 3-year exemption to use brodifacoum (*papiol*) experimentally for baboon control in pine plantations without the companies losing their FSC certificates despite the FSC prohibiting use of poisons in pest control.

Table 5: Associations in primary and secondary production

Country	Number of associations in primary production	Number of associations in secondary production
Madagascar	1 Groupement des Exploitants forestiers à Madagascar	0
Mozambique	11	Various enterprises associations and



Country	Number of associations in primary production	Number of associations in secondary production
	Forest operators' association	groups of interest (ie. Craft Interest Group in Manica province)
South Africa	Forestry South Africa	Various sector associations: Pulp and paper represented by PAMSA (Paper Manufacturers Association of South Africa) The Paper Recycling Association of South Africa (PRASA) Sawmilling South Africa (SSA) South African Wood Preservers Association (SAWPA)
Zambia	0	3 Zambia National Association of Sawmillers Copperbelt Sawmillers Association Timber Producers Association.
Zimbabwe	Timber Producer's Federation (TPF)	

Source: Country reports

### 3.4 Gender groups' representation

Globally, the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) by the UN General Assembly is described as an international bill of rights for women. The five countries signed and ratified this convention. However, all studies in the Southern African region reach a common observation that women are underrepresented in leadership roles within the forest sector.

In Zimbabwe, women constitute a higher percentage in the sector (65% in Commercial Forest Plantation, 52.7% in Commercial Farm Forests). However, women occupy lower ranks because a significant proportion of them lack the requisite skills and education to be in senior management positions. Women rarely hold decision making positions in companies and decision-making bodies in both the private and public sectors, and it is therefore clear that while their numbers may look good, there is a need for more women in positions of influence. Within timber processing and manufacturing sectors, the representation of women is as low as 23.45% due to the menial nature of the work.

National data on forest and timber enterprises are generally not gender disaggregated in Madagascar and Mozambique because there are few statistics in general on secondary forest production due to the dominance of informal activities. As a result, it is difficult to determine the percentage of women who owned small and medium enterprises or their specific contribution to economic growth. In Zambia, the forestry sector, once dominated by men, is changing as more women entrepreneurs are getting into both production and trade of wood and non-wood forest products. For example, the expert opinion survey conducted by this study revealed that the Forest Department allocates 30-40% concession licenses to women as a deliberate policy to encourage women participation in the forestry sector. Of

the total number of actors trading in softwood sawn timber, about 80% were women, and of the complete actors trading in hardwood sawn timber, 30% were women. Hardwood sawn timber is mainly traded in the semi-processed form (i.e., cants or blocks) while softwood timber is in finished form and ready for end-user customers. Of the people who obtain concession licenses 70% are men and 30% are women in SMEs; these proportions are used as a way to have equitable exploitation of forest resources which have been men dominated for many years by encouraging women to participate in these activities.

In South Africa, females were observed to be underrepresented in contracts and leadership roles within the industry. Dlamini (2016) is of the view that possibly only 10% of the contractor businesses serving the industry were owned by females and that within the leadership ranks of the industry as little as 14% were female. The reason offered for this state of affairs was probably the cultural mindset that males could not be led by females and that females were not readily exposed to leadership training. In South Africa, there is a government's initiative called Broad-Based Black Economic Empowerment (B-BBEE) to bring about greater participation of black people in the economy. This initiative can be used as inspiration to the four other countries to address the issue of participation of women in forest sector effectively, but factors that constrain success of the program should also be considered. The government's B-BBEE strategy focuses on transforming the private sector, reverse the systematic exclusion of black people from full participation in the economy. The programme is not about replacing white people with black people but about growing the overall size of the industry and making sure that opportunities previously enjoyed by a minority are extended to the majority. Provision is made in the legislation to develop industry transformation charters to fast-track B-BBEE.

A Forestry Sector Charter was published in the Government Gazette number 32320 in June 2009. The Forestry Sector Charter scorecard is the primary tool for setting standards for transformation, and against which individual enterprises are measured. In addition to setting out sector-specific scorecards, the Charter commits government, industry, and labour to specific actions, or undertakings, that will enable businesses to achieve their BEE targets. The Forestry Sector scorecard is based on the generic scorecard as set out in the Codes of Good Practice issued by the Department of Trade and Industry. The codes of good practice make provision for two scorecards: one for small businesses, called Qualifying Small Enterprises (QSE) whose turnover is between USD 0.367 million and USD 2.7 million, and another for Medium and Large-scale Enterprises (MLE) with a turnover over USD 2.7 million. The Charter likewise includes scorecards for both QSE and MLE.

Table 6 shows the allocation of weighting points across the seven elements, or business areas, for both medium and large-scale enterprises and QSEs. The allocation of the points is a reflection of the relative importance of this element to B-BBEE.

Table 6. Forest Sector Scorecard: Relative weighting points of the elements and allocation of bonus points in South Africa

	Description	Medium and Large-scale Enterprises	Qualifying Small Enterprises
Ownership	Measures effective ownership of enterprises by black people	20	25
Bonus Points		5	3
Management Control	Measures effective control of enterprises by black people	10	25
Bonus Points		-	2
Employment Equity	Measures initiatives intended to achieve equity in the workplace	15	25
Bonus Points		3	2
Skills Development	Measures initiatives intended to develop the competencies of black employees.	15	25
Preferential Procurement	Measures the extent to which enterprises buy goods and services from B-BBEE compliant suppliers as well as black-owned entities.	20	25
Enterprise Development	Measures the extent to which enterprises carry out initiatives contributing to effective enterprise development.	15	25
Socio-economic Development	Measure the extent to which enterprises carry out initiatives contributing to socio-economic development.	5	25
Bonus Points		3	3
<b>Total possible number of points</b>		<b>111</b>	<b>110</b>

Source: Forestry Charter 2010 p. 14, 31.

