



A PLATFORM FOR STAKEHOLDERS IN AFRICAN FORESTRY

**PUBLIC PRIVATE PARTNERSHIPS IN THE FOREST
SECTOR IN AFRICA: COUNTRY REPORT FOR
UGANDA**



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Public-private-partnerships in the forest sector in Africa: Country Report for Uganda

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Acronyms and Abbreviations

AFF	African Forest Forum
CBFM	Community Based Forest Management
CFM	Collaborative Forest Management
CFR	Central Forest Reserve
DRC	Democratic Republic of Congo
FAO	Food and Agricultural Organisation of the United Nations
FSSD	Forest Sector Support Department
GoU	Government of Uganda
LFR	Local Forest Reserve
MWE	Ministry of Water and Environment
NEMA	National Environmental Management Authority
NFA	National Forestry Authority
NFTPA	National Forestry and Tree Planting Act
NGO	Non-Governmental Organisation
NTFPs	Non-Timber Forest Products
NWFPs	Non-Wood Forest Products
PPP	Public-Private Partnership
SMEs	Small and Medium Enterprise
SPGS	Sawlog Production Grant Scheme
SWOT	Strengths Weaknesses Opportunities and Threats
UBOS	Uganda Bureau of Statistics
UEDCL	Uganda Electricity Distribution Company
UTGA	Uganda Timber Growers Association
UWA	Uganda Wildlife Authority
WWF	World Wildlife Fund

Executive Summary

Forest resources are of prime importance to the people and economy of Uganda owing to the range of ecological, economic, social and cultural products and services they provide for a multitude of stakeholders. However, forests in the country have declined from 4.9 million hectares in 1990 to an estimated 2.08 million hectares in 2015, although there was a marked increase in the area of planted forests since the early 2000s. Traditionally, forest management in Uganda has been the preserve of government with the private sector predominantly engaged in secondary production and trade in forest products, particularly timber. However, over the past decade, there has been increased participation of the private sector in primary forest production. The national forest policy envisages the private sector to play a central role in managing forests on private land, developing and managing commercial forest plantations, and developing and managing forest products processing industries. This country report is the result of a study conducted in 2015 and 2016 aimed at identifying and promoting public private partnership (PPP) approaches for forest compatible sustainable livelihoods development with the view to strengthen understanding of the key actors in both primary and secondary forestry production in Uganda. The study was conducted through desk review of extant literature, key informant interviews, and field surveys in selected districts across the country. It involved mapping of key actors in primary and secondary forest production and ascertaining information relating to key products and production, employment, policies and regulations, gender issues, marketing and trade, contribution of private forest sector activities, linkages among actors and the scope of public private partnerships in Uganda's forest sector.

Findings of the study indicate that there are multiple actors in the sector with the private sector playing an increasingly dominant role in both primary and secondary forest production as government focuses on creating an enabling environment. A variety of tree species are managed in natural forests but *P. caribaea* and *E. grandis* are the major species managed in plantations. The planted forest estate approached 90,000ha with an estimated 7 million cubic metres of growing stock. Secondary forest production involved production of various forest products ranging from fuelwood to non-timber forest products. While the primary production sector exhibited appreciable performance, the secondary sector was curtailed by limited supply of round wood. Vertical and horizontal linkages were generally weak with relationships being more informal than formal but emerging players seemed to be pursuing strategies for vertical integration while a section of players in the primary sector made efforts to integrate horizontally. However collaborative arrangements between the public and private sectors have been successfully implemented with appreciable achievements and there is potential for further collaboration for the benefit of the forestry sector. This will help consolidate the achievements so far made, particularly contributions of the private forestry sector such as advocacy, employment generation, social services and value addition to forest produce.

1. Introduction

1.1 Background

This work was undertaken on behalf of the African Forest Forum (AFF), with the broad objective of identifying and promoting promising public private partnership (PPP) approaches for forest compatible sustainable livelihoods development in Uganda. The study sought to provide a better understanding of the key actors in both primary and secondary forestry production through various tasks. The tasks involved identifying the different actors and their modes of operations; understanding the interactions between the actors and stakeholders; and evaluating how the private sector could be strengthened. A strengthened understanding would assist in evaluating how the actors could be organized into a cohesive sector able to attract attention and resources for development and growth of the private sector in forestry with capacity to address both social and environmental concerns and leading to more sustainable, equitable and effective private sector development in Uganda.

The broad aim of the initiative was to facilitate 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 in Uganda.

The specific tasks were:

1. Mapping out the key actors and identifying 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;
2. Collecting information on actors in primary forest production, including tree species raised/managed (their productivity and use) and their distribution by area, age classes, and volume (total and merchantable), as well as plans for sustainable wood supply;
3. Collecting information on actors in secondary forest production including industry type, installed capacity, products lines/types, capacity utilization, production volumes (for five previous years) and raw material types and sources;
4. Conducting the following for actors in primary and secondary forest production sectors:
 - Evaluating employment opportunities, policies, regulations and other factors facilitating and/or constraining the development of forest products industry, including undertaking a SWOT analysis;
 - Assessing and identifying the gender specific inequalities;
 - Assessing and identifying the factors inhibiting and or promoting the full and equal participation of marginalised groups;

- Assessing and analysing gender-based control and access to required assets/resources including the specific opportunities, challenges and privileges of involvement and participation in the sector;
 - Evaluating marketing and trade (domestic and international) in their products including volumes, production costs, revenues and prices of products traded in the previous five years.
5. Evaluating the relationship/linkages among actors in primary forest production on one hand, and the relationship/linkages among actors in secondary forest production on the other hand, and how this could be organized to contribute to the growth of a well-organized formal private sector in forestry;
 6. Evaluating the scope, within the country, for public private partnership in forestry including existing promising models/approaches that could enhance social inclusion, gender equitable practices and forest compatible sustainable livelihoods development in the different forest types, and propose recommendations on the way forward;
 7. Documenting past trends on production, trade and consumption of timber and non-timber products in Uganda over five previous years. Also providing forecasts of future production, trade and consumption of the same; and
 8. Assessing the contribution of the private forestry sector activities to local livelihoods and national economy.

1.2 Methodology

The study was carried out in 2015 and 2016, through desk review of extant literature on the forest sector in Uganda, key informant interviews with technical personnel in various organisations and institutions involved in the forest sector, and field surveys conducted in selected districts across the country as described below.

1.2.1 Desk review

A desk review of published and grey literature on the forest sector in Uganda was undertaken. The key documents reviewed included the following:

- Legal documents including the Constitution of the Republic of Uganda (1995), Uganda Forestry Policy (2001 & 2012), National Forest Plan (2000), National Forestry and Tree Planting Act (2003), National Development Plan (2010), Uganda Gender Policy (2007), National Action Plan on Women (2006), National Environment Management Policy (1994), Local Government Act (1997), Land Act (1998), ,
- Annual plans and/or reports for selected agencies including National Forestry Authority (NFA), Sawlog Production Grant Scheme (SPGS), Forest Sector Support Department (FSSD), Uganda Bureau of Statistics (UBOS), as well as Uganda Timber Growers Association (UTGA)
- FAO data base for forest products production and trade

1.2.2 Key informant discussions

Discussions were held with key players in the forestry sector including:

- Forest officers in selected districts (Kampala, Wakiso, Mpigi, Mukono, Jinja, Masindi, Kabaale and Lira)
- Subject matter specialists in various organisations including NFA, SPGS, FSSD, UTGA
- Selected players in the primary and secondary forestry production
- Law enforcement personnel

1.2.3 Field Surveys

Field surveys were conducted to interview selected actors in the sampled districts to assess conditions on the ground and corroborate the secondary information obtained from literature review. Altogether, eight district local governments were studied and 17 primary producers, 38 secondary actors, and selected NGOs engaged in the survey.

2. Primary and secondary production

2.1 Forest sector overview

The total forest cover in Uganda has been estimated at 3,604,174 hectares, of which 3,570,647 hectares consist of natural forests and 33,527 hectares planted forests (Table 1). However, according to FAO (2015) the total forest cover in Uganda is estimated at 2,077,000 ha of which 60,000 ha are planted forests, this indicates that the area varies depending on source of information and accuracies in its estimation.

Natural forests are mainly comprised of woodlands (77.3%), the rest being tropical high forests. By tenure, the forests can be broadly categorised as public or private forests. The private forests are managed by private interests which may be individuals, communities, associations, cultural or religious institutions, or companies under supervision of the district local government where the forests are located. Public forest estates include local forest reserves (LFR), central forest reserves (CFR) and parks and wildlife reserves. These forests are held in trust and managed by national government on behalf of the people of Uganda. Local forest reserves are managed by district local governments where they are situated. On the other hand, central forest reserves are managed by the National Forestry Authority (NFA) while national parks and wildlife reserves are managed by Uganda Wildlife Authority (UWA). A small portion of forests on public land is jointly managed by NFA and UWA (Table 1). Forests and woodlands in protected areas make up 35% of the national forest cover; the remaining 65% is on private land. However, the publicly available disaggregated data in Table 1 was compiled in 2009 and as such does not take into account changes, particularly plantation establishment since then.

Table 1: Forest cover by type and tenure

Forest type	Tenure Category				Private	Total
	Public					
	LFR	CFR	Parks & wildlife	Other*		
Plantations	354	18,954	2,482	-	11,737	33,527
Tropical High Forests	243	283,575	251,002	23,468	234,361	792,649
Wood Lands	614	325,422	389,664	7,279	2,055,019	2,777,998
Total	1,211	627,951	643,148	30,747	2,301,117	3,604,174

*Jointly managed by NFA and UWA (Source: MWE, 2013)

These forest resources are of prime importance to the people and economy of Uganda owing to the range of ecological, economic, social and cultural products and services they provide for a multitude of stakeholders. Forestry direct contribution to Uganda's economy is

between 3.5% - 8.7% annually, in addition to providing a range of non-monetary ecosystem services (UBOS, 2015). Non-monetary contributions including climate regulation, soil conservation and protection of biodiversity that are not quantified in the national accounting system. It is estimated that over 90% of households in Uganda depend on biomass energy, most of which is in the form of firewood and charcoal derived from these forests. Millions of resource-poor Ugandans still depend on environmental resources such as trees and forests as the most readily accessible and valuable resources for income and sustenance of their livelihoods. In terms of employment, the forest sector is an important employer in Uganda, especially in rural areas; it is estimated that the forest sector employs over 1 million people, both formal and informal, in forest establishment and management, and in production of and trade in forest products. Thus, forests offer many opportunities for poverty alleviation, economic development and environmental improvement (NEMA 2008). Estimates put the turnover of business in the forestry sector such as charcoal, poles, timber, furniture, crafts, firewood, fruits and seedlings at over \$100 million (UBOS, 2010).

