FORESTRY AND VALUE CHAINS DEVELOPMENT PROGRAMME

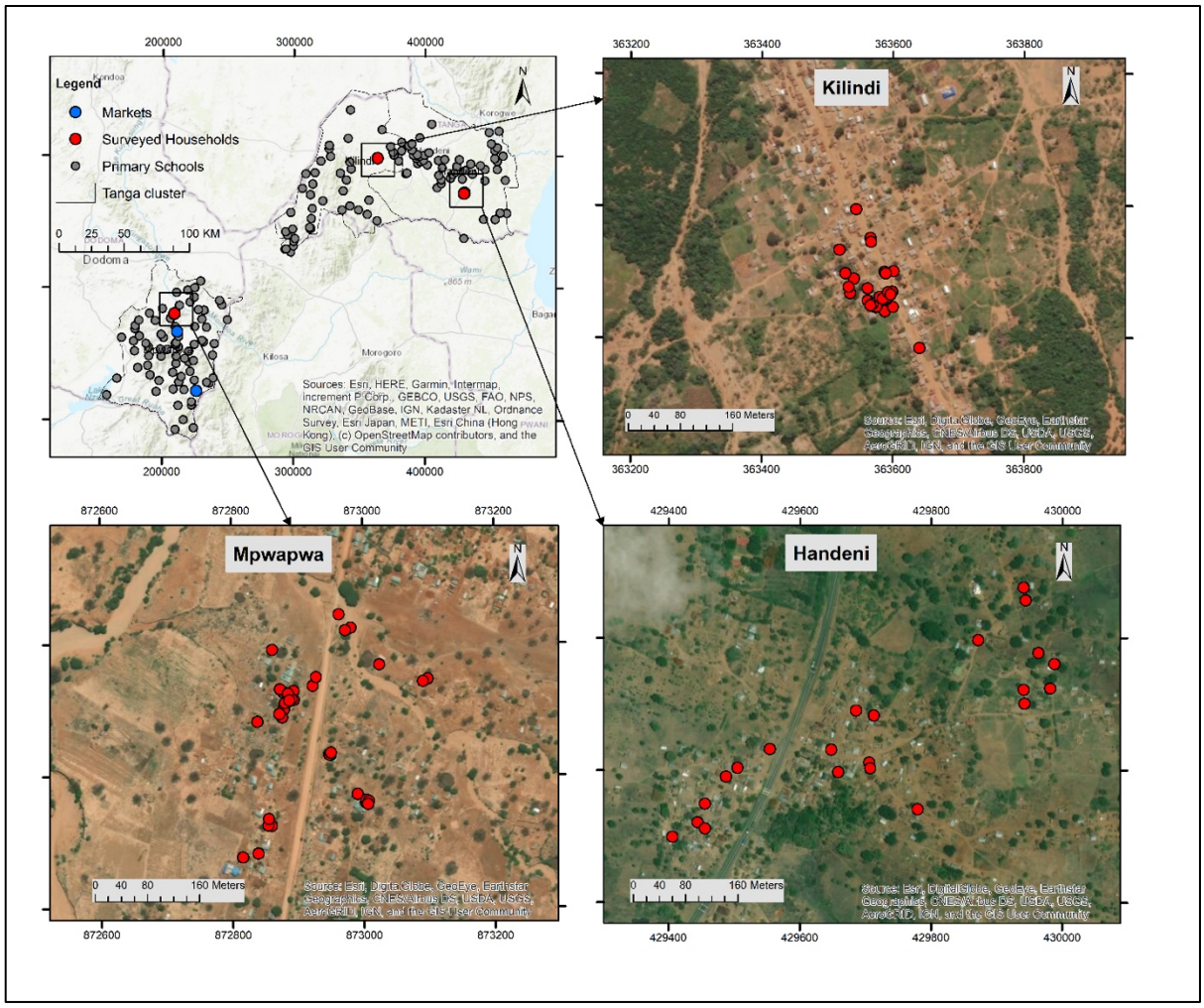
BASELINE SURVEY REPORT

8 JUNE 2020

The United Republic of Tanzania
MINISTRY OF NATURAL RESOURCES
AND TOURISM

Ministry for Foreign
Affairs of Finland

FORVAC BASELINE SURVEY REPORT



(***Photo:*** *Spatial distribution of households involved in questionnaire survey in Tanga cluster*)

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Executive Summary

Rationale of the assignment

The" Forestry and Value Chains (FORVAC) Development" Programme puts more emphasis to sustainable utilisation and forestry value chain. The programme concentrates more on strengthening institutional framework and creating enabling environment for the private sector stakeholders to manage and utilise natural forest sustainably. Adoption of business and market-driven value chain approach is at the core of the Programme as is linking up with business development providers and private sector. In order for the Monitoring, Evaluation and Learning to be effective, FORVAC found it imperative to gather baseline information to assess the programme's progress during implementation and after its completion. The specific objectives of the assignment (as explicitly stipulated in the Terms of Reference) included the following: *define the socio-economic status of the programme areas*; *analyse Forest Value Chains and their contribution to sustainable forestry and forest-based livelihoods*; and *assess private sector involvement in the forest sector.*

Sampling design, data collection and analysis

Stratified random sampling design was used in the present study. Stratification was carried out at two levels in each of the FORVAC cluster: stratification of study area by **location**: *where adoption of FORVAC cluster villages will be reinforced considering distribution of human habitation, population sizes,* and stratification of **respondents:** *by considering their wealth categories, gender, age, disability, producers, traders, and leadership role.* The intent of this sampling strategy was to have a study sample that is *sufficient* and *representative* of the target population that can provide a benchmark for FORVAC operations. Data was collected using pre-tested and pilot-tested household questionnaires (pre-testing and field testing aimed at *improving* both *face validity* and *content validity* of the questionnaire), direct observations, rapid resource assessment, and interviews (with forest product producers and processors, and key informants), and remote sensing and GIS tools. A total of 635 households were sampled for the study. Data analysis was carried out using *SPSS* and *Excel* statistical computer programmes. The "open-ended" questions' responses were analysed using *multiple responses analysis*.

Key findings of the study

i. Socio-economic status of respondents

The findings indicated that the study attained a *fairly good gender balance*: the number of *male respondents* (57.6%) was comparable to that of *female respondents (42.4%)*. It was revealed that only 9% of respondents are Self-employed in forest-based activities, which could call for efforts to build the capacities of local communities to engage in forest-related activities for their livelihoods. Further, respondents constituted both male-headed households (85.4%) and female-headed households (14.6%). It was found that 80% of respondents are farmers and only 9% of respondents are self-employed in forest-related activities. Key households' assets in the study area include *livestock* (410 households equivalent to 65%), *bicycles* (311 households equivalent to 49%), *pesticide sprayers* (118

households equivalent to 19%) and *motorcycles* (105 households equivalent to 17%). Goats were reported to be the most forest-dependent animals in the study area (reported by 64.8% of respondents). It was also evident that 66% of respondents grow both cash crops and food crops. The major crop grown in the study area is maize (80% of respondents). It was revealed that 51% of respondents use ox-plough for farming and barely 1% of respondents own tractors. There was no evidence of food insecurity in the study area: 63% of respondents reported that they were food-secure (has sufficient food production from own farms).

ii. Households' fuel consumption in the study area

Fuelwood consumption in the study area is consistent with *energy-stacking model* where there is mix of fuels consumed by individual households: 68.9% and 25.8% of respondents use, respectively, firewood and charcoal for cooking. It was also evident that solar energy is increasingly becoming popular source of energy for lighting and charging (72.8% of respondents).

iii. Households' investments in the study area

The study found that 74% of respondents are aware of existence of forest-based enterprises in their respective villages. Approximately 38% of respondents are involved in firewood-related enterprises, 24.3% in medicine, 9.7% in charcoal, 4.7% in beekeeping, and 4.4% in timber. It was also noted that approximately 50% of respondents own poultry projects. It was revealed that forest-based sources of income contribute to nearly 18% of household income in the study area.

iv. Forest resources stewardship in the study area

It was found that nearly 94% of respondents in the study area are aware of the existence of bylaws and local institutions for governing forest resources in the study area, and 41% of respondents reported that the performance of the same is strong. Various factors were reported to cause disturbances of forest resources: *Fire* (33.7% of respondents), *illegal harvesting* (17.9% of respondents), *Farming* (23.6% of respondents) and *grazing* (13.7% of respondents).

v. Marketing of forest products in the study area

The findings revealed that most traded NTFP are medicine (31.2% of respondents) and the least traded are tuber (3.9% of respondents). Approximately 55% of those respondents (involved in forest product marketing) get information on the demand of forest products just by chance, and 17.5% of respondents get information through middlemen. It was revealed that some respondents have received various trainings on sustainable forest harvesting, NTFPs sustainable harvesting, forest product processing, bee management, bee product processing and packaging, and marketing of forest products.

vi. Poverty analysis in the study area

The present study strove to analyse poverty in the study area using a number of suggested thresholds in order to get a deeper insight of poverty situation in a given the study area.

Relative poverty lines were computed using both the per-capita median income and per capita mean income at proportions of 40%, 50% and 60%. Based on the per capita household mean and median income and the computed relative poverty lines, percent of populations (respondents) living below poverty lines range from 27.3% to 64.8%.

Conclusions

The following conclusions can plausibly be made:

- One of most impending issue on values addition is the market that is full of middlemen who controls the prices and affect the demand and supply. This interferes the value chain rendering consequential impacts on value addition, simply because primary producers consider the whole business as non-lucrative and ignore investing their time and material in adding value to their products.
- Most of the reserved forests, be it Central, LGA and /or Village Land Forest Reserves have no harvesting plans. Harvesting is more of haphazard and unpredictable, the consequences of having no harvesting plans leads to unsustainable harvesting.
- The entire value chain in forest produce is facing limited skills that leads to ineffective use of resources.
- Financial resources become limited and access to both MFIs and FIs is also difficult because of the term for loans are unfriendly to SMEs. As result of this, value addition to forest products is not done as it should be.
- There have been complaints from forest-based entrepreneurs on the statutory requirements and dues that are imposed by the government. There are so many fees and levy imposed starting from the village – to – district- to-national level that should be paid. These fees increase the costs for running business.
- Illegality in the forest sector is commonly because of limited human resources to man the forest and petty perversions at village level.

Recommendations

The potentials exist to improve the current situation on forest value chains and livelihoods of the forest-adjacent communities. This study puts forward the following recommendation:

- To improve value addition
- To support available user and interest groups
- To utilize the available marketing potential
- To enhance commercialization of NFTPs
- To provide extension services and education relevant to forest resources management and utilization.

ACKNOWLEDGEMENT

The Consultants acknowledge the support provided by the FORVAC team in facilitation to the assignment. We thank the Chief Technical Advisor Mr. Juhan Harkonen, and the National Forest Management and Value Chain Expert Mr. Alex Njahani, who were instrumental in providing overall guidance and information that facilitated smooth undertaking of the assignment.

We acknowledge the support provided by the FORVAC Field Coordinators in organizing meetings with District Authority officials in the FORVAC clusters, advance notification to the wards and villages that were sampled, and for provision of many valuable insights: Lindi Cluster Coordinator Mr. Eustack Mtui, Tanga Cluster Coordinator Mr. Petro Masolwa and Ruvuma Cluster Coordinator Mr. Marcel Mutunda.

We appreciate the support of District Authority officials in all FORVAC Clusters who provided us with useful insights related to the forest value chains and livelihood of the communities. Specifically, we acknowledge the support of District Forest Officers including Gravas Mwalyombo, Zakayo Kaunda, Halifa Kassin Singano, Bugingo, Mzui, James Kabuta, Paiton Kamnana, Elinihaki Hashim, Adam Sylivester Enock, and Anderson Mwamengo. We also thank Mr. Damas Mumwi of Liwale District Council for his field support.

Our appreciation is further registered to all village leaders, community members, and forest-product traders for their participation in providing useful firsthand information. We benefitted a lot from their willingness to participate and to the kind of insights they provided in terms of forest management, livelihoods and social infrastructure in the villages.

We thank the dedicated team of our extended staff who participated in the field data collection specifically, Mr. Abdallah Liingilie, Dr. Peter Matata, Mr. Kivuyo Tumaini and Mr. Dotto Msakwa.

Finally, the Consultants recognizes the technical and professional advice provided by forest expert Dr. Mathew Mpanda. We highly appreciate his valuable insights which was useful in the reviewing of the tools used and the contents of this work.

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ABBREVIATIONS AND ACRONYMS

AAC	Allowable Annual Cut
CBFM	Community-based Forest Management
CT	Consultancy Team
DFM	District Forest Manager
DFO	District Forest Officer
ECOPRC	Empowering Communities in PFM, REDD+ and Climate Change
FBD	Forestry and Beekeeping Division
FDCT	Field Data Collection Team
FGD	Focus Group Discussion
FIs	Financial institutions
FORVAC	Forestry and Value Chains Development Programme
FRF	FORVAC Results Framework
FTI	Forestry Training Institute
IUCN,	International Union for Conservation of Nature
LGAs	Local Government Authorities
MCDI	Mpingo Conservation and Development Initiative
MFIs	Micro Finance Institutions
MJUMITA	Mtandao wa Jumuiya wa Misitu Tanzania
NFBKP	National Forest and Beekeeping Programme
NGOs	Non-Governmental Organization
PFM	Participatory Forest Management
PFP	Private Forest Programme
SMEs	Small and Medium Enterprises
TFCG	Tanzania Forest Conservation Group
TFS	Tanzania Forest Services Agency
TNC	The Nature Conservancy
TNRF	Tanzania Natural Resource Forum
VC	Village Council
VLFRs	Village Land Forest Reserves
VLUPs	Village Land Use Plans
VNRC	Village Natural Resources Committee
WMA	Wildlife Management Areas
WWF	World Wide Fund for Nature

1.0 INTRODUCTION

1.1 Background of FORVAC programme

The Forestry and Value Chains Development Programme (FORVAC) is a 4-year (2018-2022) Programme funded by the Governments of Tanzania and Finland. The main partners in the implementation of the programme are the Forest and Beekeeping Division (FBD) of the Ministry for Natural Resources and Tourism (MNRT), Tanzania Forest Service (TFS) agency and the President's Office Regional Administration and Local Government (PO-RALG). FORVAC aims to contribute in increasing economic, social and environmental benefits from forests and woodlands while reducing deforestation in the target areas of Tanzania.

The FORVAC builds on the activities, experiences and lessons learned from three bilateral programs in Tanzania financed by Finland: National Forest and Beekeeping Programme (NFBKP II, 2013–2016), Lindi and Mtwara Agribusiness Support (LIMAS, 2010–2016), and Private Forestry Programme (PFP, 2014–2018). NFBKP II and LIMAS have worked under the Community-based Forest Management regime to advance sustainable forest management and generate income and employment to communities from declared Village Land Forest Reserves. The Private Forestry Programme is working solely in plantation forests but, has created valuable experiences to share in value chain development, mobilization of rural communities for economic activities, and developing training and extension services for small-scale forest enterprises.

The expected outcome of FORVAC is *Improved forest-based income, livelihoods and environmental benefits*. The outcome will be achieved through the following outputs.

i. Improved Value Chains and increased Private Sector Involvement in the forest sector.
ii. Stakeholder capacity to implement and promote forestry value chain development enhanced.
iii. Functional extension, communication, monitoring systems; and Management Information System (MIS) in place.
iv. Supportive legal and policy frameworks to forest value chain and sustainable forest management developed.

The estimated number of final beneficiaries is 330,000 consisting of local communities, household members and individual persons in *ten* districts, as well as of private companies and local traders, e.g. sawmills, pit sawing teams, charcoal traders, honey processing and

marketing companies and NGOs. The Forest and Beekeeping Division of the MNRT, Tanzania Forest Services Agency and their personnel at local level as well as PO-RALG together with District Councils, Village Councils and VNRCs will benefit from the programme. The Programme stakeholders include other sector ministries, civil society organizations, Community-based Organizations, research institutes and development partners.

The total financing of the FORVAC programme is 10.15 M EUR with possibility of additional potential funding of up to 10 M EUR in the course of implementation subject to agreement between the government of Tanzania and Finland. The FORVAC programme operate field activities in three clusters scattered in 9 districts and 4 regions. The clusters include Tanga cluster: Handeni, Kilindi, and Mpwapwa[1] districts; Lindi cluster: Liwale, Ruangwa, and Nachingwea districts; Ruvuma cluster: Namtumbo, Mbinga, Songea and Nyasa districts (Fig. 1).

1.2 Background to the Baseline Survey

The implementation of the FORVAC programme is vested on the guidance of its Result Framework where all indicators have to be reached on timely manner as planned. In order for the Monitoring, Evaluation and Learning to be effective, FORVAC was desirously looking to gather baseline information to assess the programme's progress during implementation and after its completion. The key areas required under the TOR for the baseline survey include the following:

i. Study to define the socio-economic status of the programme areas
ii. Study of Forest Value Chains and their contribution to sustainable forestry and forest-based livelihoods
iii. Study of the private sector involvement in the forest sector

[1] Mpwapwa district is found in Dodoma region.

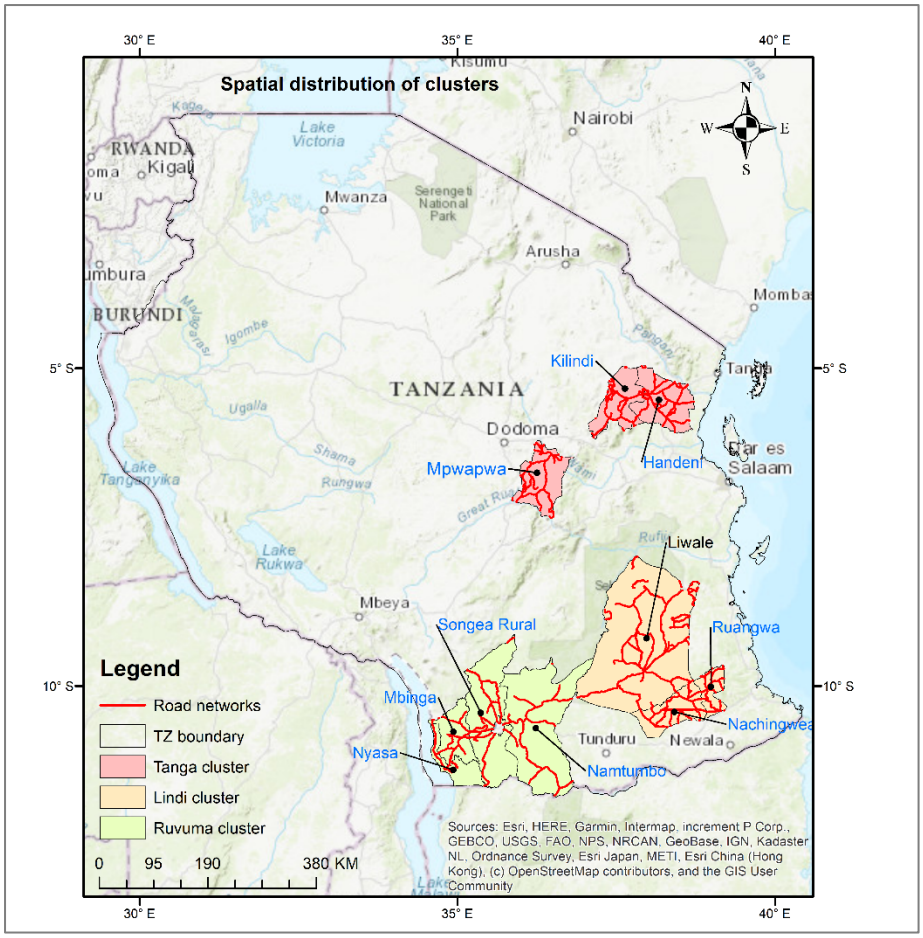

Figure 1: *The location of the FORVAC clusters, showing accessibility by major roads*

1.3 Structure of the Report

This report is organized into six chapters: the first chapter gives the overview of the FORVAC programme. Chapter 2 provides overview about the methods used for collection of information to support development of the baseline. Chapter 3 is the most important section of this report as it gives the socio-economic profile of the FORVAC cluster villages and state of the forest value chains. Chapter 4 provides the synthesis of the results obtained in the baseline survey, and explains parts that need to be included in the result framework. Chapter 5 provide an overview of the FORVAC Results Framework and how the current baseline information has been used to update it. Chapter 6 gives conclusions of the baseline survey and provide recommendations to be taken into consideration by the FORVAC programme.

The report contains four main Annexes which will be attached at the end of the report. The Annexes include the following;

i. *Annex I*: Complete dataset of Household Questionnaire Survey for the baseline study.

ii. *Annex II*: Rapid Forest Resources Assessment datasets from all VLFR sampled in the study area.

iii. *Annex III*: Revised FORVAC Results Framework

iv. *Annex IV:* Segregated Household data (gender, sex, cluster and age wise)

In addition, due to the nature of some of the Annexes (I and II) it is difficult to provide them in hardcopies; hence they are delivered as softcopies (Fig. 2).

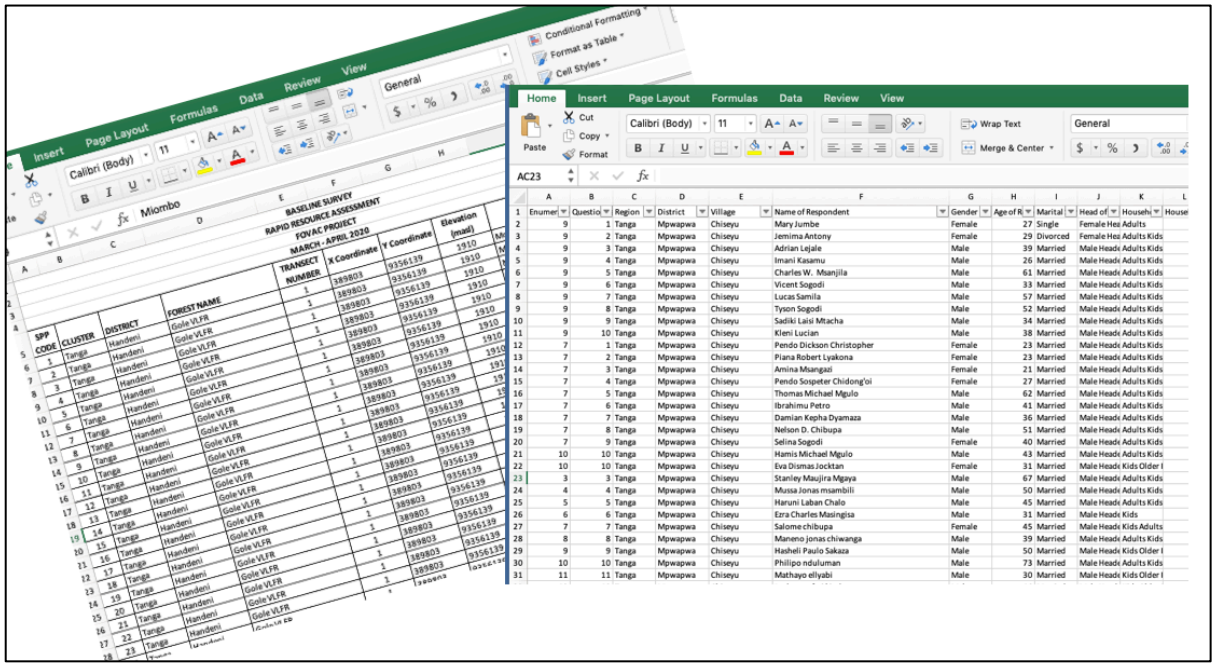

Figure 2*: Screenshot of excel sheets containing baseline data for tree species and HH questionnaire survey*

2.0 METHODOLOGY, ASSUMPTIONS AND LIMITATIONS

2.1 Approach and Strategy

Innovative and participatory approaches were undertaken to operationalise the execution of all activities for the development of baseline survey. The two-dimensional approach was applied i.e., strategic and operational to ensure information collected are accurate, broad-based and suits the terms of references for the assignment to enable adequate decision making for the FORVAC program in undertaking effective interventions.

Strategic approach was characterized by addressing the global view of FORVAC Result Frameworks. The importance of considering the link between the availability and transformation of forest resources *vs*. improvement of social services other interventions surrounding improvement of livelihoods of forest adjacent communities were emphasized.

Operational approach was characterized by the participatory nature of the exercise, where stakeholders at grass-root level were directly involved in the collection of factual information. District Authority officials, Ward Executive Officers, and Village Executive Officers were the key source of information and planners of the field work. The District Officials were mentored to adopt contemporary data collection methods using KoBo Toolbox and other innovative techniques in surveys. This was intended to allow future participation in Monitoring and Evaluation exercises that FORVAC programme may organize.

2.2 Summary of Methods

A total of 21 villages in 10 districts covered by FORVAC clusters were sampled to collect representative baseline information (Table 1). This total number of villages were pre-agreed which represented about 20% of all the villages where the FORVAC programme is currently operational. The choice of individual villages to be involved in the survey was done in consultation with FORVAC cluster leaders and District officials.

Table 1: *Clusters and sampled villages in the baseline survey*

Cluster	District	Number of villages sampled	Name of a village
Tanga	Mpwapwa	1	Chiseyu
	Kilindi	1	Mnkonde
	Handeni	1	Kitumbi
Lindi	Liwale	6	Likombora, Ngongowele, Nangano, Kibutuka, Mtawatawa, Mikunya,
	Nachingwea	3	Nahimba, Nanjihi, Chimbendenga
	Ruangwa	3	Kitandi, Mnawa, Nandenje
Ruvuma	Mbinga	1	KindimbaJuu
	Namtumbo	1	Limalu
	Nyasa	2	Hinga, Lipingo,
	Songea	2	Kikunja, Liweta

2.2.1 Desk Review

A long list of documents was made available and reviewed which are relevant to the baseline survey including FORVAC programme documents, and forest management documents (e.g., management plan, harvesting plan).

A number of literatures was used to extract relevant information that contributed in the planning of the baseline survey exercise and others were used as secondary information to beef up data collected using primary tools. Additional literatures were used as a basis for professional clarifications and inferences to the findings of the baseline information.

2.2.2 Household Questionnaire Survey

A total of 635 households were interviewed in 10 cluster districts. The number of questionnaires were determined using formulas proposed by Bartlett *et al.,* (2001) and Cochran's (1977), where a sizeable sample of the population was determined and subjected to provide representative information. Questionnaires were developed, pretested, reviewed and later applied in the data collection exercise. Innovative instrument called KoBo toolbox was used in household questionnaire survey where it proved to be accurate, time saving and immediate synchronize data. The spatial distribution of the households participated in the survey was captured by KoBo toolbox.

2.2.3 Focused Group Discussion

Focus Group Discussions (FGD) was used to collect information from various thematic groups that constitute information needed in the baseline for the FORVAC programme. Selection of the participants to the FGD was made in consultation with Village Leaders, District Officials and FORVAC programme team depending on the thematic areas and the objectives of the discussions.

One FGD constituted a group of about 7 to 12 people, taking into consideration the most appropriate factor in handling and controlling discourses. The results from Focus Group Discussion (FGD) were used to draw meaningful deduction of facts in a wider perspective to enrich and supplement information in the statistical findings as drawn from the household questionnaires survey and Key Informant Interviews.

The FGD was conducted to various stakeholder including community members, forest resource producers (e.g., *timber producers, charcoal producers, beekeepers* etc.), forest products aggregators (e.g., honey aggregators), processors of various forest products (e.g., timber saw-millers, honey processors etc.), retail traders of forest products, and large-scale forest products traders.

2.2.4 Key Informant Interviews

A long list of Key Informants to be interviewed was prepared in collaboration with the District Authorities, Village Leaders and FORVAC cluster coordinators. Representatives from various stakeholders' groups were selected to provide required information. Checklists were prepared to suit different stakeholder groups to obtain factual and opinion about structured thematic areas of forest value chains.

Some of key individuals and their representatives included the District Forest Officers (DFOs), District Forest Managers (DFMs), Village and sub-village leaders, Local Councillors, District Community Development Officers, other relevant government officials, and Private Sector i.e., processors and traders of forest products.

The Key Informant Interviews provided an opportunity to clarify statements as well as probing for additional information about socio-economic issues, forest value chains and their

contribution to sustainable forestry and forest-based livelihoods, and private sector involvement in the forest sector within the FORVAC programme clusters.

2.2.5 Rapid Forest Resources Assessment

The Rapid Forest Resources Assessment (RFRA) was conducted in representative forests as agreed by the FORVAC cluster coordinators and respective DFOs. A total of 13 forests were subjected to the exercise, with some of the forests shared by multiple villages and districts (Table 2). Before undertaking the RFRA, some key information was supposed to be unveiled including management plans and harvesting plans mainly from District Forest Officers (DFOs), Village Councils (VC) and Village Natural Resources Committees (VNRCs).

Table 2: *Rapid Forest Resources Assessment in selected FORVAC clusters*

S/N	Cluster name	District	Village name	Ward name	Area (ha)	Name of protected area
1	Tanga	Handeni	Gole	Kang'ata	7,229.58	Gole VLFR
2	Lindi	Nachingwea	Nanjihi	Kilimarondo	3,571.52	Honela (FR)
			Nahimba	Mbondo	1,816.56	Nahimba (FR) Ndonda (WMA)
		Liwale	Mihumo	Mihumo	8,691.10	Angai (FR)
			Barikiwa	Barikiwa	17,903	Liboya (FR), Magingo (WMA), Selous (GR)
3	Ruvuma	Songea	Liweta	Mpandangindo	5,262	Lupagalo
			Litowa	Palangu		Lupagalo
		Namtumbo	Masuguru	Mchomoro	26,916.40	Lilindindo
			Kilangalanga	Luchili		Lilindindo
		Mbinga	Ndongosi	Namswea	23,046	Namswea
			Kindimba Chini	Muungano		Namswea
		Nyasa	Lituhi	Lituhi		Namswea
			Mwerampya	Lituhi		Namswea

The RFRA involved field review of the harvestable stocks through sample checks in the respective forests to understand the prevailing state for the forest resources. Systematic sampling was used to estimate the Annual Allowable Cut (AAC) for trees of different sizes in the next five years.

Alongside RFRA, the transect walks was conducted in all sampled forests to document other issues related to forest management including identification and recording of traces of

incidences of forest illegal activities such logging, farming, and grazing. Other detrimental activities such as wildfires were also documented.

Hand-held Garmin GPS were used to collect spatial information related to forest sampled plots and critical points identified during transect walk. These would allow the FORVAC programme to maintain a long-term and traceable points where future reference will be made in monitoring e.g., illegal activities, harvesting trends, encroachment etc. Quantum GIS (QGIS) and ArcGIS Pro were used in mapping of the spatial information of the forest landscapes to detail areas of interest as observed during rapid forest assessment and transect walk.

2.3 Assumptions, Limitations and Mitigation measures

This baseline study was conducted as a precursor to the effective Monitoring and Evaluation of the FORVAC programme. In the course of undertaking this baseline survey, there are some assumptions and limitations that were considered:

i. The baseline survey at grassroot level covered a total of 21 villages which is about 21% of the about 100 villages under the programme. It is assumed that those representative villages could paint a good picture of others as the samples cover enough variations. However, some of the specificity might be missing in the report analysis concerning all of the around 100 villages covered by FORVAC.
ii. During the onset of the field work for data collection, the Covid-19 pandemic spiked in the country, which necessitated the government to issue prohibition of all public gatherings. This might have interfered with data collection processes especially in tools that required large gatherings. People might have also felt uneasy in participating to these meetings, hence this may have impact on their contributions to the discourses. This was addressed through conducting meetings in open canopy areas, maintained a recommended distance of 2m apart by participants, operated meetings with very minimal time by cutting long explanations, provided participants with information on COVD-19 and application of hand sanitizers before and after the meetings.
iii. The urgency of the assignment coincided with rainy season especially in the Lindi cluster. Due to poor earth roads and long distances between villages involved in the survey, the tasks were conducted longer than anticipated. This challenge was addressed by extending the working period in the cluster.

3.0 MAJOR BASELINE FINDINGS

The findings presented in this chapter includes all information acquired through primary data collection tools and secondary sources through literature search. Presentation of the results is therefore, intended to provide a comprehensive detail as captured by various tools. Key areas covered include socio-economic profile and livelihood of the communities, poverty analysis of the community and forest resources management.

3.1 Socio-economic and livelihoods characteristics

3.1.1 Socio-economic characteristics

The socio-economic characteristics for 635 respondents who took part in the present study (Table 3) is defined by the study sample comprised of both *male-headed* households and *female-headed* households, *albeit* the former constituting the majority. These findings are in congruency with the national data which shows that over 66% of the household in Mainland Tanzania are male headed (NBS, 2014). However, this study attained a *fairly good gender balance*: the number of *male respondents* was comparable to that of *female respondents*.

Majority of respondents have attained at least the minimum level of universal primary education (92.8%). This provides assurances that at least majority of respondents have ability to read and write and consequently they are able to easier understand and follow any development intervention provided such initiatives are aligned to their needs (both immediate and future needs).

Table 3: *Socio-economic characteristics of respondents*

Characteristics of respondents	Frequency (N)	Percent (%)
Gender of the respondent		
Male	366	57.6
Female	269	42.4
Marital status of respondent		
Married	501	78.9
Single	98	15.4
Widowed	16	2.5
Divorced	20	3.2
Household head		
Female-headed households	93	14.6
Male-headed households	542	85.4
Educational level of household head		
Illiterate (never attended formal education)	46	7.2
Primary education	528	83.2
Secondary education	52	8.2
Tertiary education	9	1.4

Respondents' occupations in the study area (Table 4) shows that majority identified themselves as farmers. Like many rural parts of Tanzania, agriculture is the main economic activity. In some cases, agriculture and forestry may compete when farmers practice extensive farming. So, agriculture and forestry policy need to inform each other so that farmers can benefit from both. This suggests that agriculture is the main dominant activities for both material wealthy generation and survival. This is similar to other part of the country especially in rural areas whose economic mainstay is predominantly agriculture or agricultural based activities. As has been noted in many studies, farming activities in Tanzania is associated with extensive tilling, to maximize productivity, as far as natural resources management is concerned this trend is unsustainable and has been leading to encroachment on protected areas for farmland expansion.

Table 4: *Respondents' occupations in the study area*

Category label	*Code*	*Count*	*Percent (%)*
Farmers	1	612	79.0
Business	2	57	7.0
Pastoralists	3	18	2.0
Employed	4	10	1.0
Self-employed in forest-based activities	5	67	9.0
Agro-pastoralist	6	6	1.0
	Total	**770**	**100**

The distribution of the *collapsed* household income (Fig. 3) shows more than 75.1% lives at or below 60,000 TZS per month by monetary income.

Figure 3: *Categories of household monthly income*

3.1.2 Demographic characteristics

Gravetter and Wallnau (2004; 2007) recommended that in determining household size, a *mode* should be used as a measure of *central tendency*. Household size in each FORVAC cluster was worked out (Table 5), and this suggests that the study area has households with similar sizes. We further noted that each household is composed with at least 2 adult, 2 kids and 1 elderly. This may, arguably, imply that across the study sites (FORVAC Clusters) household size has no sizeable effects on forest resources conservation and that households have comparable responsibilities with regards to managing families.

The kids and elderly might be considered as dependants. However, this composition forms what we call workforce which contributes to the production and income of the entire household. The trend on household size is more or less similar from national household size which lies at around 4.7.

The age class distribution of the respondents (Fig. 4) mostly being heads of households, indicating a diverse age distribution across the clusters.

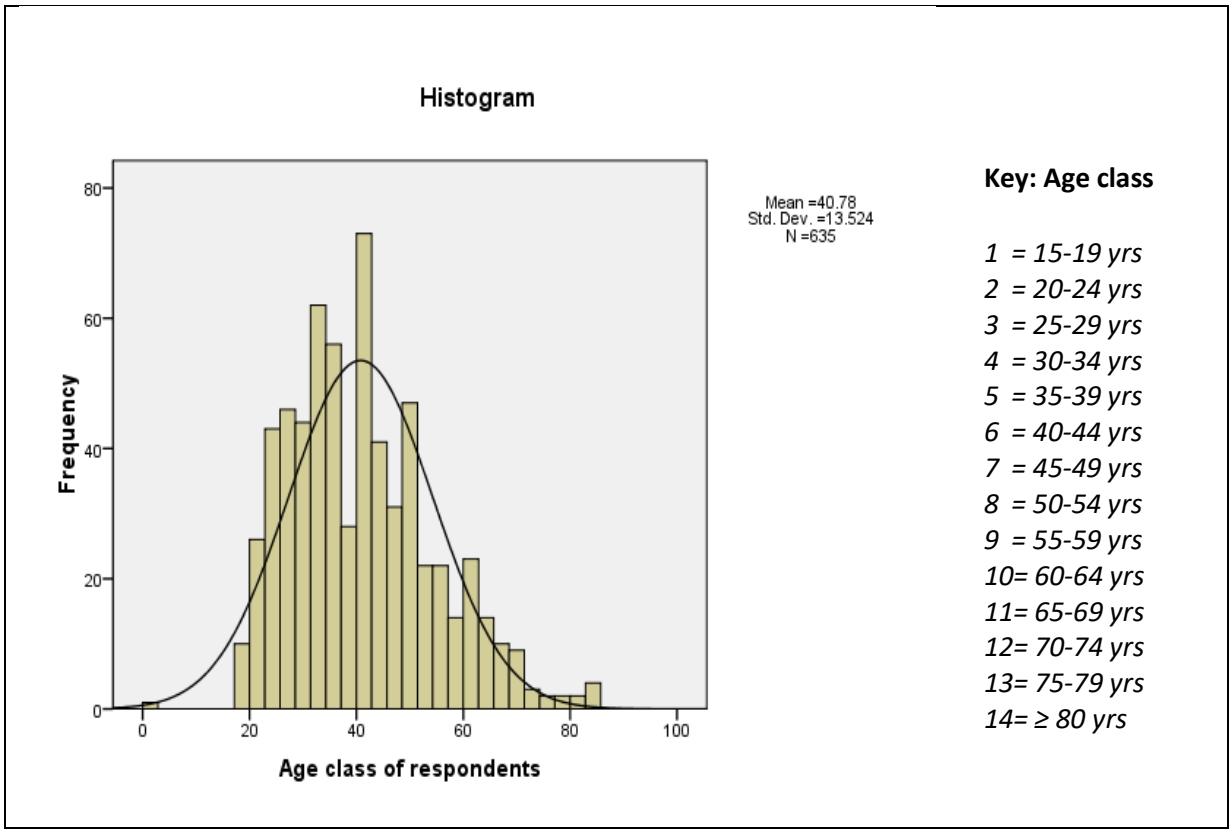

Figure 4: *Histogram showing age class distribution of respondents in the study area*

Table 5: *Average household size in the study area*

FORVAC cluster	Household size
Lindi	4
Ruvuma	2
Tanga	3
Overall	**4**

3.1.3 Wealth status of the respondents

During data collection, *household assets* were used as *proxy* for household wealth. Both *animate* (*cattle, goats, sheep, and donkeys*) and *inanimate* assets (*motor cars, bicycles, motor cycles, wheel barrows, ox-driven carts and sprayers*) were recorded for each respondent household and these reflected *the wealth status* of a respective household.

