



# Social-Economic Impact Evaluation of the FORVAC Programme

Rahima Njaidi & Aklei Albert

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**FINLAND**



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# SOCIO-ECONOMIC IMPACT EVALUATION OF THE FORVAC PROGRAMME

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Rahima Njaidi and Aklei Albert



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Client contact	Forestry and Value Chains Development Programme, Tanzania – Finland Cooperation, Ministry of Natural Resources & Tourism (MNRT), P. O. Box 1351, Kilimani Street, 40472 Dodoma. Tel. +255 735 155 661 Email: <a href="mailto:procurement@forvac.or.tz">procurement@forvac.or.tz</a> Website: <a href="http://www.forvac.or.tz">http://www.forvac.or.tz</a>
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Consulting Team	Rahima Njaidi Aklei Albert



## Executive summary

The Forestry and Value Chains Development Programme (FORVAC) was a six-year initiative (July 2018 to July 2024) jointly funded by the Governments of Tanzania and Finland. Its goal was to, in tandem strengthen sustainable forest management and improve forest income in Community Based Forest Management (CBFM). CBFM devolves management responsibilities of natural forests to communities, however this comes with significant costs. FORVAC's key role is to increase the benefits communities get from sustainable forest use and forest product enterprises with the intention of creating a better balance between costs and benefits in CBFM for communities. These benefits are intended to cover forest management costs, but also to improve the livelihoods of forest users and the wider community through improved social services. This is all intended to incentivized forest maintenance and management under CBFM, whilst improving livelihoods. This approach of increasing forest income hand in hand with reducing deforestation goes against the grain of most conservation approaches that tend to aim to reduce deforestation by reducing forest use.

This independent socio-economic assessment looks at the socio-economic impact of FORVAC's support to improving income from community managed forests, and uses both the programme results framework's outcome and impact indicators and targets from the programme document from 2018 and the baseline study the programme as benchmarks to asses progress against. The before and after time horizon was 2018 and 2024. The 29 villages from districts where the programme is still active were sampled in Lindi and Ruvuma. 754 community participants were interviewed (468 males/286 females) and this included 79 people living with disabilities (PLWD). Additionally, 422 key informants were interviewed, including 23 Local Government Authority (LGA) officials from six districts, 225 leaders from village councils and village natural resource committees, and 174 individuals and leaders from forest enterprise groups along the value chains. Extrapolations and mean values were then calculated based on this sample. It is important to keep in mind that in a parallel study on deforestation rates conducted by SUA, that CBFM forests in FORVAC sites had 7 times less deforestation that forests outside CBFM sites, with those with the highest income from forest products, performing the best in terms of deforestation. So socio-economic impact was not achieved at the expense of the forest, just the reverse, the higher the forest income the lower the deforestation rates. A second element of the assessment was to study the benefit sharing mechanisms within communities.

Key findings from the socio-economic impact assessment against the results framework and baseline.

- Over 82% of respondents believe the deforestation rate in the community managed forests as either decreasing or stable, with over 71% of households expressing increased motivation to protect these forests compared to before the programme,

with the highest motivation in the districts with the highest income from sustainable timber, particularly notable in Liwale (78%), Nachingwea (77%), and Ruangwa (73%).

- The proportion of income-poor households decreased by 11.6% from the baseline value of 33.2% to 21.6%.
- 63 % of community members social services had improved since FORVAC, with 60% of the income from timber sales being invested by communities in improved services. The target for the programme was 25%.
- 27% of community members were engaged in forest-based enterprises by the end of the programme, the target was 10%. For these households, forestry contributed 12% of the annual household income. The target was to increase livelihood income by 10% from those houses involved in forestry enterprises.
- In total 45 villages sold sustainably harvested timber. The total income from standing and processed timber sales was TZS 9,981,821,517 (EUR 3,992,728). Standing timber sales, including LKTS, were above target, but selling of processed timber was a bit behind the monetary target, as 88% was achieved, which was partly due to the full operation of all 4 mobile sawmills only happening in the last year and the limited processing capacity of these small sawmills. In timber value chains the split of those employed were 79/21 percent male/female. However it must be noted that around 45% of this income was spent on improving services in the community, 1,667 development projects in all, which benefitted a broad range of community members, male, female and vulnerable groups, with 66% of community members saying time to access services decreased.
- Although income from the range of NTFPs is much lower than for timber, at TZS 139,903,212 (EUR 55,961), the percentage of women engaged at 47% of all was higher than for the timber value chain and above the target of 45%. Also importantly the engagement in NTFPs was much broader within the community than for the timber value chains.
- Regarding people living with disabilities only 2% were engaged, which falls short of the target of 5%. This was despite best efforts of the programme, and highlights the difficulty of incubating small-scale enterprises to be viable whilst simultaneously trying to have a significant number led by people with disabilities. The enterprises that were most successful at accommodating people with disability were relatively larger enterprises.
- Although there is some variation the benefit-sharing mechanism allocates revenues for forest management (35%), village development projects (55%), and extension services from the local authority (10%).

### **Conclusions, lessons and recommendations.**

On the whole the FORVAC support to VLFRs and forest based socio-economic development succeeded in delivering and at often exceeding its socio-economic targets, whilst also having perceived positive impact on forest protection. Although the timber value chain for cultural

reasons is male dominated, it must be noted that 60% of the income from timber went into social services in the communities, such as dispensaries and these benefit the whole community, men, women and people living with disabilities (PLWD). This fact should also be kept in mind when considering the low engagement of people living with disabilities engaged in the enterprises. This low engagement comes about despite the best efforts by FORVAC the nature of small fledging enterprises is that they find it difficult to achieve viability whilst also employing PLWD, it would seem important to first prioritize growing the enterprises then in time targeting more PLWD, rather than forcing the issue too quickly which might affect viability of the enterprises themselves.

However there was great discrepancies in the income across sites and therefore great variation in support to services across sites. The sites that produced most timber had by far the greatest contribution to services and also highest motivation for forest protection. Although in the sites with low income there appeared to still be sufficient motivation for forest protection, it is feared that this will not last in the long run without the generation of significant financial benefits from the VLFR. This all points to key recommendations;

1. Maximise the revenue from sustainable harvesting of the VLFRs across as many VLFRs as possible. Currently not enough VLFRs are generating enough benefits, even though in many the potential to generate benefits is there. Many VLFRs have a harvesting quota of timber that has not yet been translated into income. When selecting new VLFR sites, always consider the economic potential of the forest, including timber. If the potential is not there, then this forest might not be a suitable priority for a VLFR. Prioritize those forests with the most economic potential.
2. Creating CBFM associations at district level, that have representation from both low income and high income VLFRs can be important, the high income VLFRs can support the low income VLFRs, through better market linkages and transfer of knowledge.
3. Although it was impressive to see so many of the benefits from the timber enterprises being shared so widely through the 60% contribution to services, there is also a danger with this. If few people generate the benefits but many share the benefits this might undermine the motivation for entrepreneurial development. It will be important to get the balance right between enterprises that reward those that put most effort in and can generate profit to be re-invested in the business, and the generation of collective benefits for community. The development of thriving profit driven businesses based on VLFR products also helps to build independence of these groups, a separation from local government which helps to build resilience, reducing dependency.
4. One of the few socio-economic targets that FORVAC did not meet related to people with disabilities leading enterprises. It is important to not try to do too many socio-economic development activities at once, FORVAC was already tasked with supporting community organization to manage forests, with forest management plans, with setting up viable enterprises, with generating benefits for social development funds from forest income. When it comes to people with disabilities, it

might be better to have a step-by-step approach, aim at getting businesses set up and viable first, then supporting those businesses to accommodate people with disabilities when they are first viable. Also when there are significant funds available for social development in the community it will be easier for the community itself from their own funds to accommodate people with disabilities better, rather than being dependent on international programme support only.

5. Finally regarding the baseline report for FORVAC and also some of the impact indicators, it appeared to the assessors that many were not relevant to a programme focussing on support forest-based income development. For example, increased use of pesticide by villagers was one of the indicators, yet increased pesticide is not specifically related to forest income, or even compatible with it. Increased pesticide use can lead to a reduction in bees and honey production for example. It is recommended to in future programmes have indicators more relevant to and compatible with VLFR based enterprises.

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## List of Acronyms

AAC	Annual allowable cut
CBFM	Community Based Forest Management
DC	District Commissioner
DCO	District community development officer
DED	District Executive Director
DFO	District forest officer
DNRO	District natural resource officer
FBD	Forest and Beekeeping Division
FGD	Focus Group Discussions
FMP	Forest Management Plans
FORVAC	Forestry and Value Chains Development Programme
FPIC	Free and Prior Informed Consent
HH	Household
KII	Key Informant Interview
LGA	Local Government Authorities
LKTS	Lesser-known tree species
LPG	Liquefied Petroleum Gas
M <sup>3</sup>	Cubic meters
MEL	Monitoring, Evaluation, and Learning
MNRT	Ministry for Natural Resources and Tourism
NTFP	Non-Timber Forest Products
O&Od	Opportunities and Obstacles to Development
ODK	<i>Open Data Kit</i>
PD	Programme Document
PLWD	People Living with Disabilities
PO-RALG	President's Office Regional Administration and Local Government
SDG	Sustainable development goals
SWOC	Strength, Weakness, Opportunities and Challenges
TFS	Tanzania Forest Service
VC	Village Council
VEO	Village Executive Officer
VLFR	Village Land Forest Reserves
VLUM	Village Land Use Management team
VNRC	Village Natural Resource Committee

## INTRODUCTION

### Background

The Forestry and Value Chains Development Programme (FORVAC) is a six-year initiative (July 2018 to July 2024) jointly funded by the Governments of Tanzania and Finland. The Forest and Beekeeping Division (FBD) of the Ministry for Natural Resources and Tourism (MNRT), in collaboration with the Tanzania Forest Service (TFS) and the President's Office Regional Administration and Local Government (PO-RALG), serves as the implementing agency. FORVAC aims to enhance economic, social, and environmental benefits derived from forests and woodlands while mitigating deforestation. Its anticipated outcome is "Sustainably managed forests and forest-based enterprises generating income for community members and revenue for community social services." The programme operates in Liwale, Ruangwa and Nachingwea Districts in Lindi Cluster, Songea, Namtumbo, Nyasa and Tunduru Districts in Ruvuma Cluster; Handeni, Kilindi, Mpwapwa and Kiteto Districts in Tanga Cluster.

As of June 2023, FORVAC had assisted 71 villages in obtaining approved Forest Management Plans (FMPs), covering a total Village Land Forest Reserves (VLFR) area of 451,322 hectares in the aforementioned clusters. These FMPs have established an annual allowable cut (AAC) of 135,000 cubic meters of wood for sustainable timber trade by the managing communities. Forty-two (42) out of the 71 villages have harvested 20,758 cubic meters of standing timber, valued at TZS 5,675,919,864 (EUR 2,270,368). The cumulative value of sawn timber sales reached TZS 301,991,170 (EUR 120,796). The distribution of timber sale income is stipulated in the FMP, typically allocating 30% to VNRC for forest management, 60% to the Village Council for development projects, and 10% to the District Council for extension services and technical support expenses.

For effective Monitoring, Evaluation, and Learning (MEL), FORVAC conducted a baseline study to assess program progress during implementation and evaluate achievements by the end of 2020. This study defined the socio-economic status of the program areas, analyzed Forest Value Chains' contributions to sustainable forestry and forest-based livelihoods, and evaluated private sector involvement in the forest sector. The primary goal of FORVAC was to increase income from VLFRs, with the belief that increased income incentivizes protection and sustainable management by communities.

The consultant recognizes that FORVAC's context underscores the importance of commissioning a consultancy assignment to assess the program's socio-economic impact, particularly in linking revenue generation to deforestation reduction. FORVAC would like to use the findings of this survey to demonstrate that "the forest that stays is the forest that pays." Furthermore, the assignment seeks to analyze benefit sharing from VLFRs and offer guidance on how these benefits can foster self-sustainability, encourage investment in forest management and enterprises, and ensure equitable distribution of funds through social programs.

## Purpose of the assignment

The primary objective of the assignment is to comprehend the socio-economic outcomes and impacts of the FORVAC Programme, along with the benefit-sharing mechanisms from Village Land Forest Reserves (VLFRs). More specific objectives of the assignment are as follows: Specific objectives include:

- (i) To evaluate FORVAC's economic impact on VLFR communities using program indicators.
- (ii) To analyze the correlation between increased income and reduced deforestation in VLFRs within the FORVAC programme. aligning with the theory that "the forest that stays is the forest that pays".
- (iii) To assess equity challenges, including gender disaggregation within FORVAC programme.
- (iv) To evaluate non-financial benefits of FORVAC programme like capacity building, ownership, and empowerment.
- (v) To assess any non-financial benefits related to strengthened capacity, ownership, empowerment etc.
- (vi) To examine strengths, challenges, opportunities, and risks of existing benefit-sharing mechanisms implemented by villages within FORVAC programm.
- (vii) To develop a guideline for best practices in benefit sharing within VLFRs.

## Deliverables

The applicant understands that the assignment seeks to obtain the following deliverables.

### 1. Socio-economic outcome/impact assessment tools

- a) The data collection and assessment will cover at least the following topics (to be linked to programme approach and indicators):
  - Income and subsistence benefits from the VLFR and how this affects livelihoods and livelihood security.
  - How income/benefits from the VLFRs affects motivation to protect and manage the VLFR
  - income/poverty analysis;
  - availability of social services in villages;
  - estimation of the forestry employment;
  - Analysis and evaluation of the lessons and recommendation of the Programme.
  - SWOC analysis of the existing benefit sharing mechanism
- b) End impact study report (results, lesson learnt and recommendations) submitted at the end of consultancy, along with a concise presentation.

## METHODOLOGY

### Location of the Study

The survey was conducted across 29 villages within 6 districts included in the FORVAC project in the Ruvuma (Figure 3) and Lindi clusters (Figure 4). These villages represent approximately 41% of the total FORVAC villages as of May 2024 (Table 1). This is higher than the 21 villages representing 20% of the FORVAC coverage during baseline survey. The number of villages was intentionally predetermined in collaboration with FORVAC, focusing on areas where the project has been notably successful in promoting sustainable timber trade. The selection of specific villages for the survey was carried out in consultation with FORVAC cluster leaders and district officials.

*Table 1: List of Villages participated in the survey*

Cluster	District	No of Villages	Village Names
	Liwale	7	Barikiwa
			Chimbuko
			Chigugu
Lindi	Nachingwea	5	Luwele
			Mtawatawa
			Nangano
			Nahoro
			Majonanga
	Ruangwa	5	Kilimarondo
			Mbondo
			Ngunichile
			Lipuyu
			Nandenje
	Namtumbo	4	Nahanga
			Mchichili
			N'gau
			Lichwachwa
Ruvuma	Nyasa	4	Nandenje
			Limamu
			Chengena
	Tunduru	4	Kumbara
			Njalamatata
			Liuli
			Nkarachi
			Mkali A
			Mkali B
			Mkowela
			Liwangula
			Misechela
			Kajima

The villages in the study area comprise a total of 20,868 households with a combined population of 75,154 people, averaging approximately 4 people per household (Table 2). The gender ratio is such that for every 100 women, there are 86 men.

*Table 2: Basic characteristics of the study area*

Cluster	District	No of villages	Population					
			Households	Male	Female	Total	M/F ratio	HH size
Ruvuma	Namtumbo	4	2,214	5,151	6,095	11,246	0.85	5
	Nyasa	4	2,724	5,258	6,239	11,497	0.84	4
	Tunduru	4	4,553	7,490	7,989	15,479	0.94	3
Lindi	Liwale	7	3,185	6,890	7,306	12,448	0.94	4
	Ruangwa	5	3,847	5,859	7,154	13,013	0.82	3
	Nachingwea	5	4,345	4,915	6,556	11,471	0.75	3
<b>Total</b>	<b>All districts</b>	<b>29</b>	<b>20,868</b>	<b>35,563</b>	<b>41,339</b>	<b>75,154</b>	<b>0.86</b>	<b>4</b>

### Inception activities

The inception meeting between the consultants and FORVAC was conducted on 12/04/2024, which was followed by a series of discussions about the assignment through email until 26<sup>th</sup> April 2024. In addition, the research team met with FORVAC personnel at each cluster, during the field survey. Through these discussions, the consultant got clear understanding of the key issues around the assignment as well as clarifications of the terms, the nature and scope of the work. The ToR, and methodology was discussed and the consultant obtained the list of key stakeholders including partners, villages, and staffs to participate in the interview process. At the end of the inception phase, the following were obtained.

- i) Comprehensive research tools including detailed Household and KII interview Questionnaires.
- ii) List of clusters, districts, enterprise crops, and villages to participate in the survey.
- iii) Typologies of Key Informants to participate in the survey.
- iv) Consideration of cross cutting issues in data collection, such as gender, weather conditions in relation to transportation infrastructure, conflicts management, and Free and Prior Informed Consent (FPIC) principle,

### Literature Review

A Literature review/desk study was conducted to guide preparation for field survey and supplement primary data. Literature review/desk study was conducted to understand the programme and its socio economic impacts. The study also collected informal/unpublished secondary data along with primary data collection techniques, including:

- (i) Village harvesting plans, forest management plans, receipt and license books, expenditure reports.
- (ii) Programme Document (PD)
- (iii) Programme Baseline Survey (2020)
- (iv) Programme Annual Report 2022-2023
- (v) Programme Annual Workplan 2023-2024

- (vi) FORVAC training needs assessment & action plan (2019) and
- (vii) FORVAC Market Systems Analysis (2018)
- (viii) Similar studies by other stakeholders and villages including the MJUMITA's sustainable timber and charcoal enterprise and benefit sharing models and
- (ix) Available carbon trading benefit sharing models in the country to compare with other enterprises benefit sharing models.

### Key Informants Interview

A total of 422 key informants were interviewed, including 23 Local Government Authority (LGA) officials from the 6 districts, 225 leaders from village councils and village natural resource committees, and 174 individuals and leaders from forest enterprise groups along the value chains (Table 3). At the village level, Key Informant Interviews (KII) included village Council Members, including (Chairperson and VEO) and VNRC leaders (Chairperson, Secretary, Treasurer). Additionally, two active members who participated effectively in all VNRC committee activities were included. For forest-based enterprises, group leaders (Chairperson, Secretary, Treasurer) and other active members who effectively participated in the daily activities of the enterprises were selected to participate in the discussions (Figure 1).

Table 3: Number of participants in the Key Informant Interview

District	No. of Villages	LGA Officers			VC & VNRCs			Enterprise Groups/Individuals			
		M	F	T	M	F	T	No.	M	F	T
Namtumbo	4	3	1	4	19	9	28	10	22	8	30
Nyasa	4	2	1	3	24	4	28	19	34	29	63
Tunduru	4	2	1	3	19	8	27	4	21	7	28
Liwale	7	3	1	4	28	6	34	8	17	3	20
Ruangwa	5	3	1	4	40	14	54	3	11	6	17
Nachingwea	5	4	1	5	47	7	54	7	15	1	16
<b>All districts</b>	<b>29</b>	<b>17</b>	<b>6</b>	<b>23</b>	<b>177</b>	<b>48</b>	<b>225</b>	<b>51</b>	<b>120</b>	<b>54</b>	<b>174</b>

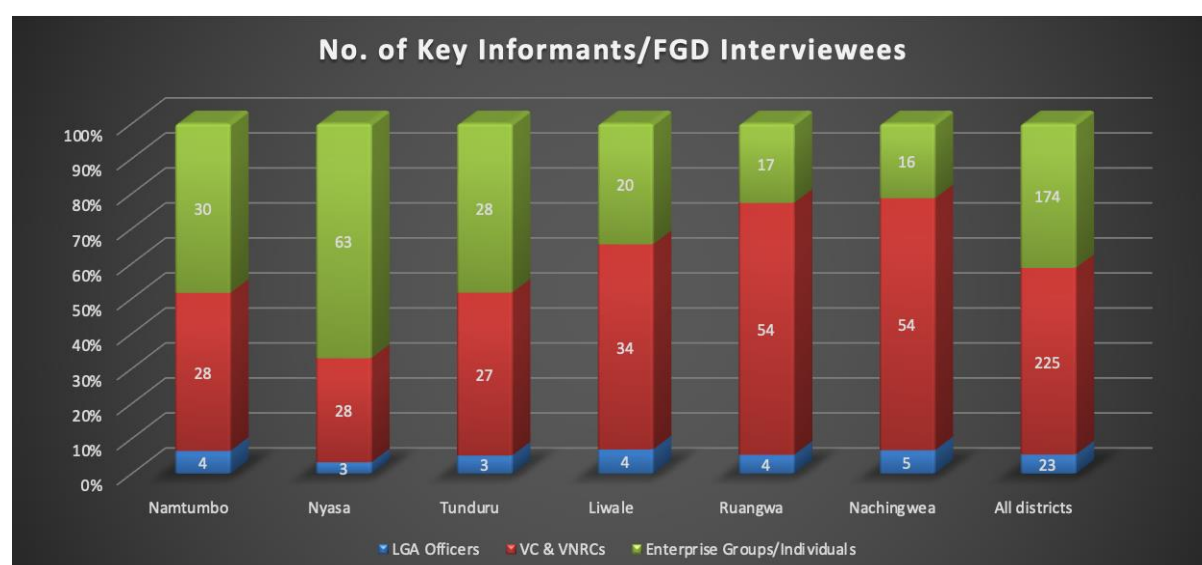


Figure 1: Summary of the number of participants in the Key Informant Interview



## Household Interviews

The structured questionnaire was developed, tested and administered by using *Open Data Kit (ODK)* for convenience and high-quality data. A sum of 8 trained enumerators, with 2 team leaders were engaged to fasten data collection process. In each surveyed village, there were more than three sub-villages. Therefore, each of the three enumerators was assigned to a specific sub-village. Within their assigned sub-villages, the enumerators randomly selected households, ensuring that each household had an equal chance of being chosen. The target for each enumerator was to survey 8 to 10 households. Additionally, the enumerators were supported by a host, who was either the sub-village leader or a VNRC member. A total of 754 households from the 29 villages were interviewed in the endline survey, compared to 635 households from 21 villages during the baseline survey. The respondents included 468 males, 286 females, 156 youths under 36 years, and 79 people living with disabilities (PLWD) (Figure 2).