Notwithstanding the tremendous contribution of forests to the welfare of the people of Uganda, forest cover is reducing at a high rate, particularly forests on private land. This has been attributed to the rising demand for agricultural land and forest products caused by the high rate of population growth in both urban and rural areas (MWE, 2013). Consequently, forest cover has consistently declined over the past two decades at an average rate of 1.8% per annum (UBOS, 2015). The major threats identified include rapid expansion of urban centres, forest fires, uncontrolled mining in forests, unsustainable logging, infrastructure development, brick laying, and charcoal burning. The creation of NFA as a lead agency for managing central forest reserves was a good development that has helped to contain and, in most cases, reverse forest decline in central forest reserves. However, local government forest services and private forest owners have not been given adequate support to develop their capacity for effective management of the forest resources under their jurisdiction.

2.2 Mapping of key actors

2.2.1 Primary forest production

The actors in primary forest production in Uganda's forest sector can be broadly categorised into three groups on the basis of scale of operation and their legal status as individual producers, corporate producers and institutional producers.

2.2.1.1 Individual producers

This category includes smallholders who grow trees within agricultural landscapes as an integral part of their livelihood strategies, for subsistence and/or commercial purposes. These actors constitute the largest block of primary forest producers and they are very diverse in their practices and farming systems. They undertake different forms and scales of tree growing activities including planting hedge trees, agroforestry, woodlots for pole or fuelwood production and nursery operations for supply of seedlings. Their operations are mainly limited by availability of land, labour, capital, and technical knowledge. These players normally target the local markets and are important suppliers of fuelwood, poles and construction timber in these markets. The size of their tree growing undertakings range from 0.1 ha to 10 ha or more, and majority of them produce trees on their own land though some

operate on leased land. Also included in this category are individual owners of natural forested land. Individually owned natural forests in Uganda are not well documented and have not been sustainably managed in the past. Consequently, most of them have been converted into agricultural and grazing lands because of their low perceived value, lack of capacity to protect them, insecurity of tenure, lack of technical knowledge on forest management by the owners, and limited (if any) support from government. In terms of gender, most individual level tree growers are men owing to land tenure system that doesn't favour women in terms of land ownership. According to UBOS (2013), women constitute only 28.1% of Uganda's population above the age of 15 years with land ownership. This low rate of land ownership among women obstructs women from engaging in livelihood options such as primary forest production. This is worsened by the perception that forestry is a male domain (Mukasa *et al.*, 2012).

2.2.1.2 Corporate producers

This category includes actors engaged in tree production on large scale and mainly for commercial purposes. They can be broadly categorised into agricultural estates and commercial tree planters. Agricultural estates include companies engaged in commercial farming of crops such as tea, tobacco and sugarcane whose postharvest handling require considerable amounts of wood. These estates use biomass energy owing to the high cost of electricity and fossil fuels; with the exception of the sugar processing industry where bagasse is used for electricity co-generation, the other agro processors use considerable quantities of wood in their processes. To reduce their dependence on natural forests, they engage in growing of tree plantations. Limited information is available on extent of tree planting by agricultural estates. Commercial tree planters include private companies engaged in tree planting as a business for production of timber, fuelwood and for trading in carbon credits. This category mainly consists of players who have leased land in forest reserves to establish industrial plantations with the goal of roundwood production, targeting markets for poles and sawlogs. Most of these plantations are being established on degraded forest land, thus qualifying the owners to benefit from trading in carbon credits. The major producers in this category include Nileply, New Forests Company, Green Resources and Global Woods.

2.2.1.3 Institutional producers

This category includes government institutions mandated with managing the public forest estate, training institutions, and religious and cultural institutions. NFA is the major public institution engaged in primary forest production whereas UWA and district local governments are barely engaged in production at the moment. NFA is mandated with the management of central forest reserves of which 351,900 ha were designated production forests for the sustainable supply of forest produce (Odokonyero, 2005). Over 150,000ha which includes savannah bushland and grassland areas were identified for development of industrial plantations (NFA, 2005). Owing to the difficulty of finding large enough privately-owned blocks of land to attract serious private sector investment, the available land in CFRs can potentially be utilised by private investors under PPP arrangements. Religious and cultural institutions such as churches, mosques and kingdoms are important forest resource producers. These institutions own forested land, both natural forests and plantations, and

also engage in community development activities aiming at improving the livelihood of the rural poor through agro-forestry interventions.

2.2.2 Secondary forest production

Actors in the secondary forest production sector can be best described along product lines as outlined below:

2.2.2.1 Fuel wood production and consumption

Majority of households in Uganda are dependent on biomass (firewood in rural areas and charcoal in peri-urban and urban areas) as the primary source of energy. Thus, in rural areas, firewood collection is an integral part of the livelihood strategy of the household and it is mainly the responsibility of women and children. The main actors in the production of fuelwood harvesting and charcoal burning for commercial purposes are men, particularly the youth. Wholesale trade (mainly mobilisation and aggregation of produce from small-scale producers scattered over wide areas) is dominated by men while retail trade of charcoal in urban centres is dominated by women. Other stakeholder groups in the fuelwood sector, apart from domestic energy consumers, include producers of construction materials particularly bricks and institutions such as schools, hotels, hospitals and small-scale industries.

2.2.2.2 Timber production

The production of timber in Uganda can be legally carried out using sawmills and pit-sawing operations but a considerable volume of timber on the market is produced using free-hand operated chainsaws despite the illegality of such timber. Prior to exhaustion of plantations in forest reserves, sawmilling operations were carried out mostly by companies that obtained harvesting concessions through a public bidding system. As the planting done during the early 2000s comes on stream, particularly eucalyptus and the second thinning for pine plantations, the sawmilling sector is getting revived. The major players are tree farmers, both individuals and companies, interested in processing their thinning into timber to tap into the lucrative timber market and also to build capacity for processing the final crop. On the other hand, pitsawing operations are carried out in forests on private land by pitsawing contractors licensed by district local governments where the forests or trees are located. These are normally individuals with capital to acquire equipment and manual labour necessary to carry out the production operations. The other key players in timber production are chainsaw operators who operate illegally because timber production using freehand power saws was banned in the country in the mid-1990s. The ban may have been misguided or not well informed by stakeholder needs for it still remains most versatile technology for smallholders. Chainsaw operators harvest trees mainly from private forests and woodlots, on-farm trees and have been reported to poach trees from protected areas. While their operations are not well documented due to their informal nature, market surveys confirm that they make a significant contribution to timber supply as timber produced with power saws can be easily identified from the conspicuous marks made by these wasteful machines.

2.2.2.3 Pole production

Poles can be broadly categorised as construction poles used in the building sector for scaffolding, fencing, structures and raw materials for transmission poles that are treated and used mainly for electric power transmission. Both categories of poles are sourced from eucalyptus plantations and woodlots scattered across the country. The construction sector also uses small sized poles for roofing purposes owing to timber scarcity. Medium sized poles are also used for farm fencing purposes, with or without treatment. Power transmission poles on the other hand have minimum size specifications and are chemically treated using industrial processes to meet the required quality standards. The actors engaged in the supply chain for these poles depend on the type of poles. For poles used in the construction sector, these include forest/woodlot owners, traders who harvest and transport the poles from farmers to markets in urban centres or direct to construction sites. For transmission poles, there is less than ten treatment plants in the country operated by private companies with some number have their own plantations from which they source the poles but also use contracted suppliers who source poles from private tree farmers.

2.2.2.4 Plywood and boards

The plywood and board industry in Uganda is still very small; until recently, there has been only one known industry engaged in these products namely Nileply. However, according to Tumushabe and Mayers (2015), there has been a rapid growth in the number of Chinese investors in Uganda's forestry sector, particularly plywood manufacturing but the scope of activities of these players remains poorly understood. Anecdotal evidence indicates that at least four Chinese firms have set up plants for plywood production in the country but there is paucity of information about their operations. These companies include Tian Tang Group located along Kampala-Jinja highway, Zong Ding located along Hoima road and Hong Hai located along Masaka road. This list highlights the increased presence of Chinese/Asian investors in Uganda's wood processing industry.

2.2.2.5 Furniture production

Carpentry and joinery continues to be a vibrant sector owing to the vibrant construction sector and increasing urban population as well as improved affluence linked to growth of the economy. Most of the players in the sector are small-scale roadside producers using hand tools and operating as individuals, although they are clustered around major timber markets in urban centres, such as Ndeeba and Bwaise in Kampala city. This section of the industry plays a critical role of supplying low-cost furniture products while providing employment opportunities to marginalised groups, particularly youths and women. There is however a number of medium sized firms employing relatively advanced technology to produce high-class furniture. These include Hwang Sung Furniture Company, Elimu Furniture Company, Lotus Arts, Kaava Furniture Company, and Master Wood Furniture Company (Kizito, 2009).

2.2.2.6 Non-wood forest products (NWFPs)

A number of non-wood products such as medicinal plants, handicraft materials (rattan & bamboo), aromatic oils, bee products, herbal medicine, wild coffee, forest foods and light construction materials are extracted from Uganda's forests by small-scale harvesters. Their production offers opportunities for improving livelihoods for rural communities living close to forest resources because they are easily accessible, require little capital investment for

collection, processing and marketing, while their production is relatively less destructive compared to timber. Some NWFPs can only be harvested from intact forest while others are maintained on farm. The production of non-wood forest products on farm depends on whether the cultivation of such products is possible outside the forest surroundings. A variety of species are planted on farms for fruit, oil, gum, medicine and other products for both domestic and commercial use. The actors involved depend on whether the products are available naturally in the wild or are intentionally cultivated as part of the management effort for the forest. Generally, major actors in NWFPs extraction are the communities living around forests who harvest the products individually or as a community depending on local arrangements with forest or land owners.

