



Tanzania Tree Growers Associations Union

Business Plan for Engagement in Wood Trade

Njombe, Tanzania
June, 2018

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ABBREVIATIONS

AGM	Annual General Meeting
BP	Business Plan
DC	District Council
FAO	Food and Agriculture Organisation of the United Nations
FWITC	Forest Wood and Industry Training Center
HR	Human Resources
PFP	Private Forestry Programme
M & E	Monitoring and Evaluation
MIS	Market Information System
MNRT	Ministry of Natural Resources and Tourism
NFC	New Forest Company
SHTGA	Southern Highlands Tree Growers Association
STGs	Small scale Tree Growers
TANESCO	Tanzania Electric Supply Company
TANWAT	Tanganyika Wattle Company
TC	Town Council
TFS	Tanzania Forest Service
TGA	Tree Growers Association
TSH	Tanzania Shillings
TTGAU	Tanzania Tree Growers Associations' Union
UTU	University of Turku

1. INTRODUCTION

The objectives of the Business Plan (BP) is to describe the TTGAU engagement in wood trade for a period of 4 ½ years (July 2018 – December 2022). The BP is a road map for the Union (i.e. TTGAU) in developing its engagement in the forest value chains. It is also a document showing partners the feasibility in investing in development of the Union, especially when it comes to its role in facilitation of the tree growers' marketing of their products.

Tree growers are members of the Tree Growers' Associations (TGA), which then form the TTGAU. The TTGAU's reason for existence derives from the value addition that the organisation delivers to its members and the tree growers. Therefore, the philosophy in the Union's engagement in wood trade is to operate a business that is beneficial to tree growers in form of access to markets and increased profitability from tree growing (i.e. competitive stumpage prices) at the same time as providing the Union and TGAs with income to sustainably run the services in wood trade as well as potential other services. Therefore, the objective of TTGAU's engagement in wood trade is not profit maximisation but enhancing tree growers' returns at harvest of their woods. This is also visible in the benefit sharing arrangements proposed in this Business Plan.

The business plan defines TTGAU engagement in the pine sawn timber and eucalyptus transmission poles value chains. The dynamics in the forest sector and related value chains is recognised, with new products emerging (e.g. Eucalyptus veneer, Eucalyptus sawn timber, bio-energy from alternative sources). Therefore, it is recommended that the business plan is reviewed in mid of its implementation, including assessment of product mix to target in wood trade engagement as well as the potential for investment in processing equipment.

The BP is a part of a larger TTGAU development process. In parallel to the BP, the Union will prepare its Development Plan. This plan again will look at the union from a holistic perspective and will include development of human resources (HR) and management as well as other services to the members and strategies for growing the membership base. Furthermore, the business plan identifies concrete procedures and systems that needs to be developed for successful engagement in wood trade.

The Union is supported by the Private Forestry Programme (PFP) a bilateral development cooperation programme between Tanzania and Finland. Facilitation in the preparation of the TTGAU business plan is a part of this support. The Union is also supported by other institutions such as We Effect (project on strengthening institutional capacity), AgriCord and FAO.

Preparation of the Business Plan has been led by the TTGAU manager under the supervision of the TTGAU Board. The Board has been regularly involved in the development process for discussion, information exchange and validation. The pilot villages have been involved from the start both for provision of information and for validation/acceptance of intervention ideas.

Data for the market analysis was obtained through interactions with tree growers, timber traders and other stakeholders in the timber trade during the period April – June 2018. Data collection included visits to the main markets in Njombe, Makambako, Mafinga, Dodoma, Mwanza, Arusha and Dar es Salam.

In Chapter 2 the TTGAU and the villages object for the piloting are described. Here also justification for the selection of the particular areas for engagement is provided. Chapter 3 is a market analysis providing a snapshot of the pine sawn timber and eucalyptus transmission pole market as well as feasibility of TTGAU's planned interventions. The rest of the document outlines in more detail TTGAU's engagement in the wood trade.

2. TANZANIA TREE GROWERS ASSOCIATIONS' UNION AND THE PILOT TGA'S

2.1 Tanzania Tree Growers' Association Union

Background

The model for tree growers' organisation, i.e. Tree Growers' Associations (TGA) was developed by Private Forestry and Carbon Trading project (2009-2013), a precursor for Private Forestry Programme (PFP), both development programmes funded by the Tanzania and Finnish governments. Success of the model led to establishment of Southern Highlands Tree Growers Association (SHTGA), an umbrella of TGAs in the Southern Highlands. Increasing demand to expand area of coverage led to establishment of Tanzania Tree Growers Associations Union.

Tanzania Tree Growers Associations Union (TTGAU) is a member-based organization established in 2017 and has its headquarters in Njombe town council. The TTGAU was established to promote the interests of tree growers who are organized in Tree Growers' Associations (TGAs), one of the main objective being to increase members' income at harvest of plantations. The mission and vision of the Union is shown in the text box below.

Textbox 1: TTGAU Vision and Mission

Vision	Mission
To be the principal organization that unites private commercial tree growers for lobbying and advocacy for improved income and development of forest sector in the country, to represent tree growers in policy development, economic and social forums	To promote an inclusive, environmentally and socially accepted private commercial forest industry in Tanzania for improvement of peoples' livelihood

Key interventions for the Union include: i) build and strengthen networking amongst tree growers, ii) enhancing women and young people participation in tree planting, iii) provide market brokering services and processing of members woods, iv) facilitate members' access to improved forestry and farm inputs as well as access to advisory services, and v) advocacy and lobbying for forest production and related value chains.

Geographical spread

Although TTGAU is a national coverage organization, because of resources constraints, the Union is currently concentrated in the Southern Highlands. The Union is operating in Mufindi, Kilolo, Kilombero, Makete, Ludewa Njombe and Madaba districts, soon extending its outreach to districts in Ruvuma region. In these districts there is strong participation of small-scale tree growers (STGs) in tree planting activities. Membership structure is shown in the table below.

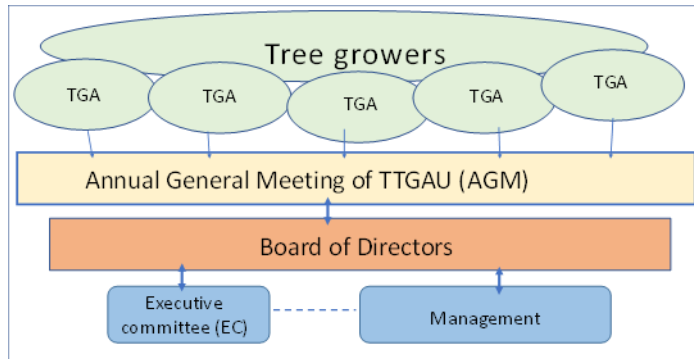
Table 1: TTGAU membership structure

Region	District	Number of TGAs	Members			Total
			Men	Women	Institutions	
IRINGA	Mufindi	28	953	444	17	1,414
	Kilolo	9	166	119	17	302
Total Iringa		36	1,119	563	34	1,716
NJOMBE	Makete	18	1,583	717	20	2,333
	Ludewa	27	1,414	701	43	2,158
	Njombe DC	5	168	108	3	279
	Njombe TC	10	472	255	10	737
Total Njombe		60	3,637	1,781	76	5,494
RUVUMA	Madaba	11	379	168	8	555
Total Ruvuma		11	379	168	8	555
MOROGORO	Kilombero	6	358	120	5	483
Total Morogoro		6	358	120	5	483
Grand Total		114	5,493	2,632	123	8,248

TTGAU management and decision making

The TTGAU and the TGAs are member-based organizations, where the TGAs are members of the Union and tree growers' are members of the TGAs. The figure below shows the organisation structure and the relations between the decision-making bodies, the TGAs and the tree growers. The figure emphasizes the central position of the tree growers.

Figure 1: Tanzania Tree Growers Associations Union, TGAs and tree growers organisation structure



The table below describes the organisation structure roles within the Union. The Annual General Meeting (AGM) is the supreme decision-making organ. Members of the AGM are one representative from each member TGA.

Table 2: TTGAU Organisation structure

Functional structure	Responsibility
Annual General Meeting (AGM)	<ul style="list-style-type: none"> • Making important decisions regarding the union. • Comply with legal requirements, such as the presentation and approval of the audited accounts • Approve work plans, budgets and expenditures • Confirm the minutes of the previous AGM and of any intervening special general meeting • Election of board members • Appointment of auditors for the new accounting term.
Board of Directors	<ul style="list-style-type: none"> • Provide policy directions • Approve resource allocation • Receive M&E reports • Provide feedback
Executive Committee	<ul style="list-style-type: none"> • Create general awareness of the Union • Submit reports (narrative and financial) to the board • Prepare project implementation plans • Collect and analysing data and information • Design the implementation and M&E tools
Management Team	<ul style="list-style-type: none"> • Exercise powers delegated to them by the board • Overseer of all TTGAU development projects • Links management with the Board • Initiate performance reviews and audits • Provide performance guidelines • Submit progress reports to donors • Implement activities • Provide and receive feedback • Advice Board implementation of activities and policies

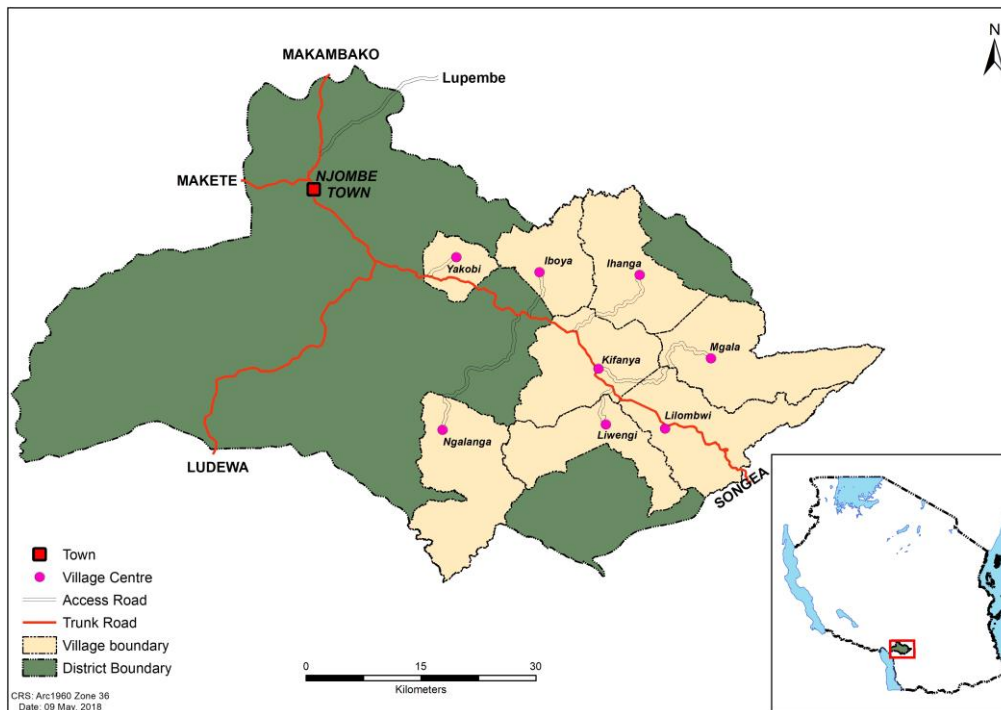
The Board of Directors is responsible for planning, setting the rules, coordination and overseeing the implementation of activities. The Board reports to the AGM and meets on a quarterly basis. Under the Board of Directors is the Executive Committee which is responsible to oversee project activities in between board meetings.

