PANDA MITI KIBIASHARA
PRIVATE FORESTRY PROGRAMME

DESK STUDY FOR DEVELOPING MECHANISMS AND POLICIES THAT STRENGTHEN THE PRIVATE PLANTATION FORESTRY AND RELATED VALUE CHAINS

FINAL REPORT

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EXECUTIVE SUMMARY

Background

Over the past 15 years the Government of Tanzania has been creating an enabling environment to promote private forestry to maximize the potential and existing opportunities in forestry. In line with that Private Forestry Programme (PFP) was initiated in 2013 with intention to increasing rural income, thereby reducing poverty and inequality through developing sustainable plantation forestry in Southern highlands. Against this background, PFP commissioned FORCONSULT to conduct a desk study to develop mechanisms and policies that strengthen private plantation and related value chain. The main approach and method was desk reviews of literature, limited consultations with some stakeholders and stakeholders' workshop.

Findings

Studies done in Tanzania on plantation tree species

The most common tree species grown in Southern Highlands are *Pinus patula*, *P. caribea and P. elliotii, Tectona grandis, Acacia mearnsii and several Eucalyptus* spp. The height growth and productivity of these species vary from plantation to plantation. The height growth for some of selected tree species are:23-34 m for *Pinus patula* range at 20 years; 18-30 m for *Tectona grandis* at 17 years and 6-20 m for *Eucalyptus spp*, at 10 years. The MAI are: 21-35 $m^3ha^{-1}yr^{-}$for *Pinus patula* range at 20 years; 13-17 $m^3ha^{-1}yr^{-}$ for *Tectona grandis* at 17 years and 3.7-23 $m^3ha^{-1}yr^{-1}$ for *Eucalyptus spp*, at 10-13 years. The variation in growth and productivity are due to due to various factors such as species/provenance selection, genetic improvement, species-site matching and silvicultural practices.

Current tree improvement projects and actors, access to planting materials and high quality seeds

The desk study found that tree improvement in Tanzania had gone through phases of increasing in the 1960s, declining in between 1970- 1990 and increasing again in the late 1990s. The trend has been largely driven by availability of fund to establish or maintain the programmes. The unstable nature of tree improvement programmes in Tanzania has resulted to increase in significant proportion of low productivity and quality in plantations and increase in cost of importation of planting materials. It was equally observed that there are tree improvement programmes that begun and being implemented in Tanzania and those began from outside Tanzania but implemented in Tanzania at the later stage of tree improvement. Different actors ranging from National, Regional to International are being involved in tree improvement programmes in Tanzania.

Currently, the private forest companies source high quality planting materials through importation from 2^{nd} and 3^{rd} generation seed stands, and seed orchards. However, due to high cost of seed importation most public forest plantation managers and TGs source their planting materials through old stands or unimproved TTSA seed stands.

Establishment of private forest plantations on government forest reserves through concession

Concession in Government forest reserves is backed by the forest policy and forest act and there is large forest area potentially available. However, there is no forest under concession to-date due to, presumably, unfavourable conditions. Implementation is constrained by:

stringent conditions which can only be met by large-scale industrial private forestry enterprises; Long and bureaucratic process and lack of the model for monitoring private forests under concession; and lack of awareness among others. There is need to facilitate a discussion platform on forest concession and derive concrete proposal on the way forward.

Utilization of land and land tenure in the programme area, present situations and trends

There is limited information on the land-use classes and their dynamics in the Southern Highlands of Tanzania. However qualitative analysis found out competing land uses between different land use classes. Land use competition is partly due to population increase and technological advancement. It was also observed that there is large unutilised area held by forest plantations, government organisations, local institutions and individuals.

The study found out that land in Tanzania can be accessed and utilised through Customary Certificate of Right of Occupancy (CCRO) for village land, Granted Right of Occupancy (GRO) for General lands, and Derivative Right of Occupancy/ Lease for a Non-Tanzanian in a general lands. However, more than 90% of villagers in the Southern Highlands do not have any of legal documents for land ownership due to lack of Survey/Land use plans for the villages.

Extensions services in private forestry

Currently extension services in the forestry sector in general are almost non-existent and the scant presence is fragmented, lack coordination among the different players and there is no sustainable sources of funding. It is recommended that in order to effectively deliver extension services to private forest owners, other service providers such as NGOs, CBOs and other institutions should be involved and financing these activities should be assured.

Access to raw material for wood processing from natural forest reserves and plantations; Logistics and transportation costs

Access to forest products as inputs to wood processing has increasingly become difficult due to increasing demand. Current estimates show that there is a deficit of 22.5 million m^3 of wood. Public forests alone cannot meet this demand and concerted effort by everyone is needed to fill this gap. Transportation of forest produce is characterized by road network supplemented by a railway line – TAZARA. Poor rural and forest roads, fuel and vehicle maintenance costs and unreliable railway transportation contribute to the current high price of forest products at the market. Improved road network and resumption of TAZARA cargo services are recommended.

Timber standards and grading procedure for domestic market

The current Forest Policy, through the Forest Act does not provide statements and directions to regulate standards and grading procedure for timber to be consumed in the local market. There is need to review and revise the Forest Policy, Act and regulations so that timber grading for local market is also regulated.

Taxation and fees payable to forest products of the forest sector

Taxation and fees charged to forest products supplied from public forests are provided for in the Act and regulations. Nevertheless these regulations are silent on taxation and fees for forest products from private forests. Concern is pointed out on existence of many taxes and fees collected by different entities which increases operation costs and prices to the consumers. It is recommended to streamline taxes, and that private forest owners benefit from some fee retentions as public plantations.

Tax incentives and subsidies in forestry development; and TGAs financing

There are many ways in which forest development could be financed. These include incentives and subsidies; and self financing. The former group, include grants and soft loans, income tax relief, tax concessions and joint venture while the latter group include certification, carbon trade, payment for environmental services, cooperation-community contracts etc. There is need to explore these mechanisms.

Policy and legislative development needs

While policy and legislative environment for private forestry is provided for, there are certain areas which need to be examined, including definition of general land and its implication on forest land under village land, and clear definition of concession on government forest reserve. Complimentarity with water policy on water sources and river banks.

ABBREVIATIONS

AAC	Annual Allowable Cut
CAF	Certificate of Forestry Payment (Costa Rica)
CAFA	Advanced Certificate of Forestry Payment (Costa Rica)
CBFM	Community Forest Management
CBO	Community-based organizations
CCRO	Customary Certificate of Right of Occupancy
CDM	Clean Development Mechanism
dbh	diameter at breast height
DC	District Council
DFHC	District Forest Harvesting Committee
DFO	District Forest Officer
DRC	Democratic Republic of Congo
DRO	Derivative Right of Occupancy/Lease
EIA	Environmental Impact Assessment
EU	European Union
FAO	Food and Agricultural Organization
FBD	Forestry and Beekeeping Division
FDT	Forest Development Trust
FITI	Forest Industries Training Institute
FSC	Forest Stewardship Council
GCF	Gatsby Charitable Foundation
GN	Government Notice
GRL	Green Resources Ltd
GRO	Granted Right of Occupancy
IA	Infrastructure Allowance
IGA	Income Generating Activities
INAB	National Institute of Forests
ITA	Investment Tax Allowances
JFM	Joint Forest Management
KEFRI	Kenya Forestry Research Institute
KVTC	Kilombero Valley Teak Company
LGA	Local Government Authority
LMDA	Logging and Miscellaneous Development Account
m^3	Cubic metre
MAI	Mean Annual Increment
MNRT	Ministry of Natural Resources and Tourism
MoF	Ministry of Finance
MoID	Ministry of Infrastructure Development
MoLHHS	Ministry of Lands, Housing and Human Settlements
MPM	Mufindi Paper Mill
NAFORMA	National Forestry Resources Monitoring and Assessment
NGO	Non-Governmental Organization
NHC	National Housing Corporation
NIFP	Non-industrial Forest Plantations or NIPF Non Industrial Private Plantations
PF–CT	Private Forestry and Carbon Trading
PFP	Private Forestry Program
PINFOR	Program of Forestry Incentives
PMO-RALG	Prime Minister's Office regional Administration and Local Government

PS	Pioneer Status
PSA	Payment for Environmental Services (Costa Rica)
PSRC	Parastatal Sector Reform Commission
SA	Stakeholders' analysis
SAFIA	Southern Highlands Forest Industries Association
SAGCOT	Southern Agricultural Growth Corridor of Tanzania
SARI	Selian Agricultural Research Institute
SHFP	Sao Hill Forest Plan
SHIVIMITA	Shirikisho la ViwandavyaMisitu Tanzania
SME	Small and Medium Enterprise
SPGS	Sawlog Production Grant Scheme
SUA	Sokoine University of Agriculture
TaFF	Tanzania Forest Fund
TAFORI	Tanzania Forest Research Institute
TANWAT	Tanganyika Wattle Company
TAWOFA	Tanzania Wood Furniture Association
TAZARA	Tanzania Zambia Railway
TBA	Tanzania Building Agency
TBS	Tanzania Bureau of Standards
TFCMP	Tanzania Forest Conservation and Management Project
TFGS	Tree Farming Grant Scheme
TFS	Tanzania Forest Services
TGA	Tree Growers' Association
TGIS	Tree Growth Incentive scheme
TIC	Tanzania Investment Centre
ToR	Terms of Reference
TRA	Tanzania Revenue Authority
TSh	Tanzanian Shilling
TTSA	Tanzania Tree Seeds Agency
TZS	Tanzania Standard
UDSM	University of Dar es Salaam
UNDP	United Nations Development Programme
URT	United Republic of Tanzania
USD	United States Dollar
VAT	Value Added Tax
VG	Village Government
VPO	Vice President's Office

1. INTRODUCTION

1.1 Introduction and Background

Tanzania is well positioned, from both supply and demand aspects, to significantly increase the contribution that plantation forestry could make to its rural and national economies. It is well positioned for a well-developed commercial forestry sector in terms of the potential to export to other African countries and abroad by sea. It is clear that there is potential beyond that which is currently realised. The improved management of existing plantations and establishment of new plantations represent opportunities to revive, consolidate and grow the forestry sector. However, Tanzania has not been able to maximize this potential because of reliance of the government sector. Realising this, the government has created an enabling environment through revision of the forest policy and other interventions to stimulate and promote participation of private sector in forestry sector development.

The Private Forestry Programme (PFP) – *Panda Miti Kibiashara,* aims at increasing rural income in the Southern highlands area, thereby reducing poverty and inequality through developing sustainable plantation forestry, value addition including employment creation in the entire production value chain from quality seeds to quality products in markets. The Program supports sustainable land use planning, facilitates the organising of tree growers into Tree Growers' Associations (TGAs), and develops the capacities of tree growers, SMEs and service providers (extension and business services). The Program will accelerate tree growing, improve its quality and strengthen wood-based value chains by introducing a Tree Growth Incentive Scheme (TGIS) and Income Generating Activities (IGA). The experiences of the Program's innovative approaches will be processed into best practices to be disseminated widely within the sector.

The key beneficiaries of the PFP are tree growers and wood processing SMEs in the PFP area, especially members of already existing and to be established Tree Growers' Associations (TGAs). Inclusive and equal participation in TGAs will be promoted, and the rights of vulnerable groups will be strengthened. To ensure environmental sustainability, the Program will integrate biodiversity conservation in land-use planning and improve biodiversity management in plantation development.

The Programme strategy is based on the Forest Policy 1998 which defines that industrial forest plantations will be managed on a fully commercial basis. This applies to plantations on central and local government forest reserves. On village lands however there is no strict guidance on the purpose of the plantations, only the tree ownership and extension issues are addressed. As guided by the policy statement 7 "Private and community forestry activities will be supported through harmonized extension service and financial incentives. The extension package and incentives will be designed in a gender sensitive manner" the Programme will work to improve the production and sustainability of private plantation forestry, especially the environmental, institutional, social dimensions of sustainability, and the Programme will actively support the development of the sector's enabling environment. A starting point for the planning of activities to strengthen the enabling environment will be a desk study of the experiences of developing mechanism s and policies that strengthen the

private plantation forestry and related value chains in other countries, and experiences gained so far in Tanzania.

1.2 Objectives of the Study

The objective of this task is to conduct a desk study that shows comprehensive plan of activities to strengthen the enabling environment in terms of mechanism and policies that strengthen the private plantation forestry and related value chains. In addition, is to highlight bottlenecks, legislative development needs and prepare concrete proposals for policy and legislative revisions and to suggest high priority support actions. Special attention is given to the land issues and forest fees, including land title deed structure.

1.3 Terms of Reference

The terms of reference of the desk study were to address the following key issues:

1.3.1. Report on studies done in Tanzania on plantation tree species. Their height, growth development and mean annual increment (MAI) particularly those grown in the southern highlands of Tanzania;

1.3.2. Description of the current tree improvement projects and actors, access to planting material and high quality seeds;

1.3.3. Information on the possibility of establishing private forest plantations in government forest reserves through forest concession;

1.3.4. Description of Land use issues in the programme area. Specifically to cover utilization of land and land tenure, present situations and trends;

1.3.5. Assessment of the extensions services: actors, financing, availability of services;

1.3.6. Explanation of access to raw material for wood processing from natural forest reserves and plantations, and wood sourcing mechanisms;

1.3.7. Description of the logistics and transportation costs in forest sector including movement permits

1.3.8. Report on the current timber standards and grading procedure for domestic market

1.3.9. Explanation of the actual procurement requirements by government with respect to locally sustainable grown wood office furniture;

1.3.10. Presentation of an account of the actual taxation and fees payable to forest products of the forest sector, tax incentives;

1.3.11. Description of tax incentives and subsidies in forestry development

1.3.12. Exploration of a Sustainable Tree Growing Association financing system, experiences from other countries and proposal for development in Tanzania

1.3.13. Proposals for Policy and legislative development needs; complementarity and conflicts with legislation with related sectors (incl. agriculture, environment, research and education, land use planning, import/export, industrial development, financing and investments, legislation on associations and cooperatives).

2. METHODOLOGY

The main approach and method was desk reviews of the experiences so far gained in other countries; and Tanzania as a base. This was supported by findings emanating from key informant interviews and focus group discussions. The findings and recommendations for strengthening the private plantation forestry and related value chains in Tanzania (are to be) were presented to key stakeholders including representatives from Ministries, private sector, NGOs, LGAs, and TGAs.

2.1 Desk reviews

The consultant collated information from published and grey literature regarding development of private forestry development in different countries worldwide. Special attention was given to countries that have shown great development in private forestry. Experiences from Asia-Pacific, Guatemala, Chile, Uganda, Costa Rica, and Brazil were reviewed. Interesting cases were deciphered for building a case for Tanzanian private forestry development. Tanzania government's policies and legislations, procedures, directives, guidelines were also reviewed to capture their strength and weaknesses in supporting private forestry in the country.

2.2 Key informant interviews

The consult visited some key stakeholders from the Forestry and Beekeeping Division (FBD), Tanzania Forest Services (TFS), Representatives from Local Government Southern Highlands (Iringa, Mufindi, and Njombe Districts) and SAFIA to gather specific/basic information that could guide or not be captured in the desk review. Others valuable stakeholders consulted included Kilombero Valley Teak Company (KVTC)members of the academia and TGAs representatives.

3. RESULTS

3.1 Reports on studies done in Tanzania on plantation tree species; their height, growth development and mean annual increment

The majorplanted tree species in Tanzania include fast growing soft wood such as *Pinus patula, P. caribea and P. elliotii.* Hardwood tree species include several *Eucalyptus spp* (*E. grandis, E. saligna, E. camaldulensis and E. clones),Tectona grandis*, *Acacia mea mearnsii* and *Grevilea robusta*. *Pinus patula* is the most planted tree species covering about 78% of the total area, the remaining 22% of total planted area is shared by other species with *Tectona grandis*, *Eucalyptus* and *Acacia* taking big portion (Ngaga, 2011). The tree species are mainly planted for timber production, pulp and paper manufacture, particle board and wood-wool manufacture, transmission poles and charcoal production (Mtui *et al.*, 2002). In this section we present reports on height growth and the mean annual increment (MAI) for *Pinus patula*, *Tectona grandis and Eucalyptus spp*. The three species are selected because they are the most widely planted softwood and hard wood in Tanzania and also, there are reliable source of information regarding their performance.

3.1.1 Height growth and Mean Annual Increment

The desk study found that height growth and MAI vary from plantation to plantation and between species (Table 3.1).The variability is partly due to species/provenance selection, genetic improvement, species-site matching and cultural practices (Chamshama and Nwonwu, 2004; Chamshama *et al.*, 2009).

Table 3.1: Height growth and Mean Annual Increment of Seletcted tree species in the Southern Higlands of Tanzania.