2.2.3 Support institutions and regulatory bodies

2.2.3.1 Support institutions for the forestry sector

The 1995 Constitution (amended) empowers government to hold in trust and sustainably manage publicly owned natural resources, including forests. The Ministry of Water and Environment (MWE) under whose jurisdiction the forestry sector falls has overall responsibility to ensure that the country's forest resources, both public and private, are responsibly managed. The National Forestry and Tree Planting Act (NFTPA) of 2003, is the main legislative framework for the forestry sub-sector. It clarifies institutional roles and responsibilities for management of the forestry resources and mandates the MWE to formulate policy, guidelines and regulations for the sector.

Besides the National Forestry and Tree Planting Act (2003), the other legislations relevant to management of forestry resources in Uganda include the following

- (i) The Land Act, which requires landowners to use their land in accordance with the National Forestry and Tree Planting Act (2003).
- (ii) The National Environment Act, which provides for the:
 - Management of all forests in line with principles of sustainable development;
 - Issuance and prescription of measures and standards for management of the environment and the natural resources therein;
 - Ensuring that renewable resources are used efficiently with appropriate technology to minimise waste.
- (iii) The Local Government Act, which assigns management of forest resources to local governments.
- (iv) The Mining Act, which provides guidelines for mineral prospecting in forested areas.

Other important institutions affecting the governance of the forestry sector include Uganda Wildlife Act, Traditional Rulers (Restitution of Assets and Properties) Statute, Inspector General of Government Act, Leadership Code, Magistrates Act, Police Act, Evidence Act, and the Gender Policy.

2.2.3.2 Regulatory bodies

The Government of Uganda (GoU), through the Ministry of Water and Environment (MWE) is responsible for formulation and implementation of the regulatory framework including laws, policies and regulations and monitoring their implementation. The ministry is

responsible for promoting and supporting the forestry sector through mobilising investments and coordinating the sector at both national and international levels. According to Nsiita (2010), specific responsibilities for MWE include:

- Formulation and oversight of appropriate policies, standards and legislation for the forestry sector;
- Co-ordination and supervision of technical support and training to local governments;
- Inspection and monitoring of local governments and the NFA performance in forest sector development;
- Co-ordination of the NFA and cross-sectoral linkages;
- Mobilisation of funds and other resources for the forest sector;
- Promotion, public information and advocacy for the forest sector.

The mandate of MWE is implemented through the Forest Sector Support Department (FSSD), which is the technical arm of the ministry. It oversees NFA and the District Local Government Forestry Services; the former is responsible for management of central forest reserves while the latter are responsible for managing local forest reserves and forests on private land. Specific responsibilities for these bodies are outlined below (Nsiita, 2010).

(i) NFA

- Sustainable management of CFRs in partnership with private sector and local communities;
- Advisory, research or commercial services on contract with clients who may be Government or private sector;
- Seed supply;
- National forest inventory and other technical services;

(ii) District local governments

- Establish District Forestry Services;
- Strengthen forestry in production and environment committees and District Development Plans;
- Implement international and national policies on forests;
- Permits, license fees and tax collection from forest products outside Central Forest Reserves;
- Mobilise funds;
- Develop and enforce bye-laws;
- Support and quality control of forestry extension, brokering between farmers and service providers, providing market information;
- Manage local forest reserves (LFRs) in partnership with communities and private investors.

Private sector players include forest owners, farmers and other investors, communities, forest industries, and traders. Their mandate includes:

- Forest management and tree farming investments on private land
- Forest investments in CFRs on rented land
- Collaborative Forest Management of CFRs
- Wood and NWFP processing
- Trade in forest products

- Efficient use of fuelwood

2.3 State of primary forest production sector

Establishment of tree plantations on a commercial scale in Uganda resumed in the early 2000s following close to 30 years during which there was minimal new planting. The private sector was initially not actively involved in plantation forestry owing to the perception that tree planting was a responsibility of government. This changed after 2003 due to incentives from the Sawlog Production Grant Scheme (SPGS), which provided planting grants and technical advice, and the provision of land in central forest reserves for leasing by private entrepreneurs interested in investing in plantation forest development. A few private woodlots were established all over the country prior to the general resumption of plantation establishment in the early 2000s, some funded through donor support while others were established by tea and tobacco processing companies to meet their own fuel demands.

2.3.1 Tree species managed

There is a variety of indigenous tree species grown in Uganda's natural forests and these vary between forest tenure categories and locations. Basing on rapid market appraisals of common timber species on the market, it can be deduced that the common indigenous tree species managed include *Aningeria altissima*, *Antiaris toxicaria*, *Blighia unijugata*, *Maesopsis eminii*, *Markhamia lutea*, *Albizia coriaria* and *Milicia excelesia*. However, majority plantation forests are planted with exotic trees particularly *Pinus caribaea* and *Eucalyptus grandis*. Tree farmers who grow *P. caribaea* are basically targeting the market for industrial roundwood used for saw log and plywood production. On the other hand, Eucalyptus is majorly grown for poles and fuelwood, both domestic and industrial. Owing to the prevailing timber scarcity in the country coupled with fast growth characteristics of eucalypts, there is also a big market for saw logs from eucalyptus. Thus, most of the plantations that have been established in the country are most dominated by these species. However, in a few instances, other species such as Musizi (*Maesopsis eminii*), *Pinus patula*, *P. oocarpa*, *Cupressus lusitanica*, *Araucaria spp.*, *Terminalia spp.* and Teak (*Tectona grandis*) have been planted, but the total area under these species is relatively small. Preliminary data from SPGS indicates that by the end of 2013, *Pinus caribaea* made up a total of 92% of forest plantations, followed by Eucalyptus at 7%.

2.3.2 Area and age class distribution

Publicly available data on forest cover in Uganda, updated about 5 years ago to writing of this report; owing to the relatively high planting rate, these figures do not reflect the actual forest cover, particularly for plantation forests. Anecdotal information indicates that total plantation forest cover is close to 90,000 ha (Table 2). This excludes undocumented private growers who have established forests and woodlots outside central forest reserves and without direct support from SPGS, estimated at 10,000ha. Information obtained from NFA indicates that of the total planting on public land, only 9,690 ha belongs to NFA while the rest is owned by private growers.

Table 2: Age class distribution of plantation forests

Land tenure	Area (ha) by age class				Total
	1 – 5	6 – 10	11 – 15	16 – 20	
Public	8,125	9,107	6,123	1,204	24,559
Private*	32,226	17,577	11,024	4,533	65,360
Total	40,351	26,684	17,147	5,737	89,919

*Does not include undocumented planting by the private sector

Source: NFA (2015) Plantation establishment data (*unpublished*); SPGS (2015) Plantation establishment data (*unpublished*)

2.3.3 Tree stock volumes

There is paucity of information on the growing stock of trees in both natural and plantation forests due to limited or non-existent monitoring of forest stocks. The estimated total growing stock in plantation forests is close to 7 million cubic metres (Table 3). This has been based on age class distribution in Table 3, yield models for *P. caribaea* and *E. grandis* (Kaboggoza, 2011), the assumption that plantations are 90% softwoods (dominated by *P. caribaea*) and 10% hardwoods (dominated by *E. grandis*), with lowest yield values in each age category used.

Table 3: Estimates of tree growing stock in plantation forests

Age Class	Area (ha)		Yield (m ³ /ha)		Volume (m ³)		Total Vol.(m ³)
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	
1 – 5	36,316	4,035	0	4	0	16,140	16,140
6 – 10	24,016	2,668	68	133	1,633,061	354,897	1,987,958
11 –15	15,432	1,715	192	208	2,963,002	356,658	3,319,660
16 –20	5,163	574	290	290	1,497,357	166,373	1,663,730
Total	80,927	8,992			6,093,419	894,068	6,987,488

Source: NFA (2015) Plantation establishment data (*unpublished*); SPGS (2015) Plantation establishment data (*unpublished*)

2.3.4 Plans for sustainable supply

Sustainable forest management is a central theme throughout Uganda's forestry policy and as such the national forestry plan has entrenched strategies for development and management of commercial forestry plantations in a sustainable manner. Some of the practical strategies being implemented to ensure sustainable supply of timber and other forest products include, but are not limited to the following:

2.3.4.1 Incentives to attract private actors

The provision of incentives in form of grants and technical support from SPGS has been a major initiative to stimulate private sector participation in development of commercial forestry in Uganda. These incentives have been targeted at improving the business

environment and facilitating profitability of private investors in commercial tree plantation business. In addition, SPGS has supported communities, churches and schools in establishing plantation woodlots for fuel wood supply; between 2005 and 2010, over 1,700,000 seedlings were supplied to smallholder tree farmers (Jacovelli, 2010). The current forest plan envisages building on the momentum given to the private sector through continuing to provide a favourable investment climate for forest plantation establishment.

2.3.4.2 Attractive investment opportunities

Owing to the prevailing scarcity of timber and wood in the country and the associated high prices, many private investors have engaged in tree planting, either on their own or under support from SPGS. Nampindo *et al.* (2011) estimated that private investors contributed over US\$ 41 million to development of forest plantations in Uganda during the period of 2002 to 2008, which is an indication that tree growing is becoming an attractive investment opportunity in Uganda. As noted above, the Government of Uganda is committed to continue attracting private entrepreneurs into the sector. Consequently, a third phase for implementation of the SPGS has been initiated under support of FAO to support further establishment of commercial plantations and ensure efficient processing and utilization of timber sourced from plantations established under the earlier phases.

2.3.4.3 Private investor support and promotion efforts

Private investors in the forestry sector, particularly tree growers who have been supported under SPGS have formed an association, Uganda Timber Growers Association (UTGA) with a purpose of improving the status of profitable commercial plantations and to prepare for a future beyond donor supported programmes such as SPGS. UTGA focuses on advocating for conducive policy and legal environment, promoting learning and sharing of experiences, seeking support for the private sector and lobbying financial services, tax exemptions and accessing inputs for the development of commercial plantation forestry. This forum is bound to increase the visibility of tree growers, help in addressing their concerns and provide a shared vision thereby enhancing their confidence in the sector.

2.3.4.4 Tree out-grower schemes (plantation clusters)

Private developers in CFRs have been encouraged to develop their plantations in clusters in consideration of future sawmills and other wood industries establishment. Under the 'cluster' approach, the country has been demarcated into six main clusters (Held *et al.*, 2010; Kaboggoza, 2011; Howard, 2011) and investors planting in or very close to the clusters have been supported by SPGS. The aim is to have sufficient plantation area within each cluster that would provide sufficient sawlog material to feed a sizeable processing facility. Owing to the challenges associated with developing a sustainable and profitable industry and the fact that Uganda currently has virtually no significant timber processing facilities suited to plantation-grown sawlogs, a cluster approach will be instrumental in avoiding setting up small unsustainable processing facilities.