The responsibility of implementing Union interventions lies with the Management Team, who is responsible for the day-to-day management of the Union. Here the Union Manager is having a central role. The Management Team is responsible and reports to the Board of Directors.

2.2 Pilot villages for interventions in wood trade

The business plan will initially be piloted in Njombe Town Council, starting in Kifanya and Iboya villages in Kifanya ward. The intervention will be scaled up as an action learning process based on experiences from implementation in the pilot villages. Scaling up will also depend on availability of resources.

Map 1: Location of pilot area



Iboya and Kifanya villages are located relatively close to each other around 50 kms south west of Njombe along the Njombe to Songea highway. The two villages are chosen as pilots because of accessibility, good road networks, close to markets (timber yard in Njombe) as well as activeness among villagers in in tree planting and timber trade. The TGAs in the pilot villages are described in the text box below. Estimated plantation resources and trade in wood in the villages is described in next chapter.

Table 3: TGAs in Kifanya and Iboya villages

	Kifanya TGA	Iboya TGA
Year of establishment	2009	2014
Number of members	82 (43 male, 39 female)	63 (38 male, 25 female)

3. MARKET ANALYSIS

3.1 Small holder tree growing in Southern Highlands

3.1.1 Overview

Southern Highlands of Tanzania is the main supplier of wood material in the country. There is strong participation of public, private industrial companies and smallholders in tree planting. This is in fact because of favourable climate, suitable soils as well as available land for expanding tree farming. These natural factors, coupled with the recent efforts by the government and development partners to promote private commercial forestry in the country, have led to people living in the area to have high interest in tree planting, which is motivated by the relatively good financial gains from tree farming.

In 2017 PFP engaged the University of Turku (UTU) and the Food and Agricultural Organisation of the United Nations (FAO) in mapping the existing forest plantations in the Southern Highlands¹. Key findings from the mapping include:

- 196,000 ha of plantations lie in the Southern Highlands area.
- About 67% (132,000 ha) of the plantations are pine, 19% (37,000 ha) are eucalyptus and 13% (26,000 ha) are wattle (*Acacia mearnsii*).
- The majority of plantations are around Mufindi and Njombe, but the districts of Makete, Mbeya and Kilolo also have substantial areas dedicated to plantations.
- Pine plantations are found throughout, but eucalyptus plantations are concentrated in Mufindi, Njombe and Mbeya. Majority of wattle plantations are in Njombe.
- About 139,000 ha of plantations (71 %) are owned by smallholders, 36,000 ha by the government, and 20,000 ha by companies. Almost all government plantation resources are located in and around Mafinga though a small area is also found in Mbeya. Private companies have plantations in Kilolo, Mufindi and Njombe.

The small holder plantation resources per main forested districts in Southern Highlands are shown in the table below (public and industry plantations are not included in the table). The analysis is based on UTU/FAO mapping. Due to the automatic classification used, the areas in young woodlots (0 – 3 years) may be underestimated. The classification was carried out in 2017 and based on satellite images from 2015. Hence, the plantation are today de facto +3 years older than at the time of the satellite image.

An analysis of investment opportunities in forest sector was carried out by Indufor in 2018². The analysis concludes that areas in Southern Highlands most favourable for forest industry sector development are around Mafinga and Njombe.

Table 4: Forest resources in main districts in Southern Highlands

District	0-3 years	3-8 years	>8 years	TOTAL	Pine	Eucal.	Wattle
Njombe TC	2,317	13,703	4,112	20,132	71%	17%	12%
Njombe DC	3,141	11,262	2,234	16,637	72%	26%	2%
Mufindi	3,250	19,088	4,538	26,875	56%	33%	12%
Kilolo	1,249	11,256	6459	18,975	66%	13%	21%
Makete	444	16,722	10,530	27,696	81%	4%	16%
Mbeya	153	4,407	3,194	7,755	62%	13%	25%
Songea	73	634	328	1,037	53%	46%	0%
TOTAL	10,627	77,072	31,395	119,094	68 %	18 %	14 %

¹ Forest Plantation Mapping of the Southern Highlands, 2017

² Investment Opportunities in the Tanzanian Forest Industry and Bioenergy Sectors, Cluster Analysis, 2018

3.1.2 Tree growing in Njombe Districts and the pilot villages

There is a total of almost 37,000 ha of forest plantations in the districts (Njombe TC and DC), with almost ¾ being Pine and most of the rest being Eucalyptus. The bulk of the plantations are in the age 3 – 8 years. Taking into considerations this figure and the fact that the classification was done with images from 2015, there will be a substantial increase in harvestable volumes and outflux of raw material from the plantations within a 5 – 10 years period in the districts.

Piloting TTGAU interventions on timber trade will be in a cluster of villages around two “focus villages”, Kifanya and Iboya. The total plantation area in Kifanya and Iboya villages is estimated to 1,225 ha and 912 ha respectively, while the total estimated plantation area in the village cluster is estimated to close to 6,000 ha. Both in Kifanya and Iboya, as well as in the villages as a whole, pine dominates with 70 % of the total planted area. The bulk of the plantations, 85 % are below 8 years of age. A considerable part of the plantations is in the age classes 3 – 8 years. There is an estimated total of 900 ha of plantations that are older than 8 years.

Table 5: Forest resources in pilot villages per age class

Village name	0 - 3 years	3 - 8 years	>8 years	TOTAL	Pine	Eucaluptu	Wattle
Iboya	141	617	154	912	72%	23%	5%
Kifanya	186	856	184	1,225	70%	27%	3%
Ngalanga	46	278	31	355	42%	50%	8%
Mgala	49	123	9	181	51%	49%	0%
Liwengi	57	217	24	298	78%	22%	0%
Lilombwi	74	268	39	382	72%	28%	0%
Other Non TGA villages							
Ihanga	307	1,271	321	1,899	83%	16%	2%
Yakobi	88	513	138	739	48%	47%	5%
TOTAL	948	4,144	900	5,992	70%	27%	3%

The figures in the tables imply the following:

- There are already sizeable areas of plantations estimated to be older than 8 years. A part of this area is of age now mature for harvesting.
- Within a 5 – 10 years period, the bulk of the present plantations will reach maturity, meaning a substantial increase in harvestable volumes and outflux of raw material from the plantations.

There is already harvesting and processing going on in the villages. An estimation made by the TGAs in Kifanya and Iboya is 5 trucks and 2 trucks with sawn timber respectively going out from the villages to the market daily.

The estimated plantation areas and on-going timber trade shows opportunities for engagement in timber trade already now, and above all in the future. The estimated considerable increase in harvestable volumes within a 5 – 10 period implies a growing need for coordination of the timber market and support services to tree growers in the timber trade. Conclusions from the investment study on Mafinga and Njombe being the most favourable areas for forest industry sector development provides important guidance for TTGAU strategies in wood trade interventions.

3.2 Trade of pine sawn timber from Njombe District

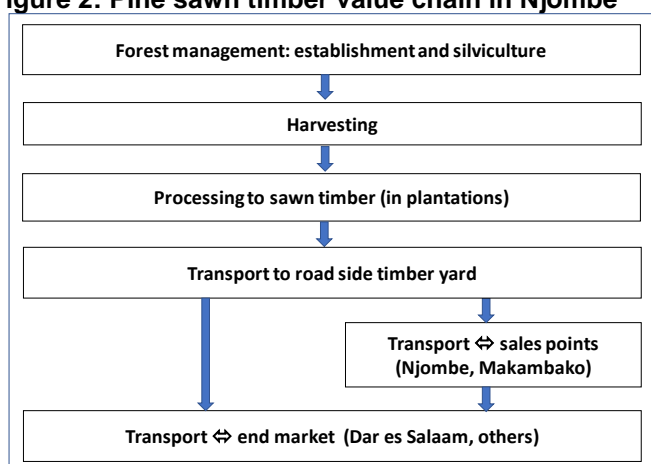
3.2.1 The pine sawn timber value chain

Actors in the sawn timber value chain

The pine sawn timber value chain is shown in the figure below. The actors in the Njombe pine sawn timber value chain are as follows:

- The **tree grower**, managing the woodlot. In absolute majority of cases he/she is selling the wood on stumpage.
- The **middle men**, buying the trees from the tree grower and selling to a trader processing the trees into sawn timber. Middle men are not always part of the trade, the tree grower is also selling directly to the trader.
- The **trader**, buying the standing trees from the tree grower or from the middle men. The trader may transport the timber to Njombe or to other markets.
- The **power chain saw operators** hired/employed by the trader to harvest the trees. The chain saw operators generally lacks safety awareness and protective gear and are weak on skills on cutting the trees to maximize sawn timber volumes.
- The **processing entrepreneurs** hired by the trader to process the logs into sawn timber. The trader may have own processing machinery and hence not hiring processing equipment. At the moment the only processing technology available in Njombe is the Chinese Amec circular saw commonly known as Ding Dong sawmills.
- The **transport entrepreneur** hired by the trader to transport the sawn timber to markets. The trader may also have own transport facilities.

Figure 2: Pine sawn timber value chain in Njombe



Characteristics of the trade among small holder in Njombe

In absolute majority of the timber trade, the tree growers are selling the wood on stumpage. A “normal” transaction when it comes to pine (according to tree growers in Kifanya and Iboya) is around 500 trees and the age of the plantations is 8 – 12 years of age. Hence, the trees sold are normally immature.

The tree growers are having limited information on prices, they may know the prices paid to neighbours selling trees, but there is not a comprehensive understanding and information on markets and trends. Hence, the price expectations may be either un-realistically high or below what could be negotiated. Tree growers are in a weak position in the timber market and are commonly price takers. The presence of middlemen implies that stumpage prices paid to tree growers are further depressed.