S/N	Species	Plantation/ Location	Age	Height (m)	MAI ($m^3ha^{-1}yr^{-1}$)
1	*Pinus patula*[1]	Sao Hill, Iringa	20	24-34	24-35
2	*Pinus patula*[2]	GRL, Mufindi-Iringa	21	-	21
3	*Pinus patula*[10]	Rongai, Kilimanjaro	19	23.7	21.7
4	*Tectona grandis*[3]	KVTC, Kilombero-Morogoro	17	25-30	13-17
5	*Tectona grandis*[4,5]	Longuza, Tanga	17	23.8	16.5
6	*Tectona grandis*[11]	Mtibwa, Morogoro	17	18-24	14
7	*Eucalyptus grandis*[2]	GRL, Mufindi-Iringa	13	20	23
8	*Eucalyptus camaldulensis*[6]	Malya, Shinyanga	11	-	3.7
9	*Eucalyptus camaldulensis*[7]	Kigwe, Dodoma	9	6.5	5.9
10	*Eucalyptus alba*[8]	Igwata, Mwanza	10	11.9	10.23
11	*Eucalyptus clones (GC)*[9]	Kwamarukange, Tanga	8	20.2	16-17

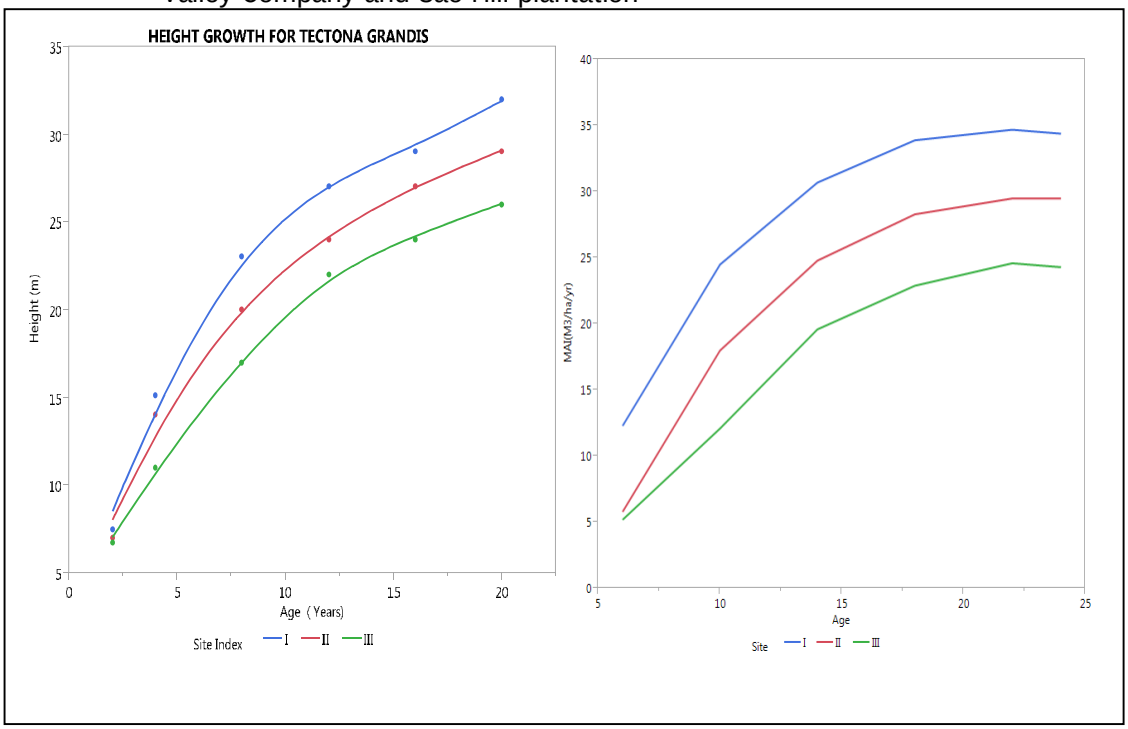
Source: [1]Adegbehin and Philip (1979), Mtui *et al.* (2005), Mhando *et al.* (1993); [2]Wesaka (2010), [2]GRL (2014); [3]Pretorius (2007), Bekker et *al.*, 2004, Kollert and Cherubini (2012); Madoffe and Maghembe (1988); [5]Pedersen et al. (2006); [6]Sabas and Nshubemuki (1987);[7]Hall and Asghedom (1981); [8]Lulandala *et al.* (1995); [9]Pima (2014); 10 Malimbwi *et al.* (1991); [11]Malende and Temu (1990).

Note: The rotation age for *Pinus Patula*, *Tectona grandis* and *Eucalyptus spp* is 21-25, 20-40 and 10-13 years respectively.

Studies have shown that proper selection of planting material has great potential to improve growth and yields. A selection of the best *Tectona grandis* provenance at Longuza plantation had increased height growth and MAI by 10% and 40% respectively (Pedersen *et al.*, 2006). Similar findings were observed in South Africa and Brazil where proper selection of planting materials and high standard silviculture have increased the MAI for *Eucalyptus* and *Pines* to 50 m3/ha-1yr-1 with a rotation length of 25 years (Chamshama, 2014).

The differences in site qualities also explain the variability in height growth and productivity. This is shown by the fact that a 20-year *Pinus patula* at Sao Hill Plantation produce higher height and MAI as compared to older *Pinus patula* at Green Resources, even though both plantations are located in similar climatic zone. Green Resources plantations are located on marginal lands that could be poorer in terms of soils, topography and micro climate as compared to Sao Hill Plantation. Figure 3.1 show the effect of site on height growth of *Tectona grandis* and MAI of *Pinus patula* at KVTC and Sao Hill Plantation. It is shown that there is a difference of about eight metres between teak planted in Site 1 and Site 3 at the age of 20 years. Likewise, the difference in MAI between *Pinus patula* planted at Site 1 and Site 3 is more than 10m3/ha^{-1}yr^{-1} at the age of 23 years.

Figure 3.1: Height growths for *Tectona grandis* and MAI for *Pinus patula* at Kilombero Valley Company and Sao Hill plantation



Source: Redrawn from Pretorius (2007) and Adegbehin and Philip (1979)

Cultural practices such as: site preparation, spacing, planting pit, weeding, pruning, thinning, and harvesting are also important determinant of growth and yields. Studies have shown increase in growth and yield of *Pinus patula* as the land preparation intensity increases (Kalaghe and Mansy, 1989). Another study has shown increase in growth and yield of *Eucalyptus spp* with increase in planting pit size (Nshubemuki, 1980). Malimbwi *et al.* (1991) have shown increase in growth and yield of *Pinus patula* with increase in spacing. A recent study has found that if correct forest practices are followed, yield will continues up to three rotations (Chamshama *et al*., 2009).

3.1.2 Recommendations for PFP

Awareness creation to tree growers on the importance of the quality of planting materials, matching tree species and provenances to site, proper plantation establishment techniques and silvicultural practices as these will have an impact on growth and productivity

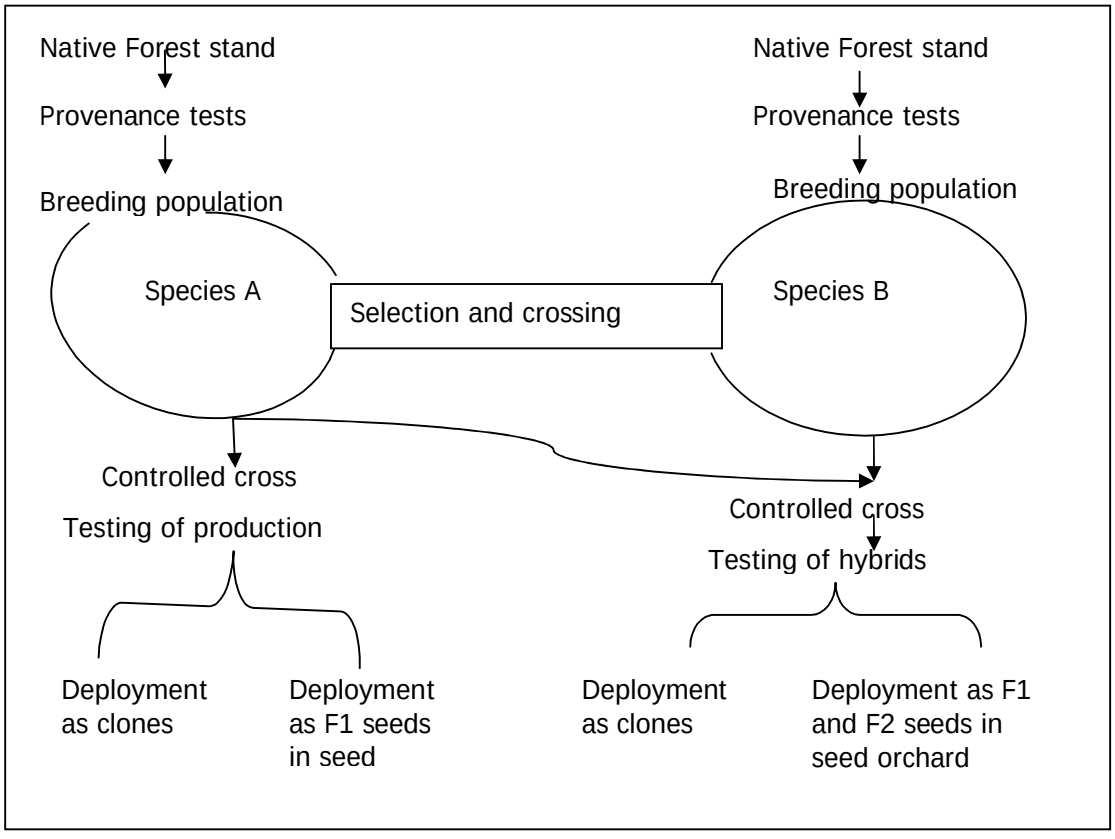
3.2 Current tree improvement projects and actors, access to planting materials and high quality seeds

Although the growth and yields of plantation tree species is largely determined by proper site selection and silvicultural practices, the stem quality (straightness, persistence of stem axis, branching and flowering) is strongly controlled by genetic make-up (Keiding*et al.*, 1986). Growth and stem quality can be improved by up to 25% through correct selection of planting material (Keiding *et al.*, 1986, Wellendorf and Kaosaard, 1986).

The desk study found that tree improvement in Tanzania had gone through phases of increasing in the 1960s, declining in between 1970 and 1990 and increasing again in the late 1990s. The trend has been largely governed by availability of fund to establish or maintain the programmes. The unstable nature of tree improvement programmes in Tanzania has resulted to increase in significant proportion of low productivity and quality in plantations and increase in cost of importation of planting materials (Chamshama and Nshubemuki, 2011).

Generally, the current tree improvement programmes in Tanzania falls into two major categories: (1) Tree improvement programmes started and implemented in Tanzania and (2) tree improvement programmes started outside the country but being implemented in Tanzania. Both categories comply with principles of tree improvement as illustrated in Figure 3.2. The only difference is the area of implementation of different stages.

Figure 3.2: Illustration of traditional tree improvement system in Tanzania



3.2.1 Tree improvement programmes started and being implemented in Tanzania

These are tree improvement programmes that begin in Tanzania carried out by TTSA and TAFORI. The programmes involve production of new genetic combinations through controlled pollination, selection and hybridization of local tree species/ landraces. The process starts with species and provenance trials. The best provenances in terms of survival, growth and yield are selected and subject to further selection and breeding. The best candidates are selected and can be used for large scale production of clones and seeds. The major challenges with these programmes are lack of sufficient monitoring time, infrastructure, fund and professional staffs as a consequence, most of them end up at provenance trials (Mwang'ingo *et al*., 2004). Examples of tree improvement in these categories are as follows:

Mtibwa *Tectona grandis clonal* Seed Orchard

This is a 50 hectare seed orchard established at Mtibwa Teak Plantation in Morogoro. It was established in 2012 by TTSA in collaboration with TAFORI and TFS. The clones were obtained from 50 plus tree from Mtibwa-Morogoro, 50 plus trees from Longuza-Tanga and 10 plus trees from Rau-Kilimanjaro. Different combinations of the clones were made (through grafting) and planted at Mtibwa for further monitoring. At the moment the seed orchard is 2 years old and is doing well.

Kiroka *Tectona grandis* clonal Seed Orchard

This clonal seed orchard project was established by Tanzania Tree Seed Agency (TTSA) in 1996 at Kiroka in Morogoro. The aim of the project was to produce large quantities of genetically improved seeds in the country. The clones were obtained by first selecting 32 best trees from Coimbatore provenances (India), and then planting them at Longuza (Tanga, Tanzania), and finally, the best trees at Longuza were selected and clonally propagated by grafting and planted at Kiroka. At 6 years old, the trees were already flowering and producing seeds (Rance and Monteuuis, 2004). Currently, TTSA is collecting seeds from this orchard ready for distribution to clients. The seeds from the clones are considered as of high quality (higher growth rate and good stem quality of the mother tree) (Personal communication with TTSA).

Tectona grandis clones at KVTC

This is another tree improvement programme for *Tectona grandis* but run by private forest company, KVTC. This project started in 2009 with 12 clones from Mtibwa. The clones originated from Malaysia. At the moment only 4 clones are on trials and monitoring. The other 8 have been neglected due to lack of records of performance of mother trees. Based on initial assessment of the trials, the clones are performing better than local land races and KVTC is considering raising all planting materials from these clones (Pretorius, 2007).

3.2.2 Tree improvement programmes started outside the country but being implemented in Tanzania

Under these programmes, the early tree improvement procedures such as provenance and species selection, hybrid and controlled pollination are performed in other countries. What are brought to Tanzania are the high quality F1, F2 or F3 seeds or clones for field trials and

large scale deployment. Some of the examples of seed stands/orchard produced from such tree improvement arrangements are:

Magamba *pinus patula* seed stand

This is a 50 hectare seed stand established at Malibwi, Magamba in Tanga region. It was established in 2005 with the seed source being 3rd generation seed stand from Zimbabwe. Currently, the seed stand is nine years old and it has started producing seeds. Poor phenotypes have been removed and TTSA is considering starting collecting seeds for large scale deployment in 2015.

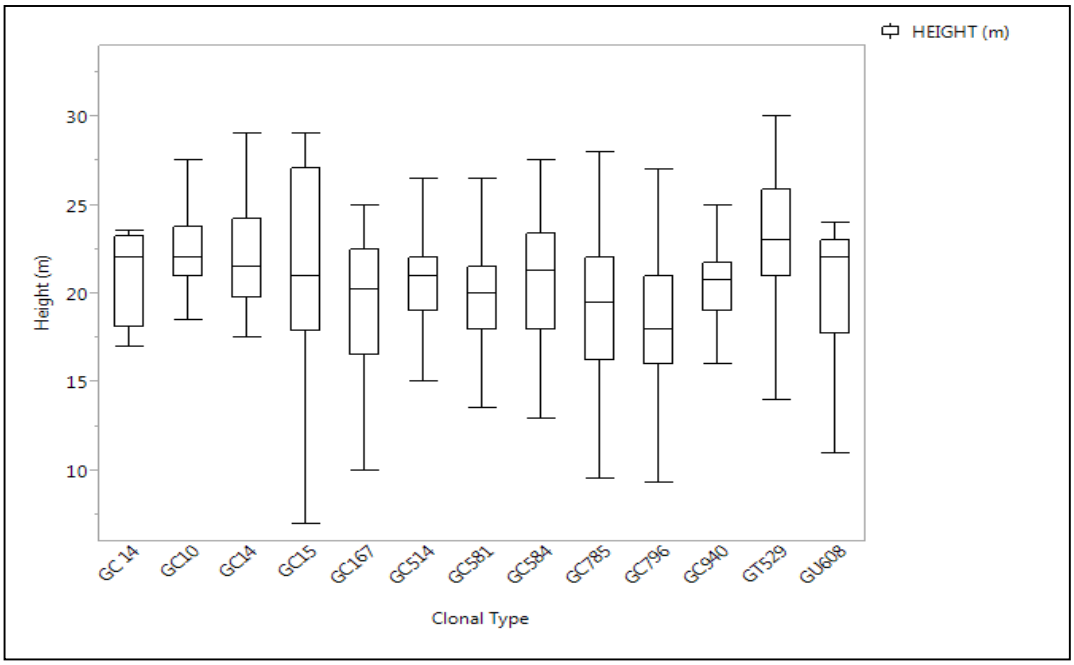
Eucalyptus seed stands

Several *Eucalyptus* seed stands have been established in Tanzania. Some of them are: a 15 hectare *Eucalyptus camaldulensis* established in 1997 at Kisinga-Iringa; a three hectare *E. grandis* established in 2006 at Magamba-Tanga; a 15 hectare *E. tereticornis* established in1 1998 at Kwalukonge-Tanga; A seven hectare *E. Tereticornis* established in 1996 at Mkundi-Morogoro and a five hectare *E. citriodora* established in 2004 at Mkundi, Morogoro. The seed Sources for all *Eucalyptus* seed stands (above) are 2nd generation seed stands in Zimbabwe. TTSA is producing seeds in all of these stands for distribution to clients.

Hybrid *Eucalyptus* Clones

This project started in 2004 with the main objective to transfer and apply tissue culture and clonal forestry biotechnology starting with *Eucalyptus* clones (Mwang'ingo*et al*., 2004).A total of 12 *Eucalyptus* clones (*grandis* x *camaldulensis* (GC), *grandis x europhylla* (GU) and *grandis* x *tereticornis* (GT) were introduced from Kenya and South Africa and established in Kwalukonge, Lushoto, Sao Hill, Shinyanga and Kibaha.The project is jointly run by Tanzania Forest Research Institute (TAFORI) and Selian Agricultural Research Institute (SARI)in collaboration with the Gatsby Charitable Foundation, UK (GCF), Mondi Business paper (South Africa) and the International Service for the Acquisition of Agribiotech Application (ISAAA).The performance of the clones 8 years after establishment is as presented in Figure 3.3. Due to good performance of these clones (as compared to local *Eucalyptus* land races), some of forest companies have started planting them in large scale. Green Resources Ltd for example, has started planting GC 15 and GC 584 with the clones being sourced from Kwalukonge trial plots.