MLE are scored against all seven elements, and QSEs are scored against any four of the seven elements. The essential primary method for implementing B-BBEE is through procurement. Any enterprise wishing to do businesses with state institutions will require to have an excellent B-BBEE rating to comply. In turn, such enterprises are required to buy from suppliers with an excellent B-BBEE rating. The system is thus cascaded through a business such that even enterprises that do not directly supply government are affected (Forestry Charter 2010).

In all the elements save socio-economic development, an adjustment is made for gender in the points allocated on the MLE scorecard. In the QSE scorecard, a change is made for gender in the points awarded for all the elements save preferential procurement and socio-economic development (Forestry Charter 2010). Such a program allows for an objective evaluation system of minority participation in forest production.

## 3.5 Technical and commercial organization of forestry production

### 3.5.1 Technical and commercial organization in primary forest production

#### 3.5.1.1 Production

The countries in the sub-region produce various products including saw logs, multiple different types of poles, necessary construction materials, matches, charcoal and fuelwood (Table 7), with most production coming from South African primary industries. On the other side, charcoal production is very high in Madagascar.

Table 7. Roundwood utilization of timber species

Source (m <sup>3</sup> )	Madagascar	South Africa	Zambia	Zimbabwe
Sawmills	99 960	3 744 583	1 160 000	393 920
Pole production and impregnation	66 640	416 975	850 000	40 073
Mining timber		637 292		
Matches		32 698		
Charcoal	857 500	238 351	7 970 000 (in wood raw material equivalent)	28 166
Fuelwood	9 020 000		3 711 600	10 420

Source: Study reports

#### 3.5.1.2 Tree species for industrial roundwood production

In Madagascar, indigenous forests provide the bulk of the wood for consumption because plantation forests account only for 3.25% of the national forests. Indigenous forests are characterized by richness and endemism of species. There are over 4000 tree species, but only 30 are currently being exploited; with the main sawlog providing ones including *Dalbergia* sp., *Intsia bijuga*, *Ocotea* sp., *Harungana madagascariensis*, *Faucherea* sp., *Cedrelopsis grevei*, *Weinmannia* sp., *Breonadia*, *Dilobeia thouarsii*, *Cordyla madagascariensis*. Plantation species are dominated by Pines (*Pinus kesyia* and *Pinus patula* mainly) and Eucalypts (*Eucalyptus robusta*, *E. camaldulensis*, *E. grandis*); the latter used primarily for charcoal.

In Mozambique, there is a great diversity of forest species in national forest reserves. Predominant species are *Brachystegia spiciformis*, *Azelia quanzensis*, *Brachystegia spiciformis*, *Julbernardia globiflora*, *Newtonia buchananii*, *Pterocarpus angolensis*, *Milletia stuhlmanni*, and *Burkea africana*. Plantation species are *Pinus* sp. and *Eucalyptus* sp.

In Zambia, there is also a great diversity of forest species in national forest reserves. Primary species include *Barkiaea plurijuga*, *Brachystegia spiciformis*, *Burkea africana*, *Julbernardia paniculata* and *Parinari curatellifolia*. Plantation forests account for only 0.01%

of the forest cover. They are dominated by *Pinus kesiya*, *Pinus ocarpa*, and *Eucalyptus grandis*.

Zimbabwe's forest industry raises and manages exotic hardwoods: eucalypts and wattle, as well as softwoods mainly pines. Among the eucalypts, *Eucalyptus cleoziana* is mainly grown for pole production under short and mid-rotation intensive cycles. *Eucalyptus grandis* and *E. saligna* are grown for pulpwood used in fibre and particle board production. Alternative uses of the eucalypts are mining timber and sawlog production. The waste from eucalyptus species is used for charcoal production. Other species grown for fuelwood purposes in the much drier areas include *Eucalyptus tereticornis*, *E.camaldulensis*, *E. citriodora* and *E. paniculata*. Wattle (*Acacia mearnsii*) is grown for tannin (extracted from the bark) while the logs are converted into charcoal. Poplars (*Populus deitoides*) used to be grown for the matches industry which has since closed down. Pine tree species which include *P. patula*, *P. taeda*, *P. elliotti*, *P. tecunumanii*, *P. kesiya*, *P. oocarpa* and *P. maximinoi* are raised for pulpwood and rough sawn timber, veneer, pulp and paper. Indigenous forests in the country have limited timber production potential hence the low economic value. However, the forests also provide many environmental services which assist in coping with some environmental challenges; e.g. they act as carbon sinks which help to ameliorate climate.

South African forestry production is centered on planting of exotic tree species in commercial plantations. Pine (*Pinus patula*, *P. elliottii*) and varieties of the eucalypts (*E. nitens*, *E. grandis*, *E. macathurii*, Hybrids of *E. grandis* and *E. europphylla*) are grown mainly for sawlog but also pulpwood. Eucalyptus species are mainly used for pulpwood and mining timber. The third most planted genus is wattle for pulpwood. Few other plantation species are used for pulpwood production, like poplar.

#### 3.5.1.3 Sawmill recovery

From the individual country studies that led to this synthesis, average sawmill recovery stands at 20.5 % in Madagascar; 35% in Zamb; 44% for pine and 52% for eucalypts in Zimbabwe; 47% in South Africa. Low recoveries in Madagascar and Zambia are mainly due to incompatibility between wood raw material, conversion process and the final product, resulting in a lot of waste, poor quality and considerable economic losses. The suppliers of industrial roundwood have no information about the expected final product and its markets, while traders sell wood products on an as-is basis. Especially in Madagascar, systematically operators debit wood into sleepers, in the form of square or rectangle section, 2 to 2.5 m in length, to supply the timber market, and this is transported by men. On the other end, buyers do not know the source of material used in producing the wood product they are buying and do not demand specifications.

### 3.5.2 Technical and commercial organization in secondary forest production

#### 3.5.2.1 Production

Secondary forest production is characterized by extensive roundwood processing and further wood processing mainly for construction and furniture. Outputs from South Africa

dominate the total outputs in the Southern Africa region, the forest products industry is export based in this country. Pulp paper and board manufacture dominant the industry (Table 8).