The tree growers price expectations are per tree, not fixed to m³ tree-, log- or sawn timber volume. There is no detailed valuation of the stand to connect tree growers’ price expectations with market realities. Consequently, there are no fixed prices or guidelines to assist in the price

setting. Due to inadequate standards, running a MIS with concrete price information or providing hands-on information to tree growers in individual sales transactions is at present a challenge.

On a general level, the stumpage price will depend on: i) Quality and size of trees, ii) accessibility (distance from roads and terrain, etc.), iii) markets conditions, iv) tree growers' need to sell.

3.2.2 Target markets

Sawn timber markets and prices

Most of the sawn timber produced from small holder plantations is sold in the Njombe timber yard, from where it is either used locally or taken to the markets in Makambako, Dodoma or Dar es Salaam. The most common sizes in the sawn timber trade are shown in the figure below as well as their wholesale prices obtained in April 2018 in the different markets. The prices are considerably lower than found when preparing the Value Chains Analysis³ study in mid-2016, and the expected trend in mid- and long term is a rise in sawn timber prices.

Due to the primarily young plantations, an essential part of the sawn timber from the small holder plantations is smaller sizes (i.e. 1"x4", 2"x4" etc.). The immature timber is also impacting on the demand, making it more difficult to sell than sawn timber from mature stands e.g. from Sao Hill plantations. Prices for sawn timber from Sao Hill plantations generate a higher price as compared to Njombe sawn timber especially among bigger construction companies.

On a general level, due to down turn in the economy, market prices on sawn timber has gone down considerably. In the long term, the situation is expected to improve, but the length of the down turn is difficult to estimate.

The figures in the table below shows small differences in prices for sawn timber in in Njombe and in Makambako. In fact, our study showed that in some cases prices even higher in Njombe. The sawn timber prices in Dodoma are slightly higher. There is considerable difference between prices at markets in Njombe and in Dar es Salaam.

Table 6: Sawn wood prices in target markets

Dimension	Whole sale prices TSH/m ³			
	Njombe	Makambako	Dodoma	Dar es Salaam
1" x 4" x 12 ft	88,889	88,889	133,333	N/a
1" x 6" x 12 ft	N/a	N/a	200,000	555,556
1" x 8" x 12 ft	361,111	361,111	365,741	888,889
1" x 10" x 12 ft	488,889	466,667	525,926	888,889
2" x 2" x 12 ft	111,111	133,333	185,185	N/a
2" x 3" x 12 ft	133,333	162,963	172,840	370,370
2" x 4" x 12 ft	194,444	194,444	201,852	600,000
2" x 6" x 12 ft	185,185	203,704	203,704	N/a

Transport costs

Estimated average transport costs from Njombe plantations to markets are shown in the table on the next page. Smaller trucks with estimated average load of 12 m³ are used for transportation from plantations to Njombe, while bigger trucks (estimated loading capacity 35 m³) are used for transportation to other markets. Due to distance, transport costs to markets in Dodoma and Dar are considerable higher as compared to Njombe and Makambako.

³ Value Chain Analysis of Plantation Wood from Southern Highlands, PFP, 2016

Table 7: Estimated transport costs from Njombe plantations to markets

		Scania (35 m3)	Small truck (12 m3)
Costs per truck, TSH	Njombe		80,000
	Makambako	400,000	
	Dodoma	2,750,000	
	Dar	3,200,000	
Loading/offloading (TSH/m3)		48,000	35,000
Unit costs, TSH/m3	Njombe		9,583
	Makambako	12,800	
	Dodoma	79,943	
	Dar	92,800	

Value addition from sales at different markets

The value addition from selling the small holders' sawn timber in other markets than Njombe is estimated in the table below based on price and cost information obtained in April 2018. The sawn timber price differences between Dodoma and Njombe is too small to compensate for the increased transport costs. Hence, looking at purely the income/costs, selling the sawn timber in markets in Njombe is more profitable than transporting and selling in Dodoma. Due to the high sawn timber price difference between Njombe and Dar es Salaam, there is a considerable value addition in selling sawn timber in Dar as compared to Njombe.

Table 8: Value addition in transporting sawn timber from Njombe to other market

	Timber price (TSH/m3)	Transport costs (TSH/m3)	Difference in timber price (TSH/m3)	Difference in transport costs (TSH/m3)	Profit (TSH/m3)	Profit (TSH/truck)
Njombe	204,815	9,583				
Makambako	212,778	12,800	7,963	3,217	4,746	166,120
Dodoma	234,475	79,943	29,660	70,360	-40,699	-1,424,466
Dar es Salaam	627,407	92,800	422,593	83,217	339,376	11,878,157

Conclusion on the target markets for pine sawn timber

At the moment sawn timber prices are low and are expected to increase in the medium- and long term. The market is recognising the difference between the sawn timber from immature stands as compared to mature stands (Sao Hill), both when it comes to prices and demand. From a purely income/cost perspective the best options for sawn timber from small holder plantations in Njombe are markets in Njombe, Makambako and/or Dar es Salaam.

3.2.3 Value Chain Analysis – processing on stumpage and selling at Njombe timber yard

The estimated margins and value addition for processing of pine timber in pilot villages is shown in the table below. The analysis assumes that all equipment used are hired, i.e. no investments in own equipment. The cost figures were obtained from Kifanya and Iboya villages in April 2018. The analysis assumes processing at plantation site with Ding dong sawmill or with improved technology (i.e. Wood Mizer band saw). Recovery rates used are obtained from the value chain analysis prepared by PFP in 2016.

The table shows that the estimated residual at stumpage, i.e. when all costs are reduced from the selling price of sawn timber, is 159,358 TSH/m³ of sawn timber when using Ding Dong sawmills. Transforming this to wood payment capacity in m³ of trees gives 35,377 TSH. Although recovery rates are higher for improved technology, the higher processing costs results in wood paying capacity at the stumpage being lower.

The decreases in sawn timber prices is reflected also in the wood payment capacity at stumpage. Consequently, prices at stumpage has decreased. The relatively small trees at sale

is limiting the wood payment capacity. These are two important issues that the tree growers need to be fully aware of in the trade and setting their price expectations; i.e. knowing the market trends and being aware of the impact of tree sizes on wood prices. At the moment, this awareness is limited.

Table 9: Estimated cost for production and residual at stumpage

Recovery rate	Ding dong	Woodmizer
	37%	47%
	TSH/m3	
Wood payment capacity TSH/m3 of tree volume	35,377	25,699
Wood payment capacity TSH/m3 of logs	58,962	51,398
Residual at stumpage (sawn timber)	159,358	109,358
Harvesting	5,873	5,873
Processing	30,000	80,000
Transport to timber yard in Njombe	9,583	9,583
Selling price - timber yard in Njombe	204,815	204,815

The analysis assumes present practises, i.e. harvesting of immature trees of relatively small sizes and processing using mobile Ding Dong saw mills. Obviously harvesting of mature and bigger trees will increase both the timber percentage (proportion of the tree that can be utilized for logs) and the recovery rates of sawn timber. As stated earlier, sawn timber from mature trees is in higher demand at the market. Hence, growing the trees into maturity will increase the demand and wood payment capacity at stumpage, i.e. higher stumpage prices to the tree grower. At present the availability of improved processing technology is limited in Njombe District. To provide benefits to small holder tree growers, Union engagement in pine sawn timber value chain need to have a clear focus on promoting the growth of trees to maturity and emergence of improved processing technology into the district.

3.3 Trade of Eucalyptus poles in Njombe District

3.3.1 The Eucalyptus pole value chain and target markets

Main target for Eucalyptus transmission poles are the pole treatment plants. Major poles treatment plants in Southern Highlands are located in Kilolo, Mufindi and Njombe districts. TANWAT in Njombe is using poles from its own plantations. The government plantations in Sao Hill is a large supplier to most of the pole treatment plants.

Currently, the major buyer of poles from smallholders is New Forest Company (NFC) with treatment plant in Kilolo. NFC is at the moment sourcing poles as far as Mbinga in Ruvuma region. One possible reason is that the capacity that NFC plant is big and NMFC own plantations are still immature.

NFC is procuring poles from smallholders through two channels, either buying on stumpage from tree growers or buying from traders either at plantation site or at factory gate. Therefore, the main actors in the value chain when it comes to poles from small holders are:

- The **tree grower**, managing the woodlot. In absolute majority selling on stumpage.
- The **scouters**, surveying the available trees ready for harvesting and informing the middlemen (can sometimes handle transactions) between tree grower and middlemen
- The **middle men**, buying from the tree growers and selling to NFC or other traders. The middle men may sell to NFC or traders at stumpage or to NFC at factory gate.
- The **treatment plant** buying the poles at stumpage or at factory gate from the middle men.

The table on the next page shows stumpage prices paid to tree growers as well as prices paid for poles delivered at factory gate in Kilolo. The table shows that prices received by tree growers when middlemen are involved in the trade, are considerably lower. Due to woodlot management problems, 13 and 14m long poles are seldom supplied from smallholders. One pole is obtained per tree. The stumpage prices in the table therefore represent both the price paid per pole and per tree.

Table 10: Pole prices at stumpage and factory gate⁴

Poles Height in Meters	Stumpage Price/pole (TSH)		Factory gate prices (TSH)
	New Forest Company	Middlemen	
9	28,000	15,000	45,000
10	28,000	15,000	120,000
11	28,000	15,000	135,000
12 medium	28,000	25,000	145,000
13 medium	60,000	30,000	145,000
13 stout	60,000	30,000	155,000

3.3.2 Value chain analysis

The estimated costs⁵ and profit margins in pole trade is shown in the table below. The analysis shows that the profit margin at factory gate is considerable. With the stumpage price paid by middle men, the profit margin at factory gate is more than 4 times the price paid at stumpage. Consequently, according to the estimate, the wood payment capacity at stumpage is considerably higher than what is paid to the tree grower.

Table 11: Estimated costs and profit margins in pole trade

	NFC TSH/pole	Middle men TSH/pole
Stumpage price	30,000	15,000
Felling	1,500	1,500
Debarking	1,000	1,000
Skidding	5,000	5,000
Loading	5,000	5,000
Cess	3,000	3,000
Transport	18,000	18,000
TP	500	500
Business Reg	500	500
Total costs	64,500	49,500
Factory gate price	130,000	130,000
Profit margin	65,500	80,500

⁴ Source: NFC and traders, Iboya and Kifanya

⁵ Cost figures obtained through discussions with industry and traders in May 2018

3.3.3 Conclusions

TANESCO is the main final consumer of transmission poles in the country. Currently demand for poles outweighs supply. One contributing factor is the Rural Electrification project implemented by the government. However, due to quality challenges TANESCO is considering sourcing poles from outside Tanzania and use of alternatives like concrete poles. Recently the government has imposed a ban on importation of utility poles to promote local supply of the raw material.