Figure 3.3: Height growth of a 10-years*Eucalyptus* clones at Kwalukongea-Korogwe, Tanzania



Source: Redrawn from Pima (2014)

3.2.3 Access to Planting Materials and High quality Seeds

During the early stages of plantation establishment in Tanzania, seeds were imported from Central America, Mexico, Australia and South Africa. In the late 1960s, local seed stands and seed orchards for major tree species such as *Pinus patula*, *cupressus lustanica*, and *Tectona grandis* were established (Madoffe and Chamshama, 1989). These stands, however, were not properly managed as a result disqualified as a seed source. The only exceptions are four improved seed orchards of *C. lustanica*, *T. grandis, E. tereticornis* and *Grevillea robusta* (TTSA, 2010), which are not adequate for local seed demand. In the late 1990s, TTSA established a number of seed stands and seed orchards but most of them have not started large scale seeds production (Personal communication with TTSA in 2014). Currently, the studies found that most private plantations rely on importation of seed from second and third generation seed orchards or have developed their own seed sources (Table 3.1).The imported tree species are *Eucalyptus grandis*, *E. tereticornis, E. saligna, Pinus caribea, P. elliottii, P. kesiya, P.oocarpa, P. patula, P. tecunumanii and P. taeda* (TTSA, 2010).On the other hand, due to high cost of imported tree species (e.g. one kilogram of *P. patula* equal to USD1,180 and *Eucalyptus spp* is USD 900), most of public forest plantation managers source their seeds from older stands or TTSA unimproved seed sources (Chamshama and Nshubemuki, 2011). Discussion with TGAs from Njombe, Makete, Kilolo, Mufindi, Ludewa and Kilombero revealed that they are currently buying seedlings raised from unimproved seed sources because it was cheaper (one seedling = TSh 200 or USD 0.2)

Table 3.2: Access to planting materials and seed quality in public and private plantations in the Southern Highlands, Tanzania

Name of forest plantation	Tree species	Planting material	Seed Source	Quality of the seeds
SAO HILL	*Pinus patula*	Seedlings raised from seeds	Collected in TTSA plus trees and seed stands	Low
			Imported Through TTSA from 2nd Generation Seed Stands in Zimbabwe and South Africa	High
	Eucalyptus grandis and E. saligna	Seedlings raised from seeds	Collected in TTSA 1st generation seed stands and plus trees	Low-medium
GREEN RESOURCES LTD	*Pinus patula*	Seedlings raised from seeds	Imported Through TTSA from 2nd Generation Seed Stands in Zimbabwe and South Africa	High quality
	Eucalyptus grandis	Seedlings raised from seeds	Seeds imported from Zimbabwe and South Africa	High quality
	Eucalyptus saligna	Seedlings raised from clones	GC 15, GC 584,GU from Kenya and South Africa	High quality
KVTC	*Tectonagrandis*	Stumps raised from seeds	Locally collected seeds from -Mtibwa seed orchard	High quality
		Stumps raised from clones	Clones are originally from Malaysia	High quality

Source: Ngaga (2011) and Personal Communication with TTSA in 2014.

3.2.4 Recommendations on tree improvement project and access to high quality planting material

1. The actors involved in tree improvement programme (International, National, Private and NGOs) should join forces and work together. This will increase knowledge sharing and reduce cost of establishment and monitoring of tree improvement programme. In addition, the new comers will benefit from the already existing knowledge.
2. Investment on tree improvement project to widen the genetic base. This include recruiting new professionals in this field (e.g. tree breeders) and searching for more tree species or clones that will suit the current changing tree growing environment.
3. PFP create awareness to private companies on the potential of establishing high quality planting material commercial nursery in the Southern Highlands
4. The platform for sourcing and accessing planting material is TTSA. However, tree owners should be informed of other sources such as KVTC, GRL and MPM from where they can source high quality planting materials such as clones.

3.3 Establishment of private forest plantations on government forest reserves through concession

Forest concession is one of two mechanisms provide by Forest Act for stakeholders participation in the management of forest reserves in Tanzania. The other mechanism is joint forest management (JFM) (Akida and Blomley 2006). Section 20 of the Forest Act (2002) describes the process for establishing forest concession arrangements for the management of trees in forest reserves or general. Generally from the Forest Act forest concession is explained as the agreement to share the management on state-owned forest land with commercial forest company through a public-private partnership. The Forest Policy defines forest concession in a little bit different context that can bring confusion because it talks of concession of 'forests' while the Forest Act describes concession of 'forest land'. The Forest Policy defines concession as:

"a long-term agreement between the government and a forest industry enterprise, the latter to manage a forest reserve, industrial plantation or part thereof mainly for timber production. The company is responsible for all harvesting and silvicultural activities including road construction and maintenance. The government collects the agreed royalty and concession fees" (URT, 1998).

The forest reserves mentioned for forest concession includes natural forests reserves (National and local authority forest reserves, general lands) and industrial forest plantation which altogether cover more than 29 million hectares (MNRT, 2014). In this section, will explore the possibilities of establishing private forest plantation by analysing the opportunities and obstacles for establishing private forest plantation on government forest reserve.

3.3.1 Opportunities of Establishing Private Forest Plantations on Government Forest Reserves

Backed by Policy and Law: Forest concessions are provided both in the policy and by the law. The forest Act section 20 of (2002) describes the process for establishing forest concession arrangements for the management of trees in forest reserves or general land and since 2005, the framework, criteria and guidelines for concession arrangements in plantation forests has been developed (Ngaga, 2011). Some of the assessment criteria and guideline for applying for forest concession are summarized in Box 1 and Appendix 1 respectively. The Forest Policy (1998) statement No. 2 support forest concession as follows:

''Concession of Forest Reserves to private actors will be promoted. The actors will be entitled to operate in the forests in accordance with forest management plans based on the principle of sustainable forest management. The capacity of the forest authorities to monitor forest operations undertaken by private actors and/or executive agencies will be strengthened''.

Lack of capacity for government to manage the forest reserves: Studies has shown that the government forest reserves are deteriorated due to lack of fund for monitoring forests.A study assessed the available staff and capacity to manage the Eastern Arc mountain forests, and found that the government was providing approximately one-quarter

of the resources required to manage these forests adequately (Burgess and Kilahama, 2005).

Box 1: The criteria for assessing an application for forest concession

The application of concession of forest land shall be assessed based on:

1. the uses to which the applicant is proposing to put the forest land and the manner in which he is proposing to undertake those uses and the compatibility of those proposed uses to the provisions of section 3 of Forest Act No. 14 of 2002 and any forest management plan applicable to the said forest land;
2. the resources available to the applicant and likely to be applied to the said forest land;
3. the current use and management arrangements of the forest land;
4. the record, if any, of the applicant in managing or exploiting any other forest land whether in Tanzania or elsewhere;
5. the attention the applicant has paid and is proposing to pay to associating the local community, if any, with his uses and management of the forest land;
6. the duration of the lease which the applicant is proposing including any proposed renewal of the concession;
7. the contents and conclusions of any environmental impact assessment which has been undertaken in respect of the proposals of the applicant;
8. the economic and social benefits and costs, both national and local, which might flow from the grant of a concession, including the implications for employment in and about the said forest land;
9. such representations as may be received on the proposal from any person;
10. Such other matters as may be considered relevant to making an informed and responsible decision.

Potentially available area for expansion: Tanzania has about 29 million hectares of forest reserves (MNRT, 2014). Out of this, 9.3 million hectares are protected and 19.7 million hectares (production forest reserve) could be potentially available for forest concession. In addition, there is great opportunity for expansion in the vicinity of existing industrial forest plantations due to large undeveloped areas under the current forest plantations. It is estimated that 81,916 hectares are available for expansion in all government industrial plantations (MNRT, 2014b). In the project area there are more than 36,000hectares available as shown in Table 3.3.

Table 3.3: Forest plantations under TFS management by 2014

S/N	Plantation name	Location	Plantation area (Ha)	Extension areas (Ha)	Total Area (Ha)	Standing Volume of wood (Ha)
1	Sao Hill	Mufindi	52,070	36,003	88,073	8,341,371
2	Shume	Lushoto	4,227	140	43,670	510,792
3	Longuza	Muheza	1,904	200	2,104	242,450
4	West Kilimanjaro	Hai	4,149	337	4,486	377,601
5	North Kilimanjaro	Rombo	6,177	200	6,377	563,941
6	Ukaguru	Kilosa	976	941	1,917	60,189
7	Kiwira	Rungwe	2,784	45	28,290	334,290
8	Kawetire	Mbeya	2,131	517	26,480	137,439
9	Rondo	Lindi	864	1,541	2,405	13,869
10	Rubya	Ukerewe	1,771	181	1,952	243,930
11	Buhindi	Sengerema	3,810	7,569	113,790	261,095
12	Meru	Arumeru	6,110	0	6,110	548,954
13	Rubare	Bukoba	1,227	1,920	31,470	23,275
14	Mtibwa	Mvomero	1,867	75	19,420	149,274
15	Wino	Songea	1,380	10,000	10,867	130
16	Mbizi*	Sumbawanga	158	11,442	11,600	0
17	Korogwe*	Handeni	0	10,805	10,805	0
	Total		91,606	81,916	223,954	11,808,600

Source: MNRT (2014b)

3.3.2 Challenges of Establishing Private Forest Plantations on Government Natural Forest Reserves through concession

1. The assessment criteria and the conditions attached to forest concession described in the forest act no 14 of 2002 (section 20), can only be met by large-scale industrial private forestry enterprises. The condition number 2 for example (Box 2) is un-realistic to achieve by small scale forest owners.

Box 2: The Conditions attached to forest concession

A concession forest land may include conditions on;

1. arrangements for and methods of felling trees, including the rates of extraction of timber;
2. construction of roads, bridges, buildings and other structures on the forest land and the use to be made of all the aforesaid;
3. arrangements for and methods of transporting timber within and out of such forest land;
4. gathering and utilization of forest products from such forest land;
5. afforestation and reforestation;
6. disposal of waste;
7. avoidance of pollution;
8. conservation of flora and fauna within such forest land;
9. modes of consultation with persons living near to and deriving some or all of their livelihood from such forest land;
10. cooperation with right holders in respect of existing rights;
11. the duration of the concession and any arrangements for its renewal;
12. payment of fees, royalties and other imposts;
13. rendering of reports to the Division, the local authority or as the case may be the village council on compliance with the terms and conditions of the concession;
14. arrangements for the settling of disputes arising out of the concession between the grantor and the grantee;
15. such other matters as may be prescribed or as may be required by any law applicable to such forest land.

2. Concession agreements are bound by the principles of a management plan agreed between the government and the private company e.g. Forest concessions agreement does not allow changes in the land use of the forest land. In that case, it will be difficult to establish fast growing, exotic tree species forest plantation on forest concession that was previously natural forest reserve for biodiversity conservation.
3. Lack of the model for monitoring private forests under concession. Despite the fact that forest concession is backed by the law and policy, there is no single forest under concession in Tanzania. Thus, the government does not have a model for monitoring forest concession. Experience from Democratic Republic of Congo (DRC) and Congo-Brazzaville has shown that, insufficient monitoring of forest under concession has resulted to forest degradation and conversion to other land uses (Karsenty *et al*., 2008).
4. Poor performance of Joint Forest Management (JFM). JFM is the joint management of forest between the government and villagers. It is the other mechanisms (together with forest concession) proposed in the Forest Act for sharing government forest reserves with other stakeholders. There are about 1,890,613 hectares of forests under JFM in Tanzania out of which 1,134,458 is in the southern highlands (Zahabu *et al*., 2009). JFM has proved complex due to sharing of the rights of forest management between two forest managers (Akida and Blomley, 2006).
5. Long and bureaucratic process to be followed in acquiring the concession.

3.3.3 Recommendations for efficient/effective forest concessions in government

a. Piloting different models of forest concession arrangement for managing both natural forest and forest plantations.
b. Restrictions on the management of forest concession in natural forest (e.g. on afforestation and reforestation) can be reviewed. Models from Uruguay and Brazil on the mosaic forest that contains indigenous tree species and exotic fast growing species have been doing well and could be tried in Tanzania.
c. The policies, rules, regulations and guidelines of forest concessions in government forest reserves and plantation forest reserves should be harmonised and well-defined. The issues of either concession of a 'forests' or 'forest land' should stand out clearly.

3.4 Utilization of land and land tenure in the programme area, present situations and trends

3.4.1 The Utilization of Land and Land Use

The area under different land uses for Tanzania is shown in Table 3.4.

Table 3.4: Area by land use classes in Tanzania

Land Use class	Area (ha)	Percentage (%)
Agriculture	20,593.373	23
Production forest	19,788.332	22
Wildlife reserve	19,139.678	22
Protection forest	9,377.499	11
Grazing land	9,311.009	11
Shifting cultivation	5,786.159	7
Built-up areas	1,935.442	2
Other land	1,429.493	2
Water body or swamp	664.044	1
Total	88,025.029	100

Source: MNRT (2014)

The land in the programme area is under different uses depending on the bio-physical and socio-economic factors prevailing in those areas. There are limited information on the land-use classes and their dynamics in the Southern Highlands of Tanzania. However, based on the information gathered from interview with Tree Growers from Njombe, Mufindi, Makete, Kilolo, Kilombero and Ludewa, and some information gathered from literature, we provide the qualitative land use dynamics in the programme area as shown in Table 3.4. The table shows that there is competition between different land-use classes as some show increasing trends while other show decreasing trend. Based on interview between TGAs, there is stiff competition between land under subsistence farming and tree or tea farming. Some farmers in Ludewa were converting the areas under cultivation to tree farming. Other competing land uses include private large scale forest plantation and small scale tree farming/ woodlots. Most of the land use classes were increasing on the expense of other land uses such as forest reserves and un-utilized land. The stiff competition is partly due to increase in population and technological advancement. Table 3.5 further shows that, there is large area which is not under uses, the 'idle land'. This land includes those held privately by individuals "Non-Farm Land Owners", Private institutions (e.g. churches), government agencies (Prisons and Army) and private forest companies. It is estimated that the current undeveloped land held by private forest companies (Green Resources Ltd, Mufindi Paper Mill, Kilombero Valley Teak Company and New Forests) is 115,500 hectares (Ngaga, 2011).

Table 3.5: Utilization of Land, current situation and trends in the southern highlands

S/N	Land Use	Present Situation (area coverage)	Trends
1	Subsistence agriculture	+++++	+ve
2	Commercial agriculture (tea, sugarcane, potatoes, onion, rice)	++	+ve
3	Industrial government forest plantation	+++	-ve
4	Industrial private forest plantations	++	+ve
5	Community/individual woodlots	+	+ve
6	Reserved lands (forests, wildlife, water)	++++	-ve
7	Built-up areas	++	+ve
8	Mining	+	+ve
9	Livestock keeping	+	+ve
10	Un -utilized land	++++	-ve

Note: The current land uses was evaluated at levels of land uses: (very low(+), low (++), Medium (+++), High (++++) and very high (+++++). Trend was evaluated based on whether a particular land use was on rise or decline in the project area.

3.4.2 Land Tenure in the Southern Highlands

All land in Tanzania is public land, held in trust by the Head of State. Land tenure is thus informed of a right of occupancy for Tanzanians and leasehold for foreigners. In this section we will describe the type of land tenure (access and use rights) for different land use categories.

Customary Certificate of Right of Occupancy (CCROs)

This is land access right provided for land under *village land*[1]. This certificate is offered for land acquired through inheritance, gift, buying, given by village government or opening up of a new forest area by clearing forests in the village. The CCROs is offered by village council through authority of the village assembly. The village council however can give CCROs only for a land not more than 50 acres (URT, 1999). Before a villager can apply for CCRO, the village must have conducted a land use plan and awarded the certificate of village land. If the village has the certificate of village land, the villager applying for CCRO should fill in form No. 17, 18, 19, 20, 21 and form of encumbrances all available at the village office. The whole process would take a minimum of 9 months before the award of CCRO.

Granted Right of Occupancy (GRO)

This is land access right to individuals or group of two or more citizens provided for land under *village land*, *general land*[2] *and reserved land*[3]. The granted rights of

[1] Village Land: all land within the boundaries of a village registered in accordance with the provisions of section 22 of the Local Government Act No.7 of 1982, Land Tenure Act of 1965 and Village land Act No. 5 of 1999.-If a village fulfil the requirements of these acts is awarded a certificate of village land.

[2] General lands:-all public land which is not reserved land or village land *and includes unoccupied or unused village land*" (National Land Act No.4 of 1999) or all public land which is not reserved land or village land (National Land Act No.5 of 1999).

[3] Reserved lands: all land set aside for special purposes, including forest reserves, game parks, game reserves, land reserved for public utilities and highways,.

occupancy are granted by the commissioner of the lands on behalf of the president. In case of the village land, GRO is only offered if the village land to be given is more than 50 hectares and for this case, the village land has to be firstly converted to the general land. GRO is granted for a period of up to but not exceeding 99 years. It is stated that the GRO has equal status as CRO (URT, 1999). However, GROs seems to be more attractive when land has to be used as collateral as compared to CROs. The procedures for applying GRO are described in section 25 of the National land act No.4 of 1999 (URT, 1999a).

Derivative Right of Occupancy/Lease

Non-citizen of Tanzania is not granted rights of occupancy of land unless it is for investment purpose (URT, 1999). The procedures for acquiring DRO is the same as for GRO except the DRO are obtained through Tanzania Investment Centre (TIC). The procedures for acquiring land under this category are summarized in Appendix 3.

Generally land tenure in Tanzania should fall under the categories described above. However, due to the fact that most villages in the southern highlands (about 90%) are unsurveyed thus the villagers do not have legal documents for access and use the land. Some of the TGA interviewed were confident that their lands were secure even in the absence of tittles. One was quoted asking "Have you ever heard in Tanzania that one has lost his farm because he doesn't have a certificate of ownership? ..never.. We just need the certificate so that we can apply for loans in the banks". However, experience from other parts of Tanzania have shown that areas without tittles can be considered as general lands and allocated to investors or forest reserves

3.4.3 Challenges of Land Tenure in Tanzania

1. The processes of acquiring certificate of occupancy (CCRO), Granted Right of Occupancy (GRO) and lease are expensive, and lengthy. It is estimated that the cost of one CCROs is TSh.16,000;
2. So many forms to be handled and filled by the villagers applying for CCROs. There are about 8 different forms to be filled by villagers most of which have only primary school education;
3. On 'paper' the village land is managed by Village Council, However, on the ground most of the management activities are performed by LGA-There are more than 50 different forms to handle, unrealistic for village government;
4. Land act is silent about previously plots allocated to private institutions who have failed to make effective use of the land;
5. The conditions attached to certificate of occupancy make it difficult for the land to be used as collateral in sourcing loans from the banks. The Land mortgage under CCROs cannot be transferred to a person residing outside the village where the land is located;

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hazardous land and land designated under the Town and Country Planning Ordinance.

6. Lack of enforcement of land use planning. Even though land use planning is costly and time consuming activity, it is hardly implemented making the whole process meaningless.

3.4.4 Recommendations on Land Use and Land Tenure in the Programme area

1. It is recommend that land use planning should be done immediately to avoid losing important land uses such as areas for subsistence farming or forest reserves for conservation of biodiversity and/or watersheds conservation;
2. Legislate laws and by laws for enforcement of village land use planning
3. Legislate measures to utilize undeveloped lands being held by individuals and government institutions;
4. Empower and Strengthen the capacity of Village Council to execute their land related tasks such as provision of CCRO;
5. Re-examine land surveying procedures to reduce costs incurred during provision of CCORs.