Table 8. Secondary forest production total outputs

Type	Unit	Madagascar		Mozambique		South Africa		Zambia		Zimbabwe	
		No	Total output	No		No	Total output	No	Total output	No	Total output
Sawmills (Sawn-wood)	m <sup>3</sup>	970	57 023	183	-	74	1 588 123	115 2	600 000	11	144 677
Veneer and Plywood factory	m <sup>3</sup>	1	108					1	4,250	1	0
Fibre and particle board	m <sup>3</sup>	1	325					2	25,000	1	30 240
Matches	m <sup>3</sup>					1	32 698			1	0
Pulp and paper	tons					18	3 387 062	1	3 900	1	0
Charcoal (Kilns)	tons					4	58 196			34	22 032
Industrial Firewood	Tons or m <sup>3</sup>						50 253 tons			-	10 420 m <sup>3</sup>
Domestic firewood										-	-
Construction Poles	m <sup>3</sup>					32	407 265			4	4 007.3
Transmission Poles	m <sup>3</sup>									4	36 065.7
Wattle bark for Tannin	tons									1	1 815
Engineered wood products	m <sup>3</sup>							2	3 000	-	-
Builders' carpentry	m <sup>3</sup>							4	1 500	-	-
Blockboard	m <sup>3</sup>							1	800		
Mining timber	tons					14	386 631				
Chips and mills residues	tons						2 284 994				

Source: Field data

Forest industries in Madagascar, Mozambique and Zambia are mostly composed of small-scale enterprises. Most of them operate informally, are not registered, some have no bank accounts and usually carry out temporary activities. In general, industries face many challenges such as technology and raw material material deficiencies, energy deficiency, and poor quality of production tools (insufficient kiln drying facilities, weak, inadequate

treatment capacity), the difficulty of access to finance and technology and other problems limiting quality conformity.

South Africa faces different challenges. The sawmilling sector faces challenges relating to its round log supplies. Sawmillers have to contend with smaller log sizes, with the average log diameter having declined from about 27 cm in 2002 to 24 cm in 2013. Pulp paper and board mills were reported running at an average 81% capacity, with some machines having been mothballed. Printing and writing paper have been particularly hard hit with that sector running at 62% capacity. Reasons for this state of affairs are partly related to the relatively small size of the paper market in South Africa, and general economic conditions in the country (Bothma, 2016).

In Zimbabwe, the operating capacities of the companies were reported to have significantly dropped, and some of the plants have closed down; e.g., veneer and plywood factory, the pulp and paper and the match production because of the economic crisis.

## **3.6 Socio-economic analysis of primary and secondary forest production**

### **3.6.1 Marketing and trade opportunities in the forestry sector**

Madagascar's forestry policy has focused on conservation, with the Durban vision aiming the extension of the Protected Areas of the country up to 6 million hectares (target achieved in 2012). However, forest exploitation has not been sufficiently taken into consideration in this policy. The ratification by Madagascar of ITTA Agreement in 2016 and the support of the EU-FAO Forest Law Enforcement, Governance and Trade Programme (FAO-FLEGT) beginning 2016, show that the government wishes to move towards economic development through sustainable logging. Decree No. 2000-383 on afforestation describes the incentives for reforestation, such as subsidies from forest funds as a contribution to land preparation, maintenance and protection costs of reforested areas, facilitation of access to land, and exemption from payment of royalties.

In 1999, the government of Mozambique approved the Law number 10, on Regulation of Forests and Wildlife, on forest concession systems, which have long-term management obligation on concessionaires and a requirement to process the wood locally of the species on first-class category of species, thus adding value in the country, and creating job opportunities in the forestry sector. During the recent years, the nature of Mozambican forest products export has changed, starting to export more processed products though with still low added value due to the use of obsolete technologies, possession of debilitated infrastructure and weak labor capacity. Both volumes of export of wood logs and sawn wood increased during the period between 2008 and 2014. Sawn wood export rocketed from 43,813 to 373,769 m<sup>3</sup> and logs increased in small quantities due to the requirement of local processing by the Mozambican government, having risen from 13,544 m<sup>3</sup> in 2008 to 147,517 m<sup>3</sup>.

The forest products industry in Zambia has a number of opportunities for enhancing marketing of wood products. These are supported by the Government vision 2030 ([GRZ, 2006](#)) and the sixth national development plans ([GRZ, 2011](#)) which are aimed at establishing a profitable environment for increased domestic industrial growth, export promotion, the development of market-oriented production management, and private sector development ([GRZ, 2009](#)); including formation of business clusters and economic zones that support socio-economic aspects of production. The Investment Act of 1993 offers a wide range of incentives to the forestry sector, including special development allowances for growing certain crops like tea, coffee, bananas, citrus fruit trees or other similar plants or trees.

Zimbabwe has several existing legal and policy instruments that deal with ownership, control, access, and use of forest resources. The Forest Act 1954 (Chapter 19:05) and the CLFPA 1988 (Chapter 19:04) regulates forest management. The Forest Based Land Reform Policy of 2004 ensures that forest development plans are integrated with overall land use plans and supports the development of environmentally sustainable small-scale industries (Chibememe *et al.*, 2014). Zimbabwe's forestry sector had grown continuously from the late 1980s up to the beginning of the millennium. During that period, it had managed to satisfy the local market and had extended its influence on the southern African region, especially South Africa, Botswana and Namibia. Rough sawn timber and timber products, e.g., poles, particleboard, fiberboard, doors and veneer went through a process of certification with the FSC, SGS Qualifor, ISO 9000 and ISO 14000. This made several markets more accessible to the industry. The Forestry Commission has exported certified seed to countries as far as South America, Australia and New Zealand.