Type of assets owned by the respondents in the study area (Fig. 5 and Table 6), indicates that livestock ranked first, meaning that cattle, goat and sheep are the most important household asset within the FORVAC clusters. These have been the traditional assets in the Tanzanian rural setting and it is expected to observe such trends. High number of livestock may as well translate that there will be need for grazing lands, if the stocking level is not kept at carrying capacity the possibility of encroaching forest reserves remains high.

However, it should be noted that there are new assets that would have not been mentioned if this study would have been done 10 years ago. These include the pesticide sprayer and motorcycle; the emergence of these items suggests that the social perception on asset is widening up to include items that generate income.

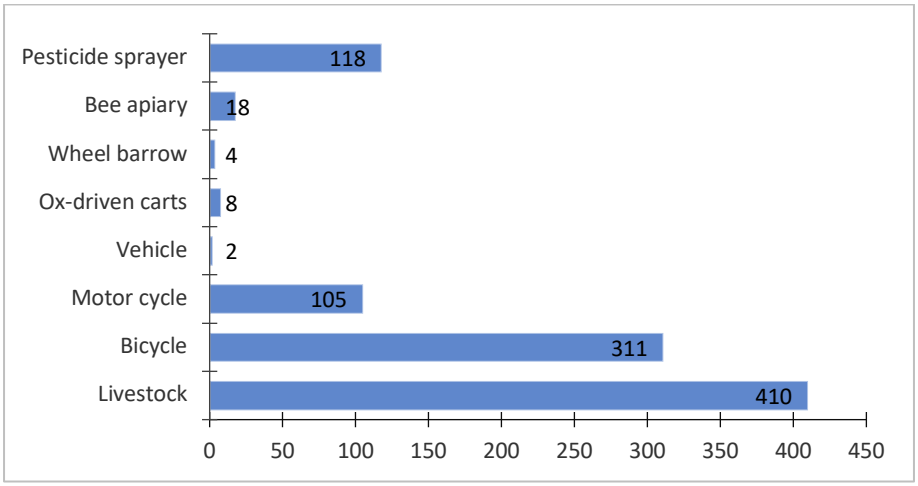

Figure 5: *Number of respondents owning various assets in the study area*

Table 6: *Households owning forest-dependent animals in the study area*

Category label	*Code*	*Count*	*Percent (%)*
Cow	1	88	24.6
Goats	2	232	64.8
Sheep	3	22	6.1
Donkey	4	16	4.5
	Total	**358**	**100**

3.1.4 Household fuel consumption patterns in the study areas

Biomass fuel is one of the humanity's earliest sources of energy—and constitutes the highest proportion of global renewable energy supply. According to Demirbas (2001), 18% of the global primary energy supply is from renewable sources of energy, of this renewable energy contribution to total energy, more than 55% is from traditional biomass, 30% is from large hydro and 12% is from solar, wind, modern biomass, geothermal, small hydro (less than 10MW), and ocean energy all put together. The choice of domestic fuel is a matter of concern for households and policy makers (Gupta and Köhlin, 2006). According to Heltberg (2005), understanding the factors guiding households' choice of cooking fuel is crucial for policies to combat indoor air pollution. Masera and Navia (1997) argued that understanding the dynamics of inter-fuel substitution is particularly important for urban and peri-urban areas, but also for rural areas for a number of reasons: *fuel switching is a major determinant of both future wood fuel demand and wood fuel prices*; it is also critical for *policies aiming at sustainable development*, given the multiple connections between *wood fuel use and environment*, *health and social impacts*.

Household fuel choices have often been analysed and understood through the lens of the *energy ladder model* (Heltberg, 2003, 2004; Masera *et al.,* 2000; Leach, 1992; Schlag and Zuzarte, 2008; Campbell *et al.,* 2003; Hosier and Dowd, 1987): with increasing affluence, a progression is expected from traditional biomass fuel to more advanced and less polluting fuels. Heltberg (2004) and Leach (1992) assert that besides income, other factors influencing movement up the 'energy ladder' are: electrification, urbanisation, biomass scarcity, and relative fuel prices. However, more realistically, households use multiple energy sources-implying *energy stacking model* (Masera *et al.,* 2000; Mekonnen and Köhlin, 2008; Schlag and Zuzarte, 2008): as income rises, households increase the number of fuels used, and also they

spend more on fuels they consume. Figure 6 illustrates the "energy ladder" and "energy stack" models.

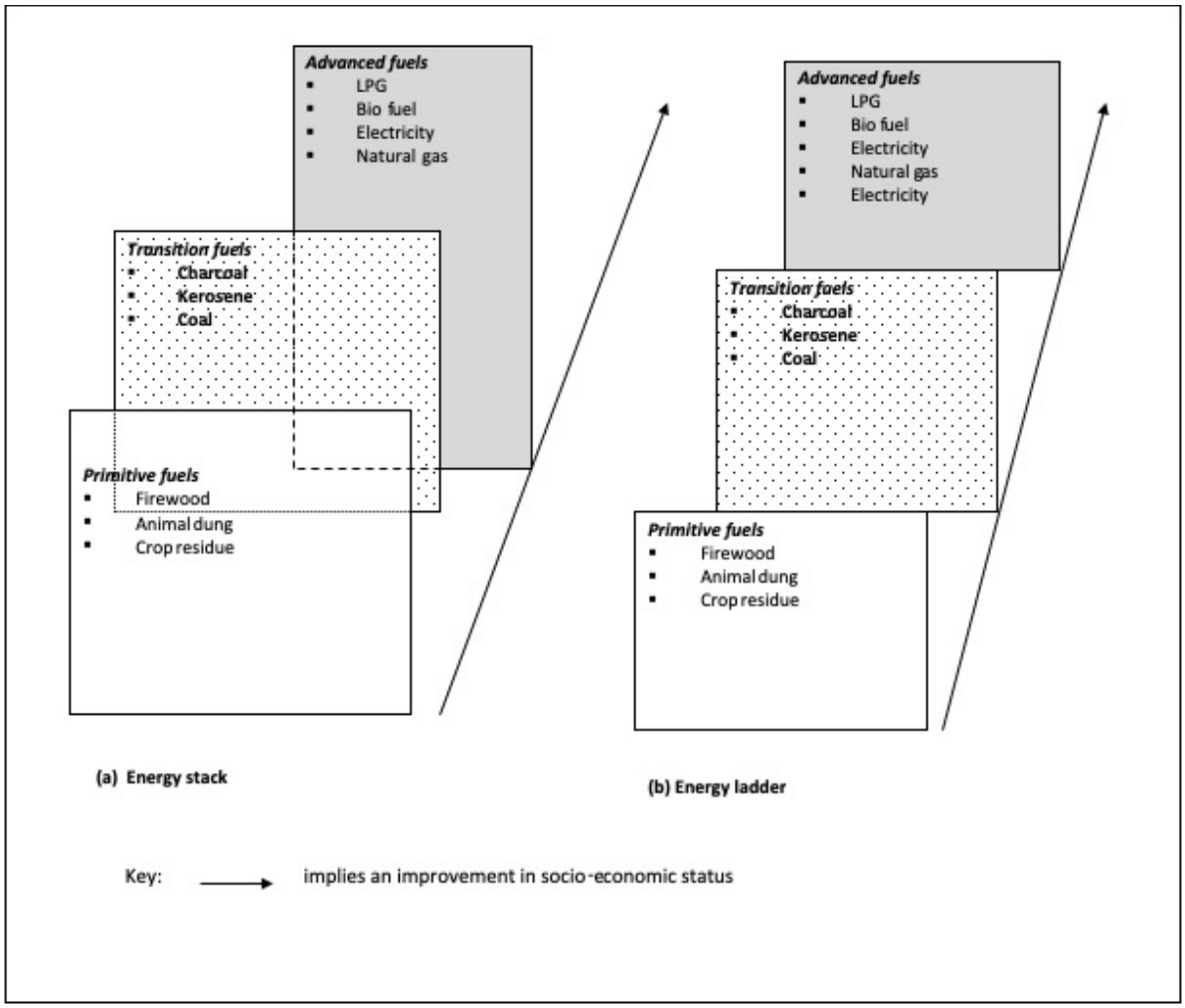

Figure 6: *"Energy ladder" and "Energy Stack" Models*

Source: Adapted from Schlag and Zuzarte (2008)

The results from present study shows that the source of energy among respondents is predominantly from biomass (firewood and charcoal). Over 90% of the households in the study area uses fuelwood for cooking and heating simply because this is the most affordable and accessible energy compared to other sources (Table 7). The use of modern and alternative sources of energy is far from been realized in the near future. Several factors can be attributed to this including per capita income and associated costs that limits their accessibilities.

Table 7: *Source of household energy for cooking and heating in the study area*

Category label	*Code*	*Count*	*Percent (%)*
Firewood	1	586	68.9
Charcoal	2	219	25.8
Electricity	3	3	0.4
Kerosene	4	20	2.4
Biogas	5	14	1.6
Gas-LPG	6	8	0.9
	Total	**850**	**100**

The trend shown above, suggests that there will be a continued extraction of forest resources for fuel energy to meet the ever-increasing demand. In turn this creates a lot of pressure in the forests and since there is limited human resources for manning all reserved forests illegal tree harvesting will remain a serious challenge in the forest sector.

Source of household energy for lighting and charging (Table 8) has shown that there is new dawn for the energy sector in Tanzania today, the emerging of solar energy in last decade has considerable impacts in rural areas. The present study revealed that over 70% of the respondents were using solar energy for lighting and charging their mobile phones. This is on the contrary with national data that was collected 8 years ago which showed that over 40% of Tanzanians were using kerosene for lighting. It seems that investment on solar energy technology in the past 6 years has been enormous, government incentives on energy has made the technology more accessible and affordable.

Table 8: *Source of household energy for lighting and charging in the study area*

Category label	*Code*	*Count*	*Percent (%)*
Electricity	1	13	2.0
Kerosene	2	13	2.0
Candle	3	58	8.8
Generator (*petrol/diesel*)	4	2	0.3
Biogas	5	3	0.5
Firewood	6	90	13.7
Solar	7	478	72.8
	Total	**657**	**100**

3.1.5 Farming activities in the study areas

It is evident that respondents in the study area are involved in production of both cash crops and food crops (Fig. 7).

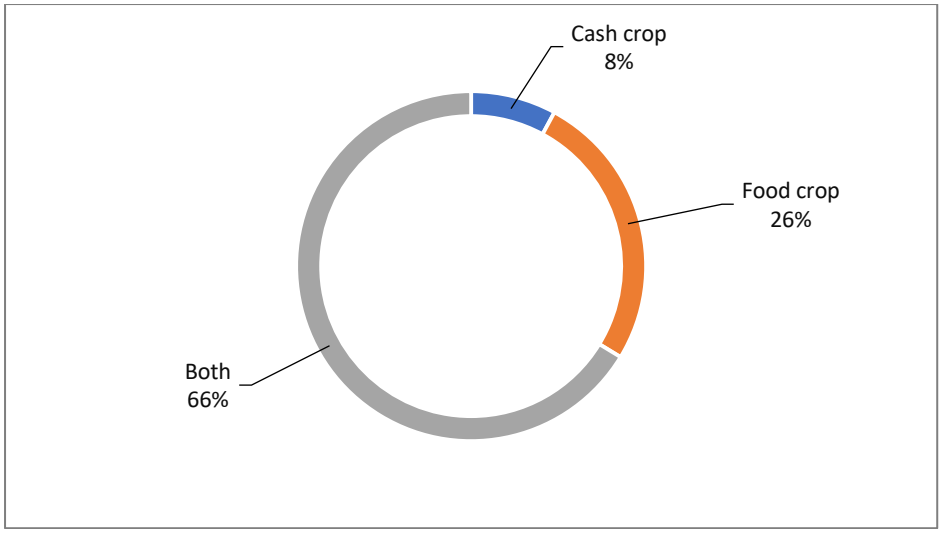

Figure 7: *Crops cultivated by the respondent households*

It was also noted that maize, sesame, cassava, cashew nuts and beans are produced by majority of households (Fig. 8). As noted above, maize remains to be a leading crop that is preferred by peasants over 80% of respondents acknowledge to have been growing it. Looking closely on the table, one will note that most food crops are cereal in nature. These are the staple dishes in the country, the Tanzanian diet relies heavily on starchy staples with maize providing over 32 to 51% of the calories. Beans are the non -cereal food crop and an important main source of protein in most areas.

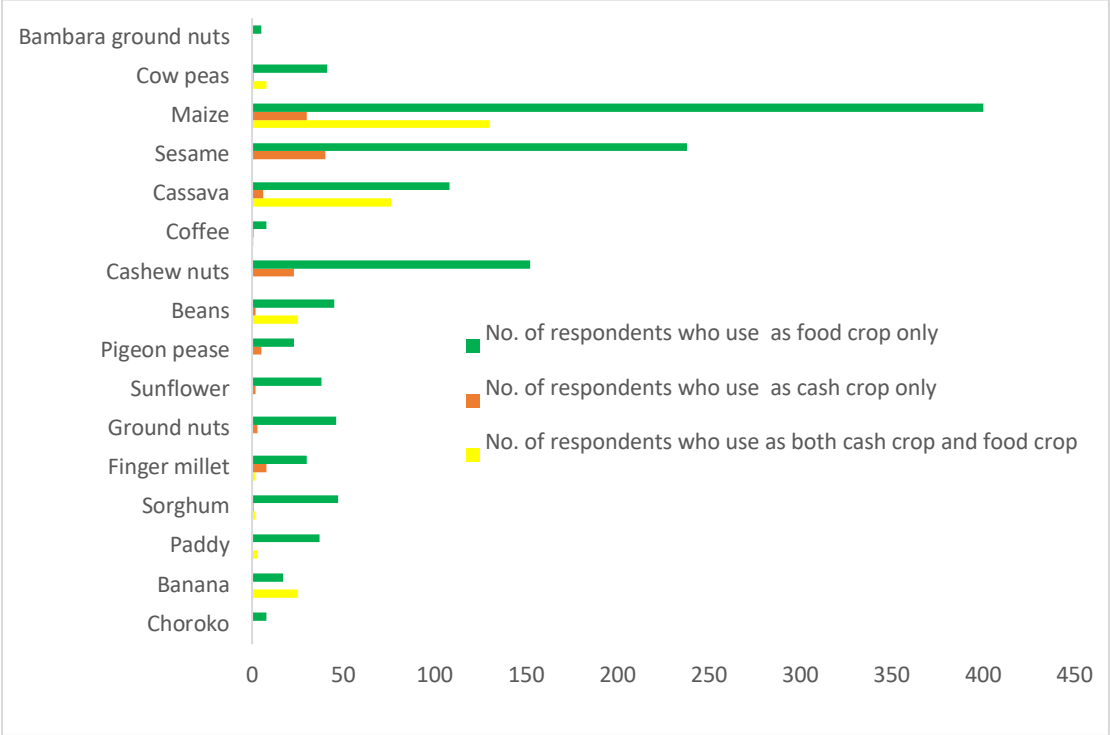

Figure 8: *Crops cultivated for various uses*

The majority of the households use hand hoes as primary tools for farming (Fig. 9). The study reveals that most of the farmers are heavily using hand hoes, over 90% of respondents farm using hand hoes which limits their production capacity and is directly linked with the farm size owned and/or cultivated which is at an average of 6 acres. Furthermore, this, suggests that agrarian mode of production in the clusters is manual based and transforms very slowly toward semi-mechanisation. Mechanisation in the cluster is still at infancy stage and use of draught animals is very low compared to other areas/regions.

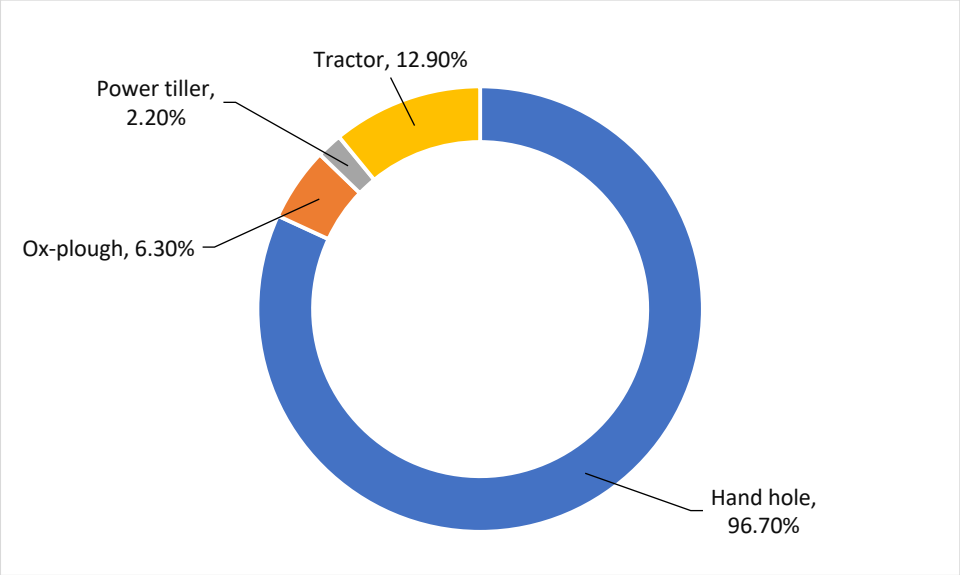

Figure 9: *Primary tools and equipment used for farming*

Besides, farmers use power tillers, tractors and ox-plough which are either self-owned or hired (Table 9). It was revealed that many households are food-secure since they have self-sufficient food production from owned farms (Table 10).

Table 9: *Access to primary tools and equipment for farming in the study area*

Category label	*Code*	*Count*	*Percent (%)*
Ox-plough owned	1	357	51
Ox-plough hired	2	122	18
Power tiller owned	3	10	1
Power tiller hired	4	66	10
Tractor owned	5	10	1
Tractor hired	6	129	19
	Total	**694**	**100**

The average farm size owned by household across the clusters is 6.67 acre. This in agreement with the national average farm size which range from 2 to 7 acres as reported on the global

yield gap atlas. This state of affair suggests that most of the farming activities are done at a subsistence level to meet the daily dietary needs of the household. Meaning that commercial farming is far from attainment; serious investment will be needed to stimulate the subsector.

Table 10: *Households' food security status in the study area*

Food security status	Frequency (n)	*Percent (%)*
Additional food bought to supplement own production	228	35.9
Percentage of food purchased in household food security	7	1.1
Self-sufficient food production from owned farms	400	63.0
Total	**635**	**100.0**

3.1.6 Households' investments in the study areas

Many households have invested in different economic activities which are both forest-based (Table 11) and non-forest based (Table 12). The findings revealed that approximately 74% of respondents are aware of the existence of forest-based enterprises in their respective villages.

Table 11: *Types of forest-based enterprises that household members are involved*

Category label	*Code*	*Count*	*Percent (%)*
Timber	1	34	4.4
Beekeeping	2	36	4.7
Charcoal	3	75	9.7
Firewood	4	295	38.2
Weaving	5	10	1.3
Carving	6	3	0.4
Wild vegetable and fruits	7	132	17
Medicine	8	188	24.3
	Total	**773**	**100**

The main investment of most households in the study area is poultry (Table 12). This does not come as a surprise, there have been a lot of awareness creation and promotion to both rural and urban areas on enterprise development especially poultry and fish farming. However, the level and scale of investment might be quite variable from one place to another. Again, as noted above, emerging enterprises/investments can be observed here i.e. pesticide sprayer, mobile phone charging, video halls, barber shops and petrol vending facilities. These investments would have been farfetched business ideas 10 years ago. Improved farming

practices, *Bodaboda*, Mobile communication technology and digital television has hatched up some of these investments.

Table 12: *Investments owned by households*

Category label	*Code*	*Count*	*Percent (%)*
Shop	1	90	11.3
Milling machine	2	14	1.8
Video hall	3	14	1.8
Min petro vending facility	4	2	0.3
Restaurant	5	30	3.8
Poultry	6	392	49.1
Carpentry	7	14	1.8
Barber shop	8	4	0.5
Money lending	9	6	0.8
Pesticide sprayer	10	116	14.5
Sewing machine	11	7	0.9
Mobile phone charging	12	87	10.9
Bee apiary	13	23	2.9
Total		**799**	**100**

It was further noted that only 50% of the respondent households have membership to various forest-based organisations (Fig. 10) and also are aware of existence of bylaws governing access and protection for acquiring forest products (Fig. 11).

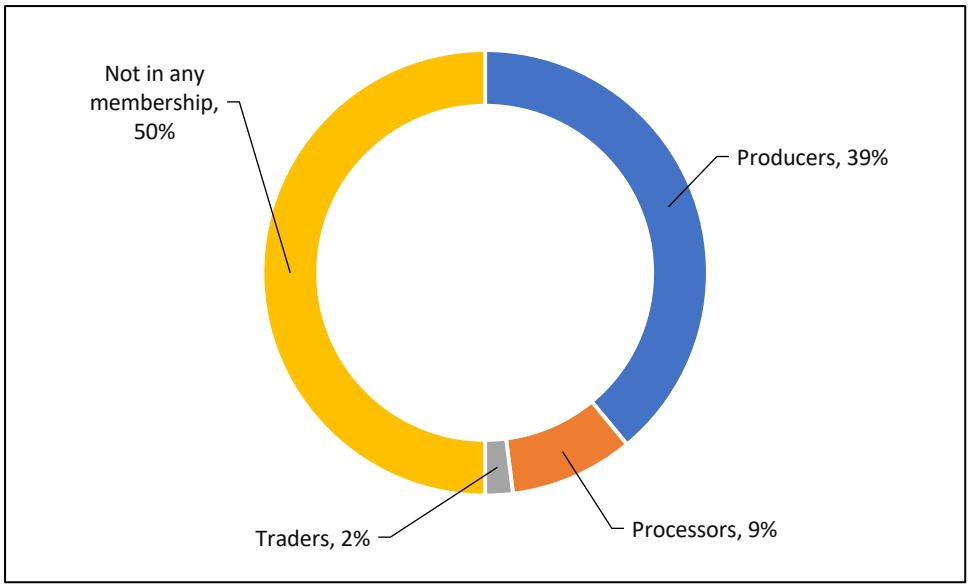

Figure 10: *Membership in forest-based organisations*

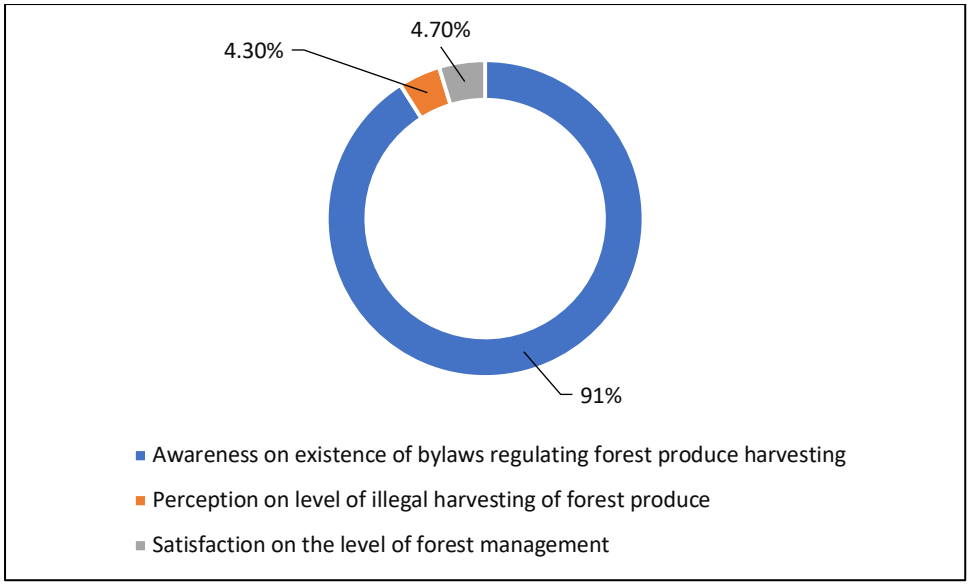

***Figure 11**: Access and protection for acquiring forest products*

Furthermore, it was revealed that only 41.8 % of respondents are aware of the contribution of forest-based enterprises social fund in supporting community work and/or vulnerable groups (Fig. 12).

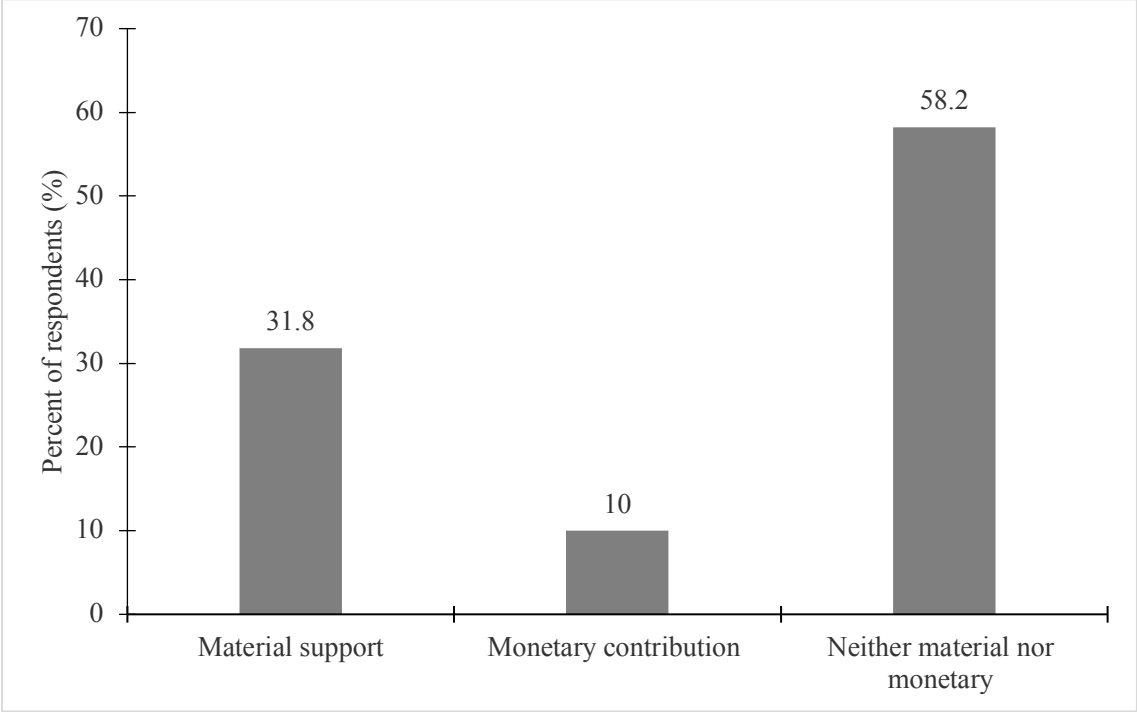

***Figure 12:** Awareness on the contribution of forest-based enterprises to social services*

It can be deduced that forest-based sources of income contributes to approximately 17.46% of total household income (Table 13).

Table 13: *Average annual household income from various sources*

S/N	Source of income	Amount of income per year (TZS)
1	Beekeeping	8,467
2	Timber	16,771
3	Charcoal	5,669
4	Firewood	5,565
5	Weaving	2,755
6	Carving	173
7	Wild vegetables and fruits	2,067
8	Medicine	4,387
	Subtotal	**45,854**
9	Other sources	216,705
	GRAND TOTAL	**262,559**
	Contribution of forests-based sources to total income	17.46%

3.1.7 Forest resources stewardship in the study areas

The study strove to elicit information on the governance issues of forest resources including disturbances of forest resources, land use changes in forested land, presence of bylaws governing forest management and local institutions. Opinions were also sought regarding the presence of stakeholders to support management of forest resources in the study area.

The main disturbances include forest fire and encroachment for farming which accounts for 57.3% (Table 14). In addressing these disturbances, the village governments have put in place bylaws to manage land use, albeit with some degree of inefficiency.

When asked if they are aware of the presence of bylaws that govern forest management including the local institutions, majority of the respondents (Fig. 13) were in full knowledge of their existence. Nonetheless, there were mixed opinions by the respondents regarding the performance of the bylaws with majority (74.4%) satisfied and 25.6% unsatisfied (Fig. 14).

Table 14: *Disturbances of forest resources*

Category label	*Code*	*Count*	*Percent (%)*
Fire	1	524	33.7
Grazing	2	213	13.7
Farming	3	367	23.6
Settlement	4	172	11.1
Illegal harvesting	5	278	17.9
	Total	**1554**	**100**

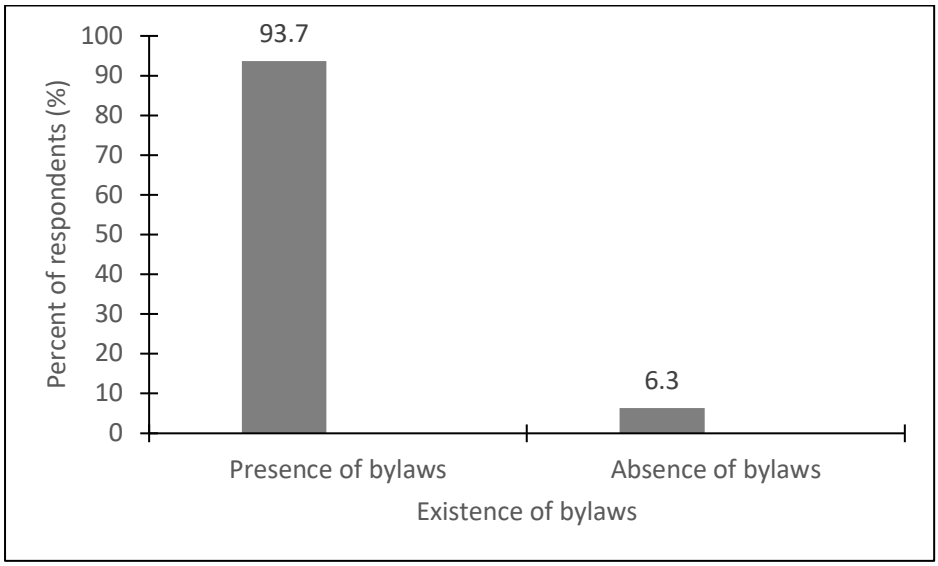

Figure 13: *Awareness on the presence/existence of bylaws including local institutions*

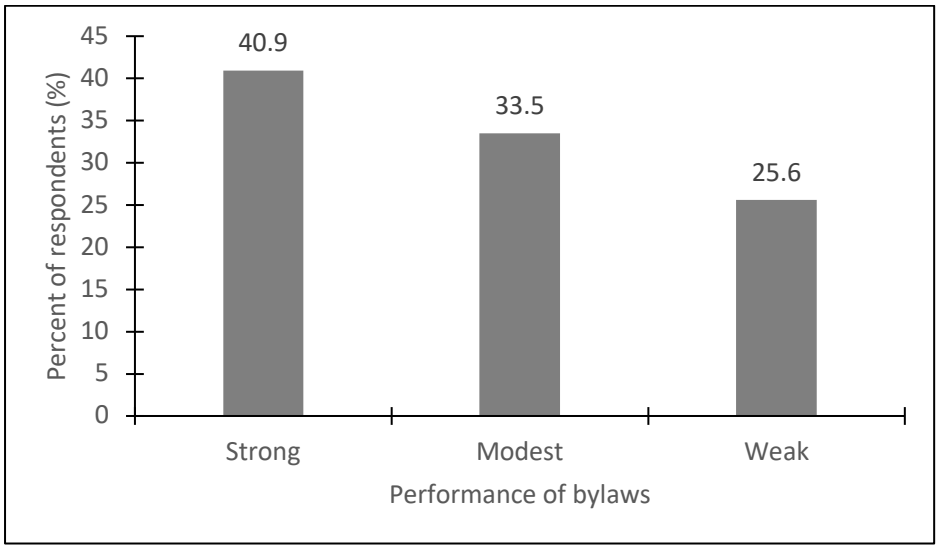

Figure 14: *Performance of bylaws including local institutions*

Various stakeholders present in the study area have supported management (Table 15), including state and non-state actors. This implies that the FORVAC programme has the

advantage of utilizing collaboration with other institutions at local level in fostering forest value chain and uplift the livelihoods of the communities.

Table 15: *Presence of stakeholders to support management of forest resources*

Category label	*Code*	*Count*	*Percent (%)*
CBOs	1	72	5.6
NGOs	2	298	23.0
District Authorities	3	576	44.5
Central Government	4	348	26.9
	Total	**1,294**	**100**

3.1.8 Marketing of forest products in the study area

Information was sought regarding the marketing aspects of forest products including types of NTFPs traded, availability of market facilitation related to forest products, respondent's information regarding demand of forest product, and relevant forest-based trainings that respondents have ever attended.

Types of NTFPs traded (Table 16) and market facilitations (Table 17) indicates dominance of bee products, mushroom, wild fruits and vegetables and medicine. Special events that are carried out in close proximity to their village are the main source of market facilitation.

Table 16: *Types of NTFPs traded in the study area*

Category label	*Code*	*Count*	*Percent (%)*
Honey and beeswax	1	90	12.1
Fruits and vegetables	2	220	29.5
Mushrooms	3	174	23.3
Medicine	4	233	31.2
Tubers	5	29	3.9
	Total	**746**	**100**

Table 17: *Market facilitations to forest product*

Category label	*Code*	*Count*	*Percent (%)*
Saba Saba	1	62	9.3
Nane Nane	2	107	16.1
Access to loans from MFIs	3	11	1.7
Special events (investment for meetings, visits)	4	485	72.9
	Total	**665**	**100**

Majority of the respondents obtain information related to the demand of forest products just by chance (Table 18).

***Table 18**: How information related to the demand of forest products is obtained*

Category label	*Code*	*Count*	*Percent (%)*
Middlemen	1	127	17.8
Direct calls from customers	2	64	9.0
Network among harvesters	3	31	4.3
Market research	4	7	1.0
Social media	5	63	8.8
By chance	6	392	54.9
Through training and seminars	7	30	4.2
	Total	**714**	**100**

It was noted from the study findings that some of the respondents have had trainings in areas such as sustainable forest management, NTFPs sustainable harvesting, forest products processing, bee management, bee products processing and packaging, and marketing of forest products (Table 19).

***Table 19:** Various trainings attended by households in the study area*

Category label	*Code*	*Count*	*Percent (%)*
Short course on sustainable forest harvesting	1	131	15
Seminar on sustainable forest harvesting	2	200	23
Seminar on NTFPs sustainable harvesting	3	55	6
Short course on forest product processing	4	15	2
Seminar on forest product processing	5	66	7
Short course on bee management	6	41	5
Seminar on bee product processing and packaging	7	14	2
Seminar on bee management	8	63	7
Short course on bee product processing and packaging	9	9	1
Seminar on marketing of forest products	10	27	3
Peer-to-peer training	11	261	30
Total		**882**	**100**

3.2 Analysis of income - poverty in the study area

3.2.1 Poverty, poverty lines and poverty indices: a review

There are many definitions, as well as intense debate, about the poverty situation. As a matter of definition, it is imperative to distinguish four types (degrees) of poverty: extreme or absolute poverty, moderate poverty, relative poverty (Sachs, 2005) and subjective poverty (Duclos and Araar, 2006). *Absolute poverty* means that households cannot meet basic needs for survival. They are chronically hungry, unable to access health care, lack amenities of safe drinking water and sanitation, cannot afford education for some or all children, and perhaps lack rudimentary shelter (Wangwe, 1997; Carraro, 2006, Sachs, 2005).

Absolute poverty occurs only in developing countries— an argument which is dismissed by Price (*Personal communication, 12.06.2009*): "there is what is called the Fourth World, an under-

society of people at the margin of survival, in the developed world." *Moderate poverty* generally refers to condition of life in which basic needs are met, but just barely. *Relative poverty* is generally construed as household income below a given proportion of average income – usually mean or median income. Relative poverty depends on the social context, and may be objectively assessed or subjectively measured Frye (2005).

According to (Donaldson and Blackorby, 1980) relative poverty is something whose value is unchanged when all incomes and the poverty line itself are multiplied by a positive scalar, while the absolute poverty index is one whose value depends on the income of the poor. *Subjective poverty*, according to Duclos and Araar (2006) refers to poverty as perceived by the households themselves. Generally speaking, poverty may be *socially* or *economically/statistically* defined (Figure 15).

Saunders *et al,* (2002) make the distinction between *absolute poverty* and *overall poverty*: *absolute poverty* is a "condition characterised by severe deprivation of basic human needs including food, safe drinking water, sanitation facilities, health, shelter, education and information – *it depends not only on income but also on access to services*. *Overall poverty* is a wider concept including not only lack of basics, but also lack of participation in decision making, and in civil, social and cultural life. Arnold (2001) for instance argued that poverty has generally been defined as insufficient food, income, and inputs to maintain adequate standard of living, with the latter sometimes being defined to include quality of life.