2.3.4.5 Equitable access to benefits

Effort has been made to ensure that tangible benefits of tree plantations are accessed by various stakeholders. For example, thousands of rural jobs have been created, silvicultural contracting and nursery businesses are flourishing and a new generation of young forestry

professionals is rapidly learning the business of commercial forestry. Suppliers of equipment and other support services are emerging, attracted by the scale of investment in tree planting. Through corporate social responsibility, funds have been invested in supporting communities around plantations by providing social amenities such as health and education facilities. It was envisaged that once the trees mature, the plantations will be able to support the establishment of a sustainable and profitable, forest-based industry in Uganda that will amplify these benefits. For example, such an industry can create many jobs, both upstream and downstream the value chain. With these tangible benefits flowing to a multiplicity of stakeholders, establishment of plantation forests is bound to receive more support than antagonism from a variety of stakeholders.

2.3.4.6 Support for private investors

A number of initiatives and plans have been fronted by government and non-governmental bodies to support the private sector, and these are envisaged to enhance the sustainability of the forest sector. These include, but are not limited to the following:

- Deepening understanding of how ownership and management of private and customary forests is influenced by differences in land tenure, ecological, and cultural settings;
- Developing guidelines for the management of private and customary forests;
- Creating awareness of ownership rights, opportunities and obligations for the owners and users of private and customary-managed forests;
- Developing incentives to encourage private and customary forest owners and users to set aside natural forests as permanent forest land;
- Securing tenure for private and customary forests;
- Developing the capacity of forest owners and users to manage their forests effectively;
- Developing the capacity of government institutions and service providers to supply extension support and advice; and
- Monitoring the ownership and management of private and customary forests.

2.4 State of secondary forest production sector

2.4.1 Sawmilling

2.4.1.1 Installed capacity and capacity utilisation

The sawmilling industry in Uganda has never fully recovered since its collapse in the mid-1970s. According to UBOS (2011), there were over 180 business establishments engaged in sawmilling; no information was provided on the installed capacity or output. However, anecdotal evidence indicates that some of the business establishments classified as sawmills were actually engaged in secondary milling of timber for furniture production as opposed to primary milling of logs into timber. Prior to exhaustion of plantation forest resources, timber production was done using simple mobile equipment with annual capacities of a few thousand cubic metres (McCaughan and Carvalho, 2003). Currently, timber production in Uganda is largely artisanal characterised by rudimentary technologies such as pit-saws and saw benches, and dominated by informal business undertakings,

making it difficult to ascertain information about their capacity and output. Recently, one firm installed a fixed sawmill with a capacity of 8,500 m³/yr; there may be one other fixed sawmills. However, a number of tree growers currently doing final thinning have reportedly acquired mobile milling technologies for adding value to the thinnings and, eventually, the main crop. Due to lack of documentation on establishment and operation of such milling plant, there is paucity of information on the installed capacity as well as their operations.

2.4.1.2 Raw material supply

Owing to the prevailing scarcity of wood in the country, raw material supply is a major bottleneck faced by processing industries. Most of the wood is sourced from forests on private land, on-farm trees including woodlots, and plantation thinnings from growers doing the final thinning. Large companies that established their own plantations are converting their own thinnings but also get supplies from out-growers. According to UBOS (2015), round wood supply for sawn wood production has been generally increasing (Table 4)

Table 4: Round wood supply for sawn wood production

	2010	2011	2012	2013	2014
Volume ('000s tonnes)	1,847	1,957	2,071	2,192	2,317
Value (million US \$)	39.6	51.7	67.3	85.1	95.6

Source: UBOS (2015), exchange rate used: 1US \$ = 3350 USShs

2.4.1.3 Product lines and production trends

Sawn wood produced is general-purpose, used for both furniture production and building construction. The timber is generally classified by species and size; there is barely any grading system used that takes account of timber quality. The common cross-section dimensions (mm) on the market include 75x50, 100x50, 100x75, 150x50, 300x25, and 300x50 depending on species and end-use category. Traditionally timber has been marketed using the “standard length” system whereby each timber piece is expected to be 4.3m (14 ft). However, due to the prevailing scarcity, the length has generally been reduced and ranges between 3m (10 ft) and 4.3m (14 ft). The trend in timber production in Uganda is given in Table 5. However, due to lack of a functioning system to capture data on timber trade, available statistics provided in official reports and plans have been deemed unreliable but estimates by WWF (2012a) indicated that timber consumption in 2011 was about 360,000m³ per annum.

Table 5: Sawn wood production estimates for Uganda

	2010	2011	2012	2013	2014
Volume ('000s m ³)	93	280	320	308	308

Source: FAOSTAT (2015)

2.4.2 Carpentry and joinery

2.4.2.1 Installed capacity and capacity utilisation

Carpentry and joinery trades are flourishing due to the rapidly growing housing sector as well as the rising urban population. There is a variety of enterprises engaged in this sector but most of these are small-scale players working on roadsides and close to the major

timber yards, particularly in Kampala. According to UBOS (2011), there were over 5000 business establishments engaged in furniture production in Uganda. There is virtually no information about the installed capacity and output of these businesses.

2.4.2.2 Raw material supply

Most of the carpentry and joinery enterprises use sawn wood for furniture production although a section of them use nontimber forest products such as rattan for furniture production. The supply for sawn wood is covered under Section 2.4.1.3 above; however, disaggregated data on sawn wood use for furniture production is not readily available. In addition, the country imports high value hardwood timbers such as mahogany and mvule, mainly from Democratic Republic of Congo (DRC); which is exclusively used for furniture production. According to WWF (2012b), timber imports from DRC in 2011 were estimated at 8,300m³ per annum. Different timber import estimates, according to FAO (2015), are given in Table 6.

Table 6: Sawn wood import estimates into Uganda

	2010	2011	2012	2013	2014
Volume (m ³)	7888	6152	6165	6165	6906

Source: FAOSTAT (2015)

2.4.2.3 Product lines and production trends

Furniture products can be broadly classified as office or domestic furniture (kitchen bedroom, dining and living rooms), shop furniture as well as upholstered furniture. There is no easily accessible data on production and production trends of these furniture products.

2.4.3 Pole treatment

2.4.3.1 Installed capacity and capacity utilisation

The demand for treated transmission poles is increasing internally as the government intensifies a rural electrification programme that also targets to supply neighbouring countries. Currently, the major pole treatment plants in the country include the New Forests Pole Treatment Plant (Mityana), Nile Ply Pole Treatment Plant (Kakooge), Ferdsult Pole Treatment Plant (Lugazi), Kampala Poles Treatment Plant Limited, Uganda Electricity Distribution Company-UEDCL (Lugogo, Kampala), Woodco (U) ltd (Kampala), and Busoga Forestry Company (Masese, Jinja).

The estimated capacity for major players in pole treatment industry in Uganda is over 400,000 poles per annum (Table 7). These estimates are based on publicly available information.

There has been an increase in the demand for construction and electric poles, and this is attributed to the growth of the building construction sector and efforts by government to intensify rural electrification. Consequently, annual consumption of construction and electric poles has increased by close to 23% over the past five years (UBOS, 2015). Consumption data could not be ascertained.

Table 7: Estimated capacity of pole treatment plants

Firm/Plant	Estimated annual capacity (Poles)
New Forests Pole Treatment Plant (Mityana)	120,000
Nile Ply Pole Treatment Plant (Kakooge),	100,000
Ferdsult Pole Treatment Plant (Lugazi)	90,000
Kampala Poles Treatment Plant Limited	No information
UEDCL (Lugogo, Kampala)	70,000
Woodco (U) Ltd (Kampala)	25,000
Busoga Forestry Company (Masese, Jinja)	No information

2.4.3.2 Raw material supply

Round wood for pole production is supplied mainly from eucalyptus (*E. saligna* or *E. grandis*) plantation forests and woodlots. Most of the major pole treatment plants have their own plantations in addition to out-growers and contract suppliers. Table 8 provides the trend in round wood supply for pole production for the period 2010 to 2014;

Table 8: Round wood supply for pole production

	2010	2011	2012	2013	2014
Volume ('000s tonnes)	1,013	1,057	1,101	1,150	1,196
Value (million US \$)	12.4	18.0	30.4	45.5	58.3

Source: UBOS (2015), exchange rate used: 1US \$ = 3350 UShs

The trend in terms of volumes supplied has been relatively unchanged during these five years but has grown to almost five times in terms of value, indicating the earning power of this business.

2.4.3.3 Product lines and production trends

Poles produced fall into three main categories namely power transmission poles, telecommunication poles, construction poles and fencing posts. Commercial pole production plants focus on the power transmission and telecommunication poles, with power transmission poles being dominant. These poles are classified into size (length and top diameter) according to end-use. The lengths range from 9m to 14m while the top diameter ranges between 130mm and 250mm. Information on production levels and trends is not readily accessible but judging from raw material supply trends (Table 8), there was a general increase in pole production between 2010 and 2014.

2.4.4 Plywood and boards

2.4.4.1 Installed capacity and capacity utilisation

Until recently, Nileply Ltd was the sole company engaged in the production and distribution of plywood and boards in Uganda. However, a number of Chinese firms have established plywood plants in the country. These include Hong Hai (Masaka road), Tian Tang (Jinja

road), and Zong Ding (Hoima road). Owing to intermittent supply of wood, production in most of these plants is intermittent and as such they produce below installed capacity.

2.4.4.2 Raw material supply

Raw material for plywood production is obtained from various sources including natural forests, plantation forests (particularly thinnings), woodlots and on-farm trees. There is no documentation in official records on the volume of round wood used for plywood production.

2.4.5 Non-timber forest products and charcoal

2.4.5.1 Installed capacity and capacity utilisation

A number of NTFPs are processed in the country, mostly by small scale players. The major products include bee products (honey and wax), aromatic oils, fruits, charcoal and briquettes. Others include artisanal and handicraft trades based on rattan cane furniture, woodcarving, drum making and other wood and non-wood handicrafts. The most common NTFPs utilised in Uganda include gum arabica, medicinal plants, shea butter, neem, bush meat, rattan, and bamboo. Others include handicraft products such as baskets, mats, hats, chairs, tables and lampshades. These products are sold to locals as well as tourists.