At the height of the Fast-Track Land Reform Programme (FTLRP), the Zimbabwean economy started to decline and coupled with that, timber exports also declined. Local sales became unfavorable due to inflation and continuous devaluation of the Zimbabwe dollar (Z\$). Exports demanded that timber be certified to be competitive on the export market. Companies also lost value in their bank savings, which continued to be devalued when companies could not access the money from banks. However, from 2009, the country resorted to going for a multi-currency system which saw the country using the United States Dollar, the South African Rand, the Botswana Pula and other major currencies. Timber companies thus borrowed from banks to resuscitate their operations. Unfortunately, this did not yield the expected results as the economic environment continued to deteriorate. However, several markets opened up for various timber products, with poles are being exported to Malawi, Zambia, Tanzania, Kenya and Mozambique; and rough sawn timber exported to South Africa, Namibia and Botswana. However, none of the companies has renewed their sustainability certification because of the high costs involved, as well as the current subsistence felling being done by companies. Artefacts also have a broad market in South Africa, and the southern African region as a whole, while NTFPs of medicinal, fruit and food value are finding their way into the regional and global community from NGOs like Phytotrade Africa and SAFIRE, albeit in small quantities.



The South African forest products industry ranks among the top exporting industries in the country. It is mostly an export-based business and therefore exposed to the vagaries of the world markets and the current unfavourable economic environment. South Africa has the highest percentage of certified plantation area in the world in terms of proportional area. Eighty-four per cent (84%) of South Africa's forest plantations are FSC (Forestry Stewardship Council) certified, and provides the country with advantages in the global marketplace. FSC certification not only ensures that forest owners manage their plantations responsibly but also assures the wellbeing of forest workers and local communities. The acceptance of group certification schemes for smaller commercial growers and the availability of local FSC auditors have contributed to the high percentage certification (FSC, 2014). Arrangements are in progress to introduce a new SLIMF (Small Low Impact Management Forest) certification system to accommodate the 20 000 small woodlot growers in South Africa. Co-operative marketing, the industry codes of conduct developed for the Forest Sector at the Forestry Sector Charter Council, covering contracting, new forest grower schemes, and employment practices are strengths that will assist the industry to address environmental challenges in the short term. However, the need for collateral and the bureaucratic afforestation procedures inhibiting new afforestation by black growers will continue to hurt empowerment.

Regarding import and export, **Error! Reference source not found.** and **Error! Reference source not found.** summarize trade values per country for wood, articles of wood, and wood charcoal. It can be discerned that:

- The quantity and value of imports and exports are very high for South Africa compared to the other countries. For example, South Africa's exports are 60 times higher in value than those of Madagascar which has the lowest trade value;
- Japan and Namibia are the primary destinations for South African wood, with additional markets in Malaysia and Swaziland;
- Zimbabwe exports mainly to Zambia, Botswana, Mozambique, and South Africa;
- Zambia and Mozambique mainly export to China;
- Madagascar exports to Mauritius and France;
- Mozambique, Zambia and Zimbabwe import mostly from South Africa. This is not the case for Madagascar, which imports mostly from China. Imports from South Africa to Madagascar represent only 8% of the trade value. This is undoubtedly due to the insularity of Madagascar;
- There is a slight trade deficit in Mozambique and a bigger one for Zambia that imports a three times greater value than it exports; otherwise, the other countries have a positive trade balance for that year.



Table 9. Export of wood, articles of wood and wood charcoal in the Southern Africa region with countries of export (in US\$)

	Madagascar		Mozambique		South Africa		Zambia		Zimbabwe	
Countries of export	Trade value	%	Trade value	%	Trade value	%	Trade value	%	Trade value	%
World	6 009 783	100	48 385 559	100	369 652 210	100	10 576 941	100	30 981 116	100
Mauritius	2 398 586	39.91								
France	2 306 757	38.38	304 826	0.63						
China	595 614	9.91	42 395 996	87.6			8 086 261	76.45		
Comoros	560 301	9.32								
Germany	41 604	0.69	237 585	0.49						
India	35 856	0.60								
United Arab Emirates	23 507	0.39								
USA	17 487	0.29							18 889	0.06
Italy	10 044	0.17								
Canada	5 431	0.09					1 007 451	9.52	460	0.00
South Africa			2 492 335	5.15					5 127 084	16.55
Thailand			940 861	1.94						
Belgium			600 692	1.24						
Vietnam			410 515	0.85						
Singapore			203 595	0.42						
Netherlands			166 089	0.34						
Malawi			132 956	0.27			247 962	2.34	8 742	0.03

Japan					89 888 072	24.32				
Namibia					46 892 452	12.69	92 829	0.88	24 351	0.08
Botswana					28 337 507	7.67	67 702	0.64	6 741 591	21.76
Mozambique					26 572 267	7.19			6 463 917	20.86
Lesotho					19 900 960	5.38				
United Kingdom					19 004 820	5.14				
Australia					17 434 417	4.72				
Swaziland					15 664 126	4.24				
Zambia					13 580 260	3.67			12 596 081	40.66
Dem. Rep. of the Congo							607 447	5.74		
Zimbabwe					12 895 869	3.49	303 775	2.87		
Congo							35 379	0.33		
Other Asia							71 427	0.68		
Kenya							26 533	0.25		

Source: UN Comtrade 2015

Table 10: Import of wood, articles of wood and wood charcoal (in US\$)

	Madagascar		Mozambique		South Africa		Zambia		Zimbabwe	
Countries of import	Trade value	%	Trade value	%	Trade value	%	Trade value	%	Trade value	%
World	4 339 240	100	49 361 787	100	338 178 867	100	29 069 218	100	18 782 406	100
China	2 492 265	57.44	6 954 949	14.09	62 847 223	18.58	1 868 783	6.43	1 393 115	7.42
France	664 308	15.31								