The present study has striven to analyse poverty in the study area using a number of *suggested thresholds* in order to get a deeper insight of poverty situation in a given the study area. *Relative* poverty lines were computed using both the per-capita median income and per capita mean income at proportions of 40%, 50% and 60%. The per capita household *mean* and *median* income (Table 20); the computed relative poverty lines (Table 21); and percent of populations (respondents) living below poverty lines (Table 22).

Table 20: *Per capita household mean and median income in the study area*

Stratum/cluster	Valid sample size (N)	Mean income (TZS/month)	Median income (TZS/month)
Lindi	327	48,728.00	15,755.00
Tanga	90	25,713.00	6,759.00
Ruvuma	194	29,171.00	12,426.00
Overall	**611**	**39,129.00**	**13,889.00**

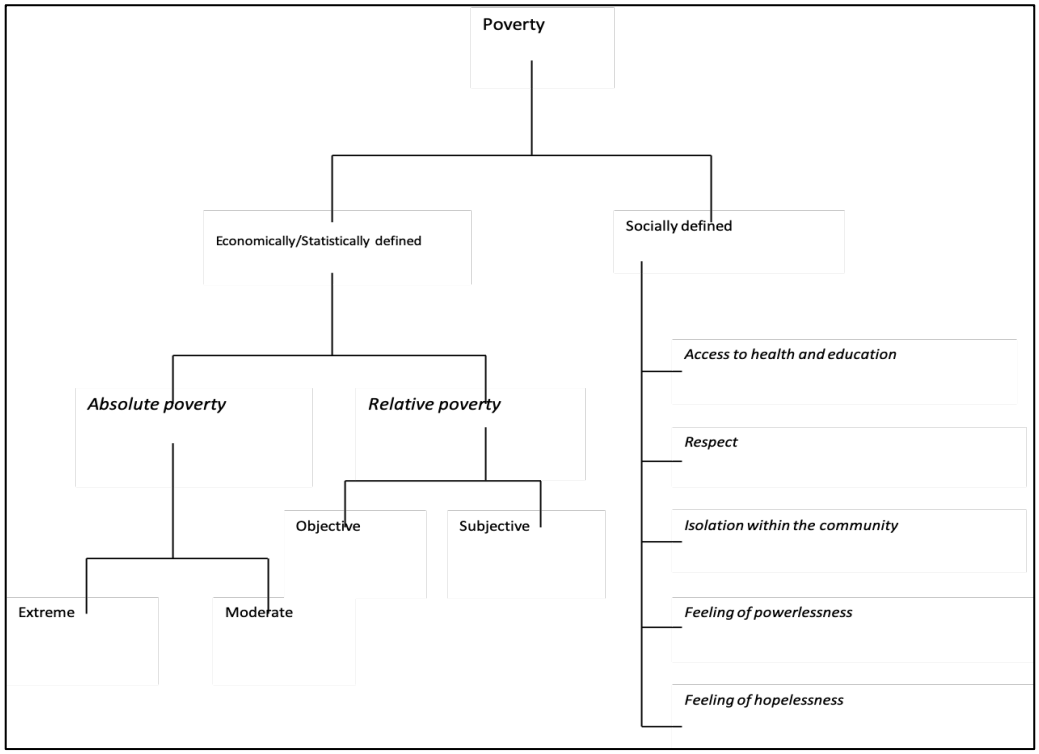

***Figure 15**: Understanding the poverty concept*

***Table 21:** Computed relative poverty lines (using per capita household mean and median income)*

Stratum/cluster	Median poverty lines (TZS/person/month)			Mean poverty lines (TZS/person/month)		
	40%	50%	60%	40%	50%	60%
Lindi	6,302.00	7,878.00	9,453.00	19,491.00	24,364.00	29,237.00
Tanga	2,704.00	3,380.00	4,055.00	10,285.00	12,857.00	15428.00
Ruvuma	4,970.00	6,213.00	7,456.00	11,668.00	14,586.00	17,503.00
Overall	**5,556.00**	**6,945.00**	**8,333.00**	**15,652.00**	**19,565.00**	**23,477.00**

***Table 22:** Population below poverty lines in the study area*

Poverty line	Percentage (%) below poverty line			
	Lindi	*Tanga*	*Ruvuma*	*Overall*
1: 40% of the median	26.3	21.1	29.9	27.3
2: 50% of the median	28.1	23.3	33.5	33.2
3: 60% of the median	36.1	23.3	36.6	35.5
4: 40% of the mean	54.1	54.4	47.9	54.2
5: 50% of the mean	61.8	60.0	55.2	58.3
6: 60% of the mean	67.0	65.6	58.8	64.8

3.2.2 State of access to Social Services

The consultancy team strove to elicit information on the availability and satisfaction of public social services from the respondents in their respective areas. Information which was sought included: perception of the quality of delivery of social services and walking distances to: nearest health centres, education facilities, water points, village government offices, renewable energy sources, all-weather roads and electric grid connections. It was evident that the delivery of social services is fairly good (Fig. 16).

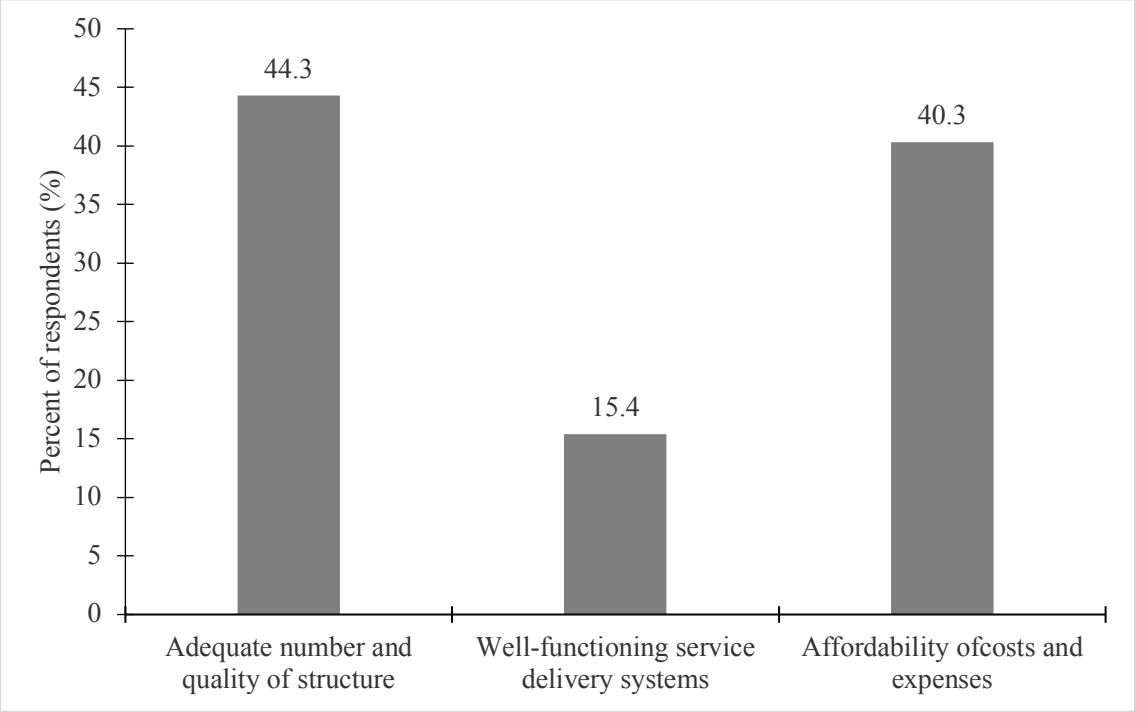

Figure 16: Perception by respondents on the quality of delivery of social services

Walking distances from respondent households to various social services (Table 23) indicate the spread nature of the villages and sub-villages in relation to the central business area of the village.

Table 23: *Average walking distance/time from household to social services facilities*

S/N	Social service	Walking distance from the household (hrs.)
1	Health centre	1.24
2	Education facility	0.94
3	Water points	1.21
4	Renewable energy source	1.47
5	Village government offices	1.19
6	All-weather roads	0.74
7	Electric grid connections	1.81

Generally, the findings reveal that, household average walking distance to nearest social services vary considerably across the clusters. Access to renewable energy sources had a relatively longer walking time/distance showing that the forests are either dwindling both in size and quality or their boundaries have been varied quite a lot such that village areas have been expanding in the expense of forests. In some clusters especially Tanga, it was noted that the forest condition has declined because of farmland expansion, illegal harvesting, grazing and population growth that demand more land for settlement, grazing and farming.

The perception of villagers on the quality of social service delivery for Tanga and Ruvuma clusters ranks these services from affordability of costs to adequate service delivery where as their counterpart in Lindi rank from adequate to well-functioning. This could be attributed by the income generated from VLFRs activities like timber harvesting that have been going on in Liwale district. The return from VLFRs have been used in social services like construction of dispensaries, schools, water boreholes etc as well as facilitating social services employees like teachers, nurses and clinical officer with basic home amenities.

3.3 Forest Resources Management

3.3.1 Forest Management Instruments

The perception of the strength of the institutions vested with management of Village Land Forest Reserves varies between cluster districts (Fig. 17). Th existing legal framework on forest and land use management is in place and working, albeit with some challenges. It is important however to ensure that access and protection of acquiring forest produce must be aligned with the existing regulations in order to avoid conflicts, misuse and flourishing of illegal harvesting.

Currently, in some villages within FORVAC clusters, the Village Land Use Plans (VLUPs) whose implementation is important has noted to be not adhered to. This situation has been leading to frequent land use disputes in some villages especially in Kilindi, Mpwapwa and Nachingwea District. Some villages claimed that the VLUPs were developed inappropriately (there were no consensus as well as participation).

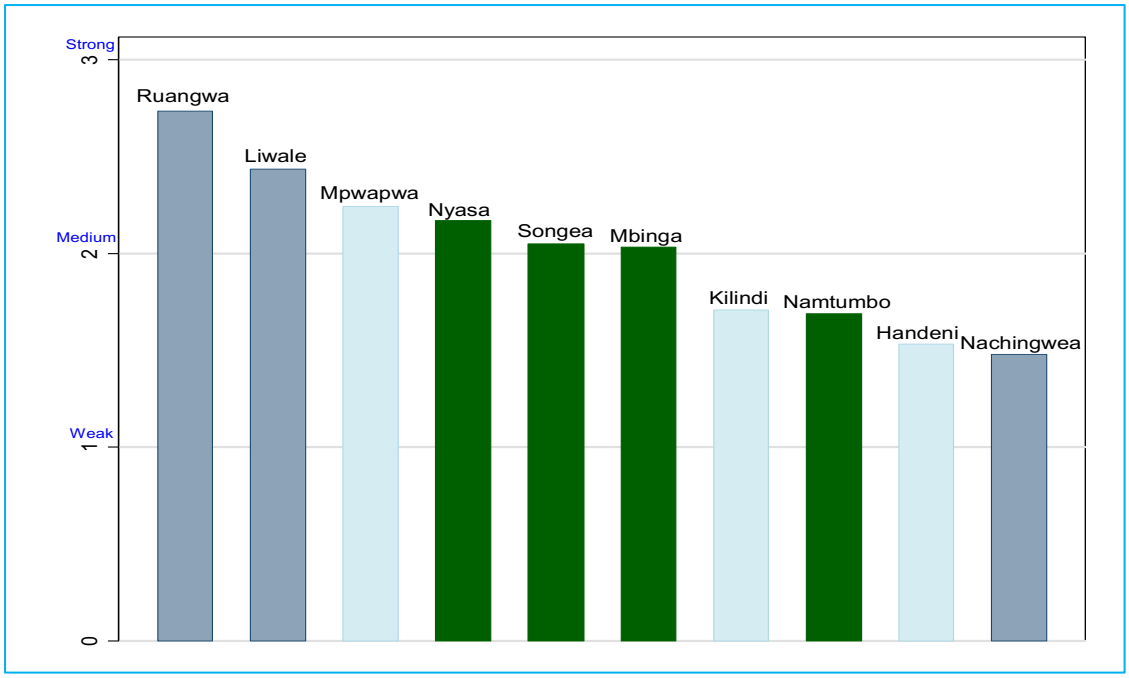

***Figure 17**: Households perception of performance of local institutions by cluster districts*

Note: Similar colours indicate shared clusters

The sound and efficient regulatory institutions are necessary precondition for the sustainable management of the forests. The institutions mediate the relationship between humans and forest. Particularly the management plan can be used as a 'tool' for operational management usually aligned towards the strategic goals. The Key Informants reported about 50% success of the forest areas in the cluster districts operate with formal management plans (Fig. 18).

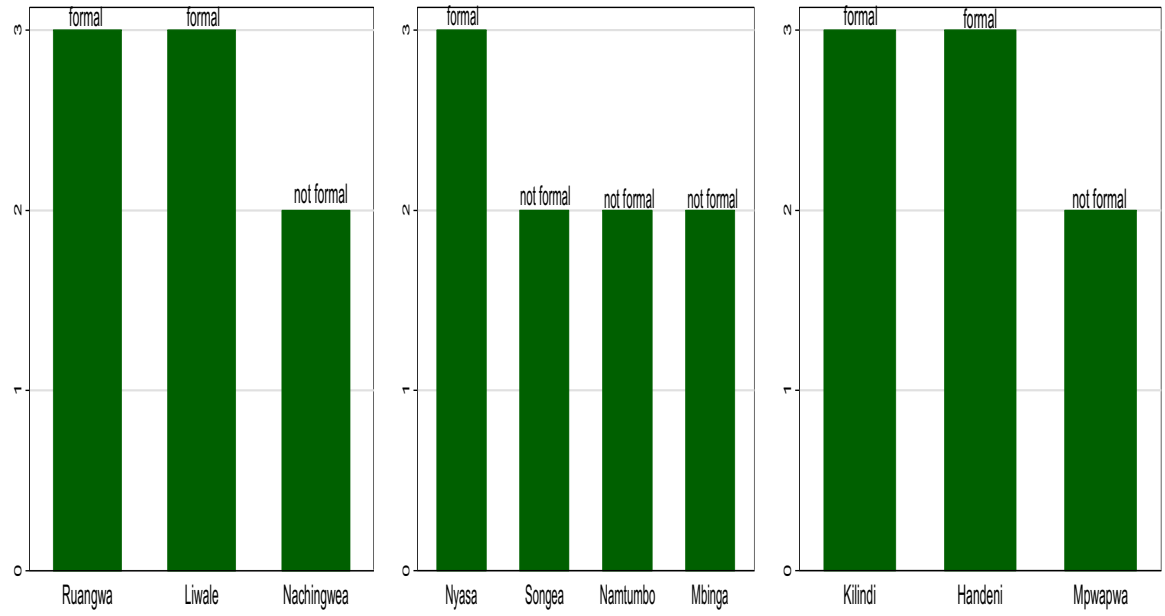

***Figure 18**: Status of management plans in the district of cluster areas*

In Lindi cluster, Liwale had the formal forest management plans while there was fewer management plans for Ruangwa and no formal plan in Nachingwea. Concurrently, only one district, Nyasa (Lipikongat) had a formal management plan with forests in Ruvuma cluster with Songea (Kikunja), Namtumbo (Limamu) and Mbinga (Kidimba) without formal plans. Moreover, in Tanga cluster, Kilindi and Handeni had management plans, while Mpwapwa (Chiseyu) had no formal plan. The situation indicates the need to improve through capacity building enabling the local governments or communities around the respective forests to prepare and implement formal management plans. Effort is required to enable the rest of the districts to develop and operate management plans.

3.3.2 Forest Business Enterprises

3.3.2.1 Non-timber forest products

Non-timber forest products (NTFP) were found to be the major commodities harvested and traded by community members in the study area (*cross-ref*. Tables 11, 13 and 16). Extraction of these products is regarded in most cases as primary forest production conducted by forest user or user groups whose interest is for sources of livelihoods (Mwamakimbula, 2016).

Majority of these user groups comprises of vulnerable and poor individuals like women, widows, youth and men. These forest-based micro-enterprises and the income earned from them is merely for livelihood survival; their markets are localised within and/or at the villages and district level. Collection of firewood, medicine, wild vegetable and fruits is normally done by people living adjacent to the forest. Furthermore, not all collectors in this group will do it in a sustainable way, strategies have to be developed in order to accommodate the interests of the individuals in order to discourage acts of illegal harvesting and unsustainable extraction

In order to improve the quality of the products extracted from the forest, capacity building on value addition, packaging and branding of these produces needs to be done. Proper packaging of wild vegetable and fruits, honey, and medicine fetches relative better prices. Packaging plays an essential role in promoting, protection and transportation of products, this is essential an important step in value addition over the entire value chain.

Facilitation to these groups of firewood, medicine, wild vegetable and fruits collectors can be made through creation of VSLs services for ease access of soft loans. This will enable the

groups to turn their venture into timber trading with minimal efforts. Intervention from actors like the FORVAC Programme and Mpingo Conservation and Development Initiative (MCDI) will be needed to assist villagers and user groups in developing harvesting plans, marketing of timber and entry into Forest Stewardship Council certification

3.3.2.2 Timber business

High-end enterprises like timber, carving and beekeeping are less invested upon; translating to that income earned from less valued enterprises is limited and cannot be used for further expansion of businesses. Timber is considered as the most valuable natural resource from the forest, the demand for hardwood sawn timber is huge due to rapid growth of the construction and furniture sector. Enterprises that venture on timber supply are likely to be profitable and of greater impact on the socio-economic development in rural villages.

Deliberate efforts on empowering villagers on venturing in high end enterprises has to be done in tandem with capacity building on sustainable forest harvesting, processing and marketing of forest produce. In the course of undertaking this study, it was noted that a lot of off cuts especially in Lindi cluster are left in the forest to rot.

Forest-based business enterprises present in the study area include the sawmilling, fuelwood and charcoal sellers and non-timber forest products such as baobab, honey and tamarind trades. In Ruvuma cluster, especially in Songea (Kikunja) the mostly traded forest products include timber, fuelwood, charcoal, wild fruits and vegetables and mushrooms. In Mbinga (Kidimba), the main traded products include logs, timber, poles, mushrooms and wild fruits. Further, timber, charcoal and fuelwood were the mostly sold products in Songea district (Liwewa). In Tanga cluster, timber, charcoal and fuelwood were the mostly traded products in Handeni and Kilindi. In Mpwapwa, charcoal and fuelwood were the mostly traded products, with baobab and honey reported to have a share in trading. In Lindi, timber furnitures were mostly traded as well as Tamarind juice.

In Ruvuma cluster, the market of forest products being informal. The markets are normally in towns due to high demand of timber and charcoal. There is also a prospect for a slight general increase in demand of forest products. In Handeni, it was reported the market of the forest products to be at Kitumbi and Mkata, and mainly in Dar es Salaam. In Mpwapwa, the market

destination for the baobab seeds were reported to be Zanzibar, Arusha and Nairobi. However, the business people in Mpwapwa reported high government tariffs limits the trade of NTFPs such as baobab pods lowering the benefits to the communities. The same limitation of high government fees was reported in Lindi cluster as well, especially for doors and doors frame fetching high charges compared to beds although they use small quantity of timber.

3.3.3 Value Addition of Forest products

Value addition of forest products is important to enhance economic status and incentives of communities living around the forest. The benefits influence the communities to appreciate the value the forests, and given appropriate institutions, contribute to the sustainability of forests and livelihoods. However, the level of value addition to the forest products differs among FORVAC cluster (Fig. 19) due to various factors.

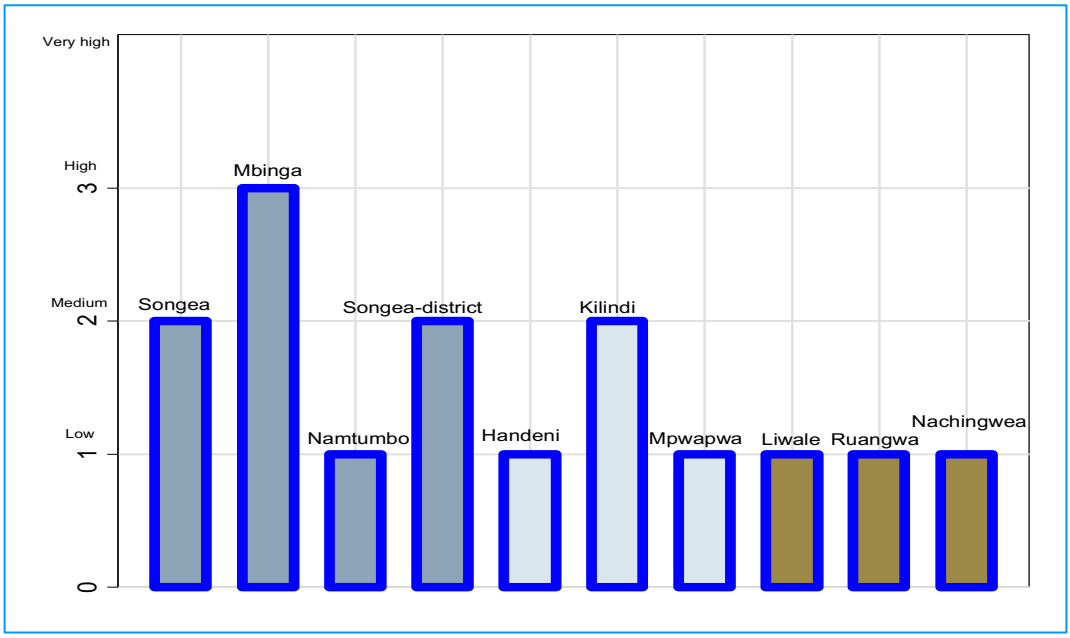

***Figure 19**: Subjective overall score of the value addition of the forest products*

3.3.3.1 Value addition for NTFPs

Value addition of forest products were noted to be commonly done for NTFPs like baobab, tamarind, honey and weaving materials (Ukindu). Value addition for NTFPs is common practiced in baobab, tamarind and honey. Tamarind and baobab are either packed for into bags and transported to urban markets. However, some of these products are sold to local food vendors who further process into juice and ice cream, packed and sold locally in

restaurants and other places like in bus stops and stands, *boda-boda* stages and/or through itinerant traders.

As for honey value addition includes processing and packing into various assortment of containers. The common packages are of improvised types that ranges from rudimentary items like used bottles of water and other liquors. More advanced packing uses specialised honey packing containers that are full labelled, though this is limited to a few dealers especially in town centres and district headquarters.

In general value addition is rarely done by primary producers, the entire process has been left to secondary producers/processors to determine how best they can add the value of the products to meet the market demand. The market competition is a driving factor for value addition, traders are forced to package and brand their products to attract customers as well as a means for promotion of products.

On top of that, the selling of Non-Timber Forest Products such as baobab and to a smaller extent honey is prominent in villages around Mpwapwa, although value addition is minimal despite the potential. In Mpwapwa, despite wide use of charcoal, there were no formal selling centres, with charcoal sold informally from bicycle vendors.

3.3.3.2 Value addition for timber

The value addition process in timber products relates to processing of saw logs to slippers (Plate 1) and cants that are either imported to last destination or further processed to small sized timber in various assortment before been shipped to ultimate processers. Across the cluster there were a number of artisanal works especially joinery and carpentry. These micro processing facilities were the leading value addition points that convert timber to various furniture across the clusters. Prominent processing and sales centre are like Mkata in the Tanga cluster, Liwale and Nachingwea Districts in the Lindi cluster. These furniture marts are specialised at crafting products that are shipped to Dar es Salaam market.

***Plate 1**: Semi-processing of logs in Liwale district*

There was variation of the extent of value addition in the respective clusters as well as communities' engagement in the value chain. The profiling of individual districts in the clusters indicated that to some extent communities were engaged in the value addition to produce different wood products. For example, in Songea district (Liweta), the communities engaged in the production of doors, windows, armchairs and sofa sets supported by the FORVAC. The same was reported in Nyasa (Lipikongat) and Mbinga (Kidimba), although the situation was not the same in Namtumbo (Limamu).

In Tanga cluster, especially in Kilindi, forest products are sold semi-finished, which is a medium level of value addition. In Lindi, the value addition and value chain of the forest products were reported to be low, indicating the foregone opportunity to improve the community livelihoods. Mainly the value addition involved furniture production such as doors, windows and beds.

Charcoal processors have been using fixed weight package bags (50 kg), there have been designated sales point in some districts. The sales points serve as a market place for charcoal dealers in the village and it the place where large scale customers come to buy their supplies that are further transported to urban areas and major cities like Dar es Salaam.

3.3.3.3 Income from forest products

The experts consulted included District Forest Managers (DFMs) and District Forest Officers (DFOs) in cluster districts indicated that most traded forest products were charcoal, timber and fuelwood. The estimate amount of income generated by the government in terms of taxes and dues (Table 24) indicate huge contribution from timber and charcoal.

Table 24: *Income and quantities of products sold in cluster districts*

Ruvuma	**Tanga**			**Lindi**	
Mbinga	Handeni	Kilindi	Mpwapwa	Liwale	Ruangwa
- 855 bags charcoal, - 72.5m^3 fuelwood	- 3.5 M TZS from charcoal, timber & fuelwood	- 39.6 M TZS charcoal, - 43.7 M TZS timber, - 138,000 TZS fuelwood	- 19.8 M TZS charcoal, - 4.3 M TZS baobab.	- 3750 m^3 timber	- 1981 m^3 timber

There is, however, little contribution from non-timber products. In the government perspective, timber is lucrative in bringing royalties, usually traded with big investment business people. Local communities, usually with low investments may not be successful in direct benefit with timber business requiring big investments. Therefore, training and marketing on NTFPs may be useful to majority of low-income community members to benefit directly from the forest products. Especially important in the districts with low forest cover, such as Mpwapwa, but with potential for beekeeping and other NTFPs like wild fruits including baobab pods.

3.3.4 Rapid Forest Resources Assessment

3.3.4.1 State of forest condition

The forest conditions in all sampled forests indicated a promising value in terms of available tree species for commercial logging (Table 25). Extrapolation of the trees for the entire VLRF was made based on the information translated from the transects. There is high number of harvestable trees of medium sizes compared to the large trees. This can be explained by normal growth trajectories of the tree species in one hand and other historical trends in the past which relates to the harvesting and/or recruitment patterns.

In order to have a well sustainable harvesting regimes, it is more likely that some forests will not have to harvest large trees in the next five years due to limited number of stocks. For instance, Gole, Honel and Nahimba are shown to be deprived of available forest stocks for immediate harvest of large trees. It is therefore, advised that the FORVAC program will have to manage expectations from the communities and focus on other interventions apart from logging of large trees. Availability of medium sized tree stocks for harvesting is promising to all sampled forests. In the next five years, it is expected that each of the sampled forest will have a certain amount to harvest ranging from about 200 to more than 15,000 trees.

Harvesting plans were lacking in most forests, while in others like in Lindi cluster some of them were in their final years hence requiring reviews. Among the noted concern was that harvesting heavily relying on the number of trees instead of considering the species to be harvested. This might have led to the overexploitation of certain species compared to others that are within the harvesting projections. On part this is contributed by non-adherence to the complete instructions of the harvesting plan due to poor enforcement and also contributed by traders who insists in particular species. It is therefore, important to strengthen the capacity of the VNRC to manage and withstand pressure in order to adhere to agreed harvesting plans.

***Table 25**: Harvestable tree in the sampled forests in the study area*

Estimates of trees for harvesting	**VLFRs**							
	Angai	**Barikiwa**	**Gole**	**Honela**	**Lilindindo**	**Lupagalo**	**Nahimba**	**Namswea**
Number of Transects	1	1	1	1	2	2	1	4
Transect Straight Length (km)	2	2	2	2	4	4	2	8
Transect width (m)	10	10	10	10	10	10	10	10
Transect area (ha)	2	2	2	2	4	4	2	8
Forest Area (ha)	8691.1	17,903	7,229.58	3,571.52	26,916.4	5,262	1,816.56	23,046
Basic Multiplier (forest area/transect length)	4,346	8,952	3,615	1,786	6,729	1,316	908	2,881
Number of small trees (not harvestable) in transect area	48	34	44	51	189	186	89	326
Number of medium trees (harvestable) in transect area	92	57	35	33	281	330	96	456
Number of big trees (harvestable) in transect area	54	17	9	6	32	30	4	19
Total Number of medium trees (harvestable) in the VLFR	8,344	6,422	2,706	1,418	77,198	17,278	3,257	57,208
Total Number of big trees (harvestable) in the VLFR	3,466	1,387	0	0	2,375	520	0	623
Annual take for medium trees for 5 years in the VLFR	1,669	1,284	541	284	15,440	3,456	651	11,442
Annual take for big trees for 5 years in the VLFR	693	277	0	0	475	104	0	125

The forest vegetation throughout the sampled forests are Miombo woodlands, with the common species used mainly for timber and charcoal production (Table 26). Species details, their distribution and geo-location of the tree plots are summarized in *Annex II*.

***Table 26**: Common tree species for timber and charcoal in the study area*

Local name	Scientific name	Main use
Mkongo/Mbamba kofi	*Afzelia quanzensis*	Timber
Msufi pori/Mfomasia	*Bombax rhodognaphalon*	Timber
Myombo/Mhuga	*Brachystegia boehmii*	Timber & charcoal
Mgeregere	*Brachystegia bussei*	Timber & charcoal
Mkukwe/Ngomboto	*Brachystegia longifolia*	Timber & charcoal
Mtundu/mtondolomtondo	*Brachystegia spiciformis*	Timber & charcoal
Mkalati/Mjembe	*Burkea africana*	Timber
Mlaliyu (Mhulyaliu)	*Combretum collium*	Timber & charcoal
Mpingo	*Dalbegia melanoxylon*	Timber & charcoal
Mgunga	*Dalbergia boehmii*	Timber & charcoal
Mchenga	*Julbenardia globiflora*	Timber & charcoal
Mpande	*Milletia stuhulmanii*	Timber
Muwanga/Mpuga	*Pericopsis angolensis*	Timber & charcoal
Mneke/mwengele	*Pteleopsis africana*	Timber & charcoal
Mninga	*Pterocarcus angolensis*	Timber
Mninga maji	*Pterocarpus tinctorus*	Timber
Mmbalamwezi/muhumbete	*Sterculia quinqueloba*	Timber
Mnjekele/mkuchimbi	Swartzia madagascariensis	Timber
Mchuyo	*Terminalia sericea*	Timber & charcoal
Muwati	*Acacia mearnsii*	Charcoal
Msasa	*Acacia mellifera*	Charcoal
Mkambala	*Acacia nigrescens*	Charcoal
Mkwangwa	*Acacia polyacantha*	Charcoal
Mkongowe	*Acacia robusta*	Charcoal
Mchonda	*Acacia xanthophloea*	Charcoal
Unknown	*Combretum fragrans*	Charcoal
Mlama	*Combretum molle*	Charcoal
Nkakala	*Diospyros kirkii*	Charcoal
Mpugupugu/mng'ebe	*Markhamia obtusifolia*	Charcoal
Mkagati	*Monotes africana*	Charcoal
Mbuni	*Parinari curateiiifolia*	Charcoal
Msegese/mkomba	*Piliostigma thonningii*	Charcoal
Msolo	*Pseudolachnostylis maprouneifolia*	Charcoal

3.3.4.2 Disturbance of forest resources

During transect walk in the survey transect, several disturbances were noted, both recently and historical. The clear incidences of disturbances were the wildfire that emanate from nearby farms, farming activities inside the forests, signs of livestock grazing and illegal cuts of trees and poles. The patterns of tree cuts observed does not suggest a well-designed harvesting but rather an illegal off-takes.

Our observations using Google Eye in the sampled transects clearly picked up some of the disturbances such as cultivation but could not for the others such as grazing and illegal tree cuts due to size and nature of the disturbances.

While grazing and illegal tree cuts are done not on regular basis through hide, the cultivation within forests have been found to be widespread and remain a matter to resolve related to land use plans and forest boundaries (Fig. 20 and 21). A number of forests were found to have challenges related to disputes in forest boundaries. It is important during the interventions by the FORVAC program and other stakeholders to ensure that the issues related to boundary disputes are addressed which is the source to some of the detrimental disturbances such as wildfire and cultivation which affects integrity of forest ecosystems.

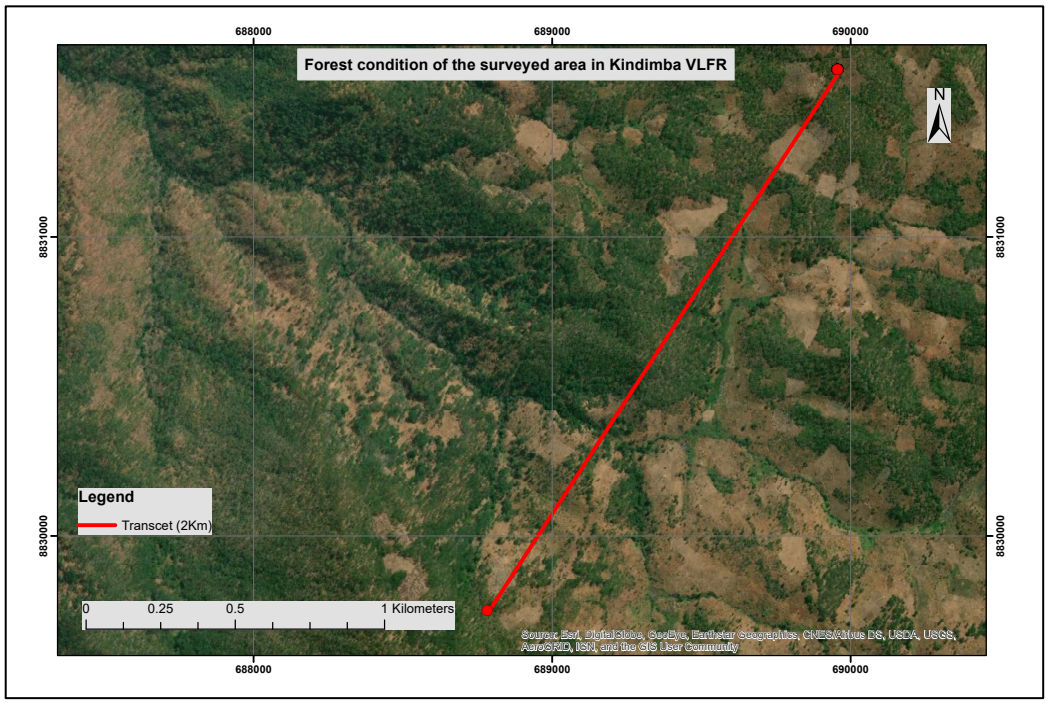

***Figure 20**: Encroachment for farming in Kindimba VLFR*

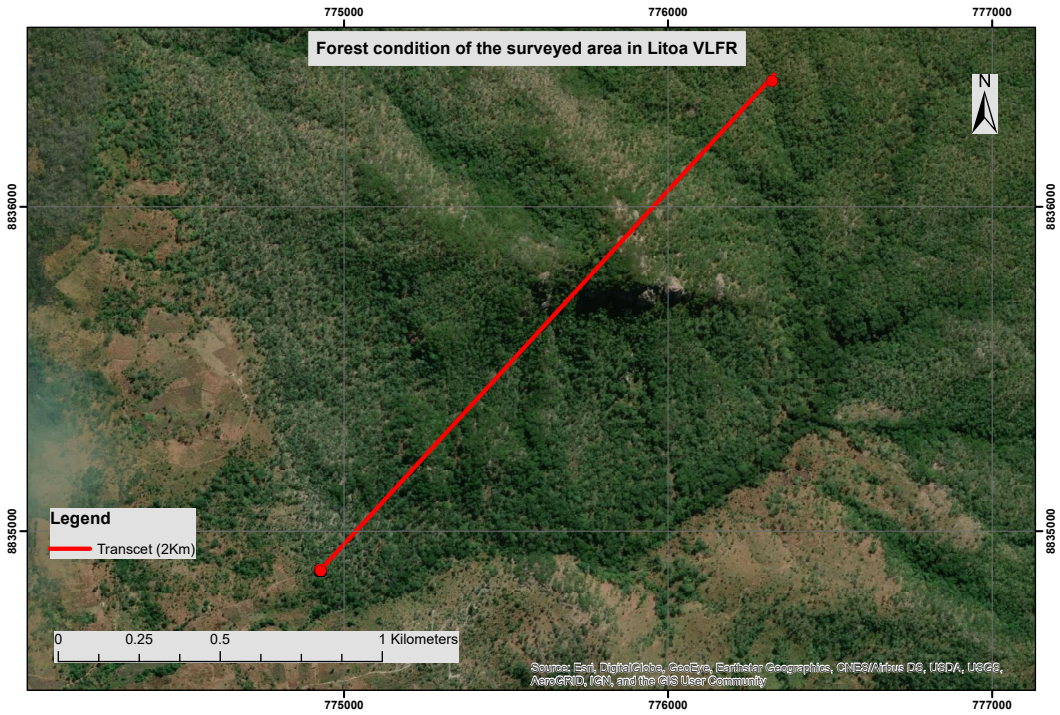

***Figure 21**: Intact forest vegetation at Litoa VLRF*

4.0 SYNTHESIS OF THE BASELINE INFORMATION

4.1 Socio-economic status of the programme areas

4.1.1 Household income derived from forests

Forest-based self-employment account for 9% of the respondents (Table 4) in the FORVAC clusters. This estimate by inference include all sorts of activities that offer livelihoods to the communities. This study finding is consistent with the recent estimate by the government that 5.5 million people which is equivalents to 9.3% of population in Tanzania[2] depends directly on natural resources.

Overall, income from forest-based enterprises accounts for 17.5% of the household income which is equivalent to 45,854 TZS (Table 13). Key products being firewood, medicine and wild vegetables and fruits which accounts for 79.5% (Table 11) of the forest-based enterprises that households are involved. Most of these forest produces are traded locally or within very short distances from their sources. Therefore, improving access and technology to the harvesting and processing of forest products might be a way to increase the number of people deriving income from the source but also increase the income due to value addition. Hence, it is imperative that this sizeable percentage of population will improve their income once conditions become more helpful.