2.4.5.2 Raw material supply

Raw material for NTFPs processing is mainly obtained from natural forests, on-farm trees and woodlots as well as woodlands. There is no documentation on the relative importance of these sources, but woodlands are likely to be the dominant source judging from their expanse (Table 1) and accessibility.

With regard to charcoal the harder the wood, the better the charcoal. Thus, the best charcoal comes from the slow growing, dense species in the savanna woodlands – particularly Combretum, Albizia, Terminalia and Acacia species. E.g. in Luweero district there are three tree genera preferred for charcoal production namely Terminalia, Combretum and Albizia. Fast grown species (e.g. *Eucalyptus grandis*) and softwoods (e.g. *Pinus Caribea*) produce a lighter charcoal that does not supply the same heat (Knöpfle, 2004). The main species utilized for production include: Combretum; Terminalia; Albizia; Acacia; Allophylus and Grewia spp. (Shively *et al.*, 2010).

2.4.5.3 Product lines and production trends

Firewood

According to UBOS (2015) the volume of fuel wood produced and consumed in the country increased from 28.1 million m³ in 2010 to 32.0 million m³ in 2014 and this trend is likely to continue in the foreseeable future due to lack of affordable alternative sources of energy for domestic and industrial use. Most of the firewood is used to supply domestic fuel for cooking. A considerable volume of fuelwood is also used for commercial purposes in sectors such as brick making, bakeries, schools, hotels, breweries, and cooking oil refineries.

Table 9: Round wood supply for firewood production

	2010	2011	2012	2013	2014
Firewood volume ('000s tonnes)	28,074	29,013	29,954	30,951	31,980
Firewood value (million US \$)	52	54	55	57	58

Source: UBOS (2015), exchange rate used: 1US \$ = 3350 UShs

The trend in the value of firewood produced in those five years did not change appreciably, denoting the earning power of businesses built around firewood.

Charcoal

Charcoal consumption particularly in urban and peri-urban centres has steadily grown owing to increased urbanisation and the high cost of alternative energy sources such as electricity, kerosene and gas. Over five years (Table 10), total round wood for charcoal production increased by 31% to 11.2 million tonnes per annum (UBOS, 2015), while the value also increased by almost the same margin.

Table 10: Round wood supply for charcoal production

	2010	2011	2012	2013	2014
Charcoal volume ('000s tonnes)	8,535	9,134	9,766	10,449	11,180
Charcoal value (million US \$)	15.3	16.4	17.5	18.7	19.4

Source: UBOS (2015), exchange rate used: 1US \$ = 3350 UShs

Non-Wood Forest Products

Examples of NWFPs that are key to livelihoods of communities in Uganda include:

(i) Handicrafts: Products include baskets, mats, tablemat sets, hats, chairs, tables and lampshades. The main forest or woodland species used include raffia, sisal, rattan and bamboo. The products are sold locally as well as more widely to tourists.

(ii) Gum Arabic is mainly sourced from acacia by tapping or exudation. Gum Arabic is used locally as an adhesive or as an ingredient of traditional medicines. However, it has an established international market and finds use in confectionery, soft and alcoholic drinks, pharmaceuticals, and in the printing, ceramics and textile industries.

(iii) Shea butter is derived from the nuts of the shea tree, found in the savannah of eastern and northern Uganda and is used locally for oil and medicinal purposes. It is also exported and widely used as a base for soaps, creams, moisturizers, hair conditioners and shampoos, and also as an ingredient in chocolate products.

(iv) Medicinal plants are collected from natural forests or the wild and domesticated on-farm trees, although trade in these products is rarely documented. Neem is an example of a medicinal tree used against common ailments such as malaria, skin diseases and AIDS-related opportunistic infections.

2.4.6 Future production projections

2.4.6.1 Round wood production

Assuming average trends for round wood production over the period 2010 – 2014 continues into the foreseeable future, the total round wood production will increase from 50.7 million tonnes in 2016 (UBOS, 2014) to 60.3 million tonnes by 2020 (Table 11).

Table 11: Projected round wood production (2016 – 2020)

Purpose	2016	2017	2018	2019	2020
Sawn wood ('000s tonnes)	2,594	2,744	2,903	3,072	3,250
Poles ('000s tonnes)	1,299	1,353	1,410	1,469	1,531
Fuel wood ('000s tonnes)	34,126	35,252	36,415	37,617	38,858
Charcoal ('000s tonnes)	12,776	13,658	14,600	15,607	16,684
Total ('000s tonnes)	50,794	53,006	55,328	57,765	60,323

Source: UBOS (2015) (extrapolated)

2.4.6.2 Sawn wood production

Based on the projected round wood production (Table 11) and using a conversion factor of 2 cubic metres per tonne and an average sawn wood recovery of 30%, projected sawn wood supply would increase from an estimated 389,000m³ in 2016 to 481,000m³ by 2020 (Table 12).

Table 12: Projected sawn wood supply (2016 – 2020)

	2016	2017	2018	2019	2020
Sawn wood volume ('000m ³)	389	412	435	461	488

Source: UBOS (2015)

2.4.6.3 Charcoal production

Basing on projected round wood production (Table 11) and estimated charcoal yield of 1kg for every 10Kg of biomass (Basu *et al.*, 2013) charcoal production may range from 1.28 million tonnes in 2016 to 1.67 million tonnes in 2020.

Table 13: Projected charcoal supply (2016 – 2020)

	2016	2017	2018	2019	2020
Charcoal volume (tonnes)	1,277,600	1,365,800	1,460,000	1,560,700	1,668,400

Source: UBOS (2015)

2.5 The private sector role in forestry

Traditionally, forest management in Uganda has been spearheaded by government with the private sector predominantly engaged in production and trade in forest products, particularly timber. Over the past decade, the forest sector has experienced tremendous transformation making it a priority investment sector by private entrepreneurs. There has been an increase

in interest and participation of the private sector, especially in forest plantation development facilitated by a number of factors. First were the forest sector reforms undertaken by Government of Uganda (GoU) between 1998 and 2003 that ushered in a new institutional and governance framework. These institutional changes paved way for the private sector to become a major player in the development of forestry in Uganda. Uganda's 2001 Forest Policy states that "...the private sector will play a major role in developing and managing commercial forestry plantations". Secondly, GoU in partnership with development partners initiated a sawlog production grant scheme (SPGS) that has made tremendous success in supporting commercial tree farming by the private sector. Lastly, the National Development Plan (NDP, 2010) has placed forestry at the centre of Uganda's development agenda by categorizing it as a primary growth sector, alongside other sectors like agriculture, tourism, industry, and oil and gas. These factors have been instrumental in creating an environment that has attracted private sector investment in the forestry sector in Uganda.

Private sector players in Uganda's forestry sector can be broadly categorised into profit-making and non-profit-making actors. The later consists of mainly some Community Based Organisations (CBOs) working in partnership with government in implementing community forest initiatives with communities living near forestry and wildlife reserves. The profit oriented private sector comprises of individuals, associations and companies engaged in businesses along the value chains of forest products. These include tree growers, product processors and traders, and service providers. Some of these players have formed associations as platforms for collective action and to mobilise bargaining power in influencing policy and the governance environment in the sector. Private investment in commercial timber plantations is fast gathering pace and there is growing interest among small tree growers to establish woodlots. Between 2003 and 2010, the total area of plantation forests established by formal players has been estimated at about 90,000 ha, of which over 70% is owned by the private sector. As noted earlier, about 65% of the forest estate in the country is located on private land. Thus, the private sector makes considerable contribution to the various benefits generated by the forest sector in Uganda.

2.5.2 Employment opportunities

The forestry sector is one of the major sources of employment in the country, offering employment opportunities in both the formal and informal sectors. According to the draft National Forest Plan (Ministry of Water and Environment, 2011), the government estimates that the sector employs over 1 million people. One hundred thousand of these are employed in the formal sector.

The biggest number of employed people is found in firewood and charcoal production; however, with the expansion of plantations, many employment opportunities have opened up in that area. Basing on an estimate of two permanent jobs per hectare of plantation forest established, the estimated employment figure in plantation forests alone is about 180,000 people per annum. Many more jobs are anticipated to be created in forest industries to be established for processing trees as they mature. It is projected that plantation forest establishment alone will create up to 100,000 new jobs by 2025 (MWE, 2013).

2.6 Gender roles in the forest sector

2.6.1 Gender specific inequalities

2.6.1.1 Land tenure

While the Land Act (1998) provides for non-discrimination against women, there are gender disparities in land ownership with only 7% of the land in Uganda owned by women (Mukasa *et al.*, 2012). This is because most land in Uganda is acquired through inheritance, which favours men over women. In addition, under most land tenure systems, women's rights to land are largely limited to usufruct rights. This is a barrier to women's participation in production forestry since most of them do not own land and have to first seek for consent from their spouses if they want to plant/sell trees. Women's limited control over productive resources also affects their access to credit facilities that are crucial for investment in tree planting.

2.6.1.2 Gender role perceptions

It is generally believed that forestry is a male domain because men do most of the work in tree planting activities in terms of clearing land, acquiring seedlings, planting, weeding and management. However, despite beliefs that women lack physical strength and courage required for most non-managerial forestry jobs, women constitute a significant proportion of the work force in the forestry sector (Mukasa *et al.*, 2012). According to Sun *et al.* (2010), gender-balanced participation in forestry improves decision making, management and utilization of forest resources. However, integration of gender participation in forestry is sometimes constrained by the perception that forestry is a male-dominated profession (Mai *et al.*, 2011).

2.6.1.3 Gender imbalance between rights and responsibilities

Women normally have multiple, often, disproportionate responsibilities, and little ownership or control over productive forest resources. Often, men and women have contrasting perceptions, priorities and goals in respect to forest management and women's specific needs, but these are not explicitly addressed when making partnership agreements between communities and forest authorities. This is made worse by the limited number of women in technical and leadership positions, absence of the gender focal persons required by law, and inadequate knowledge and skills on gender equity issues by leaders and technical staff in local governments. This imbalance contributes to women's subordinate and disempowered position relative to men in respect to forestry resources. This negatively affects women's willingness to participate in sustainable forest management.