The analysis shows that the profit margins at factory gate is quite high and that there is wood payment capacity that would allow for higher stumpage prices to the tree grower. At the same time there is the opportunity for TTGAU and TGA replacing the middle men. TTGAU and TGAs being on the ground where poles come from, are on a better side of tapping the opportunity for both improving quality of poles on the supply side and increasing tree growers' income.

3.4 SWOT analysis

The SWOT analysis for TTGAU engagement in wood trade is shown in the table below. In the development of the TTGAU it is essential to nurture the Strengths, identify the Weaknesses and implement measures for correcting them, capture the emerging Opportunities and take necessary actions to manage risks related to the Threats. Therefore, it is recommended that the TTGAU and its members discuss and up-date the SWOT on a regular basis as a part of developing the TTGAU.

Table 11: SWOT analysis

<p>Strengths</p> <ul style="list-style-type: none"> • Good and established contacts to partners for investments in developing the TTGAU • Committed staff and board for development of services in wood trade 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Limited experience in operating businesses and trade as a whole • Limited experience in wood value chain • Limited awareness on the market on TTGAU existence • Limited awareness among tree growers and members about TTGAU and potential services in wood trade • Limited staff and other resources
<p>Opportunities</p> <ul style="list-style-type: none"> • Growing and urgent need among tree growers for service and coordination in the wood market. • Growing wood market and demand • Potential support from sector actors e.g. government, development partners 	<p>Threats</p> <ul style="list-style-type: none"> • Market down turns impact on wood markets demand and prices • Presence of alternatives for timber in different uses

4. TTGAU BUSINESS MODEL IN TRADE OF WOOD PRODUCTS

Long term vision for the TTGAU in the trade in wood products in Southern Highlands of Tanzania:

The Union is a strong actor in wood markets in Southern Highlands. Through Union's interventions tree growers receive value addition in form of better prices for their wood and access to markets. Strong emphasis is put on high quality both when it comes to own interventions as well as development of the value chains tree growers are engaged in. The interventions in marketing and processing is providing a solid financial foundation for the union and TGAs.

Long term intervention outline:

- **Engagement in wood marketing through brokering and maintaining a MIS**
 - ⇒ The Union and TGAs are operating a Market Information System that is providing regularly up-dated and relevant information to tree growers for marketing their wood as well as to traders and processing industry to increase connectivity in the market.
 - ⇒ The Union and TGAs are providing value added hands-on support to individual tree growers in their specific wood trade interventions.
 - ⇒ The Union is providing hands-on support to traders and industry in linking them to tree growers for supply of raw material.
- **Engagement in processing and trade of Pine sawn timber**
 - ⇒ The Union and TGAs are operating small scale wood processing to increase the value addition to tree growers and provide income to the institutions.
 - ⇒ The Union at beginning having a major role in the operations, but as TGAs develop the roles and responsibilities will be reviewed.
 - ⇒ The engagement is starting with hiring equipment for operations. This approach will be reviewed as the capacity and experience grows.
- **Capturing opportunities in emerging value chains**
 - ⇒ Engagement in wood trade will start in the Pine timber- and Eucalyptus pole value chains. The dynamic forest sector is recognised and the mid-term review of this business plan will look into emerging value chains and opportunities to be captured in them.

5. TTGAU BUSINESS PLAN (JULY 2018 – DECEMBER 2022)

5.1 Introduction

This business plan outlines the TTGAU engagement in wood marketing and processing in Southern Highlands during the period July 2018 – December 2022. The main value chains for interventions are the Pine sawn timber and Eucalyptus transmission poles, and to some extent the eucalyptus veneer value chain.

The union will during the period of implementing this business plan closely follow market developments and emerging new products in Southern Highlands (e.g. processing of Eucalyptus sawn timber, charcoal and briquettes from residues). In the middle of the planning period, the business plan will be reviewed and up-dated when it comes to value chains, interventions and possible investments.

The TTGAU engagement in wood marketing and processing will be in close cooperation with local TGAs. The philosophy is operating a business that is beneficial to tree growers in form of access to markets and increased profitability from tree growing (i.e. competitive stumpage prices), at the same time as providing the TTGAU with a profit that will be used to run other TTGAU services to its members. Service delivery will provide tangible benefit to the tree growers and the TGAs, hence engagement in the wood trade is a part of TTGAU fulfilling its mandate at the same time as attracting more tree growers to join TGAs.

Engagement in the wood marketing will include:

- Acting as a broker in the timber and pole trade including operating a Market Information System.
- Processing and marketing of sawn timber.

Successful engagement in the trade, processing and marketing sawn timber and transmission poles will require commitment and focus among the union and associations as well as effective organizational arrangements and good cooperation. Capacity building and access to additional resources will also be needed.

5.2 Businesses and services

5.2.1 Brokering the timber and pole market

Main “product” is marketing of small holders’ standing trees of pine and eucalyptus. The benefit to tree growers will be in form of access to markets, increased prices for their trees as well as the union carrying out tasks in the wood marketing on their behalf.

The main interventions will be:

- Providing on a general level information to member tree growers on market opportunities, prices and other relevant issues in relation to their trade in wood (MIS).
- Linking individual tree growers with traders and processing industry to serve tree growers in the process of selling and/or buyer in the need for raw material.
- Valuation services for support to tree growers in individual timber sales.
- Acting on behalf of individual tree growers in specific sales transactions in form of advocacy and taking care of sellers’ interests.
- Identification and coordination of co-sales (several tree growers selling timber to same trader) of wood.

Main mechanisms for implementing the interventions are the Marketing Information System (MIS), the TTGAU personnel and close cooperation between the TTGAU and TGAs. The TTGAU forester (duty station Njombe) will spend most of his/her working time out in the villages.

The MIS is a data base operating through emails and internet and will be operating throughout Southern Highlands. The field-level-engagement, i.e. support to tree growers in specific wood trade transactions, will focus on pilot villages and spreading out based on time/resources availability and opportunities in the marketing.

5.2.2 Processing and marketing of Pine sawn timber

The main “product” is the trade in Pine sawn timber. The engagement in processing and marketing will enable the organisation to have insight into the sawn timber value chain and that way enable more accurate information delivery in the brokering services to the tree growers. The union is fully aware of its dual role in processing and marketing of sawn timber, i.e. being a trader running a business at the same time as being an institution providing benefits to its members.

The benefit to tree growers will be in form of access to markets and increased prices for their trees. In addition, the engagement in processing and trade will include benefit sharing arrangement where the profit (income from sales of sawn timber – costs accrued) will be shared among the tree growers and the organisations.

The interventions will be along the whole pine sawn timber value chain, from stumpage to market. The Union will:

- Buy the trees on stumpage from the tree growers.
- Harvest the trees.
- Process the logs into sawn timber.
- Transport the sawn timber to the markets and sell the product.

The Union buying the trees will put pressure on cash flow in the union. Therefore, various alternatives for payment schedules to tree growers will have to be looked into to develop alternatives that both enhances confidence among tree growers and reduce the burden on cash flow within the organisation.

5.3 Marketing Plan

5.3.1 Service promotion towards TGAs and tree growers

The tree growers are already engaged in the timber trade. The Union is entering the trade as a new actor. The tree growers will also in the future be free to choose with whom they engage in the trade. They will utilize the services of the Union if they regard this being the best option. A key issue in Union’s engagement in timber trade is to get into a position that its services is well known and regarded by tree growers as the best option as well as accepted by the timber traders.

Main promotion activities towards TGAs and tree growers are as follows:

- Presence on the ground. The only way the union is going to be penetrating the market is to have field presence thereby being able to offer tangible services as well as having insight on needs and up-coming opportunities.
- Awareness raising. Entering into the market as a new actor means that it will be important to allocate considerable efforts to ensure that all TGA members as well as other tree growers are aware of this opportunity and the benefits that lay in utilizing the services. The TGAs will here have an important role as well as utilization of local radio stations. It is recommended that an awareness raising plan is prepared together with the TGAs.
- Good governance in the marketing and trade interventions. Ensuring that the union’s engagement in the trade is transparent and participatory. This implies e.g. regular members’ meetings where adequate information is shared, and decisions are made with regards to the on the interventions. Specific considerations have to be put into information sharing among the benefit sharing arrangements.
- High quality market operations which includes keeping what has been decided and promised as well as being both quality and price competitive.

5.3.2 Service promotion towards timber traders and processing industry

The purpose is to establish good relations to key industry actors and traders as well as processing and transport entrepreneurs to gain the reputation as a trusted and competent partner in the trade in wood.

The main activities are as follows:

- Continuous market analysis to know the key players.
- Contact through phone, regular visits. Well planned visits with “interesting” information to the object of the visit to ensure that the visit is regarded as beneficial.
- Preparation and distribution of printed marketing material.
- Participation in exhibitions.
- High quality market operations which includes keeping what has been decided and promised as well as being both quality and price competitive.

5.3.3 Well planned and executed wood market interventions

The best marketing is satisfied traders/industry and tree growers through high quality products and services. This again is achieved through commitment and careful implementation of the market interventions outlined above and in the next chapter (the Operational Plan).

5.4 Operational plan

During the coming 4 ½ years period the tree growers’ organisation will under the leadership of the union engage in marketing and trade of timber. The Union is the main driver and has the major roles in the timber trade engagement. However, at village level the TGAs are central actors for coordination, awareness, providing information as well as concrete inputs into the timber trade.

5.4.1 The Market Information System

The MIS is a central mechanism in keeping the tree growers and their organisation up-dated on the market situation as well as linking the demand and supply. Information is shared within the tree growers’ organization and with the tree growers through the following mechanisms:

- Phone, SMS and What’s App messages.
- Email.
- Regular meetings and distribution of printed material.
- Broadcasted information through mass media and community/social gatherings

MIS is hosted and managed by the union and is a two-way communication channel within the tree grower’s organisation as well as between the tree growers’ organisation and the industry and traders. The MIS will first and foremost include market information on pine and eucalyptus value chains.

The MIS is managed and kept up-to-date through the following main interventions:

- Union and TGAs own market transactions are recorded into the system, including process obtained and other key information.
- TGA collecting information from their members on transaction when not selling through the TTGAU/TGA services.
- Regular “willingness to sell” enquiries carried out by the TGAs and the union forester for obtaining information on potential supply of wood among the tree growers.
- A wide network of partners with whom regular communication is maintained as well as regular market assessments.
- Cooperation and information exchange with government institutions (MNRT, TFS).