Key indicators: *Increase of contribution of forest-based employment, which as of current stands at 9%; increase in percentage of household income from forest-based enterprises, which now stands at 17.5%, and at 45,854 TZS.*

4.1.2 Improved social services for villages

Access and availability of social services in the FORVAC clusters is relatively appealing. Most of the facilities are found within the reach of maximum of 1.8 hours (Table 13). The distance to the social services can also be explained by the nature of rural villages in Tanzania where houses as widely dispersed in the landscape.

Respondents indicated that the qualities of the social services are good in terms of adequacy in numbers and quality of structures and affordability (Fig. 16). Most of these facilities are state-owned, hence the costs involved are relatively fair. Health and education facilities were

[2] Budgetary speech by Minister for Natural Resources and Tourism for the 2020/2021 budget.

found to be available in almost of study villages; hence the distance involved depends on the location households in respective sub-villages. However, the level of improvement in all social services is necessary as pointed out during FGD and Key Informant Interviews which revealed ongoing efforts in construction and rehabilitation of the facilities, including dispensaries, schools, water services and government offices.

Key indicators: *Decrease in walking distance to reach socio-services from the current value of 1.21 hrs for water points, 1.2.1 for renewable energy sources and 1.81 hrs for national grid; number of dispensary, schools and office facilities constructed and/or rehabilitated*[3].

4.2 Forest Value Chains, its management and livelihoods

4.2.1 Increased number of dealers of forest produce

About 50% of the respondents indicated to be active members of forest-based organizations (Fig. 8). The engagement includes producers, processors and traders, though this might not necessarily involve formally registered organizations, but rather a loose association.

Fuelwood and NTFP (medicine, vegetables and indigenous fruits) were found to be the major sources of income from forest-based enterprises at household level (Table 11 and 13). Timber and charcoal production occupy low profile (Table 9), which is explained by the nature of the goods, capital involvement, speciality in skills, and labour involved.

In order to increase the number of dealers in high value forest products like timber, beekeeping and charcoal production, a targeted capacity building is required. This may include the technical knowledge of the production/harvesting and processing and initial capital investment cost. Throughout the rural area in the FORVAC clusters, it was evident that there is high potential of the forest-based enterprises but little capacity by the community's members and groups. A number of trainings were mentioned to have been conducted to the community members (Table 16), but this does not translate to the improved commercialization of the forest enterprises.

Key indicators: *Increase in number of groups formally registered for forest-based enterprises per village, which as of current stands at zero; establishment of umbrella association at district level for forest-based enterprises, which as of current non-existent in the study site.*

[3] It is assumed that there is less likelihood of new construction of the facilities but rather construction in terms of expansions and/or rehabilitation of some facilities.

4.2.2 Social fund distribution from forest produce sales

In villages where forest resources are plenty and have managed to put in place mechanism for harvesting of forest products, they enjoy revenue collection. Sales of logs, timber, charcoal, fuelwood and NWFP have increased the revenue of the villages. However, a good number of the target FORVAC villages have not yet reached the stage of production. About 41.8% of respondents indicated to be aware of the contribution of forest-based enterprises in supporting community social works in terms of material and monetary aspects (Fig. 12).

Revenue from forest produce harvested from Village Land Forest Reserves have been used in multiple purposes including improvement of social services. The magnitude of the revenue and their planned used differ from one village to another depending on the need and community agreement (Table 27).

Table 27: *Examples of uses of forest revenue for community work*

Village	District	Estimated earnings from forest (TZS)	Forest fund uses
Nandeje	Ruangwa	Slipper and timber (40M)	To build office and VEO house
Likombola	Liwale	Timber (200M)	3 motorcycles, 3 bicycles, village office and properties, school toilet, office toilet, secondary and food contributions to students, loans to family members, next to buy tractor under negotiations.
Ngongowele	Liwale	Timber (400M)	Office, solar power, motorcycle, water mortar machine, 2 classrooms, maternity ward
Nangano	Liwale	Timber (80M)	VEO house, classroom, health centre, secondary and godown
Kibutuka	Liwala	Timber (60M)	Motorcycle, village market Centre, health Centre, bicycle,
Mtawatawa	Liwale	Timber (239M)	Tractor, 3 motorcycles, VEO's house, one classroom, village water centre, office, toilets, Health centre toilet, health Centre maintenance service, fund for ward health Centre, ward secondary school, temporary employment of a teacher
Mikunya	Liwale	Timber (100M)	Office, village toilet, VEO house, water centre, classroom, solar power, motorcycle, 4 bicycles, cupboard for storing medicine,

Key indicators: *Amount of funds invested in social distributions from forest produce with minimum of zero to those which have not yet started*; *Increase in number of villages implementing social fund distribution with a current baseline of 40%*[4].

4.2.3 Adherence to harvesting plans of forest produce

FORVAC clusters contain a number of forests with a total of more than 363,936 ha, with size ranging between 357 ha and 26,916.4 ha. These forests are in different stages in relation to logging activities; with some practicing and other not. Of the sampled villages, out of 20 villages only 8 have harvesting plans especially in Liwale, Nachingwea and Ruangwa; while Tanga cluster has zero harvesting plan with lots of boundary conflicts among villages that share forest resources.

A number of forests are not yet in the harvesting stage due to inadequacy in fulfilment of the requirements including lack of management plans, harvesting plans and incomplete application of the gazettement. In other villages, there is not yet village land use plans that could have officially set aside forestland for production and protection purposes. In absence of management plan and harvesting plan, it is therefore, difficult to assess the adherence to Annual Allowable Cut (AAC) as it doesn't exist.

Essentially, planning for forest harvesting is a multi-tiered process often comprising three levels (Fig. 22). These levels are: long-term planning, operational planning, and task planning. Long-term or strategic plans are broad-scale advanced plans that are based primarily on available information. They serve as a guide for future activities in all operations. Operational plans are developed for each individual harvest area, based mainly onsite inspections. Maps of the harvesting block (coupe), showing a detailed plan of the activities to occur, form the main elements of the operational plan. Task planning is undertaken by the harvesting company and describes responsibilities of staff and how work is to be carried out. It is appropriate that task plans be prepared after the operational plan has been developed.

[4] Eight villages out of 20 that were covered by baseline survey. Information from DFO on this matter was very scant.

[4] http://www.fao.org/3/ac142e/ac142e09.htm.

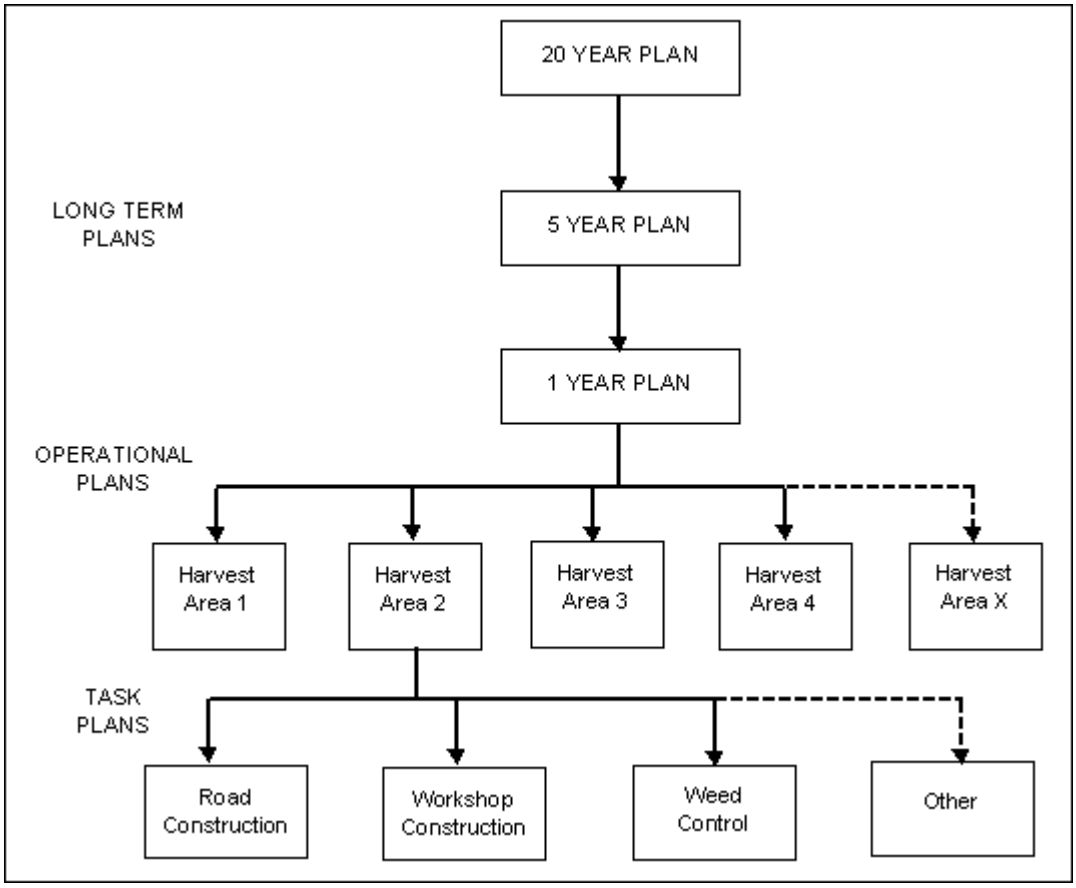

***Figure 22**: Planning System Structure*

Sample survey in selected forests through Rapid Forest Resources Assessment and discussion with Key Informants indicated that adherence to harvesting plan is in mixed state. One of the major shortcomings being that adherence is done on volume of harvest but does not consider the species involved; which in turn lead to overharvesting of certain types of species.

Key indicators: *Increase in number of forests with management plan, which as of current it stands at 28; Increase in number of forests with harvesting plan, which as of current stands at 28.*

4.3 Private sector involvement in the forest sector

4.3.1 Beekeeping and other NTFP/NWFP

The number of households involved in beekeeping is seemingly low. This suggests that deliberate efforts are need to promote beekeeping in the study area. Wild vegetables and fruits as well as medicine engage more respondents in the study area. The beekeeping activities have been highlighted by several authors to be cardinal in supporting conservation. Beekeeping provides local people and the government economic incentives for the protection

of natural habitats and is a useful activity in any forest conservation initiatives (Agera, 2011; Lalika, 2008).

Bees are important pollinators and many ecosystems depend on the pollination by bees thus increasing the genetic diversity through cross pollination (FAO, 2007). Beekeeping has been used as a useful approach in management of forests in areas where beekeepers put their beehives avoid bush fires and sometimes take initiatives to guide to ensure safety for their apiaries and this discourages illegal logging or cutting poles. Additionally, in apiaries people avoid doing activities or passing in fear of being stung by bees. Therefore, where there is an apiary, forest resources are conserved (Lusambo and Mbeyale, 2016).

Key indicators: *Increase in percent of households engaged in beekeeping activities, which as of current it stands at 4.7%; and only 2.9% of respondents have invested in bee apiary.*

4.3.2 Efficiency of timber processing

Timber processing is very infantry in the FORVAC clusters. Out of 20 villages surveyed only one village had two (mobile circular saw mills; Plate 2) processing plants in terms of large sawmills. About 9% of the respondents have indicated to have attended short courses and seminars in forest product processing, which may translate in the products improvement.

In absence of adequate investment in the processing of wood products, most of the timber is sold as either raw or semi-processed, hence leaving very small share at village level.

***Plate 2**: Mobile sawmill in Ngongowele village, Liwale district*

Key indicators: *Increase in number of timber processing sawmills; increase in number of people trained in timber processing;*

4.3.3 Number of private business actors engaged in legal timber processing

It is envisaged that FORVAC programme will increase involvement of households in timber value chain. Currently, just 34 respondents (equivalent to 5% of respondents) were actively employed in timber value chain activities (timber processing).

It is important to consider improving conditions and business environment in the villages to allow people invest in timber processing facilities that in turn will enable utilization of local labours and hence provide employment to youth.

Key indicators: *Increase in proportion (percentage) of respondents involved in timber processing activities.*

4.3.4 Increased employment in timber value chain

Value chains encompass all of the factors of production including land, labour, capital, technology, and inputs as well as all economic activities including input supply, production, transformation, handling, transport, marketing, and distribution necessary to create, sell, and deliver a product to a certain destination (Tchale and Keyser, 2010). Arguably, many households are involved/employed in value chain analysis in the study area. Nonetheless, the available evidence from this study indicate that 67 respondents reported to be involved in timber-related activities (which translates to 11% of respondents).

Special interest for the FORVAC should be to seek ways to engage youth in carpentry and other related skills through vocational training. This could allow value addition of the wood products but also increase youth employment at village level.

Key indicators: *Increase in proportion (percentage)of respondents involved in timber value chain activities, against the baseline of 11%.*

4.3.5 Total income from charcoal sales within FORVAC VLFR's

Available evidence suggests that income from charcoal sales within FORVAC VLFR's constitutes small proportion of total household income (only 2.2%) and approximately 12% of forest-bases household income.

The charcoal business conducted in the respective villages of the FORVAC villages constitute mostly of informal sector hence bulk of the consignment could not be traced in the revenue books of the respective villages and districts. However, a range of 3.5 to 39.6 million TZS of charcoal per annum was estimated for the revenue specifically from charcoal that were managed to be documented.

Emerging new methods of charcoal transportation using motorbikes and bicycles from producing villages to nearby urban and peri-urban areas have made it difficult for capturing the true figures of production and as well has led to the loss of revenue by village and district government through tax aversion.

Formalization of charcoal business through improvement of value chain from production, transportation and marketing should be emphasized by the FORVAC program. In as much as

charcoal is negatively perceived, then there is likelihood that key players in the business will tend to shy away from formal procedures. It is therefore, important that FORVAC program take lead to ensure formalization of the business, which will ensure best practices in harvesting, acquisition of right permits and payment of government dues as appropriate.

Key indicators: *Number of charcoal dealers/business groups established and formalized, as of current there is none; improve revenue from charcoal sales and permits from VLFRs, from a minimum of 3.5 M TZS;*

4.3.6 Households assets endowment in the study area

During data collection, *household assets* were used as *proxy* for household wealth. Both *animate* (*cattle, goats, sheep, and donkeys*) and *inanimate* assets (*motor cars, bicycles, motor cycles, wheel barrows, ox-driven carts and sprayers*) were recorded for each respondent household and these reflected *the wealth status* of a respective household.

Key indicators: *Increased percentage of respondents with both animate and inanimate assets. Current percentages for livestock, motorcycles, bicycles, bee apiary and pesticide sprayers are: 65%, 17%, 49%, 3%, and 19% respectively.*

4.3.7 Reduction in annual illegal forest harvesting cases in FORVAC supported forests

Illegal harvesting of forest produce specifically timber was reported by 17.9% of respondents (Table 14). It was further noted that there was widespread of local artisans involved in carpentry in almost all villages include those which do not have legal harvesting schemes. This provided a clear indicator of existing illegal harvesting of timber from nearby forests, but this information was not availed on records.

Alongside illegal harvesting, it was noted that disturbances to the adjacent forests were contributed by encroachment by other uses including wildfire, grazing, farming, and settlement (Table 14). During RFRA exercise, we noted signs of illegal tree cuts including sizeable levels for timber and poles. Examination of the cut stumps indicated that some of the cuts were old and others newly cuts (*approximately less than 4 years old*). Information obtained through FGD corroborated with the HHs and RFRA, but less explanation was provided, seemingly due to the sensitivity of the matter.

Key indicators: *Reduction in the reported incidences of illegal logging*; *increase in satisfaction of level of forest management from a current baseline of 4.7%*

4.3.8 Households' dependency on biomass/wood fuel

Households' dependency on wood fuel as a source of energy in the study area is overwhelming. Empirical evidence suggests the energy-stacking model, suggesting that while efforts to avail other sources of fuels alternative to wood fuel to the population in the study area are highly recommended; existing sources of fuel should concurrently be increased and used more efficiently. The support towards the energy stacking model coupled with high household dependency on wood fuel, is sufficient evidence that biomass fuel in general and wood fuel in particular will remain the major - and in many cases the only – source of household cooking and/or heating fuel. It is reasonably plausible to argue that since (according to the findings of this study) at any point in time a household will use a fuel mix, efforts targeted at reducing pressure on natural forests should explicitly aim at reducing the share of wood fuel in household total fuel mix. It is also evident that solar energy is increasingly becoming a main source of energy for lighting.

Lusambo (2009) suggested possible instruments for alleviating household fuel-related environmental problems: albeit both firewood and charcoal have revealed inelastic demands, charcoal appears to be relatively more elastic: own-price elasticity of demand for firewood and charcoal are, respectively, –0.177 and –0.878. This suggests that if the price of charcoal is raised, its consumption will significantly decrease. The implication of this finding is that charcoal (which causes the most of wood fuel-based deforestation) can be controlled using economic instruments. Amsberg (1998) argued in support of the use of economic instruments in the reduction of deforestation: "in theory, economic instruments should overcome the market failures that lead to excessive deforestation". Panayotou (1994) concisely defined the concept *economic instruments*: "an instrument that strives to induce a change in behaviour of an economic agent by internalising environmental or depletion cost through change in the incentive structure that the agent faces (rather than mandating a standard or a technology) qualifies as an economic instrument". The author (ibid) argued further that economic instruments can be grouped into seven categories*:* property rights, market creation, fiscal instruments, charge systems, financial instruments, liability instruments; and performance bonds and deposit refund systems.

In the context of this study, the plausible economic instruments that can be applied with a view to reduce wood fuel consumption and its consequent pressure on the natural forests are:

(a) *fiscal instrument*: taxing charcoal production to reflect its deleterious environmental consequences would imply raising is price to the ultimate consumers and thus reducing its demand (as highlighted in the previous paragraph). Nevertheless, this strategy is more appropriate in a situation where there are adequate and affordable alternative sources of fuels — a situation which is inapplicable to the study area. Adopting this strategy in the study area would mean exacerbating the current high-level *fuel poverty*;

(b) *financial instruments*: i.e. incentives and subsidies. If various incentive systems are devised to reward all those striving to improve household energy services e.g. providing wood fuel efficient consumption technologies, there might be a positive impact on dissemination of the respective technologies and possibly their adoption rate. As for subsidies, caution should be taken not to subsidise the unit consumption costs – because it is practically unsustainable, and in most cases infeasible. Empirical evidence from this study has indicated for instance that those households with access to electricity have a smaller share of wood fuel in their total energy than their counterparts who have no access to electricity. This suggests that subsidising the upfront costs of household electricity connections may increase the number of households accessing electricity (if electricity is available in that particular location) and consequently increase the wood fuel saving. The challenge of reducing day-to-day electricity (as applies to other fuels) is partly in the hands of the consumers, and could be addressed through two main routes (preferably undertaken simultaneously): applying energy consumption *curtailing behaviour* and adoption of efficient energy consumption technologies;

(c) *charge systems*: Tanzania already has a number of legal charges (fines) for various environment-related offences. Overall, the weakness of the existing Tanzanian charge systems, can be considered to exist in two areas. *First*, the penalties (charges) associated with various offences are disproportionately low, with the consequence that offenders are of the

attitude “it is worth the risk” as they are able to afford the fines if they are caught. The penalties need to be reviewed and accordingly adjusted to reflect the forests’ total economic value under destruction. Second, there is poor enforcement of the existing environmental policies and laws – partly due to inadequate resources (financial and human) and corruption among the government forest officials. Field experience indicates that corruption is a serious bottleneck to sustainable natural resource management in general and forest management in particular. If the utilisation of improved charcoal making technology is made mandatory countrywide and a compliance penalty devised and enforced accordingly, devoid of corruption, then positive sizeable environmental benefits could be realised;

(d) *property rights*: unless there are explicit and secure property rights in place, forest destruction will continue. Field experience in the study area revealed that property rights for forests in Tanzania are ill-defined with perilous consequences: when the communities are given use rights and ownership rights are vested somewhere else, the outcome is that community sees no incentive for them to care about sustainable stewardship of their surrounding forest resources.

Key indicators: *Decrease in percentage of those using firewood and charcoal, as of current, approximately 68.9% and 25.8% of respondents use firewood and charcoal respectively for cooking; increase in the percentage of respondents using improved energy for lighting, as of currently 13.7% and 8.8% use firewood and candle respectively; increase in number of people having access to electricity for lighting and charging which as of now stands at 2%.*

4.3.9 Reduced household income poverty in FORVAC supported areas

Empirical evidence suggests that the majority of households in the study areas are, by the considered standards, poor. Different relative poverty thresholds were used to analyse the poverty situation in the study area – in order to appreciate how subjective is the whole process of defining and quantifying the poor people. Apparently, the relative poverty thresholds using mean income were relatively higher than their counterpart thresholds using median income and consequently led to higher head counts of poor people (poverty incidence). The present study adopted 50% of the median per-capita household income as relative poverty line, and accordingly, poverty situation in the study area is relatively high (overall: 33.2%, Ruvuma cluster: 33.5%, Lindi cluster, 28.1% and Tanga cluster: 23.3%).

Key indicators*: Reduction of relative income poverty in the study area, currently approximately 33% of the respondents in the study area are income-poor.*

5.0 FORVAC RESULTS FRAMEWORK WITH BASELINES

The FORVAC Results Framework (FRF) provides the overall pathways to link activities and expected outcomes of the project. The ultimate goal of the FRF is therefore intended to guide the implementation of the FORVAC program by taking into accounts the current state of the indicators and ensure their improvement at the lifetime of the project. However, during the launch of the project, some of the indicators of the FRF were either missing or need fine-tuning, and to this effect the Baseline Survey was designed.

The information collected during Baseline Survey have been used to improve the FRF especially filling the gaps of the data that were previous non-existent at the start of the FORVAC project. A complete revised FRF is attached to this report as *Annex III*. The FRF indicators alongside additional indicators as extensively explained in *Chapter 4 on the Synthesis of the Baseline Information* will provide the FORVAC project a wide bird view of the needs and situation of the ground.

It is important to note that depending on the prevailing facts on the ground, the FORVAC project at some point will need to assess whether the targets earmarked captures adequately the dynamics of the communities.

The tools used for the collection of data in the Baseline Survey such as the KoBo Toolbox will remain available for the FORVAC project to have a pinpoint follow up of its sampled population. Same households can be traced through georeferenced locations for future assessments of the targets in order to make adequate comparisons.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The current baseline study has unveiled the status of socio-economic profile of the livelihoods of communities living in areas where the FORVAC program operate. It further highlights the issues pertaining to management, resources use and business enterprises related to forest sector. The major conclusions of the study include the following;

6.1.1 Constraints for value addition

One of most impending issue on values addition is the market that is full of middlemen who controls the prices and affect the demand and supply. This interferes the value chain rendering consequential impacts on value addition, simply because primary producers consider the whole business as unlucrative and ignore investing their time and material in adding value to their products.

For example, in charcoal processing middlemen acquires funds in their name from wholesalers, quickly liaise with processors/producers demanding to be supplied with certain amount of merchandise at a specific price. They make advance payment to the processors and sometimes supplies them with other upkeep supply like food stuff and other commodities that will be needed in the course of making up the merchandise. In doing so they completely obscure the interaction between the producer and the buyer, while determining the prices at both ends as well as the quantity of products that flows into the market. Moreover, middlemen are also present at the market or point of sale. The middlemen own the sales stages and spaces (Vijiwe), whoever coming in the market will have to leave his/her merchandise to their sales spaces in return they charge commission for the service they coercively offered.

6.1.2 Absence of harvesting plans

Most of the reserved forests, be it Central government, LGA and /or Village Land Forest Reserves have no harvesting plans. Harvesting is more of haphazard and unpredictable; the consequences of having no harvesting plans leads to unsustainable harvesting. In unsustainable harvesting, resource extraction does not consider what should be left for future recruitment. All resource that are in demand are removed/harvested resulting into over-

exploitation of resources and logging in unsuitable areas or inappropriate tree size or inappropriate quantity of produces. Since the products are acquired without proper guidance as would have been stipulated in the harvesting plan, then accelerated harvesting does not adhere to the principal of sustainable forest.

6.1.3 Limited processing skills- ineffective use of resources

The entire value chain in forest produce is facing limited skills that leads to ineffective use of resources. For examples, logging segment alone have a lot of incompetence like tree felling techniques, scaling, selection of proper trees and etc. This state of affair accounts to a lot of post harvesting loss in term of log damage, and unnecessary off cuts. The same can be experienced to secondary processors in the joinery and carpentry segment, where a lot of timber is lost because of limited joinery skills. A lot of carpenters will not use a piece of wood that have 1 m or less, they prefer full piece of wood i.e., 8 – 10 feet which are hard to find in the forest today. The trend goes on to NTFPs as well, inferior processing that makes the product looks shabby are a common place to most producers and packers.

6.1.4 Limited capital

Lack of operational capital is a common problem to most entrepreneurs across the study area. Investment in forest value chain requires injection of considerable capital depending on the entry point. The capital is needed for procurement of material, skilled labour and technology. Entry into forest value chain without proper capital results into poor efficiency. Technologies can be acquired either from the local market and/or importation depending on the scale of investment and complexity of the enterprise. The issues of capital come as money is need to acquire these technologies (i.e., purchase of machines and training on skills for operating the technology).

Since, majority of the primary producers in the forest sector are at the level of SMEs; the role of micro-finance institutions in leveraging capital is very important. Oftentimes financial resources become limited and access to both MFIs and FIs is also difficult because of the term for loans are unfriendly to SMEs.

6.1.5 Fees and levy

There have been complaints from forest-based entrepreneurs on the statutory requirements and dues that are imposed by the government. There are so many fees and levy imposed starting from the village – to – district- to-national level that should be paid. These fees increase the costs for running business. Furthermore, each business segment in the value chain is charged fee separately. For example, there is fee for logging, saw milling, running a timber yard, running a secondary or tertiary processing facility like carpentry. All of the fees culminate into huge fees that discourage further investment in forest value chain because the ultimate product will be sold at a relatively higher price making it uncompetitive in the market. Apart from the fees, there have been a lot of check points along the way hiking the transportation costs and delay delivery of products to the market and/or processing facilities.

6.1.6 Illegal harvesting

Forest illegalities were found to be a common practice in most of the study area. This is partly contributed by the limited human resources to man the forest and petty perversions at village level. Products acquired illegally are hardly processed properly because of the rush to wade away from the law enforcement organs. In most cases, logs will be converted to cants/slippers or sawn into timber using chainsaw in the vicinity of harvesting sites before been shipped away to their final destination. Sawing using chainsaw is associated with a lot of wood loss because of the large kerf created by the chainsaw blade. Presence of illegal harvest discourages other legal operators from adding values on products because they consider it as a costly undertaking whenever they factor in the cost of acquiring raw materials from the forest.

6.2 Recommendations

The potentials exist to improve the current situation on forest value chains and livelihoods of the forest-adjacent communities.

6.2.1 Improve value addition

There are plenty of forest produces in the forest that can be sustainably extracted. These resources provide opportunity for forest fringe communities to move away from raw to value added products. The marginal value added from these easily accessible products by the

communities can be accrued directly to the individual households, respective village governments and various actors in the value chain. This present a unique opportunity for entrepreneurs to acquire these products as per existing regulations. Availability of materials facilities value addition to stimulate competition and promotion in order to win the market. Each processor or producer has to define his/her market niche and add values to meet the expectation of the ultimate consumer.

6.2.2 Support available user and interest groups

During the survey, we noted plenty of forest user and interest groups that have been doing various activities in the forest. These activities range from conservation, extraction and processing. The support from various actors like FORVAC Programme offer the potential for these groups to participate and practice value addition for forest products. The communities and many other people beyond product sources directly use most of the forest products. For example, honey originating from the forest can be used for making alcohol and for local medical purposes in respective villages, but some of the honey is found in many markets in cities.

Awareness creation has been done a lot, what needs to be done for now is empowerment in term of training, start-up capital for some groups, access to reliable marketing and sustainable harvesting. This kind of assistance need amalgamation of efforts and resources from various actors both in the public and private sector. The government especially LGAs, FBD and TFS need to take a leading role in ensuring these groups are empowered. Presence of NGOs and Development programme like FORVAC offers a unique opportunity for successful empowerment of youth, women and vulnerable groups to engage in forest value chain.

6.2.3 Utilize marketing potential

The market for various forest product is readily available both in rural and urban areas. The demand for timber and non-timber forest products in the country is high; the issue is facilitation of easy access by rural based entrepreneurs/primary producers. In reality, what needed is value addition to fetch high prices and profitability. Business development skills especially in the forest sector have been offered quite a lot lately through support of various actors like MCDI, PFP, FORVAC Programme, TFCG/MJUMITA, WWF, IUCN, TNRF, among others. Various institutions and individuals who are developing and designing hands on tailor-

made courses for groups can do facilitation of such skills. This potential if properly explored the capacity for user groups to engage effectively in forest value chain.

6.2.4 Enhance commercialisation of NFTPs

The current trend on commercialisation of NTFPs has necessitated the need to add value on those products. NTFPs are no longer a household commodity but rather commercial products or merchandise that can be processed, packed, branded and marketed locally and globally. A good example of NTFPs commercialisation is bee products like honey and waxes, which are now plenty in grocery shops and super markets. Medicine extracted from the forest are now famous as people are looking for alternative medicine that is organic and affordable. Proper and hygienically processing with appropriate packaging and branding offers a room for value addition of forest products. Institutionally, the potential NTFPs can be identified and create strategies for commercialisation making sure that communities take part in the forest value chain by marketing of these NTFPs.

6.2.5 Extension services and education

As noted above on bullet (c), several organisations and actors in the private and public sector that have been rendering extension services and education on forest conservation and management including sustainable harvesting and value addition. Issues like proper selection of wood species, sawing, seasoning are of utmost importance in timber value addition. The use of lesser-known tree species should be encouraged beyond harvesting only famous species like Mninga. Switching to less known species of similar wood quality like Knobthorn (*Acacia nigrescens*) is considered important at the moment.

These efforts should go hand in hand with NTFPs to make sure no products are left behind. Marketing techniques will be an important part of the extension and training package. The extension service modules should be designed and developed enough to be used by the local extension agents, NGOs should link the aspect of sustainable forest management making sure local communities are central to the management and benefits from the forests. The extension modules should be site-specific (e.g. based on clusters) considering the competitive advantage of the localities such as potential resources, but also dynamic informed by the changing needs. The extension services may also take advantage of the technology such as mobile phone to solve challenges and inform local communities.

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ANNEXES

Annex I: Complete dataset of Household Questionnaire Survey for the baseline study. In xlsx file format

Annex II: Rapid Forest Resources Assessment datasets from all VLFR sampled in the study area. In MS word file format

Annex III: Revised FORVAC Results Framework. In MS word file format

Annex IV: Segregated Household data (gender, sex, cluster and age wise). In MS word file format.

Annex I: Dataset of Household Questionnaire Survey for the baseline study (complete dataset given in xlsx file format)

Region	District	Village	Name of Respondent	Gender	Age of F	Marital Status	Head of Household	Household size	Respondent's Occupation
Tanga	Mpwapwa	Chiseyu	Mary Jumbe	Female	27	Single	Female Headed Househo	Adults	Employed
Tanga	Mpwapwa	Chiseyu	Jemima Antony	Female	29	Divorced	Female Headed Househo	Adults Kids	Farmer
Tanga	Mpwapwa	Chiseyu	Adrian Lejale	Male	39	Married	Male Headed Household	Adults Kids	Farmer Business man/woman
Tanga	Mpwapwa	Chiseyu	Imani Kasamu	Male	26	Married	Male Headed Household	Adults Kids	Agro-pastoralist
Tanga	Mpwapwa	Chiseyu	Charles W. Msanjila	Male	61	Married	Male Headed Household	Adults Kids Older Peo	Farmer Business man/woman
Tanga	Mpwapwa	Chiseyu	Vicent Sogodi	Male	33	Married	Male Headed Household	Adults Kids	Farmer
Tanga	Mpwapwa	Chiseyu	Lucas Samila	Male	57	Married	Male Headed Household	Adults Kids	Agro-pastoralist
Tanga	Mpwapwa	Chiseyu	Tyson Sogodi	Male	52	Married	Male Headed Household	Adults Kids	Business man/woman Agro-pa
Tanga	Mpwapwa	Chiseyu	Sadiki Laisi Mtacha	Male	34	Married	Male Headed Household	Adults Kids	Agro-pastoralist
Tanga	Mpwapwa	Chiseyu	Kleni Lucian	Male	38	Married	Male Headed Household	Adults Kids	Agro-pastoralist
Tanga	Mpwapwa	Chiseyu	Pendo Dickson Christopher	Female	23	Married	Male Headed Household	Adults Kids	Business man/woman Farmer
Tanga	Mpwapwa	Chiseyu	Piana Robert Lyakona	Female	23	Married	Male Headed Household	Adults Kids	Farmer
Tanga	Mpwapwa	Chiseyu	Amina Msangazi	Female	21	Married	Male Headed Household	Adults Kids	Farmer Business man/woman
Tanga	Mpwapwa	Chiseyu	Pendo Sospeter Chidong'oi	Female	27	Married	Male Headed Household	Adults Kids	Farmer Business man/woman
Tanga	Mpwapwa	Chiseyu	Thomas Michael Mgulo	Male	62	Married	Male Headed Household	Adults Kids	Farmer
Tanga	Mpwapwa	Chiseyu	Ibrahimu Petro	Male	41	Married	Male Headed Household	Adults Kids	Farmer
Tanga	Mpwapwa	Chiseyu	Damian Kepha Dyamaza	Male	36	Married	Male Headed Household	Adults Kids	Farmer
Tanga	Mpwapwa	Chiseyu	Nelson D. Chibupa	Male	51	Married	Male Headed Household	Adults Kids	Farmer Business man/woman
Tanga	Mpwapwa	Chiseyu	Selina Sogodi	Female	40	Married	Male Headed Household	Adults Kids	Farmer Business man/woman
Tanga	Mpwapwa	Chiseyu	Hamis Michael Mgulo	Male	43	Married	Male Headed Household	Adults Kids Older Peo	Farmer Pastoralist
Tanga	Mpwapwa	Chiseyu	Eva Dismas Jocktan	Female	31	Married	Male Headed Household	Kids Older People	Farmer
Tanga	Mpwapwa	Chiseyu	Stanley Maujira Mgaya	Male	67	Married	Male Headed Household	Adults Kids Older Peo	Farmer
Tanga	Mpwapwa	Chiseyu	Mussa Jonas msambili	Male	50	Married	Male Headed Household	Adults Kids Older Peo	Farmer Pastoralist
Tanga	Mpwapwa	Chiseyu	Haruni Laban Chalo	Male	45	Married	Male Headed Household	Adults Kids Older Peo	Farmer Pastoralist
Tanga	Mpwapwa	Chiseyu	Ezra Charles Masingisa	Male	31	Married	Male Headed Household	Kids	Farmer Pastoralist
Tanga	Mpwapwa	Chiseyu	Salome chibupa	Female	45	Married	Male Headed Household	Kids Adults Older Peo	Farmer Business man/woman
Tanga	Mpwapwa	Chiseyu	Maneno jonas chiwanga	Male	39	Married	Male Headed Household	Adults Kids	Farmer
Tanga	Mpwapwa	Chiseyu	Hasheli Paulo Sakaza	Male	50	Married	Male Headed Household	Kids Older People	Farmer
Tanga	Mpwapwa	Chiseyu	Philipo nduluman	Male	73	Married	Male Headed Household	Adults Kids Older Peo	Farmer
Tanga	Mpwapwa	Chiseyu	Mathayo ellyabi	Male	30	Married	Male Headed Household	Kids Older People	Farmer
Tanga	Mpwapwa	Chiseyu	Jocktan saferi kisaloon	Male	46	Married	Male Headed Household	Kids Older People	Farmer
Tanga	Mpwapwa	Chiseyu	Happy alyoce chaulesi	Female	25	Married	Male Headed Household	Kids Older People	Farmer
Tanga	Mpwapwa	Chiseyu	Dorica Laban	Female	52	Married	Male Headed Household	Kids Older People Adu	Farmer
Tanga	Mpwapwa	Chiseyu	Fredy chelewa	Male	40	Married	Male Headed Household	Kids Older People	Farmer
Tanga	Mpwapwa	Chiseyu	Elizabeth Wilson	Female	36	Married	Male Headed Household	Kids Older People Adu	Farmer
Tanga	Mpwapwa	Chiseyu	Max jego	Male	52	Married	Male Headed Household	Adults Kids Older Peo	Farmer