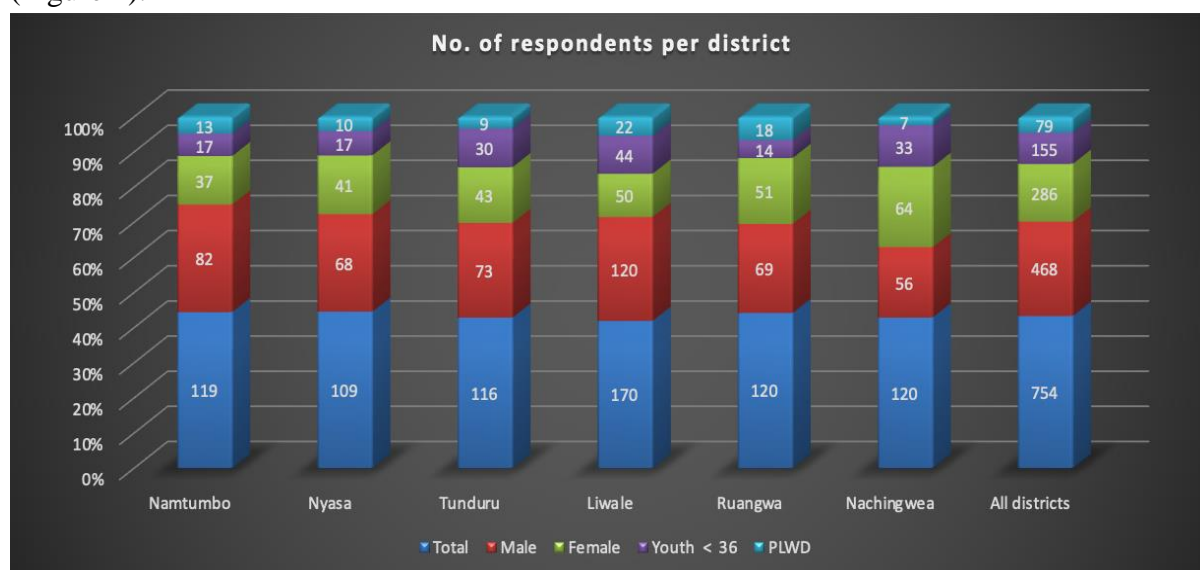


Figure 2: Number of respondents participate in the survey

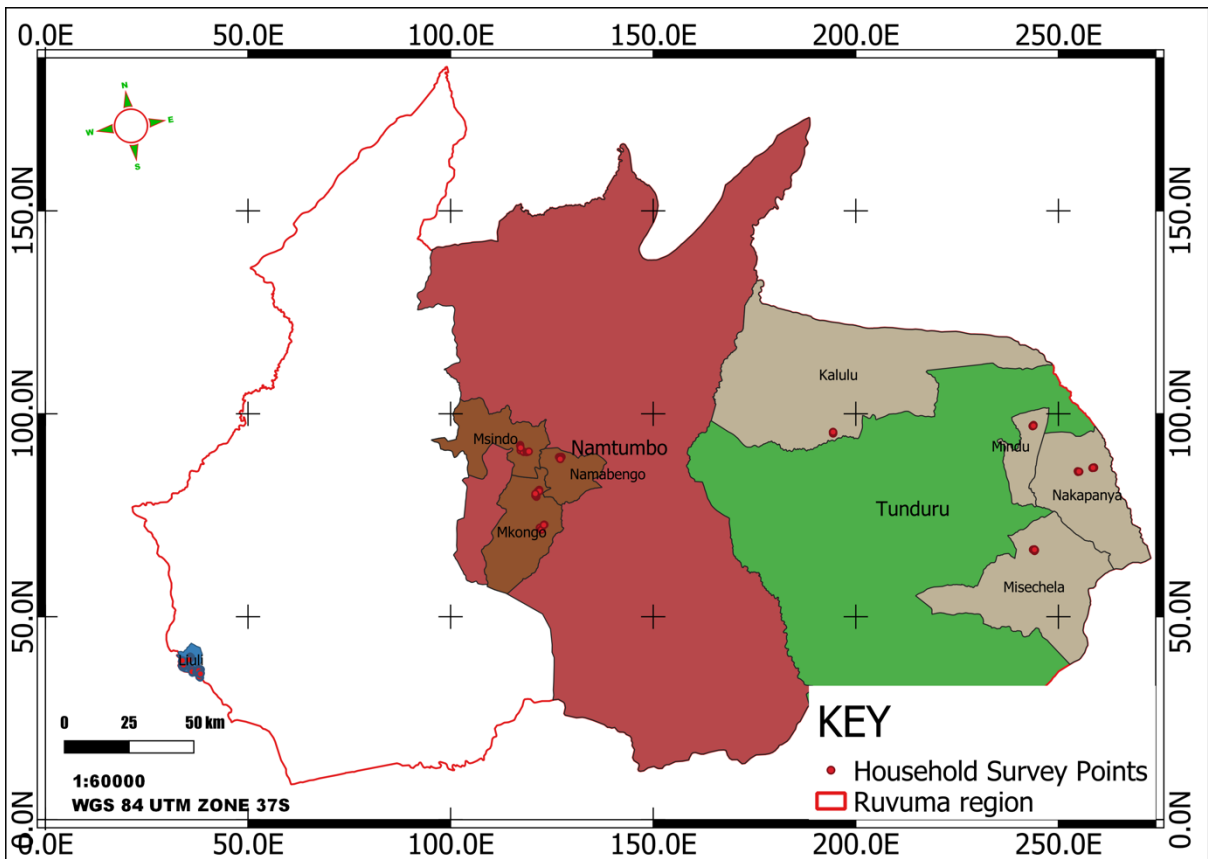


Figure 3: The study area in Ruvuma Cluster

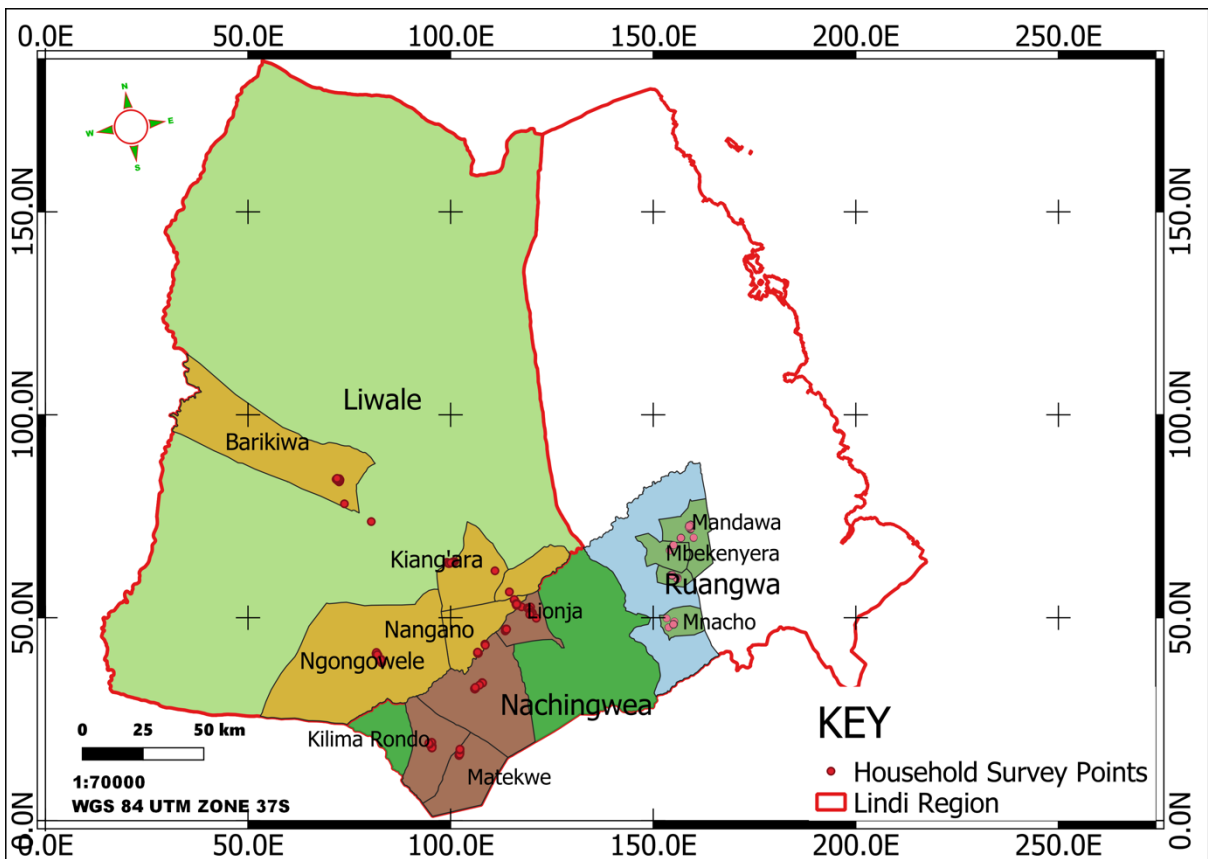


Figure 4: The study area in Lindi Cluster

## SOCIO-ECONOMIC ENDLINE FINDINGS

### Basic Socio-economic and livelihoods characteristics

Basic social economic characteristics of the 754 households participated in both baseline and endline surveys is comparatively summarized in Table 4.

*Table 4: Basic socio-economic characteristics of the respondents*

Characteristics of respondents	Baseline		Endline	
	Frequency (N)	Percent (%)	Frequency (N)	Percent (%)
<b>Gender of the respondent</b>				
<i>Male</i>	366	57.6	468	62.1
<i>Female</i>	269	42.4	286	37.9
<b>Marital status of respondent</b>				
<i>Married</i>	501	78.9	630	83.6
<i>Single</i>	98	15.4	25	3.3
<i>Widowed</i>	16	2.5	28	3.7
<i>Divorced/Separated</i>	20	3.2	71	9.4
<b>Household head</b>				
<i>Female-headed households</i>	93	14.6	196	26.0
<i>Male-headed households</i>	542	85.4	558	74.0
<b>Educational level of household head</b>				
<i>Informal</i>	46	7.2	49	6.5
<i>Primary education</i>	528	83.2	610	80.9
<i>Secondary education</i>	52	8.2	81	10.7
<i>Tertiary education</i>	9	1.4	13	1.7

Over 99% (Table 5) of the respondents are engaged in farming activities, supporting the key informants' statement that "at least every household has a plot of farm." There is an increased proportion of households involved in various livelihood activities, indicating a rise in diversification as a livelihood strategy. Notably, the proportion of respondents engaged in forest-based activities has increased from 11% to 25%.

*Table 5: Household's occupations*

Occupations	Baseline		Endline	
	Frequency (N)	Percent (%)	Frequency (N)	Percent (%)
Farmers	612	96	746	99
Business	57	9	179	24
Livestock keeping	24	4	136	18
Employed	10	2	190	25
Self-employed in forest-based activities	67	11	188	25

The proportion of households perceiving living on less than TZS 30,000 has declined from 35.4% at the baseline survey to 26.66% at the endline survey (Figure 5). Conversely, the proportion of households earning between TZS 30,000 and TZS 60,000 has increased from

21.7% to 35.41%. However, those earning more than TZS 60,000 have decreased from 42.9% to 37.93%.

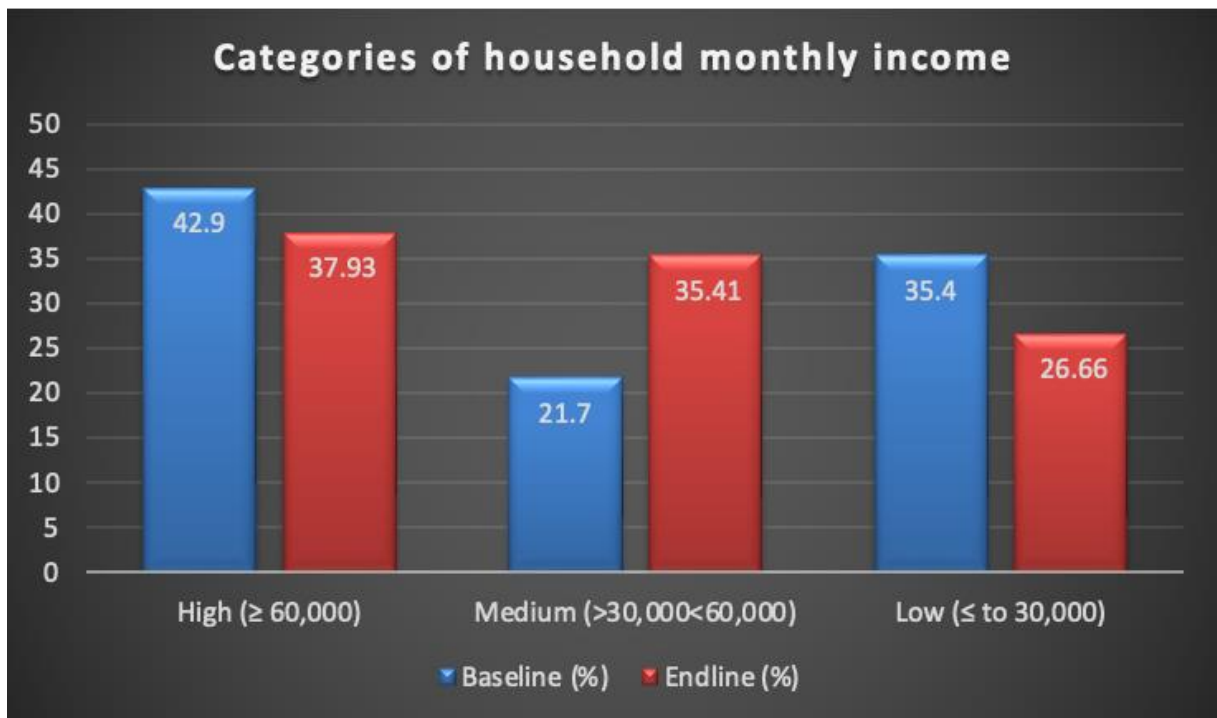


Figure 5: Perceived categories of households' monthly income

#### Farming activities in the study areas

The endline survey found that over 99% of households in the project area are engaged in farming activities, with approximately 75% producing cash crops and 96% producing food crops (Figure 6); Maize, cashew nuts, sesame, cassava, pigeon peas, sorghum and paddy being the most commonly cultivated crops (Figure 7).

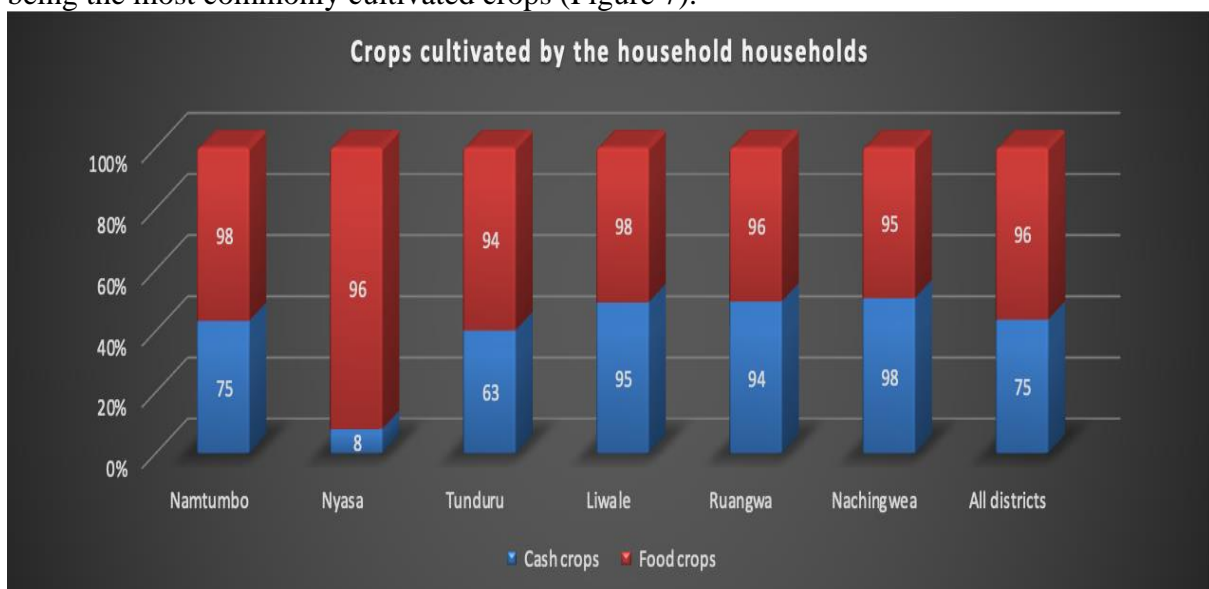


Figure 6: Number of households engaged in cash crop and food crops farming

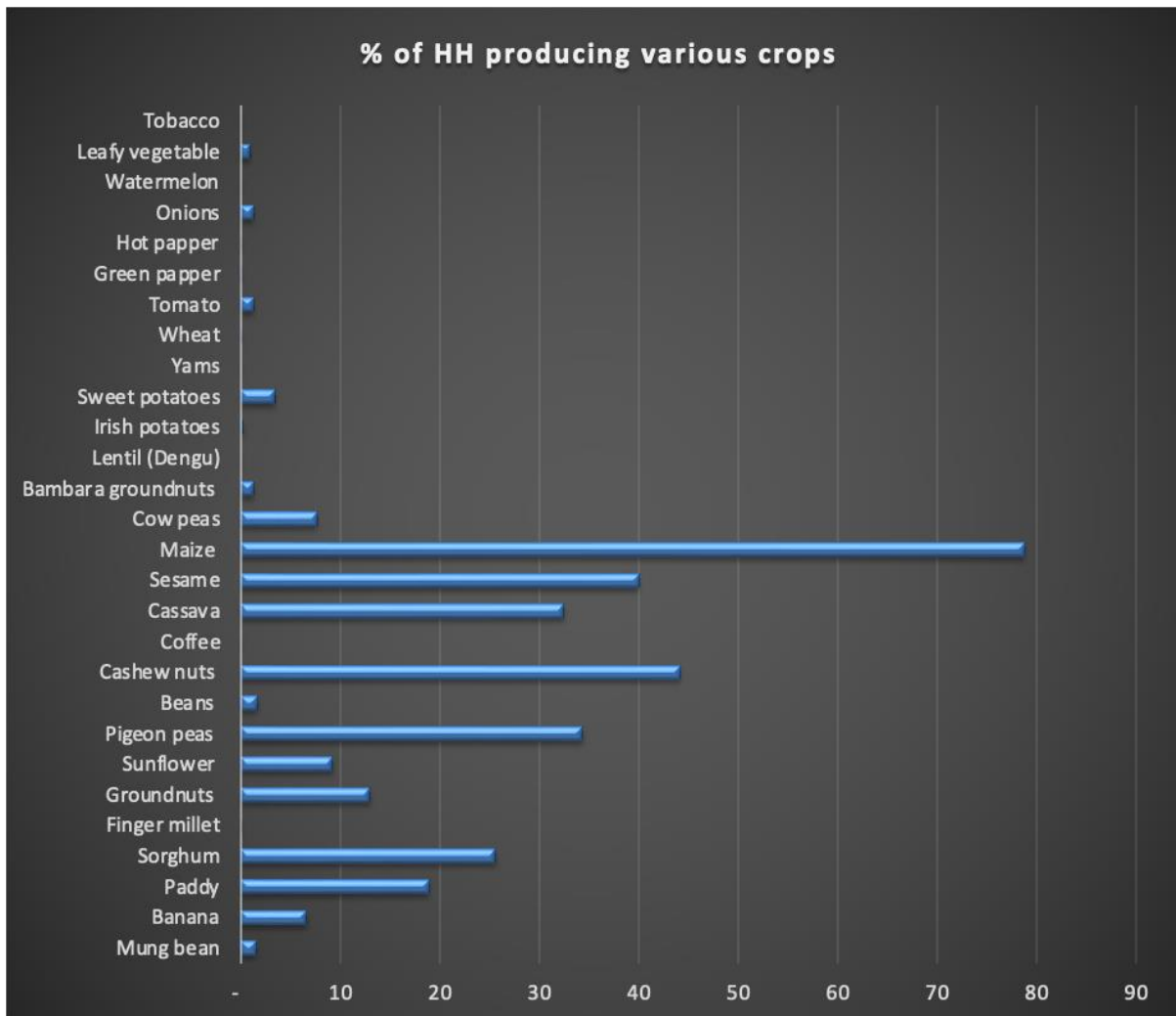


Figure 7: Proportion of households in the project area producing different crops

### Ownership of Livelihood Assets

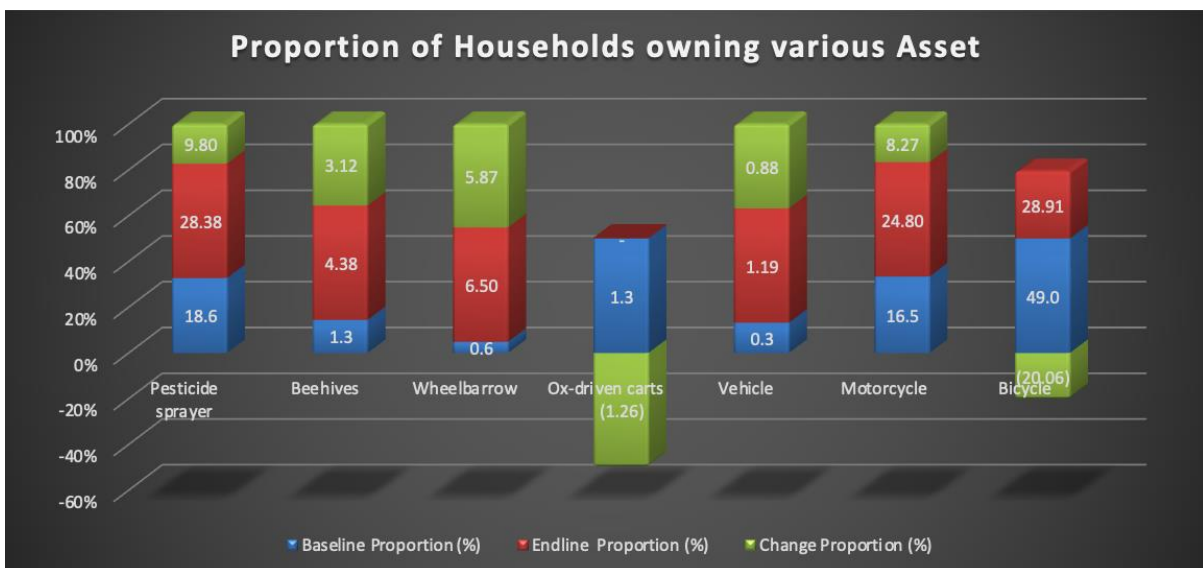


Figure 8: Proportion of households owning various assets during baseline and endline