3.5 Extensions services in forestry

Policy statement 33 of the draft Forest Policy (2013) states: *To ensure increased awareness and skills amongst the people on sustainable management of forest resources, the forestry extension services will be strengthened."* This is given on the background that currently extension services in the forestry sector are almost non-existent and the scant presence is fragmented, lack coordination among the different players and there is no sustainable sources of funding. However, the policy seeks for promotion of the involvement of NGOs, CBOs and other institutions in forestry extension activities although the issue of financing these activities is missing. Simula, Mlowe & Msemo (2009) in MNRT (2011b) pointed out that lack of technical guidelines and effective extension services resulted into inadequate skills and poor knowledge by most tree farmers.

Currently the forestry sector administration is operating under the local governments, regional administration, and the ministry responsible for forestry (URT, 2011) and it is not explicit as to which particular structure the extension services are effectively hosted. It is noted that the Ministry of Agriculture and Food Security, which has one of the richest experiences in extension services, has seen changes over the years with thrust to have the extension services well-nested at the lowest level of government. Under the Regional Administration Act, 1997 and the Local Government Act No. 6 of 1999, the responsibility for implementing extension services lies with the local government authorities (Rutatora and Mattee, 2001).

Availability of Services

Unlike in the Agricultural sector, extension service has been uncommon in forestry. This activity is now becoming a necessary management tool, especially to private forestry practitioners. To be effective to the private forestry programme needs, the extension services should cover technical forestry aspects: Nursery establishment and management, planting out in the field, processing and marketing, institutional development and human capacity building, as well as income generation activities to TGA members.

Of equal importance is to provide sustainable business development services. At this point when the TGAs are getting established, and most farmers are establishing their woodlots, the most critical extension services on demand are on production of seedlings and planting. With time, further extension services will be required to empower farmers with knowledge and skills not only for stand management and marketing at the appropriate age of stand "maturity", but also for income generating activities during the 15-20 years waiting period for economic returns from a mature stand. In the report on assessment of service providers submitted to MNRT (MNRT, 2011f).

Over and above the nurseries and planting techniques, service delivery to tree growing farmers will have to timely cover the following technical aspects:

a) Woodlot management, with focal issues on fire management, thinning and pruning.
b) Optimum harvesting age and best cutting techniques for optimal financial returns.

c) Information mechanisms and support in marketing and selling the round wood.
d) Tree species with different rotation ages to spread out maturation periods.
e) Promotion of alternative income generating activities (IGAs).

Actors and Mode of Delivery

Of late, due to the expansion of needs for extension services and lack of that capacity from the government, the real challenge is availability adequate funds for outsourcing to alternative providers. In their assessment of experience of extension delivery in the Ministry responsible for agriculture, Rutatora and Mattee (2001) wrote "*As the government continues to face financial difficulties, it has started to reconsider the issue of public extension service and is currently entertaining the possibilities of gradually divesting the public sector of extension, leaving the private sector and users to take an increasing responsibility*". Engagement of NGOs, CBO, and other private organizations to provide extension services has to be accounted for. Most projects were successful as long as there were donor funds to cover for extension services. Challenge remains as to how to objectively determine the actual cost given the diversity ofneeds for quality services.(BACAS (1997) and Isinika (2000) in Rutatora and Mattee, 2001).

One of the core responsibilities of the Tanzania Forest Services (TFS), which was launched in 2011, is to provide forest and beekeeping extension services in areas of its jurisdiction which covers over 11 million ha in more than 402[4] forest reserves and almost 19 million ha in village and general land (MNRT,2014b). It therefore implies that TFS is compelled to offer extension services to all forests, including private forests. There is no evidence that TFS has any significant contribution to this task. Local Governments are also active players expected to ensuring effective and equitable delivery of qualitative and quantitative services to the people within their areas of jurisdiction, for example Njombe District Council acted as service providers in TGA institutional development and income generation activities (PFP, 2013).

In his report on social strategies for sustainable private forestry and carbon trading initiative in Sao Hill, Vainio-Matilla (2011) informs us that in order to offer the necessary extension services in the pilot phase the project has to engage some service providers. It is noted that the District Forestry Officer in Njombe and other private companies and NGO such as Green Resources, INCOMET, HEIFER and CARITAS have been active in providing extension services to the fledgling private tree growers (MNRT, 2011f). It is expected that as TGAs grow in strength and capacity in the near future, these associations will be able to contract identified relevant providers.

The Private Forestry and Carbon Trading (PF – CT) project, working at field level embarked to test and develop replicable models for service delivery to small-scale tree growing farmers in five pilot projects in six districts in Southern Highlands (Kilolo, Mufindi, Njombe rural, Njombe urban, Rungwe and Kilombero). Two modes of delivery: (1) outsourcing; and (2) directly by District Council (DC) were tested (MNRT, 2011f). Findings showed that delivery through outsourcing to civil society and private sector model is functioning and replicable when proper support and monitoring framework are provided. However, it was concluded

[4] The number of Forest Reserves stipulated in the Order which established TFS is 506.

that further refinements on identification of service needs as well as identification and engagement of service providers would improve functionality of the model. On the other hand service delivery through DC - model did not function well with the present DC finance management framework. Slow release of funds from DC Miscellaneous Deposit Accounts has negative impact on service implementation. It was recommended that for getting service delivery through DCs to function, among others, the DC should open a specific account (with own finance reporting) and build staff capacity on management and technical aspects.

Financing Extension Services

Financing extension services has always been overlooked, possibly because traditionally extension was regarded as public service. Provision of extension services is not a cost-free undertaking. Table 3.6 (MNRT, 2011f) shows the type of services, service provider and the associated costs during the PF-CT project in Njombe District.

Table 3.6: Extension service delivery to TGAs in Njombe District

Project name	Service provider	Budget	Duration
Provision of Services to Small-Scale Tree Growers' Associations	Green Resources Ltd	56,732,000 Tsh (29,859 Euro)	9 months (Sept 2010 – May 2011)
Provision of Services to Tree Growers' Associations on the Development and Implementation of Income Generating Activities	Heifer International Tanzania	30,500,000 Tsh (16,053 Euro)	7 months (Dec 2010 – June 2011)
Provision of Services to Tree Growers' Associations on Institutional Development	Incomet 2001	12,584,000 Tsh (6,623 Euros)	6 months (Dec 2010 – May 2011)
Provision of Services to Tree Growers' Associations on the Development and Implementation of Income Generating Activities	Incomet 2001	25,000,000 Tsh (13,158 Euro)	7 months (Dec 2010 – June 2011)
Technical Forestry and Environmental Aspects	Njombe District Council	2,955,000 Tsh (1,508 Euro)	6 months (Oct 2010 – March 2011)

Source: MNRT, (2011f).

Recommended Mechanisms

The following mechanisms are recommended in order to achieve functional delivery of extension services in the programme:

1. Diversify services in order to be relevant to the ever-changing socio-economic and technical dynamics
    a. Meet demands as they occur during the woodlot growing period and market readiness
    b. Develop TGAs to become active actors in the service delivery.
2. Strengthen the TGAs in terms of institutional capacity and size
    a. Competent decision making organs - leadership
    b. Information dissemination (plans and reports)
    c. System (administrative and Finance management).
3. Establish an apex body for internal development, coordination and external representation of the TGAs.

4. Apply competitive procedures during identification and engagement of Service Providers to ensure that all interested institutions have the possibility to be engaged instead of direct engagement where competence is not assured.
5. Re-invigorate service delivery through DCs by opening a specific account (with own finance reporting) combined with capacity building on management.
6. Establish sustainable financial mechanism by lobbying for policy and regulatory environment to allow tapping on (benefiting from) forest products and IGA value chains.

3.6 Access to raw material for wood processing from natural forest reserves and plantations

Access to raw materials

Access to forest products as inputs to wood processing is becoming more difficult due to increasing global demand. Population growth, economic growth and continued urbanization increased demand for products made from wood. The infrastructure projects, need for housing and commercial real estates and packaging materials for the export industry are expected to grow significantly in the next 10 years (MNRT, 2011a).

Availability

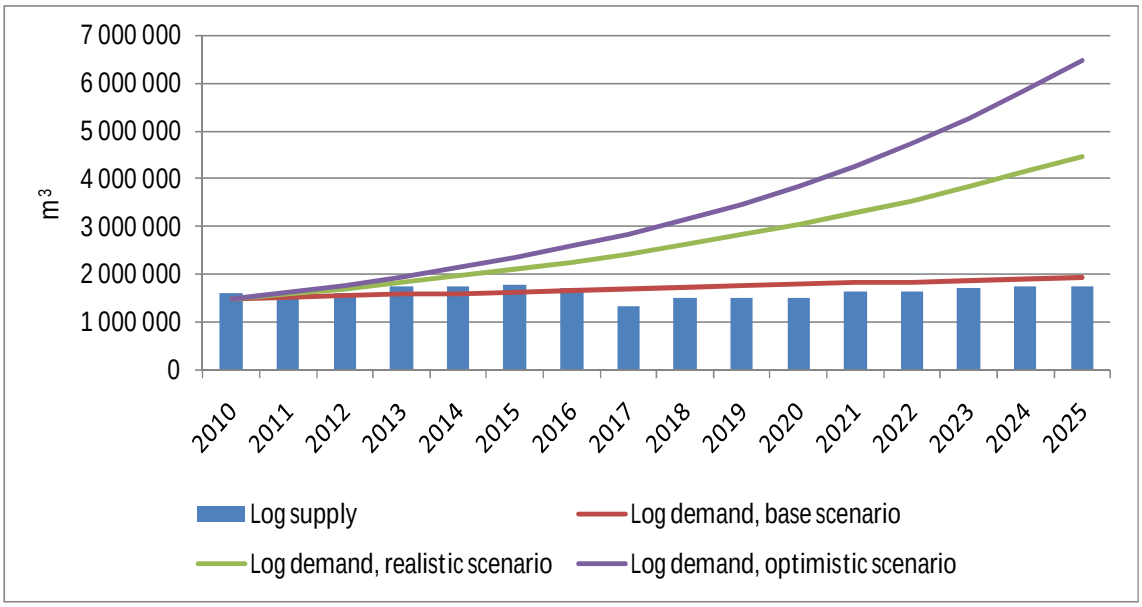
Findings of the just ended National Forestry Resources Monitoring and Assessment project(NAFORMA)show that the total productive forest in Tanzania is 19.8 million hectares (MNRT, 2014a). Most of these forest reserves annually produce on average between 4.5 and 5.5 m^3/ha of wood (FBD, 2003; TFCMP, 2007) and are regarded as a major source of revenue from charcoal and timber sales in the districts. Forests on general land are relatively less stocked at the moment and are assumed to produce between 1 and 3 m^3/ha of wood annually (TASONABI, 2008). Therefore, the annual harvestable volume in the existing production forests is estimated at 87.7 million m^3.

However, derivation of some studies on few districts in Tanzania (FBD, 2003 and TFCMP, 2007 in Ngaga, 2011) may guardedly be used to determine a conservative estimate of between 84,000 and 168,000 m^3 of hardwood logs being produced annually. Based on the some district reports, about 20% of the volume is annually harvested for poles and other woods, i.e. 17,000 to 34,000 m^3. Thus, on average, the industrial (commercial) round wood extraction would be some 150,000 m^3 annually from natural forests in Tanzania (Ngaga, 2011).

The majority of forest industry plants currently operating in Tanzania depend on their raw material supply from industrial/governmental plantations. In 2009 government plantations produced 1,034,765 m^3 out of which 85% was produced in Sao Hill forest plantation alone. Non-industrial private forest plantations(NIPF) are currently supplying an estimated 250,000 m^3 of round wood in the Southern Highlands area, implying that there are 1,000ha already being harvested (MNRT, 2011b).

The demand for forest products, both raw and semi-processed, is in the rise. A 2011 market study by Indufor-Oy (MNRT, 2011b) summarized the supply and demand of forest products as shown in Figure 3.4. Supply dynamics indicate a severe shortage of roundwood from public plantations in 2016/2017 due to severe over harvesting and lack of replanting in the 1990's. But in recent years investment by large and small private tree growers, coupled with resumed replanting in public plantations will make a slight increase in supply. However this will only slightly approach the base demand, while challenging for an increased supply to at least meet the realistic demand. This can be achieved by planting "idle" areas allocated not only to the public plantations, but also to the large private enterprises (MPM, KVTC, GRL, TanWat, etc) and more important to the small tree growers.

Figure 3.4: Recent and future supply and demand of roundwood, 2010-2025



Source: MNRT(2011b).

Once accessed these products are accepted by local consumers as they are, on the perception that most of the local consumers are still insensitive to quality and largely focused on prices. Therefore, most of the products, especially sawn wood, are easily taken up by the local markets. The high demand and availability of the products will only be possible once there is smooth accessibility. Access is viewed here from two aspects: (1) physical access – with regard to existence of roads into forest areas, (2) legal access – elucidating the requirement in terms of permission, financial capacity and qualification (including technical) which makes an entity eligible to seek and own forest products.

Physical access

Most forest plantations are accessible through roads which were constructed either during the establishment or as part of the harvesting preparations. However, these roads are rarely maintained and therefore requires high powered trucks and tractors to facilitate transportation to the nearest processing facility. Access to natural forests is uncertain and trees with merchantable height and girth are hardly found in one location to justify road construction beyond the available rural roads. Normally harvesters fell and saw right on the spot and manually carry or transport sawn woods to the nearest road for further transportation with motor and bicycles and eventually trucks. Private tree growers in distant villages depend on rural roads for access to the markets.

Legal Access

The forest Policy, Forest Act and national programs are intended to develop and achieve sustainable utilization of forest resources in cooperation with various stakeholders. Likewise guidelines, regulations, government notices and directives issued and are continuously reviewed to ensure that the forest act is efficiently and effectively implemented. Guidelines for sustainable harvesting and marketing of forest products fall under the armpit of the 1998 forest policy, Forest Act No 14 of 2002 and Government Notices No 69 and 70 of 2006.

Implementation of the guidelines is based on the Management Plan of each forest and the same guideline describes the procedure required to acquire harvesting rights, establishment of wood processing facility and doing business on wood products, locally and internationally. To access raw material for wood processing therefore, an entity has to fulfill all requirements of the guidelines which include, but not limited to: Registration, Log/tree Dealer, Application fees and transit pass.

Challenges

The biggest challenge for planned access to raw materials from the forests is availability of those resources to meet the increasing demand. The supply of hardwood into the future may become erratic without considerable changes to harvesting within natural forests, and the development of additional plantation forests (Schaafsma *et al.,* 2013). A plantation forest is deemed accessible for harvesting after reaching the intended rotation age; the volume of a forest at that age constitutes what is regarded as the Annual Allowable cut (AAC). Practice show that forest management plans and AACs are always planned but the actual harvesting volumes vary from year to year. Furthermore, forest industry suffers from lack of reliable information on raw material availability, market statistics and skilled labour (MNRT, 2010; Ishengoma, 2009 in MNRT, 2011b).

The issue of rural roads is covered in section 3.7 of this report.

Other challenges include illegal activity affecting several serious types of infraction, such as logging without documentation, logging in unauthorized areas, and the use of invalid export documentation; Increasing distances of processing facilities from the forest resources and there are serious problems with transportation due to poor infrastructure. The permission and procedure required by the forest policy, act and its instruments need to be streamlined to ensure smooth access to the resources without compromising its sustainability. Most dealers in forest produce, especially exporters, feel that the procedure is bureaucratic, time consuming and add transaction costs. For example, registration is done at the regional HQ while license is issued by DFO at the district

Sourcing mechanisms

Forest products, in forms of logs or poles are sourced through procurement mechanisms which are normally followed by both the Sellers and Buyers. The Forest Act No 14 of 2002, the 2006 Charcoal Regulation and the District Forest Harvesting Committee (DFHC) are the main instruments for control sourcing of forest products. The main functions of the committee are to receive and evaluate applications for harvesting of forest products, such as firewood, charcoal, timber and poles. Other functions include identification of harvesting areas within the District, preparing and coordinating harvesting plans, and reviewing quarterly reports on harvesting activities from the DFO. The committee prepares and maintains a register of all forest product dealers in the District, held under the custodianship of DFO. DFHCs are chaired by the District Commissioner who is a Presidential appointee MNRT draft policy (2013).

The following mechanisms, derived from direct or implied interpretation of the Forest Act no 14 of 2002 are currently being practiced:

1. Auction: An *auction* is a process of buying and selling goods or services by offering them up for bid, taking bids, and then selling the item to the highest bidder. For public forests, the government has set baseline prices and that the auction price shall apply to all persons who had valid sale agreements with the government. (Forest (Amendments) Regulations 2013).

   Auctions are prone to some challenges including the possibility where winner takes all. In such instance others weaker bidders are deprived some share of the volume planned for harvesting. The management has to always reserve areas/volume for private agreement with other important customers who could not meet the financial challenges during auctions. Failure to observe the allocated allowable cut; Collusion and intimidation between and among bidders; and threats and intimidation among bidders are some of observed downsides of this method.

2. Tendering: is the *process* of making an offer, bid or proposal, or expressing interest in response to an invitation or request for *tender (From group discussion).* Challenges in this mechanism include colluding among tenderers and that comparatively this method fetches lower price than auctioning.

3. Private Agreement: This is an arrangement where applications are made by large private companies, SMEs or individuals to harvest a certain volume or area. Successful applicants then enter into agreement of terms to purchase a certain volume, or harvest a certain area.

4. Investment Agreement: These are commitments set by the former Presidential Parastatal Sector Reform Commission (PSRC) to investors who purchased some companies whereby inside the sale agreement there were some clauses giving assurance of raw materials. At that time forest products processing industries had lower capacity than the available cut and as a result the assurance of agreed volumes are now seen to be very high. For example, Sao Hill Industries has a contract with the government for a 300,000 m^3 annual supply from Sao Hill Forest Project for 20 years (Ngaga, 2011) and Mufindi Paper Mill has a contract of 500m^3 annually from Sao Hill Plantation

   Challenges

   Lack of organized market outlets and bargaining power; Lack of market information and price data on timber products in key markets (domestic and neighbouring countries, e.g. Kenya); and, poor quality of timber and end products (Ngaga, 2011, MNRT, 2011b). For effective and fair sourcing mechanisms, information on the market prices, procedures and business ethics are necessary. Other challenges include unnecessary bureaucracy and corruption during processing for harvesting and related permits.