South Africa	351 755	8.11	27 626 078	55.97			13 631 161	46.89	15 613 145	83.13
Other Europe	313 389	7.22								
Ecuador	92 781	2.14								
Mauritius	65 761	1.52					94 333	0.32		
Malaysia	63 593	1.47			57 323 770	16.95				
Spain	48 540	1.12								
Sweden	45 629	1.05								
Thailand	39 083	0.90								
Portugal			7 564 883	15.33						
Zimbabwe			1 752 470	3.55			10 061 421	34.61		
United Arab Emirates			1 203 499	2.44			109 838	0.38		
Italy			826 106	1.67					280135	0.15
Panama			599 466	1.21						
Viet Nam			516 085	1.05						
Turkey			436 406	0.88						
India			340 261	0.69			112 662	0.39		
Swaziland					50 002 163	14.79				
Indonesia					20 389 505	6.03				
Germany					20 024 688	5.92				
Brazil					18 956 616	5.61				
USA					14 281 795	4.22				
Namibia					14 026 982	4.15				

Uruguay					8 861 805	2.62				
Austria					4 768 664	1.41				
Malawi	2 206 969	7.59							905 928	4.82
Botswana							297 624	1.02	34 423	0.18
Angola							86 472	0.30		
Egypt							80 388	0.28		
Zambia									343 176	1.83
Mozambique									114 688	0.61
China. Hong Kong SAR									90 845	0.48
Netherlands									80 590	0.43
Other Asia									53 621	0.29

Source: UN Comtrade 2015

### 3.6.2 Employment opportunities, wealth creation, and marketing of timber and non-timber forest products

Through extrapolation and survey, the following estimates of several companies and employees are addressed (Table 11, Table 12). While this does not give a complete picture of the employment situation in the study countries, it does demonstrate its distribution among several operations. For example, in the countries that had reasonably good information there were, in those countries 125,366 employees in primary forest production and 602 966 charcoal production, while in secondary forest production, the number of employees was estimated at 78,186; giving the impression of a very high potential for employment in primary production and fuelwood activities.

Table 11. Technical and commercial organization of primary forest production

	Madagascar		South Africa		Zambia		Zimbabwe	
	#	Employees	#	Employees	#	Employees	#	Employees
Industrial round wood	-	13727		92100	4	12,000		
Construction and transmission poles	-	-			2	200	4	139
Industrial firewood	0				-	200		-
Domestic firewood	-	-			.	7000	-	-
Charcoal	-	102941	4	-	..	500,000	34	25

Table 12. Technical and commercial organization of secondary forest production

	Madagascar		Mozambique		South Africa		Zambia		Zimbabwe	
	#	Employees	#	Employees	#	Employees	#	Employees	#	Employees
Sawnwood	970	15 816	183	*	74	20000	1 152	10600	11	1591
Veneer plywood	1	30					1	120	1	0
Fibre and Particleboard	1	20					2	980	1	240
Engineered wood products	0						2	100		
Builders' carpentry	0						4	200		
Blockboard	0						1	100		
Pulp, paper and board	0				18	26000	1	50	1	0
Mining timber					14	2200				
Pole treating					32	-			8	139
Match					1	-			0	0

\* Incomplete data from Mozambique

Sawnwood industries are numerous in Madagascar and Zimbabwe; they have the most significant number of employees. Pulp, paper and board industries exist only in Zambia (only one) and in South Africa with 18 industries. With 26 000 employees, pulp, paper and

board industries in South Africa have the highest number of employees compared to the other wood processing facilities.

While the primary and secondary forest production activities employ several people in the SMEs and larger companies, as seen in Tables 11 and 12, this level of employment is very small as compared to that created by informal forestry activities. For example, informal employment accounts for 90% of the total number of people employed in Zambia and more than 50% in Madagascar (Rabemananjara et al. 2012, Mouhoudhoir 2006).

At the household level, forests have several income generating activities, that include crop production at forest buffer zones or due to taungya farming, livestock rearing, harvesting of forest products, beekeeping, fishing and mining. The majority of households depend on wood resources (firewood and charcoal) for their cooking energy; for example, with over 83% of all households and over 97% of rural households in Zambia depending solely on fuelwood for their cooking energy, while only 1.7 % were reported to have access to electrical energy (CSO, 2004). In Madagascar, firewood and charcoal are the primary sources of energy used by 94% of Malagasy households (Ministère de l'Energie, 2012).

With respect to South Africa, commercial forestry is a mature industry and is becoming more mechanized. Operations in the primary forestry value chain are outsourced and carried out by contractors. Contractor operations cover the full forestry value chain, from silviculture to harvesting and transport. This development has created opportunities within the forestry value chain, thereby enabling companies to create employment and wealth, in particular for black people, in conformance with the requirements of the Forestry Charter.

Furthermore, wealth creation is possible through training and mentorship of the existing emergent grower base. Smith (2016) estimated that with proper management, 100 000 tons of new timber could be supplied by small growers in the Zululand area of KwaZulu-Natal. This translates to an additional USD 5.5 million over and above the average USD 13.77 million that is being generated from this source. Although slow in coming, the afforestation programme in the Eastern Cape, if fully subscribed, could produce similar or possibly higher income for rural communities in this, impoverished region.

In Zimbabwe, there was an upsurge of employment figures in the 1990s but became stagnant from early 2000 then started to decline from 2005 to date in response to the harsh socio-economic operating environment in the country. Many experienced professionals left for the diaspora (countries like Mozambique, Tanzania, Uganda, South Africa, Rwanda, the DRC, Ghana, Malawi, and Australia) as the economic environment deteriorated. The timber industry started to experience a downfall and enrolments in forestry colleges and universities also declined since prospective students sensed that they would not get employment.



### **3.7 Contribution of the private forestry sector activities to local livelihoods and national economy**

Forests have many functions which are critical to the livelihoods of rural poor populations including the provision of forest foods, fodder, shelter, medicines, construction materials and firewood for energy. Moreover, forests provide a wide range of NTFPs and services whose economic values are not captured in the nation's GDP.