There is variability in the ownership of livelihood assets across households between the baseline and endline surveys (Figure 8), with proportion increase of households owning

pesticide sprayers, wheelbarrows, beehives, motorcycles, and vehicles, while ownership of ox-driven carts, and bicycles has decreased. Additionally, many households use hand hoes and tractors as their farming tool (Figure 9), and the proportion using ox-ploughs, and power tillers, is slightly less than in the baseline findings. Furthermore, the ownership and hiring of improved farming tools (Figure 10), appear to be better for tractors but lower for other farm tools in the endline survey compared to the baseline. In addition, the number of farm animals owned by households has decreased overall (Figure 11). The endline survey found that 11% of households own approximately 1,819 chickens.

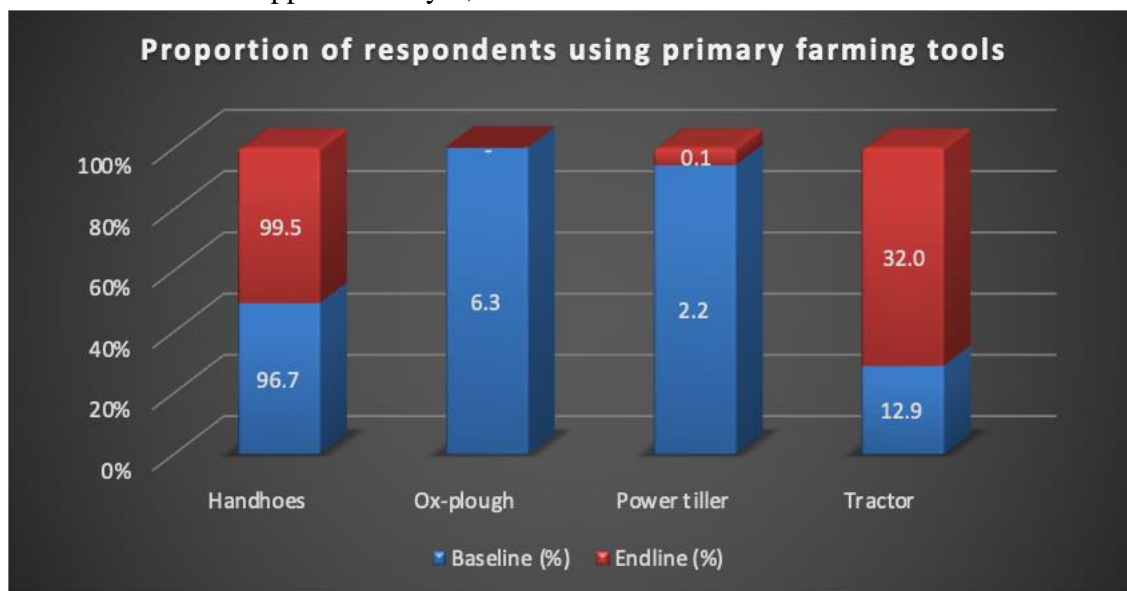


Figure 9: Households (%) using primary farming tools during baseline and endline.

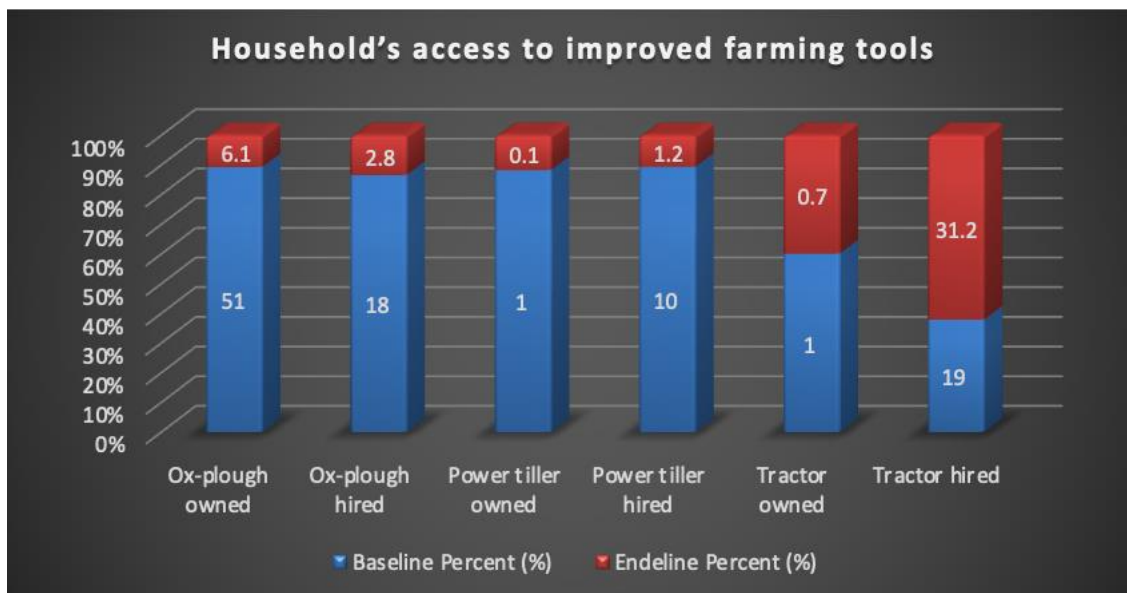


Figure 10: Households' access to improved farming tools during baseline and endline.

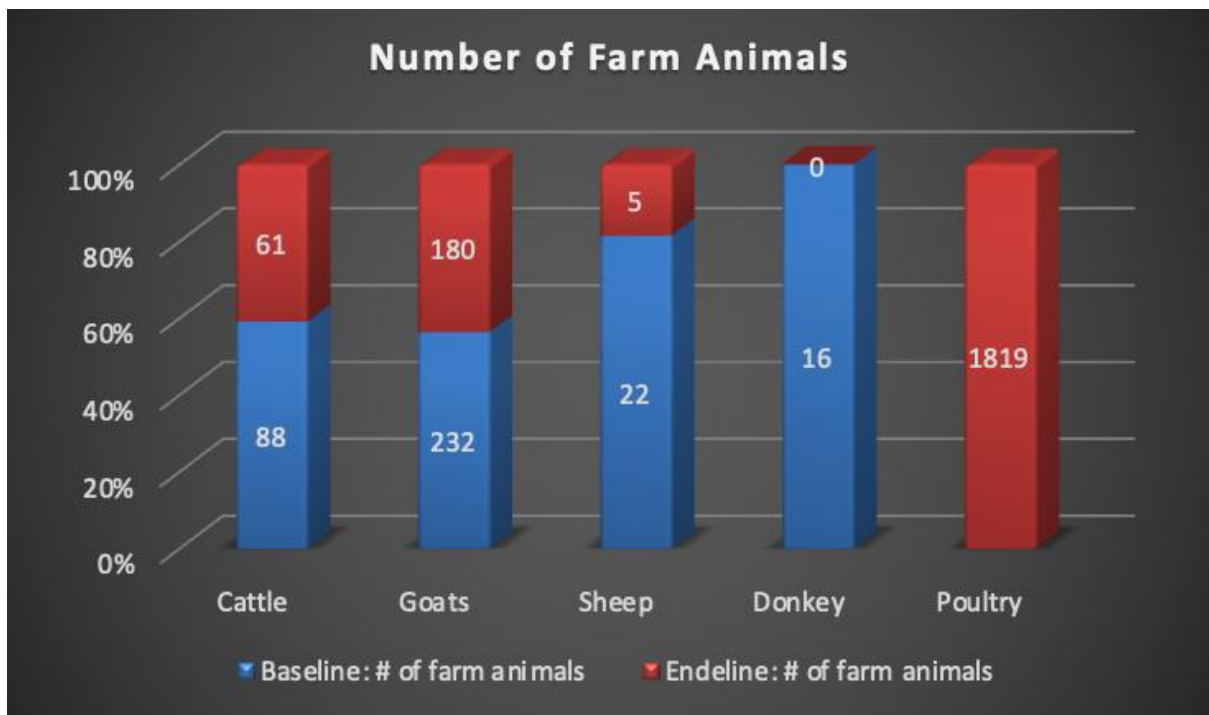


Figure 11: Comparison of the number of farm animals during baseline and endline.

#### Sources of energy for the households

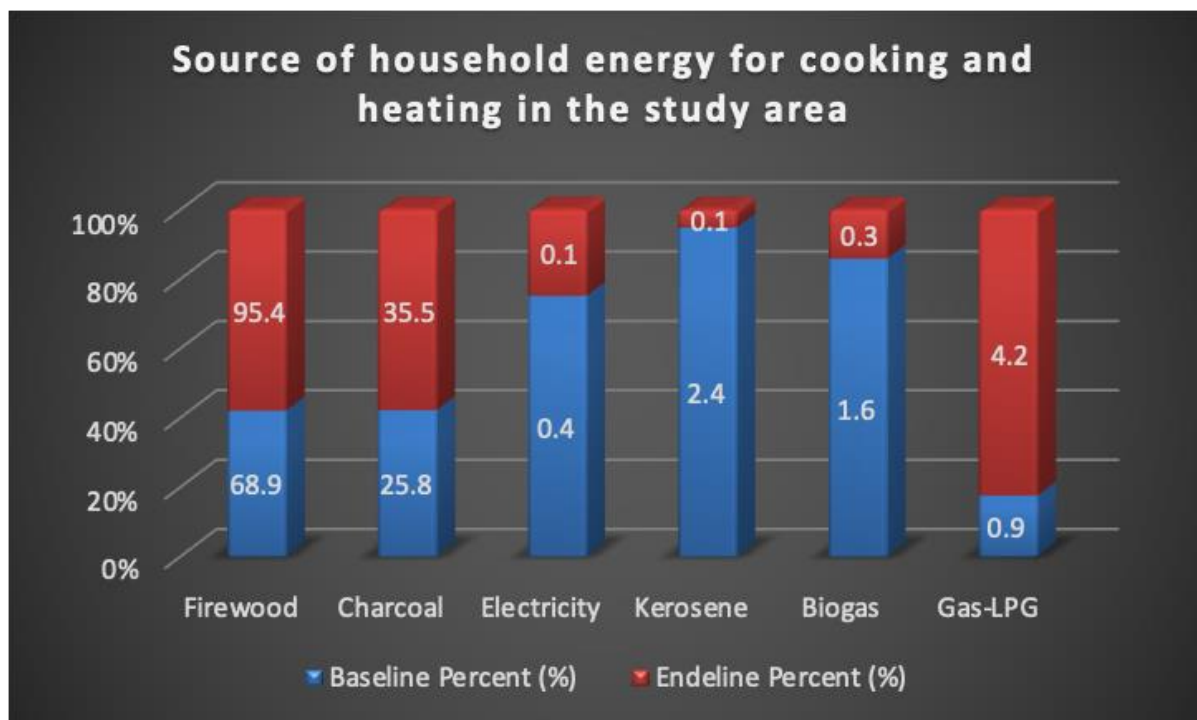


Figure 12: Proportion of households using various energy sources for cooking.

The endline survey revealed that over 95.4% of households use firewood for cooking, and 35.5% use charcoal (Figure 12). Additionally, there has been a slight increase in the use of electricity, kerosene, and biogas for cooking. However, fewer households are now using Liquefied Petroleum Gas (LPG).

In terms of lighting energy sources (Figure 13), the proportion of households using electricity has risen significantly from 2% to 19.6%, while solar power usage has also increased from

72.8% to 79.8% between baseline and endline surveys. Additionally, a combined total of 16.4% of households utilize rechargeable and non-rechargeable lead-acid batteries. Furthermore, there has been a noticeable decline in the proportion of households relying on other sources of lighting energy such as kerosene, candles, generators, biogas, and firewood.

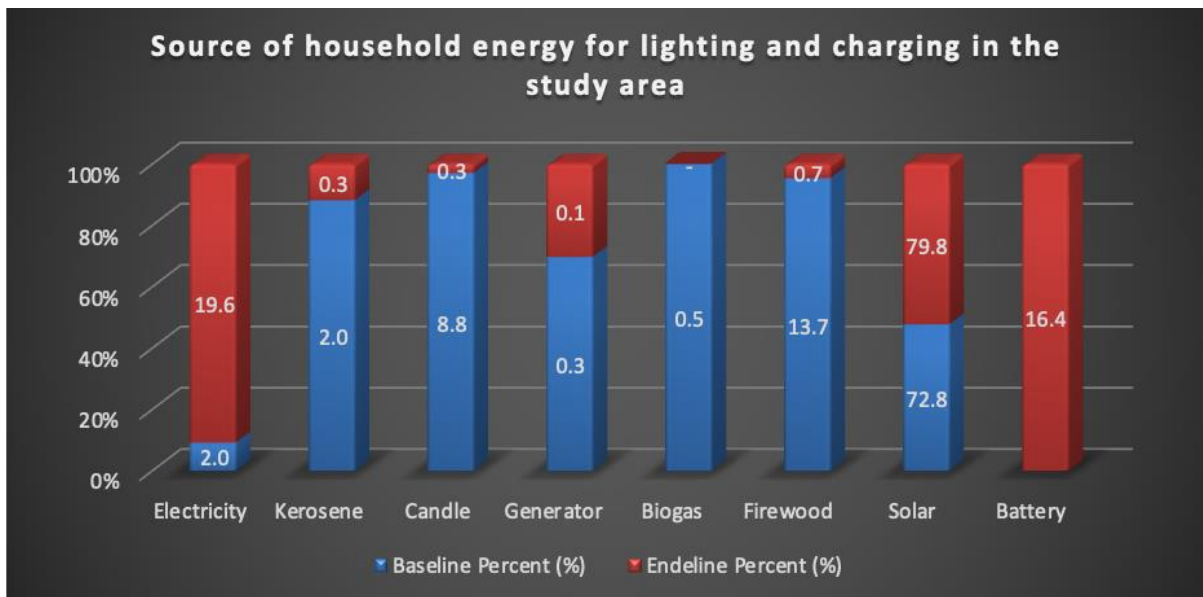


Figure 13: Proportion of households using various energy sources for lighting.

### Status of Food security

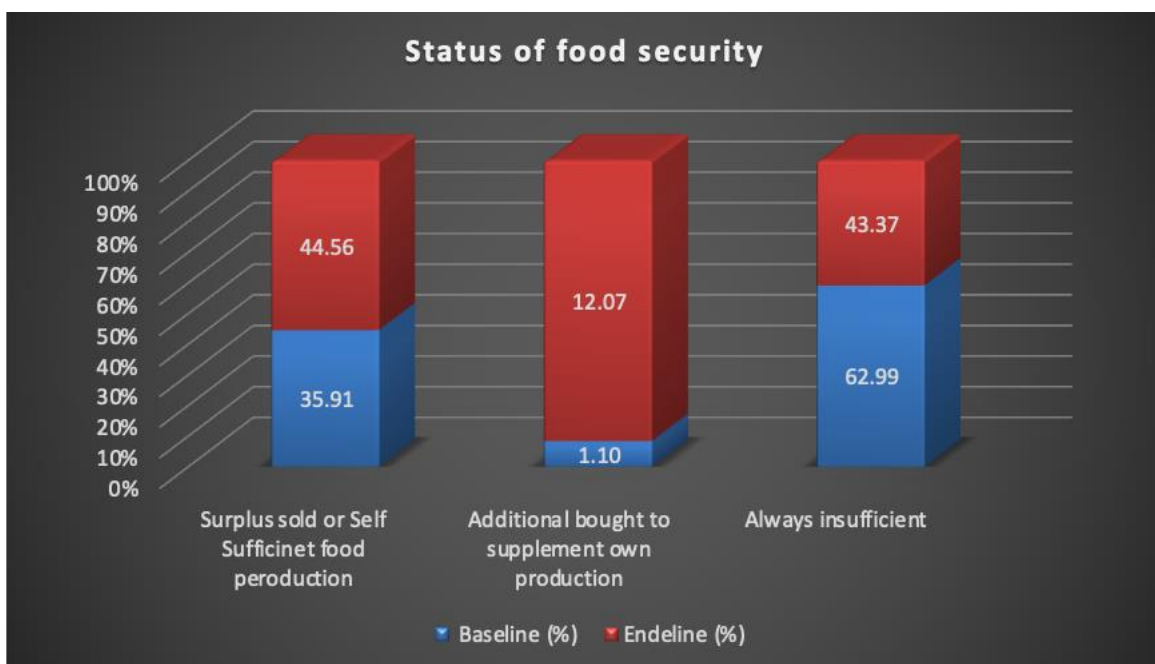


Figure 14: Proportions of the households with different status of food security.

The proportion of households reporting surplus or self-sufficient food from their own farm production increased from 35.91% to 44.56% between the baseline and endline surveys (Figure 14). Additionally, households buying additional food to supplement their own production rose from 1.1% to 12.07%. Meanwhile, those consistently suffering from



insufficient food production decreased from 62.99% to 43.37%. Besides, ownership various livelihood assets is summarized in Table 6.

*Table 6: Ownership of various livelihood assets in the study area.*

<i>Investments owned by households</i>	Baseline	Endline
	No. of Investments	No. of Investments
Shop	90	48
Milling machine	14	12
Video hall	14	19
Min petrol vending facility	2	4
Restaurant	30	21
Poultry	392	2263
Carpentry	14	10
Barber shop	4	1
Money lending	6	2
Pesticide sprayer	116	214
Sewing machine	7	13
Mobile phone charging	87	8
Bee apiary	23	33
Solar panel		358
Rental Houses		19
Residential Houses		344

#### **Households' Forest based organizations.**

Approximately 25% of the households (N=188) participate in forest-based producer organizations (Table 7), with 21.2% (N=160) being members of local forest-based enterprises or organizations. Additionally, the survey identified 45 (Table 8), individuals and organizations with a total of 383 members and 25 employees or volunteers, involved in about 58 local forest-based enterprises across the production, processing, transportation, and sales value chains (Figure 15). About 69% (N=31) of these enterprises are managed by registered organizations, 29% (N=13) are operated by individuals, and 2% (N=1) are currently dormant (Figure 16). These enterprises have received a total of 2,900 (Table 9), farm inputs to support their production process. Over 71% of the enterprises are engaged in honey value chains, and 22% in furniture (Table 10).