Textbox 2: The Market Information System

Information contents in the MIS

- Processing Industry and traders. List with address and contact details of key actors as well as a general description on their raw material use.
- “Blacklist”. Information on traders with inadequate performance in the trade.
- Demand for raw material (for brokering). Actual, concrete demand for pine and/or Eucalyptus on stumpage including information on the “customer” and volumes.
- Demand for sawn timber (for processing and trade). Actual, concrete demand including information on the “customer” and volumes.
- Sawn timber prices at main markets for the main sizes including trends in demand and prices. Prices for transmission poles paid at factory gate(s).
- Stumpage prices. Prices paid per stumpage for implemented transactions, including details with impact on the price (age, dbh, quality, accessibility)
- Potential supply of wood per TGA. Estimates per village on areas of plantations and age structures.
- Actual supply. Actual, concrete information on tree growers intending to sell on stumpage including contact details, location, size of the intended sales as well as expressed demand for TTGAU services.
- Factors which impact on stumpage prices: transport costs, accessibility other key cost factors.

5.4.2 Brokering the timber and pole market

The field level engagement, i.e. support to tree growers in specific wood trade transactions, will focus on pilot villages and spreading out based on time/resources availability and emergence of clear and concrete opportunities in the marketing. The Union will have a main role in the brokering and the forester in Njombe will have a central position. The union will manage the MIS, be the focal point in information sharing within the tree growers’ organisation as well as the main link to traders and processing industry. The union will also be the one first-hand providing valuation services and hands-on support in timber trade.

The TGAs have an essential role in anchoring the timber trade interventions in the field by providing information for populating and keeping the MIS up-dated as well as engaging with their members and alerting on up-coming needs for hands-on services from tree growers in planning the sales or marketing the wood. The TGAs are always the entry point for TTGAU field level services. The roles and responsibilities of the union and the TGAs is likely to evolve. Therefore, a pragmatic approach is applied for efficient implementation of the services.

Linking individual tree growers with traders and processing industry.

The tree grower informs the TGA or TTGAU about his/her intention to sell wood. The Union is utilizing its network and information on demand to identify potential reliable buyers (i.e. traders, industry). The information is entered into the MIS. Connecting the tree grower with the buyer is done either by the TGA or the union depending which is the most efficient and in line with procedures and instructions to be developed.

In the contact with the tree grower, the TGA/union inquires the need for other services from the organisation (i.e. valuation, acting in the trade negotiations). If the tree grower is not in need for other services, no service fee is obtained. The age of the stand for sale and its impact on prices will always be discussed with the tree grower to promote growing of the stands to maturity.

Valuation services

If the tree grower recognises the need and benefit for valuation of the stand prior to sales, this service is provided. Through the information obtained in the valuation and information in the MIS, the tree grower is provided with an estimate of price per tree and income to be obtained

from the sales. This information is presented to the traders/industry when identifying potential buyers for the wood.

Textbox 3: The Valuation Services

Main steps in the Valuation Services

Details of the service including timing and service fee are agreed upon between the tree grower and the Union.



Data for valuation is collected by the union, including:

- Measurement of a sample of trees in the stand for volume calculations and confirming the number of stems.
- Assessment of other factors with impact on the price (e.g. quality of the trees, accessibility) are assessed.



Results for valuation is calculated and presented to the tree grower in written format, including:

- Number of trees, volume per tree and estimated price per tree.
- Estimated price for the whole stand.

Negotiation services in individual sale transactions

This service is a logical continuation of the valuation and will be provided if the tree growers see the need and benefit from Union becoming engaged in stumpage sales negotiations. The Union will act on behalf of individual tree growers in specific sales transactions in form of advocacy and taking care of tree growers' interests. The Union will look for the opportunity to inform several traders, hence provide for competition and potential to attract higher prices. All potential buyers will be treated equally, provided with the same information and opportunity to engage in the trade.

Textbox 4: The Negotiation Services

Main steps in Negotiation Services

Details of the service including timing and service fee are agreed upon between the tree grower and the union.



The union identifies and approaches potential traders, informing on the business opportunity. The information will be based on the valuation, in written format including all relevant information and schedules for expected reply.



The union receives reply from the traders and negotiates prices. The tree grower is continuously informed and if applicable also participating in the negotiations.



When final proposals are reached from the buyers, the options are presented to the tree grower. The tree grower is taking the decision on whether to sell and to whom.



If the sales transaction materializes, the information is put into the MIS.

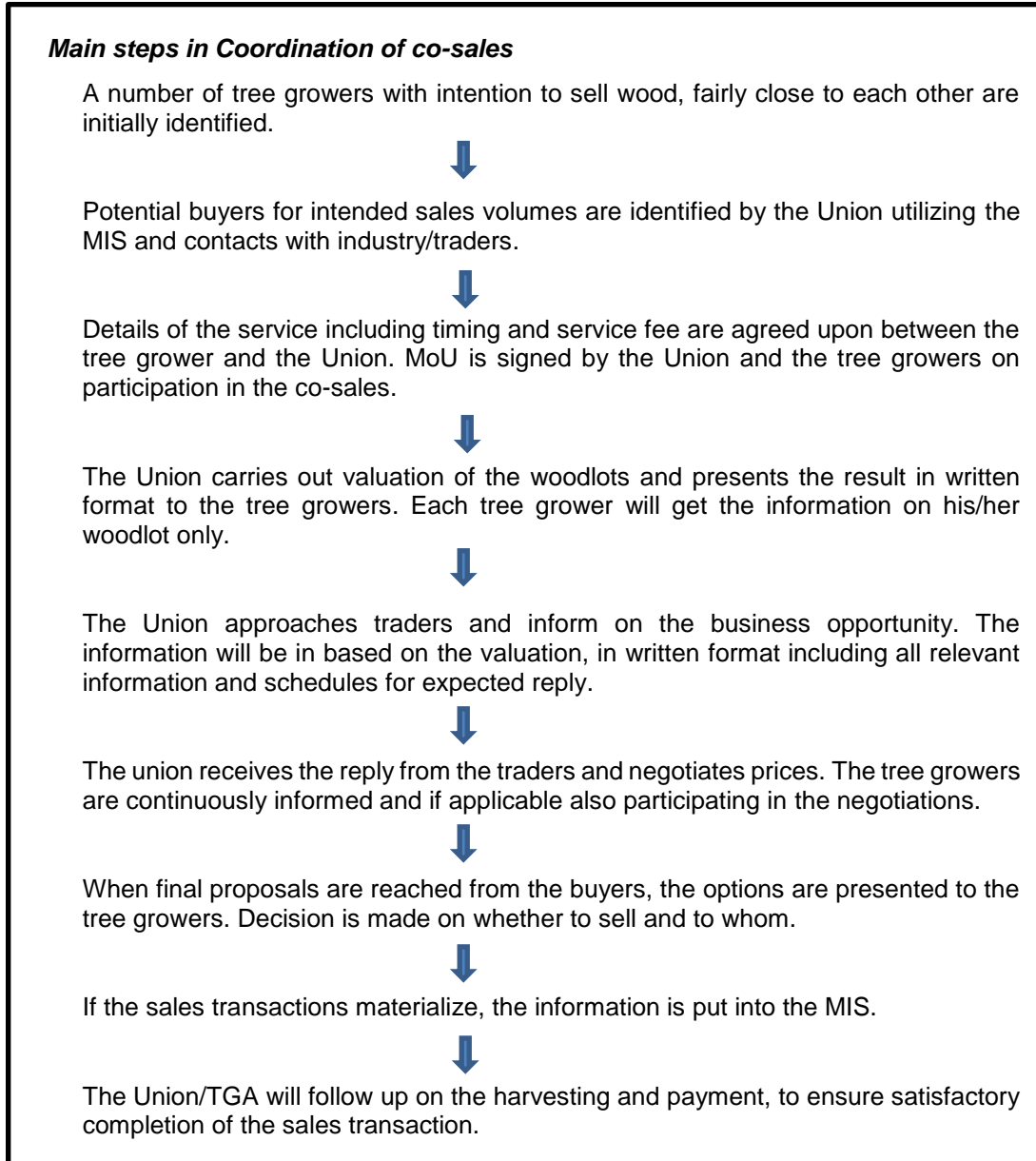


The Union/TGA will follow up on the harvesting and payment, to ensure satisfactory completion of the sales transaction.

Identification and coordination of co-sales

This service includes identification of several tree growers with intention to sell on stumpage and linking to the same buyer. The idea is to get higher prices for the trees due to bigger volumes in the trade. For this to succeed the woodlots for sale need to be fairly close to each other, potential buyers with need for bigger volumes identified and the tree growers involved agreeing to the mutual sales. Each of the tree growers will make independent decision on whether to sell or not. Each tree grower intending to sell through the co-sales will sign a MOU with the Union on the particular sales hence providing for confirmation to the Union, necessary to provide strength in the negotiation process.

Textbox 5: Coordination of co-sales



Linking traders and processing industry with individual tree growers

The industry and/or traders informs the union or the TGA on need for raw material and preferable location. The MIS is utilized to provide information on potential stumpage on sale. In addition, the union is contacting relevant TGAs to inform and inquire on potential stumpage on sale not in the MIS. Information is provided to the buyer and connection is secured between the parties. If no field level interventions is required, no service fee is charged from the buyer.

The TGA/union inquiries from the tree grower the need for other services from the organisation (i.e. valuation, acting in the trade negotiations). If the tree grower is not in need for other services, no service fee is obtained.

The services to the traders/processing industry may also go a step further, with the union providing hands-on support to the trader/processing industry, physically connecting the buyer and seller in the field. In this case, and if a sales transaction is concluded, the buyer will be charged a service fee from the union. Information from the sales transaction is entered in MIS.

5.4.3 Processing and marketing of sawn timber

The TTGAU interventions in processing and marketing of sawn timber will be based on good knowledge of the market, established relationship with buyer and well-planned interventions. Hence, when the union enters into discussion with a tree grower planning to sell his/her woodlot, the sizes to be produced, destination of the sawn timber as well as entrepreneurs to engage is known. The MIS will be a central tool here.

Textbox 6: Key strategies for TTGAU engagement in sawn timber processing and trade

- ✓ Focus on stands close to maturity and/or mature stands. This will enable better wood payment capacity, produce better quality sawn timber and enable easier market access, hence promote the growing of stands to maturity among tree growers.
- ✓ No own investment in machinery and equipment, instead hiring in entrepreneurs.
- ✓ Preference on hiring first and foremost improved processing technology, thereby promoting the change of technology in the sector. However, realizing the reality on the ground, the union will most probably have to engage with Ding Dong entrepreneurs as well.
- ✓ Aiming at long term arrangements with processing and transport operators. This will enable negotiation of favorable prices as well as promotion of technology and skills development.