In South Africa, it is reported that small growers and contractors delivered about 879 000 tons of timber to the major processors (Sappi, Mondi, and NCT) that is estimated to have contributed to about USD 52 million turnovers in local communities. In addition, the value chain activities are estimated to have contributed a further USD 22 million to rural communities making the total contribution from forestry-related businesses to more than USD 74 million in the previous financial year (Mondi Zimele, 2014). Although the country's low natural forest coverage has led to the development of the commercial forestry sector over the last 100 years, natural forests have continued playing a significant role in the livelihoods and well-being of many rural communities. The use of natural forests as sources of building material, fuelwood, food and medicine is increasing, with an estimated 80% of South Africa's population still using medicinal plants, most of which are sourced from natural forests. However, because of the lack of data, it is difficult to quantify the contribution of these private forestry sector activities to local livelihoods and national economy, not only in South Africa, but other southern African countries.

The contribution of the forestry sector to livelihood support and national economy is significant, with country's GDP varying from 0.8 % for South Africa, 1.7% for Mozambique, 3% for Zimbabwe, 3.5% for Madagascar, to 5.7% for Zambia. The sector has considerable potential for employment and incomes at different levels.

In Madagascar and Zambia, the higher contribution to GDP from primary activities such as forestry supplying raw materials such as round-wood through licensing than processed forest products indicates the lack of value-addition in the downstream industries. There is a need to plan to increase the contribution to GDP from secondary sectors (e.g., wood and wood products processing) to be higher than that from round-wood production. There is also a need to address the contribution of environmental services.

Some of these countries are losing revenues due to illegal domestic wood trade. For example, in Madagascar, between 2009 and 2010, losses to the state arising from illegal logging have been estimated at 124 084 800 MGA (USD 38 679) due to about 270,000 logs that were illegally traded locally (Andriatahina, 2010).

### **3.8 Scope of public-private partnership**

Public-Private Partnership (PPP) is a form of cooperation of public and private actors having their own goals but working together towards a common goal (Nijkamp et al. 2002). While PPPs were initially considered as a derivative of the privatization movement, there is a

growing consensus today that the Public-Private Partnership (PPP) does not merely mean the introduction of market mechanisms or the privatization of public services. The PPP rather implies harmonious cooperation to pursue common goals, while leveraging common resources and capitalizing on skills, synergies and respective strengths of public and private partners.

According to Shaheen & Khan (2008), PPPs forestry can be divided into four groups in terms of:

- (a) *Ownership*: A conventional approach was the involvement of the private sector in plantation activities on private and public land.
- (b) *Forest use*: Private companies extract logs and forest products on public forests according to one of three options: (i) *Concessions or leases arrangements* with private companies without affecting land title. During the rental period, private operators act as owners and are bound by the terms of the lease agreement; (ii) *Volume permits or standing timber sales*: the state sells standing timber in a specially marked area, which is then logged by private company; (iii) *Contractual arrangements*: forestry administration outsources logging to a private company but retains the marketing and distribution.
- (c) *Forest management*: in some situations where the public sector is not able to manage its forest resource, it contracts the responsibility to private entities. The private sector actor performs resource management activities such as forestry inventories, zoning, reforestation and monitoring.
- (d) *Private and community participation*: This approach empowers local communities by involving/partnering with them in different ways. For example, private companies often conclude direct agreements with local landowners for the supply of forest products. Also if such partnerships are accompanied by a definite incentive scheme, they can act as a way to share the benefits of forestry development projects to local communities.

Key promising PPP approaches and experiences in forestry in the southern Africa region include:

**(a) Leasing or contracting**

These can be for managing the forest resource or for just exploiting/harvesting the resource. In Madagascar, for example, the management lease contract has been found to be promising. Private companies manage state forests for the duration of up to 30 years. However, the national forestry administration is the owner of the forest and is responsible for monitoring and evaluating the execution of the private companies' works according to the management plan. Essentially the private company is responsible for managing the forest, harvesting as per plan, marketing the forest produce. Some of the advantages of this contract are:

- The private operator is motivated to manage resources sustainably during the contract and based on the forest development and management plan,
- There is job creation for the rural population living around the forest, for both women and men,
- There is evidence that the wood is legally sourced,
- The recovery rate on wood processing is high.

However, not all leases or contracts yield such good results. For example, in Madagascar the contract to harvest/log forest resources gives a private company 1 to 3 years to exploit the forest, in exchange for the payment of forest royalties. Some of the constraints associated with this type of contract include:

- There is little concern for resource sustainability because of the short-term nature of the contract,
- Few tenders are floated because the forest administration cannot afford to undertake extensive forest inventories,
- No employment opportunities for the local people because the private companies come with their own people.

### **(b) Value addition in primary and secondary processing**

In Zambia, a promising partnership has been conceived between the Copperbelt University (CBU) through the School of Natural Resources - Department of Biomaterials Science and Technology (public) and the Sawmillers Association of Zambia (private). The partnership is aimed at training Zambia's sawmillers in entrepreneurship, skills development, value addition, markets, and trade. This partnership includes sourcing of funds for training and capital investment in human capital and the central sawn timber drying kiln. The Copperbelt University as an intermediary institution and sawmillers as beneficiaries, operate in an all-inclusive forest compatible sustainable livelihoods project in the Lufwanyama timber industry economic cluster of the Copperbelt Province. The Government of Finland supported the Zambia National Association of Sawmillers (ZNAS) to improve their members' businesses, as well as improve the technical skills that will bring them to a level that will enable them to create partnerships and contribute to a green jobs programme. The Copperbelt University has some facility and personnel to build technical, and business skills capacity in value-added processing and will require the building of a central drying kiln in the same area for ZNAS to manage under the PPP management contract model. Also, CBU will use this partnership to send students for attachments to various sawmills under ZNAS, which has a membership of over 640 Micro Small Medium Enterprise (MSMEs) sawmills. At the time of collecting data for this study, this partnership idea was just developing and waiting for the signing of the memorandum of understanding (MOU). When the MOU is signed, then it will be used as a vehicle by the partners to approach the Zambia Development Agency (ZDA) and donors for funding. ZNAS and its members are based in the Lufwanyama district, which has been identified by the Government as an industrial cluster for timber production and value addition while CBU training sawmill is also located in the same district.