*Table 7: Proportion of households who are members of forest-based organisations*

<i>Membership in forest-based organisations</i>	<b>Endline (%)</b>
Producers	15.4
Processors	2.4
Traders	3.4
Not members of the <i>forest-based organisations</i>	84.4

Table 8: Number of members in the forest based enterprises with the surveyed villages

District	members			Employees/Volunteer			No of enterprises
	Male	Female	Total	Male	Female	Total	
Namtumbo	48	21	69	8	4	12	11
Nyasa	44	73	117	2	0	2	13
Tunduru	28	9	37	0	0	0	4
Liwale	76	36	112	5	0	5	8
Ruangwa	22	10	32	0	0	0	3
Nachingwea	14	2	16	6	0	6	6
<b>All districts</b>	<b>232</b>	<b>151</b>	<b>383</b>	<b>21</b>	<b>4</b>	<b>25</b>	<b>45</b>

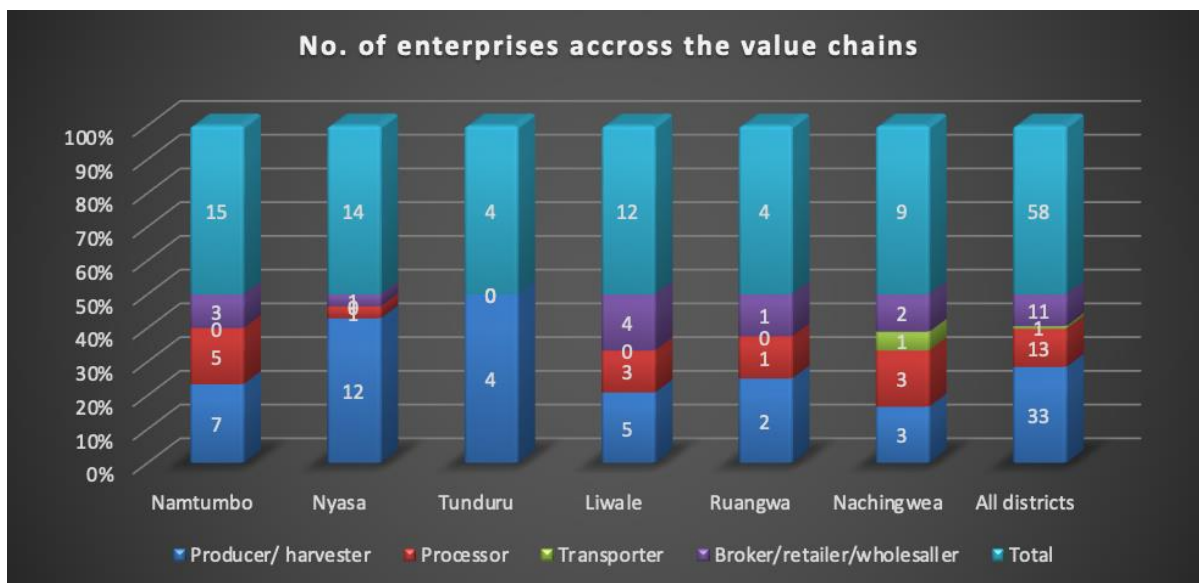


Figure 15: Number of forest based enterprises along the value chains

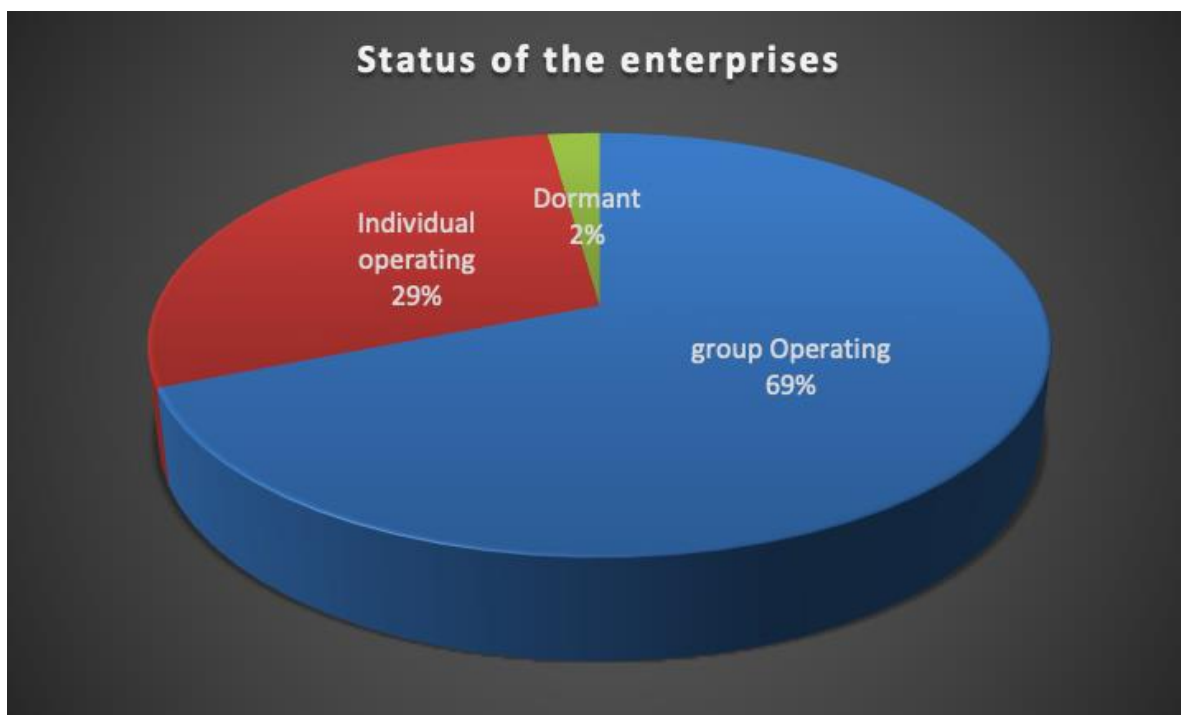


Figure 16: Status of the forest-based enterprises during survey

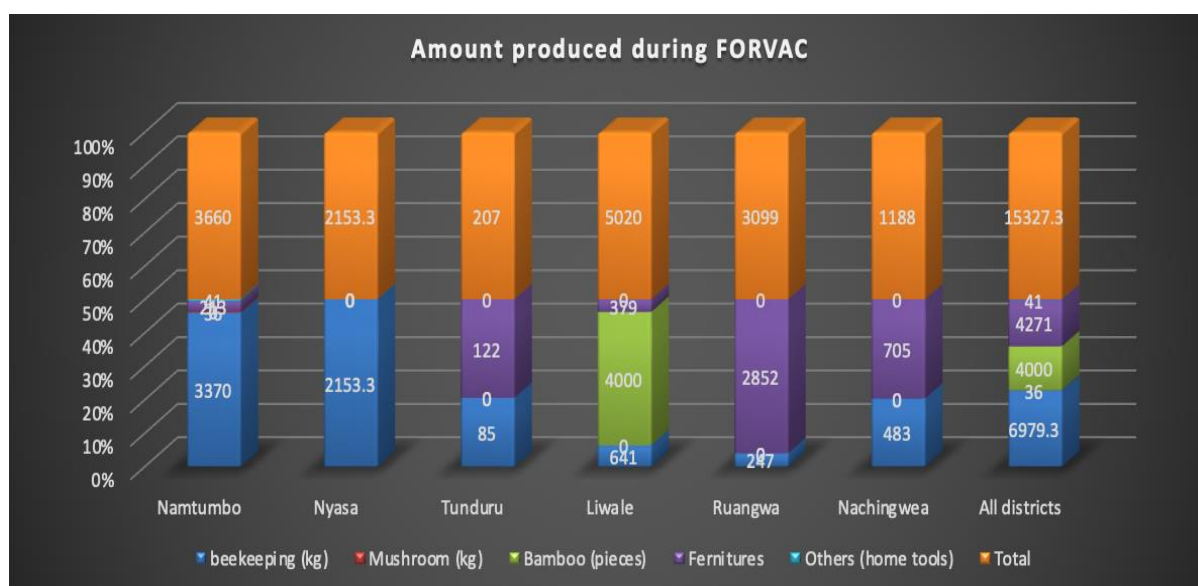
*Table 9: Amount or number of production inputs*

<b>Input</b>	<b>Amount</b>
local beehives	1,173
Improved beehives FORVAC	864
honey press	5
Bucket	89
honey harvesting gears	81
smoker	58
rope/wire/roller (Meter)	33
container	350
gunboot	104
saw mill/carpentry eqpmnts	118
guta motorcycle	1
overall	10
helments	14
<b>Total</b>	<b>2,900</b>

*Table 10: Typologies of produce by the forest-based enterprises*

<b>Type of produce</b>	<b>Number (N)</b>	<b>Proportion (%)</b>
Timber	1	2
Ferniture	10	22
beekeeping	32	71
Mushroom	1	2
Bamboo	1	2
Others	1	2

The grand amount of production by the enterprises is 15,327 (Figure 17) units comprising of 6,979 kg of honey, 36 kg of mushroom, 4000 pieces of bamboo, and 4,271 units of furniture, and the gross income was **66,026,450 TZS** (Table 11).



*Figure 17: Amount produced by the enterprises formed by FORVAC*

Table 11: Cumulative revenues by the enterprises formed by FORVAC

District	Cummulative revenue (TZS)	Cummulative costs of production (TZS)	Cummulative gross profit (TZS)
Namtumbo	60,314,050	35,122,600	25,191,450
Nyasa	18,794,000	10,988,200	7,805,800
Tunduru	3,170,000	111,400	3,058,600
Liwale	27,320,000	20,872,600	5,647,400
Ruangwa	33,888,200	20,174,000	13,714,200
Nachingwea	13,879,000	10,890,000	10,609,000
<b>All districts</b>	<b>157,365,250</b>	<b>98,158,800</b>	<b>66,026,450</b>

Over 89% of the enterprises sells their products within the village for which 24% sales at the farm-gate, and 11% can access export market (Figure 18). About 60% of the enterprises obtain market information from colleagues within the value chain and 40% from middlemen (Figure 19). Only 33% of the enterprises have members trained on Market Analysis and Development (MAD), and 9% have a written business plan (Figure 20).

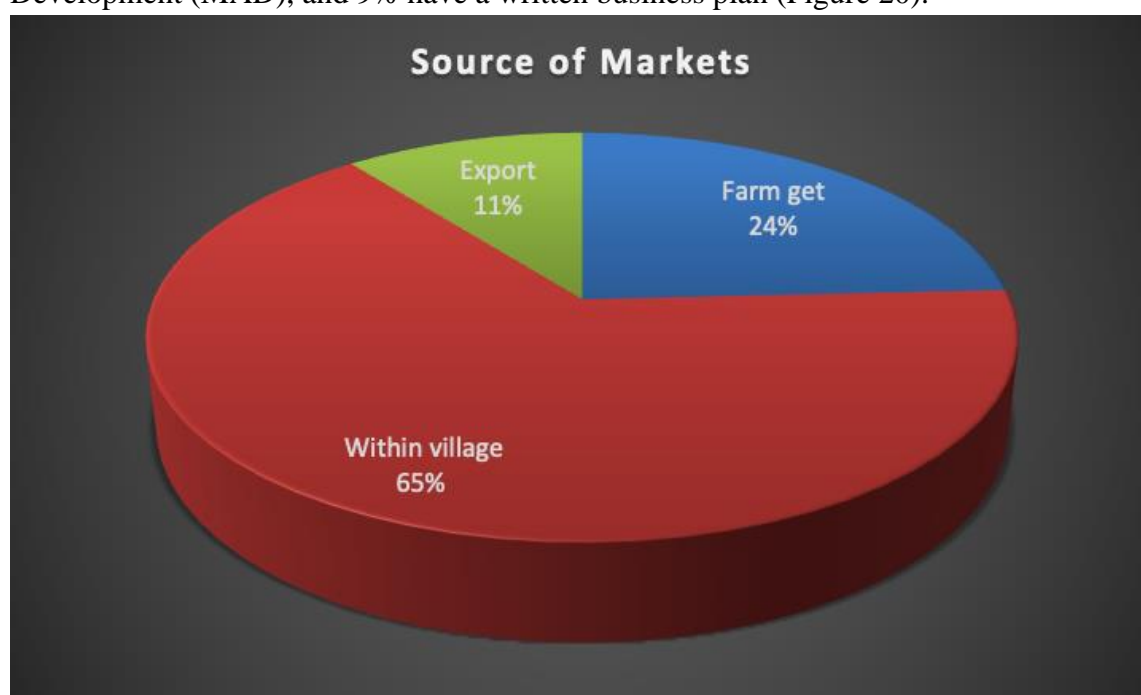


Figure 18: Sources of market for the forest based enterprises

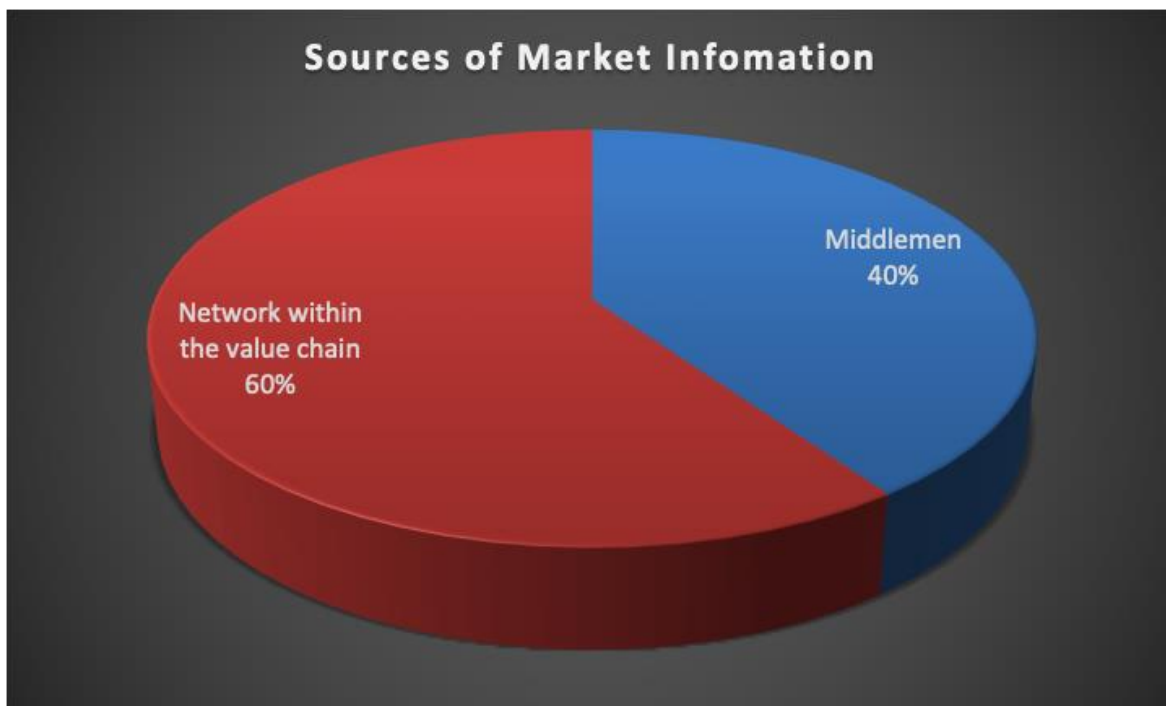


Figure 19: Source of market information for the enterprises



Figure 20: Capacity of the enterprises to undertake marketing process

### Trend of forest-based income.

About 41% of the households engaged in forest-based enterprises perceives that their gross income is increasing and 36% consider the income to be constant (Figure 21). Diversification of forest products and Improved skills to produce better products, have been sited by the respondents as the main reasons for increase in gross revenues (Table 12).

About 23% of the respondents are experiencing a decreasing trend of gross revenues from the forest-based enterprises. Reasons for experiencing a decreasing trend of gross income includes extreme weather events, that affects productivity of the resources; Market fluctuations; Limited access to financial services, credit, and investment capital; and Poor infrastructure for production, processing, storage, and transportation of the products (Table 13).

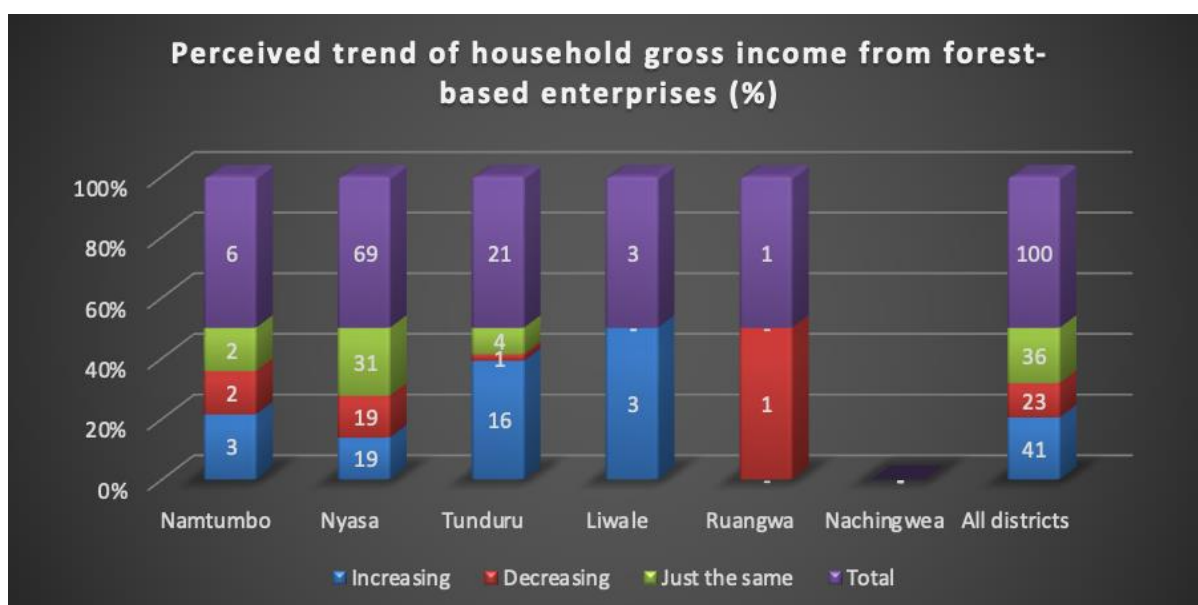


Figure 21: Perceived trend of household income from forestry

Table 12: Reasons for increasing gross income from forest-based enterprise.

Reasons	Counts	% of HH
Improving availability of raw materials due to improved conservation	14	31
Better harvesting plans	13	29
Diversification of forest products	19	42
Access to better market	14	31
Value addition	7	16
Better branding	0	
Improved skills to produce better products.	17	38
Adoption of better harvesting, processing, and storage technologies	6	13
Better collaboration and partnerships with technical expertise, financial resources, and market linkages	6	13
Better state policies that encourage you to invest in forest-based enterprises.	4	9

Table 13: Reasons for not experiencing increasing gross income from forest enterprises.

Reasons	Counts	% of HH
Resource depletion due to overexploitation or unsustainable harvesting of forest resources	7	28
Market fluctuations	22	88
Government policies creating bureaucratic stumbling blocks for enterprise development.	2	8
extreme weather events, that affects productivity	24	96
Poor infrastructure for production, processing, storage, and transportation of the products.	19	76
Limited access to financial services, credit, and capital.	22	88

### Benefits from Village Land Forest Reserves

FORVAC reported a total gross revenue of 5,675,919,864 TZS (EUR 2,270,368) from the sale of 20,758 m<sup>3</sup> (Table 14) of standing timber across its entire project area. A sum of 16,760 m<sup>3</sup> of standing timber was harvested in 22 out of the 29 surveyed villages, generating approximately 4.67 billion TZS in gross revenue.