The field level engagement will focus on pilot villages in Njombe. The service will be spreading out around and outside Njombe based on time/resources availability and emergence of clear and concrete opportunities in the trade.

The TTGAU will have a main role in the processing and marketing of the sawn timber, the forester being a central figure role in providing the field support services. However, the TGAs have an essential role in anchoring the interventions in the field by marketing and raising awareness of the service among tree growers as well as informing the union on up-coming opportunities. The TGAs will also on case-by-case basis have various roles in supervision and monitoring of the operations.

The profit for each transaction will be monitored⁶. In case of profit, it will be shared between the tree grower, the TGA and the Union. The profit is defined and the residual when all costs and TTGAU service fee is deducted from the income from selling the sawn timber. The profit will be shared as follows:

- Tree grower = 40 %
- TGA = 20 %
- TTGAU = 40 %

⁶ Note that the profit share refers to TTGAU processing and marketing sawn timber, i.e. when TTGAU is buying wood on stumpage from the tree growers.

Buying from tree growers on stumpage

The Union will buy the wood on stumpage from tree growers. The schedules for payment will be developed and piloted to reach at a system optimal for tree grower and Union. Preliminary proposal is a payment schedule where 50% is paid to tree grower upon signing the sales contract and 50% when trees have been harvested, processed and sawn timber sold. If the duration from sale on stumpage to final payment is long, it is proposed to introduce the option for an interim payment of half of the remaining payment, i.e. 25 %.

The profit share (see previous page) to tree growers, i.e. their part in the benefit sharing arrangement, will be paid out as soon as the sawn timber is sold, funds received and profit calculated.

Information on tree growers potentially willing to sell is obtained from the MIS. In addition, the role of TGAs is to inform TTGAU on up-coming opportunities. The actual business transaction is between the tree grower and the union. The price will be set through valuation, utilizing information from the MIS and negotiations between the tree grower and the union.

Harvesting

Harvesting is carried out by entrepreneurs hired by the union. Preference will be to hire entrepreneurs from the village where the woodlot is located and to establish long term arrangement with entrepreneurs. This will facilitate more favourable contractual arrangements for the union as well as enable skills development and hence higher quality work (e.g. processing the trees into logs), with impact on profitability for tree grower, union and the entrepreneur. FWITC will be engaged in skills development.

The harvesting will be monitored by the Union forester. The TGAs will also have a role in the monitoring, which will be established case by case. The aim is to supervise the work as efficiently as possible utilising the resources in the TGA and in the Union. Specific attention will be paid to the optimal cutting of logs from the trees, hence maximizing the value addition.

Processing

Processing is carried out by entrepreneurs hired by the union. Preference will be to hire entrepreneurs from the village where the woodlot is located and to establish long term arrangement with entrepreneurs. This will facilitate more favourable contractual arrangements for the union as well as enable skills development and hence higher quality work, which impact on profitability for tree grower, union and the entrepreneur. FWITC engagement in skills development.

Processing will be at the woodlots, hence utilizing mobile sawmills. Union will aim at engaging with entrepreneurs operating with improved technology. However, if needed the union will also in its processing, where necessary utilize ding dong sawmills.

The processing will be monitored by the union forester. The TGAs will also have a role in the monitoring, which will be established case by case. The aim is to supervise the work as efficiently as possible utilising the resources in the TGA and in the union.

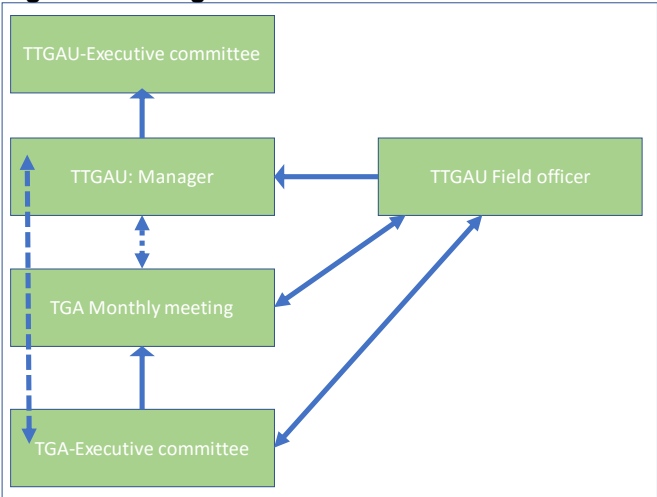
Transporting to the markets.

Transport equipment (i.e. lorries) is carried out by entrepreneurs hired by the union. The aim is to establish long term arrangement with entrepreneurs. This will facilitate more favourable contractual arrangements for the union.

5.5 Management and organisation

Implementation of the TTGAU business plan will on daily basis be overseen by the Management Team and especially the Manager and Union Field Officer. The field officer will be directly linked with the TGAs carrying out wood trade, and will be responsible for all the field work, assessment and valuation of woodlots, support harvesting and processing and providing any other technical support as needed by the growers. The field forester will be accountable to TTGAU manager who will be accountable to the board of directors. At the TGA level, timber trade will be supervised by the TGA Executive committee which will be on monthly basis reporting to TGA members in a meeting. The field officer will be attending the TGA monthly meetings for reporting and provide technical briefing.

Figure 3: Management of the timber trade



6. DEVELOPMENT NEEDS FOR IMPLEMENTATION OF THE BUSINESS PLAN

The TTGAU business plan shows that there are clear opportunities to be captured in the wood trade; providing benefits to the tree growers and income to the organisation. This business plan outlines the operations whereby the opportunities are captured.

However, the Union does not have methods and procedures in place in relation to the trade interventions to be able to successfully implement the business plan. This relates both to technical issues such as the MIS and the Valuation Services as well as to administrative and governance procedures for engaging in trade interventions. In addition, skills, knowledge and resources are in-adequate to capture the opportunities identified.

Therefore, successful implementation of this business plan will require development of methods and procedures in relation to the trade interventions as well as strengthening capacity. Key development needs are broadly identified in the table below and on the next page.

The Union seeks investments from current and future partners in development of methods and procedures as well as strengthening capacity. The financial analysis (chapter 7) shows that the interventions will be profitable starting from the 4th year of operation. Therefore, the Union will also seek investments from partners to cover recurrent costs for the first years of operations.

Main support interventions will include:

- Development of technical procedures such as MIS and Valuation Services.
- Development of administrative and governance procedures in timber trade including transparent procedures for competitive tendering and the Union’s engagement in processing.
- Capacity building to both TTGAU leaders and TGAs to facilitate implementation of the wood trade interventions.
- Investment in equipment such as forestry equipment (e.g. for valuation), as well as transport and office equipment.
- Human resources: TTGAU needs to have professional staff to undertake the wood marketing role, this can be through recruitment or capacity building on the job
- Enabling environment: Political will to support smallholders upgrade in the wood trade value chains is paramount.

Table 12: Topics for development for business plan implementation

Topic	Development needs
Management Information System (MIS)	<ul style="list-style-type: none"> • The MIS that exists does not include needed market information, is not being up-dated and lacks mechanisms for a two-way communication. Therefore, it does not satisfy the requirements put on a MIS for timber trade. • The MIS database need to be develop as well as rules, instructions and formats for maintaining and operating the system. Clear roles and responsibilities between the union and the TGAs need to be established. • There is a close connection between the MIS and the valuation system described later in this document. Development of the valuation system is central for providing useful information through the MIS to tree growers.

Topic	Development needs
Valuation Services	<ul style="list-style-type: none"> • In smallholder forestry, the stumpage price is at the moment set per tree. There are no connections to units which impact on the price (i.e. m³). To enable valuation services and provision of price information, it must be possible to establish a connection between the price and units that can be measured or classified. • The TTGAU will have to develop the system for valuation, with price per tree fixed to: <ul style="list-style-type: none"> ○ Tree volumes (m³). ○ A broad classification of tree quality (branches, straightness). ○ A broad classification of other factors with impact (e.g. accessibility) • The system for valuation needs to have safeguards and procedures in place that ensures transparency and good governance, hence enhances trust in the system as well as minimizes the risks for corrupt practices. • The MIS will have to be developed to enable the accommodation of parameters in the valuation services
Engagement in stumpage sales	<ul style="list-style-type: none"> • Union/TGA engagement in individual stumpage sale transactions only succeeds if systems are transparent and invokes trust among the tree growers. Therefore, procedures must be outlined in detail and formats developed to ensure this as well as good governance overall in the interventions. • Various procedures for competitive processes, e.g. competitive bidding, auctioning, may provide opportunities for stumpage price increases. For these systems to succeed, they must get acceptance both among tree growers and buyers of the stumpage. Hence, their development need to be a participatory process involving both parties in the trade. • Skills and knowledge needs to be built within the tree growers' organisation to successfully implement the systems.
Engagement in timber processing and trade	<ul style="list-style-type: none"> • Union/TGA engagement implies a need for working capital. Management standards must be developed to minimize risks, ensure transparency and invoke trust among tree growers and within the organisation. Key issues are: <ul style="list-style-type: none"> ○ Procedures and formats for buying trees on stumpage as well as contracting chain saw operators and entrepreneurs in processing and transport. ○ Guidelines and checklists for monitoring the operations as well as undertaking necessary corrective measures. ○ Grievance mechanisms to ensure that systems are in place guarantying rights of the tree growers. ○ A system for sharing of the profit from the services. The system must be easy to apply and transparent. • Skills and knowledge needs to be built within the tree growers' organisation to successfully implement the standard.

7. FINANCIAL ANALYSIS

7.1.1 Introduction

The union is a relatively young institution with a thin staffing structure, little experience in the wood trade and limited working capital. Therefore, the approach recommended for TTGAU when engaging in the wood trade is to minimize financial risks by avoiding investments and tying up capital. When the union is acting as a broker the financial risks are rather small. Here the costs are rather fixed. In the engagement in processing and trade the management- and financial risk are bigger, since the union is buying the wood, and selling the processed products. Here the cost structure will depend on the volume of the processing and trade. This business plan recommends a careful start with the volumes rather modest during the first 1 ½ years and then gradually building up as skills, knowledge and resources are increasing.

The income from engagement in wood trade is coming from fees paid by tree growers and industry on services provided by the union as well as the profit margin in the timber trade and processing. Hence, the income is directly related to the volume of the services. The PFP will provide funds for the employment of the TTGAU manager for year 2018. It is assumed that this arrangement will continue in PFP phase II.

7.1.2 Assumptions for the financial projections

Revenue

The service fees in the brokering are assumed to be 600 THS/m³ for the tree growers that are TGA members and 1,000 THS/m³ for non TGA members. The service fee is charged for valuation and negotiation services in individual sale transactions, not for providing general information through the MIS.