2.6.1.4 Inadequate prioritisation of gender issues

One of the major obstacles to women's participation in forest management in Uganda is the inadequate attention given to gender issues in various organisations and programmes in the forestry sector. For example, in many organisational structures, there is no provision for a gender position or staff assigned to work specifically on gender issues. Mukasa *et al.* (2012) noted that the Ministry of Gender, Labour and Social Development is allocated a very small budget compared to other ministries while there were no specific budget lines for gender activities in several NGOs engaged in the forestry and environmental sectors. This is

worsened by inadequate knowledge, information and skills on gender as well as the low participation of women in science, which leads to limited women decision makers in forestry. A study by Banana *et al.* (2013) that examined the extent to which gender features in projects and programmes that involve forests concluded that in many cases gender equity provisions are a mere formality that ends on paper but actual participation, fairness and sharing of benefits leave a lot to be desired. For example, in CFM arrangements, women, the elderly and other advantaged members of the community such as persons with disability know little about CFM agreements and as such males still dominate and take up most of the decision making (EMPAFORM, 2006; OCA, 2006).

2.6.1.5 Institutional framework

Uganda has several policies, legal and institutional frameworks to support equality between men and women, including the Constitution, the Uganda Gender Policy, the National Environmental Management Policy, the Water Policy, and the Uganda Forestry Policy. The Forestry Policy, Forestry Act and Forestry Plan all address gender and women's specific needs. Nevertheless, institutional, legal and policy frameworks are not backed up by relevant legal provisions for ensuring compliance hence there is weak policy implementation at the various levels of governance. Moreover, majority of forest-specific organizations have no policy on gender and don't show any intention of promoting gender in forest management. In addition to social norms, the gendered division of labour and gendered behavioural norms, as well as gendered spaces and species, all limit women's participation in decision making and participation in forest management (Howard and Nabanoga, 2007). A study on the implementation of gender equity provisions in Uganda's forestry sector concluded that little progress had been made in improving women's status in forest management. Consequently, there was little achievement in gender equity after more than a decade of implementation. Similarly, Banana *et al.* (2013) found that limited number of women in technical and leadership positions, absence of the gender focal persons required by law, and inadequate knowledge and skills on gender equity issues hindered integrating gender in forest management activities in the local governments.

2.7 Linkages among actors

The forest production sector in Uganda is largely disaggregated with limited vertical and horizontal integration. A few emerging corporate players in the primary sector appear to be pursuing a strategy of vertical integration. A section of actors in the primary production sector who have been supported under SPGS have also made an attempt to pursue a strategy of horizontal integration by forming an association (UTGA) as previously noted. However, most actors in the forest production sector operate on an individual basis and do not belong to trade associations. A few existing associations are inactive or are virtually dormant. Consequently, majority of actors transact through spot markets transactions only, although some actors are engaged in informal networks and contractual arrangements. Notable platforms through which some stakeholders in the forestry sector interface include the following:

2.7.1 Uganda Forestry Association (UFA)

This is an umbrella organisation for foresters and other professionals interested in forestry; it is envisaged to become an independent body for setting and enforcing standards in the forestry sector.

2.7.2 Uganda Forestry Working Group (UFWG)

This is a network of CSOs, academic and research institutions with the mission of promoting the development of the forestry sector and stimulating forestry stakeholders to respond to sector changes and challenges. The network provides a platform for stakeholders in forestry to deliberate on and influence developments in the sector, in addition to monitoring implementation of the forest policy, legislation and the national forest plan.

2.7.3 Uganda Timber Growers Association (UTGA)

This is comprised of individuals and firms engaged or interested in development of industrial plantations which is one of the attractive investments in the sector, driven by the prevailing timber shortage in the country. The association was formed in 2006 and now boasts of wide membership including small, medium and big planters across Uganda. Its core activities include influencing policy and action in order to create an enabling environment, supporting members to establish plantations and access quality inputs and services at more competitive terms. The association also aims at creating public awareness about the importance of tree growing; sharing experiences amongst members; promoting the profitability of commercial forestry and lobbying for favorable financing (UTGA, 2015).

2.8 Analysis of strengths, weaknesses, opportunities and threats for the private sector forestry in forestry

In the context of the above, an analysis of the strengths, weaknesses, opportunities and threats of (SWOT) the forests products industry in Uganda was conducted with the view to inform the development of the private sector in forestry in the country. Each of these are outlined below.

2.8.1 Strengths

Regulatory framework

Notwithstanding implementation shortfalls, Uganda has adequate forestry and environmental policies and supporting laws, as outlined in section 2.3, required for directing and guiding the forestry sector towards realisation of its goals.

Technical know-how

There is a pool of qualified technical personnel (Kaboggoza, 2011) with varying levels of experience in forestry and related fields to provide the technical knowledge needed by the public and private sectors to support investment in the sector.

Stakeholder interest

There is growing interest in the forest sector by various stakeholders including government, development partners and private investors. This can be reflected in the increased support to the sector through provision of incentives such as long-term leases for land in CFRs and financial support for establishing plantation forests. This has led to an increase in the number of private investors that have picked interest in the sector, particularly in tree growing and industry.

High demand for forest products

The demand for forest products has steadily grown over the past two decades and is envisaged to continue growing due to increased population, growing economy and rising urbanisation. This guarantees a ready market for the forest products and promising reasonable returns for investors in the sector.

2.8.2 Weaknesses

Degradation and loss of forest resources

There is a high rate of forest cover loss, estimated at close to 2% (UBOS, 2015). Private forest owners have not performed well in protecting and managing their forests due to inadequacy of legal provisions and technical skills needed to effectively manage their forests. The resulting degradation and eventual conversion of these forests to alternative uses such as agriculture negatively impacts on availability of products and services derived therefrom.

Non-compliance with policies and legislations

Unsatisfactory forest law enforcement and good forest governance (FLEG) and institutional failures have been identified as the major causes for the poor performance of the forestry sector. This can be attributed to regulatory and governance weaknesses such as lack of transparency and accountability, flouting of policies and laws, insufficient participation of key stakeholders in decision-making processes, and poor coordination between enforcement and management agencies. Levels of compliance with forest-related policies and laws are generally low. There are many cases in which the policies and laws are flouted not only by the law breakers, but also those charged with implementing the policies and enforcing the laws (Kamugisha-Ruhombe, 2007). Consequently, the forest sector is characterised by high levels of corruption including illegal logging, illegal and unplanned forest conversion and conflicts over ownership and access rights.

Inappropriate technology

The management of forests is generally characterized by use of inappropriate technology in harvesting, processing and utilisation and this contributes significantly to the overharvesting of forest resources. For example, the recovery rate of converting logs into timber for mill sawn logs is below 30 percent, recovery for charcoal production is also very low (20-25%), while firewood and the charcoal are mostly used with inefficient stoves. This implies that more trees than would be reasonably required are cut down to meet the demand for timber and fuel wood.

Weak sector coordination

The regulatory framework demarcates forested resources under various tenure regimes including central forest reserves, local forest reserves, private forests as well as the wildlife reserves. The coordination and collaboration between the various bodies responsible for management of forests under various tenure regimes is generally weak (Kamugisha-Ruhombe, 2007). Moreover, support provided by government towards management and protection of these resources has been skewed towards central forest reserves at the expense of local forest reserves and forests on private land. This has resulted in wanton destruction of forest resources in the latter categories, particularly those on private land.

Weak sector supervision and technical guidance

The forest production sector is generally characterised by inadequate guidelines, standards, and regulations particularly for private forestry. For example, regulations to operationalise the National Forestry and Tree Planting Act (2003) took more than a decade to develop. Without these regulations, it became difficult to effectively enforce adherence to provisions of the Act. This partly aided acts such as illegal logging in CFRs and uncontrolled harvesting on private land to continue unabated.

Inadequate support for private forest owners

Entrepreneurs in the forest sector face a number of constraints including inadequate information on markets; weak linkages in the value chain; limited access to key inputs including credit, finance, capital and technology; and shortage of business and technical skills. However, little effort has been made to support private forest owners to overcome these constraints while preferential treatment has been given to CFRs managed by NFA and the NPs & WRs leaving other forests to suffer. Low priority is being given to the management of private natural forests but once exhausted, pressure will be turned onto the remaining public forest reserves that may be very difficult to contain.

The forestry sector in Uganda, particularly private forestry, has until recently been underdeveloped with limited or no support accorded to it compared to the public sector. There have been limited incentives for investment in tree growing for a long time and virtually none for sustainable management of natural forests, especially those on private land. Specifically, guidelines, standards, regulations for private forestry have not been developed while private forest owners have limited bargaining power with government.

Scarcity of quality planting materials:

There is a general scarcity of good quality planting material in the country due to failure in the past to maintain well developed tree seed stands. Consequently, high quality planting materials have to be imported into the country which makes them relatively expensive. The high cost of good quality seeds, limited awareness among stakeholders, lack of regulations for tree seed and seedling operations and deficiency in monitoring of production and supply of tree seed and planting materials, many unregulated tree nurseries have sprung up posing a risk to future productivity of forests. Many tree growers may realise late that they wasted valuable resources on inappropriate planting materials and this will have a long-term negative impact on participation of private entrepreneurs in tree growing.

Underestimation of forestry sector contribution

The worth and contribution of forests to GDP in Uganda is grossly underestimated which negatively impacts on the ability of forests to compete favourably with other land use options (Bush et al., 2004). Services rendered by these forest resources are mostly not quantified economically and do not result into direct revenue inflows for the forest owner. The limited revenue from forest products is not sufficient to fund sustainable management of these forests.

High level of informal activity in the sector

Most of the forest products reach the market through informal or illegal channels (Kambugu et al., 2013). This is worsened by poor traceability of forest products due to lack of a proper chain of custody that makes it difficult to differentiate between formal and informal products on the market. Consequently, there is limited data on the forest sector because official records capture only a small proportion of the forest products traded in the market, making it difficult to develop appropriate interventions regarding forest products supply and demand. Similarly, it is difficult to obtain documentation regarding the areas under trees by private tree growers who are not growing in CFRs unless they are operating on large scale or are registered with SPGS or UTGA. There is also limited information on the downstream value chain which disadvantages tree owners because they never get to know the market worth of their tree resources. In addition, there has been limited effort made in research and development efforts to integrate value chain development into mainstream forestry research.

Undue attention to timber production

Efforts that have been made towards forest management have been biased towards timber production. Consequently, there is limited emphasis on the production of fuelwood for the country's energy requirements, especially in the rural areas. This partly explains the continued cutting down of forests outside public reserves without due regard for sustainability.