Table 14: Amount of revenues generated from VLFRs

District	No of villages	VLFR size (Ha)	FIVE YR AC (M <sup>3</sup> )	AAC (M <sup>3</sup> )	Total M <sup>3</sup> harvested	Cummulative Revenues
Namtumbo	1	23,931	14,191	2,838	28	8,086,000
Tunduru	4	26,536	21,155	4,231	293	88,585,600
Liwale	7	104,757	685,358	137,475	11,730	3,302,698,767
Ruangwa	5	20,825	17,700	3,537	3,542	892,994,210
Nachingwea	5	42,966	56,320	11,261	1,167	375,070,700
<b>All districts</b>	<b>22</b>	<b>219,015</b>	<b>794,724</b>	<b>159,342</b>	<b>16,760</b>	<b>4,667,435,277</b>

Table 15: Development projects implemented using VLFR revenues

Project	Tunduru	Ruangwa	Liwale	Nachingwa	All districts
<b>Education facilities</b>					
Classrooms	0	18	14	8	40
Plot purchase	0	1	1	0	2
Electricity/Solar	0	2	2	5	9
Domitory	0	0	4	0	4
Food to students	0	4	7	4	15
Teachers allowances	0	0	13	0	13
Toilets	4	12	7	4	27
Books/Cash=1	0	1	1	0	2
equipments (desks,beds,chairs etc)	124	20	55	138	337
buildings	0	11	7	8	26
<b>Health facilities</b>					
resting place	0	1	0	0	1
buildings	0	3	9	3	15
toilets	0	1	1	1	3
medicine contr.	0	0	1	0	1
equipment	0	0	0	0	0
compasations	0	0	0	1	1
Insuarance	0	144	234	0	378
<b>Water facilities</b>					
Water plots	0	2	0	0	2
Piped	0	2	0	0	2
power supply	0	0	0	1	1
drilled	0	2	5	0	7
tanks	0	0	1	0	1
<b>Village officer development</b>					
Buildings	0	2	10	3	15
Toilets	0	0	4	0	4

Equipment	0	9	260	7	276
Supporting worship places	0	4	1	0	5
Office plot purchase	0	5	0	0	5
Machine	0	0	3	0	3
Motorcycle	0	0	2	0	2
Food for community	0	0	1	0	1
Tractor	0	3	1	0	4
Road Maintenance (km)	0	0	33	0	33
<b>VNRC for forest protection</b>					
VNRC Equipments	0	216	99	93	408
VNRC Motorcycle/Bycle	0	3	15	6	24
<b>Total</b>	<b>128</b>	<b>466</b>	<b>791</b>	<b>282</b>	<b>1667</b>

A sum of 1,667 social development project were implemented in Tunduru, Liwale, Ruangwa and Nachingwea, using funds accrued from the VLFRs (Table 15, Table 17). On average, about 64% of respondents claimed to have benefited from the Village Land Forest Reserve (VLFR) revenues (Figure 22). The highest proportions (Figure 23), were reported in Ruangwa, Liwale, and Nachingwea, with 93%, 89%, and 75% of respondents respectively. Within the surveyed households, 2,289 people (Table 16), benefited from the VLFR revenues, equivalent to an average of 66% of the population. In Ruangwa and Liwale, households reported that 100% of their members benefited from the revenues accrued from the VLFRs.

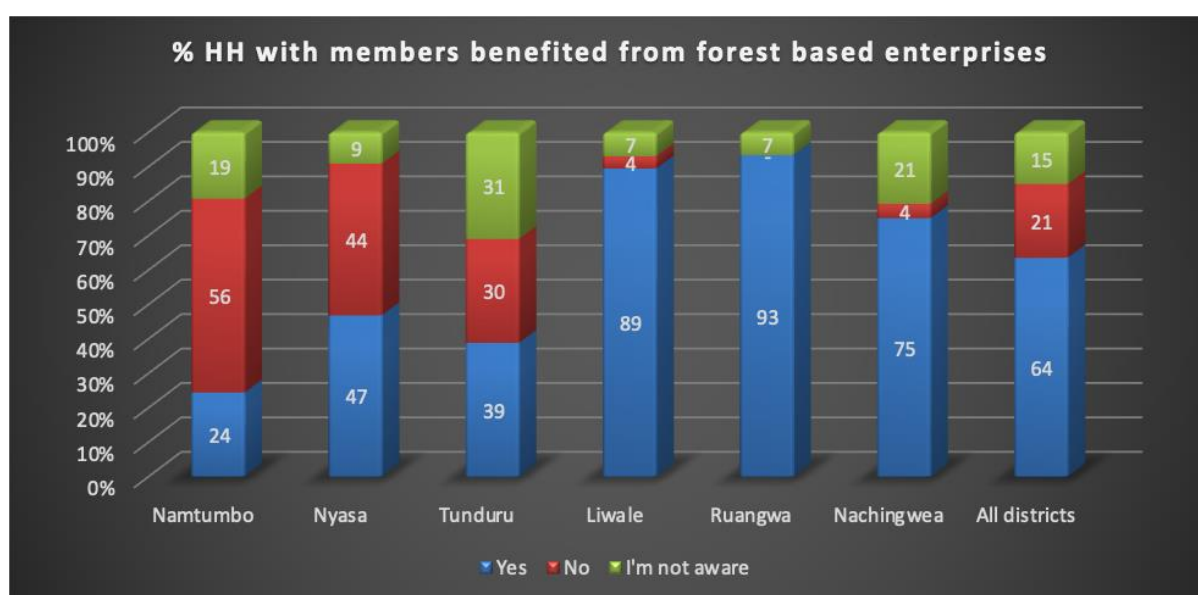


Figure 22: Proportion of households benefited from revenues accrued from the VLFRs



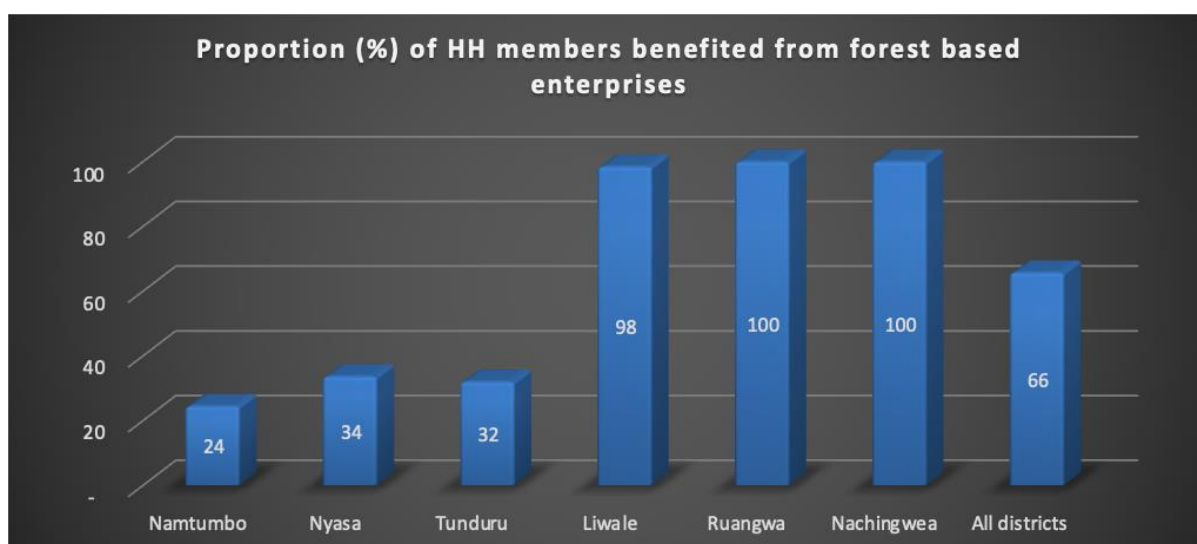


Figure 23: Proportion of the population that benefited from the VLFR revenues.

Table 16: Respondents' HH members benefited from the forest-based enterprises.

District	Adult Males	Adult Females	Boys	Girls	Total
Namtumbo	49	37	45	24	155
Nyasa	53	59	39	33	184
Tunduru	44	37	43	35	159
Liwale	254	284	185	167	890
Ruangwa	125	142	83	102	452
Nachingwea	125	143	91	90	449
<b>All districts</b>	<b>650</b>	<b>702</b>	<b>486</b>	<b>451</b>	<b>2,289</b>

Table 17: Types of benefits contributed by the VLFRs.

Benefit	Namtumbo	Nyasa	Tunduru	Liwale	Ruangwa	Nachingwea	Total
Income support such as dividends or cash transfer during hardships	-	9	2	5	3	6	4
Education such as school uniforms, school desks, school fees, books, food to school children	9	2	25	81	82	62	47
Healthcare such as dispensary building and health insurance,	20	3	13	78	74	66	45
Housing improvements	3	1		16	23	55	17
Food assistances	4	6		32	43	38	22
Child and family support	1			15	4	1	4
Elderly and disability support				36	23	1	12
Improved water supply	4		5	14	12	10	8
Land rights such as CCROs, conflict resolutions		9	4	1	2		2
Energy such as electrical installations, improved cookstoves		1		5	12	10	5

In general terms, about 62% (Figure 24), of households believe that the trend of benefits from VLFR is increasing, while 30% perceive it as neither increasing nor decreasing. The highest perceived increase is in Liwale (85%), followed by Nachingwea (78%) and Ruangwa (73%).

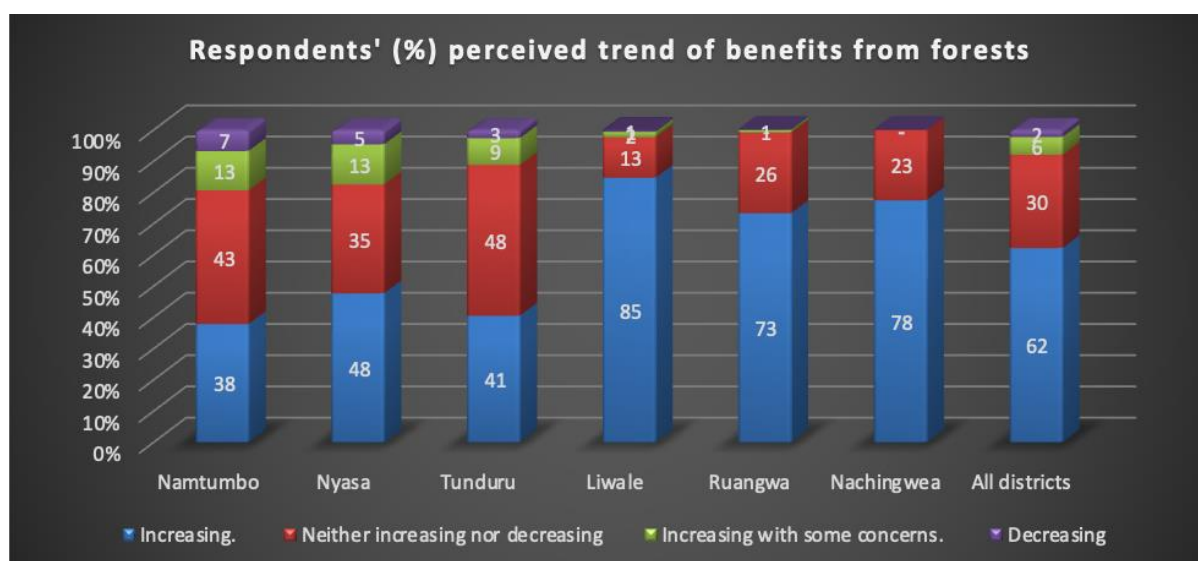


Figure 24: Perceived trend of benefits from VLFR

On average, 58% of households (Table 18) reported that their livelihoods have improved compared to the baseline period. When assessing respondents' views on the adequacy and quality of social service structures, the efficiency of service delivery systems, and the affordability of costs and expenses, 63% indicated an improvement, compared to 44.3% during the baseline assessment (Figure 25). Meanwhile, 8.7% and 15.4% observed a decline, and 28.35% and 40.3% noted no change, during endline and baseline surveys respectively.

Table 18: Status of basic livelihood element compared to previous years.

Status of basic livelihood elements	Just the same	Worse off	Better off
Access to basic needs such as food,	12	2	86
Food security	15	7	78
Water security	35	10	56
Land tenure security	59		41
Forest tenure security	50	1	49
Diversification of livelihoods	21	3	76
Health insurance	73	14	14
Predictability of the household income	30	7	63
of family members Employability	47	4	49
Ability to create employments to others	43	12	46
Establishments of new production streams (entrepreneurship)	29	5	66
Ability to participate in loans and saving schemes	25	6	69
<b>Average</b>	<b>36</b>	<b>6</b>	<b>58</b>

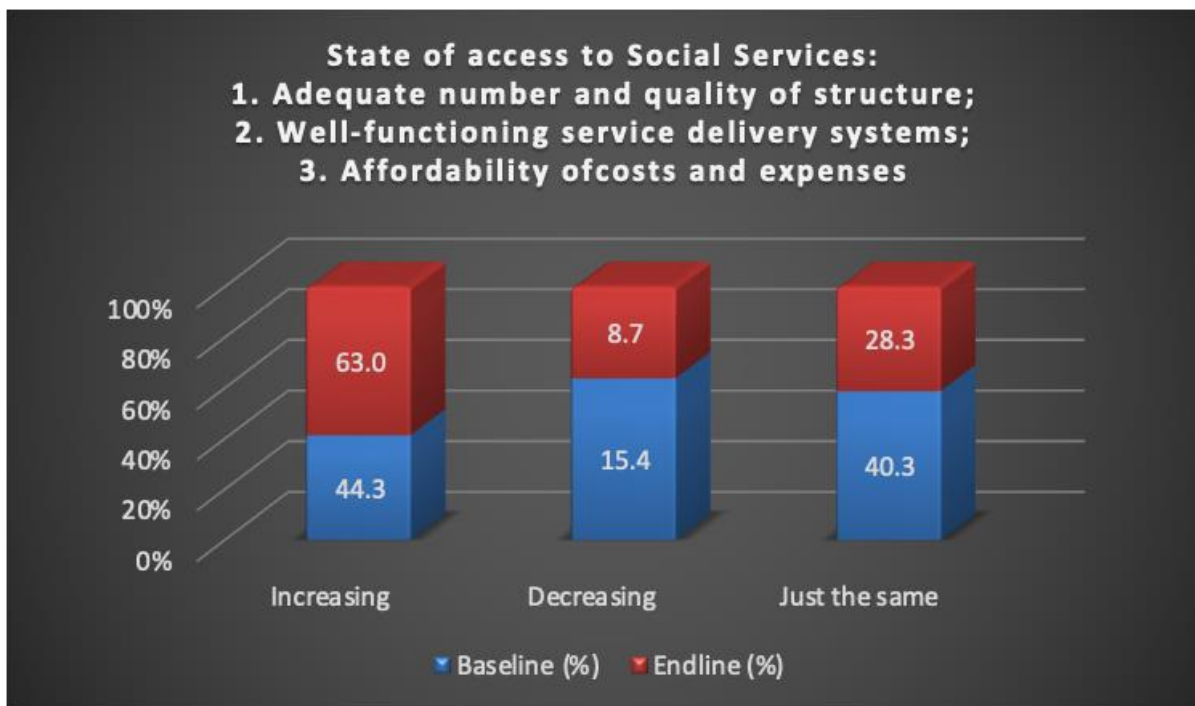


Figure 25: State of access to Social Services

The average walking time for households to access basic social needs has significantly decreased from 1.23 hours to 0.42 hours between baseline and endline surveys (Figure 26). Notably, access to key services has notably improved, with access to the national electricity grid decreasing from 1.81 hours to 0.20 hours, access to water points decreasing from 1.21 hours to 0.30 hours, access to health services decreasing from 1.24 hours to 0.53 hours, and access to village offices decreasing from 1.19 hours to 0.38 hours.

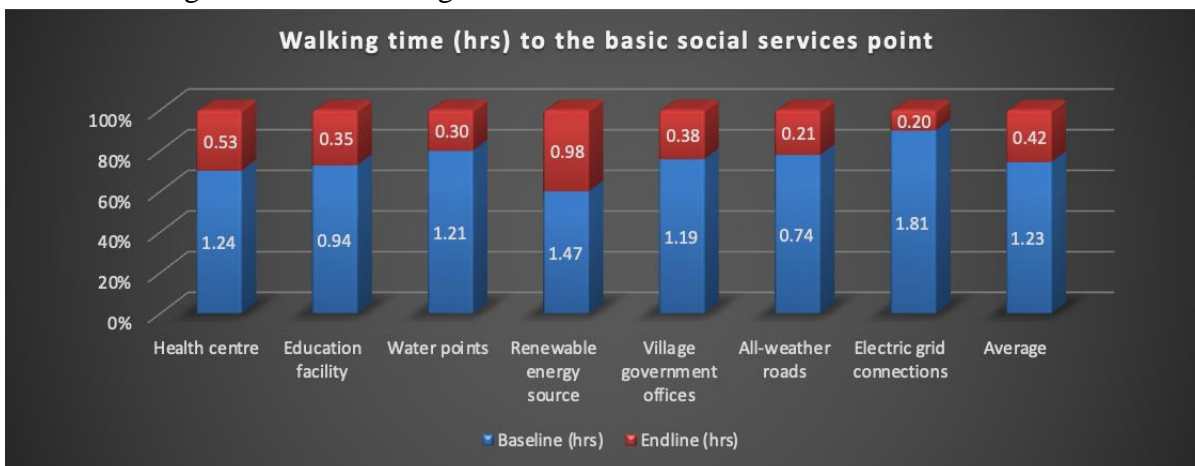


Figure 26: Average walking time (hrs) to the basic social services point

### Motivations to protect the forests.

FORVAC has facilitated 71 villages in obtaining approved Forest Management Plans (FMPs) at the district and/or Ministry level, encompassing a total VLFR area of 451,322 hectares across the Lindi, Ruvuma, and Tanga Clusters. Of these, 22 villages participated in the endline survey, covering 219,015 hectares of VLFRs.

An encouraging trend emerged, with over 71% of households (Figure 27), expressing an increased motivation to protect these forests, particularly notable in Liwale (78%),

Nachingwea (77%), and Ruangwa (73%). On average, 64% of households (Figure 28), acknowledge the presence of additional forests on village land, signalling potential for expansion, especially in Liwale, Ruangwa, and Nachingwea. However, there appears to be a lower willingness among households (44%) to allocate more forests to the VLFRs (Figure 29).

Besides, households narrated concerns (Table 19), in managing the VLFRs; for example, increasing deforestation caused by people living adjacent to the forests or other places in the country; continued forest illegalities eg for timber and limited benefits from the VLFRs.

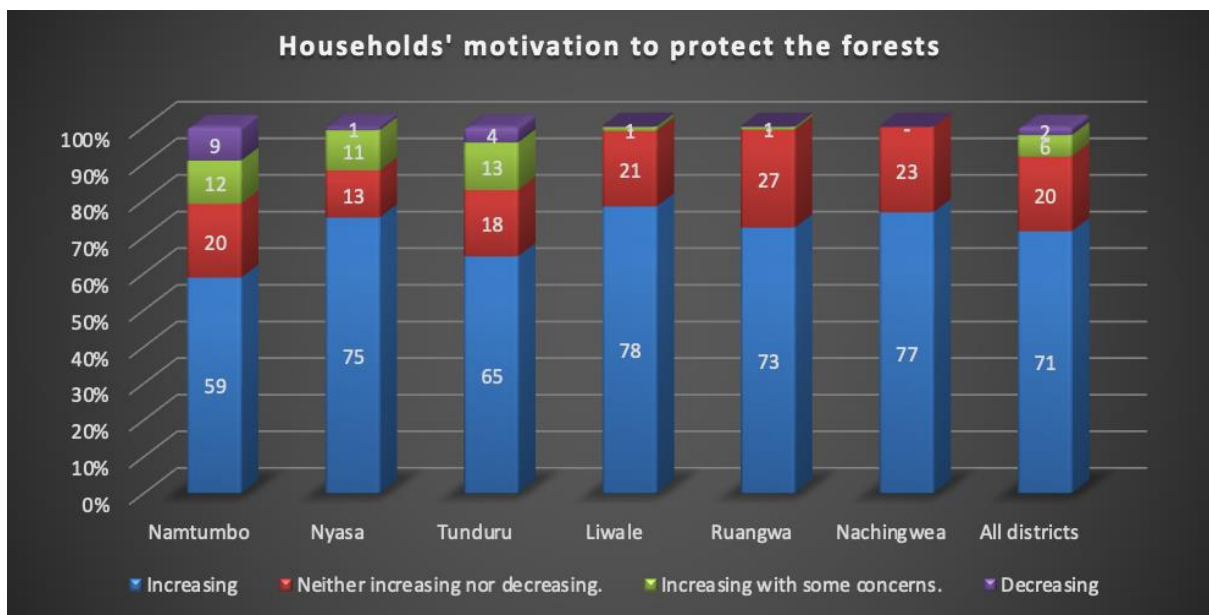


Figure 27: Status of households' motivation to protect the forests

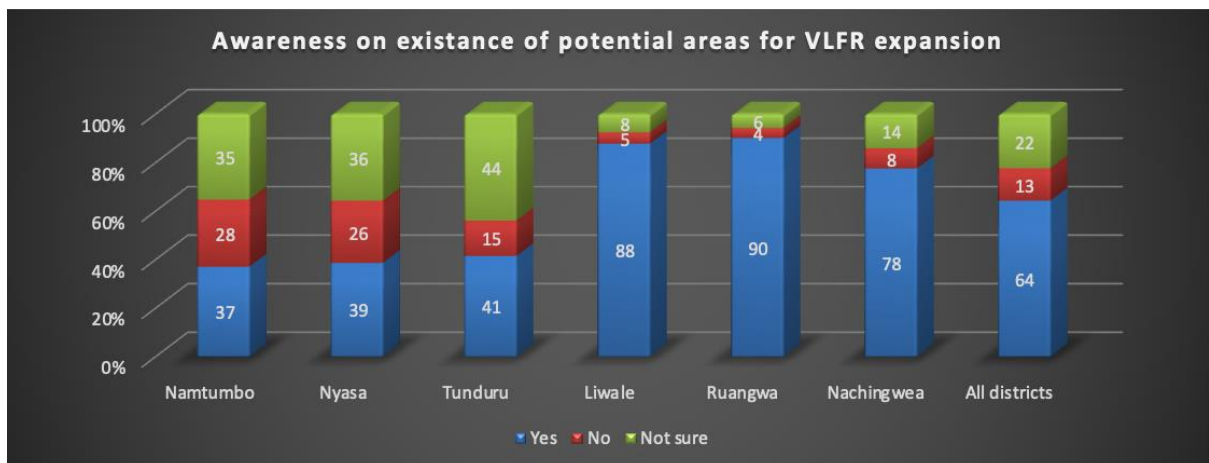


Figure 28: Awareness on the existence of potential areas for expansion of the VLFRs