When providing services to the industry the commission is 5 % of the realized transaction value. The commission is only charged for hands-on services physically connecting the trader with tree growers in the field leading to concrete transactions.

The pines sawn timber stumpage price and cost figures in processing and trade is derived from the value chain analysis presented earlier in the business plan, but with an assumed slight increase in tree volumes. The profit margin is based on the same calculations. A service fee to the Union of 5 % of the total value of the sawn timber is deducted prior to the profit sharing.⁷

Given the expected rise in sawn timber market prices as well as increase in size of trees and hence increased timber percentage and sawn timber recovery rates, the stumpage values used in the financial projections can be considered rather conservative. The brokering volumes are in tree volume and the processing/trade volumes in sawn timber volume in the profit- and loss accounts.

Engagement in the timber trade is planned to start carefully, be modest during the first 1 ½ years to then take off and grow. The brokering is planned to account for ¾ of the total volumes in the union's engagement in wood trade, hence being volume-wise considerably bigger than the processing and trade. Sales of the sawn timber will be on wholesale at the main timber markets. During the 1st year Njombe markets will be targeted only, during the 2nd and 3rd year target markets will spread to Makambako and Dar es Salaam.

It is assumed that investment partners (PFP, WE EFFECT) will provide resource for implementing the business plan. This will include salary and some other operating costs as well as investment costs.

Expenditure

Expenditure include expenses related to processing and trade of sawn timber, operating expenses and investments. The expenses related to processing and trade include the costs for buying trees on stumpage as well as benefit sharing of the profit. The benefit sharing of the calculated profit is as follows: i) Tree growers: 40 %, ii) TGA: 20 % and iii) TTGAU: 40 %.

⁷ Note that the benefit sharing only relates to when the Union is buying wood from tree growers, processing and trading in sawn timber.

The operating expenses include salaries, office costs as well as transport and communication. The salary costs include full time employment of forester with duty station in Njombe as well 20 % (30 % from the 3rd year onwards) of the salary costs for the union manager and 30 % of the salary costs of the accountant (70 % from the 3rd year onwards). Office cost include 20 % of office rent as well as office supplies, phone/internet. Transport cost include fuel & maintenance.

The union will invest in a motorbike and computer during the 1st year. Forestry mensuration equipment will be procured. Since all equipment for harvesting, processing and transport will be hired, these does not include any investment costs. The costs for hiring the equipment is included in the profit calculations with regards to the stumpage price.

7.1.3 Profit and loss account

The estimated profit and loss account is shown on pages 28/29 showing the following:

- Brokering and timber processing and trade will start carefully during the 2nd half of 2018. Hence the revenue will be modest. The union forester will be employed, and investments carried out (motorbike, computer). Hence, the results will be heavily on the negative side during 2018. Support from investment partners will cover for the negative results, with the total end results showing slightly positive.
- 2019 is still a year for establishing the services and for learning, the brokering and processing/trade volumes growing slightly but still being modest. Hence the results without investment partner support showing a negative result of -34,123,979 TSH. With investment partner support included, the result is estimated to + 11,716,021 TSH.
- In 2020 the services are expected to take off, with an estimated doubling of the trade volumes as compared to 2019. Hence, the result, although still negative, will improve considerably. Investment partner support is still keeping the total result on the positive, + 44,777,680 TSH.
- During the years 2021 and 2022 brokering and processing/trading volumes are estimated to grow steadily. In year 2021 the volumes have reached such a level that the expected results from the brokering and processing/trade is positive also without the support from investment partners. Hence, from 2021 onwards it is expected that the union services in wood trade will be on a financially sustainable basis.
- The benefit sharing with TGAs and tree growers, i.e. sharing of the profit, is estimated to be quite substantial when the volumes increase from year 2020 onwards, in the range 8 – 17 million TSH per year going back to the villages.

7.1.4 Cash flow analysis

The cash flow analysis is presented on page 30. The union is buying the trees on stumpage, therefore the cash flow is to a great extent directly related to the volumes in pine sawn timber processing and trade. The first years the volumes in sawn timber processing and trade are modest and half of the cash flow is related to operating expenses. However, from 2020 onwards, with growing volumes, 2/3 of the turnover will be related to processing and trade of sawn timber.

Although the operating volumes are modest in the beginning, the cash flow for pine sawn timber processing and trade in year 2018 will 12 million TSH. Hence, to enable smooth start up and operations, it is strongly recommended that the union agrees with investment partners on “seed funding”.

When pine sawn timber processing and trade increases in 2020, cash flow per quarter will be in the range of 40 million TSH. Therefore, it is of crucial importance that well outlined, efficient and transparent procedures for accounting, payment and revenue collection are in place. Otherwise the risk for cash flow constraints are obvious. The recommended approach to start carefully during the first 1 ½ years will allow for setting and procedures and building capacity for their implementation.

One central element in minimizing cash flow constraints is procedures for scheduling payments to tree growers (stumpage) and entrepreneurs with relation to union receiving payment for the sawn timber. It is recommended that different systems are discussed and piloted.

Table 13: TTGAU profit and loss account 2018 - 2020

	2018				2019				2020											
	July/Sept		Oct/Dec		Jan/March		April/June		July/Sept		Oct/Dec		Jan/March		April/June		July/Sept		Oct/Dec	
REVENUE	TSH	Volumes	TSH	Volumes	TSH	Volumes	TSH	Volumes	TSH	Volumes	TSH	Volumes	TSH	Volumes	TSH	Volumes	TSH	Volumes	TSH	Volumes
Brokering (pine) - tree growers (TSH/m3)	600	112,500	188	337,500	563	262,500	438	262,500	438	262,500	438	262,500	438	562,500	938	562,500	938	562,500	938	562,500
Brokering (Eucalyptus) - tree growers (TSH/tree)	10,000	400,000	40	400,000	40	1,000,000	100	1,000,000	100	1,000,000	100	1,000,000	100	2,000,000	200	2,000,000	200	2,000,000	200	2,000,000
Brokering - traders and processing industry	5%	479,070	250	479,070	250	718,605	375	718,605	375	718,605	375	718,605	375	1,197,676	625	1,197,676	625	1,197,676	625	1,197,676
Service fee in sawn timber processing	5%	153,931	15	461,793	45	431,007	60	431,007	60	431,007	60	431,007	60	923,587	150	923,587	150	923,587	150	923,587
Sawn timber sales (Njombe) (TSH/m3)	204,815	3,078,623	15	9,235,868	45	8,620,144	42	8,620,144	42	8,620,144	42	8,620,144	42	18,471,736	90	18,471,736	90	18,471,736	90	18,471,736
Sawn timber sales (Makambako) (TSH/m3)	212,778	0	0	0	0	3,837,979	18	3,837,979	18	3,837,979	18	3,837,979	18	9,594,948	45	9,594,948	45	9,594,948	45	9,594,948
Sawn timber sales (Dar es Salaam) (TSH/m3)	627,407	0	0	0	0	0	0	0	0	0	0	0	0	9,430,718	15	9,430,718	15	9,430,718	15	9,430,718
TOTAL REVENUE		4,224,124		10,914,232		14,870,235		14,870,235		14,870,235		14,870,235		42,181,164		42,181,164		42,181,164		42,181,164
COSTS																				
COSTS FOR SAWN TIMBER PROCESSING/TRADE (TSH/m3)																				
* Total cost at Njombe timber yard	176,242	2,649,144		7,947,432		7,417,603		7,417,603		7,417,603		7,417,603		15,894,864		15,894,864		15,894,864		15,894,864
* Total cost at Makambako timber yard	179,459	0		0		3,236,993		3,236,993		3,236,993		3,236,993		8,092,484		8,092,484		8,092,484		8,092,484
* Total cost at Dar es Salaam timber yard	259,459	0		0		0		0		0		0		3,899,995		3,899,995		3,899,995		3,899,995
Subttotal - cost for sawn timber processing		2,649,144		7,947,432		10,654,597		10,654,597		10,654,597		10,654,597		27,887,342		27,887,342		27,887,342		27,887,342
BENEFIT SHARING TO TGA AND TREE GROWERS (processing)		66,843		200,530		341,633		341,633		341,633		341,633		2,154,402		2,154,402		2,154,402		2,154,402
						1,366,534								8,617,608						
OPERATING EXPENSES (TSH/month)																				
* Salary expenses																				
TTGAU Manager		3,000,000		3,000,000		3,000,000		3,000,000		3,000,000		3,000,000		4,500,000		4,500,000		4,500,000		4,500,000
Forester in timber trade	2,000,000	6,000,000		6,000,000		6,000,000		6,000,000		6,000,000		6,000,000		6,000,000		6,000,000		6,000,000		6,000,000
Accountant		1,440,000		1,440,000		1,440,000		1,440,000		1,440,000		1,440,000		3,360,000		3,360,000		3,360,000		3,360,000
* Office supplies	150,000	450,000		450,000		450,000		450,000		450,000		450,000		450,000		450,000		450,000		450,000
* Rent (20%) of total rent	90,000	270,000		270,000		270,000		270,000		270,000		270,000		270,000		270,000		270,000		270,000
* Communication (phone & internet)	50,000	150,000		150,000		150,000		150,000		150,000		150,000		150,000		150,000		150,000		150,000
* Repairs and maintenance		300,000		300,000		300,000		300,000		300,000		300,000		300,000		300,000		300,000		300,000
* Transport - motorbike	115,000	345,000		345,000		345,000		345,000		345,000		345,000		345,000		345,000		345,000		345,000
* Transport - other. Meetings		150,000		150,000		150,000		150,000		150,000		150,000		300,000		300,000		300,000		300,000
* Other expenses	100,000	300,000		300,000		300,000		300,000		300,000		300,000		300,000		300,000		300,000		300,000
Subtotal - general operating expenses		12,405,000		12,405,000		12,405,000		12,405,000		12,405,000		12,405,000		15,975,000		15,975,000		15,975,000		15,975,000
TOTAL COSTS		19,070,987		20,552,962		23,401,230		23,401,230		23,401,230		23,401,230		46,016,744		46,016,744		46,016,744		46,016,744
PROFIT		-14,846,863		-9,638,730		-8,530,995		-8,530,995		-8,530,995		-8,530,995		-3,835,580		-3,835,580		-3,835,580		-3,835,580
		ANNUAL PROFIT				ANNUAL PROFIT								ANNUAL PROFIT						
		-24,485,593				-34,123,979								-15,342,320						
SUPPORT FROM INVESTMENT PARTNERS																				
Partner funding (PPP)		5,050,000		3,000,000		3,000,000		3,000,000		3,000,000		3,000,000		4,500,000		4,500,000		4,500,000		4,500,000
Partner funding (AGRICORD)		6,000,000		6,000,000		6,000,000		6,000,000		6,000,000		6,000,000		6,000,000		6,000,000		6,000,000		6,000,000
Partner funding (WE EFFECT)		4,360,000		2,460,000		2,460,000		2,460,000		2,460,000		2,460,000		4,530,000		4,530,000		4,530,000		4,530,000
Subtotal investment partner support		15,410,000		11,460,000		11,460,000		11,460,000		11,460,000		11,460,000		15,030,000		15,030,000		15,030,000		15,030,000
RESULTS INCLUDING INVESTMENT PARTNER SUPPORT		563,137		1,821,270		2,929,005		2,929,005		2,929,005		2,929,005		11,194,420		11,194,420		11,194,420		11,194,420