Recommended Mechanisms

The following mechanisms are recommended in order for the PFP to effectively contribute to increase access to raw materials for wood processing:

1. Construct and/or maintain roads for easy access to private woodlots from wood processing facilities and markets;
2. The programme should strive to develop and continuously monitor management plans for all woodlots. A comprehensive management plan made up of individual woodlots plans will ensure timely harvesting and realistic forecasts of supply volumes and hence make appropriate marketing strategies;
3. Eligibility to access and harvest forest products should be revisited to remove undesirable stumbling blocks and corruption loopholes. (See section 3.13).

3.7 Logistics and transportation costs in forest sector material for wood processing from natural forest reserves and plantations

This part describes the logistics[5]and transportation costs in forest sector including movement permits.

Forest Access Roads

Access to forest products is a critical factor for the success of profitable tree growing. The primary forest product in the form of logs or poles need to be transported from the stump site to the first processing facility – either a sawmill or an impregnation plant and subsequent nodes to the final consumer goods. Traditional timber harvesting had roadside landings as the immediate and necessary transit point of logs from the stump area, however, experience has shown that roadside landings are not common nowadays, especially on gentle terrain where hauling/forwarding equipment can access the stump area. In forestry, roads are essential structures as they provide access to the forest from the establishment phase to harvesting stage. Thus it is important that roads are properly planned, constructed and maintained in order to ensure easy access, smooth transport of forest products, safety, comfort and economy on vehicle operations (Abeli *et al.* 2000). Where non-industrial forest plantations are involved, rural roads should meet the minimum requirements to ensure accessibility to trucks carrying the primary forest products.

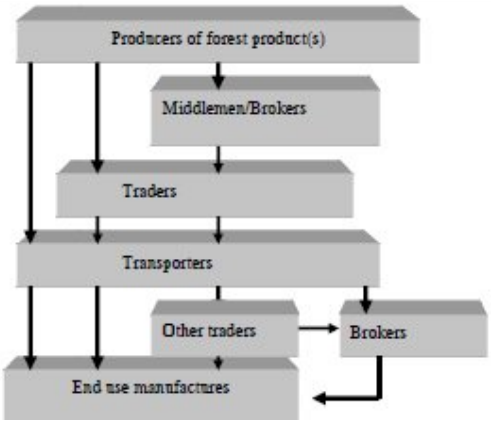
Access to the harvesting site requires roads passable by straight or tractor trucks. Currently major and medium sized sawmills (Sao Hill Industries, Mufindi Wood poles and Timber Ltd, Mufindi Environmental Trust, and KVTC (Kilombero), transport logs from harvest sites Sao hill Forest Project (SHFP) to the processing mills while most of the small wood processing industries use push benches (Ding dong, etc) within harvesting sites. Access to the non-industrial forest plantations (NIFP) is by the existing rural roads, which are owned and maintained by the local government. Access and smooth transportation of forest products from the private forest farms will therefore depend on the commitment of the local authorities regarding construction and maintenance of the rural roads. Since roads open up places for many activities and businesses, it is easy to convince different stakeholders to share the construction and maintenance costs, hence public private partnership (PPP) is a possible mechanism for accessing private woodlots in the programme area.

Transportation of forest products

Transportation of forest products to the final market may be directly from the processing facility of through intermediary points and payers (Fig 3.5). Starting with small traders at the villages, culminating with large traders who may hire or own a fleet of trucks. Transport volumes and type/capacity of trucks vary along this movement, starting with small straight trucks which can operate in short distances up to 100 km, to large semitrailer trucks carrying heavy loads for longer distances up to 1,000 km and beyond. The status of various road classes in Tanzania is shown in Table 3.7 (TanRoads, 2014).

[5]the planning and control of the flow of goods and materials through an organization or manufacturing process

Figure 3.5: Market channels of forest product (adopted fromMNRT, 2011b)



Sawn timber and poles are then transported from the first processing facility to the consumers. Main and immediate markets of the forest products from the program area are Mbeya, Iringa, Dodoma, Morogoro and Dar-es- Salaam. The project area is very close to Makambako town; a famous trade centre along the A 104 highway with a major station of the Tanzania Zambia Railway (TAZARA) which makes it a strategic transportation hub. Makambako is connected to Dar es Salaam, which is the main local consumption centre for wood products from the Southern Highlands as well as the main port for the export of products (NMRT, 2011b). Analysis of long distance transport from Makambako to Dar-es-Salaam is a useful reference to assess the contribution of transport cost to the final product price

Table 3.7: Status of various road classes in Tanzania

Road Class	Paved (km)	Unpaved	Total	%Paved
Trunk Roads	5,478	7,308	12,786	43
Regional Roads	840	20,265	21,105	4
District, Urban, Feeder, Roads	774	51,807	52,581	1.5
TOTAL	7,092	79,380	86,472	

Source: TanRoads and PMORALG (http://www.tanzania.go.tz/home/pages/1526 of 21/10/2014)

Truck transport

Transportation in the access roads (forest and rural roads) is commonly by straight trucks of 7 tonnes (up to 15tonnes). Logs are transported in flatbeds while some sawn timber is transported in open top box bodies. For long distance transport, semi-trailer trucks of up to 40 tonnes are used, and it is a requirement that the load should be open for easy of inspection.

Railway transport

The Tanzania-Zambia railway offers the best alternative for transporting bulk forest products from the Program area. Makambako complete with gantry cranes and other handling

facilities is the most attractive terminal for sawn wood and poles transport 652km from the Southern Highlands to Dar es Salaam. Mbeya terminal [849km] could also be used while arrangements can be made to upgrade the Ifakara station [360km] to handle cargo from the southern and northern parts of the program area. However, the Makambako station, which used to be filled by stacks of different sizes of sawn timber, is now empty. Business at Makambako has declined due to unavailable of wagons and/or unreliable rolling stock. Concerted efforts need to be done to re-invigorate this option which will obviously be less expensive compared to road transport. Details of costs and business arrangement could not be obtained under this assignment due to time constraint.

Check Points

There are several check points for natural resources relevant to the program area. Checkpoints identified at the time of this report on two routes are:

1. Makambako - Makete route: Makete, Mangofu, Makoga, and Makambako (Nyigo);
2. Makambako – Dar es Salaam route, Mafinga, Iringa, Mikumi, Chalinze, Vigwaza, Kibaha and Mbezi.

Traders and transporters are subject to verification of load against paperwork/documents at checkpoints, where supplementary assessments and/or verification is done. If found with excess load is penalised in accordance to Forest Act.

There are claims, and evidences that check points are manned by corruptive people and this has tarnished the good intentions for setting out these points. Recently the number of motor vehicles plying our roads has been swelling by the day, the development is also witnessing a rise in the volume of contraband being transported from point to point both within Tanzania and beyond the borders. It was partly in an effort to put a stop to this unwanted traffic, aggravated by the fact that railway transport is no longer reliable, that the government introduced checkpoints along the roads. But corruption and lack of accountability have made the roadblocks fail to serve the purpose for which they were set up in the first place, including checking the movement of contraband.

Transport Costs

Two scenarios were observed during an interview with sawn timber traders at Makambako (2014):

1) Transport of sawn wood from villages (source) to central trading centre. For example a straight truck 10 tone truck, (Fuso) can be hired to carry 400 pieces of sawn wood from Makete to Makambako 170km charges TShs500,000. This is equivalent to 1,250TShs/piece.
2) Transportation of sawn wood accumulated at Makambako to Dar es Salaam using a semi-trailer which can carry up to 3,000 pieces of pine sawn wood or 1,300 pieces of eucalyptus poles. The current charge per trip varies between TShs2,200,000 to 3,000,000, making an average cost of TShs 1,800 to 2,300 TShs/piece.

Except for large industries; Sao Hill industries MPM, TanWat and KVTC; most trading of forest products (sawn timber and poles) is done per piece rather than per cubic meter basis. Unless a reliable conversion factor is established, it is therefore difficult to make generalized statements and comparison on unit cost rates (Kingazi and Mwamakimbullah, 2014). Most

of the softwood sawnwood sold in Dar es Salaam comes from the Southern highlands, and according to a study by Indufor Oy (MNRT, 2011b) found out that road transportation costs takes about 28% and by rail 22% of the selling price.

Movement Permits

A transit permit (TP) is a requirement for any vehicle carrying forest products at any stage. The current charge is TSH 6,500 for trucks of up to 7 tonnes, and TSH 13,000 for trucks above 7 tonnes. The TPs are one of the necessary documents to be shown at all check point.

Challenges

Transportation of forest materials is a necessary but expensive undertaking and faces the following challenges:

- Dwindling supply of raw material which has gradually increased logging distances and transportation to mills and hence production costs;
- Dependence on truck transportation which has higher cost per m^3 per km. This cost may increase due to unnecessary delays and corruption as the load passes through numerous checkpoints and weigh bridges (MNRT, 2011b);
- Increased prices of fuel and lubricants;
- Poor condition of some roads, especially district roads, which increase vehicle maintenance costs and delays which eventually interprets into higher cost per piece per km;
- Railway transportation is deemed to have lower cost per km (TAZARA), but this option is currently out of consideration due to unreliability.

At the end traders are faced with two undesirable options: either expensive but reliable truck transportation or a less expensive but unreliable railway transportation. At the end consumers are compelled to acquire forest products at a relatively higher cost.

Recommended Mechanisms

1. Establish a “road fund” through a PPP agreement with District authorities and other stakeholders on the construction and maintenance of District roads.
2. Seek to re-invigorate TAZARA services to be able to use this alternative transport which will greatly reduce transport cost and hence the price of the forest product at the final market.
3. Given that District authorities do not have enough funds to construct and maintain rural roads, the road fund under TanRoads be directed as well to rural roads which have significant economic contribution, such as roads leading to private forest plantations.
4. Seek to become a proponent of cubic metre (m^3) as a unit of measure of forest products.

3.8 Timber standards and grading procedure for domestic market

Worldwide, grading of industrial timber is done in order to establish and maintain an acceptable uniformity in the products of different mills, so that a given grade will represent the same quality and be usable for the same purpose, regardless of the source of the raw materials from which it was derived or the mill by which it was produced. Accordingly, grading provides both manufacturers and users with known values on which to base sales/contracts. Grading rules and procedures are established to guide graders in categorising timber products into different timber grades. Examples of grading rules include South African national standard-SANS 1783-1:2004; Sawn timber – Appearance grading of softwood-European standard EN 1611-1, National Hardwood Lumber Association (NHLA) - USA; the standard grading rules for Canadian lumber The National Lumber Grades Authority (NLGA, 2014) among others.

The Tanzania Bureau of Standards (TBS) has developed a number of timber- related standards. A full list of standards can be accessed through TBS website while only a few are hereby cited:

a) TZS 81:2009, Paper and board – Determination of grammage;
b) TZS 256: (Part 1) 2009, Timber – Determination for coniferous sawn timber (cypress and pine) – Part 1: Sizes of sawn and planed timber;
c) TZS 657: 2011, Glossary of terms used in timber industry;
d) TZS 661: 2011, Copper/chromium/arsenic composition for the preservation of timber – Methods for timber treatment;
e) TZS 686: 2011, Wood poles and blocks for power and telecommunication lines – Specification.

Synopsis

Although TBS has these standards in place, it is unfortunate that majority of them are not enforced. The Forest Act (2002) and Forest Regulations (2004) – 25th and 26th schedules provide grading rules for export timber only. There are no regulations for local market timber. Can it be an oversight? May be not. The Forest Policy (1998) for example fails to acknowledge the contribution of local market in the value of Tanzanian forest. From the policy's point of view; it is claimed that the value of the Tanzanian forests is high due to the high potential for royalty collection, exports and tourism earnings as well as the recycling and fixing of CO_2 and conservation of globally important biodiversity (Forest Policy, 1998). The claim ignores local market which the consultant believes to be a major consumer of majority of the forest produce in the country. One of the objectives of the Forest Act (2002) is to enhance the quality and improve the marketability of forest products and regulate their export. It is not regulating timber for local market.

A key question to stakeholders will be "do we need to grade and regulate timber for local market?" A response from SAFIA members to that question was an emphatic yes (Focus discussion, 2014). They confessed to envy products produced by Sao Hill

Industries in that they (products) fetch better prices and the market is responsive to superior products.

However, if we are to enhance the quality and improve the marketability of forest products be for local market or export; there are challenges before us. These may include:

1) The existing plantations have not been efficiently managed. The planting materials are also of low quality, most sivilcultural operations neglected, hence the quality of raw material to the industry has been as well of low quality (MNRT, 1998).
2) The operations and efficiency of the forest industry plants have been poor due to obsolete technology and untrained staff (MNRT, 1988, Mwamakimbullah, 2014).
3) Sensitivity of the market to quality goods is not assured (Kingazi and Mwamakimbullah, 2014).

In order to have quality products; individually and collectively we should change the way we do things particularly as we look forward for prospective private forests. It is a well known fact that private forests, particularly those established and managed by small holder tree farmers, are ill managed (MNRT, 2011b). Going by the quality at the source principle, the issue of supply and availability of quality seeds to farmers and or private forest plantations is of paramount importance. New machines and technologies for forest industries won't be of any help if the raw materials sent to them are already of a poor quality. Issues of forestry extension services to private plantations should be given due weight.

Secondly, the Forest Policy (1998) had directed among other things that a favourable environment for the establishment of new forest industries will be promoted and facilitated through appropriate financial incentive; however, the Policy review draft (2013) assumes a different direction. It says "a favourable environment for the operation of small, medium and large forest industries will be promoted and facilitated. It does not say how this will be facilitated! The draft has removed facilitation through appropriate financial incentive, why? The consultant will want to support an assertion by Keip (2004) that the profitability of plantations is increased if there is sufficient production to support efficient processing industries. Here we gather that as we increase production from plantations we should also make sure that efficient processing industries are in place. There is no reason for the government to shy off from this. The wood industry accounts for nearly half of the recorded sector's contribution to the national GDP (MNRT 1998; NFP-2001-2010). This contribution of the industry in itself sufficient and good enough reason for the government to provide financial incentive to the industry; after all the Government will with certainty recover the monies from taxes from the industry. It is possible to consider government forest incentives as a self-financing investment in the sense that the income generated over time may greatly exceed the subsidy, and if that income is taxed, a government may, at least partly, recover its outlays (Beattie, 1995). In Chile the subsidies have reportedly been profitable to the State. Tanzania, we need to shift our paradigm in this aspect.

Finally, regarding grading staff, the Forest Act section-60.-(1) says “the Director of forestry may, either on the basis of an application made in the prescribed manner or of his own motion authorise in writing any suitable person to be a grader of timber or an inspector of forest produce for the purposes of carrying out the provisions of this Part”. To operationalise this part of the Act, the Forest regulation (part XV) says “No forest produce and wood products shall be exported unless it has been inspected and graded by a grader who is registered. It will be interesting for the business community to have this register of graders communicated, if it is there. Moreover, from consultant’s discussion with SAFIA members, it was clearly pointed out that graders were in shortage in the country. Actually, the consultant learnt from KVTC that there is only one grader and only one designated depot where timber can be exported from (i.e. Zamcargo). Consequently Zamcargo has a monopoly on timber exports and can charge rates higher than what other container depots would charge. Shortage of graders and limited number of depots from which timber could be exported from result into delays in export and increased storage charges in port; effectively increasing cost of exports, logistics and reducing the net sales price.

Therefore, on the continuum of staff development, the issue of training of graders should feature vividly and should not be overlooked. Streamlining export business is as well vitally important to reduce operational costs to exporters.

As a follow-up to this discussion, the consultant recommends the following:

1. There should be a paradigm shift on quality aspects. We should cultivate a quality mentality right from seed selection, nurseries, establishment through management, harvesting, processing and handling in order to produce high grade products;
2. Train more graders for various products
3. Revise the Forest Policy and Act in order for the latter to regulate products for local market
4. Sensitize the market on the importance and to demand for quality products
5. Enforce timber grading for the local market
6. There should be concerted efforts by the government to facilitate forest industries to acquire new technologies through guarantees or by creating a special window for private forest development.

3.9 Office furniture procurement requirements by government

Economic Reform Programmes implemented by the Tanzanian Government have been based on the philosophy that Tanzania is committed to a market economy whereby the private sector will take the lead in creating incomes, employment and growth. The private sector has started playing an increasing role in creating incomes and employment although not at a pace that one would expect. Local SMEs in the furniture industry like their counter-parts in other sectors are very important. However, local furniture fail to contribute significantly due to a number of un-addressed challenges that impede their growth and hence the sector's contribution to the national economy. Such challenges include poor technology, insufficient knowledge, capital deficiency, lack of creativity, leadership and management failures. Poor quality of locally manufactured furniture compounds the above mentioned problems to obstruct furniture entrepreneurs to penetrate the market or rather to sustain competition with imported furniture.

Hon. Nagu (2011), the Minister of State in the Prime Minister's Office-Investment and Empowerment while opening the entrepreneurial seminar organised by the National Economic Empowerment Council (NEEC) which attracted furniture markers from Dar es Salaam, Morogoro, Tanga and Pwani regions told participants that the government has made a decision to gradually replace imported furniture with locally made ones. Although the decision to stop importing or gradually replace imported furniture with local has been made; it has not been reflected in government policies and legislations. No wonder why we continue seeing furniture shops full of old and new stocks. And government offices continue procure imported furniture as of now.

Efforts by the consultant to determine the actual government demand of locally manufactured softwood furniture produced no positive results. Office furniture by the government is not coordinated and therefore difficult to establish the actual requirement. A consolidated database for government furniture is non-existent. Lack of information market for wood industry is pointed out in a number of literatures (Mwamakimbullah, 2014; MNRT, 2011b; URT, 1998). Provision of furniture information on how much, where, when and who requires should serve as a "carrot" for investment in new technologies by furniture investors. Together with market information, there is need for addressing challenges facing the sector.