### **(c) Community afforestation**

In South Africa, a critical afforestation project in south-west KwaZulu-Natal (near uMzimkhulu) provides a model for successful intervention in community afforestation. This is the Umgano project undertaken by the Mabandla Community. The Mabandla community is typical of rural communities in this region. A survey completed amongst community members, for example, indicated that 15% of the people were illiterate and that on average members had seven years of schooling. One-third of the households live under the World

Bank's purchasing power parity level of USD 1.9 (Bainbridge, 2016). The Mabandla Tribal Authority approached Mondi for assistance in developing an afforestation project on 2,166 ha of land that had at the time been recently acquired. This was freehold land, and an important decision was taken not to settle the land but to use it to provide employment opportunities for members of the community. Mondi, since they had an interest in afforestation in the area, assisted their Community Forestry Assistance Programme in the form of planning, environmental impact assessment, and licensing applications. Afforestation went ahead in 2000 with the result that 1 320 hectares have been established. The community has plantings of eucalypts maturing between 2010 and 2015 and pine maturing between 2024 and 2030. This afforestation now provides a significant and sustainable source of income and wealth to the community. The money is used to fund other employment and wealth-generating activities such as eco-tourism, a sawmill, livestock, transport, land care, and training (Ballantyne and Nixon, 2015). Consideration has been given to establish a furniture manufacturing company to add further value to their sawn timber and to generate additional employment opportunities. Permanent jobs have been created for about 100 members of the community who no longer need to become migrant labourers to support their families.

***(d)Community participation in developing, protecting and managing forest resources***

In South Africa there is a micro-franchising business opportunity offered by African Honey Bee Kruger Park (Pty) Ltd. The company provides the secure base of a reliable honey supply and marketing with small independent honey enterprises being established to expand the supply base. Mentorship and training are provided by African Honey Bee and profits are shared on a patronage basis (Stubbs, 2016; African Honey Bee, 2016). Sappi are promoting this activity amongst communities bordering their eucalyptus plantations in Zululand. While providing opportunities for entrepreneurs this activity is beneficial to Sappi in that, it reduces the fire risk to their plantations.

The Zimbabwean forest sector, given the current economic challenges, is compelled to include the existing private companies in seeking partners for the injection of resources to make their operations sustainable. The private companies can go into partnership with surrounding communities as out-growers in return for essential social services such as schools, clinics and recreational facilities. This arrangement helps alleviate problems with arson since communities become partners in firefighting and prevention. Community leaders can also be incorporated into fire committees for shared responsibility. Surrounding communities can be nurtured into out-growers, and during the process, timber companies compensate them for the opportunity costs of having certain crops for trees. This will enhance integrated community development.

## 4. CONCLUSION

The contribution of the forestry sector to livelihood support and national economy in the region is significant. The sector has considerable potential for employment and incomes at different levels.

Madagascar, Mozambique and Zambia depend on indigenous forests for their wood products supply and are facing similar concerns. For example, there are various wood and non-wood tree species of commercial importance whose stocks are declining. Challenges related to customary-lands, land-tenure, limited information about forest resources as well as the weak institutions are contributing factors that have accelerated to the steady reduction of forest cover. Most of the forest resources are owned by the government. Actors in secondary forest production are mainly SME's and large companies in the private sector; most of them are informal.

In South Africa and Zimbabwe, the bulk of the commercial forest estate is in private ownership; 83% in South Africa and 60% in Zimbabwe. Landowners have property rights and full control over the land and forest resources on it, and with limited statutory prohibitions such as felling of indigenous trees and land use changes.

In Zimbabwe, the forest sector had a good history of primary and secondary growth, with a timber resource base enough for both domestic consumption and export; however capacity utilization has since fallen to below 20%. The low-capacity utilization resulted from power cuts, lack of competent staff, and obsolete manufacturing plants. The sector cannot recapitalize due to difficult economic challenges. Although this scenario is characteristic of the manufacturing industry across the country, the forestry sector has good potential to enter into public-private partnerships to revive it.

South Africa has a strong well-organized private sector managing its commercial forests. However, forestry is faced with the challenges arising from poor, marginalized communities bordering these plantations. This notwithstanding the forestry sector has good potential to strengthen public-private partnerships to promote sustainable livelihoods and sustain the forest resources.

There are weak linkages and relationships among actors in primary and secondary forest production in Madagascar, Mozambique and Zambia. Primary forest producers have no or very few associations and the same is with secondary processing. There are established associations of operators and forestry companies in Mozambique. Associations have good potential to promote the sector as seen in South Africa.

There is a strong relationship/linkage exists amongst the actors in the primary forest products sector in South Africa. All commercial timber growers (around 95%) are well represented through Forestry South Africa. The benefits derived through this representation

are, amongst others, the performance of a lobby function, joint research and development, and providing growers with the ability to leverage funding from external sources to the benefit of the sector as a whole. Relationship linkages in secondary forest production are restricted to sector associations that provide members with a base from which to lobby for their particular interest groups, product promotion, and in some instances, technical information and assistance. Men are the main actors even though women are also increasing their participation in the forest sector. To address the issue of the involvement of previously marginalized groups in the country's economy, the South African government has set up the initiative Broad-Based Black Economic Empowerment (B-BBEE). This system could inspire the other countries to the address issue of participation of women in forest sector effectively; factors that constrain the success of the program notwithstanding.

There is good potential in the southern African region, for increased public-private partnerships in the forestry sector. Promising models include leasing or contracting, PPP in value addition in primary and secondary processing, community afforestation, community management of natural resources. However, several supporting measures are needed, such as presence of secure land tenure, promotion of associations of actors in the sector, strengthening of the private investment environment in the forest sector, promotion of ties between companies and local communities, providing incentives for the creation of PPPs, capacitating stakeholders on various aspects of PPP including negotiations for fair deals and promotion of benefit sharing systems.