Lack of skills on forest management

Lack of appropriate skills has been identified as a major constraint to effective private sector participation in the development of commercial forestry in Uganda. Skill levels in most private plantation businesses in Uganda are inadequate, with most employees lacking skills and experience in management practices for viable commercial plantations development. Similarly, there are few private contractors and credible managers who can be entrusted with running the private investments with minimum supervision (Jacovelli, 2012).

Conflicts over public land

Private sector investors interested in tree planting have entered into partnership with NFA to establish plantations in central forest reserves. In many cases such land is occupied by encroachers and most investors demand that the encroachers be removed from CFRs before the investors accept to take on the land. It is not unusual for former encroachers to seek compensation before they vacate the land and when removed by force, they usually commit acts of arson on plantations established on land they previously occupied.

Encroachers are one of the most outstanding impediments reported by private sector investors in commercial forest plantations.

2.8.3 Opportunities

High enthusiasm in tree growing

There is a growing interest in forestry by the private sector, not only in traditional areas such as tree growing, processing and trade, but also in non-traditional products and services including ecotourism, carbon sequestration and support for conservation initiatives (Nampindo et al., 2011; Ruhombe, 2012).

Prioritisation of the forest sector

The forestry sector has been given a high priority by government agencies including Uganda Investment Authority and the National Development Authority. Forestry has been categorized as a primary growth sector in the National Development Plan, which provides an opportunity for forestry institutions to mobilize financial resources for forestry development (MWE, 2013). There is also goodwill among development partners to finance forestry in the country as demonstrated by support towards SPGS by EU and Norway, and also by FAO (Jacovelli, 2012). There is also positive support from politicians and decision makers at various levels, especially in terms of providing policy direction for forestry development; this is instrumental to the success of public institutions.

Variety of products and services

A number of products and services from forests are now becoming more marketable and therefore, a promising source of income for the forest owners and revenue for forest management institutions. These products include high grade timber and associated products, ecotourism, bee products, carbon sequestration services, water catchment services, and biodiversity products. In addition, international initiatives on climate change are providing further opportunities for funding forestry programmes (Ruhombe, 2012).

Government commitment

Government is committed to promoting tree growing on farms in all areas. Consequently, there will be continued support towards efforts to establish and maintain quality forest plantations and provide the needed support to the private sector to grow industrial forest plantations. Incentive schemes to stimulate private sector investment similar to the public-private partnership in the SPGS model will be undertaken to increase investment in commercial forest plantations (MWE, 2013).

Attractive returns to investment

Timber plantations in Uganda offer more attractive rates of return on investment in the order of 15-18% (more with well grown Eucalyptus). This compares very favourably with many other countries as follows: Germany (0.5-1%); UK (3-5%); Brazil, Chile, Spain, Turkey (10-12%); and New Zealand and Australia (8 to 8.5%) (Kaboggoza, 2011).

Availability of land for plantation expansion

The Government of Uganda has made available about 500,000 ha from the country's central forest reserves for leasing to private investors interested in development of forest plantations (MWE, 2013). This policy has been instrumental in facilitating private investors'

interest in plantation forestry. Moreover, the policy has helped in bringing degraded forests into productive use instead of remaining idle and thus vulnerable to further degradation or encroachment.

Existing markets

Owing to the prevailing supply-demand gap, there is a ready market for timber and poles and this is set to continue in the foreseeable future due to increasing demand as population and the economy expand at both national and regional levels. The imbalance between demand and supply has helped to make tree growing a profitable and attractive investment (Jacovelli, 2012).

Favourable environment

Uganda is endowed with favourable environment for tree growing including fertile land and favourable weather conditions. Kaboggoza (2011) and Odokonyero (2005), report mean annual increment in the range 15 – 26 m³/ha/yr in plantation forests and 3m³/ha/yr in tropical high forests with good management practices. This plantation mean annual increment is relatively better as compared to that of other areas such as Australia (15m³/ha/yr), South Africa (15m³/ha/yr), and Tanzania (14m³/ha/yr).

Human resource base

There is abundant skilled manpower in the sector, with academic institutions such as Makerere University and Nyabyeya Forestry College churning out sufficiently trained human resources for the forestry sector in Uganda.

2.8.4 Threats

Anthropogenic pressure on forests

The combination of population and economic growth is envisaged to exert undue pressure on forest resources unless considerable progress is made in reducing the ever-increasing demand for fuel wood, construction materials and land for human settlement and agriculture. As pressure on the forests continues to grow, the remaining forests are likely to be further degraded and can be ultimately lost. This will have adverse effects on the economy and the livelihoods of rural communities who are exposed to stress and shocks resulting from inadequate supplies of the forest products and services.

Degradation of forests through encroachment

Forest encroachers exacerbate forest degradation by turning forested land into agricultural land, grazing land and permanent settlements. When degraded forest land is allocated for plantation development, the evicted encroachers engage in malicious activities such as setting plantations on fire to frustrate the investors. This is adversely affecting development of forest plantations in degraded central forest reserves and some private land.

Governance, political influence and corruption

The continued degradation of Uganda's forests and other natural resources is increasingly being attributed to poor governance manifested through political interference and influence peddling, poor institutional coordination of the forestry agencies, corruption, abuse of office, breakdown in law enforcement and compliance, inadequate mechanisms for access to justice and remedy; and bureaucratic inefficiencies and indecisiveness. There is widespread

use of power and authority entrusted to political leaders and technical personnel for their personal gain. Powerful business people with strong political connections actively participate in illegal forestry sector activities despite presence of clear policy and legal frameworks that advocate for sustainable forest resource utilisation. These players have developed sophisticated networks that continue to extract various products from Uganda's forests often eluding surveillance and intelligence mechanisms employed by both government agencies and the powerless communities adjacent to the forests.

Some political leaders restrain technical personnel from strict implementation of regulations particularly during the pre-election and election periods. Consequently, law enforcement is normally relaxed leading to increased illegal activities such as encroachment and trade in illegal forest products. According to Jao and Kiyingi (2005), over 80% of forest encroachments in the reserves are backed by political leaders who are willing to compromise responsible forest management in return for votes. This not only costs government huge revenue losses thereby affecting provision of social services but also reduces public confidence in the sector. It also affects livelihoods of forest adjacent communities and will, in the long term, negatively impact on environmental sustainability.

Financing of forest investments

Most of the financial institutions do not have financing arrangements for forest management projects owing to the long-term nature of such investments. Consequently, mobilizing financial resources for managing commercial forest plantations usually focuses on limited private sources.

Social risks

Tree plantations are subjected to a number of social risks such as arson, and deliberate vandalism in situations where there are conflicts over land ownership and use.

Institutional failure

Inadequate implementation of FLEG has contributed to deforestation and forest degradation thereby discouraging sustainable investment in the forestry sector. In addition, there has been a general failure to provide incentives for sustaining forests as opposed to using them for agricultural activities. Consequently, quick profits from agriculture have been ultimately valued over conservation at the detriment of private forests.

Lack of adequate infrastructure for certification

Uganda's production forests have not been certified and the chains of custody are poorly developed. Consequently, Uganda cannot sell most of its forest products on some of the international markets that require certified products. This is made worse by illegal timber trade and competition from cheap imports.

Pests and diseases

Plantation monocultures tend to be more vulnerable to pest and disease attacks, and these can frustrate the tremendous efforts and resources that have gone into establishment of commercial forest plantations in Uganda. A study by Nyeko and Nakabonge (2008) indicated that a number of pests and diseases were present in tree nurseries and

plantations in Uganda, but little was known about their cause, distribution, host range, population variability and magnitude, making it problematic to effectively control them.

2.9 Potential for public private partnerships (PPP)

2.9.1 PPP policy and legislation framework in Uganda

In 2010, the Government of Uganda (GoU) adopted a PPP policy as a tool for provision of public services and public infrastructure in Uganda with the aim of better utilisation and allocation of public funds, efficient development and delivery of public infrastructure, ensuring good quality public services and boosting economic growth (GoU, 2010). The key elements of the PPP policy and legislative framework include a PPP framework policy (2010), the Public Private Partnerships Act (2015) and guidelines on Public Private Partnerships for Local Governments. The tenure structure of forests in Uganda coupled with past and prevailing management challenges in the forest sector renders the forestry sector one of the fertile areas for application of PPPs. This is duly recognised by the Forest Policy (2001) which asserts thus "...the private sector will play the major role in developing and managing commercial forestry plantations..." Key areas for PPP consideration include forest management and utilization.

2.9.2 Existing PPP arrangements

Some of the existing PPP in Uganda's forestry sector that can provide lessons in implementation include the following:

2.9.2.1 Uganda Wildlife Authority/ Forests Absorbing Carbon Emissions

The UWA-FACE initiative is a public/private partnership between the Government of Uganda (GoU) and Forests Absorbing Carbon Emissions (FACE), a non-profit organization, to reforest the degraded areas of Kibale and Mt Elgon National Parks. This was intended to enable sequestration of carbon, management of water resources and creation of a habitat for diverse wildlife. Under this partnership, FACE undertook to reforest the previously degraded areas of the parks under the arrangement that the two parties would share revenue from carbon offsets generated. The project targeted to restore 10,000 ha in Kibale and 25,000 ha in Mt. Elgon National Park (MENP).

2.9.2.2 Uganda Nile Basin reforestation project

The Uganda Nile Basin Reforestation Project, operating in Rwoho CFR in Mbarara District South Western Uganda, is an arrangement between the World Bank Biocarbon Fund, Government of Uganda (represented by NFA) and Rwoho Environment Conservation and Protection Association (RECPA). NFA maintains overall responsibility for the project implementation and delivery of the emission reductions. The authority provides seedlings and technical advice to community groups, who in turn protect the plantations and remaining patches of natural forests. The community groups concerned are then paid by NFA for each ton of CO₂ sequestered at a price stipulated in the agreement.

2.9.2.3 The International Small Group and Tree Planting Programme (TIST)

TIST is a jointly implemented initiative by the Institute for Environmental Innovation (I4EI) and Clean Air Action Corporation (CAAC). In Uganda, the project operates in three sites (Bushenyi, Kabale and Kanungu) in the southwest corner of Uganda to empower small groups of subsistence farmers to reverse the devastating effects of deforestation, drought and famine, through tree planting and sustainable agriculture. The groups receive quarterly payments per tree planted and surviving trees, on the condition that the members also adopt sustainable farming practices.