Recommendations:

1. Policies and legislations should have statements and directives that compel one to avoid purchases of imported furniture;
2. Training on start of the art in furniture making should be provided;
3. An independent market study on local furniture requirement be conducted;
4. The Tanzania Wood Furniture Association be capacitated in terms of leadership and management.

3.10 Taxation and fees payable to forest products of the forest sector

This section provides an account of the actual taxation and fees payable to forest products of the forest sector, with some recommendations for tax incentives.

Although tax revenue contributes significantly in government finance compared to other sources; notwithstanding, for revenue sustainability and increment, the then Commissioner General of Tanzania Revenue Authority (TRA) emphasised for the need to have in place a good tax structure and administration (TRA, 2013). Further, he stresses for the need to creating taxpayer and investor-friendly tax administration.

In Tanzania taxpayers/investors in the forest sector pay tax/fees at four levels: Central government, local government, sectoral and village levels.

At Central Government level, taxes are administered by TRA. Section 4 of the income Tax Act (2004) requires that corporations and individuals pay corporation tax which is 30% of the profit while for individuals the tax is graduated i.e., the higher the profit the higher the tax but does not exceed 30% of the profit. Apart from this tax, taxpayers/investors also pay Value Added Tax (VAT); a tax which was introduced in Tanzania since 1998 by VAT Act 1997. The tax is levied upon supply of any taxable goods and services by any business that is registered for VAT purposes. It is important at this juncture to mention that sawlogs, pulp and timber are not among goods that are VAT exempted supplies. All taxable goods and services are charged VAT at standard rate of 18% of a value goods supplied. Therefore, each registered person in the chain between the first supplier and the final purchaser/user is charged tax on taxable supplies made to him (input tax) and charges tax on taxable supplies made by him (output tax). He pays over to TRA the excess of output tax over input tax, or recovers the excess of input tax over output tax from TRA (TRA, 2013). An example of administration of VAT is given in BOX 1.

BOX 3: Example for VAT remittance

Suppose Davis & Co Ltd, a sawmill company has bought logs from Sao Hill forest plantation worth TSh 10 million. Davis Co is supposed to pay VAT of TSh 1,800,000 to TRA as input tax (i.e.18%). Suppose sales from selling timber sawn from the purchased logs by Davis &Co is TSh15 million (which includes VAT), i.e. Davis Co has collected VAT from the buyer(s) on behalf of TRA and therefore 18% of TSh 5 million is output tax. The output tax is TSh 2,700,000 (i.e.18%).

Remittance to TRA will be: Output tax –Input tax= TSh 2,700,000 - TSh 1,800,000 =TSh 900,000.

Note that the TSh 2,700,000 become input tax for whoever buys timber from Davis & Co. And when the former sells this timber, he collects output tax out which he pays the access to TRA or recovers the access of input over output tax from TRA.

In a discussion with the timber business community in Mafinga town the Consultant gathered that as timber dealers transport timber from Mafinga to Dar –es-salaam, one of the harassment they get was for TRA officials or Agents demanding for VAT receipts at check points. The consultant was told that some produced receipts mainly input tax, while others claimed to have not sold their product and therefore not supposed to pay the tax. Other claim that they have paid VAT through Sao Hill plantations and therefore they are not supposed to pay further. On other hand, other complained of double taxation.

From these arguments, it is clear that there is need for improving VAT awareness to timber business community. For example, what it takes to be a VAT registered businessmen, VAT advantages and how to administer it should be clearly elaborated. This is expected to improve the community's VAT compliancy and lessen frustrations. It is important to note that businessmen who buy supplies from VAT-registered suppliers while themselves are not; they disadvantage themselves in that they do pay for input tax but they can't collect output tax to offset some of the input tax or recover access of input over output tax from TRA since only the VAT registered can do so. On the other hand, those who are registered claimed that exporters are currently not receiving timely VAT refunds. There is need to expedite such transactions so that businessmen could use the refunds to support their operations.

Our limited interview also gathered that the Government of Tanzania has changed the land rent rates and has introduced a new rate for Forestry. However, many of the titles previously issued where classified as Agricultural Use (in the absence of Forestry as a land use category) – currently none of the large forestry companies has been charged on the basis of Forestry use and the new Agricultural rates are prohibitively expensive for a forestry crop which has rotations of >15 years and longer.

At local government level: the Local Government Act, 1982 and Urban Authority Act of 1983 empower any LGA to pass by-laws that allow the Authority to charge local taxes and collect levies and fees within its command. Accordingly, LGAs have imposed on larger forest mills like Sao Hill Industries Ltd or Mufindi Paper Mills a forest produce cess of 5% of logs bought. Similarly, from small and medium timber traders, LGAs collect a fee of between 100 and 200 TSh per piece of timber sold. For example, Mufindi, Njombe and Makete LGAs collect 150, 100 and 200 TSh per piece.

Apart from the above fees, the LGAs also collect business license, e.g. For medium scale sawmills it charges 100,000 TSh per annum.

At sectoral level, i.e. Ministry level, the Forest Act 2002 through the Forest (Amendment) Regulations (2013) which is read as one with the Forest Regulations (2004) provides level of fees payable for any licence, permit or certificate for forest products and services; and royalty.

Royalty fees are categorised by classes (I-IV) of tree species from non-plantation forests as detailed in Government Notice (GN) 433 (Appendix 4). Royalty fees for logs from non-plantation forests ranges from 76,800 – 230,400 TSh/m^3 for class IV and class 1A, respectively. Fees for Classes II and III fluctuate in between the range.

Royalty fees for logs from plantation forests are set in GN 433 for both softwoods and hardwoods. For softwoods, the fees range from TSh3,920 for logs with diameter at breast height (dbh) of 11-20cm to 37,690 TSh/m^3 for those with diameters greater than 35cm. On the other hand, royalty fees for hardwood (*E. grandis and E. saligina*) range from TSh4,800 for logs with dbh of 11-20cm to 21,000 TSh/m^3 for those with diameter at breast height (dbh) greater than 30cm.

Forest Act (2002) No 14, section 78 (3) provides that no royalties shall be required for the harvesting or extraction of forest produce within a village forest reserve or a community forest reserve by the resident of the village or the members of a group as the case may be unless such a requirement is specifically provided for any agreement under which they are managed. The Act is silent on royalty fees from private forests.

Fees for other products such as withies, firewood, fibres and mangrove products are included in the GN and can be accordingly referenced.

The Tanzania Forest Fund (TaFF) is a Conservation Trust Fund established by the Forest Act Cap. 323 (2002) under Sections 79 – 83, as a mechanism to provide long term, reliable and sustainable financial support to Forest Conservation and Sustainable Forest Management (SFM) in the Country. Its source of funds among others includes a levy of 2% of every prescribed fee and a levy of 3% of any royalty payable under the Forest Act. These fees are accrued from a buyer who purchases materials from public sources and these are on top of the royalty fee paid according to GN 433.

Furthermore, the Forest (Amendment) Regulations (2013) read as one with the Forest Regulations (2004) requires that any person intending to operate a sawmill, chipboard mill, pulpwood mill, wood preservative treatment plant and any other similar installation of a similar nature must apply for and obtain a licence/certificate of registration. The rates for various dealers are also included in the attached GN 433. However, in a summary, for example, for somebody to operate a sawmill with annual capacity of processing 1-5,000m^3 s/he needs (Table 3.8).

Table 3.8: Fees required to operate a sawmill

S/N	Fee item	Rate, Tsh	
		Public plantation	Private forest
1	Registration to run a sawmill	512,000	-
2	Log/tree dealer	270,000	-
3	Application fee for registration	5,000	-
4	Application fee for tree dealer	5,000	-
5	Transit pass application fee if load < 7 tons	6,500	
6	Transit pass application fee if load > 7 tons	13,000	
7	LMDA (Logging Miscellaneous Account) in Plantations:		
	Road fee per m^3 of softwood logs	7,000	-
	Road fee per m^3 of hardwood logs	14,000	-
	Silviculture fee per m^3 of softwood logs	7,000	-
	Silviculture fee per m^3 of hardwood logs	14,000	-

The licence described under item(1) in the time shall expire on the 30th day of June each calendar year and renewed each year (disincentive to investing in better technologies).

Village councils also have the mandate to pass by-laws that allow them to collect fees from products sourced from their villages. For example, villages in Kilolo District collect on average 100 TSh per piece of timber.

On top all these fees and taxes, there are also “Pay as you Earn tax”, contributions for development projects such as schools, dispensaries, etc

Synopsis

Following the discussion in this section; three issues come out for discussion:

1) Financing mechanism for public plantations seem to be well elaborated and regulated while there is much to be done for private plantations (Table 3.7)
2) The advice that was given by TRA (2013) that we need to have in place a good tax structure and taxpayer-friendly tax administration may have not been achieved
3) Validity of the certificate of registration is on the lower side.

It is a simple logic that cost of running private plantations is almost similar to that of public plantations. Private plantations need money for silviculture, for road construction and maintenance; fire fighting, etc. Accordingly, a wise argument will be to put in place a financing mechanism for private forestry.

Recommendations

1. The government through amendment of the Forest Act could allow royalties, LMDA fees, and application fees for timber dealers similar to those charged for materials from public sources be paid for private plantations through organised structures such TGAs. This will build capacity of the private forestry in country enabling them to

sustainably manage their forests. A well managed forest has many advantages that we may not need to register them here.

2. The number of taxes and amount payable presents room for discussion between the Government and the business community. Tax incentives have been used in many countries to getting the private plantation sector off the ground, generating jobs and increasing forest products both for local and export markets. Nations with growing private forest plantations have done so through offering tax incentives to private forest plantation investors. This has worked well in Brazil, Asia-Pacific Countries, Costa Rica, Guatemala, Chile and many more. Waving of for example, income tax or VAT to a level which is acceptable by both sides could boost the initiative of developing private forest plantations in the country. The tax structure should factor in the long term nature of forestry investment so as to avoid unrealistic taxations.

3. The Government should support the existing forestry companies in having the land rent and land use categories corrected while companies take the lead in initiating and following up with the matter
4. Lastly, is on the validity of certificate of registration which is only a year. We should agree that that any serious investment takes long before it pays back. As we encourage investments in new technologies to process our forest produce and companies to recruit qualified staff (MNRT, 1998); we should be able to create an enabling environment that will tolerate companies to recover their investment. One being registered or being assured of being in business for a good period of time could be in business could be a prerequisite to access a loan facility. So, this duration is a well subject to discussion. A minimum of three years could be suggested to start with.

3.11 Tax incentives and subsidies in forestry development

This section presents a summary review of experiences from different countries in respect financing schemes for development of private plantations. Output from this section form a basis for recommending potential mechanism/scheme for financing Tanzanian TGAs.

Viana *et.al*., (2002) reported a number of approaches and instruments to support sustainable private forestry. The approaches include:

i. Forest certification
ii. Payments for watershed protection and restoration,
iii. Institutional partnerships,
iv. Carbon sequestration
v. Incentives

3.11.1 Forest certification

Forest certification has emerged as a new instrument to promote sound forest management practices in all forest types. This system has acted as a catalyst of change in tropical forest management systems, whose area of adoption has surpassed the prediction set at the outset (Viana, 1996). The area of forests certified under the Forest stewardship council (FSC) scheme has grown rapidly: there were over 24 million ha of certified forests worldwide and 870,511 ha for Brazil as of August 6th, 2001 (fsc.org.br). Certification has brought has a number of benefits including improvement in forest management systems, in social, economic and ecological terms. In terms of financial and other benefits to certified companies from certification, price premiums in the export market have not yet been as high as anticipated, but companies appear to have benefited from improved market access (Viana*et.al.* 2002). A premium of 8% for certified products has reported by Braga (2000). This is an opportunity to that TGAs could benefit from given that they at very initial stages of plantation development.

The Mpingo Conservation and Development Initiative is an independent NGO based in Kilwa District in Southern Tanzania. Its aim is to conserve endangered forest habitats by promoting and socially equitable harvesting of valuable timber stocks particularly Mpingo (East african blackwood, *Dalbergia melanoxylon*). It is a beneficially of the certification scheme. From her reports, we learn that that the final sale price of most blackwood instruments is very high (more than $1,000) compared to the cost of the wood (less than $50 for the set of billets (wooden blocks) required for a single instrument (Ball 2010). The point is to access such a market through certification scheme.

3.11.2 Payment for watershed protection and forest restoration

Linkages between forest conservation and watershed protection offer new opportunities to fund forest restoration. The Municipality of Piracicaba in Brazil has passed a legislation to allow the investment, in forest restoration, of 1% of all water revenues, on the basis of the water volume (m^3) consumed. This is generating annual budgets of about US$ 500 thousand, and would reach US$ 1 million/year if all municipalities of the watershed were to adhere to this policy. Using the water revenue policy instrument could be an important element in securing not only good quality water supply, but also high productivity of freshwater fisheries.

3.11.3 Community-company interactions

The way in which communities interact with the private sector is key- since it is access to the market which affects the speed and process of transition from low level subsistence use of forest resources to commercial production (Viana *et.al.,* 2002). Community-private sector interactions in relation to forest resources take a number of forms in Brazil, depending on the nature of the resource, timber or non-timber, the type of private sector entity involved and the land tenure situation. For example, an interaction observed when a community sell products to a company, the latter takes over the marketing issue. Another type of interactions may take place at an earlier stage i.e. under special agreement; companies may provide seedlings, fertilisers, etc to communities. In Tanzania, the latter has been practiced by KVTC and Green Resources Ltd (GRL). GR for example, acts as a facilitator in providing guidelines and training on nursery establishment, woodlot establishment, woodlot management and biodiversity conservation. Training is provided through written material and practical, in-field demonstrations and nursery inputs. Of late we have seen a Memorandum of Understanding being signed between the Furniture Centre and the Tanzania Wood Furniture Association, whereby the former will facilitate marketing and training while the former will be on the production side.

Whatever the kind of interaction, it is worth noting though that these interactions should be heavily influenced by the legal and institutional context to determine the bargaining power of both sides.

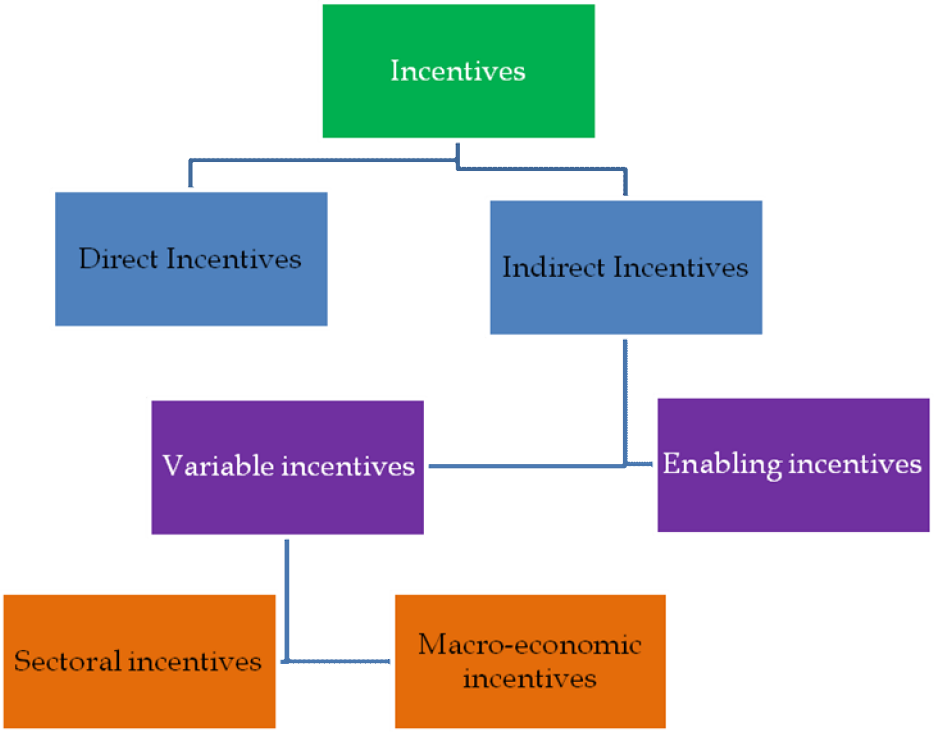
3.11.4 Carbon offset projects

Forests provide an important environmental service as they store and sequester carbon from the atmosphere and thus help to mitigate global climate change processes. Until recently, this service had no market value. However, one of the principal opportunities for financing private sector forest management activities in developing countries that has emerged recently is the Clean Development Mechanism (CDM). This argument was also supported by a study on "Identifying Carbon Trading Opportunities" conducted under the PF-CT project in Tanzania which concluded that forest plantations in Tanzania have the potential to benefit from carbon finance and generate additional income to the communities (MNRT, 2010a). Although this financing mechanism looks promising, it is not left with challenges. Some eminent challenges are for example, forest activities to be included (reforestation, forest management, protection of natural forests, forest regeneration) in such scheme; whether the investments made are effectively additional and go beyond what would have been done without the CDM; how to measure the carbon sequestration in comparison with a baseline situation; and how to deal with leakages associated with the transfer of emission intensive activities to other areas as a result of the "freezing" of forest land use (Viana*et.al.* 2002). Following these unresolved complexities, we learn from PFP outlook that there seems to be general agreement among stakeholders that it is premature to propose credits from carbon trading as incentives for tree plantation as it creates expectations that may not be met (PFP, 2013). However, a new development to this frontier is case by Green Resources Ltd which has managed to sell carbon credits (CERs) through voluntary carbon market. TGAs could join or follow up GR tracks to access and benefit from voluntary markets.

3.11.5 Incentives

Due to different ways in which incentives are defined, the consultant adopted a definition given by Enters, *et.al.* (2004). According to Enters, incentives are defined as policy instruments that increase the comparative advantage of forest plantations and thus stimulate investments in plantation establishment and management. This definition has a wider scope than subsides which are of a purely pecuniary nature and usually viewed as payments provided to reduce the costs of or raise the returns on an activity. The broader definition given by Enters includes research and extension, which are important elements in supporting plantation development. This broader definition also includes sectoral and macro-economic policies which establish much of the general investment climate and heavily influence the economic behaviour of individuals and corporations. Consequently, the spectrum of incentives is considerably broadened and a distinction is made between direct and indirect incentives as shown in Fig 3.6.