# REFERENCES

- African Honeybee (2016) [www.africanhoneybee.co.za](http://www.africanhoneybee.co.za). Accessed 25/7/2016.
- Andriatahina (2010). Observatoire National de l'Environnement et du Secteur Forestier. *Diagnostic du fonctionnement de la filière illicite de bois d'œuvre dans la Commune Rurale de Didy du District d'Ambatondrazaka*, 55.
- Bainbridge, W., (2016). *Personal communication*. Umgano Project, Mabandla Traditional Council. Interviewed with Dave Dobson on 10/8/2016.
- Ballantyne, J. and Nixon, P. (2015) *Forestry, an economic enabler for South Africa's rural communities*. IVX World Forestry Congress, Durban, South Africa, 7-11 September 2015.
- Bothma, M. (2016) *Personal communication*. Pulp paper and board statistics 2012. Accessed 24/8/2016.
- Chibememe, G., Dhlwayo, M., Gandiwa, E., Mtisi, S., Muboko, N., Kupika, O.L. (2014). *Review of National Laws and Policies that Support or Undermine Indigenous Peoples and Local Communities, Zimbabwe*, Technical Report, Ford Foundation.
- CSO (2004). *Living conditions monitoring surveys*. Central Statistical Office (CSO), Zambia Printing Co. Lusaka, Zambia.
- Dlamini N., (2016) *Personal communication*. Business Development Director, Forestry, South Africa. Interviewed 28/7/2016.
- FAO (2015). Southern Africa's Forests and People. XIV World Forestry Congress 2015, Durban, South Africa. ISBN: 978-0-620-66709-8
- Forestry Charter (2010) *A Guide to the Forestry Sector Charter*. Forestry Sector Charter Council. Department of Agriculture, Forestry and Fisheries. Republic of South Africa.
- FSC (2014) *FSC and Plantations. FSC's position on plantations*. FSC Global Development GmbH, Bonn Germany.
- GISC (2009). *Etude sur la consommation et la production en produits forestiers ligneux à Madagascar : Projet d'appui à la gestion durable de l'environnement et des écosystèmes forestiers à Madagascar*. JARIALA, MINENVEF, IRG. 33 pages.
- GRZ (2006). Government of the Republic of Zambia Vision 2030. *In*: GRZ (ed.). Lusaka, Zambia: Government Printers.
- GRZ (2011). Zambia Sixth National Development Plan\_Final\_Draft. *In*: MOFNP (ed.). Lusaka, Zambia: Government Printers.
- GRZ (2009). Government of the Republic of Zambia. Public-Private Partnership Act of 2009. *In*: MOFNP (ed.). Lusaka.
- Hardin, G. (1968) The tragedy of the Commons. *Science* 162:1243–1248
- Ministere de l'Energie (2012). *Diagnostic du secteur énergie à Madagascar*. Editions WWF, Minsitère de l'Energie, 197 p.
- Smith, J., (2016) *Personal communication*. Chief Executive Officer, Mondi Zimele. Telephone interview with Dave Dobson on 28/8/2016.
- Mondi Zimele (2014) *Encouraging independence through enterprise in South Africa* <http://www.wbcds-case-study-mondi-zimele-october-2014-final.pdf>.
- Mouhoudhoir, B. (2006). *Etude de l'utilisation des bois d'œuvre et de construction : cas rencontrés dans la commune urbaine de Toamasina*. Mémoire de Maîtrise

- Spécialisée en Gestion des ressources naturelles et environnement. Université de Toamasina. 78 p.
- MTENR (2008). Environment and Natural Resources Management and Mainstreaming Programme. In: FD (ed.). Lusaka, Zambia.
- Nijkamp, P.; Burch, M.; V. Cabriella (2000). A comparative institutional perspective on urban land use and revitalisation policy. [https://www.researchgate.net/publication/4874251\\_A\\_comparative\\_institutional\\_perspective\\_on\\_urban\\_land\\_use\\_and\\_revitalisation\\_policy](https://www.researchgate.net/publication/4874251_A_comparative_institutional_perspective_on_urban_land_use_and_revitalisation_policy)
- Peter M. (2016) *Draft Genus Exchange Regulations Suspended (and unlikely to be reintroduced)*. Forestry, South Africa. [www.forestry.co.za](http://www.forestry.co.za). Accessed 8/8/2016.
- Rabemananjara, Z., Rabenasolo, E., Andriamanalina, R.L., Randrianarivelo, J.O., Raoeliasoa, M. (2012). *Enquête des marchands et transformateurs de bois dans la ville d'Antananarivo et ses environs. Rapport technique appui à l'administration forestière dans le contrôle et le suivi des provenances des produits forestiers sur le marché de la ville d'Antananarivo*. Foundation Tany Meva, 21 p.
- Shaheen F.H., Khan S.R. (2008). *Public-Private Partnerships (PPP) in Forestry: Implementing Strategy, Project Report Series # 12*. Sustainable Development Policy Institute, 31 p.
- Sitoe A., Guedes B.S. (2015). *Community Forestry Incentives and Challenges in Mozambique*. *Forests* 6: 4558-4572.
- Stubbs, G., (2016) *Personal communication*. Interviewed 25/7/2016.
- UN Comtrade 2015. <https://comtrade.un.org/pb/downloads/2015/VolI2015.pdf>
- Vieilledent G., Grinand C., Rakotomalala F.A., Ranaivosoa R., Rakotoarijaona J.R., Allnutt T.F., Achard F. (2018). *Combining global tree cover loss data with historical national forest-cover maps to look at six decades of deforestation and forest fragmentation in Madagascar*. *Biological Conservation*. 222: 189-197





# African Forest Forum

A platform for stakeholders in African forestry



## For more information please contact:

The Executive Secretary  
African Forest Forum  
United Nations Avenue, Gigiri  
P.O. Box 30677-00100, Nairobi, Kenya  
Phone: +254 20 722 4000, Fax: +254 20 722 4001  
Email: [exec.sec@afforum.org](mailto:exec.sec@afforum.org); Website: [www.afforum.org](http://www.afforum.org)