Tanga	Mpwapwa	Chiseyu	Obedi sapi	Male	47	Married	Male Headed Household	Kids Older People Adu	Farmer
Tanga	Mpwapwa	Chiseyu	Tekira kigaila	Female	25	Married	Male Headed Household	Kids Older People	Farmer
Ruvuma	Nyasa	Lituhi	Stan Haule	Male	34 - 41	Married	Male Headed Household	Adults Kids Older Peo	Farmer Business man/woman
Ruvuma	Songea	Kikunja	CONSILATA TEMBO	Female	18 -25	Married	Male Headed Household	Kids	Farmer
Ruvuma	Songea	Kikunja	Valentini Ndomba	Male	42 - 49	Married	Male Headed Household	Kids	Farmer Business man/woman
Ruvuma	Songea	Kikunja	Asteria kawonga	Female	42 - 49	Married	Male Headed Household	Adults	Farmer
Ruvuma	Songea	Kikunja	IVO BANDA	Male	34 - 41	Married	Male Headed Household	Adults	Farmer
Ruvuma	Songea	Kikunja	Mackilina Haule	Male	18 -25	Married	Male Headed Household	Adults	Farmer
Ruvuma	Songea	Kikunja	George Ndomba	Male	26 -33	Married	Male Headed Household	Adults	Farmer Business man/woman
Ruvuma	Songea	Kikunja	Carlos Banda	Male	26 -33	Married	Male Headed Household	Adults	Farmer
Ruvuma	Songea	Kikunja	BONIFACE LUOGA	Male	42 - 49	Married	Male Headed Household	Adults	Farmer
Ruvuma	Songea	Kikunja	Lilliana Ndunguru	Female	34 - 41	Married	Male Headed Household	Adults	Farmer
Ruvuma	Songea	Kikunja	AFLED BANDA	Male	34 - 41	Married	Male Headed Household	Adults	Farmer Business man/woman
Ruvuma	Songea	Kikunja	DOMITILA KOMBA	Female	34 - 41	Married	Male Headed Household	Adults	Farmer
Ruvuma	Songea	Kikunja	VITUS CHALE	Male	42 - 49	Married	Male Headed Household	Adults	Farmer
Ruvuma	Songea	Kikunja	Flora j.kapinga	Female	34 - 41	Married	Male Headed Household	Kids	Farmer
Ruvuma	Songea	Kikunja	Osmunda komba	Female	63+	Married	Male Headed Household	Adults	Farmer
Ruvuma	Songea	Kikunja	Anastazia Ndomba	Female	34 - 41	Married	Male Headed Household	Kids Adults	Farmer
Ruvuma	Songea	Kikunja	Adelherma kawonga	Female	18 -25	Single	Female Headed Househo	Kids	Farmer
Ruvuma	Songea	Kikunja	Kelvin ndomba	Male	34 - 41	Single	Male Headed Household	Adults	Farmer Business man/woman
Ruvuma	Songea	Kikunja	Visiana Nombo	Female	34 - 41	Married	Male Headed Household	Adults	Farmer Business man/woman
Ruvuma	Songea	Kikunja	Joseph ignasi luoga	Male	42 - 49	Married	Male Headed Household	Adults	Farmer Pastoralist
Ruvuma	Songea	Kikunja	Romanus kiwili	Male	42 - 49	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Songea	Kikunja	Samweli banda	Male	18 -25	Married	Male Headed Household	Adults	Farmer
Ruvuma	Songea	Kikunja	Adelegoti J.luoga	Male	34 - 41	Married	Male Headed Household	Adults	Farmer Pastoralist
Ruvuma	Songea	Kikunja	Antonia Valentin Nomba	Female	63+	Single	Female Headed Househo	Adults	Farmer
Ruvuma	Songea	Kikunja	JOJI EREXANDA HAULE	Male	63+	Married	Male Headed Household	Adults	Farmer
Ruvuma	Songea	Kikunja	GAUDENCE GARISI NDUNGURU	Male	42 - 49	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Songea	Kikunja	BENARD M. KINGI	Male	26 -33	Married	Male Headed Household	Kids	Employed
Ruvuma	Songea	Kikunja	BENJAMINI PONERA	Male	50-57	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Songea	Kikunja	GAUDENCE KRISTANDUS PONER	Male	42 - 49	Married	Male Headed Household	Adults	Farmer
Ruvuma	Songea	Kikunja	SEPERIANA KASIANI BANDA	Female	42 - 49	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Songea	Kikunja	DESDERIA SANGA	Female	26 -33	Married	Male Headed Household	Kids	Farmer
Ruvuma	Songea	Kikunja	JOYCE L.MILINGA	Female	34 - 41	Married	Male Headed Household	Kids	Farmer
Tanga	Kilindi	Mnkonde	Bakari ali	Male	51	Married	Male Headed Household	Adults	Self employed - carpenter/logg
Tanga	Kilindi	Mnkonde	Haji zenge	Male	43	Married	Male Headed Household	Adults	Farmer
Tanga	Kilindi	Mnkonde	Mwanaisha Mohamedi	Female	52	Married	Female Headed Househo	Adults	Farmer

Tanga	Kilindi	Mnkonde	3	Male	80	Married	Male Headed Household	Adults	Farmer
Tanga	Kilindi	Mnkonde	Hatibu mohamed	Male	35	Married	Male Headed Household	Adults	Farmer
Tanga	Kilindi	Mnkonde	Abdallah Alli Kiboko	Male	33	Married	Male Headed Household	Adults	Farmer
Tanga	Kilindi	Mnkonde	Toba abdalah maganda	Male	33	Married	Male Headed Household	Adults	Farmer Self employed - carper
Tanga	Kilindi	Mnkonde	Hadija Mohamedi	Female	33	Married	Male Headed Household	Adults	Farmer
Tanga	Kilindi	Mnkonde	Mariamu Saidi	Female	38	Married	Male Headed Household	Adults	Farmer
Tanga	Kilindi	Mnkonde	Maulidi Salimu Peto	Male	50	Married	Male Headed Household	Adults	Farmer Pastoralist
Tanga	Kilindi	Mnkonde	Sophia Selemani Masingisa	Female	45	Married	Male Headed Household	Adults	Farmer
Tanga	Kilindi	Mnkonde	Abdala Mohamedi	Male	42	Married	Male Headed Household	Adults	Farmer Self employed - carper
Tanga	Kilindi	Mnkonde	Selemani Athumani Mcholi	Male	35	Married	Male Headed Household	Adults	Farmer
Tanga	Kilindi	Mnkonde	Nuri Hemedi Kihuli	Male	63	Married	Male Headed Household	Adults	Farmer
Tanga	Kilindi	Mnkonde	Makombo Idi	Female	39	Married	Male Headed Household	Adults	Farmer
Tanga	Kilindi	Mnkonde	Subira hasani zohya	Female	39	Married	Female Headed Househo	Adults	Self employed - carpenter/logg
Tanga	Kilindi	Mnkonde	Zubeda hasani zohya	Female	36	Married	Female Headed Househo	Adults	Farmer Self employed - carper
Tanga	Kilindi	Mnkonde	Asha ibrahim	Female	25	Married	Male Headed Household	Adults	Farmer
Tanga	Kilindi	Mnkonde	Mohamedi abrahaman mwinger	Male	45	Married	Male Headed Household	Adults	Farmer Pastoralist
Tanga	Kilindi	Mnkonde	Abdalah omar maganda	Male	81	Married	Male Headed Household	Adults	Farmer
Tanga	Kilindi	Mnkonde	Omari ngedele	Male	72	Married	Male Headed Household	Adults	Farmer
Tanga	Kilindi	Mnkonde	Munga hasani	Male	34	Married	Male Headed Household	Adults	Farmer
Tanga	Kilindi	Mnkonde	Bakar juma mseza	Male	42	Married	Male Headed Household	Adults	Farmer
Tanga	Kilindi	Mnkonde	Juma athumani mchor	Male	46	Married	Male Headed Household	Adults	Farmer
Tanga	Kilindi	Mnkonde	Zubeda Kihiyo	Female	51	Married	Male Headed Household	Adults	Farmer
Tanga	Kilindi	Mnkonde	Regina kacimili	Female	30	Single	Female Headed Househo	Adults	Employed
Tanga	Kilindi	Mnkonde	Ismaili sadik	Male	40	Married	Male Headed Household	Adults	Farmer Self employed - carper
Tanga	Kilindi	Mnkonde	Saumu omar	Female	29	Married	Male Headed Household	Adults	Farmer
Tanga	Kilindi	Mnkonde	Juma hamza	Male	50	Married	Male Headed Household	Adults	Farmer Self employed - carper
Tanga	Kilindi	Mnkonde	Athumani juma	Male	23	Single	Male Headed Household	Adults	Self employed - carpenter/logg
Tanga	Kilindi	Mnkonde	Sadick ramadhani mlugu	Male	50	Married	Male Headed Household	Adults	Employed
Ruvuma	Songea	Liweta	Suzana mwale	Female	56	Single	Female Headed Househo	Adults	Farmer
Ruvuma	Songea	Liweta	Japheti Luambano	Male	45	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Songea	Liweta	Joseph mhagama	Male	56	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Songea	Liweta	Pensia Haule	Female	26	Married	Male Headed Household	Kids	Farmer
Ruvuma	Songea	Liweta	Emma mbilinyi	Female	28	Single	Female Headed Househo	Adults	Business man/woman
Ruvuma	Songea	Liweta	Imelda Chale	Female	41	Married	Male Headed Household	Kids Adults	Farmer
Ruvuma	Songea	Liweta	Fransiska mbena	Female	24	Married	Male Headed Household	Kids	Farmer
Ruvuma	Songea	Liweta	Donata mwingira	Female	50	Married	Male Headed Household	Adults	Business man/woman Farmer
Ruvuma	Songea	Liweta	Goleti Komba	Female	22	Married	Male Headed Household	Kids	Farmer

Ruvuma	Songea	Liweta	VUMILI SAIDI	Female	37	Married	Male Headed Household	Kids	Farmer
Ruvuma	Songea	Liweta	Tutubert M.Mhagama	Male	33	Married	Male Headed Household	Kids	Farmer Business man/woman
Ruvuma	Songea	Liweta	JOSEPHU S.LUAMBANO	Male	24	Married	Male Headed Household	Kids	Farmer
Ruvuma	Songea	Liweta	SAKINA MZEE SHAWA	Female	58	Single	Female Headed Househo	Adults Kids	Farmer
Ruvuma	Songea	Liweta	MARIA NJOVU	Male	44	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Songea	Liweta	Christopha Mwingira	Male	49	Married	Male Headed Household	Adults Kids	Farmer Self employed - carper
Ruvuma	Songea	Liweta	Teopista mhagama	Female	40	Single	Female Headed Househo	Adults Kids	Farmer
Ruvuma	Songea	Liweta	Selafim Mwingira	Male	58	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Songea	Liweta	MARIA MHAGAMA	Female	29	Single	Male Headed Household	Adults Kids Older Peo	Farmer Pastoralist
Ruvuma	Songea	Liweta	Laurnsia G.Komba	Female	55	Married	Male Headed Household	Adults	Farmer
Ruvuma	Songea	Liweta	PAULO MHAGAMA	Male	23	Single	Male Headed Household	Adults	Self employed - carpenter/logg
Ruvuma	Songea	Liweta	Deograsia kihega	Female	46	Married	Male Headed Household	Adults	Farmer Business man/woman
Ruvuma	Songea	Liweta	Abdala Pili	Male	44	Married	Male Headed Household	Adults Kids	Farmer Self employed - carper
Ruvuma	Songea	Liweta	Kassian Mhagama	Male	46	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Songea	Liweta	Kiliani Gingo	Male	42	Married	Male Headed Household	Adults	Farmer Business man/woman
Ruvuma	Songea	Liweta	Fidelis Mhagama	Male	40	Single	Male Headed Household	Adults	Farmer
Ruvuma	Songea	Liweta	DAUD MHAGAMA	Male	60	Single	Male Headed Household	Adults	Farmer
Ruvuma	Songea	Liweta	FIDELIS MHAGAMA	Male	27	Married	Male Headed Household	Adults Kids	Farmer
Tanga	Handeni	Kitumbi	Athumani Abdallah	Male	65	Married	Male Headed Household	Older People Kids Adu	Farmer Agro-pastoralist
Tanga	Handeni	Kitumbi	Hadija Mustafa	Female	37	Married	Male Headed Household	Kids Older People	Farmer
Tanga	Handeni	Kitumbi	Mustafa Abbasi	Male	62	Married	Male Headed Household	Adults	Farmer
Tanga	Handeni	Kitumbi	Sufiani Zuberi	Male	45	Married	Male Headed Household	Older People Kids Adu	Farmer
Tanga	Handeni	Kitumbi	Zuberi Wambua	Male	35	Married	Male Headed Household	Older People	Business man/woman
Tanga	Handeni	Kitumbi	Zaujia Ally	Female	22	Divorced	Female Headed Househo	Kids Older People	Farmer
Tanga	Handeni	Kitumbi	Musa mahogo	Male	40	Married	Male Headed Household	Older People	Business man/woman Farmer
Tanga	Handeni	Kitumbi	Mwanahamisi Hatibu	Female	48	Single	Female Headed Househo	Kids Older People Adu	Farmer
Tanga	Handeni	Kitumbi	Cheka Hatibu	Female	45	Married	Male Headed Household	Kids Adults	Self employed - carpenter/logg
Tanga	Handeni	Kitumbi	Salina peter	Female	32	Married	Male Headed Household	Adults Kids	Farmer
Tanga	Handeni	Kitumbi	Bakari mwechengo	Male	32	Married	Male Headed Household	Older People	Farmer
Tanga	Handeni	Kitumbi	Nusra Rajabu	Female	20	Single	Female Headed Househo	Kids Adults	Farmer
Tanga	Handeni	Kitumbi	Hashiruna Bakari	Female	70	Married	Male Headed Household	Adults Kids Older Peo	Farmer
Tanga	Handeni	Kitumbi	Juma mdabwa	Male	52	Married	Male Headed Household	Older People	Farmer
Tanga	Handeni	Kitumbi	Bashiri sefu	Female	40	Married	Male Headed Household	Older People Adults K	Farmer
Tanga	Handeni	Kitumbi	Mariamu Bakari	Female	35	Married	Male Headed Household	Kids Adults	Farmer
Tanga	Handeni	Kitumbi	Sefu Mohamedi Chande	Male	62	Married	Male Headed Household	Adults Kids	Farmer
Tanga	Handeni	Kitumbi	Salimu kanga	Male	38	Married	Male Headed Household	Older People	Farmer
Tanga	Handeni	Kitumbi	Juma Hoseni Dumwe	Male	38	Married	Male Headed Household	Kids Adults Older Peo	Farmer

Tanga	Handeni	Kitumbi	Sofia omari	Female	27	Married	Female Headed Househo	Older People Business man/woman Farmer
Tanga	Handeni	Kitumbi	Zamoyo abdallah	Female	32	Single	Female Headed Househo	Older People Employed Farmer
Tanga	Handeni	Kitumbi	Zaina mgolo	Female	60	Married	Male Headed Household	Older People Farmer
Tanga	Handeni	Kitumbi	Batuli faru	Female	59	Married	Female Headed Househo	Older People Farmer
Tanga	Handeni	Kitumbi	Mashaka mtelo	Male	65	Married	Male Headed Household	Adults Farmer
Tanga	Handeni	Kitumbi	Abdallah juma	Male	47	Married	Male Headed Household	Older People Farmer
Tanga	Handeni	Kitumbi	Sefu Hassani Mkami	Male	52	Married	Male Headed Household	Adults Kids Farmer Self employed - carper
Tanga	Handeni	Kitumbi	Natasha Ali	Female	45	Married	Male Headed Household	Adults Kids Farmer Business man/woman
Tanga	Handeni	Kitumbi	Galina Omari	Female	44	Married	Male Headed Household	Adults Kids Farmer
Tanga	Handeni	Kitumbi	Asha Juma	Female	30	Married	Male Headed Household	Adults Kids Farmer
Tanga	Handeni	Kitumbi	Ahamad Ali Rajabu	Male	79	Married	Male Headed Household	Older People Kids Farmer
Tanga	Handeni	Kitumbi	Masaidi Athumani	Female	35	Married	Male Headed Household	Adults Kids Farmer Business man/woman
Tanga	Handeni	Kitumbi	Mwanahamisi Ali	Female	43	Married	Male Headed Household	Adults Kids Farmer
Ruvuma	Nyasa	Lipingo	Beatrice mwela	Female	30	Married	Male Headed Household	Adults Farmer
Ruvuma	Nyasa	Lipingo	Mathayo kasolo	Male	19	Single	Male Headed Household	Adults Self employed - carpenter/logg
Ruvuma	Nyasa	Lipingo	Jhon nkosi	Male	57	Married	Male Headed Household	Adults Farmer
Ruvuma	Nyasa	Lipingo	Anastasia mapunda	Female	35	Married	Male Headed Household	Adults Farmer Business man/woman
Ruvuma	Nyasa	Lipingo	John kayani	Male	31	Married	Male Headed Household	Adults Farmer Self employed - carper
Ruvuma	Nyasa	Lipingo	Ramoshi mapunda	Male	40	Married	Male Headed Household	Adults Farmer Self employed - carper
Ruvuma	Nyasa	Lipingo	Fred kayani	Male	33	Married	Male Headed Household	Adults Farmer Self employed - carper
Ruvuma	Nyasa	Lipingo	Agnes hilal haule	Female	64	Widow/widower	Female Headed Househo	Adults Farmer
Ruvuma	Nyasa	Lipingo	Maria manufred hyera	Female	34	Married	Male Headed Household	Adults Farmer
Ruvuma	Songea	Liweta	Yohana Haule	Female	43	Single	Female Headed Househo	Adults Farmer
Ruvuma	Nyasa	Lipingo	Rehema Fanuel Kisenga	Female	49	Married	Male Headed Household	Adults Farmer
Ruvuma	Nyasa	Lipingo	Joseph Enock Kambona	Male	37	Married	Male Headed Household	Adults Self employed - carpenter/logg
Ruvuma	Nyasa	Lipingo	Pendo Constantino Mapunda	Female	27	Married	Male Headed Household	Adults Farmer
Ruvuma	Nyasa	Lipingo	Frola Emmanuel Kimbuzi	Female	29	Married	Male Headed Household	Adults Farmer
Ruvuma	Nyasa	Lipingo	Anna Simon Chirwa	Female	23	Married	Male Headed Household	Adults Farmer
Ruvuma	Nyasa	Lipingo	SOPHIA KENETH NJAKP	Female	38	Married	Male Headed Household	Adults Farmer
Ruvuma	Nyasa	Lipingo	John Simon Haule	Male	59	Married	Male Headed Household	Adults Self employed - carpenter/logg
Ruvuma	Nyasa	Lipingo	JOSEPH ALEN ALEXANDA	Male	38	Married	Male Headed Household	Adults Farmer
Ruvuma	Nyasa	Lipingo	William Amos Ndongochi	Male	37	Married	Male Headed Household	Adults Farmer
Ruvuma	Nyasa	Lipingo	Girbeth Jerad Chombe	Male	25	Single	Male Headed Household	Adults Farmer
Ruvuma	Nyasa	Lipingo	Benard Daniel Ndiu	Male	57	Married	Male Headed Household	Adults Farmer
Ruvuma	Nyasa	Lipingo	Irine Yunis Mwasi	Female	59	Married	Male Headed Household	Adults Farmer
Ruvuma	Nyasa	Lipingo	Imerda Chumila	Female	52	Married	Male Headed Household	Adults Farmer
Ruvuma	Nyasa	Lipingo	Rucy Matias Njako	Female	27	Married	Male Headed Household	Adults Farmer

Ruvuma	Nyasa	Lipingo	Imman Erice Utonga	Female	30	Married	Male Headed Household	Adults	Farmer
Ruvuma	Nyasa	Hinga	Gabinus ndunguru	Male	59	Married	Male Headed Household	Adults	Farmer
Ruvuma	Nyasa	Hinga	Martha charles Steven	Female	68	Married	Male Headed Household	Adults	Farmer
Ruvuma	Nyasa	Hinga	Evodia dominicus	Female	60	Widow/widower	Female Headed Househo	Adults	Farmer
Ruvuma	Nyasa	Hinga	Emanuel nungu	Male	36	Married	Male Headed Household	Adults	Self employed - carpenter/logg
Ruvuma	Nyasa	Hinga	Godfrey chiwangu	Male	49	Married	Male Headed Household	Adults	Farmer
Ruvuma	Nyasa	Hinga	Oscar francis ndimbo	Male	46	Married	Male Headed Household	Adults	Farmer
Ruvuma	Nyasa	Hinga	Patrick komba	Male	39	Married	Male Headed Household	Adults	Farmer
Ruvuma	Nyasa	Hinga	Charles hilal nchimbi	Male	30	Single	Male Headed Household	Adults	Farmer Self employed - carper
Ruvuma	Nyasa	Hinga	Festo mapunda	Male	25	Single	Male Headed Household	Adults	Farmer Self employed - carper
Ruvuma	Nyasa	Hinga	Franco mwagama	Male	40	Married	Male Headed Household	Adults	Farmer Self employed - carper
Ruvuma	Nyasa	Hinga	Baraka mhagama	Male	30	Married	Male Headed Household	Adults	Farmer Business man/woman
Ruvuma	Nyasa	Hinga	Joyce mendrad mapunda	Male	43	Married	Male Headed Household	Adults	Farmer
Ruvuma	Nyasa	Hinga	Erick winfrid kiwhili	Male	44	Married	Male Headed Household	Adults	Farmer Self employed - carper
Ruvuma	Nyasa	Hinga	Bathram lwena	Male	39	Married	Male Headed Household	Adults	Farmer Self employed - carper
Ruvuma	Nyasa	Lipingo	John john kipasula	Male	63	Widow/widower	Male Headed Household	Adults	Self employed - carpenter/logg
Ruvuma	Songea	Liweta	CHRISTINA MKINGA	Female	35	Single	Female Headed Househo	Kids Adults	Farmer
Ruvuma	Nyasa	Lipingo	Michael Yohana Njako	Male	46	Married	Male Headed Household	Adults	Farmer
Ruvuma	Nyasa	Lipingo	Joyce veronica mayazi	Female	42	Single	Female Headed Househo	Adults	Self employed - carpenter/logg
Ruvuma	Nyasa	Lipingo	Thomas Obedi Njako	Male	41	Married	Male Headed Household	Adults	Farmer Self employed - carper
Ruvuma	Nyasa	Lipingo	George Julius Kayolo	Male	51	Married	Male Headed Household	Adults	Farmer Self employed - carper
Ruvuma	Nyasa	Lipingo	Catheline John Chipasula	Female	36	Single	Female Headed Househo	Kids	Farmer
Ruvuma	Nyasa	Lipingo	CHRISTINA CRISTOPINE MBELE	Female	25	Married	Male Headed Household	Kids	Farmer
Ruvuma	Nyasa	Lipingo	Jofrey Nasani minofu	Male	28	Married	Male Headed Household	Kids	Self employed - carpenter/logg
Ruvuma	Nyasa	Lipingo	Milina stephano Njako	Female	39	Single	Female Headed Househo	Adults	Farmer
Ruvuma	Nyasa	Lipingo	Veronica Vincent Nindi	Female	34	Married	Male Headed Household	Adults	Farmer Self employed - carper
Ruvuma	Nyasa	Lipingo	Emilini baziri masumba	Female	32	Married	Male Headed Household	Adults	Farmer Self employed - carper
Ruvuma	Nyasa	Lipingo	Sailisi Nikas Mpahi	Female	25	Married	Male Headed Household	Adults	Farmer Self employed - carper
Ruvuma	Nyasa	Lipingo	Judith Nelson Ntuhi	Female	68	Widow/widower	Female Headed Househo	Adults	Farmer
Ruvuma	Nyasa	Lipingo	Simoni Patrick Wana	Male	32	Married	Male Headed Household	Adults	Farmer Self employed - carper
Ruvuma	Nyasa	Lipingo	Patrick Simoni Wana	Male	50	Married	Male Headed Household	Adults	Farmer Self employed - carper
Ruvuma	Nyasa	Hinga	Frank Johnson Maumau	Male	40	Married	Male Headed Household	Adults	Farmer Self employed - carper
Ruvuma	Nyasa	Hinga	Recho daudi magambo	Female	26	Married	Female Headed Househo	Adults	Employed
Ruvuma	Nyasa	Hinga	Anna amanyisye mwakifwamba	Female	31	Single	Female Headed Househo	Adults	Employed
Ruvuma	Nyasa	Hinga	Festo Leonard Nungu	Male	38	Married	Male Headed Household	Adults	Farmer Business man/woman
Ruvuma	Nyasa	Hinga	Msafiri osinieli Ngindo	Male	43	Married	Male Headed Household	Adults	Farmer Business man/woman
Ruvuma	Nyasa	Hinga	Aleni costantin Chiwangu	Male	39	Married	Male Headed Household	Adults	Farmer Self employed - carper

Ruvuma	Nyasa	Hinga	Hassan Issa Ally	Male	32	Married	Male Headed Household	Adults	Employed
Ruvuma	Nyasa	Hinga	Imelda gerodi mapunda	Female	47	Widow/widower	Female Headed Househo	Adults	Farmer Self employed - carper
Ruvuma	Nyasa	Hinga	Francis Leonard Chanai	Male	57	Married	Male Headed Household	Adults	Self employed - carpenter/logg
Ruvuma	Nyasa	Hinga	Allicent Frederick Chanai	Male	49	Married	Male Headed Household	Adults	Farmer Self employed - carper
Ruvuma	Nyasa	Hinga	0sward Edward Mapunda	Male	51	Married	Male Headed Household	Adults	Farmer Self employed - carper
Lindi	Ruangwa	Mmawa	Athumani Bakari Mkango	Male	60	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Mmawa	Bakari Juma Hassani	Male	75	Married	Male Headed Household	Adults Kids Older Peo	Farmer
Lindi	Ruangwa	Mmawa	Rashidi Athumani Nkango	Male	28	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Mmawa	Shinda Amadi Napenya	Male	53	Married	Male Headed Household	Adults Kids Older Peo	Farmer
Lindi	Ruangwa	Mmawa	Jarina Saidi Makwanda	Female	55	Married	Female Headed Househo	Adults Kids	Farmer
Lindi	Ruangwa	Mmawa	Mayasa Bakari	Female	38	Married	Female Headed Househo	Adults Older People K	Farmer
Lindi	Ruangwa	Mmawa	Zainabu Swalehe	Female	40	Married	Female Headed Househo	Adults Kids	Farmer
Lindi	Ruangwa	Mmawa	Fatuma Ally Chimnaje	Female	52	Single	Female Headed Househo	Kids Older People	Farmer
Lindi	Ruangwa	Mmawa	Hashimu Hamadi Selemani	Male	52	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Mmawa	Mwanahawa Abdalah Makaniki	Female	56	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Mmawa	Hamadi Dadi Hashimu	Male	26	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Mmawa	Hamisi Said Mbano	Male	55	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Mmawa	Mustafa ISSA lilai	Male	38	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Mmawa	Futina Hamisi Saidi	Female	32	Married	Male Headed Household	Adults Kids	Farmer Business man/woman
Lindi	Ruangwa	Mmawa	Arasa Hamisi Saidi	Female	30	Single	Female Headed Househo	Adults Kids	Farmer
Lindi	Ruangwa	Mmawa	Aliya Bakari seleman	Female	70	Married	Male Headed Household	Older People Kids	Farmer
Lindi	Ruangwa	Mmawa	Arafa seleman Bakari	Female	28	Married	Male Headed Household	Adults Kids	Farmer Business man/woman
Lindi	Ruangwa	Mmawa	Musa athuman Kambona	Male	68	Married	Male Headed Household	Kids Older People	Farmer Pastoralist
Lindi	Ruangwa	Mmawa	Mwanahawa Nyssa Kuwandu	Female	38	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Mmawa	Teua Omari Hassan	Female	50	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Mmawa	Sakina bakari mbinga	Female	22	Married	Male Headed Household	Adults	Farmer
Lindi	Ruangwa	Mmawa	Shaban Mohamed abdulhaman	Male	46	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Mmawa	Amina abdulhaman ndambalilo	Female	24	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Mmawa	Fatima Abasi Sefu	Female	21	Single	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Mmawa	Fatima Rashid Mussa	Female	60	Divorced	Female Headed Househo	Adults	Farmer
Lindi	Ruangwa	Mmawa	Hamza Sefu Chikomina	Male	23	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Mmawa	Shaban Mohamed Lingoweche	Male	28	Single	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Mmawa	Athman Filipo Njimika	Male	20	Single	Male Headed Household	Adults	Farmer Business man/woman
Lindi	Ruangwa	Mmawa	Mussa Mohamed Lingoweche	Male	25	Divorced	Male Headed Household	Adults	Farmer
Lindi	Ruangwa	Mmawa	Seleman Mohamed Lingoweche	Male	37	Single	Male Headed Household	Adults Kids	Farmer
Ruvuma	Mbinga	Kindimba Juu	Judith Mbilinyi	Female	63+	Married	Male Headed Household	Adults	Farmer
Ruvuma	Mbinga	Kindimba Juu	Eleonora Moyo	Female	63+	Single	Female Headed Househo	Adults Older People	Farmer

Ruvuma	Mbinga	Kindimba Juu	Peter Kayombo	Male	42 - 49	Single	Male Headed Household	Adults	Farmer
Ruvuma	Mbinga	Kindimba Juu	Pasiensi Moyo	Male	50-57	Married	Male Headed Household	Older People Adults K	Farmer
Ruvuma	Mbinga	Kindimba Juu	Keneth krisian mabunda	Female	42 - 49	Married	Female Headed Househo	Older People	Farmer
Ruvuma	Mbinga	Kindimba Juu	Tarcis Dominicus	Male	58-63	Single	Male Headed Household	Adults	Farmer
Ruvuma	Mbinga	Kindimba Juu	Damaniel mapunda	Female	40	Married	Female Headed Househo	Older People	Farmer
Ruvuma	Mbinga	Kindimba Juu	Juma Mapunda	Male	34 - 41	Married	Male Headed Household	Older People Kids Adu	Farmer Business man/woman
Ruvuma	Mbinga	Kindimba Juu	Aureus felisian mapunda	Female	51	Married	Male Headed Household	Adults Kids Older Peo	Farmer
Ruvuma	Mbinga	Kindimba Juu	Evodi hillary kayombo	Female	35	Married	Male Headed Household	Older People	Farmer
Ruvuma	Mbinga	Kindimba Juu	Victoria Mbilinyi	Female	34 - 41	Single	Female Headed Househo	Adults	Farmer
Ruvuma	Mbinga	Kindimba Juu	Maura mahundi	Male	59	Married	Male Headed Household	Adults Older People K	Farmer
Ruvuma	Mbinga	Kindimba Juu	Michael fabiani haule	Female	40	Single	Male Headed Household	Older People	Farmer
Ruvuma	Mbinga	Kindimba Juu	Stella Komba	Female	34 - 41	Single	Female Headed Househo	Adults Kids	Farmer Business man/woman
Ruvuma	Mbinga	Kindimba Juu	Maria nditi	Male	23	Married	Male Headed Household	Adults	Farmer
Ruvuma	Mbinga	Kindimba Juu	Emmanuel Kayombo	Male	18 -25	Single	Male Headed Household	Adults	Farmer
Ruvuma	Mbinga	Kindimba Juu	Sarah ibrahim	Male	35	Single	Male Headed Household	Adults	Farmer
Ruvuma	Mbinga	Kindimba Juu	Geofrey Mapunda	Male	26 -33	Married	Male Headed Household	Adults	Farmer Pastoralist
Ruvuma	Mbinga	Kindimba Juu	Hirdebrand hilomus nditi	Female	61	Married	Male Headed Household	Adults Kids Older Peo	Farmer
Ruvuma	Mbinga	Kindimba Juu	Mathar nditi	Male	50	Single	Female Headed Househo	Adults	Farmer
Ruvuma	Mbinga	Kindimba Juu	Valentine Sabas	Male	42 - 49	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Mbinga	Kindimba Juu	Herena daniel mapunda	Male	30	Single	Male Headed Household	Adults	Farmer
Ruvuma	Mbinga	Kindimba Juu	Greceana hillary kayombo	Male	44	Single	Male Headed Household	Older People	Farmer
Ruvuma	Mbinga	Kindimba Juu	France Kayombo	Male	34 - 41	Married	Male Headed Household	Adults Kids	Farmer Business man/woman
Ruvuma	Mbinga	Kindimba Juu	Anna fabiani haule	Male	58	Single	Male Headed Household	Adults	Farmer
Ruvuma	Mbinga	Kindimba Juu	Frola kayombo	Male	38	Single	Male Headed Household	Adults	Farmer
Ruvuma	Mbinga	Kindimba Juu	Daniel leonad nyimbo	Female	42	Married	Male Headed Household	Adults	Farmer
Ruvuma	Mbinga	Kindimba Juu	Elizabeth kayombo	Male	46	Married	Male Headed Household	Older People Adults K	Farmer
Ruvuma	Mbinga	Kindimba Juu	Kristina mwahangama	Male	84	Married	Male Headed Household	Older People Kids Adu	Farmer
Ruvuma	Mbinga	Kindimba Juu	Neema benedit nditi	Male	40	Married	Male Headed Household	Adults	Farmer
Ruvuma	Mbinga	Kindimba Juu	Donata kayombo	Male	39	Single	Male Headed Household	Older People	Farmer
Ruvuma	Mbinga	Kindimba Juu	Asumta joseph mapunda	Male	40	Married	Male Headed Household	Older People	Farmer
Lindi	Ruangwa	Nandenje	Omar Bakari Namanguko	Male	25	Married	Male Headed Household	Adults Kids	Farmer Business man/woman
Lindi	Ruangwa	Nandenje	Suma Bentodi	Male	24	Single	Male Headed Household	Adults	Farmer
Lindi	Ruangwa	Nandenje	Rashidi Bakari Namtima	Male	40	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Nandenje	Omari Mohamedi Chikoma	Male	45	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Nandenje	Sabiamu Abdalah	Female	60	Single	Female Headed Househo	Adults	Farmer
Lindi	Ruangwa	Nandenje	Hamisi Saidi	Male	25	Single	Male Headed Household	Adults	Farmer
Lindi	Ruangwa	Nandenje	Innocent Seif Lipendele	Male	61	Married	Male Headed Household	Adults Kids	Farmer

Lindi	Ruangwa	Nandenje	Hadija saidi	Female	31	Single	Female Headed Househo	Adults Kids	Farmer
Lindi	Ruangwa	Nandenje	Samsia B Saidi	Male	21	Single	Female Headed Househo	Adults Kids	Farmer
Lindi	Ruangwa	Nandenje	Ali Saleh Mohamed	Male	49	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Nandenje	Haji Mussa	Male	35	Single	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Nandenje	Ismail Saidi	Male	35	Single	Male Headed Household	Adults Kids Older Peo	Farmer
Lindi	Ruangwa	Nandenje	Fatuma Mohamed Rashid	Female	34	Married	Male Headed Household	Adults Kids	Farmer Business man/woman
Lindi	Ruangwa	Nandenje	Hakika Sielewi	Female	46	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Nandenje	Esha Halfani Amri	Female	39	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Nandenje	Amina Issa Selemani	Female	42	Married	Male Headed Household	Adults	Farmer Self employed - carper
Lindi	Ruangwa	Nandenje	Zainabu Isa Naweka	Female	39	Married	Male Headed Household	Adults	Farmer Business man/woman
Lindi	Ruangwa	Nandenje	Piesia Kelvin Kambona	Female	36	Single	Female Headed Househo	Adults Kids	Farmer
Lindi	Ruangwa	Nandenje	Juma Abdallah Shabani	Male	83	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Nandenje	Zainabu Rajabu Mohamed	Female	27	Married	Male Headed Household	Adults Kids	Farmer Self employed - carper
Lindi	Ruangwa	Nandenje	Salina Issa Seif	Female	35	Married	Male Headed Household	Kids Adults	Farmer Business man/woman
Lindi	Ruangwa	Nandenje	Abdallah Juma Shabani	Male	44	Divorced	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Nandenje	Omar Bakari Mbinga	Male	57	Married	Male Headed Household	Adults	Farmer Self employed - carper
Lindi	Ruangwa	Nandenje	Mwajuma Ally Nammoni	Female	22	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Nandenje	Reilah Mohamed Kawawa	Female	20	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Nandenje	AMINA OMAR MAWATA	Female	69	Widow/widower	Female Headed Househo	Older People	Farmer
Lindi	Ruangwa	Nandenje	Shabae Saidi Nanduta	Female	40	Married	Female Headed Househo	Adults Kids	Farmer Self employed - carper
Lindi	Ruangwa	Nandenje	Hakika Rashid Tuwesi	Female	30	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Nandenje	Nurdin Seleman Namwimbe	Male	42	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Ruangwa	Nandenje	Mussa Bakari Omari	Male	2	Married	Male Headed Household	Adults	Farmer Self employed - carper
Lindi	Liwale	Likombora	Saudi Mohamed Mtimba	Female	42	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Likombora	Abas Kinaki	Male	22	Single	Male Headed Household	Kids Adults	Farmer
Lindi	Liwale	Likombora	Julias James Alban	Male	54	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Likombora	Zanufa Nyande	Female	32	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Likombora	Mbaraka Nasoro Bwanali	Male	36	Married	Male Headed Household	Kids	Farmer Business man/woman
Lindi	Liwale	Likombora	Saleh haji kilola	Male	27	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Liwale	Likombora	Hassan Ally Mohamed Mwindike	Male	50	Married	Male Headed Household	Kids Adults	Farmer Business man/woman
Lindi	Liwale	Likombora	Arafa mohamed Mfaume	Female	40	Married	Male Headed Household	Adults Kids	Farmer Business man/woman
Lindi	Liwale	Likombora	Isa Hamad malangula	Male	35	Married	Male Headed Household	Kids Adults Older Peo	Farmer
Lindi	Liwale	Likombora	Safina Nasoro	Female	44	Divorced	Female Headed Househo	Adults Kids	Farmer
Lindi	Liwale	Likombora	Mwanaiba Mchenga	Female	60	Widow/widower	Female Headed Househo	Kids Adults	Business man/woman Farmer
Lindi	Liwale	Likombora	Maana Pasi	Female	20	Single	Female Headed Househo	Adults Kids	Farmer
Lindi	Liwale	Likombora	Tumia Mohamed Kiwanga	Female	37	Married	Male Headed Household	Adults Kids	Farmer Business man/woman
Lindi	Liwale	Likombora	Sofia Kikoweka	Female	38	Married	Male Headed Household	Adults Kids	Farmer