Figure 3.6: Spectrum of incentives



Although it is not the purpose of this study to go into detail of each category of incentive, it should suffice to have examples (Table 3.9) of each to preamble and guide subsequent discussion.

Table 3.9: Various types of incentives

Direct incentive	Variable Incentives		Enabling incentives
	Sectoral	Macro-economic	
Goods and materials (e.g. seedlings, fertilizers etc.);	-Input and output prices	Exchange rates	Land tenure and resource security
Tax relief or concessions	-Trade restrictions (e.g. tariffs)	General taxes	Credit facilities
Differential fees and access to resources;		Interest rates	Accessibility and availability of basic infrastructure (ports, roads, electricity etc.)
Subsidized loans		Fiscal and monetary measures	Market development
Cost-sharing arrangements and price guarantees			Political and macro-economic stability
			National security
			Research and development Extension

Many governments have intervened to promote the inception and early expansion of a timber plantation sector, either directly through financing a state forestry enterprise, which might then be subsequently privatised or divested, or by offering subsidies, tax concessions, protection, technical support, and other aids for a period (FAO 2004).

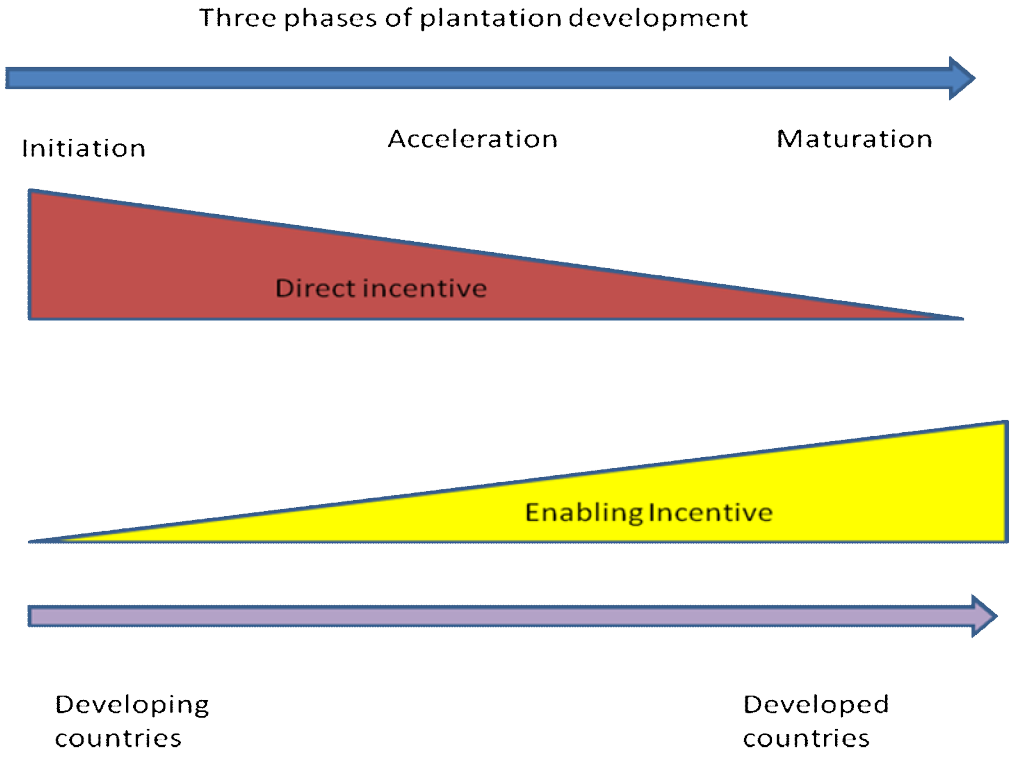
A study "*What does it take? The role of incentives in forest plantation development in Asia and the Pacific"* recognises three stages of plantation development i.e. initiation, acceleration and maturation (Enters, *et al.* 2004). A logical question to these three stages of plantation development will be: what type of incentive, when to apply it, for how long and at what stage of development the incentive is more appropriate.

Figure 3.7 below gives a snapshot of the appropriateness of different types of incentives at different stages of plantation development. From this figure, one could deduce that for a developing country like ours which is at the initiation stage of private forestry development, direct incentives are more appropriate now but as we grow into further stages i.e. acceleration and maturation, direct incentives should be phasing out giving room for enabling environment kind of incentives.

From Enters (2004) we learn that most of the governments in the Asia-Pacific area take a role of establishing the plantation to create an initial critical mass and then at a later stage the private sector is lured in through joint venture, purchases, etc. Once the involvement of the private sector is sought more directly, the use of incentives appears to progress gradually from provision of free inputs, to grants and loans, to tax concessions, to joint

venture arrangements and finally to a focus on creating an enabling environment and removing structural impediments.

Figure 3.7: Incentives with time and phase development



In Guatemala, the Government has a programme called Program of Forestry Incentives (PINFOR) which is intended to promote the reforestation, the creation of forests and sustainable forest management (SFM). A yearly amount comes from the rule that 1% of the national budget has to go to this incentive program. The incentives are a cash payment that the government grants to the owner of forests. The incentive is granted once the management plan is approved by the National Institute of Forests (INAB). INAB is responsible for providing annual evaluations and to ensure the fulfilment of the forestry activities. Also, INAB will extend a certificate which will indicate the certified area as well as the amount to be paid to the beneficiary of the incentive. PINFOR turns Guatemala into the leader of the production of goods and environmental services of the Region. The statistics indicate that from 1998 to the end of 2009, the amount delivered by PINFOR was closed to Q 893 millions (~US$110.0 millions) for a total of 88,500 hectares of plantations (Paulo de León, 2010). The Guatemala approach is similar to what was proposed in a report (MNRT, 2011a) conducted by Indu-for that a separate and semi-autonomous institution independent of the government and not, in any way, directly linked to any company be established to oversee the Tree Farming Grant Scheme (TFGS). The institution be also responsible administer grants to tree growers depending the achieved level of the predetermined standards of silviculture set by the TFGS.

In Peninsular Malaysia, fiscal incentives are provided for by the federal government to encourage investment in the establishment of large-scale forest plantation. Incentives in the form of "Pioneer Status (PS)", "Investment Tax Allowances (ITA)" and "Infrastructure Allowance (IA)" are offered to the private sector involved in forest plantation establishment. "Pioneer Status" provides 100% exemption of income tax for a period of 10 years after harvesting date (production period). "Investment Tax Allowance" allows a 100% tax exemption of the qualifying capital expenditure incurred within 5 years of initial establishment, which could be deducted from the statutory income of the company. "Infrastructure Allowance", allows setting off of expenditure incurred in permanent infrastructure development against company income (Haltia & Keipi, 1997).

Costa Rica one of the few countries in Latin America that has successfully developed its forest sector solely through forest farmers. In a World Bank documentary (De Camino *et.al*, 2000), we are informed that Costa Rica had one of the highest deforestation rates in the world in the 1980s. Between 1973 and 1989, deforestation reached one of the highest rates in the world, with an average of 32,000 hectares of forest cut down each year. Yet today Costa Rica is a pioneer in forest conservation. Costa Rica stands out as having addressed high levels of deforestation through a robust Protected Area system and natural resource management legislation, complemented by direct financial incentives offered to private landowners. Table 3.10 Summarizes the evolution of what started as financial incentives to become a sustainable financing mechanism of a forest sector dominated by forest farmers.

Table 3.10: Evolution from tax subsidies to direct subsidies for large landowners practicing reforestation

Period	Financial support/cost subsidies	Benefit
1979 - 1985	deduction of reforestation costs from income taxes for all reforestation investments, directed mainly toward business and large landowners	about 24 percent of the current planted area was reforested through tax deductions (30,000ha)
1986 -1998.	Certificate of Forestry Payment (CAF) was awarded to those farmers who reforested their properties. There was a standard reforestation price per hectare. CAF permitted more equal access to public funds - exempted capital inputs from national and import taxes	About 26 percent of current planted area was reforested through CAF initiative
1998	(CAFAs) First, the incentive was paid before reforestation so that small farmers had enough money to cover the costs of tree planting activities. Second, small farmers had to organize into associations to gain access to the reforestation price per hectare	reforestation of 23 percent of the planted land and helped improve farmers' Associations
Current	Compensation for 'services' that forests provide. Payment for Environmental Services (PSA) from fossils defaulters -"Polluters Pay"	Reducing greenhouse gas emissions; water protection, protecting biodiversity and ecosystems

In summary, government incentives in Costa Rica have evolved from tax subsidies to direct subsidies for large landowners and indirect incentives for foreign investors to democratization of the incentive system. Thus incentives are made accessible to smaller landowners, and finally the incentive system evolved into compensation system (PSAs),

which changed the public subsidy to a transfer payment from the urban private sector to the rural private sector. The PSAs provide compensation using the "polluters pay" principle through the fossil fuels tax. In essence, the PSA policy shifted the source of funding from the government budget via subsidies to an earmarked tax and payments from beneficiaries of the services. It also allows payments for environmental services to move beyond a project-by-project approach to one fully integrated and institutionalised in a national policy.

Costa Rica therefore moved from a "command-and-control" forest strategy to deregulation of harvests and delegation of responsibility for forest management and conservation to private owners. Today all Costa Rican landowners have access to forestry incentives and environmental services payments, including carbon credits. Such incentives are ongoing rather than provided on a project-by-project basis, like debt-for-nature swaps, whose success depended on the influence of international NGOs. Costa Rican forest owners have strong organizations that give them technical support for reforestation, forest management, and forest conservation. As a result, private sector participation in forestry initiatives is increasing.

Costa Rica has successfully balanced regulation with incentives. Progress has owed partly to the country's innovation in establishing fiscal incentives for conservation – these provide the 'carrot' for forest protection. This has led to an important change in perception among forest owners as to the value of the forests, and also the benefits that can accrue from the provision of environmental services (Brown and Bird, 2010).

In Uganda, they have the famous Sawlog Production Grant Scheme (SPGS). SPGS is a good example of a donor-government partnership that is producing positive results. The project has been the catalyst for over US$20m of private sector investment into timber plantations in Uganda since 2004. It is a project of the Government of Uganda, funded by the European Union (EU), the Governments of Norway and Uganda. Through the scheme, more than 47,000 ha have been planted since 2004.

3.12 Sustainable Tree Growing Association financing system

The Tree Growers Association (TGA) is a mechanism of private, commercial forestry growing for timber that functions as a conduit of information and inputs, and allows for stronger lobby of tree growers (Mattila, 2011). The number of out-grower schemes and woodlots is increasing quite rapidly in Tanzania. The PFP plans to work mainly with TGAs by supporting existing and establishing new ones. The roles of these TGAs in the long run is expected to include helping villages carry out land use planning and getting rights of occupancy, supporting IGAs, awareness creation, training on technical forestry, business training including market information and marketing support, and communication and networking (Impact Consulting, 2012). These assignments seem enormous and support of some kind is definitely required before planned responsibilities are transferred to them.

Lessons learned from a review as documented in the previous subsection (3.11) include:

1. Worldwide, there are different types of financing mechanisms which may include grants, subsidies, product certification, community-company contracts, incentives, payment for watershed protection and pollution, carbon offsets, and donor-government partnerships
2. Incentives which start as targeted and temporary can evolve into sustainable financing mechanisms
3. Strong private tree growers associations and natural resource management legislation, complemented by sustainable financial system can advance private forestry to become a significant contributor to both local and national economic development.
4. When a grant offered as an incentive, it is important that grant is given only after a pre-determined standards or a satisfying level a forest management plan has been achieved and approved by a accountable institution.
5. The Government is among the major players in initial development of private forest plantations. It can supports the development through tax allowances (e.g. exemption of income tax), infrastructure allowances, grants, subsidies, joint and ventures.
6. The international community have shown significant contributions to development of forest plantations in different countries including Tanzania.

Recommendations for TAGs financing mechanism

The initialisation stage of private forest plantation development that the country is passing through now, direct incentives in terms of grants are more appealing for financing the TAGs. The direct incentives should be supported by concerted efforts in a form of indirect incentives particularly extension services and policy reforms. Therefore, the consultant recommends that:

1) In this report, Tax incentive is perceived to be an exemption to pay a certain tax or fees to the authorities with intention to re-invest the same amount into the business under consideration. In this case the TGAs, or their apex body, are the investment entities and the Local and Central government are the authorities. It is assumed that as investment entities, the TGAs scope of business starts with land acquisition,

procurement of quality seeds, forest establishment, forest management, harvesting and first level sale of forest products. This is termed as the value creation phase of a forest product. The sources of funds for the institution may include:

a) Retentions of royalty fees, or part thereof, paid for materials extracted from private plantations;
b) Retention of VAT or part thereof on the very first sales from a TGAs' the forest;
c) Retention of all LMDA fees paid for materials extracted from a TGAs' the forest;
d) Payment for environmental services
e) Carbon sales
f) Sales from certified products
g) Donors' contributions.

2) Large-scale industries entering into contract agreements with TGAs could be possible avenue for financing some of TGAs activities.

Table 3.11 shows the various taxes and fees which are charged during the value creation phase stipulated above.

Table 3.11: Taxes and Fees charged during value creation phase of forest product

S/N	Type of Tax or Fee	Recipient	Unit	Value(TShs)
1	LMDA (incl Silviculture and Road fee	Central Govt	per m^3	7,000
2	Royalty	Central Govt	Log size >20cm	3,920
3	Royalty	Central Govt	Log size =>35 cm	37,690
4	VAT	Central Government	Value of logs	18%
5	Application Fee (Timber Dealer)			5,000
6	Produce Cess (S&M Timber traders	Village Councils	Timber piece	100
7	Produce Cess Large Mills	LGA	Value of logs	5%

3.13 Policy and legislative development needs

3.13.1 Conflicting Issues in Legislatives and Policy

1. The definition of general lands (National Land Act no 4 and Village Land Act No.5 of 1999 (URT 1999b). The National Land Act has categorised unused village land into general land, whereas the Village Land Act categorise the used land as a village Land
2. Management of Forests under Village Land. The Land Acts no.4 and 5 of 1999 gives the Village Council authority to manage all unreserved forest resources in the village. On the other hand, Forest Act No.14 of 2002 recognise central government as the manager of unreserved forests on the village land
3. Forest concession: The Forest Act no.14 of 2002 talks about concession of forest land whereas the Forest Policy of 1998 talks about concession of forests. The two terms are not synonymous

3.13.2 Complementarity in Legislatives and Policy

1. Environmental Impact Assessment (EIA): The Land Acts, Forest Act, Environmental Policy and Act, emphasize that EIA should be conducted prior to new development on Land or Land Resources.
2. Protection of water sources and river banks
3. Land Use Planning. Both Forest Act, Land Act and Environmental Act require Participatory Land Use Planning involving local communities for sustainable management of natural resources.

Master Summary of Findings Table

The Findings of the Desk Study are summarized in table4.11 showing the Challenges, Recommendations, responsible parties and the consultant's priority ranking.

Table 4.12: Summary of Challenges and Recommendations

	Theme	Challenges	Recommendations	Responsible	Ranking
1.	Report on studies done in Tanzania on plantation tree species. Their height, growth development and mean annual increment particularly those grown in the southern highlands of Tanzania	Several factors influencing growth and productivity of tree species	Invest on tree species selection, genetic improvement of planting materials, site and species matching and adhere to silvicultural practices	Forest Owners, Extension Service providers	1
2.	Description of the current tree improvement projects and actors, access to planting material and high quality seeds	Lack of coordination between tree improvement actors	Create a platform for working together	MNRT, FDT,CAMCORE, Forest owners	2
		Narrow tree species genetic base	Invest on bringing in new tree species or clones that can withstand the changing environment	MNRT, TAFORI, TTSA, FDT	2
		Low quality seeds from unknown local sources	Forest owners are advised to source high quality seeds through TTSA	Forest Owners, TTSA	1
3.	Possibility of establishing private forest plantations on government forest reserves through concession	Lack of clear definition and political will of forest concession	Provide clear definition of forest concession on Natural Forest Reserves and Industrial Forest Plantation; Implement.	Private Forest Companies, MNRT	1
		Strict conditions attached to Forest concession	Review conditions attached to forest concession to allow mosaic forest that accommodate indigenous and exotic tree species	MNRT	4
		Lack of the model for monitoring forest under concession	Piloting different models of forest concession	MNRT	4
4.	Utilization of land and land tenure in the programme	Competing land uses in surveyed villages	Land Use Planning	VG, LGA, PFP, MoLHHS,MNRT	1

	Theme	Challenges	Recommendations	Responsible	Ranking
	area, present situations and trends	Large undeveloped land held by individuals and government institution	Legislate measures to utilize undeveloped lands	LGA,MLHHS	1
		Low capacity of village council to execute land tenure tasks	Empower and Strengthen the capacity of Village Council	LGA,MoLHHS	1
		High cost of land survey	Re-examine land surveying procedures to reduce cost	LGA,MoLHHS	1
5.	Extensions services in forestry: actors, financing, availability of services	Actors: Legally it is FBD and TFS, but has inadequate capacity to deliver	Outsource to DFOs, NGOs and CBOs; improve outsourcing mechanism	TFS, DFOs TGAs [PFP to coordinate]	2
		Financing: Uncertain; only as a project	Lobby for funding from incentives and subsidies; self financing	TFS, LGAs TGAs [PFP to coordinate]	2
		Availability: Uncertain; available only as a project		TFS, DFOs, Donors, TGAs [PFP to coordinate]	2
		no technical guidelines;	Develop technical guidelines		
6.	Access to raw material for wood processing from natural forest reserves and plantations and wood sourcing mechanisms	Access Natural: Availability; difficult access;	Encourage tree planting to increase supply; Open up for private practice	FBD, LGAs (Policy and Act), TFS, TGAs	1
		Access Plantation Demand Vs Supply; access less difficult;			
		Sourcing: cumbersome procedure,	Streamline procurement mechanisms	DFHCs, TGAs, Processing Industry	3
7.	Description of the logistics and transportation costs in forest sector including movement permits	Logistics: Inadequate rural and forest roads,	Adopt PPP for rural roads;	MoID, LGAs, Traders, Truck Transporters,	1
		TAZARA Rail transport is available but unreliable	re-invigorate TAZARA	MoID, TAZARA,	4
		Costs: Transport contribute significantly to final product price,			
		TPs: Issued but too many check points; corruption	Streamline functions of check points; regulations	LGAs, FBD, TFS (Policy and Regulations)	1
8.	Report on the current timber	Timber grading standard in place	Revision of the Forest Policy and	MNRT, TBS, SUA, FITI,	2