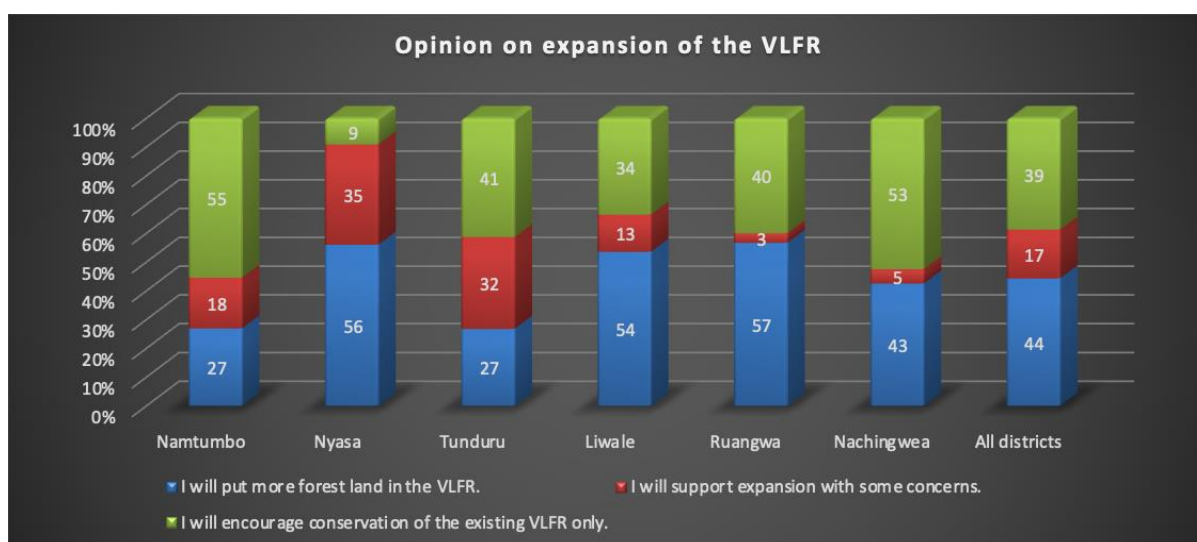


Figure 29: Opinion on expansion of the VLFRs

Table 19: Major concerns on VLFR management

Concerns	Counts	% of HH
Insecure tenure due to high risk of appropriation	30	4
Shortage of forest resources due to restrictions imposed through bylaws.	37	4.9
Increasing deforestation caused by people living adjacent to the forests.	218	28.9
Increasing deforestation caused by people coming from other places.	229	30.4
Centralized decisions on forest trade	23	3.1
Limited benefits from the VLFRs	298	39.5
Benefits unfairly distributed.	37	4.9
Inadequate law enforcements.	92	12.2
Continued forest illegalities eg for timber	184	24.4
Benefits not translated into meaningful improvements of livelihoods.	65	8.6

### Awareness of VLFR boundaries and perceived trend of forest loss

On average, 50% of households are aware of the VLFR boundaries (Figure 30). However, awareness is higher in Liwale, Ruangwa, and Nachingwea, while it is lowest in Namtumbo and Nyasa. Among those aware of the boundaries, 97% reported that the existing boundary marks are well visible (Figure 31). On average, only 18% (Figure 32), households believe that the rate of deforestation is increasing due to agricultural expansion, illegal and unsustainable use of forest resources, and bush fires (Table 20). Conversely, over 80% of families in Liwale, Ruangwa, and Nachingwea perceive that deforestation is decreasing.

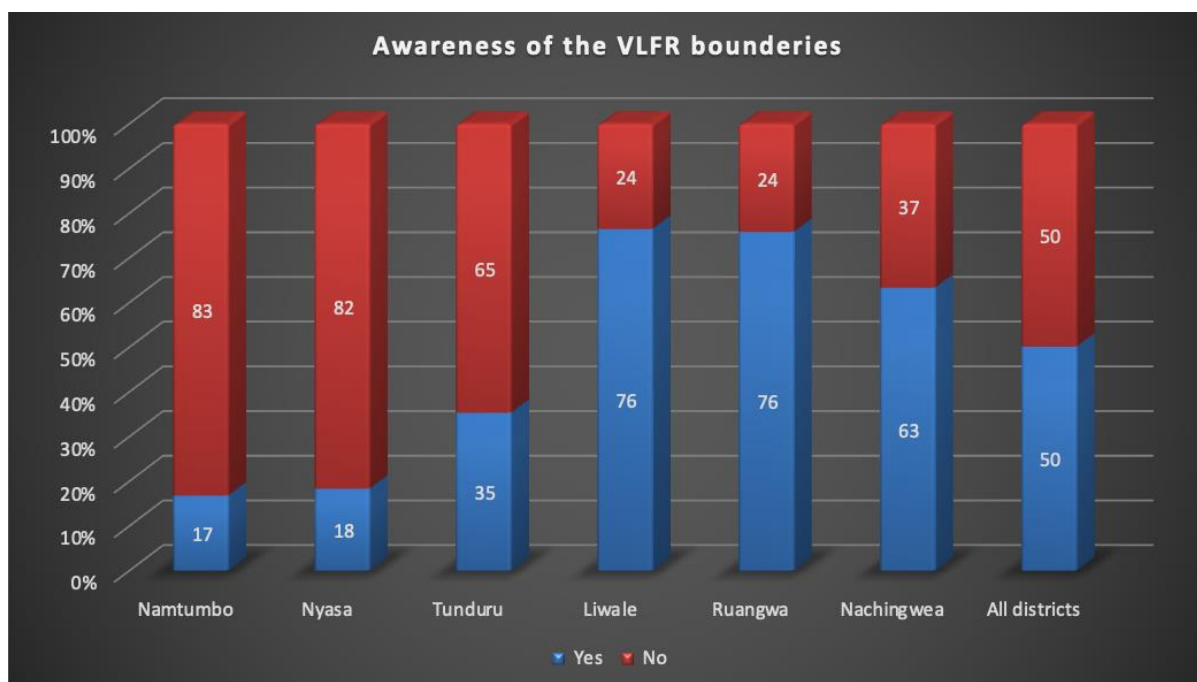


Figure 30: Awareness of the VLFR boundaries

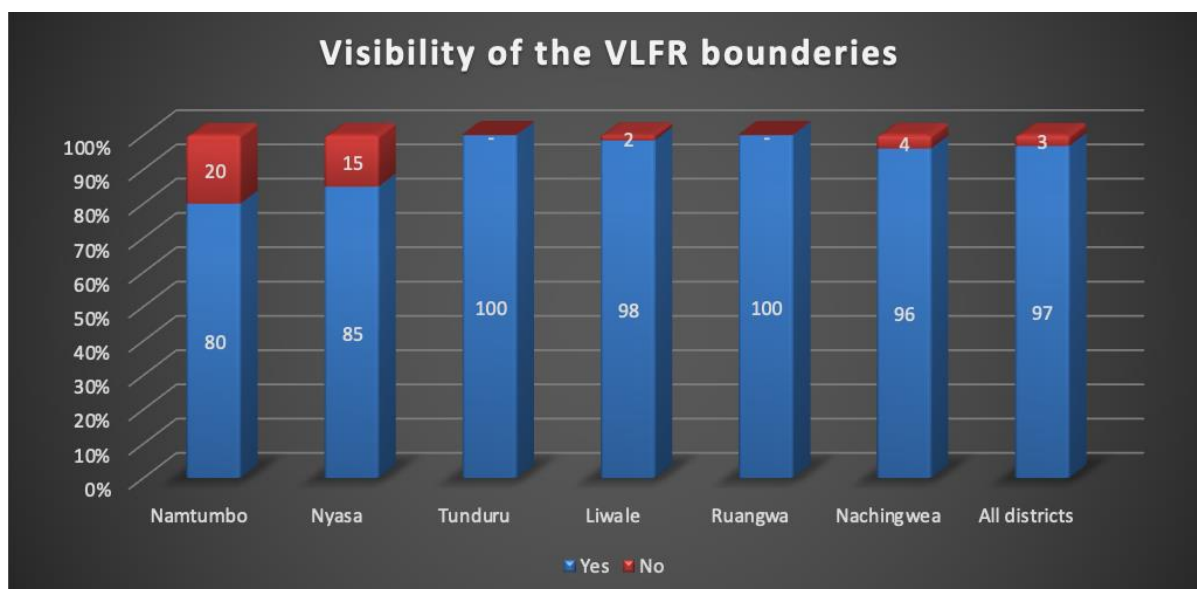


Figure 31: Visibility of the VLFR boundaries

Table 20: Drivers of forest loss

Drivers of forest loss	count	% of HH
Agricultural expansion or shifting cultivation.	356	47
Illegal and unsustainable logging	293	39
Firewood collection	82	11
Charcoal production	169	22
Infrastructure development	24	3
Mining	40	5
Urbanization	17	2
Illegal wildlife hunting	69	9
Bush fire	414	55

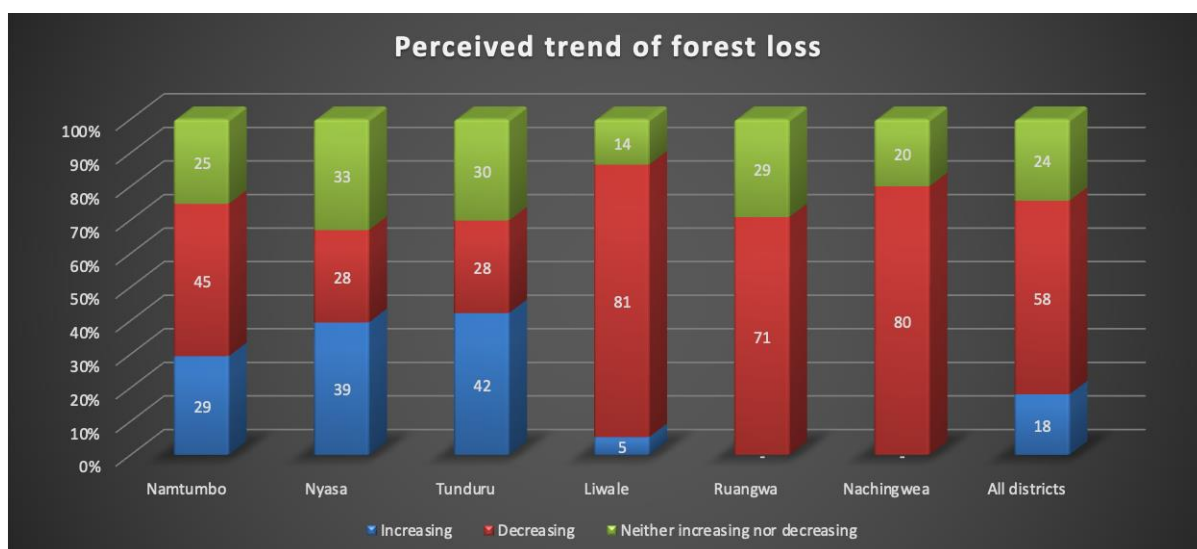


Figure 32: Perceived trend of forest loss

### Participation in decision making.

Over 81% of households consider the decision-making structure for forest-based enterprises to be excellent or good. Similarly, 81% rate the decision-making speed as fast or moderate, and 78% evaluate the effectiveness of information flow as excellent or good (Table 21). Additionally, over 71% rate the costs associated with decision-making as low or moderate. More than 81% believe that decisions made regarding VLFRs and related enterprises significantly or moderately contribute to reducing the rate of deforestation (Figure 33, Table 22). However, over 92% of respondents do not believe that communities have the capacity to distribute forest revenues for family use

Table 21: HH's rate decision-making structure along forest-based enterprise value chains?

Details	N	%
<b>Excellent:</b> well-defined, transparent, and efficiently.	278	37
<b>Good:</b> generally effective, though there may be some room for improvement.	330	44
<b>Fair:</b> With some shortcomings, such as unclear roles or inefficient communication channels.	110	15
<b>Poor:</b> inadequate, with frequent delays, conflicts, or suboptimal outcomes.	25	3
<b>Very poor:</b> severely deficient, causing significant disruptions in the value chain.	11	1
<b>TOTAL</b>	754	100

Table 22: Rating the perceived qualities of the information and decisions

Rating the time it takes in decision making.			Rating the effectiveness of the flow of information.			Rating the costs related to decision-making.		
Details	N	%	Details	N	%	Details	N	%
Fast	245	32	Excellent	260	34	Low	88	12
Moderate	369	49	Good	332	44	Moderate	444	59
Slow	101	13	Fair	104	14	High	118	16
Very slow	27	4	Poor	43	6	Very high	61	8
Inconsistent	12	2	Very poor	15	2	Uncertain	43	6
<b>Total</b>	<b>754</b>	<b>100</b>	<b>Total</b>	<b>754</b>	<b>100</b>	<b>Total</b>	<b>754</b>	<b>100</b>

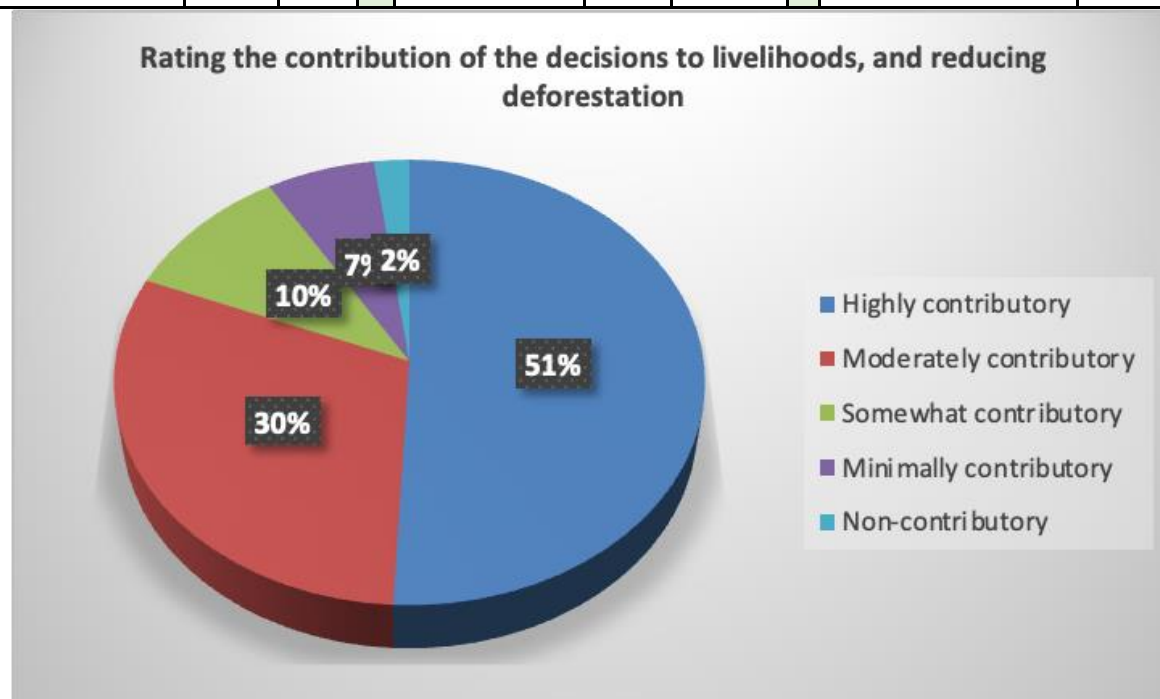


Figure 33: Contribution of the decisions on livelihoods and reducing deforestation

#### Analysis of Households Income Poverty

The total annual household income, derived from business activities, formal and informal employment, remittances, asset rentals, agriculture, livestock, and forestry, amounted to 2.4 billion TZS (Table 23). This is equivalent to approximately \$1.6 million, based on an exchange rate of 2,600 TZS per \$US.

Table 23: Total net income from various sources

Source of Income	Amount (TZS)	Amount (\$)	% of the total income
Business	172,141,000	107,588	7
Employments	115,914,000	72,446	5
Remittances	38,277,002	23,923	2
Assets	27,041,000	16,901	1
Agriculture	1,814,344,749	1,133,965	73
Livestock	229,144,170	143,215	9
Forestry	90,819,492	56,762	4
<b>Total</b>	<b>2,487,681,413</b>	<b>1,554,801</b>	<b>100</b>



Mean and median values were computed as key measures of central tendency to determine the relative poverty line in the project area (Table 24). The per capita annual household income averaged 818,792 TZS. This was calculated by dividing the total income of each household by its size and then finding the mean value across all households. The equivalent monthly per capita income, 68,024 TZS, was determined by dividing the annual per capita income by 12. Finally, the per capita daily income was computed to be \$1.86 by converting the annual per capita income at an exchange rate of 2,600 TZS per US dollar and then dividing by 365 days. Similarly, the equivalent median values were computed (Table 25).

*Table 24: Mean households per capita annual, monthly and per day income*

District	Average household per capita income			Number of Households
	Annual (TZS)	Per month (TZS)	Per day (\$)	
Namtumbo	742,120	61,843	0.78	119
Nyasa	671,534	55,961	0.71	109
Tunduru	854,300	71,192	0.9	116
Liwale	762,391	63,533	0.8	170
Ruangwa	721,267	60,106	0.76	120
Nachingwea	1,171,689	97,641	1.23	120
<b>All districts</b>	<b>818,792</b>	<b>68,024</b>	<b>1.86</b>	<b>754</b>

*Table 25: Median per capita household income*

District	Median Household per capita income		
	Annual (TZS)	Per month (TZS)	Per day (\$)
Namtumbo	468,533	39,044	0.49
Nyasa	412,020	34,335	0.43
Tunduru	478,250	39,854	0.5
Liwale	578,017	48,168	0.61
Ruangwa	510,420	42,535	0.54
Nachingwea	701,473	58,456	0.74
<b>All districts</b>	<b>551,367</b>	<b>45,918</b>	<b>0.58</b>

Relative poverty lines were calculated using per capita median and mean incomes at proportions of 40%, 50%, and 60% (Table 26). These subjective proportions were adopted from baseline computations.

*Table 26: Relative poverty lines based on per capita mean and median monthly income*

District	Mean poverty lines			Median poverty lines		
	40%	50%	60%	40%	50%	60%
Namtumbo	24,737	30,922	37,106	15,618	19,522	23,427
Nyasa	22,384	27,981	33,577	13,734	17,168	20,601
Tunduru	28,477	35,596	42,715	15,942	19,927	23,913
Liwale	25,413	31,766	38,120	19,267	24,084	28,901
Ruangwa	24,042	30,053	36,063	17,014	21,268	25,521
Nachingwea	39,056	48,820	58,584	23,382	29,228	35,074
<b>All districts</b>	<b>27,210</b>	<b>34,012</b>	<b>40,815</b>	<b>18,367</b>	<b>22,959</b>	<b>27,551</b>

The number of households falling below each per capita monthly mean and median income per district was computed. The total number of households falling below the relative poverty lines at 40%, 50%, and 60% of the mean income was 223, 274, and 344, respectively. For the median income, the corresponding totals were 132, 163, and 205 (Table 27).

*Table 27: Number of households falling in each mean and median weight of poverty line*

District	Mean poverty lines			Median poverty lines		
	40	50	60	40	50	60
Namtumbo	40	49	59	18	25	34
Nyasa	35	40	52	22	25	33
Tunduru	43	53	59	19	26	33
Liwale	34	45	62	28	33	40
Ruangwa	35	44	55	26	29	35
Nachingwea	36	43	57	19	25	30
<b>All districts</b>	<b>223</b>	<b>274</b>	<b>344</b>	<b>132</b>	<b>163</b>	<b>205</b>

The next step was to compute the proportion of households falling within each mean and median weight of the poverty line per district and overall. This was done by dividing the number of households in each category by the total number of households in the study, then expressing the result as a percentage. The results showed that 29.6%, 36.3%, and 45.6% of households fell under the 40%, 50%, and 60% mean income poverty lines, respectively. For the median income poverty lines, the figures were 17.5%, 21.6%, and 7.29% (**Error! Not a valid bookmark self-reference.**).