Table 15 (cont.): TTGAU profit and loss account 2021 – 2022

	2021								2022							
	Jan/March	April/June		July/Sept		Oct/Dec		Jan/March	April/June		July/Sept		Oct/Dec			
REVENUE	TSH	Volumes	TSH	Volumes	TSH	Volumes	TSH	Volumes	TSH	Volumes	TSH	Volumes	TSH	Volumes		
Brokering (pine) - tree growers (TSH/m3)	600	750,000	1,250	750,000	1,250	750,000	1,250	750,000	1,250	750,000	1,250	750,000	1,250	750,000		
Brokering (Eucalyptus) - tree growers (TSH/tree)	10,000	3,000,000	300	3,000,000	300	3,000,000	300	3,000,000	300	3,000,000	300	3,000,000	300	3,000,000		
Brokering - traders and processing industry	5%	2,155,816	1,125	2,155,816	1,125	2,155,816	1,125	2,155,816	1,125	2,155,816	1,125	2,155,816	1,125	2,155,816		
Service fee in sawn timber processing	5%	1,385,380	225	1,385,380	225	1,385,380	225	1,385,380	225	1,385,380	225	1,385,380	225	1,385,380		
Sawn timber sales (Njombe) (TSH/m3)	204,815	27,707,604	135	27,707,604	135	27,707,604	135	27,707,604	135	27,707,604	135	27,707,604	135	27,707,604		
Sawn timber sales (Makambako) (TSH/m3)	212,778	14,392,422	68	14,392,422	68	14,392,422	68	14,392,422	68	14,392,422	68	14,392,422	68	14,392,422		
Sawn timber sales (Dar es Salaam) (TSH/m3)	627,407	14,146,076	23	14,146,076	23	14,146,076	23	14,146,076	23	14,146,076	23	14,146,076	23	14,146,076		
TOTAL REVENUE		63,537,299		63,537,299		63,537,299		63,537,299		63,537,299		63,537,299		63,537,299		
COSTS																
COSTS FOR SAWN TIMBER PROCESSING/TRADE (TSH/m3)																
* Total cost at Njombe timber yard	176,242	23,842,296		23,842,296		23,842,296		23,842,296		23,842,296		23,842,296		23,842,296		
* Total cost at Makambako timber yard	179,459	12,138,725		12,138,725		12,138,725		12,138,725		12,138,725		12,138,725		12,138,725		
* Total cost at Dar es Salaam timber yard	259,459	5,849,992		5,849,992		5,849,992		5,849,992		5,849,992		5,849,992		5,849,992		
Subtotal - cost for sawn timber processing		41,831,013		41,831,013		41,831,013		41,831,013		41,831,013		41,831,013		41,831,013		
BENEFIT SHARING TO TGA AND TREE GROWERS (processing)		3,231,603		3,231,603		3,231,603		3,231,603		3,231,603		3,231,603		3,231,603		
		12,926,413														
OPERATING EXPENSES (TSH/month)																
* Salary expenses																
TTGAU Manager		4,500,000		4,500,000		4,500,000		4,500,000		4,500,000		4,500,000		4,500,000		
Forester in timber trade	2,000,000	6,000,000		6,000,000		6,000,000		6,000,000		6,000,000		6,000,000		6,000,000		
Accountant		3,360,000		3,360,000		3,360,000		3,360,000		3,360,000		3,360,000		3,360,000		
* Office supplies	150,000	450,000		450,000		450,000		450,000		450,000		450,000		450,000		
* Rent (20%) of total rent	90,000	270,000		270,000		270,000		270,000		270,000		270,000		270,000		
* Communication (phone & internet)	50,000	150,000		150,000		150,000		150,000		150,000		150,000		150,000		
* Repairs and maintenance		300,000		300,000		300,000		300,000		300,000		300,000		300,000		
* Transport - motorbike	115,000	345,000		345,000		345,000		345,000		345,000		345,000		345,000		
* Transport - other. Meetings		300,000		300,000		300,000		300,000		300,000		300,000		300,000		
* Other expenses	100,000	300,000		300,000		300,000		300,000		300,000		300,000		300,000		
Subtotal - general operating expenses		15,975,000		15,975,000		15,975,000		15,975,000		15,975,000		15,975,000		15,975,000		
TOTAL COSTS		61,037,616		61,037,616		61,037,616		61,037,616		61,037,616		61,037,616		61,037,616		
PROFIT		2,499,683		2,499,683		2,499,683		2,499,683		2,499,683		2,499,683		2,499,683		
		ANNUAL PROFIT						ANNUAL PROFIT								
		9,998,730						38,860,710								
SUPPORT FROM INVESTMENT PARTNERS																
Partner funding (PFP)		4,500,000		4,500,000		4,500,000		4,500,000		4,500,000		4,500,000		4,500,000		
Partner funding (AGRICORD)		6,000,000		6,000,000		6,000,000		6,000,000		6,000,000		6,000,000		6,000,000		
Partner funding (WE EFFECT)		4,530,000		4,530,000		4,530,000		4,530,000		4,530,000		4,530,000		4,530,000		
Subtotal investment partner support		15,030,000		15,030,000		15,030,000		15,030,000		15,030,000		15,030,000		15,030,000		
RESULTS INCLUDING INVESTMENT PARTNER SUPPORT		17,529,683		17,529,683		17,529,683		17,529,683		17,529,683		17,529,683		17,529,683		

Table 14: TTGAU cash flow analysis

	2018		2019				2020				2021				2022			
	July/Sept	Oct/Dec	Jan/March	April/June	July/Sept	Oct/Dec	Jan/March	April/June	July/Sept	Oct/Dec	Jan/March	April/June	July/Sept	Oct/Dec	Jan/March	April/June	July/Sept	Oct/Dec
Cash on Hand (beginning of quarter)		9,206	968,682	2,466,681	3,964,679	5,462,677	6,960,675	15,231,508	22,939,841	30,648,174	38,356,507	50,750,809	63,145,112	75,539,414	87,933,716	104,894,220	121,854,724	138,815,228
CASH RECEIPTS																		
Brokering - tree growers	112,500	337,500	262,500	262,500	262,500	262,500	562,500	562,500	562,500	562,500	750,000	750,000	750,000	750,000	937,500	937,500	937,500	937,500
Brokering - traders and processing industry	479,070	479,070	718,605	718,605	718,605	718,605	1,197,676	1,197,676	1,197,676	1,197,676	2,155,816	2,155,816	2,155,816	2,155,816	2,994,189	2,994,189	2,994,189	2,994,189
Pine timber processing & trade (Njombe)	3,078,623	9,235,868	8,620,144	8,620,144	8,620,144	8,620,144	18,471,736	18,471,736	18,471,736	18,471,736	27,707,604	27,707,604	27,707,604	27,707,604	36,943,472	36,943,472	36,943,472	36,943,472
Pine timber processing & trade (Makambako)	0	0	3,837,979	3,837,979	3,837,979	3,837,979	9,594,948	9,594,948	9,594,948	9,594,948	14,392,422	14,392,422	14,392,422	14,392,422	19,189,896	19,189,896	19,189,896	19,189,896
Pine timber processing & trade (Dar)	0	0	0	0	0	0	9,430,718	9,430,718	9,430,718	9,430,718	14,146,076	14,146,076	14,146,076	14,146,076	18,861,435	18,861,435	18,861,435	18,861,435
Investment partner funding	15,410,000	11,460,000	11,460,000	11,460,000	11,460,000	11,460,000	15,030,000	15,030,000	15,030,000	15,030,000	15,030,000	15,030,000	15,030,000	15,030,000	15,030,000	15,030,000	15,030,000	15,030,000
TOTAL CASH RECEIPTS	19,080,193	21,512,438	24,899,228	24,899,228	24,899,228	24,899,228	54,287,577	53,725,077	53,725,077	53,725,077	73,431,918	73,431,918	73,431,918	73,431,918	93,018,992	93,018,992	93,018,992	93,018,992
Total Cash Available (before cash out)	19,080,193	21,521,644	25,867,911	27,365,909	28,863,907	30,361,905	61,248,252	68,956,585	76,664,918	84,373,251	111,788,425	124,182,728	136,577,030	148,971,332	180,952,708	197,913,212	214,873,716	231,834,220
CASH PAID OUT																		
TOTAL PROCESSING AND TRADE EXPENSES	2,649,144	7,947,432	10,654,597	10,654,597	10,654,597	10,654,597	27,887,342	27,887,342	27,887,342	27,887,342	41,831,013	41,831,013	41,831,013	41,831,013	55,774,684	55,774,684	55,774,684	55,774,684
BENEFIT SHARING	66,843	200,530	341,633	341,633	341,633	341,633	2,154,402	2,154,402	2,154,402	2,154,402	3,231,603	3,231,603	3,231,603	3,231,603	4,308,804	4,308,804	4,308,804	4,308,804
TOTAL OPERATING EXPENSES	12,405,000	12,405,000	12,405,000	12,405,000	12,405,000	12,405,000	15,975,000	15,975,000	15,975,000	15,975,000	15,975,000	15,975,000	15,975,000	15,975,000	15,975,000	15,975,000	15,975,000	15,975,000
TOTAL INVESTMENT COSTS	3,950,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL CASH PAID OUT	19,070,987	20,552,962	23,401,230	23,401,230	23,401,230	23,401,230	46,016,744	46,016,744	46,016,744	46,016,744	61,037,616	61,037,616	61,037,616	61,037,616	76,058,488	76,058,488	76,058,488	76,058,488
CASH POSITION (END OF QUARTER)	9,206	968,682	2,466,681	3,964,679	5,462,677	6,960,675	15,231,508	22,939,841	30,648,174	38,356,507	50,750,809	63,145,112	75,539,414	87,933,716	104,894,220	121,854,724	138,815,228	155,775,732