Lindi	Liwale	Likombora	Hayana Rashid Chowe	Male	46	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Likombora	Zaruna Mohamed Mbee	Female	58	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Lilombe	Abdallah Rashid Mfaume	Male	23	Single	Male Headed Household	Adults	Farmer
Lindi	Liwale	Likombora	Muliji Julius James	Male	24	Single	Male Headed Household	Adults	Farmer
Lindi	Liwale	Likombora	Kasimu Malangula	Male	50	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Liwale	Likombora	Rajabu Hajj Nkane	Male	28	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Likombora	Musa Ngongole	Male	32	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Likombora	Halima Nasoro Ng'alukila	Female	60	Widow/widower	Female Headed Househo	Adults Kids	Farmer
Lindi	Liwale	Likombora	Adam Abdallah Muhoro	Male	54	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Ngongowele	Heseni Said Mtopa	Male	30	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Ngongowele	Hasma Kalunga	Female	35	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Ngongowele	Mustapha Yassin Mpacha	Male	30	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Ngongowele	Mohamed Mshamu Mikongo	Male	70	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Likombora	Maisha Abdala Kijage	Female	18	Single	Female Headed Househo	Kids	Farmer
Lindi	Liwale	Ngongowele	Rajabu Ally Mwegelage	Male	70	Married	Male Headed Household	Adults	Farmer
Lindi	Liwale	Ngongowele	Adam Said Mponda	Male	45	Married	Male Headed Household	Adults Kids	Farmer Self employed - carper
Lindi	Liwale	Likombora	Rukia Chande Pasi	Female	42	Single	Female Headed Househo	Adults Kids	Farmer
Lindi	Liwale	Ngongowele	Aziz Yasin Mpacha	Male	29	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Ngongowele	Mshamu Nasoro Mikongo	Male	70	Married	Male Headed Household	Adults	Farmer Self employed - carper
Lindi	Liwale	Ngongowele	Amina Halifa Mahali	Female	31	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Ngongowele	Haruni Abdallah Maokola	Male	27	Married	Male Headed Household	Adults Kids	Farmer Self employed - carper
Lindi	Liwale	Likombora	Amina Hemed Miyai	Female	29	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Likombora	Abdallah Kijage	Male	45	Married	Male Headed Household	Kids Adults	Farmer Pastoralist
Lindi	Liwale	Likombora	Moshi Yahaya Nnemane	Male	22	Single	Female Headed Househo	Adults Kids	Self employed - carpenter/logg
Lindi	Liwale	Ngongowele	Monica Jacob Mlowola	Female	52	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Likombora	Siyawezi Ali Kikalaindi	Female	34	Single	Female Headed Househo	Adults Kids	Farmer Self employed - carper
Lindi	Liwale	Likombora	Hashimu Mshamu Nkane	Male	66	Divorced	Male Headed Household	Adults	Farmer
Lindi	Liwale	Ngongowele	Wakili Rashid Mikongo	Male	32	Married	Male Headed Household	Adults Kids	Farmer Self employed - carper
Lindi	Liwale	Ngongowele	Mariamu Malikula	Female	40	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Ngongowele	Asma Mohamed Ndupo	Female	25	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Ngongowele	Bilah Zuberi Makenula	Male	33	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Ngongowele	Shamte hasan Mikongo	Male	18	Single	Male Headed Household	Adults	Self employed - carpenter/logg
Lindi	Liwale	Ngongowele	Ahmad Kindamba Ndonde	Male	51	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Ngongowele	Saidi Musa salum	Male	23	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Ngongowele	Ali abdala makenula	Male	68	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Ngongowele	Abdallah Hemed Mputo	Male	75	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Ngongowele	Siraji abilahi ngwawile	Male	24	Married	Male Headed Household	Adults Kids	Farmer

Lindi	Liwale	Ngongowele	Yasini Ali Kilola	Male	48	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Ngongowele	Hemed chande malimbano	Male	25	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Liwale	Ngongowele	Salima hemed singino	Female	42	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Ngongowele	Zaituni Chande Mkutage	Female	70	Widow/widower	Female Headed Househo	Kids	Farmer
Lindi	Liwale	Ngongowele	Tabia nasoro kijimbo	Female	47	Married	Male Headed Household	Adults Kids Older Peo	Farmer
Lindi	Liwale	Ngongowele	Siyawezi Abas Mponda	Female	24	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Ngongowele	Nusura Saidi Mpamba	Female	45	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Liwale	Ngongowele	Semeni Chande Kinjolonjolo	Female	24	Married	Male Headed Household	Adults	Farmer
Lindi	Liwale	Ngongowele	Hamza Mohamed Mikongo	Male	43	Married	Male Headed Household	Kids	Farmer Business man/woman
Ruvuma	Namtumbo	Limamu	Juma said	Male	45	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	FARAJI PONERA	Male	28	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	SHABILA HAKIMU PONERA	Female	30	Single	Female Headed Househo	Kids Adults	Farmer
Ruvuma	Namtumbo	Limamu	SALM YAZIB	Male	48	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	OMARY KAZINGOMA	Male	45	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	SAID NGINDO	Male	37	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	CASTO RWENA	Male	31	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	TRIFON HEBUKA	Male	30	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	PHILOMENA CHILEWA	Female	52	Divorced	Female Headed Househo	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	BARAKA KASAMBULA	Male	21	Married	Male Headed Household	Adults	Farmer
Ruvuma	Namtumbo	Limamu	AMANUS MWANZA	Male	30	Married	Male Headed Household	Kids Adults	Farmer
Ruvuma	Namtumbo	Limamu	JAMES MVULA	Male	42	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	CAMILIUS PAUL	Male	33	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	SAID NOMBA	Male	60	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	SALUM NALLY	Male	41	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	WESTON KOMBA	Male	42	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Juma musa	Male	25	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Sophia issa pilly	Female	27	Married	Female Headed Househo	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Hamis zidadu kanyenda	Male	31	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Faki jafari Nali	Male	25	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Ziada laliji Nyoni	Female	46	Married	Female Headed Househo	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Aidi laliji Nyoni	Male	51	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Zainabu Athumani Nomba	Female	25	Single	Female Headed Househo	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Maulidi Saidi Komba	Male	32	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Yusufu welinery Komba	Male	42	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Abdallah Hussein Nyika	Male	44	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	IGNO MWINGIRA	Male	54	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	ISHERIGA NYANGURU	Female	51	Married	Male Headed Household	Kids Adults	Farmer

Ruvuma	Namtumbo	Limamu	ADIM MHAGAMA	Male	30	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	OSWIN NGONYANI	Male	44	Married	Male Headed Household	Kids Adults	Farmer
Ruvuma	Namtumbo	Limamu	OIGEN OSMOND BANDA	Male	29	Married	Male Headed Household	Adults Kids	Farmer Business man/woman
Ruvuma	Namtumbo	Limamu	Modesta Joseph kadwela	Female	50-57	Married	Male Headed Household	Adults	Farmer Business man/woman
Ruvuma	Namtumbo	Limamu	Bimwana tembo	Female	63+	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Rajabu hatibu komba	Male	42 - 49	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Shida Adamu	Female	34 - 41	Married	Male Headed Household	Kids Adults	Farmer
Ruvuma	Namtumbo	Limamu	Mohamed sandali Nomba	Male	63+	Married	Male Headed Household	Kids Adults	Farmer
Ruvuma	Namtumbo	Limamu	Sandali masudi	Male	34 - 41	Married	Male Headed Household	Kids Adults	Farmer
Ruvuma	Namtumbo	Limamu	Cosma Edward Mapunda	Female	50-57	Single	Female Headed Househo	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Chigonambwalo Taji	Female	50-57	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Haji said Nomba	Male	50-57	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Salumu Hyera	Male	18 -25	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Laina Omary Ponera	Female	50-57	Single	Female Headed Househo	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Vincent Ebuka	Female	63+	Married	Male Headed Household	Adults	Farmer
Ruvuma	Namtumbo	Limamu	Shazil Joseph nomba	Male	50-57	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Saidi Mustafa Mbarika	Male	34 - 41	Married	Male Headed Household	Adults Kids	Farmer
Ruvuma	Namtumbo	Limamu	Erasmo Erineus Mlimila	Female	42 - 49	Married	Male Headed Household	Adults Kids Older Peo	Farmer
Ruvuma	Namtumbo	Limamu	Francis Francis Majumba	Male	26 -33	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Nangano	Shaibu Manzi	Male	39	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Nangano	Rashid Nasoro Mpingawandu	Male	51	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Nangano	Mshamu Abdallah Kinjenga	Male	26	Divorced	Male Headed Household	Adults	Farmer
Lindi	Liwale	Nangano	Mikidad Said Mbunda	Male	52	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Nangano	Hamza Rashid	Male	20	Single	Male Headed Household	Adults	Farmer
Lindi	Liwale	Nangano	Fadhili Mchwembo	Male	42	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Nangano	Fatuma Omary Mambunga	Male	43	Married	Male Headed Household	Adults Kids	Farmer Self employed - carper
Lindi	Liwale	Nangano	Zawadi Sixbert Masumira	Female	30	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Liwale	Nangano	Kilindo Jabir	Male	52	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Nangano	Mohamed Rashid Mmou	Male	45	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Kibutuka	Zaid Said Mtaniagi	Female	42	Single	Female Headed Househo	Kids Adults	Farmer
Lindi	Liwale	Kibutuka	Asumini Dadi	Female	35	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Kibutuka	Zakia Rashid Manyakula	Female	56	Single	Female Headed Househo	Adults Older People	Farmer
Lindi	Liwale	Kibutuka	Said Fakihi	Male	32	Married	Male Headed Household	Adults Kids	Farmer Self employed - carper
Lindi	Liwale	Kibutuka	Rzuhura Jabir Manyanya	Female	28	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Kibutuka	Simone Chande Kwepu	Female	22	Single	Female Headed Househo	Adults Kids	Farmer
Lindi	Liwale	Kibutuka	Lukas Julian Kajiname	Male	56	Divorced	Male Headed Household	Adults	Farmer
Lindi	Liwale	Kibutuka	Salina Hemed Pingili	Female	51	Married	Male Headed Household	Adults	Farmer

Lindi	Liwale	Kibutuka	Omari Chande Manjocho	Male	27	Single	Male Headed Household	Adults Kids Older Peo	Farmer
Lindi	Liwale	Kibutuka	Zainabu Said Mpandage	Female	56	Single	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Nangano	Rafii Lipiti	Male	46	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Liwale	Nangano	Halima Ngwenje	Female	34	Married	Male Headed Household	Kids	Farmer Business man/woman
Lindi	Liwale	Nangano	Maulid Mkondoa	Male	38	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Liwale	Nangano	Zainabu Abdala Manduta	Female	41	Married	Male Headed Household	Adults Kids	Farmer Self employed - carper
Lindi	Liwale	Nangano	Musa Hassan	Male	37	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Liwale	Nangano	Azizi Choki	Male	21	Single	Male Headed Household	Adults	Farmer Business man/woman
Lindi	Liwale	Nangano	Siwema ali kinyanyite	Female	34	Married	Male Headed Household	Adults Kids Older Peo	Farmer
Lindi	Liwale	Nangano	Hamis Juma	Male	19	Single	Male Headed Household	Adults	Business man/woman
Lindi	Liwale	Nangano	Abasi omari mbunda	Male	46	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Nangano	Bashiru dadi dadi	Male	36	Married	Male Headed Household	Adults	Farmer
Lindi	Liwale	Nangano	Neema Yasin Pingili	Female	31	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Nangano	Chande hemedi magambo	Male	46	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Nangano	Fatuma Ali Ndetewale	Female	33	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Nangano	Saidi mohamed mbunda	Male	40	Married	Male Headed Household	Adults Kids Older Peo	Farmer
Lindi	Liwale	Kibutuka	Habiba Ngunde	Male	56	Married	Male Headed Household	Kids	Farmer Employed
Lindi	Liwale	Nangano	Rehema mohamed mnovala	Female	30	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Nangano	Awatu dhomondo	Female	31	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Kibutuka	Mussa Seif	Male	45	Divorced	Male Headed Household	Kids	Self employed - carpenter/logg
Lindi	Liwale	Nangano	Musa ahmad mtumusa	Male	61	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Kibutuka	Hamis Hamad	Male	45	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Liwale	Nangano	Wiston hasan mnyani	Male	26	Single	Male Headed Household	Adults	Farmer
Lindi	Liwale	Kibutuka	Hamadi Hasan Ngajoga	Male	56	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Nangano	Zena likejage	Female	45	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Kibutuka	Zainabu Ngutu	Female	29	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Kibutuka	Sophia Maluka	Female	35	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Kibutuka	Rajabu hasan naliwile	Male	42	Married	Male Headed Household	Adults Kids	Self employed - carpenter/logg
Lindi	Liwale	Kibutuka	Silvia John Maurusi	Female	31	Divorced	Female Headed Househo	Kids	Farmer
Lindi	Liwale	Kibutuka	Abdul haji ng'ambe	Male	40	Married	Male Headed Household	Adults Kids	Self employed - carpenter/logg
Lindi	Liwale	Kibutuka	Mohamed Jafar Maluka	Male	36	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Kibutuka	Witmalin charles hokororo	Male	35	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Kibutuka	Mwajuma Mchwembo	Female	41	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Kibutuka	Mandela isumain mchopa	Male	28	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Liwale	Kibutuka	Asia Nuku	Female	26	Single	Female Headed Househo	Kids Adults	Farmer
Lindi	Liwale	Kibutuka	Sofia mohamed ligai	Female	45	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Liwale	Nangano	Aziza Utumbo	Female	35	Married	Male Headed Household	Adults Kids	Business man/woman Farmer

Lindi	Liwale	Kibutuka	Hasani chibwa	Male	39	Single	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Nangano	Karimu Ali	Male	20	Single	Male Headed Household	Adults	Farmer
Lindi	Liwale	Kibutuka	Rashid mtaji libanike	Male	49	Married	Male Headed Household	Adults Kids	Farmer Self employed - carper
Lindi	Liwale	Kibutuka	Adam mpondomoka	Male	37	Married	Male Headed Household	Adults Kids	Farmer Self employed - carper
Lindi	Liwale	Kibutuka	Madina juma mchwembo	Female	43	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mtawatawa	Kinjokopola	Female	62	Divorced	Female Headed Househo	Kids	Farmer
Lindi	Liwale	Mtawatawa	Abas Abdalah Makwendo	Male	43	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Mtawatawa	Hadija Jerome Ekoni	Female	34	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Mtawatawa	Kindamba Machwiko	Male	61	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Mtawatawa	Agnes Dickson Chilumba	Female	54	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Mtawatawa	Haji Jawadu	Male	35	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Liwale	Mtawatawa	Dorothea Victory	Female	79	Divorced	Female Headed Househo	Kids	Farmer
Lindi	Liwale	Mtawatawa	Mwanahawa Mohamed	Female	85	Widow/widower	Female Headed Househo	Kids	Farmer
Lindi	Liwale	Mtawatawa	Fadhili Nassoro Libungwile	Male	35	Married	Male Headed Household	Kids	Farmer Business man/woman
Lindi	Liwale	Mtawatawa	Rajabu saidi machwiko	Male	33	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mtawatawa	Mwanahawa ahmadi nakwemnc	Female	33	Married	Male Headed Household	Adults Kids	Self employed - carpenter/logg
Lindi	Liwale	Mikunya	Jabir Ndikulage	Male	42	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Mtawatawa	Said mohamed nasir	Male	28	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Liwale	Mikunya	Saddam Hema	Male	27	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Liwale	Mikunya	Rajab Said Mikongo	Male	44	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Liwale	Mtawatawa	Said ali kindunguru	Male	32	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mtawatawa	Saidi hasani mwenyeomari	Male	55	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mtawatawa	Hamisi hamisi ntila	Male	29	Married	Male Headed Household	Adults Kids Older Peo	Farmer
Lindi	Liwale	Mtawatawa	Salha mohamed mwambe	Female	36	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mikunya	Upendo Mponda	Female	26	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Mtawatawa	Juma Mohamed Mkinde	Male	40	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mtawatawa	Twahili Hamad Kapelewele	Male	32	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mtawatawa	Hasan Hasan	Male	24	Single	Male Headed Household	Adults	Farmer
Lindi	Liwale	Mtawatawa	Fatuma alfonsi emanuel	Female	23	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mtawatawa	Rehema Ally	Female	49	Single	Female Headed Househo	Adults	Farmer
Lindi	Liwale	Mtawatawa	Faiza Damian Chitawala	Female	40	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mtawatawa	Ziada Nasoro Jega	Female	37	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mtawatawa	Amina rashid yahaya	Female	32	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mtawatawa	Zaituni Kinjokopole	Female	58	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mtawatawa	Esha Abdallah Maluka	Female	48	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mtawatawa	Asha Mohamed Lilombo	Female	32	Single	Female Headed Househo	Adults Kids	Farmer
Lindi	Liwale	Mtawatawa	Hamis Mswao Punda	Male	27	Married	Male Headed Household	Adults Kids	Farmer

Lindi	Liwale	Mtawatawa	Salima mohamed mapinda	Female	62	Divorced	Female Headed Househo	Adults Kids	Farmer
Lindi	Liwale	Mikunya	Rajabu Mkingijagi	Male	40	Married	Male Headed Household	Adults Kids Older Peo	Farmer
Lindi	Liwale	Mikunya	Mwajuma Said	Female	36	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mikunya	Fatuma Rashid Mbite	Female	36	Single	Female Headed Househo	Adults	Farmer
Lindi	Liwale	Mikunya	Yahaya Abeid Mbikulage	Female	26	Married	Male Headed Household	Adults Kids	Farmer Self employed - carper
Lindi	Liwale	Mikunya	Kisa Zuberi Mbikulage	Female	21	Single	Female Headed Househo	Adults Kids	Farmer
Lindi	Liwale	Mikunya	Mohamed ali mbikulage	Male	65	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mikunya	Rashid Bakari Likwanya	Male	23	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mikunya	Mbaraka Ndwimbage	Male	47	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mikunya	Mwanahamis Abdallah Kitonda	Female	28	Married	Male Headed Household	Adults Kids	Farmer Business man/woman
Lindi	Liwale	Mikunya	Sharifa Ngalonga	Female	54	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mikunya	Abdu Mohamed Mkobokola	Male	25	Single	Male Headed Household	Adults	Farmer
Lindi	Liwale	Mikunya	Amina abara ema	Female	56	Widow/widower	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mikunya	Halima kindamba mbela	Female	58	Widow/widower	Female Headed Househo	Adults Kids	Farmer
Lindi	Liwale	Mikunya	Mohamed Majoto	Male	40	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Mikunya	Mwanaisha abdala hemed	Female	23	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mikunya	Mohamed Mfaume	Male	25	Single	Male Headed Household	Kids	Farmer
Lindi	Liwale	Mikunya	Mwajuma majoka	Female	36	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mikunya	Hasani hamisi said	Male	59	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mikunya	Sadi Mohamed Mokobokola	Male	20	Married	Male Headed Household	Kids	Farmer
Lindi	Liwale	Mikunya	Salima abdala mkong'ondage	Female	40	Single	Female Headed Househo	Adults Kids	Farmer
Lindi	Liwale	Mikunya	Ajili Ally Mkongondaye	Male	35	Single	Male Headed Household	Kids	Farmer
Lindi	Liwale	Mikunya	Hashimu abdala mkong'ondage	Male	55	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mikunya	Abdala maulid	Male	36	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Liwale	Mikunya	Kasimu mohamed mfaume	Male	29	Married	Male Headed Household	Adults Kids	Farmer Self employed - carper
Lindi	Liwale	Mtawatawa	Esha Jabir Majawala	Female	36	Married	Male Headed Household	Kids Adults	Farmer Business man/woman
Lindi	Liwale	Mikunya	Juma Abdalah Mchilili	Male	30	Single	Male Headed Household	Kids Adults	Farmer
Lindi	Liwale	Mikunya	Fatuma Mng'ondage	Female	45	Married	Male Headed Household	Kids	Farmer
Lindi	Nachingwea	Nanjihi	Edwin Edward	Male	50	Married	Male Headed Household	Adults	Farmer
Lindi	Nachingwea	Nanjihi	Ajil Omary	Male	66	Married	Male Headed Household	Adults Kids Older Peo	Farmer
Lindi	Nachingwea	Nanjihi	Issa Abdallah	Male	37	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Nachingwea	Nanjihi	Mwanaharusi Mshamu Nampwe	Female	60	Widow/widower	Female Headed Househo	Older People Adults	Farmer
Lindi	Nachingwea	Nanjihi	Ismail Rashid Kanyoto	Male	50	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nanjihi	Hassani Said Ally	Male	60	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nanjihi	Seifu Omary Mnembule	Male	46	Single	Male Headed Household	Adults Older People	Farmer
Lindi	Nachingwea	Nanjihi	AbibaAhamadi Maunga	Female	68	Widow/widower	Female Headed Househo	Adults Older People K	Farmer
Lindi	Nachingwea	Nanjihi	Mwanahawa Hassani Omary	Female	60	Widow/widower	Female Headed Househo	Adults Older People	Farmer

Lindi	Nachingwea	Nanjihi	Rashidi Omary Mkwawa	Male	54	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nahimba	Abdalah Omary Ngapona	Male	61	Married	Male Headed Household	Adults Older People	Farmer
Lindi	Nachingwea	Nahimba	Zaituni Abdalah Kajombo	Female	50	Married	Female Headed Househo	Adults Kids Older Peo	Farmer
Lindi	Nachingwea	Nahimba	Zena Amiri Manywele	Female	47	Married	Male Headed Household	Adults Kids Older Peo	Farmer
Lindi	Nachingwea	Nahimba	Zainabu Ripwetage	Female	66	Married	Male Headed Household	Adults Older People	Farmer
Lindi	Nachingwea	Nahimba	Stivin James Nambale	Male	25	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nahimba	Julius Barnabas Daniel	Male	41	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nahimba	Amina Abdalah Likoko	Female	32	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nahimba	Adamu Hamad Kikope	Male	23	Single	Male Headed Household	Adults	Farmer
Lindi	Nachingwea	Nahimba	Chance Themed Kikope	Male	32	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nahimba	Mwajuma Salum	Female	33	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Gonsalva Victory Mtila	Female	57	Divorced	Female Headed Househo	Adults Older People	Farmer
Lindi	Nachingwea	Chimbendenga	Sevarin J Katondo	Male	49	Married	Male Headed Household	Adults	Farmer
Lindi	Nachingwea	Chimbendenga	Abibu Ally Ngombo	Male	49	Married	Male Headed Household	Adults	Farmer
Lindi	Nachingwea	Chimbendenga	Flida Ashimu	Female	47	Married	Female Headed Househo	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Dastani Geofrey	Male	25	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Kelvin Pila Ngoyanga	Male	31	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Mohammad Mustafa Matete	Male	28	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Mashaka Seifu Ally	Male	36	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Regina Yustini Ngutenda	Female	31	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	John Nocholaus Chinguile	Male	36	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nanjihi	Fdvb	Male	45	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Nachingwea	Nanjihi	Silvester disimasi matuta	Male	50	Married	Male Headed Household	Adults Kids	Farmer Employed
Lindi	Nachingwea	Nanjihi	Flora liviga	Female	36	Single	Female Headed Househo	Adults Kids	Farmer
Lindi	Nachingwea	Nanjihi	Angerus angerus kichenga	Male	58	Married	Male Headed Household	Adults Kids Older Peo	Farmer
Lindi	Nachingwea	Nanjihi	Sophia pauli	Female	32	Single	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nanjihi	Evododia rashidi mateleke	Female	27	Single	Female Headed Househo	Adults Kids	Farmer
Lindi	Nachingwea	Nanjihi	Maua said sefu	Female	49	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nanjihi	Veronica jidan	Female	21	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nanjihi	Martine r chialo	Male	46	Married	Male Headed Household	Adults Kids	Farmer Self employed - carper
Lindi	Nachingwea	Nanjihi	Stellar fulubeth	Female	40	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nahimba	Simsemi Mohammed kionjo	Male	22	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nahimba	Yarabi babu magoja	Male	28	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nahimba	Mohammed abdalla ngechi	Male	70	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nahimba	Jafari Saudi nusura	Male	41	Married	Male Headed Household	Adults Kids Older Peo	Farmer
Lindi	Nachingwea	Nahimba	Ally a lijate	Male	46	Married	Male Headed Household	Adults Kids Older Peo	Farmer
Lindi	Nachingwea	Nahimba	Hamis ally ungama	Male	35	Married	Male Headed Household	Adults Kids	Farmer

Lindi	Nachingwea	Nahimba	Rukia Mohammed kulemwa	Female	48	Divorced	Female Headed Househo	Adults Kids	Farmer
Lindi	Nachingwea	Nahimba	Omary esabius chijumba	Male	46	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nahimba	Mambo hemedi mticha	Male	38	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Nachingwea	Chimbendenga	Anasitansia George lijembu	Female	40	Divorced	Female Headed Househo	Adults Kids	Farmer Business man/woman
Lindi	Nachingwea	Chimbendenga	Zaituni salum chura	Female	56	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Sophia haridi mponda	Female	50	Widow/widower	Female Headed Househo	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Josephine James malemla	Female	37	Married	Female Headed Househo	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Walivyo Mohammed mponda	Male	21	Married	Male Headed Household	Adults Kids	Farmer Business man/woman
Lindi	Nachingwea	Chimbendenga	Enosensia shaibu kamila	Female	37	Married	Male Headed Household	Adults Kids	Farmer Business man/woman
Lindi	Nachingwea	Chimbendenga	At human mussa chikambo	Male	68	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Said jafari mponda	Male	27	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Modahtiri winfridi choaji	Male	27	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Charles Charles frank	Male	28	Single	Male Headed Household	Adults	Farmer
Lindi	Nachingwea	Nahimba	Sophia mohamed mdidi	Female	20	Married	Male Headed Household	Kids Adults Older Peo	Farmer
Lindi	Nachingwea	Nanjihi	Rashid Said	Male	42	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nanjihi	Asha Hassan	Female	37	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Nachingwea	Nanjihi	Salum Salum	Male	42	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nanjihi	Siwema Abdala	Female	32	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nanjihi	Petro Nombo	Male	47	Divorced	Male Headed Household	Adults	Farmer
Lindi	Nachingwea	Nanjihi	Mohamedi Awazi	Male	40	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nanjihi	Martina Liviga	Male	30	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nanjihi	Amina Ally	Female	69	Single	Female Headed Househo	Older People Adults K	Farmer
Lindi	Nachingwea	Nanjihi	Bakari Magumba	Male	24	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nanjihi	Devotha Ng'ombo	Female	53	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Nachingwea	Nahimba	Miraji Ekeleke	Male	42	Married	Male Headed Household	Kids Adults	Farmer
Lindi	Nachingwea	Nahimba	Mwanahamisi Jabiri	Female	22	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nahimba	Zainabu Lipindula	Female	56	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nahimba	Mohamedi Ndendele	Male	73	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nahimba	Mshamu Ngapona	Male	83	Married	Male Headed Household	Adults	Farmer
Lindi	Nachingwea	Nahimba	Ally Mohamedi	Male	32	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nahimba	Mwahawa Ally	Female	52	Single	Female Headed Househo	Adults	Farmer
Lindi	Nachingwea	Nahimba	Halima Katundu	Female	21	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nahimba	Hidaya Ntikulage	Female	33	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Nahimba	Asha Mkomwele	Female	30	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Cecilia Makarusi	Female	40	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Steven Godfrey	Male	42	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Christopher Mchopa	Male	50	Married	Male Headed Household	Adults	Farmer

Lindi	Nachingwea	Chimbendenga	Asumin Benjamin	Female	39	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Amina Mwambe	Female	34	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Judith Ngwena	Female	25	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Maneno Mafuniko	Male	26	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	John Milanzi	Male	51	Married	Male Headed Household	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Amina Mkuwile	Female	36	Divorced	Female Headed Househo	Adults Kids	Farmer
Lindi	Nachingwea	Chimbendenga	Asante Chikawe	Male	36	Married	Male Headed Household	Adults Kids	Farmer

Annex II: Rapid Forest Resources Assessment datasets from all VLFR sampled in the study area (in MS word file format)

Appendix 2: Rapid Forest Resources Assessment datasets from all VLFR sampled in the study area.

Jumla ya Miti Iliyohesabiwa Katika eneo la Utafiti Angai VLFR				
Jina la Kiluga	**Jina la Kisayansi**	**Miti Midogo**	**Miti ya kati**	**Miti Mikubwa**
Kimbilia	*Combretum fragrans*	1	4	0
Kingonogo	*Combretum apiculatum*	2	1	0
Kiparapara	*Securinega virosa*	0	1	0
Machangobo (michi ya miko)	*Holarrhena pubescens*	2	1	0
Mchenga	*Julbernardia globifora*	1	2	1
Mdamudamu	*Harungana madagascariensis*	4	5	1
Mkarati	*Burkea africana*	2	8	1
Mkongo	*Afzelia quanzensis*	2	13	4
Mlaliyu (Mhulyaliu)	*Combretum collium*	1	0	0
Mneke (majengo, miichi)	*Pteleopsis africana*	4	4	1
Mnepa (michi, mbao nyeupe)	*Pseudolachnostylis sp.*	0	1	2
Mninga	*Pterocarpus angolensis*	2	7	0
Mnjekele	Swartzia madagascariensis	0	1	1
Mpangapanga	*Cussonia kirkii*	7	5	8
Mpelema (moto)	*Hymenodictyon floribundum*	1	0	0
Mpuga	*Pericopsis angolensis*	8	4	0
Mpugupugu (kamba,nyuki)	*Markhamia obtusifolia*	1	5	0
Msekeseke (Mpalapala)	*Ochna densicoma*	1	3	2
Msolo	*Pseudolachnostylis maprouneifolia*	2	3	1
Msolwa (Mselu)	*Maesa lanceolata*	3	2	0
Msufi	*Bombax rhodognaphalon*	0	0	5
Mtomoni	*Diplorhynchus condylocarpon*	3	2	0
Mtondoo	*Brachystegia spiciformis*	1	9	18
Muhilu	*Vangueria infausta*	0	1	0
Mupunga	*Oxytenanthera abyssinica*	0	1	0
Myane (mhani, muhane)	*Dodonea viscosa*	0	5	6
Myojo (Muhou)	*Uvaria acuminata*	0	3	0
Nnindianda		0	0	1
Nuvili (Mnuvi) chakula cha tembo	*Maytenus undata*	0	0	2
Ungeche	*Bauhinia petersiana*	0	1	0
Jumla		**48**	**92**	**54**

Kiasi cha Kuvuna Kiendelevu Angai VLFR					
Jina la Kiluga	**Jina la Kisayansi**	**Kiasi cha Miti ya Kati cha Msitu**	**Kiasi cha Miti Mikubwa cha Msitu**	**Ujazo (m^3)**	**Kiasi cha kuvuna kwa kipindi cha miaka mitano**
Kimbilia	*Combretum fragrans*	0	0	0	0.00
Kingonogo	*Combretum apiculatum*	0	0	0	0.00
Kiparapara	*Securinega virosa*	0	0	0	0.00
Machangobo	*Holarrhena pubescens*	0	0	0	0.00
Mchenga	*Julbernardia globifora*	0	0	0	0.00
Mdamudamu	*Harungana madagascariensis*	840	0	432	86.40
Mkarati	*Burkea africana*	1232	0	535	106.99
Mkongo	*Afzelia quanzensis*	1862	0	878	175.66
Mlaliyu (Mhulyaliu)	*Combretum collium*	0	0	0	0.00
Mneke (majengo, miichi)	*Pteleopsis africana*	0	0	0	0.00
Mnepa	*Pseudolachnostylis sp.*	0	0	0	0.00
Mninga	*Pterocarpus angolensis*	1066	0	637	127.42
Mnjekele	Swartzia madagascariensis	0	0	0	0.00
Mpangapanga	*Cussonia kirkii*	824	881	2155	431.01
Mpelema (moto)	*Hymenodictyon floribundum*	0	0	0	0.00
Mpuga	*Pericopsis angolensis*	0	0	0	0.00
Mpugupugu (kamba,nyuki)	*Markhamia obtusifolia*	630	0	218	43.51
Msekeseke (Mpalapala)	*Ochna densicoma*	0	0	0	0.00
Msolo	*Pseudolachnostylis maprouneifolia*	0	0	0	0.00
Msolwa (Mselu)	*Maesa lanceolata*	0	0	0	0.00
Msufi	*Bombax rhodognaphalon*	0	391	3930	786.05
Mtomoni	*Diplorhynchus condylocarpon*	0	0	0	0.00
Mtondoo	*Brachystegia spiciformis*	1260	1716	4937	987.42
Muhilu	*Vangueria infausta*	0	0	0	0.00
Mupunga	*Oxytenanthera abyssinica*	0	0	0	0.00
Myane (mhani, muhane)	*Dodonea viscosa*	630	478	1231	246.23
Myojo (Muhou)	*Uvaria acuminata*	0	0	0	0.00
Nnindianda		0	0	0	0.00
Nuvili (Mnuvi)	*Maytenus undata*	0	0	0	0.00
Ungeche	*Bauhinia petersiana*	0	0	0	0.00
Jumla		**8344**	**3466**	**14953**	**2990.69**

Jumla ya Miti Iliyohesabiwa Katika eneo la Utafiti Barikiwa VLFR				
Jina la Kiluga	**Jina la Kisayansi**	Miti Midogo	Miti ya kati	Miti Mikubwa
Kimbilia	*Combretum fragrans*	0	2	0
Kingonogo	*Combretum apiculatum*	7	5	0
Mchuyo	*Terminalia sericea*	0	2	0
Mdamudamu	*Harungana madagascariensis*	1	1	0
Mfomasia	*Bombax rhodognaphalon*	4	7	0
Mhoro (matambiko)		2	0	0
Mkalati	*Burkea africana*	0	4	5
Mkongo	*Afzelia quanzensis*	3	3	2
Mkundekunde (ntebelebe)	*Cassia abbreviata*	2	0	0
Mlaliyu (Mhulyaliu)	*Combretum collium*	2	0	0
Mmachangobo	*Holarrhena pubescens*	0	4	0
Mmbalamwezi	*Sterculia quinqueloba*	2	2	0
Mneke (majengo, miichi)	*Pteleopsis africana*	0	4	1
Mngechi	*Strichynos sp*	0	1	0
Mngoko	*Dioscorea sansibarensis*	1	0	0
Mninga	*Pterocarpusangolensis*	0	1	1
Mnondoondo		0	1	0
Mnyemaji		2	0	0
Mpuga	*Pericopsis angolensis*	0	2	0
Msekeseke (Mpalapala)	*Ochna densicoma*	0	1	0
Msolo	*Pseudolachnostylis maprouneifolia*	3	0	0
Mtomasi (Mmanga)		1	1	0
Mtomoni	*Diplorhynchus condylocarpon*	1	1	0
Mtondoo	*Brachystegia spiciformis*	0	6	8
Muoro	*Pseudolachnostylis maprouneifolia*	1	0	0
Mwindira		1	2	0
Myane (mhani)		0	3	0
Ungechi	*Bauhinia petersiana*	0	2	0
Unyemachi		1	2	0
Jumla		**34**	**57**	**17**

Kiasi cha Kuvuna Kiendelevu Barikiwa VLFR					
Jina la Kiluga	**Jina la Kisayansi**	**Kiasi cha Miti ya Kati cha Msitu**	**Kiasi cha Miti Mikubwa cha Msitu**	**Ujazo (m^3)**	**Kiasi cha kuvuna kwa kipindi cha miaka mitano**
Kimbilia	*Combretum fragrans*	0	0	0	0
Kingonogo	*Combretum fragrans*	2336	0	702.61	140.52
Mchuyo	*Terminalia sericea*	0	0	0.00	0.00
Mdamudamu	*Harungana madagascariensis*	0	0	0.00	0.00
Mfomasia	*Bombax rhodognaphalon*	2475	0	759.05	151.81
Mhoro (matambiko)		0	0	0.00	0.00
Mkalati	*Burkea africana*	0	0	0.00	0.00
Mkongo	*Afzelia quanzensis*	0	0	0.00	0.00
Mkundekunde (ntebelebe)	*Cassia abbreviata*	0	0	0.00	0.00
Mlaliyu (Mhulyaliu)	*Combretum collium*	0	0	0.00	0.00
Mmachangobo	*Holarrhena pubescens*	0	0	0.00	0.00
Mmbalamwezi	*Sterculia quinqueloba*	0	0	0.00	0.00
Mneke (majengo, miichi)	*Pteleopsis africana*	0	0	0.00	0.00
Mngechi	*Strichynos sp*	0	0	0.00	0.00
Mngoko	*Dioscorea sansibarensis*	0	0	0.00	0.00
Mninga	*Pterocarpusangolensis*	0	0	0.00	0.00
Mnondoondo		0	0	0.00	0.00
Mnyemaji		0	0	0.00	0.00
Mpuga	*Pericopsis angolensis*	0	0	0.00	0.00
Msekeseke (Mpalapala)	*Ochna densicoma*	0	0	0.00	0.00
Msolo	*Pseudolachnostylis maprouneifolia*	0	0	0.00	0.00
Mtomasi (Mmanga)		0	0	0.00	0.00
Mtomoni	*Diplorhynchus condylocarpon*	0	0	0.00	0.00
Mtondoo	*Brachystegia spiciformis*	1611	1387	4526.14	905.23
Muoro	*Pseudolachnostylis maprouneifolia*	0	0	0.00	0.00
Mwindira		0	0	0.00	0.00
Myane (mhani, muhane)		0	0	0.00	0.00
Ungechi	*Bauhinia petersiana*	0	0	0.00	0.00
Unyemachi		0	0	0.00	0.00
Jumla		**6422**	**1387**	**5988**	**1198**

Jumla ya Miti Iliyohesabiwa Katika eneo la Utafiti Gole VLFR				
Jina la Kiluga	**Jina la Kisayansi**	Miti Midogo (MD)	Miti ya kati	Miti Mikubwa
Mbuluzigi	*Lannea schimperi*	1	1	0
Mchelejembe	*Dichrostachys glomerata*	0	0	0
Mgunga	*Dalbergia boehmii*	0	0	0
Mhesi	*Maesopsis eminii*	2	1	1
Mhuga	*Dalbergia boehmii*	1	0	1
Miombo	*Brachystegia boehmii*	5	12	2
Mkambala	*Acacia nigrescens*	1	2	0
Mkongowe	*Acacia robusta*	0	1	0
Mlama	*Combretum molle*	14	2	0
Mng'ongo	*Sclerocarya birrea*	0	0	1
Mninga	*Pterocarpus angolensis*	5	6	1
Mnyinga	*Xeroderris stuhlmannii*	2	1	0
Mpilipili	*Sorindeia madagascariensis*	0	3	0
Mpingo	*Dalbergia melanoxylon*	3	0	0
Msasa	*Acacia mellifera*	1	0	0
Msiga	*Dobera loranthifolia*	0	2	0
Msisimisi	*Bridelia sp*	1	0	0
Msolo	*Pseudolachnostylis glauca*	3	2	0
Mtogo	*Diplorhynchus mossambicensis*	2	0	0
Mtundu	*Brachystegia spiciformis*	1	1	2
Mtundu (mtondolo)	*Brachystegia spiciformis*	2	1	1
Muwati	*Acacia mearnsii*	0	0	0
Jumla		**44**	**35**	**9**