*Table 28: Households (%) falling in each mean and median weight of poverty line*

District	Mean poverty lines			Median poverty lines		
	40%	50%	60%	40%	50%	60%
Namtumbo	34	41	50	15	21	29
Nyasa	32	37	48	20	23	30
Tunduru	37	46	51	16	22	28
Liwale	20	26	36	16	19	24
Ruangwa	29	37	46	22	24	29
Nachingwea	30	36	48	16	21	25
<b>All districts</b>	<b>29.6</b>	<b>36.3</b>	<b>45.6</b>	<b>17.5</b>	<b>21.6</b>	<b>27.2</b>
<b>Baseline values</b>	<b>54.2</b>	<b>58.3</b>	<b>64.8</b>	<b>27.3</b>	<b>33.2</b>	<b>35.5</b>
<b>Difference (baseline – Endline)</b>	<b>24.6</b>	<b>22</b>	<b>19.2</b>	<b>9.8</b>	<b>11.6</b>	<b>8.3</b>

The final step was to compare these findings with the baseline values, which were 54.2%, 58.3%, and 64.8% of households for the 40%, 50%, and 60% mean income poverty lines (The next step was to compute the proportion of households falling within each mean and median weight of the poverty line per district and overall. This was done by dividing the number of households in each category by the total number of households in the study, then expressing the result as a percentage. The results showed that 29.6%, 36.3%, and

45.6% of households fell under the 40%, 50%, and 60% mean income poverty lines, respectively. For the median income poverty lines, the figures were 17.5%, 21.6%, and 7.29% (**Error! Not a valid bookmark self-reference.**).

Table 28, Figure 34). There was a decrease in the proportion of households within these poverty lines by 24.6%, 22.0%, and 19.2%, respectively. Similarly, the baseline results for the median income poverty lines were 27.3%, 33.2%, and 35.5%. The endline results indicated reductions of 9.8%, 11.6%, and 8.3%, respectively, in the number of households falling within these median poverty lines.

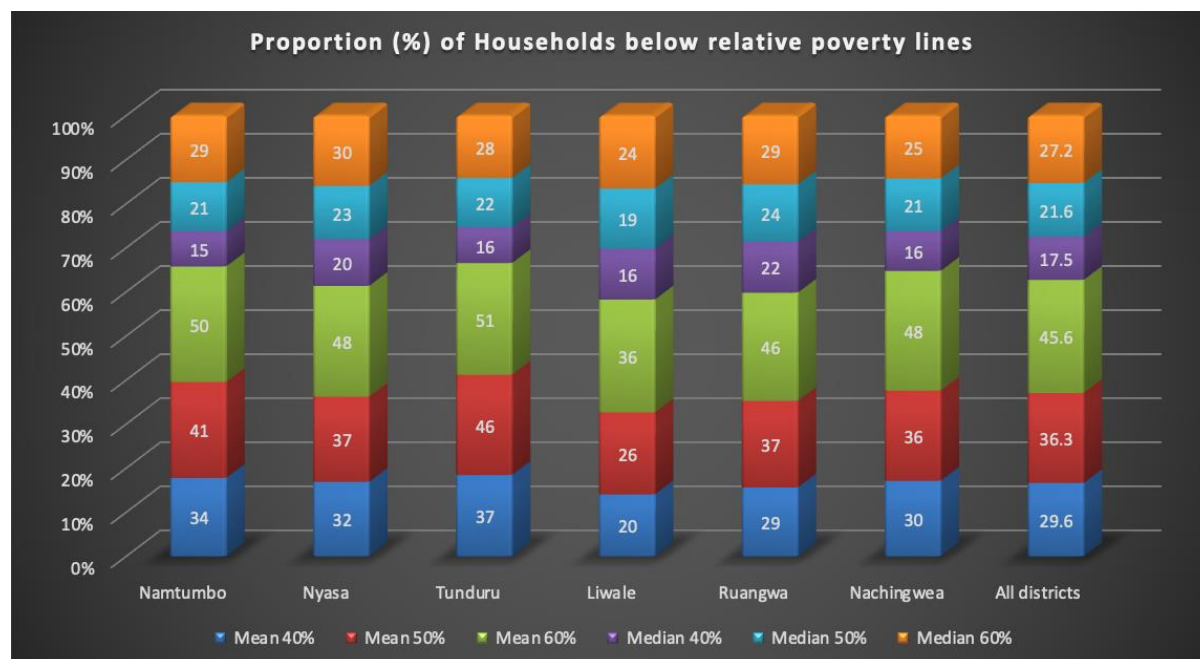


Figure 34: Proportions of households falling below mean and median poverty lines

### Comparison of the Households' Forest and Non- Forest Income

The proportional contributions of forest and non-forest income for all households were computed. Agriculture contributed 73% of the total income, while forestry contributed 4% (Table 29), implying that households heavily depend on agriculture for their income, with forestry providing only a minimal contribution.

Table 29: Proportional contribution of household income from different sources

Source of Income	Amount (TZS)	Amount (\$)	% of the total income
Business	172,141,000	107,588	7
Employments	115,914,000	72,446	5
Remittances	38,277,002	23,923	2
Assets	27,041,000	16,901	1
Agriculture	1,814,344,749	1,133,965	73
Livestock	229,144,170	143,215	9
Forestry	90,819,492	56,762	4
<b>Total</b>	<b>2,487,681,413</b>	<b>1,554,801</b>	<b>100</b>

The next step was to compute forest and non-forest income from households engaged solely in forestry livelihoods, including members of the VNRC and Village Council who participate in forest patrols or decision-making meetings related to forestry. It was found that 205 households (equivalent to 27% of all households), (Table 35), were engaged in forestry-based livelihoods. These households earned a total of 767,943,690 TZS, with 677,124,198 TZS from non-forestry sources and 90,819,492 TZS from forestry sources (Table 30).

*Table 30: Total non-forest and forest income for households engaged in forestry*

District	Total non-forest income			Total forest income		
	Total (all HH)	Per capita per annum	Per capita per month	Total (all HH)	Per capita per annum	Per capita per month
Namtumbo	51,647,880	10,220,649	851,721	6,383,000	1,273,108	106,092
Nyasa	208,968,302	42,508,851	3,542,404	17,484,492	3,756,283	313,024
Tunduru	132,248,334	32,958,405	2,746,534	20,988,000	4,801,269	400,106
Liwale	144,906,932	31,434,504	2,619,542	30,065,000	5,971,955	497,663
Ruangwa	76,600,030	19,558,598	1,629,883	6,579,000	1,681,548	140,129
Nachingwea	62,752,720	20,718,085	1,726,507	9,320,000	2,971,333	247,611
<b>All districts</b>	<b>677,124,198</b>	<b>157,399,092</b>	<b>13,116,591</b>	<b>90,819,492</b>	<b>20,455,496</b>	<b>1,704,625</b>

Next, the averages of forestry and non-forestry income were computed, including the total average household income, as well as the per capita income per annum and per month, as shown in the Table 31.

*Table 31: Average of forestry and non-forestry income for the households engaged in forestry*

District	Average Non-Forest income			Average Forest Income		
	Total (all HH)	Per capita per annum	Per capita per month	Total (all HH)	Per capita per annum	Per capita per month
Namtumbo	3,443,192	681,377	56,781	425,533	84,874	7,073
Nyasa	2,749,583	559,327	46,611	225,717	49,425	4,119
Tunduru	3,778,524	941,669	78,472	593,171	137,179	11,432
Liwale	3,534,315	766,695	63,891	730,122	145,657	12,138
Ruangwa	3,330,436	850,374	70,864	286,043	73,111	6,093
Nachingwea	4,183,515	1,381,206	115,100	621,333	198,089	16,507
<b>All districts</b>	<b>3,303,045</b>	<b>767,800</b>	<b>63,983</b>	<b>439,671</b>	<b>99,783</b>	<b>8,315</b>

The, the proportional contributions of non-forestry and forestry income for households engaged in forestry were calculated. It was found that forestry contributed 12% of the annual household income, while non-forestry sources contributed 88% (Table 32). This indicates that, even for households involved in forestry, the majority of their income still comes from non-forestry sources.

*Table 32: Proportions of forestry and non-forestry income for households engaged in forestry.*

District	Total Income (Forest + Non-forest)	No. of Households	Proportion of non forest income	Proportion of forest income	Total
----------	------------------------------------	-------------------	---------------------------------	-----------------------------	-------

Namtumbo	58,030,880	15	89	11	100
Nyasa	226,452,794	76	92	8	100
Tunduru	153,236,334	35	86	14	100
Liwale	174,971,932	41	83	17	100
Ruangwa	83,179,030	23	92	8	100
Nachingwea	72,072,720	15	87	13	100
<b>All districts</b>	<b>767,943,690</b>	<b>205</b>	<b>88</b>	<b>12</b>	<b>100</b>

The final analysis considered the total income, both forest and non-forest, for all households on average. Forestry contributed an annual average of 120,450 TZS to each household, while non-forestry sources provided an average of 3,178,862 TZS. This resulted in an overall average income of 3,299,312 TZS per household per year (Table 33). Therefore, forestry accounted for an average of 4% of the total income, with non-forestry sources comprising the remaining 96% (Table 34). These findings indicate that non-forestry sources are the predominant contributors to household income.

*Table 33: Averages of total income, forest and non-forest income for all households*

District	Annual Average Household Income			Per capita Average Income		
	None forest Income	Forest Income	Total Income	None forest Income	Forest Income	Total Income
Namtumbo	3,429,276	53,639	3,482,914	731,422	10,698	742,120
Nyasa	2,860,220	160,408	3,020,629	636,465	35,069	671,534
Tunduru	3,093,891	180,931	3,274,822	812,545	41,755	854,300
Liwale	3,432,989	176,853	3,609,842	727,109	35,282	762,391
Ruangwa	2,327,946	54,825	2,382,771	707,254	14,013	721,267
Nachingwea	3,793,009	77,667	3,870,676	1,146,928	24,761	1,171,689
<b>All districts</b>	<b>3,178,862</b>	<b>120,450</b>	<b>3,299,312</b>	<b>791,484</b>	<b>27,308</b>	<b>818,792</b>

*Table 34: Proportion of Average forest and non forest income for all households*

District	Proportion of Average forest and non forest income to the total income		
	None forest Income	Forest Income	Total Income
Namtumbo	98	2	100
Nyasa	95	5	100
Tunduru	94	6	100
Liwale	95	5	100
Ruangwa	98	2	100
Nachingwea	98	2	100
<b>All districts</b>	<b>96</b>	<b>4</b>	<b>100</b>

#### Proportion of households employed in VLFR.

An analysis of the proportion of households earning income from forestry was conducted, considering income from forest-based enterprises as well as participation in forest

management activities such as protection and decision-making. A total of 205 households, equivalent to 27% of the respondents, participate in forestry and earn income from related activities. The analysis also included the participation of different groups of people, including females and males of various age groups, as well as people living with disabilities (Table 35).

*Table 35: Number and Proportion of community members employed in VLFR*

<b>Number of people engaged in VLFRs</b>					
<b>Cartegory</b>	<b>Timber</b>	<b>Beekeeping</b>	<b>Others</b>	<b>Total</b>	<b>Total HH</b>
Female	9	16	45	70	286
Male	33	24	78	135	468
<b>Total</b>	<b>42</b>	<b>40</b>	<b>123</b>	<b>205</b>	<b>754</b>
PLWD	7	4	11	22	79
Less than 36 Years	4	6	22	32	155
35 to 60 years	35	29	74	138	467
Above 60 years	3	5	27	35	132
<b>Total</b>	<b>42</b>	<b>40</b>	<b>123</b>	<b>205</b>	<b>754</b>
<b>Village Natural resource Committee Members</b>					
Female				10	286
Male				50	468
<b>Total</b>				<b>60</b>	<b>754</b>
<b>Proportions of community members employed in VLFRs</b>					
<b>Cartegory</b>	<b>Timber</b>	<b>Beekeeping</b>	<b>Others</b>	<b>Total</b>	<b>% of Total HH</b>
<b>Total by proportion</b>	<b>6</b>	<b>5</b>	<b>16</b>	<b>27</b>	<b>100</b>
Female	21	40	37	34	38
Male	79	60	63	66	62
<b>Total</b>	<b>100</b>	<b>100</b>	<b>-100</b>	<b>100</b>	<b>100</b>
PLWD	6	4	10	20	10
Less than 36 Years	10	15	18	16	21
35 to 60 years	83	73	60	67	62
Above 60 years	7	13	22	17	18
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Village Natural resource Committee Members</b>					
Female				17	38
Male				83	62
<b>Total</b>				<b>100</b>	<b>100</b>

## SYNTHESIS AND DISCUSSIONS AGAINST FORVAC INDICATORS

### Impact

**Impact Indicator 1:** Differences in changes in forest cover area (and GHG emissions) between FORVAC and other public forest areas.

This indicator is beyond the scope of this assignment. FORVAC would need to undertake a detailed deforestation analysis to understand the status of forest cover and the extent to which forested land has been retained due to the programme's management interventions. An encouraging trend emerged, with over 71% of households expressing increased motivation to protect these forests, particularly notable in Liwale (78%), Nachingwea (77%), and Ruangwa (73%). However, it is worth considering that, on average, around 50% of households are unaware of the VLFR boundaries, and about 18% believe that the rate of deforestation is increasing due to agricultural expansion, illegal and unsustainable use of forest resources, and bush fires. Additionally, it is uncertain whether the generated revenues are effectively deterring deforestation, as the benefits were not directed towards agriculture, the main driver of forest loss in Tanzania.

**Impact Indicator 2:** Percentage of households having assets:

Approximately 28% of the households engaged in forest-based enterprises in the surveyed area own beehives indicating a substantial adoption rate of beekeeping among the community. This is surpassing the program's target by 5% and the baseline by 25%, showcasing successful outreach and implementation (Table 36). Collectively, these households own 505 beehives, averaging 16 per household. In the surveyed villages, FORVAC has supported 45 forest-based enterprise groups, with 71% (32 groups) engaged in beekeeping. These groups collectively own 2,037 beehives, including 1,173 local beehives and 864 improved beehives. This suggests that beekeeping is not just adopted widely but also practiced at a considerable scale per household, which can contribute significantly to household incomes and food security. In addition, the proportion of households owning motorcycles and pesticide sprayers has increased beyond the baselines by 7% and 9% respectively, slightly exceeding the project target for motorcycles (2%), but slightly less than the target for pesticide sprayers (-1%).

On the other hand, the proportion of households owning livestock, and bicycles, has declined significantly from the baseline and the project's expectations. This might be because, the baseline survey included four other districts—Mpwawa, Kilindi, Handeni, and Mbinga—which were not part of this study. Historically, these districts have experienced migration of agro-pastoralists, which may have influenced the state of ownership of these basic assets during the baseline assessment.

*Table 36: Households (%) having basic assets during baseline and endline surveys.*

Asset	Baseline (%)	Target (%)	Endline (%)	Achievement against	
				target (%)	baseline (%)
livestock	65%	70%	18%	-52%	-47%
motorcycles	18%	23%	24.80%	2%	7%
bicycles	49%	54%	28.91%	-25%	-20%
bee hives	3%	23%	28.00%	5%	25%
pesticide sprayers	19%	29%	28.38%	-1%	9%

**Impact Indicator 3: Percentage of households being income poor**

The overall average per capita monthly income of 68,024 TZS found in the project area during the endline survey is higher than the national basic need poverty line of 49,320 TZS by 17,095 TZS. However, the per capita mean daily income of \$1.86 is slightly lower than the international poverty line of \$1.90. This suggests that while the project has raised incomes above the national poverty line, international standards are not yet fully met. Compared to the baseline mean and median values, the results show a continued decrease in the proportion of households living below the relative poverty line. The proportion of households living below 40%, 50%, and 60% of the mean poverty lines decreased by 24.6%, 22.0%, and 19.2%, respectively. Similarly, the equivalent proportions for median poverty lines decreased by 9.8%, 11.6%, and 8.3%, respectively. This indicates significant progress in reducing relative poverty.

The subjective relative poverty line adopted by the project was 50% of the median, for which the baseline value indicated that 33.2% of the population was income poor (Figure 35). The equivalent value during the endline survey was 21.6%, which is 3.4%, exceeding the project target of 25%. Thus, the endline results indicated a reduction in the proportion of households living below the relative poverty line by 11.6%, from the 33.2% baseline value, exceeding the project's goal of reducing poverty to below 25%. This shows substantial improvement towards achieving the project's poverty reduction target.

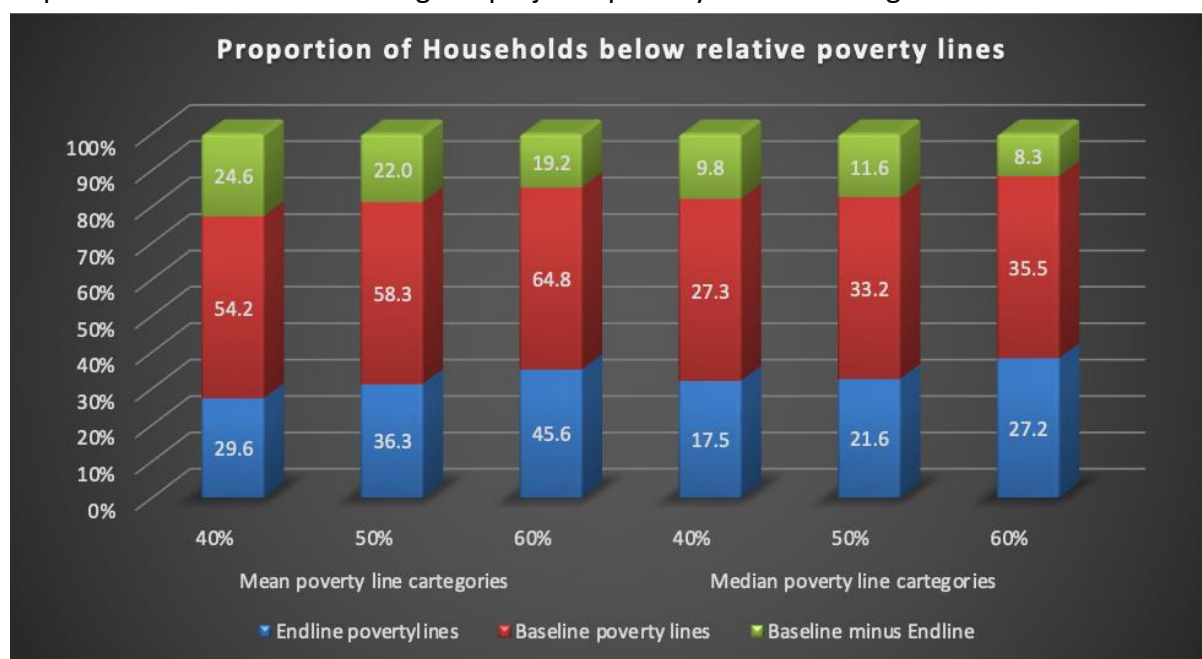


Figure 35: Proportion of households below mean and media relative poverty lines

**Impact Indicator 4: Percentage of households that find service delivery systems well-functioning (disaggregated by sex, age categories and disability)**

The endline survey revealed that 63% of households perceived improvements in the functionality of services, including an adequate number and quality of structures, well-functioning service delivery systems, and affordability of costs and expenses, suggesting that the quality, reliability, and affordability of the services have markedly improved. This



outcome significantly exceeds the program's target of 25% by 38% (Table 37). The services assessed encompassed health, education, water, renewable energy, village administration, all-weather roads, and electricity demonstrating a holistic approach to community development, addressing multiple needs simultaneously. Additionally, the time required for households to access services has decreased by 66%, equivalent to a reduction of 48 minutes, from 1.23 hours at baseline to 0.42 hours at endline, implying that, the services are now more readily available and closer to the community.

*Table 37: Households found service delivery improving by sex, age and disability*

Group of respondents perceiving increasing functionality of Services	Number and proportion of respondents in the group		
	Average for all service	Total of respondents	% of respondents
Female	180	286	63
Male	295	468	63
PLWD	38	56	69
Less than 36 Years	102	155	66
35 to 60 years	286	467	61
Above 60 years	86	132	65

Satisfaction with the improvements has been expressed by people of different ages, people living with disabilities, and both males and females in nearly equal proportions, indicating that the project benefits are inclusive and widespread across the community. This widespread approval is attributed to the significant number and variety of social services enhanced through the revenues generated by villages supported by FORVAC. These improvements include:

- 475 education facilities, including allowances for schoolteachers,
- 399 health facilities, including the issuance of health insurance,
- 13 water facilities,
- 305 village administration facilities, including the construction of village offices.
- 32 kilometers of road maintenance,
- The purchase of motorcycles, a tractor, and basic equipment for the Village Natural Resource Committees (VNRCs).

## Outcomes

**Outcomes Indicator 1:** Area in hectares under Sustainable Forest Management regime.

This indicator has been documented in the FORVAC annual reports, showing that as of May 2024, a total of 71 villages had obtained approved Forest Management Plans and bylaws at the district and/or Ministry level, formalizing a total of 451,322 hectares of forest and woodland. Out of these, 27 VLFRs covering 185,911 hectares were gazetted through Government Notice No. 454 of 25/6/2021. FORVAC reported two more VLFRs covering 4,285 hectares that were awaiting district-level approval, and the gazettelement of four VLFRs in Songea District was ongoing. Additionally, building on the foundation set by FORVAC, the endline survey observed efforts by communities to expand their VLFRs. In Nachingwea, Village General Assemblies and the District Authority had already approved the addition of 63,970 hectares to the 53,986 hectares reported by FORVAC, making a total of 117,956 hectares in 16 villages in the districtd.