	Theme	Challenges	Recommendations	Responsible	Ranking
	standards and grading procedure for domestic market	but no regulations for local market timber	forest regulations	UDSM, Building Research Unit, TAFORI	
		Inadequate graders	Train more graders	FITI, SUA, Private trainers	3
		Quality insensitivity of the market	Awareness creation	FITI, SUA, Private trainers, Traders, Users	1
		Poor quality product in the market	Support SMEs to acquire new technologies	PFP, SHIVIMITA, TFS, Development Partners	1
9	Actual procurement requirements by government with respect to locally sustainable grown wood office furniture	No information	Special Study	TAWOFA, SHIVIMITA, SUA	3
10	Provide an account of the actual taxation and fees payable to forest products of the forest sector, tax incentives	Too many taxes and fees; beneficiaries are Central and Local Governments only.	Revision of Forest Policy and Forest Act and Tax Act to allow royalties, LMDA fees, and fees for timber dealers to remain with TGAs, graduated VAT	MNRT, TFS, MoF, TRA, PFP	1
		Short life of certificate of registration (TFS - business licence)	Extend the validity to at least 3 years	TFS, MNRT	1
		Charging agricultural land use-land rent rate instead of forestry use land-rent	In presence of forestry land use category; the land rent should be corrected accordingly to reflect the actual land use i.e. forestry and not agricultural	MNRT, MLHHS, TIC	1
11	Tax incentives and subsidies in forestry development	Subsidy initiatives not fully exploited (PES, Carbon Trading, Product certifications, etc)	Retention of some fees and Taxes; Lobbying, Assist development of carbon trade projects	VPO-(Environment), PFP, SUA, UNDP	2
12	Sustainable Tree Growing Association financing system, experiences from other countries and proposal for	Financing mechanism for private plantation development is not in place	Lobbying for funds from incentives and subsidies	TFS, Tree farming grant scheme, TGA Apex body, PFP, MNRT	1
			Self financing		

	Theme	Challenges		Recommendations	Responsible	Ranking
	development in Tanzania					
13	Policy and legislative development needs; complementarity and conflicts with legislation with related sectors	Conflicting	Forest Policy Vs Land Policy: Conflict on definition of Concession	Review and Revise	MNRT, MoLHHS&HakiArdhi, Land use Planning Commission, LGAs, Relevant stakeholders	1
			Village Land Act Vs National Land Act: definition of general land	Review and Revise		1
			Village Land Act Vs Forest Act: Management of forest and general land	Review and Revise		1
		Inadequacy	Forest Policy: No Statement and Direction on administration of Private Forestry	Review and Revise	MNRT, Private Forest Owners, LGAs, Relevant stakeholders	1
			Forest Policy: No Statement and Direction to regulate local timber market	Review and Revise	MNRT, TBS, TBA, NHC, Relevant stakeholders	1
			Land Act and Village Land Act: Silent on undeveloped land	Review and Revise	MNRT, MoLHHS&HakiArdhi, Land use Planning Commission, LGAs, Relevant stakeholders	1
			CCRO is weaker Vs GRO when needed as a collateral	Strengthen CCRA	LGA, Banks, MoLHHS	
			Forest Act: Silent on Royalties from private forest reserves	Review and Revise	MNRT, MoF, TFS, LGAs, Relevant stakeholders	1
		Too restrictive	Forest Act: Certificate of registration is restrictive	Review and Revise	MNRT, TFS, TAWOFA, SHIVIMITA, Association of large industries, PFP Other stakeholders	1
			Tax Act 2004: Too demanding	Review and Revise	MNRT, MoLHHS&HakiArdhi, Land use Planning Commission, LGAs, Relevant stakeholders	1

4. CONCLUSIONS

1) Growth and productivity of tree species vary between plantations. The variation is due to various factors such as species/provenance selection, genetic improvement, species-site matching and silvicultural practices. These factors individually or collectively influence growth and productivity.
2) Although a number of ongoing or completed tree improvement projects were conducted in the country; it was revealed that coordination among projects' actors was missing leading to repetition of some of already established projects. In addition, the projects lack sustainable funding and professional expert on tree improvement such as tree breeders.
3) Despite the fact that high quality seed can be sourced through TTSA, some forest plantations continue to plant low quality seeds obtained locally from their own stand. This could partly be due to high prices of these seeds as most of them are imported outside the country.
4) Forest concession has never been practised in Tanzania besides being backed by both the Policy and the Act. Policy directives and guidelines on forest concession are in place for years now but the process is constrained by the lack of model for monitoring forests under concession, presence of other mechanisms for managing government forest reserve such as Joint Forest Management and lack of political will. There is need to ascertain the political will behind forest concession. This should go hand in hand with harmonising definitions of on forest concession to remove associated ambiguities, review of the guidelines and piloting of forest concession before we go full blast.
5) The desk study revealed that land use and land tenure are serious issue in the project area. Most of the participating villages have no land use plans that lead to competing land uses. It was cited that huge expenses associated with the exercise of land use planning was behind the failure to most villages to have land use plans. Secondly, the village councils which were supposed to handle land issues have inadequate capacity in terms of knowledge and skills. Furthermore, within the project area, there a large chunk of idle or underutilised land.
6) The resource base has very little raw material for the industry to process. Majority of the trees are young trees that may take some years to grow to an age of being harvested. The NAFORMA report an annual deficit of about 22,500 mill m3
7) Transport of forest products from the forests to the destinations is mainly done through roads after failure of TAZARA to prove as a dependable and reliable means of transport. Rural and forest roads are also in bad shape, being partly passable or wholly inaccessible.
8) The current Forest Policy, through the Forest Act does not provide statements and directions to regulate standards and grading procedure for timber to be consumed in the local market. Although standards are present but are not enforced.
9) The desk study also revealed that there are too many taxes and fees levied to forest products businessmen, and that the beneficiaries of the levies are the Central and Local Governments only. There were not fees or tax benefits to the private sector.

10) There are a number of incentives and subsides that are not fully exploited that could benefit/finance the development of the forestry in the country, including TGAs
11) There are policy and legislative flaws that serve as disincentives to swift development of private plantations in Tanzania.

5. RECOMMENDATIONS

1) In order to maximize growth and yield from forest plantations, there is need to invest in tree species selection, genetic improvement of planting materials, site and species matching and adhere to silvicultural practices.
2) There is need to create breeders forum where those engaged in tree improvement programmes could share challenges and experiences among themselves. TAFORI and TTSA should be in the forefront to assist tree growers to source out high quality seeds. Similarly, outputs from TAFORI particularly on clones that perform better in Tanzanian conditions should be disseminated to reach many tree growers.
3) There is need to facilitate a discussion platform on forest concession and derive concrete proposal on the way forward.
4) There is need to conduct land use planning in all surveyed villages. The processes of surveying should be reviewed to reduce incurred costs. Village Councils should be empowered to enable them diligently pursue land tenure issues which fall under their jurisdiction. Land Policy and Acts could be reviewed to set incentives to wise use of land and disincentives to idle/unutilised/underutilised lands.
5) There is need to support establishment of private forest plantations to bridge the gap. This should take on board the private sector and communities at large
6) There is need to improve the forest/rural roads to facilitate haulage of materials from the forests.
7) There is need to review and revise the Forest Policy, Act and regulations so that timber grading for local market is also regulated. There is as well need to train more graders as sensitive the market to demand for value for money products.
8) All the Forest policy and Act need to the revisited so that the private plantations also benefit from some fee retentions as public plantations.
9) There is need for lobbying and advocating for funds from incentives and subsidies. Also, TGAs could activate self-financing sources such as from carbon trade, product certification, etc.

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7. APPENDICES

Appendix 1: Procedures for application for concession of forest land as outlined in Forest Act No. 14 of 2002

1. A person applying for a concession of forest land shall submit an application using the prescribed form and paying the prescribed fee.
    a. Where the application is for a concession of land from a national forest reserve; or a concession of forest land from general land; the application shall be submitted to the Minister for decision and approval.
    b. Where the application is for a concession of land:- of more than two hundred hectares from a local authority forest reserve, forest land under the jurisdiction of a local authority, a village land forest reserve or forest land under the jurisdiction of a village council, it shall be submitted to and, subject to subsection (5) decided by the Minister;
    c. Where the application is for a concession of land of two hundred hectares or less from a local authority forest reserve forest land under the jurisdiction of a local authority, a village land forest reserve, or forest land under the jurisdiction of a village council, it shall be submitted to and decided by the local authority or village council responsible for that local authority forest reserve or forest land or as the case may be, that village land forest reserve or forest land
2. An applicant for a concession of forest land shall be published in one or more newspapers widdy circulating with a country and in such other forms of media as are likely to draw the matter to the attention of persons in the area where the said forest land is situate-
    a. the location of the forest land;
    b. the boundaries and area of the forest land;
    c. the uses to which the applicant proposes to put the forest land.
3. The application of concession of forest land shall be assessed based on;
    a) the uses to which the applicant is proposing to put the forest land and the manner in which he is proposing to undertake those uses and the compatibility of those proposed uses to the provisions of section 3 of Forest Act No. 14 of 2002 and any forest management plan applicable to the said forest land;
    b) the resources available to the applicant and likely to be applied to the said forest land;
    c) the current use and management arrangements of the forest land;
    d) the record, if any, of the applicant in managing or exploiting any other forest land whether in Tanzania or elsewhere;
    e) the attention the applicant has paid and is proposing to pay to associating the local community, if any, with his uses and management of the forest land;
    f) the duration of the lease which the applicant is proposing including any proposed renewal of the concession;
    g) the contents and conclusions of any environmental impact assessment which has been undertaken in respect of the proposals of the applicant;
    h) the economic and social benefits and costs, both national and local, which might flow from the grant of a concession, including the implications for employment in and about the said forest land;
    i) such representations as may be received on the proposal from any person;
    j) such other matters as may be considered relevant to making an informed and responsible decision.

4. Where concession of forest land is to be granted out of land declared to be a forest reserve, the provisions of any forest management plan applicable to that forest reserve shall, subject to any amendments which may be made by the Minister, the local

authority or as the case may be, the village council, be deemed to be a condition of that concession.

5. The conditions are attached to concession of forest land to ensure that the objectives of the forest reserve and the forest management plan applicable to that forest reserve, are adhered, a concession forest land may include conditions on;
    a. arrangements for and methods of felling trees, including the rates of extraction of timber;
    b. construction of roads, bridges, buildings and other structures on the forest land and the use to be made of all the aforesaid;
    c. arrangements for and methods of transporting timber within and out of the such forest land;
    d. gathering and utilization of forest products from such forest land;
    e. afforestation and reforestation;
    f. disposal of waste;
    g. avoidance of pollution;
    h. conservation of flora and fauna within such forest land;
    i. modes of consultation with persons living near to and deriving some or all of their livelihood from such forest land;
    j. cooperation with right holders in respect of existing rights;
    k. the duration of the concession and any arrangements for its renewal;
    l. payment of fees, royalties and other imposts;
    m. rendering of reports to the Division, the local authority or as the case may be the village council on compliance with the terms and conditions of the concession;
    n. arrangements for the settling of disputes arising out of the concession between the grantor and the grantee;
    o. such other matters as may be prescribed or as may be required by any law applicable to such forest land.
2. Where the Minister or local authority has determined the person who is to receive a concession of forest land and terms and conditions of any such concession of forest land, he shall, register that person and all the particulars and issue such terms and conditions to such person

Source: Forest Act No. 14 of 2002

Appendix 2: Procedures for concession arrangements in plantation Forestry

***I. Advertising a Concession*.** A Forest Reserve concession is advertised by MNRT, or MNRT receives an application for a Concession. MNRT must endeavour to make reserved land available for interested private and community managers in order to achieve the aims of the government strategy without the private sector driving the process. The time anticipated to complete this process is approximately 1.5 months.

ii. ***National Forestry Advisory Committee Opinion***. Upon receipt of the Expression of Interests, Tenders or Applications for a Concession, the Minister refers the potential Concessionaire(s) to the National Forestry Advisory Committee (NaFAC) for comments in order to pre-qualify bidders in regards to the technical proposal and for an opinion regarding development of a concession arrangement. This process will take approximately 1 week.

iii. ***Dialogue between the Stakeholders.*** Stakeholder (NGO, CBO, civil society, local government authorities) interests are registered and co-operation between the Concessionaire(s) and Stake-holders is initiated. This will assist in defining future social and environmental responsibilities of the Concessionaire. This process will need 2 months to be completed and longer if there are conflicts in regards to land use.

iv. ***Evaluation of the Concessionaires***. An independent Team of Experts appointed by the Director FBD will evaluate the qualifications of the Bidder(s)/Concessionaire(s) according to a list of criteria agreed upon at the time of advertising the concession, as set out in the current legislation. The Team will need 1 month to make a thorough assessment of the qualifications.

v. ***Drafting a Concession Agreement.*** A Concession Agreement is drafted using experts (Lawyer, Forest Manager, Economist, Sociologist) chosen by MNRT. The Draft Agreement will be based on the Template developed by FBD and shall include conditions to ensure that the Concessionaire meets the policy objectives and applicable legislation of the GoT including an indication of the remuneration to be paid by the Concessionaire to the GoT. Drafting of the Concession Agreement will take 2 weeks.

vi. ***Right of Exclusivity.*** The Concessionaire receives a Letter of Intent (Right of Exclusivity) from MNRT together with the Draft Concession Agreement for assessment and comment. This will encourage the concessionaire to carry out field verification with regard to the planned concession, including an EIA. All data collected by the Concessionaire is to be made available to the GoT. The timeframe for making an assessment of the concession is 2 months.

vii. ***Negotiation of a Contract.*** The evaluation and comments made by the Concessionaire are assessed and the Concession Agreement is finalised. The Concessionaire is then invited for negotiations with MNRT together with the Team of Experts chosen by MNRT that need to include a Lawyer, Economist and Forest Manager. This process is anticipated to take 1 month.

viii. ***Finalisation and Signing of the Concession Agreement***. The Concession Agreement is to be signed upon completion of negotiations and acceptance by Director FBD that the Concessionaire has fulfilled the requirements of presenting a FMP that includes an EIA. Any necessary side-agreements that must be made with local individuals

or institutions are to be negotiated directly between the Concessionaire and the Third Party during the initial phase (Year 1) of the concession. This process is anticipated to take 3 months.

ix. ***Monitoring of the Concessionaire.*** Monitoring of the Concessionaire is to be carried out on a regular basis by an institute or individual commissioned by the DFoB. The purpose of the evaluation is to ensure that the Concessionaire is abiding by the rules and regulations agreed upon in the Concession Agreement.

x. ***Reviewing the Concession Process.*** A review of the concession process is to be made on a regular basis, e.g. 5 years, to allow the Parties to the Concession Agreement to make any necessary adaptations. The time between the reviews will depend upon the type of concession that has been given, e.g. a management concession will have a longer period between reviews if compared to a utilisation concession.

Source: Ngaga (2011)

Appendix 3: Procedure for forestry land acquisition

Serial No.	Procedure	Time to complete	Cost to Complete
1	Land acquisition through the village. Foreign investors can only hold a granted right of occupancy on General Land. In order to obtain Village Land for investment, this land must first be transferred to General Land. Land can only be transferred from Village toGeneral Land by the President, after the affected villagers and the Commissioner of Lands have agreed on the amount of compensation to bepaid. Village land is under the authority of Village Councils and Village Assemblies, with the latter comprising all the residents of a village who are over the age of 18. Procedures for investors to obtain village land are substantially different from those used to acquire land directly from the TIC, because projects must undertake the transfer of land from Village Land to General Land as well as additional procedures. In contrast to obtaining land from the TIC 'land bank', where the investor does not negotiate with local communities, investors have to start negotiations from the village level. They then proceed upwards to the Ministry of Land until the final transfer of land from Village Land to General Land is approved by the President 1. The investor identifies the village where there is potential land for acquisition. 2. The investor applies for land and meets the Village Council to seek approval of the request for land. The village council comprises of 25 members who must be paid sitting allowance between TSh 5-10,000 per meeting. 3. On agreement, the Village Council and the investor forward the proposed investment plan to the District Council Land Committee, which approves the land for the Investment purpose in the village. The village chairman and village executive officer will forward the minutes to the District Executive Director. The District Executive Director will instruct the Land officer to convene a village general assembly to obtain villagers opinion. 4. The Village Assembly approves the allocation of the piece of land to the investor. The approval will be forwarded to the District Land Allocation Committee	The minimum period required to complete stages 1 to 12 is not less than 5 years.	

	which includes the Councillors. The District Land Committee will forward the application to the Ministry of Lands. 5. The Minister of Lands will request for survey of the Land applied for before approval for transfer from village land to general land. 6. The President transfers the land from Village Land to General Land through a government gazette notice effective after 90 days from the date of the announcement. 7. Village and Wards meet to approve the transfer of land from village to general land 8. Compensation schedule is drawn by a Government Valuer and approved by the Chief Government Valuer. Compensation is paid to the affected village based on agreement between the village and the Commissioner of Lands. 9. Final survey of the approved land is done after compensation is effected 10. Approval of the Maps by the Director of Survey and Mapping 11. Preparation of title deed by the Authorised Land Officer and forwarded to the Commissioner for Lands for approval and registration by registrar of titles. 12. Payment of the fees and other royalties including annual land rent, before receiving the title deed from Tanzania Investment Centre (TIC). The investor obtains a 'granted right of occupancy' (derivative right) to the land from the Commissioner of Lands at the Ministry of Lands, Housing and Human Settlements Development		