Kiasi cha Kuvuna Kiendelevu Gole VLFR					
Jina la Kiluga	**Jina la Kisayansi**	**Kiasi cha Miti ya Kati cha Msitu**	**Kiasi cha Miti Mikubwa cha Msitu**	**Ujazo (m3)**	**Kiasi cha kuvuna kwa kipindi cha miaka mitano**
Mbuluzigi	*Lannea schimperi*	0	0	0	0.00
Mchelejembe	*Dichrostachys glomerata*	0	0	0	0.00
Mgunga	*Dalbergia boehmii*	0	0	0	0.00
Mhesi	*Maesopsis eminii*	0	0	0	0.00
Mhuga	*Dalbergia boehmii*	0	0	0	0.00
Miombo	*Brachystegia boehmii*	1777	0	1010	201.98
Mkambala	*Acacia nigrescens*	0	0	0	0.00
Mkongowe	*Acacia robusta*	0	0	0	0.00
Mlama	*Combretum molle*	0	0	0	0.00
Mng'ongo	*Sclerocarya birrea*	0	0	0	0.00
Mninga	*Pterocarpus angolensis*	929	0	238	47.53
Mnyinga	*Xeroderris stuhlmannii*	0	0	0	0.00
Mpilipili	*Sorindeia madagascariensis*	0	0	0	0.00
Mpingo	*Dalbergia melanoxylon*	0	0	0	0.00
Msasa	*Acacia mellifera*	0	0	0	0.00
Msiga	*Dobera loranthifolia*	0	0	0	0.00
Msisimisi	*Bridelia sp*	0	0	0	0.00
Msolo	*Pseudolachnostylis glauca*	0	0	0	0.00
Mtogo	*Diplorhynchus mossambicensis*	0	0	0	0.00
Mtundu	*Brachystegia spiciformis*	0	0	0	0.00

Kiasi cha Kuvuna Kiendelevu Gole VLFR					
Jina la Kiluga	**Jina la Kisayansi**	**Kiasi cha Miti ya Kati cha Msitu**	**Kiasi cha Miti Mikubwa cha Msitu**	**Ujazo (m3)**	**Kiasi cha kuvuna kwa kipindi cha miaka mitano**
Mtundu (mtondolo)	*Brachystegia spiciformis*	0	0	0	0.00
Muwati	*Acacia mearnsii*	0	0	0	0.00
Jumla		**2706**	**0**	**1247.56**	**249.51**

Jumla ya Miti Iliyohesabiwa Katika eneo la Utafiti Msitu wa Honela VLFR				
Jina la Kiluga	**Jina la Kisayansi**	Miti Midogo (MD)	Miti ya kati (KT)	Miti Mikubwa (MK)
Mbamba kofi	*Afzelia quanzensis*	0	0	2
Mbindingwale /Mpindimbi	*Vitex doniana*	0	0	0
Mchejea/ Mchenjela	*Crossopteryx febrifuga*	3	2	0
Mchenga	*Julbenardia globiflora*	10	7	1
Mhoro (matambiko)	*Pseudolachnostylis maprouneifolia*	1	0	0
Mjembe	*Burkea africana*	0	3	0
Mjombo	*Brachystegia boehmii*	6	9	0
Mkulakula	*Diospyros kirkii*	1	2	0
Mneke	*Pteleopsis africana*	3	2	0
Mngolongoa	*Strichnos inocua*	1	1	0
Mninga	*Pterocarcus angolensis*	10	2	1
Mpingo	*Dalbergia melanoxylon*	0	2	0
Mpongopongo	*Xeroderris stuhlimanii*	1	1	0
Msolo	*Pseudorachnostylis maproneifolia*	4	1	0
Msufi pori	*Bombax rhodognaphalon*	0	0	2
Mtomoni	*Diplorynchus condylocarpon*	3	1	0
Muhilu	*Vangueria infausta*	1	0	0
Unknown 1	*Crossopteryx febrifuga*	2	0	0
Unknown 2	*Diplorhynchus condylocarpon*	4	0	0
Unknown 3	*Annona senegalensis*	1	0	0
Jumla		**51**	**33**	**6**

Kiasi cha Kuvuna Kiendelevu Honela VLFR					
Jina la Kiluga	**Jina la Kisayansi**	**Kiasi cha Miti ya Kati cha Msitu**	**Kiasi cha Miti Mikubwa cha Msitu**	**Ujazo (m^3)**	**Kiasi cha kuvuna kwa kipindi cha miaka mitano**
Mbamba kofi	*Afzelia quanzensis*	0	0	0	0
Mbindingwale /Mpindimbi	*Vitex doniana*	0	0	0	0
Mchejea/ Mchenjela	*Crossopteryx febrifuga*	0	0	0	0
Mchenga	*Julbenardia globiflora*	671	0	215	43.05
Mhoro (matambiko)	*Pseudolachnostylis maprouneifolia*	0	0	0	0
Mjembe	*Burkea africana*	0	0	0	0
Mjombo	*Brachystegia boehmii*	747	0	356	71.21
Mkulakula	*Diospyros kirkii*	0	0	0	0
Mneke	*Pteleopsis africana*	0	0	0	0
Mngolongoa	*Strichnos inocua*	0	0	0	0
Mninga	*Pterocarcus angolensis*	0	0	0	0
Mpingo	*Dalbergia melanoxylon*	0	0	0	0

Kiasi cha Kuvuna Kiendelevu Honela VLFR					
Jina la Kiluga	**Jina la Kisayansi**	**Kiasi cha Miti ya Kati cha Msitu**	**Kiasi cha Miti Mikubwa cha Msitu**	**Ujazo (m^3)**	**Kiasi cha kuvuna kwa kipindi cha miaka mitano**
Mpongopongo	*Xeroderris stuhlimanii*	0	0	0	0
Msolo	*Pseudorachnostylis maproneifolia*	0	0	0	0
Msufi pori	*Bombax rhodognaphalon*	0	0	0	0
Mtomoni	*Diplorynchus condylocarpon*	0	0	0	0
Muhilu	*Vangueria infausta*	0	0	0	0
Unknown 1	*Crossopteryx febrifuga*	0	0	0	0
Unknown 2	*Diplorhynchus condylocarpon*	0	0	0	0
Unknown 3	*Annona senegalensis*	0	0	0	0
Jumla		**1418**	**0**	**571**	**114**

Jumla ya Miti Iliyohesabiwa Katika eneo la Utafiti Lilindindo VLFR				
Jina la Kiluga	**Jina la Kisayansi**	Miti Midogo	Miti ya kati	Miti Mikubwa
Mbamba kofi (mbarikila)	*Afzelia quanzensis*	0	1	1
Mbuni	*Parinari curateiiifolia*	16	11	2
Mchai chai	*Schrebera alata*	1	1	0
Mchenga	*Julbernardia globifora*	22	25	1
Mgeregere	*Brachystegia bussei*	10	37	8
Mhekela	Euclea divinorum	0	2	0
Mkagati	*Monotes africana*	0	2	0
Mkulakula	*Diospyros kirkii*	2	0	0
Mkuyu	*Ficus sur*	0	3	1
Mkwangwa	*Acacia polyacantha*	0	1	0
Mlama	*Combretum fragrans*	4	4	0
Mng'ebe	*Markhamia obtusifolia*	2	0	0
Mngongoa	*Strichnos inocua*	1	1	0
Mninga	*Pterocarpus angolensis*	12	14	0
Mninga maji	*Pterocarpus tinctorus*	0	5	0
Mnyonyo	*Syzygium cordatum*	2	6	2
Mpapa	*Strychnos spinosa*	1	0	0
Mpingo	*Dalbegia melanoxylon*	8	1	0
Mpitimbi	*Vitex doniana*	4	9	0
Mpuga	*Pericopsis angolensis*	12	11	0
Mpumba		1	0	0
Msolo	*Pseudolachnostylis maprouneifolia*	12	9	0
Msuku	*Uapaca kirkiana*	7	18	0
Msuku	*Uapaca kirkiana*	2	0	0
Msuku maji	*Uapaca kirkiana*	2	7	0
Msuwosowo		7	0	0
Mtetereka	*Faurea saligna*	8	2	0
Mtomoni	*Diplorynchus condylocarpon*	4	1	0
Mtondoo	*Brachystegia spiciformis*	17	28	7
Mtumbitumbi	*Pterocarpus angolensis*	1	0	0
Muhanga (muwanga)	*Pericopsis angolensis*	12	22	2
Muhebehebe		1	0	0
Muhekela	Euclea divinorum	3	5	0
Muhowohuwo (Muhuwahuwi)	*Syzygium owariense*	3	0	0
Muhumbete	*Sterculia quinqueloba*	0	1	0
Myombo jangwa	*Brachystegia sp*	4	15	4
Myombo maji	*Brachystegia boehmii*	8	39	4
Jumla		**189**	**281**	**32**

Kiasi cha Kuvuna Kiendelevu Lilindindo VLFR					
Jina la Kiluga	**Jina la Kisayansi**	**Kiasi cha Miti ya Kati cha Msitu**	**Kiasi cha Miti Mikubwa cha**	**Ujazo (m^3)**	**Kiasi cha kuvuna kwa kipindi cha miaka mitano**
Mbamba kofi (mbarikila)	*Afzelia quanzensis*	0	0	0	0
Mbuni	*Parinari curateiiifolia*	3930	0	1634.93	326.99
Mchai chai	*Schrebera alata*	0	0	0.00	0.00
Mchenga	*Julbernardia globifora*	9469	0	3541.13	708.23
Mgeregere	*Brachystegia bussei*	10072	1182	5764.63	1152.93
Mhekela	Euclea divinorum	0	0	0.00	0.00
Mkagati	*Monotes africana*	0	0	0.00	0.00
Mkulakula	*Diospyros kirkii*	0	0	0.00	0.00
Mkuyu	*Ficus sur*	0	0	0.00	0.00
Mkwangwa	*Acacia polyacantha*	0	0	0.00	0.00
Mlama	*Combretum fragrans*	0	0	0.00	0.00
Mng'ebe	*Markhamia obtusifolia*	0	0	0.00	0.00
Mngongoa	*Strichnos inocua*	0	0	0.00	0.00
Mninga	*Pterocarpus angolensis*	5130	0	1770.39	354.08
Mninga maji	*Pterocarpus tinctorus*	975	0	434.60	86.92
Mnyonyo	*Syzygium cordatum*	1363	0	521.33	104.27
Mpapa	*Strychnos spinosa*	0	0	0.00	0.00
Mpingo	*Dalbegia melanoxylon*	0	0	0.00	0.00
Mpitimbi	*Vitex doniana*	2384	0	1061.86	212.37
Mpuga	*Pericopsis angolensis*	3837	0	1182.32	236.46
Mpumba		0	0	0.00	0.00
Msolo	*Pseudolachnostylis maprouneifolia*	3684	0	918.24	183.65
Msuku	*Uapaca kirkiana*	5262	0	1711.29	342.26
Msuku	*Uapaca kirkiana*	0	0	0.00	0.00
Msuku maji	*Uapaca kirkiana*	1652	0	848.01	169.60
Msuwosowo		0	0	0.00	0.00
Mtetereka	*Faurea saligna*	0	0	0.00	0.00
Mtomoni	*Diplorynchus condylocarpon*	0	0	0	0
Mtondoo	*Brachystegia spiciformis*	8090	1193	5685	1137
Mtumbitumbi	*Pterocarpus angolensis*	0	0	0	0
Muhanga (muwanga)	*Pericopsis angolensis*	6463	0	2550	510
Muhebehebe		0	0	0	0
Muhekela	Euclea divinorum	1366	0	323	65
Muhowohuwo (Muhuwahuwi)	*Syzygium owariense*	0	0	0	0
Muhumbete	*Sterculia quinqueloba*	0	0	0	0
Myombo jangwa	*Brachystegia sp*	3609	0	1907	381
Myombo maji	*Brachystegia boehmii*	9912	0	4550.32	910.06
Jumla		**77198**	**2375**	**34405**	**6881**

Jumla ya Miti Iliyohesabiwa Katika eneo la Utafiti Lupagalo VLFR				
Jina la Kiluga	**Jina la Kisayansi**	Miti Midogo	Miti ya kati	Miti Mikubwa
Mbakubaku (dawa kuharisha)		1	0	0
Mbuni	*Parinari curateiiifolia*	17	15	1
Mchafya		0	1	0
Mchaichai (mnyangandembo)	*Schrebera alata*	5	2	0
Mchenga	*Julbernardia globifora*	4	17	0
Mgeregere	*Brachystegia bussei*	15	40	3
Mgwilu	*Syzygium cordatum*	1	0	0
Mgwina (boriti)	*Breonadia salicina*	0	1	0
Miyombo	*Brachystegia sp*	2	1	0
Miyombo maji / chai	*Brachystegia boehmii*	4	15	2
Mkagati	*Monotes africana*	3	4	1
Mkalati	*Burkea africana*	0	1	0
Mlama	*Combretum molle*	3	2	0
Mlelamwana (Ndelamwana)	Lannea schweinfurthi var. stuhlmannii	1	1	0
Mninga jagwa	*Pterocarpus angolensis*	4	6	0
Mninga maji	*Pterocarpus angolensis*	4	4	1
Mnyoyo	*Syzygium cordatum*	0	1	0
Mnyuki		0	1	0
Mpitimbi (mbao za mizinga + majeneza)	*Vitex doniana*	1	0	0
Mpuga	*Pericopsis angolensis*	3	0	0
Msegese	*Piliostigma thonningii*	0	1	0
Msuku	*Uapaca kirkiana*	21	8	0
Mtetereka	*Faurea saligna*	8	7	0
Mtomoni	*Diplorynchus condylocarpon*	6	2	0
Muanga (muwanga)	*Pericopsis angolensis*	3	2	0
Muekele	Gnidia glauca	8	2	0
Muhanga (muwanga)	*Pericopsis angolensis*	3	8	0
Muhekela	Euclea divinorum	4	0	0
Muondoka	*Xeromphis nilotica*	0	0	0
Muoro	*Pseudolachnostylis maprouneifolia*	11	3	0
Myane (mhani, muhane)	*Dodonea viscosa*	19	31	5
Myenda (boriti)	*Bredelia micrantha*	0	1	0
Myombo	*Brachystegia sp*	8	39	3
Myombo jangwa	*Brachystegia sp*	15	51	1
Myombo maji	*Brachystegia boehmii*	12	63	13
Jumla		**186**	**330**	**30**

Kiasi cha Kuvuna Kiendelevu Lupagalo VLFR					
Jina la Kiluga	**Jina la Kisayansi**	**Kiasi cha Miti ya Kati cha Msitu**	**Kiasi cha Miti Mikubwa cha Msitu**	**Ujazo (m3)**	**Kiasi cha kuvuna kwa kipindi cha miaka mitano**
Mbakubaku		0	0	0	0.00
Mbuni	*Parinari curateiiifolia*	1076	0	330	66.04
Mchafya		0	0	0	0.00
Mchaichai	*Schrebera alata*	0	0	0	0.00
Mchenga	*Julbernardia globifora*	823	0	330	66.09
Mgeregere	*Brachystegia bussei*	2463	0	1067	213.40
Mgwilu	*Syzygium cordatum*	0	0	0	0.00
Mgwina (boriti)	*Breonadia salicina*	0	0	0	0.00
Miyombo	*Brachystegia sp*	0	0	0	0.00
Miyombo maji / chai	*Brachystegia boehmii*	713	0	346	69.18

Kiasi cha Kuvuna Kiendelevu Lupagalo VLFR					
Jina la Kiluga	**Jina la Kisayansi**	**Kiasi cha Miti ya Kati cha Msitu**	**Kiasi cha Miti Mikubwa cha Msitu**	**Ujazo (m3)**	**Kiasi cha kuvuna kwa kipindi cha miaka mitano**
Mkagati	*Monotes africana*	0	0	0	0.00
Mkalati	*Burkea africana*	0	0	0	0.00
Mlama	*Combretum molle*	0	0	0	0.00
Mlelamwana (Ndelamwana)	Lannea schweinfurthi var. stuhlmannii	0	0	0	0.00
Mninga jagwa	*Pterocarpus angolensis*	315	0	117	23.46
Mninga maji	*Pterocarpus angolensis*	0	0	0	0.00
Mnyoyo	*Syzygium cordatum*	0	0	0	0.00
Mnyuki		0	0	0	0.00
Mpitimbi	*Vitex doniana*	0	0	0	0.00
Mpuga	*Pericopsis angolensis*	0	0	0	0.00
Msegese	*Piliostigma thonningii*	0	0	0	0.00
Msuku	*Uapaca kirkiana*	670	0	165	32.90
Mtetereka	*Faurea saligna*	484	0	151	30.14
Mtomoni	*Diplorynchus condylocarpon*	0	0	0	0.00
Muanga (muwanga)	*Pericopsis angolensis*	0	0	0	0.00
Muekele	Gnidia glauca	0	0	0	0.00
Muhanga (muwanga)	*Pericopsis angolensis*	419	0	188	37.68
Muhekela	Euclea divinorum	0	0	0	0.00
Muondoka	*Xeromphis nilotica*	0	0	0	0.00
Muoro	*Pseudolachnostylis maprouneifolia*	0	0	0	0.00
Myane (mhani, muhane)	*Dodonea viscosa*	1956	157	995	199.07
Myenda (boriti)	*Bredelia micrantha*	0	0	0	0.00
Myombo	*Brachystegia sp*	1944	0	835	167.03
Myombo jangwa	*Brachystegia sp*	3018	0	1275	254.92
Myombo maji	*Brachystegia boehmii*	3397	363	2176	435.22
Jumla		**17278**	**520**	**7976**	**1595**

Jumla ya Miti Iliyohesabiwa Katika eneo la Utafiti Msitu wa Nahimba VLFR				
Jina la Kiluga	**Jina la Kisayansi**	Miti Midogo	Miti ya kati	Miti Mikubwa
Kimbilia	*Combretum fragrans*	1	0	0
Kirumaa	*Acacia sp*	5	0	0
Mchenga	*Julbernardia globifora*	24	23	0
Mchonda	*Acacia xanthophloea*	1	1	0
Mgongwea		0	0	0
Milambuchu		0	0	0
Mkalati	*Burkea africana*	4	5	2
Mkongo	*Afzelia quanzensis*	1	0	0
Mkongo pori	*Lannea shweinfurthii*	1	0	0
Mkuchimbi	*Swartzia madagascariensis*	0	1	0
Mkukwe	*Brachystegia longifolia*	0	3	1
Mkulakula	*Diospyros kirkii*	8	10	0
Mlaliyu (Mhulyaliu)	*Combretum collium*	0	2	0
Mmbalamwezi	*Sterculia africana*	1	0	0
Mnazi pori	*Phoenix sp*	0	2	0
Mnazi pori (kingunda)	*Phoenix sp*	0	1	0
Mngeche	*Strichynos sp*	0	1	0
Mngichi	*Strichynos sp*	1	0	0
Mninga	*Pterocarpus angolensis*	16	25	0
Mnjekele	Swartzia madagascariensis	1	13	1
Mnyanda	*Albizia amara*	0	1	0

Jumla ya Miti Iliyohesabiwa Katika eneo la Utafiti Msitu wa Nahimba VLFR				
Jina la Kiluga	**Jina la Kisayansi**	Miti Midogo	Miti ya kati	Miti Mikubwa
Mpande	*Milletia stuhulmanii*	0	1	0
Mpingo	*Dalbegia melanoxylon*	0	1	0
Mpome	*Commiphora sp*	0	0	0
Mpupuchu		1	0	0
Msolo	*Pseudolachnostylis maprouneifolia*	9	4	0
Mtomoni	*Diplorhynchus condylocarpon*	6	1	0
Muondoka	*Xeromphis nilotica*	0	0	0
Mwengele	*Pteleopsis africana*	1	0	0
Ngeche	*Strichynos sp*	1	1	0
Ng'omboti	*Brachystegia longifolia*	1	0	0
Ng'ulaliu (kuni)	*Combretum collinum*	2	0	0
Ngundaubi		0	0	0
Ngwichindu	*Phoenix reclinata*	0	0	0
Ntendangungu (mnangungu)	*Salacia leptoclada*	0	0	0
Rutondwa	*Arisaema sp.*	0	0	0
Unknown	*Combretum fragrans*	4	0	0
Jumla		**89**	**96**	**4**

Kiasi cha Kuvuna Kiendelevu Nahimba VLFR					
Jina la Kiluga	**Jina la Kisayansi**	**Kiasi cha Miti ya Kati cha Msitu**	**Kiasi cha Miti Mikubwa cha Msitu**	**Ujazo (m3)**	**Kiasi cha kuvuna kwa kipindi cha miaka mitano**
Kimbilia	*Combretum fragrans*	0	0	0	0
Kirumaa	*Acacia sp*	0	0	0	0
Mchenga	*Julbernardia globifora*	1109	0	406	81.25
Mchonda	*Acacia xanthophloea*	0	0	0	0
Mgongwea		0	0	0	0
Milambuchu		0	0	0	0
Mkalati	*Burkea africana*	169	0	76	15.17
Mkongo	*Afzelia quanzensis*	0	0	0	0
Mkongo pori	*Lannea shweinfurthii*	0	0	0	0
Mkuchimbi	*Swartzia madagascariensis*	0	0	0	0
Mkukwe	*Brachystegia longifolia*	0	0	0	0
Mkulakula	*Diospyros kirkii*	449	0	178	35.59
Mlaliyu (Mhulyaliu)	*Combretum collium*	0	0	0	0
Mmbalamwezi	*Sterculia africana*	0	0	0	0
Mnazi pori	*Phoenix sp*	0	0	0	0
Mnazi pori	*Phoenix sp*	0	0	0	0
Mngeche	*Strichynos sp*	0	0	0	0
Mngichi	*Strichynos sp*	0	0	0	0
Mninga	*Pterocarpus angolensis*	1163	0	572	114.33
Mnjekele	Swartzia madagascariensis	367	0	208	41.60
Mnyanda	*Albizia amara*	0	0	0	0
Mpande	*Milletia stuhulmanii*	0	0	0	0
Mpingo	*Dalbegia melanoxylon*	0	0	0	0
Mpome	*Commiphora sp*	0	0	0	0
Mpupuchu		0	0	0	0
Msolo	*Pseudolachnostylis maprouneifolia*	0	0	0	0
Mtomoni	*Diplorhynchus condylocarpon*	0	0	0	0
Muondoka	*Xeromphis nilotica*	0	0	0	0
Mwengele	*Pteleopsis africana*	0	0	0	0

Kiasi cha Kuvuna Kiendelevu Nahimba VLFR					
Jina la Kiluga	**Jina la Kisayansi**	**Kiasi cha Miti ya Kati cha Msitu**	**Kiasi cha Miti Mikubwa cha Msitu**	**Ujazo (m3)**	**Kiasi cha kuvuna kwa kipindi cha miaka mitano**
Ngeche	*Strichynos sp*	0	0	0	0
Ng'omboti	*Brachystegia longifolia*	0	0	0	0
Ng'ulaliu (kuni)	*Combretum collinum*	0	0	0	0
Ngundaubi		0	0	0	0
Ngwichindu	*Phoenix reclinata*	0	0	0	0
Ntendangungu (mnangungu)	*Salacia leptoclada*	0	0	0	0
Rutondwa	*Arisaema sp.*	0	0	0	0
Unknown	*Combretum fragrans*	0	0	0	0
Jumla		**3257**	**0**	**1440**	**288**

Jumla ya Miti Iliyohesabiwa Katika eneo la Utafiti Msitu wa Namswea VLFR				
Jina la Kiluga	**Jina la Kisayansi**	Miti Midogo	Miti ya kati	Miti Mikubwa
Limpome (Mpoma)	*Commiphora serrata*	3	6	0
Lingurungundo		1	0	0
Mbalamwezi	*Sterculia quinqueloba*	2	8	0
Mbuni	*Parinari curateiiifolia*	6	13	0
Mchaichai	*Schrebera alata*	10	2	0
Mgeregere	*Brachystegia bussei*	9	97	11
Mgwina	*Breonadia salicina*	1	2	0
Mhoro	*Pseudolachnostylis maprouneifolia*	13	2	1
Mkagati	*Monotes africana*	1	0	0
Mkoli (mkolakola)	*Bridelia micrantha*	5	3	0
Mkomba luiko (Chitimbe)	*Piliostigma thonningii*	3	4	0
Mkuyu	*Ficus sur*	1	0	0
Mlama	*Combretum fragrans*	4	3	0
Mlelamwana (Ndelamwana)	*Lannea schweinfurthi var. stuhlmannii*	3	5	0
Mngenda		1	0	0
Mngongoma	*Sclerocarya birrea*	2	1	0
Mngulaka	*Syzygium guineense*	3	1	0
Mninga jangwa	*Pterocarpus angolensis*	29	12	0
Mninga maji	*Pterocarpus angolensis*	35	46	0
Mnjoka		1	0	0
Mnyonyo maji	*Syzygium cordatum*	0	3	0
Mpangala	*Dichrostachys cinerea*	2	5	0
Mpera	*Psedium guajava*	0	0	0
Mpingipingi	*Ximenia caffra*	0	1	0
Mpome	*Commiphora sp*	1	1	0
Mpuga	*Pericopsis angolensis*	6	7	1
Mpugupugu	*Markhamia obtusifolia*	0	1	0
Mpulamwisi (mpelemusi)	*Sterculia quinqueloba*	14	4	0
Msana		1	0	0
Msolo	*Pseudolachnostylis maprouneifolia*	10	3	0
Mstafeli	*Annona muricata*	0	0	0
Msuku	*Uapaca kirkiana*	28	11	0
Msuku dume	*Uapaca kirkiana*	1	1	0
Mtetereka	*Faurea saligna*	20	9	0
Mtomoni	*Diplorynchus condylocarpon*	15	3	0
Mtopetope	*Annona cherimola*	0	0	0
Mtumbi tumbi	*Pterocarpus angolensis*	1	0	0
Muhanga (muwanga)	*Pericopsis angolensis*	16	11	0

Jumla ya Miti Iliyohesabiwa Katika eneo la Utafiti Msitu wa Namswea VLFR				
Jina la Kiluga	**Jina la Kisayansi**	Miti Midogo	Miti ya kati	Miti Mikubwa
Mwembe	*Mangifera indica*	0	3	0
Mwiba	*Acacia sp*	6	13	0
Myombo jangwa	*Brachystegia sp*	43	82	4
Myombo maji	*Brachystegia boehmii*	23	90	2
Ndelamwana	*Lannea schweinfurthi*	5	1	0
Nkakala	*Diospyros kirki*	0	1	0
Nkumbi		0	1	0
Unknown 3		1	0	0
Jumla		**326**	**456**	**19**

Kiasi cha Kuvuna Kiendelevu katika Msitu wa Namswea VLFR					
Jina la Kiluga	**Jina la Kisayansi**	**Kiasi cha Miti ya Kati cha Msitu**	**Kiasi cha Miti Mikubwa cha Msitu**	**Ujazo (m3)**	**Kiasi cha kuvuna kwa kipindi cha miaka mitano**
Limpome (Mpoma)	*Commiphora serrata*	691	0	214	42.83
Lingurungundo		0	0	0	0.00
Mbalamwezi	*Sterculia quinqueloba*	827	0	241	48.28
Mbuni	*Parinari curateiiifolia*	1526	0	654	130.85
Mchaichai	*Schrebera alata*	0	0	0	0.00
Mgeregere	*Brachystegia bussei*	11468	623	6242	1248.37
Mgwina	*Breonadia salicina*	0	0	0	0.00
Mhoro	*Pseudolachnostylis maprouneifolia*	0	0	0	0.00
Mkagati	*Monotes africana*	0	0	0	0.00
Mkoli (mkolakola)	*Bridelia micrantha*	0	0	0	0.00
Mkomba luiko (Chitimbe)	*Piliostigma thonningii*	0	0	0	0.00
Mkuyu	*Ficus sur*	0	0	0	0.00
Mlama	*Combretum fragrans*	0	0	0	0.00
Mlelamwana (Ndelamwana)	*Lannea schweinfurthi var. stuhlmannii*	584	0	249	49.79
Mngenda		0	0	0	0.00
Mngongoma	*Sclerocarya birrea*	0	0	0	0.00
Mngulaka	*Syzygium guineense*	0	0	0	0.00
Mninga jangwa	*Pterocarpus angolensis*	2333	0	821	164.15
Mninga maji	*Pterocarpus angolensis*	7432	0	2525	505.04
Mnjoka		0	0	0	0.00
Mnyonyo maji	*Syzygium cordatum*	0	0	0	0.00
Mpangala	*Dichrostachys cinerea*	501	0	157	31.46
Mpera	*Psedium guajava*	0	0	0	0.00
Mpingipingi	*Ximenia caffra*	0	0	0	0.00
Mpome	*Commiphora sp*	0	0	0	0.00
Mpuga	*Pericopsis angolensis*	929	0	371	74.14
Mpugupugu	*Markhamia obtusifolia*	0	0	0	0.00
Mpulamwisi (mpelemusi)	*Sterculia quinqueloba*	0	0	0	0.00
Msana (makambako)		0	0	0	0.00
Msolo	*Pseudolachnostylis maprouneifolia*	0	0	0	0.00
Mstafeli	*Annona muricata*	0	0	0	0.00
Msuku	*Uapaca kirkiana*	1901	0	559	111.74
Msuku dume	*Uapaca kirkiana*	0	0	0	0.00
Mtetereka	*Faurea saligna*	1670	0	696	139.21
Mtomoni	*Diplorynchus condylocarpon*	0	0	0	0.00
Mtopetope	*Annona cherimola*	0	0	0	0.00

Kiasi cha Kuvuna Kiendelevu katika Msitu wa Namswea VLFR					
Jina la Kiluga	**Jina la Kisayansi**	**Kiasi cha Miti ya Kati cha Msitu**	**Kiasi cha Miti Mikubwa cha Msitu**	**Ujazo (m3)**	**Kiasi cha kuvuna kwa kipindi cha miaka mitano**
Mtumbi tumbi	*Pterocarpus angolensis*	0	0	0	0.00
Muhanga (muwanga)	*Pericopsis angolensis*	1815	0	713	142.58
Mwembe	*Mangifera indica*	0	0	0	0.00
Mwiba	*Acacia sp*	1526	0	374	74.75
Myombo jangwa	*Brachystegia sp*	12051	0	4594	918.74
Myombo maji	*Brachystegia boehmii*	11954	0	4359	871.87
Ndelamwana	*Lannea schweinfurthi*	0	0	0	0.00
Nkakala	*Diospyros kirki*	0	0	0	0.00
Nkumbi		0	0	0	0.00
Unknown 3		0	0	0	0.00
Jumla		**57208**	**623**	**22769**	**4554**

Annex III: Revised FORVAC Results Framework (in MS word file format)

Planning Matrix for Annual Targets

Results	Indicators	Baseline	Annual target 7/2019 – 6/2020	End of programme target 7/2018 – 6/2022	Means of verification	Assumptions
Impact						
Increased economic, social and environmental benefits from forests and woodlands	Increased household incomes derived from forests (Disaggregated by age, sex, disability)	9% forest-based employment, 17.5% (TZS 45,854) HH income from forest-based enterprises.	Household incomes improved (progress measured during the endline study)	+15%	Baseline and endline studies	GoT Land and other NR related policy improve or at least remain favorable for development of the forestry sector GoT allocates sufficient resources for forestry development Political commitment for sustainable forest management and value chain development in CBFM NR and land related law enforcement is in place and is being enforced Policy harmonization contribute to sector development
	Less deforestation in the area where FORVAC works	Deforestation rate in FORVAC regions	Deforestation reduced	Deforestation significantly lower by the programme end in the VLFRs where FORVAC works compared to other VLFRs of the region	National Carbon Monitoring Centre statistics	
	Improved services for villages, e.g. water services, health services, RE solutions (disaggregated by sex, age and disability) improved services of the village office for villagers, e.g. regarding land registry	15.4% of the respondents find service delivery systems well-functioning	Services improved in FORVAC supported villages (progress measured during endline study)	Villager's opinions of the related services is improved during the project lifetime (disaggregated by sex, age and disability)	Baseline and endline studies	
	VLFRs increased contribution to national level sustainable woodland and forest management	247,789.2 ha (NFBK II & LIMAS)	36 VLFRs, including 2 Community Forest Reserves (CFR) both of them involving 2 villages established under FORVAC's support Around 120,000 ha (exact area known after LUP)	2,4 million ha	NAFORMA MNRT statistics	

Results	Indicators	Baseline	Annual target 7/2019 – 6/2020	End of programme target 7/2018 – 6/2022	Means of verification	Assumptions
Impact: Increased economic, social and environmental benefits from forests and woodlands	Improved institutional support for the forest sector through regulations and legislation in place	Existing regulations and legislation at baseline	Updates/amendments of forest legislation (Forest Act and regulations) Draft Beekeeping Policy outlined Charcoal Policy and Implementation Strategy in place	Supportive regulations and legislation revised for sustainable forest management by programme end	Forest related regulation	

Outcome	Indicators	Baseline	Annual target 7/2019 – 6/2020	End of programme target 7/2018 – 6/2022	Means of verification	Assumptions
Improved forest sector value chains contributing to sustainable forestry and forest-based livelihoods	Improved business environment in forestry sector related to - taxes and royalties - standards - forest value chains	Poor transparency of taxes and royalties Non existing standards in place Poorly functioning forest value chains	Progress made to establish a transparent and just system for levying taxes and royalties. Drafting construction / technical standard for a number tree species (timber) from natural forests commenced Improvements in forest value chains related regulations, improved benefit sharing modalities in use	Transparent and just system for levying taxes and royalties in place Construction/technical standard developed The number of forest value chains related regulations revised, benefit sharing modalities in use (the number to be defined during the course of FORVAC)	Programme reports Published Standard Revised Regulations published; programme reports	Political commitment for sustainable forest management and value chain development in CBFM Favorable political, legal and policy framework for Public Private Partnerships (PPP) and towards private sector and civil society engagement in business development Institutional stability within MNRT Good cooperation between MNRT / FBD, TFS and PO-RALG; all having clear roles on how to support
	Supporting functions/ Service provision for: - Improved market information system	Non-existent market information system Low awareness on business financing options	Development of Market information System initiated Forest sector businesses better linked with financing alternatives	Market information system in place Forest sector businesses linked with financing alternatives	Project reports Programme Reporting Endline study	

Outcome	Indicators	Baseline	Annual target 7/2019 – 6/2020	End of programme target 7/2018 – 6/2022	Means of verification	Assumptions
Improved forest sector value chains contributing to sustainable forestry and forest-based livelihoods	- Improved forest value chain financing - Enhancing capacities in VC	Low capacity in place in Tanzania for value chain development	VC included in the curricula of forestry training institutions (SUA 2019 – 2020)	Better functioning forest value chains in Tanzania benefitting forest sector and including participation of women and disadvantaged groups (data disaggregated by sex, age, disability) VC included in the curricula of forestry training institutions	Data collected from forestry training institutes	communities and private sector Domestic market available for sustainably harvested timber, charcoal, honey and other NWFP products Increasing international market access for FSC certified timber Level of forest encroachment does not increase
	Increased number of community producer groups and their members engaged in wood and NWFP harvesting, processing and marketing (per products/ district/ year, by sex, age and potential disability)	Process	36 producers groups established	70 groups of 30 women / men; totaling 2100 members (Figures to be revised on the basis of the baseline)	Survey on NWFPs, group records	
	Social fund distribution from forest produce sales (e.g. school uniforms, school desks, dispensary building, benefitting vulnerable; by gender, age and disability) and number of people benefiting	40% of the 20 villages sampled at the baseline study have contributed to social services (contribution 40% of forest income): total of 1,119,000,000 tsh since starting of CBFM (add population data of the 7 villages)	+15 %	+75 %	VNRC book keeping, Village records	
	AAC - Annual Allowable Cut defined in harvesting plans, and logging done according to plans	Very few of the villages had updated harvest	15 % (to be adjusted against harvesting plans)	xx % increase	VNRC records, district records	

Outcome	Indicators	Baseline	Annual target 7/2019 – 6/2020	End of programme target 7/2018 – 6/2022	Means of verification	Assumptions
Improved forest sector value chains contributing to sustainable forestry and forest-based livelihoods		plans in place in the beginning of FORVAC				
	Increased areas under sustainable forest management (CBFM)	247,789 ha	36 VLFRs, including 2 Community Forest Reserves (CFR) both of them involving 2 villages established under the FORVAC support Around 120,000 ha (area to be known after VLUPs) 25 VLUP produced	+ 60 % (additional 151,149 ha)	Management plans; district and VNRC records, and survey Programme report	
	Improved Forest Law enforcement and Governance system to replace trade of illegal timber with legally produced timber	Situation in 2018	Progress taken in establishment of components of Forest Law enforcement and Governance system	Key Forest Law enforcement and Governance system components in place	Project and FBD/TFS/ district records	

Results	Indicators	Baseline	Annual target 7/2019 – 6/2020	End of programme target 7/2018 – 6/2022	Means of verification	Assumptions
Output 1. Improved Value Chains and increased Private Sector Involvement in the forest sector	Number of VLFRs declared and operational, including village land use plans and forest management plans	57 VLFRs (NFBKP II 20 + LIMAS 16) 24 LUP	36 VLFR, including 2 Community Forest Reserves (CFR) both of them involving 2 villages established under the FORVAC support 25 VLUP produced	85 VLFR functional (number of new VLFRs to be established 28) 52 LUP	District register (DFO) VLFR Mgt Plans Programme reports VNRC reports	Law enforcement is sufficiently efficient to make legally harvested timber viable Management plans fulfilled and are implemented according to sustainability criteria