2.9.2.4 Collaborative Forest Management in CFRs

Several communities have gone into Collaborative Forest Management (CFM) arrangements of Central Forest Reserve (CFR) in which rights, responsibilities and returns for the communities are spelt out. The communities are allocated compartments within the CFRs to access forest products such as firewood, medicinal extracts, herbs, ropes, building poles, vegetables etc. In some cases, access to items such as timber and land is also permitted. In return, the community commits to perform management activities such as maintaining the forest boundary and fire lines, reporting illegalities etc. Examples of CFRs where this arrangement has been implemented include Budongo, Bugoma, Mabira, Echuya, Kasyoha-Kitomi, and Sango Bay.

2.9.2.5 Saw Log Production Grant Scheme (SPGS)

This was started as a joint initiative between the Government of Uganda (GoU) and EU but was later joined by the Government of Norway. The goal is to advocate for, empower and build capacity of private tree growers. During the first phase of the project (Oct. 2004-June 2009), SPGS triggered a major interest in commercial tree planting in Uganda, with some 11 000 ha being established to the required standards. The funding of the second phase (Sept. 2010-2013) had a planting target of 30 000 ha. Under SPGS, tree planters are provided technical knowledge and financial assistance (rebates) that are critical to the success of plantation development.

2.9.2.6 Leasing of CFRs to the private sector

NFA partnered with private sector players, in line with policy statement 3 and 5 of the Uganda Forestry Policy, to utilise expansive areas of CFRs that were earmarked for plantation establishment. Under the arrangement, part of the central forest reserves was licensed to various private tree plantation developers to plant fast maturing species particularly pine and eucalyptus.

2.9.3 Proposed PPP arrangements

The Government of Uganda (GoU) prioritises the promotion of private-public partnerships in forestry developments and as such seeks to engage various stakeholders interested in participating in and to benefit from the management the forest sector. Objectives of such partnerships would include but not limited to increasing area of forest cover under sustainable management, efficiency in resource utilisation, equitable benefit sharing, and encouragement of new investments in the CFRs. Therefore, GoU envisages focusing on promoting of PPPs in the areas of forest leasing, industries to process various forest

products, and establishment of ecotourism-based enterprises. Specific areas for PPP engagements include:

2.9.3.1 Production and supply of high quality planting materials

Supply of tree seeds and planting materials is an economically viable venture that can easily attract the involvement of the private sector under appropriate guidelines and regulations by regulatory and implementing institutions including NFA, district forest services and FSSD. The demand for quality planting materials is increasing due to the increased interest in afforestation and reforestation activities. Consequently, many private firms and individuals are already engaged in production and supply of planting materials but operate informally and lack necessary skills and quality control mechanisms. What is required is establishment and formalisation of partnership between the private initiatives and responsible government bodies in the forestry sector to provide standards and technical backstopping. Priority should be put on closing the skills and technical knowledge gap in the private sector.

2.9.3.2 Eco-tourism

Forests and their constituent wildlife and natural beauty represent some of the unique tourist attractions in Uganda that private sector players can invest in for increased employment and income generation. Although generally underdeveloped, the tourism sector contributes to economic and social development, and to resource conservation. For example, NFA has reported earning over \$50,000 annually from two eco-tourism sites while local communities increasingly benefit from tourism, either directly through benefit-sharing or indirectly through investments made from the tourism revenue. In addition, there is additional benefit linked to tourist expenditure multiplier effect on output, income and employment.

2.9.3.3 Concessions and leasing public land for industrial plantations

Building on the success registered in development of plantations for production of saw logs over the past decade, similar efforts can be undertaken to further expand industrial plantations targeting the production of value-added products such as pulp and paper. Given that most paper products used in Uganda and the East African region are imported, investing in the pulp and paper production can be an attractive investment if a suitable investment climate is created to attract investments in the sector.

2.9.3.4 Policies and regulation governing forest sector PPPs

As noted earlier, forest management has been a preserve of government with the private sector focusing on secondary production. Consequently, sector regulation inevitably pitted government against the private sector with relationship more adversarial than cordial. With private sector increased participation in primary production, there will be urgent need to forging PPPs to regulate the forestry sector, particularly secondary processing. This is critical if the private sector is to optimise benefits from tree rowing.

2.9.3.5 Other areas

Other areas include demonstration and training in good practices for tree growing, improvement in forest products processing practices, promoting FBEs (eco-tourism, bee-keeping, crafts, medicine), partnerships for carbon and trade and climate change mitigation.

3. Conclusions and recommendations

3.1 Conclusions

3.1.1 Key actors in the forest production sector

The forestry sector in Uganda is characterised by multiple players engaged in both primary and secondary production, including individual actors, public institutions and private interests. While government has traditionally played the central role in primary forest production with the private sector focusing on the secondary production, this has changed over the past decade. The private sector is now taking a leading role especially in the development of industrial plantations while government is focusing on creation of an enabling environment for private sector to thrive.

3.1.2 Primary forest production

A variety of tree species grow in Uganda's natural forests although years of selective logging in forests on private land without deliberate management have led to virtual exhaustion of these forests. Natural forests in CFRs on the other hand have been relatively well protected although the zoning of these forests left little resource available for exploitation and there is virtually no production from these forests. In the plantation forest sector, extensive effort has been made to establish plantation forests by both the private and public sectors. Current estimates put plantation forest area close to 90,000ha of which about 90% belongs to the private sector. These forests contain an estimated 7 million cubic metres of tree growing stock. This indicates that the private sector picked interest in tree planting partly because of the financial support and other incentives provided to catalyse this investment and partly due to the opportunities created by the prevailing scarcity. Efforts to sustain these investment trends have been devised.

3.1.3 Secondary forest production

The secondary forest production comprises of fuelwood (firewood and charcoal) production, sawmilling, furniture production, pole treatment, plywood production and processing of non-timber forest products. Consequently, key products include fuelwood, timber, transmission poles, panel products and a range of other products derived from NTFPs. However, there is paucity of information on both capacity and actual production, but the prevailing scarcity of wood implies that majority of the producers are operating below capacity.

3.1.4 Performance of the forest production sector

Primary forest production has exhibited appreciable performance, particularly with regard to establishment of plantation forests but the performance with regard to forests on private land has been largely dismal. Performance in secondary forest production is below its potential mainly due to constraints related to raw material supply. Employment is largely arising from on-going plantation forest establishment and as such is mostly informal, but the

future promises many opportunities. The gender landscape does not favour women due to perceptions about nature of forestry work, land tenure systems that discriminate against women, inadequate prioritisation of gender issues and weaknesses in the institutional framework.

3.1.5 Linkages among actors

The forestry sector is largely disaggregated although a number of corporate actors are pursuing a strategy of vertical integration. However, with many primary forest production players interested in capturing opportunities for a growing lucrative timber market, there is a risk of uncontrolled forest products harvesting and processing in the future which can detrimentally affect the returns these players would have reaped.

3.1.6 Potential for public private partnerships

The institutional changes instituted by the Government of Uganda helped in creating a supportive legal environment including laws, regulations and policies that are supportive of private forestry initiatives. Further, aware that the private sector is better placed to make viable investments in the forestry sector, GoU has shown commitment to establishment of public-private partnerships. A number of PPP arrangements have been successfully implemented, notable among them the SPGS. This initiative has demonstrated tremendous success in establishment of timber plantations. A number of other potential areas for collaboration between the private and public sectors have been identified.

3.1.7 Production, trade and consumption of forest products

Production, trade and consumption of all categories of forest products is on a rising trend as population increases. However, the forest estate area is declining except that of plantation forests. This means that plantation forests will play an increasing role in the production of forest products in the near and distant future.

3.1.8 Contribution of the private forestry sector

The private sector, which is profit-seeking and non-profit seeking NGOs/CSOs and CBOs, have made tremendous contribution to the forest sector in Uganda. Civil society organisations work in partnership with government in implementing community forest initiatives and do considerable advocacy work in the forestry sector thereby providing the much-needed oversight. Profit-oriented organisations, on the other hand, provide a range of benefits such as employment generation, payment of taxes, provision of social services (corporate social responsibility initiatives) and value addition through the range of business undertakings they engage along the whole forestry value chain.

3.2 Recommendations

- a) There is need to build capacity of actors to transform from individual level operations to institutional level either in partnerships, or as associations or companies. This is because majority of players act as individuals yet investments in the forestry sector are mostly long-term, hence individual level investments may not be easy to continue beyond the first or current generation of investors.
- b) There is need to extend public-private partnerships to natural forest management on private land. Most of the country's private forests are located on private land yet PPP efforts in primary production have mainly focussed on plantation forests and natural forests in reserves. Consequently, natural forests on private land are being lost at a very high rate.
- c) Deliberate efforts could be made to address weak collaboration between players in the forestry sector. For example, with most actors operating individually, there is a risk of overproduction in some product lines resulting from undue competition between the players.
- d) Gender mainstreaming efforts need to be strengthened to ensure that aspirations of women, youth and other special interest groups are not hindered through cultural norms and other entry barriers.
- e) There is need to strengthen vertical and horizontal linkages between actors to improve resource conversion and use efficiency in the forestry sector.
- f) The private sector needs to be more actively engaged in the regulation of the forest sector as opposed to the mostly passive role being played at the moment, which is partly responsible for the prevailing scarcity and apparent disorganisation witnessed in the sector at the moment.

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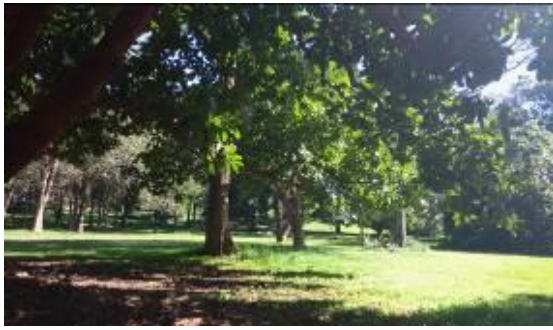
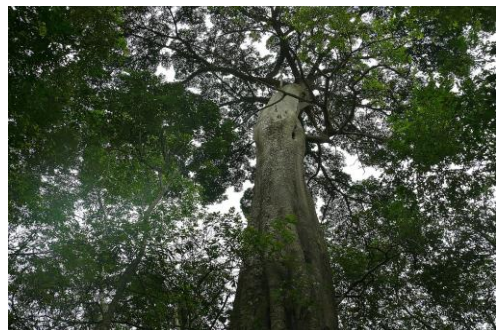
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