Results	Indicators	Baseline	Annual target 7/2019 – 6/2020	End of programme target 7/2018 – 6/2022	Means of verification	Assumptions
Output 1. Improved Value Chains and increased Private Sector Involvement in the forest sector	Number of forest harvesting contracts contributing to the timber value chain managed in VLFRs (species, volume sold and unit prices) villages/district / year	2 large sawmills 5% of respondents engaged in timber processing. 11% of respondents engaged in timber value chain activities.	5 new harvesting plans by June 2020	At least for 25 % of the VLFRs established during FORVAC +200%	VNRC records, district records, programme report	Strong leadership and equitable participation of villagers in CBFM is maintained FBD and PO-RALG take active stance in solving the coordination and monitoring issues PO-RALG allocates sufficient resources to districts Villages, private sector and civil society are committed to interact with GoT institutions Political will to support CBFM exists at district level A sufficient number of qualified Service providers available Domestic market demand increases for lesser-known timber species; for quality honey and other honey products produced in Tanzania Other NWFPs (other than honey products)
	Lesser known species with market potential identified and researched	process (0)	10 – 15 identified (service contract)	at least 10 with potential for market/business dev.	Assessment Report on Lesser Known Species, programme reporting	
	Advocacy on lesser known species	process (0)	Information (technical qualities) and availability of 3 – 5 species disseminated by June 2020	x species of lesser known species disseminated	TFS/districts records, market study on species and their market potential assessed and promoted, programme reporting	
	Honey producer or other NWFP/NTFP producer groups linked with traders and other value chain actors (by sex) and their income increased	70 groups Kg 21 000 / a honey Kg 5250 / a bees wax NTFP: to be established % women producers	+ 5% + kg 1000 + 250 kg + 15% + 20%	+ 30% + 100% + 100% + 100%	District statistics/records, programme reporting survey on honey sales and / or NWFP sales	
	Increased efficiency of timber processing (e.g. use of efficient sawmills contra pit sawing)	Current recovery rate 25 -30 %	No contribution during the planning period (but later during the programme years 3 and 4)	5 – 10% increase	Survey on recovery rates	
	Number of new institutional arrangements/ business models with market linkages (e.g. MoUs, joint ventures, PPP & other partnerships)	Process (0)	+ 3 – 5	10 – 15	TFS, district and programme records	

Results	Indicators	Baseline	Annual target 7/2019 – 6/2020	End of programme target 7/2018 – 6/2022	Means of verification	Assumptions
Output 1. Improved Value Chains and increased Private Sector Involvement in the forest sector	Number of private business actors engaged in legal timber processing (per district/year) increased	Records by the Baseline Study Process	+20%	+150%	VNRC (VLFR), TFS, district and programme records	with commercialization potential are available Private sector, villagers and VNRC exist in the districts and are interested to participate in value chain development
	Increased employment (# of persons getting income) in harvesting and transportation, processing, pit sawing and saw milling; by gender.	5 % of population in target villages employed in timber processing	+ 300 (15 % women)	+1000 people (at least 20 % women)	Baseline and endline studies, project reports	
	Total income from charcoal sales within FORVAC VLFRs	Handeni: TZS 3.5 million per year Kilindi: 39.6 million per year	+20%	+200%	District forestry offices	
	Reduction in annual illegal forest harvesting cases in FORVAC supported forests	Illegal harvesting of timber was reported by 17.9% of the respondents		10% of the respondents report illegal harvesting of timber	Baseline and endline studies	
Output 2. Stakeholder capacity to implement and promote forestry value chain development enhanced	Number of government staff trained in forest management and value addition techniques, disaggregated by sex (inclusive VETA training programme)	Government staff not having or possessing inadequate knowledge and skills on forest mgt and VCD	100 district officers + 20 regional & central government officers 20% + women	120 district officers (10 officers in each programme district) 22 regional and central government officers 20% women	FBD/NFBKP II/LIMAS records from previous phase and service provider records	Government organisations willing to implement capacity development results Villages, districts, private sector, civil society actors and other organizations willing and able to implement capacity development and are committed to
	Number of individuals trained in forest management and value addition techniques, disaggregated by sex, age and disability/ by category (village level, SMEs, service providers)	Village Councils and VNRCs, villagers involved in timber harvest & processing, charcoal production and trade with totally lacking or inadequate	• 1600 village leaders (40 villages: 20 Village Councils + 20 VNRCs) • 100 SMEs • 20 staff members of Service Providers	3400 village leaders (85 villages: 20 Village Councils + 20 VNRCs) 180 SMEs 20 staff members of Service Providers	Records kept by the project and service providers	

Results	Indicators	Baseline	Annual target 7/2019 – 6/2020	End of programme target 7/2018 – 6/2022	Means of verification	Assumptions
Output 2. Stakeholder capacity to implement and promote forestry value chain development enhanced		knowledge and skills on forest mgt & VCD				interact with GoT institutions Equitable participation of villagers in CBFM related capacity development FBD/TFS and PO-RALG take active stance in promoting capacity building at all levels Willingness and ability of relevant educational institutes to include forest value chain development in their curricula
	Value chain related efficiency in decision making and in administrative procedures increased	Status/baseline as of situation in 2018	Steps taken to improve efficiency of VC related decision making and administrative procedures, average time for getting permits reducing	Average time for getting permits reduced procedures simplified	Procedures defined and used as a reference for assessing the performance	
	Forest value chain development incorporated in University and FTI/FITI curricula	No existing VC related education	VCD included in the curricula of SUA	Curricula developed and in use Issues of gender, age and disability considered in learning material	Programme reports; existing curriculas	
	Communication strategy mobilized	Established (ST consultancy in 2018)	Communication strategy mobilized and applied to FORVAC programme mgt, supported activities and communication with stakeholders FORVAC website established and taken into use.	FORVAC communication according to strategy	Programme reports	

Results	Indicators	Baseline	Annual target 7/2019 – 6/2020	End of programme target 7/2018 – 6/2022	Means of verification	Assumptions
Output 3. Functional extension, communication, monitoring systems and Management Information System in place	Extension strategy developed, aiming for synergies with FBD, on the principles of HRBA, incorporating value chain development Programme MIS unit established contributing to FBD MIS development	Non existent Non existent	Extension strategy formulated and taken into use (service contract or ST consultancy) MIS established and taken into use (ST consultancy)	Strategy developed and put in use Functional MIS Unit	Programme reports Programme reports	MNRT and PO-RALG take active stance in extension and communication services along the VC at all levels Villages, districts, private sector, civil society actors and other organizations willing to develop extension and communication TFS and FBD and other concerned governmental parties including research institutions, as well private sector and NGOs are committed to set up functional monitoring and MIS systems and provide inputs on regular basis Districts, villagers and VNRCs cooperate in collecting data for village monitoring system

Results	Indicators	Baseline	Annual target 7/2019 – 6/2020	End of programme target 7/2018 – 7/2022	Means of verification	Assumptions
Output 4. Supportive legal and policy frameworks to forest value chain and sustainable forest management developed	FORVAC development support for Guidelines: CBFM books	Version outdated	Update, printing and dissemination of 5 CBFM books (guidelines, accounting / bookkeeping materials for VLFRs, etc., edition of 3500 pcs. in total	Books updated and distributed to CBFM actors Issues of gender, age and disability considered in visual materials	Programme reports	Political will exist for updating and endorsing the sector level policy and legal documents GoT committed to support Forest Law and Governance enforcement, as well as implementation of Charcoal Policy and Implementation Strategy Private sector and civil society are committed to interact with GoT institutions in legal and policy revision processes, and GoT takes due recognition
	Updated forest legislation (Forest Act and regulations) approved	Updated Forest act needed for Forest policy	Progress made in amendments of Forest Act and regulation Translation in Swahili and dissemination	Forest Act approved; related information disseminated in project area (with consideration to accessibility for all potential users)	MNRT reports and records	
	Updated Forest Policy disseminated	Final draft exists	1000 copies of the new Forest Policy and implementation strategy printed and disseminated	Forest Policy approved; related information disseminated in project area (with consideration to accessibility for all potential users)	Programme reports	
	National Assessment on the Charcoal sector results supported by FORVAC	Draft in progress	Support to preparation of Charcoal Policy and Implementation Strategy - Charcoal Policy and Implementation Strategy approved by June 2020	Strategy in use	MNRT records on National Charcoal Strategy	

Results	Indicators	Baseline	Annual target 7/2019 – 6/2020	End of programme target 7/2018 – 7/2022	Means of verification	Assumptions
Output 4. Supportive legal and policy frameworks to forest value chain and sustainable forest management developed	Timber legality assurance system (TLAS) established	Initiated, with development of timber tracking sub-component of TLAS, electronic device piloted in selected checkpoints	Establishment of national working group on developing forest law enforcement (Timber Legality Assurance System) Process for reducing a number of checkpoints by merging TFS and District Council checkpoints initiated and further supported Review the feasibility of the electronic timber tracking system introduced Tanzanian Timber Legality Manual produced in cooperation with TFS and the FBD (partnering with TRAFFIC). Stakeholders trained on law enforcement / legality issues In cooperation with the Tanzania Forestry Working Group (TFWG), an awareness raising workshop against illegal logging and charcoal production in in the programme area	TLAS developed and in use, efficient country-wide timber tracking system piloted and taken into use	TFS reports, MNRT report, programme reporting	

Annex IV: Segregated Household data (gender, sex, cluster and age wise; in MS word file format)

Appendix 4: Selected socio-economic results segregated by clusters

Table 1: Socio-economic characteristics of respondents

Characteristics of respondents	Overall		Lindi		Ruvuma		Tanga	
	Frequency (N)	Percent (%)	Frequency (N)	Percent (%)	Frequency (N)	Percent (%)	Frequency (N)	Percent (%)
Gender of the respondent								
Male	366	57.6	182	55.2	79	38.7	59	58.4
Female	269	42.4	148	44.8	125	61.3	42	41.6
Marital status of respondent								
Married	501	78.9	249	75.5	159	77.9	93	93
Single	98	15.4	53	16	39	19.1	6	5.0
Widowed	16	2.5	11	3.3	5	2.5	0	0
Divorced	20	3.2	17	5.2	1	0.5	2	2.0
Household head								
Female-headed households	93	14.6	51	15.5	30	14.7	12	11.9
Male-headed households	542	85.4	279	84.5	174	85.3	89	88.1
Educational level of household head								
Illiterate (never attended formal education)	46	7.2	28	8.5	7	3.4	11	10.9
Primary education	528	83.2	276	83.6	171	83.8	81	80.2
Secondary education	52	8.2	22	6.7	23	11.3	7	6.9
Tertiary education	9	1.4	4	1.2	3	1.5	2	2.0

Table 2: Respondents' occupations in the study area

		Overall		Lindi		Ruvuma		Tanga	
Category label	*Code*	*Count*	*Percent (%)*	*Count*	*Percent (%)*	*Count*	*Percent (%)*	*Count*	*Percent (%)*
Farmers	1	612	79.0	325	86.4	196	74.8	91	68.9
Business	2	57	7.0	23	6.1	20	7.6	14	10.6
Pastoralists	3	18	2.0	2	0.5	9	3.5	7	5.4
Employed	4	10	1.0	2	0.5	4	1.5	4	3.0
Self-employed in forest-based activities	5	67	9.0	24	6.4	33	12.6	10	7.6
Agro-pastoralist	6	6	1.0	0	0.0	0	0	6	4.5
TOTAL		**770**	**100**	**376**	**100**	**262**	**100**	**132**	**100**

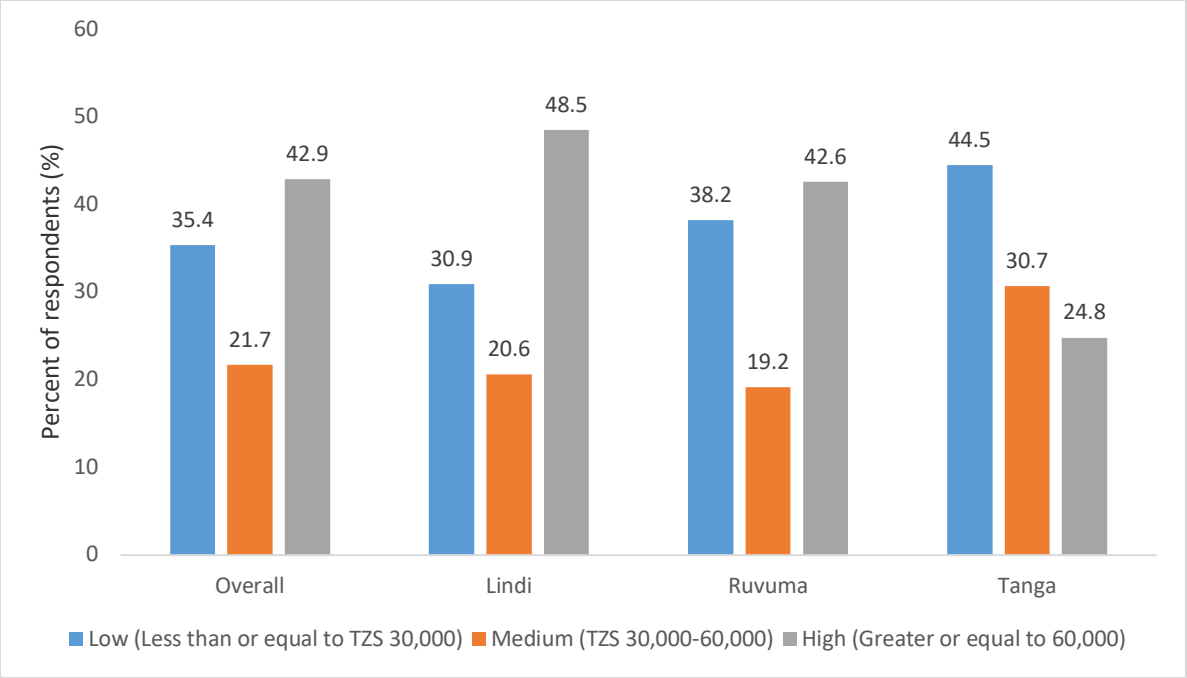

Figure 1: Categories of household monthly income

Table 3: Average household size in the study area

FORVAC cluster	Household size
Lindi	4
Ruvuma	2
Tanga	3
Overall	**4**

Table 4: Number of respondents owning various assets in the study area

Asset	Overall	Lindi	Ruvuma	Tanga
Pesticide sprayer	118	73	42	3
Bee apiary	18	5	6	7
Wheel barrow	4	0	2	2
OX-driven carts	8	0	0	8
Vehicle	2	1	0	1
Motor cycle	105	55	30	20
Bicycle	311	229	47	35
Livestock	410	160	169	81

Table 5: Households owning forest-dependent animals in the study area

		Overall		Lindi		Ruvuma		Tanga	
Category label	*Code*	*Count*	*Percent (%)*	*Count*	*Percent (%)*	*Count*	*Percent (%)*	*Count*	*Percent (%)*
Cow	1	88	24.6	7	27	51	25.8	30	22.4
Goats	2	232	64.8	19	73	144	72.7	69	51.5
Sheep	3	22	6.1	0	0	3	1.5	19	14.2
Donkey	4	16	4.5	0	0	0	0	16	11.9
	TOTAL	**358**	**100**	**26**	**100**	**198**	**100**	**134**	**100**

Table 1: *Source of household energy for cooking and heating in the study area*

		Overall		Lindi		Ruvuma		Tanga	
Category label	*Code*	*Count*	*Percent (%)*	*Count*	*Percent (%)*	*Count*	*Percent (%)*	*Count*	*Percent (%)*
Firewood	1	586	68.9	312	75.0	180	68.4	94	55.0
Charcoal	2	219	25.8	101	24.3	50	19	68	39.8
Electricity	3	3	0.4	1	0.2	1	0.4	1	0.6
Kerosene	4	20	2.4	0	0	15	5.7	5	2.9
Biogas	5	14	1.6	0	0	14	5.3	0	0.0
Gas-LPG	6	8	0.9	2	0.5	3	1.2	3	1.7
	TOTAL	**850**	**100**	**416**	**100**	**263**	**100**	**171**	**100**

Table 7: *Source of household energy for lighting and charging in the study area*

		Overall		Lindi		Ruvuma		Tanga	
Category label	*Code*	*Count*	*Percent (%)*	*Count*	*Percent (%)*	*Count*	*Percent (%)*	*Count*	*Percent (%)*
Electricity	1	13	2.0	38	10.7	1	0.4	6	4.3
Kerosene	2	13	2.0	4	1.1	6	2.5	45	32.4
Candle	3	58	8.8	36	10.2	6	2.5	16	11.5
Generator	4	2	0.3	0	0.0	2	0.8	0	0.0
Biogas	5	3	0.5	0	0.0	3	1.3	0	0.0
Firewood	6	90	13.7	41	11.5	26	11.0	23	16.6
Solar	7	478	72.8	236	66.5	193	81.5	49	35.3
	TOTAL	**657**	**100**	**355**	**100**	**237**	**100**	**139**	**100**

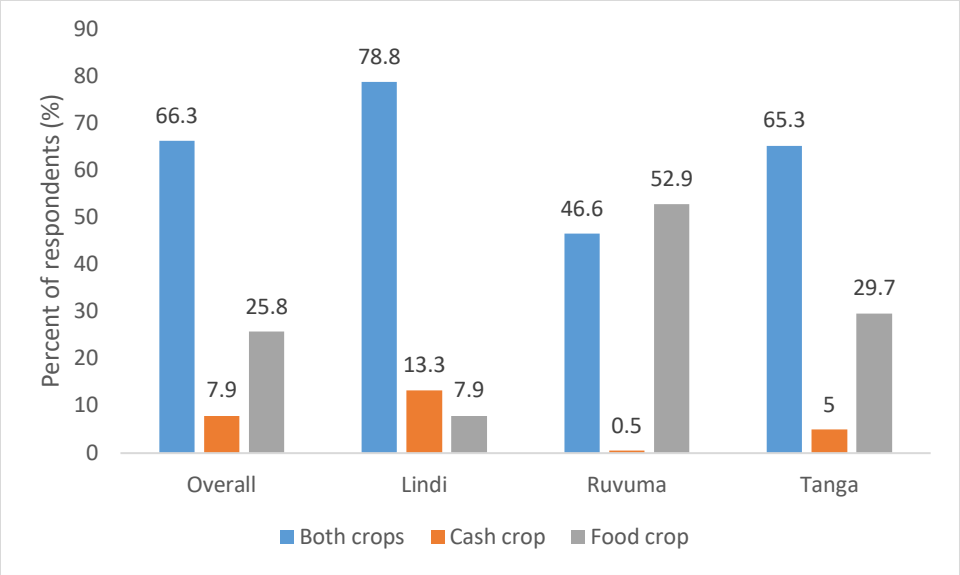

Figure 2: Crops cultivated by the respondent households

Table 8: Number of respondents who cultivates crops for various uses in the study area

S/No		Overall			Lindi			Ruvuma			Tanga		
	Crop type	*Cash crop*	*Food crop*	*Both*	*Cash crop*	*Food crop*	*Both*	*Cash crop*	*Food crop*	*Both*	*Cash crop*	*Food crop*	*Both*
1	Choroko	0	8	0	0	1	0	0	3		0	4	0
2	Banana	0	17	25	0	0	0	0	15	25	0	2	0
3	Paddy	0	37	3	0	28	3	0	8	0	0	1	0
4	Sorghum	1	47	2	0	25	1	0	8	0	1	14	1
5	Finger millet	8	30	2	8	25	0	0	2	2	0	3	0
6	Ground nuts	3	46	0	3	19	2	0	4	0	0	23	0
7	Sunflower	2	38	0	0	2	0	0	5	0	2	31	0
8	Pigeon peas	5	23	0	5	16	0	0	6	0	0	1	0
9	Beans	2	45	25	0	2	0	1	37	23	1	6	1
10	Cashew nuts	23	152	0	23	126	0	0	6	0	0	20	0
11	Coffee	1	8	1	0	1	0	1	7	0	0	0	0
12	Cassava	6	108	76	4	67	8	0	31	64	2	10	4
13	Sesame	40	238	0	39	168	0	0	52	0	1	18	0
14	Maize	30	400	130	26	240	25	21	94	75	3	66	34
15	Cow peas	1	41	8	1	18	3	0	14	3	0	9	5
16	Bambara groundnuts	0	5	0	0	2	0	0	2	0	0	1	0

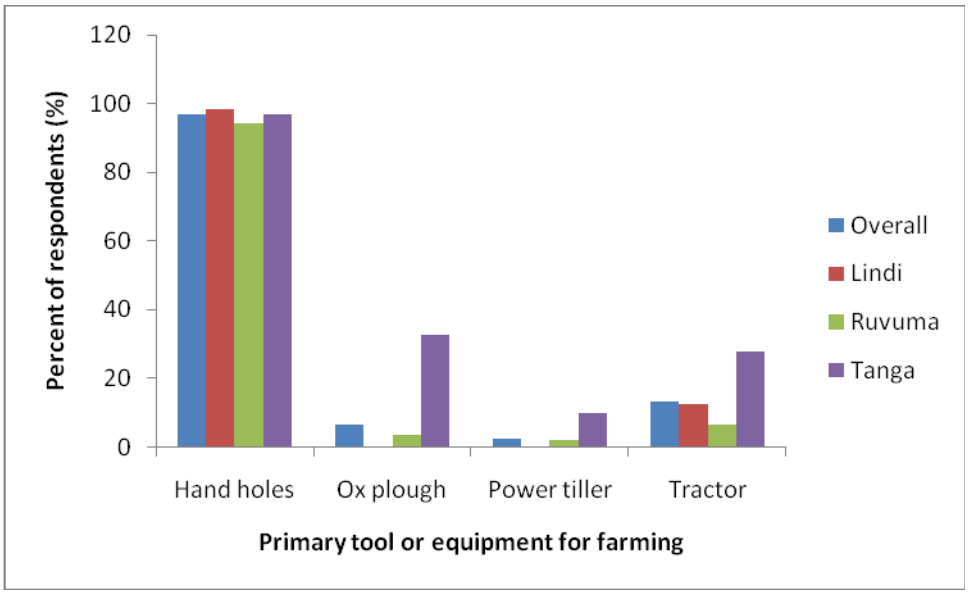

Figure 3: Primary tools and equipment used for farming

Table 2: *Access to primary tools and equipment for farming in the study area*

		Overall		Lindi		Ruvuma		Tanga	
Category label	*Code*	*Count*	*Percent (%)*	*Count*	*Percent (%)*	*Count*	*Percent (%)*	*Count*	*Percent (%)*
Ox-plogh owned	1	357	51	264	80	73	29.3	20	17.7
Ox-plogh hired	2	122	18	20	6	72	28.9	30	26.5
Power tiller owned	3	10	1	0	0	8	3.2	2	1.8
Power tiller owned	4	66	10	4	1	53	21.3	9	8.0
Tractor owned	5	10	1	1	0	9	3.6	0	0.0
Tractor hired	6	129	19	43	13	34	13.7	52	40.0
	TOTAL	**694**	**100**	**332**	**100**	**249**	**100**	**113**	**100**

Table 10: Household food security in the study area

Situation	Overall	Lindi	Ruvuma	Tanga
Additional bought to supplement own production	228 (35.9%)	174 (52.7%)	27 (13.2%)	27 (26.7%)
Percent of food purchases in household food security	7 (1.1%)	2 (0.2%)	5 (2.5%)	0
Self-sufficient food production	400 (63%)	154 (46.7%)	172 (84.3%)	74 (73.3)

Table 11: Types of forest-based enterprises that household members are involved

		Overall		Lindi		Ruvuma		Tanga	
Category label	*Code*	*Count*	*Percent (%)*	*Count*	*Percent (%)*	*Count*	*Percent (%)*	*Count*	*Percent (%)*
Timber	1	34	4.4	10	2.9	20	6.8	4	2.9
Beekeeping	2	36	4.7	4	1.2	25	8.5	7	5.0
Charcoal	3	75	9.7	12	3.5	22	7.5	41	29.5
Firewood	4	295	38.2	87	25.6	141	48.0	67	48.2
Weaving	5	10	1.3	7	2.1	3	1.0	0	0.0
Curving	6	3	0.4	1	0.3	2	0.7	0	0.0
Wild vegetable and fruits	7	132	17	55	16.2	62	21.1	15	10.8
Medicine	8	188	24.3	164	48.2	19	6.5	5	3.6
TOTAL		**773**	**100**	**340**	**100**	**294**	**100**	**139**	**100**

Table 12: Investments owned by households

		Overall		Lindi		Ruvuma		Tanga	
Category label	*Code*	*Count*	*Percent (%)*	*Count*	*Percent (%)*	*Count*	*Percent (%)*	*Count*	*Percent (%)*
Shop	1	90	11.3	43	10.3	29	10.9	18	15.3
Milling machine	2	14	1.8	6	1.4	6	2.3	2	1.7
Video hall	3	14	1.8	4	1.0	8	3.0	2	1.7
Mean petrol vending facility	4	2	0.3	0	0.0	1	0.4	1	0.8
Restaurant	5	30	3.8	11	2.6	7	2.6	12	10.2
Poultry	6	392	49.1	211	50.7	129	48.7	52	44.1
Carpentry	7	14	1.8	9	2.2	2	0.8	3	2.5
Barber shop	8	4	0.5	1	0.2	3	1.1	0	0.0
Money lending	9	6	0.8	6	1.4	0	0.0	0	0.0
Pesticide sprayer	10	116	14.5	73	17.5	37	14.0	6	5.1
Sewing machine	11	7	0.9	4	1.0	3	1.1	0	0.0
Mobile phone charging	12	87	10.9	40	9.6	34	12.8	13	11.0
Apiary	13	23	2.9	8	1.9	6	2.3	9	7.6
TOTAL		**799**	**100**	**416**	**100**	**265**	**100**	**118**	**100**

Table 12: Membership in forest-based organisations (% of respondents)

	Overall	Lindi	Ruvuma	Tanga
Producers	39	26.4	41.2	43.2
Processors	9	3	7.4	0
Traders	2	0.3	4.6	5.9
Not in any membership	50	70.3	46.8	50.9
TOTAL	**100**	**100**	**100**	**100**

Table 13: Disturbances of forest resources

		Overall		Lindi		Ruvuma		Tanga	
Category label	***Code***	***Count***	***Percent (%)***	***Count***	***Percent (%)***	***Count***	***Percent (%)***	***Count***	***Percent (%)***
Fire	1	524	33.7	287	46	163	29	78	21
Grazing	2	213	13.7	41	7	73	13	99	27
Farming	3	367	23.6	156	25	116	20	95	26
Settlement	4	172	11.1	39	6	87	15	46	13
Illegal harvesting	5	278	17.9	97	16	132	23	49	13
TOTAL		**1554**	**100**	620	**100**	**571**	**100**	**367**	**100**

Table 14: Types of NTFPs traded in the study area

		Overall		Lindi		Ruvuma		Tanga	
Category label	***Code***	***Count***	***Percent (%)***	***Count***	***Percent (%)***	***Count***	***Percent (%)***	***Count***	***Percent (%)***
Honey and beeswax	1	90	33.7	22	6	26	9	42	38
Fruits and vegetables	2	220	13.7	74	21	95	34	51	46
Mushrooms	3	174	23.6	53	15	110	40	11	10
Medicine	4	233	11.1	203	57	24	9	6	6
Tubers	5	29	17.9	6	2	23	8	0	0
TOTAL		**746**	**746**	358	**100**	**278**	**100**	**110**	**100**

Table 15: *: How information related to the demand of forest products is obtained*

		Overall		Lindi		Ruvuma		Tanga	
Category label	*Code*	*Count*	*Percent (%)*	*Count*	*Percent (%)*	*Count*	*Percent (%)*	*Count*	*Percent (%)*
Middlemen	1	127	17.8	65	18.0	25	11.1	37	23.3
Direct calls from customers	2	64	9.0	27	7.5	24	10.6	13	8.2
Network among harvesters	3	31	4.3	4	1.1	18	8.0	9	5.7
Market research	4	7	1.0	1	0.3	6	2.7	32	20.1
Social media	5	63	8.8	25	6.9	33	14.6	5	3.1
By chance	6	392	54.9	225	62.3	106	46.9	61	38.4
Through training and seminars	7	30	4.2	14	3.9	14	6.2	2	1.3
TOTAL		**746**	**100**	361	**100**	**226**	**100**	**159**	**100**

Supplementary Tables

Preamble

Six supplementary tables are provided as additional information to the main FORVAC Baseline Survey Report. The tables attempt to provide detailed information as appropriate to segregate data into more useful and easier to follow where possible narrowing down into gender segregation, age segregation and disability[1] segregation. The supplementary tables further respond to some specific details, example contributions of beekeeping and charcoal to the household total income and corresponding age classes.

FORVAC programme interventions affect people at different levels according to their gender, age and disability, hence pooling these survey details to that extent will allow adequate feedback in course of implementation of the program.

Note: The supplementary tables are arranged with corresponding table numbers and figure numbers as found in the main report. The letter ***S*** denotes ***Supplementary***. For the case of figures in the main report which were necessary to transform into tables in this report, we have indicated the corresponding figure numbers in order to avoid confusion. There is also the addition of new tables whose information in the main report was not present.

Table 4 – *S1*: Gender – segregated respondents' occupations in the study area

Description		**Overall**		**Female**		**Male**	
	Code	***Count***	***Percent of responses***	***Count***	***Percent of responses***	***Count***	***Percent of responses***
Farmers	1	612	80.0	263	83	349	77
Business	2	57	7.0	29	9	28	6
Pastoralists	3	18	2.0	3	1	15	3
Employed	4	10	1.0	5	2	5	1
Self-employed in forest-based activities	5	67	9.0	15	5	52	11
Agro-pastoralist	6	6	1.0	-	0	6	1
	Total	**770**	**100**	**315**	**100**	**455**	**100**

[1] In most cases it was not possible to capture details related to disability.

Table 4 – *S2(a)*: Age – segregated respondents' occupations in the study area

Description		**Overall**		**15-19 years**		**20-24 years**		**25-29 years**		**30-34 years**		**35-39 years**		**40-44 years**		**45-49 years**	
	Code	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Farmers	1	612	79	1	25	48	84	72	80	79	76.0	81	76	96	83	74	80
Business	2	57	7	1	20	5	9	7	8	6	5.7	13	12	0	0	4	4
Pastoralists	3	18	2	0	0	0	0	1	1	2	1.9	3	3	3	3	6	7
Employed	4	10	1	0	0	0	0	2	2	5	4.8	0	0	0	0	0	0
Self-employed in forest-based activities	5	67	9	2	50	4	7	7	8	11	10.6	8	8	16	14	8	9
Agro-pasto0ralist	6	6	1	0	0	0	0	1	1	1	1.0	1	1	0	0	0	0
Total		**770**	**100**	**4**	**100**	**57**	**100**	**90**	**100**	**104**	**100**	**106**	**100**	**115**	**100**	**92**	**100**

Table 1 – *S2(b):* Age – segregated respondents' occupations in the study area (*continued*)

Description		**Overall**		**50-44 years**		**55-59 years**		**60-64 years**		**65-69 years**		**70-74 years**		**75-79 years**		**≥ 80 years**	
	Code	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Farmers	1	612	79	49	78	42	88	35	92	15	75	10	42	4	100	6	100
Business	2	57	7	4	6	1	2	2	5	1	5	0	0	0	0	0	0
Pastoralists	3	18	2	2	3	0	0	0	0	1	5	0	0	0	0	0	0
Employed	4	10	1	1	2	1	2	0	0	0	0	0	0	0	0	0	0
Self-employed in forest-based activities	5	67	9	6	9	3	6	1	3	2	10	14	58	0	0	0	0
Agro-pasto0ralist	6	6	1	1	2	1	2	0	0	1	5	0	0	0	0	0	0
Total		**770**	**100**	**63**	**100**	**48**	**100**	**38**	**100**	**20**	**100**	**24**	**100**	**4**	**100**	**6**	**100**

Table 13 – *S3*: Gender-segregated average annual household income from various sources

Source of income	OVERALL	FEMALE	MALE
Beekeeping	**8,467**	**929.4**	**14,007.4**
Timber	16,771	7,249.1	23,770.6
Charcoal	**5,669**	**2,676.6**	**7,868.9**
Firewood	5,565	4,030.5	6,694.1
Weaving	2,755	5,948.0	409.9
Carving	173	37.2	273.3
Wild vegetables and fruits	2,067	2,877.4	1,472.7
Medicine	4,387	2,531.6	5,751.4
Subtotal	**45,854**	**26,279.8**	**60,248.3**
Other sources	216,705	196,676.6	231,426.3
Grand Total	**262,559**	**222,956.4**	**291,674.6**
Contribution of forests-based sources to total income (%)	**17.46**	**11.79**	**20.66**
Contribution of **beekeeping** to total income (%)	**3.22**	**0.42**	**4.80**
Contribution of **charcoa**l to total income (%)	**2.15**	**1.20**	**2.70**

Table 13 – *S*4: Age-segregated average annual household income from various sources

Source of income	OVERALL	15-19 years	20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 years	50-54 years	60-64 years	65-69 years	80 years and above
Beekeeping	8,467	-	400	-	435	33,572	10,516	1,317	12,941	857	4,000	70,000
Timber	16,771	-		-	-	13,096	52,577	19,737	1,961	71,429	-	-
Charcoal	5,669	-	6,000	14,474	8,095	1,072	516	6,842	6,275	5,714	8,000	-
Firewood	5,565	50,000		4,434	11,312	5,286	5,412	2,737	9,804	6,714	1,333	-
Weaving	2,755	-		-	9,524	-	8,247	0	2,941	-	-	-
Carving	173	-		-	-	-	-	1,316	196	-	-	-
Wild vegetables and fruits	2,067	2,500		2,395	952	833	5,949	2,237	471	800	-	-
Medicine	4,387	-		3,289	6,071	1,191	371	2,763	29,412	714	-	-
Subtotal	**45,854**	**52,500**	**6,400**	**24,592**	**36,390**	**55,048**	**83,589**	**36,949**	**64,000.6**	**86,229**	**23,333**	**70,000**
Other sources	216,705	125,000	94,600	366,184	264,417	233,452	187,835	32,987	338286	366,184	30,667	3,334
Total	**262,559**	**177,500**	**101,000**	**390,776**	**300,807**	**288,501**	**271,424**	**169,936**	**402,286**	**452,413**	**54,000**	**73,334**
Contribution of forests-based sources to total income (%)	**17.46**	**29.58**	**6.34**	**6.29**	**12.10**	**19.08**	**30.80**	**21.74**	**15.91**	**19.06**	**43.21**	**95.45**
Contribution of beekeeping to total income (%)	**3.22**	**-**	**0.40**	**-**	**0.14**	**11.64**	**3.87**	**0.77**	**3.22**	**0.19**	**25.93**	**0.77**
Contribution of charcoal to total income (%)	**2.15**	**-**	**5.94**	**3.70**	**2.69**	**0.37**	**0.19**	**4.03**	**1.56**	**1.26**	**14.81**	**4.03**

Figure 16[2] – *S*5: Perception of the quality of delivery of social services by gender

Perception of the quality of delivery of social services	Overall		Female		Male	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Adequate number and quality of structures	281	44.3	110	40.9	171	46.7
Affordability of costs and expenses	98	15.4	41	15.2	57	15.6
Well-functioning service delivery systems	256	40.3	118	43.9	138	37.7
Total	**635**	**100.0**	**269**	**100.0**	**366**	**100.0**

Figure 16[3] – *S*6: Perception of the quality of delivery of social services by age segregation

Description	Adequate number and quality of structures		Affordability of costs and expenses		Well-functioning service delivery systems	
	Frequency	%	Frequency	%	Frequency	%
Overall (n = 635)	**281**	**44.3**	**98**	**15.4**	**256**	**40.3**
Age: 15-19 years (n = 4)	3	75	-	-	1	25
Age: 20-24 years (n = 50)	22	44	7	14	21	42
Age: 25-29 years (n = 76)	34	44.7	11	14.5	31	40.8
Age: 30-34 years (n = 84)	37	44	13	15.5	34	40.5
Age: 35-39 years (n = 84)	42	50	9	10.7	33	39.3
Age: 40-44 years (n = 97)	38	39.2	15	15.5	44	45.4
Age: 45-49 years (n = 76)	33	43.4	15	19.7	28	36.8
Age: 50-54 years (n = 51)	24	47.1	9	17.6	18	35.3
Age: 55-59 years (n = 43)	17	39.5	8	18.6	18	41.9
Age: 60-64 years (n = 35)	14	40	9	25.7	12	34.3
Age: 65-69 years (n = 15)	7	46.7	-	-	8	53.3
Age: 70-74 years (n = 10)	3	30	-	-	7	70
Age: 75-79 years (n = 4)	3	75	1	25	-	-
Age: ≥ 80 years (n = 6)	4	66.7	1	16.7	1	16.7

[2] The corresponding information to this table is Figure 16 in the main document and not a particular table.

[3] As 2 above.

Additional Information

New Table – *S*7: Forest-based employment[4] segregated by gender

Description	Overall	Female	Male
Valid sample size	635	269	366
Number with forest-based employment - Processors	60	27	33
Percent in forest-based employment - Processors (%)	**9.4**	**10.0**	9.0

New Table – *S*8: Forest-based employment[5] segregated by age (%)

Age class	Frequency	% employed
Overall (n = 635)	60	9.4
Age: 15-19 years (n = 4)	1	25.0
Age: 20-24 years (n = 50)	3	6.0
Age: 25-29 years (n = 76)	6	7.9
Age: 30-34 years (n = 84)	9	10.7
Age: 35-39 years (n = 84)	5	6.0
Age: 40-44 years (n = 97)	16	16.5
Age: 45-49 years (n = 76)	6	7.9
Age: 50-54 years (n = 51)	2	3.9
Age: 55-59 years (n = 43)	6	14
Age: 60-64 years (n = 35)	4	11.4
Age: 65-69 years (n = 15)	2	13.3
Age: 70-74 years (n = 10)	-	-
Age: 75-79 years (n = 4)	-	-
Age: ≥ 80 years (n = 6)	-	-

[4] Forest employment related to harvesting and transportation, processing, pit sawing and saw milling

[5] As 4 above

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