**Outcomes Indicator 2:** Percentage of total income increase from households involved in forest-based businesses sourced legally from VLFRs.

The average annual household income for all households is 120,450 TZS (Table 33), representing an increase of 74,596 TZS (164%) from the baseline of 45,854 TZS. The total annual household income from forestry is 90,819,492 TZS, which represents 4% of the total annual household income of 2,487,801,863 TZS (Table 29). The average household income for households engaged solely in forestry is 439,671 TZS (Table 31), accounting for 12% of their average annual income (Table 32). This is significantly lower than the 17.5% baseline value and falls short of the projected 10% increase. These findings suggest that while absolute forestry income has significantly grown, its relative contribution to overall household income has not met the ambitious expectations.

**Outcomes Indicator 3:** Percentage of adult community members employed in VLFR management and forest-based enterprises (disaggregated by sex, age categories and disability; and differentiated for timber and other VCs)

A total of 27% (N=205) of households are engaged or have members engaged, in forest-based enterprises, up from 9% at baseline (details in Table 35). Of these, 6% are involved in timber, 5% in beekeeping, and 4% in other value chains. About 21% of those engaged in the value chain are female, while the remaining 79% are male. Additionally, 6% are people living with disabilities (PLWD). At least 10% of those in the value chain are young people under 35 years old. The majority, 83%, are between 36 and 60 years old, while the remaining 7% are over 60 years old. These findings imply that the project has successfully fostered community engagement in diverse, sustainable forest-based enterprises, with notable inclusivity of females, youth, and PLWDs, though there remains room for improvement in gender balance and youth involvement.

**Outcomes Indicator 4:** Volume (m<sup>3</sup>) and value (income, TZS) of legal timber sold from VLFRs: i) total; ii) lesser-known species; and iii) primarily processed (e.g., for sawmilling)

This has been reported in the FORVAC's annual report, that:

- I. Standing timber: 20,758 m<sup>3</sup> / TZS 5,675,919,864 (EUR 2,270,368)
- II. LKTS: 3,452 m<sup>3</sup> / TZS 670,193,832 (EUR 268,078)
- III. Sawn timber: 8,910 planks (approx. 240 m<sup>3</sup>) / TZS 295,491,170 (EUR 118,197)

**Outcomes Indicator 5:** Amount (TZS/EUR) of social funds from forest produce sales used/distributed from FORVAC supported VLFRs (specified for types of support, including to vulnerable people)

The FORVAC annual report reveals that, on average, 60% of income from standing timber sales and 35% from sawn timber sales, totaling TZS 3,532,439,256 (EUR 1,412,975), is dedicated to social development. In the surveyed villages, 45% (TZS 2,115,726,430) of the TZS 4,667,435,277 was used to fund 1,667 development projects in 23 villages. This substantial financial contribution supports local infrastructure, healthcare, and education, fostering economic empowerment and sustainable development, demonstrating the programme's wide reach and positive impact on community development in Tanzania.

*Some communities reported significant improvements in their lives after participating in the program. For example, Mr. Yoashi Goliyama from Mkali B Village in the Liuli Ward of Nyasa District earned a profit of TZS 1,000,000 from selling honey. Additionally, he*

*received training from FORVAC on producing modern beehives. With this knowledge, he produced 100 beehives and earned a profit of TZS 4,000,000. This enabled him to purchase a small house to establish another enterprise—a carpentry workshop*

## Activities and Outputs

FORVAC implemented the following activities through capacity building and direct support on implementation process to communities.

- ❖ Forest Value chains
- ❖ CBFM processes
- ❖ PFRA (Forest inventory)
- ❖ Forest Management Plan Development & Implementation
- ❖ Forest Fire management
- ❖ Village Land use planning
- ❖ Beekeeping and marketing
- ❖ Carpentry and marketing
- ❖ Carving and marketing
- ❖ Establishment & Management of associations of community based organizations
- ❖ Village Timber Business Planning & Management
- ❖ Annual Work Planning & Implementation
- ❖ Good Governance
- ❖ Establishment and management of CBFM associations
- ❖ Operation, Management, and Maintenance of Mobile sawmills and Solar Kilns
- ❖ Visualise, Prioritize, implement, and manage Community Development projects
- ❖ Logging, Transportation, and processing of timber.
- ❖ Computation of Timber volumes
- ❖ Forest patrols (for controlling illegal activities)

In capacity building the trainings involved four groups of stakeholders.

- a) Communities (VNRCs, VCs, VLUM, Mobile sawmill operators, VSLAs, Beekeeping groups, Carpenters, Carving groups, CBFM association leaders)
- b) District staff (PLUM team, DNROs, DCDOs, DFOs, Legal officers, Game officers, Trade officers, Planning officers, Town Planners, etc)
- c) Regional staff and national level staffs
- d) District Council members

Since its inception, the Programme has consistently achieved significant milestones in various areas, reflecting its comprehensive and sustained efforts to foster sustainable forest management, community development and economic growth.

*Table 38: Project outputs*

Indicators	Output
Number and area of operational VLFRs:	VLFRs 71 / 451,322 ha:
- Number and area of village land use plans prepared	- Approved VLUPs 39 / 590,790 ha (additionally, 2 VLUPs / 29,297 ha waiting for approval)
- Number and area of forest management plans prepared/ updated	- Approved FMPs 57 / 451,322 ha (additionally, 2 villages / 4,285 ha waiting for District level approval)

Indicators	Output
<ul style="list-style-type: none"> <li>- Number of VNRCs formed/remobilized and percentage of women membership</li> <li>- Volume of AAC in FORVAC covered VLFRs</li> <li>Area of strictly protected forest in VLFRs</li> </ul>	<ul style="list-style-type: none"> <li>- 76 VNRCs formed/ remobilized, 35% of women membership</li> <li>- AAC in FORVAC covered VLFRs 135,373 m<sup>3</sup></li> <li>- 51,599 ha strictly protected (11% of VLFR area)</li> </ul>
Number of established Bee reserves	5 bee reserves established, totaling the reserve area of 5,059 ha, and the gazettelement approved. Drafting GN is ongoing.
Number of lesser-known species with market potential identified, studied and marketing commenced	<ul style="list-style-type: none"> <li>-Technical properties and commercial value/marketability analyzed for 14 species</li> <li>-Miombo timber species database will be relaunched in 2023</li> </ul>
Number of forest-based businesses supported and linked with traders (disaggregated by type of enterprise, sex, and vulnerability)	<ul style="list-style-type: none"> <li>-Charcoal: 2 Charcoal Making Groups: 60 members, 38% women, 14 PiVP (age over 60)</li> <li>-Beekeeping: 61 enterprises, 312 (157M/155F) beneficiaries, 50% women, 6 PLWD</li> <li>-Pottery (improved cooking stoves): 2 enterprises, 18 beneficiaries, 100% women, 3 indirectly PLWD</li> <li>-Carving: 1 enterprise, 9 beneficiaries (9M)</li> <li>-Carpentry: 1 enterprise, 5 beneficiaries (5M)</li> </ul>

## Relevance

By focusing on sustainable forestry, FORVAC appears to align to 10 out of 17 sustainable Development Goals (SDGs) including goal number 1,2,5,6,7,8,11,12,13 and 15 (Figure 36).



Figure 36: Sustainable development indicators linked to FORVAC

**Alignment to National Policies:** FORVAC's interventions have supported the formalization of additional unreserved forests within village lands, promoted the sustainable management of these forests, and enhanced sustainable forest-based enterprises and related value chain development. These efforts have directly contributed to the targets outlined in the National

Forest Policy Implementation Strategy (NFPIS, 2021) and the National Community-Based Forest Management Action Plan (2022). The program has made significant contributions to several national targets, including the following:

- a. Deforestation rate of 462,000 ha per year reduced by 70% by June, 2031,
- b. Area under CBFM increased from 2.7 million ha to 16 million ha in June, 2031
- c. Bamboo production and utilization promotion mechanisms developed
- d. by June, 2026
- e. About 50% of Tanzania's charcoal is produced sustainably by June, 2031
- f. Marketing Information System for wood and non-wood products
- g. established by June, 2023;
- h. Lesser-used and alternative forest species utilization mechanisms
- i. developed by June, 2025;
- j. Sawmilling waste reduced from 60% to 40% by June, 2031.

FORVAC is in line with the transformation of first-generation CBFM which comprised a protective management model, to second-generation CBFM seeking to integrate forest-based enterprises such as sustainable timber harvesting and charcoal production. These new forest-based enterprises serve the dual goals of paying for forest management and providing rural livelihoods.

### **Sustainability**

**Land Use Planning:** By facilitating comprehensive land use planning, the programme has ensured that land resources are allocated efficiently and sustainably. This planning process has helped prevent deforestation and land degradation by designating specific areas for agriculture, forestry, and conservation, thereby promoting long-term environmental health and resilience.

**Formalization of Village Land Forest Reserves:** The formalization of village land forest reserves has empowered local communities to manage and protect their forests. This legal recognition ensures that communities have the rights and responsibilities to sustainably use and conserve forest resources, leading to better forest management practices and enhanced biodiversity conservation.

**Establishment of Sustainable Timber Enterprises:** By promoting sustainable timber enterprises, the programme has encouraged responsible logging practices that do not deplete forest resources. These enterprises follow guidelines and standards that ensure the regeneration of forests, maintaining their ecological functions and providing a continuous supply of timber without compromising future generations' needs.

One of the key initiatives under the FORVAC investment is the enhancement of the timber value chain in the Lindi and Ruvuma Cluster. For instance, the installation of two Solarola Minipro solar wood kiln machines in the Ruangwa and Liwale districts is aimed at adding value to timber harvested from the VLFR. These machines have already been installed, and comprehensive business plans are in place. Notably, the Liwale machine has successfully dried wood valued at 200 million TZS from a single customer, a timber trader. However, operations for the Ruangwa machine have not commenced yet.

Additionally, the investment includes the procurement of two sawmill timber processing machines from Norwood, Canada, each valued at 105,042,483 TZS. These machines are designated for Ruangwa (covering 8 CBFM villages) and Liwale District (covering 27 CBFM villages). Six CBFM villages, namely Mtawatawa and Chimbuko in Liwale DC, and Nandenje, Nahanga, Mchilichili, and Ng'au in Ruangwa DC, have collectively processed 1,052 cubic meters of timber using these machines. This effort resulted in a benefit of 50,933,814 TZS. Notably, the operations are ongoing, with progress varying across villages.

To ensure sustainable management, the machines will be overseen by associations established in each district, comprising members from the respective villages. A revenue-sharing model has been proposed, where each participating village will contribute 5% of its earnings towards the operation and maintenance of the machines. In Lindi cluster, these associations, namely UVIHIMIL and UVIHIMIRU, are currently in the establishment phase with support from MCDI.

**Communities replicating the results:** Some beneficiaries are actively investing in forest-based enterprises and value addition initiatives. For example, Mtawatawa village in Liwale District has invested in a Wood Mizer HP 25 sawmill machine worth 70,600,000 TZS for timber processing. While the machine is yet to commence operations, the village is diligently preparing a comprehensive business plan to ensure its efficient utilization.

There are some community members who were not direct beneficiaries of the project started their own enterprises after learning from the project for example in Mkali A village there are 4 communities who prepared their own modern beehives (each one 20 beehives) for beekeeping. In Mkali B village 10 people started to plant trees (Teek) in their farms about 80 trees each person. There are 4 group members in JUHUDI beekeeping group who established their own individual enterprise of beekeeping after learning from the group.

**Development of Non-Timber Enterprises:** The focus on non-timber enterprises, such as beekeeping, has diversified income sources for local communities. This reduces the pressure on forests for timber and other resources, fostering economic resilience and encouraging the conservation of forests for their broader ecological and social benefits.

## ANALYSIS OF BENEFIT SHARING MODEL, KEY ISSUES AND RECOMMENDATIONS

### Benefit sharing mechanism.

The basic benefit sharing guidance for FORVAC villages is stipulated in the Forest Management Plans or forest bylaws for each village. The decision on the use of revenues is legally subjected to a comprehensive planning process led by the district planning officer, where villages are required to conduct participatory rural appraisals to identify Opportunities and Obstacles to Development (O&OD) through sub-village meetings. A pairwise ranking is undertaken to prioritize village development projects, which are then incorporated into a comprehensive village annual implementation plan and budget. This plan and budget must be approved by the village general assembly before the beginning of the new fiscal year. During implementation, village council meetings are usually held to approve specific activity budgets and review implementation reports. Requests for payment, enclosed with the village council meeting minutes (and VNRC minutes for forest management expenditures), are submitted to the bank for payment after being endorsed by the respective District Executive Director. Quarterly village general assemblies are conducted to review the implementation and expenditure reports.

On average, the revenue distribution among Village Natural Resource Committees (VNRCs), Village Councils (VCs), and Local Government Authorities (LGAs) was 35%, 55%, and 10%, respectively (Figure 37).

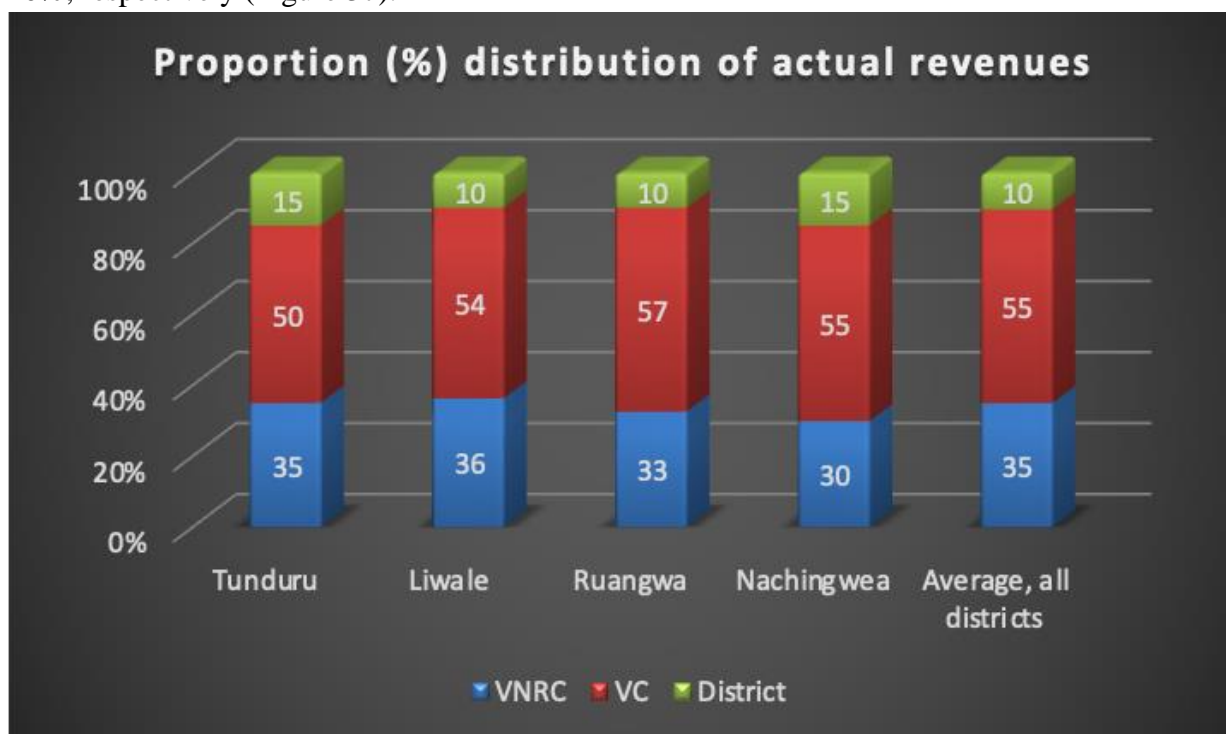


Figure 37: Distribution of revenues from the VLFRs

For benefit-sharing to be effective, communities must influence all decisions regarding collections and expenditures. To achieve this, a dividend philosophy should be adopted so that each community member is aware of how much they have gained from the forest over time and how much they have spent on forest management, extension services, and community development projects. Additionally, if a member chooses to use their share of the revenue for personal family gains, they should not face retaliation. However, although the

majority of community members believe they have power over village resources through decisions made in the village general assembly, over 92% do not believe they can choose to distribute forest revenues among family members (Figure 38).

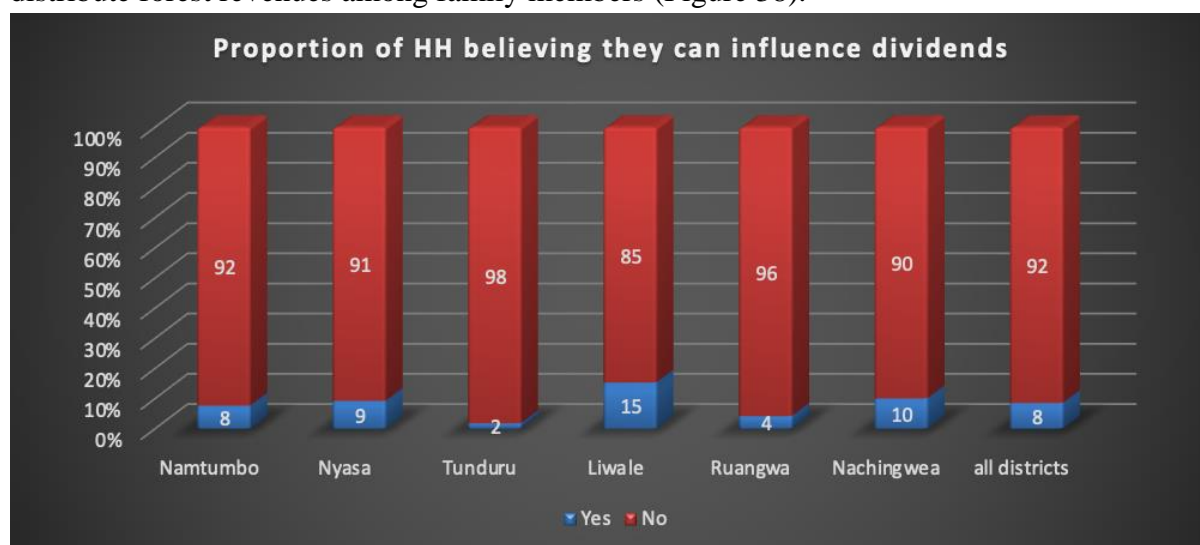


Figure 38: Proportion of households believing that they can influence dividends

### Strength, Weakness, Opportunities and Challenges (SWOC) related to the benefit sharing mechanism.

The survey performed a detailed SWOC analysis of the current benefit sharing model and the results were as follows.

#### Strengths

**Local empowerment and sense of ownership:** The model provides communities with legal power to retain 100% of revenues generated through sales of forest produce from the VLFR. Communities have a chance to influence decisions on the share of revenues allocated to VNRCs and Village Councils. Decision-making on the benefit sharing between forest management institutions by local communities ensures that they have a say in how resources are managed, and benefits are distributed, fostering a sense of ownership and responsibility.

**Community development:** Revenues allocated to the village councils are used for local development projects, such as improving infrastructure, education, healthcare, etc.

**Incentives for sustainable forest conservation:** The allocated share for VNRCs provides assurance for funds for forest management. Sharing revenue can provide financial incentives and motivation for communities through VNRC to engage in sustainable forest management and conservation practices. With a vested interest in the forest's conservation, local institutions are more likely to engage in sustainable practices that ensure long-term biodiversity conservation.

**Resource Availability for Support for Extension Services:** By allocating a portion of revenues, villages ensure that there are funds available to pay for necessary extension services provided by district officials. This can include technical support, training, and other services that enhance the efficiency and sustainability of forestry practices. Regular funding can lead to improved quality and consistency of services, as district officials are financially supported to carry out their roles effectively.



**Strengthening relationship:** Overall, this benefit-sharing mechanism can strengthen the relationship between village communities and district officials, promote sustainable forest management, and support local economic development.

#### Weaknesses

**Inadequate, compliance to the benefit-sharing model as stipulated in the FMP:** During the Socio-Economic assessment, it was observed that some villages do not adhere to the allocation guidelines indicated in the Forest Management Plan (FMP). For instance, in three CBFM villages in Nachingwea (Kilimarondo, Majonanga, and Mbondo), after deducting 15% of the revenue of the District Councils, the remaining amount is incorrectly treated as 100%. It is reallocated with 60% going to the VC and 40% to the VNRC. This deviates from the FMP guidelines, stipulating that the allocation should be 15% DC, 60% VC and 25% VNRC.

**Delay of allocation to village councils due to control imposed at the district level:** Untimely allocation distributions, leading to delays in receiving funds by Village Councils, have been observed in some CBFM villages in Ruangwa. Unlike the 10% allocated to the district, which is immediately disbursed when funds are deposited into the VNRC account, village distributions have faced delays. For example, in Nandenje Village during the 2023/24 fiscal year, the last distribution occurred in March 2024, despite continued revenue collection from harvesting between April and June 2024. In Lichwachwa Village, for the 2023/24 fiscal year, the committee made only one distribution amounting to TZS 3,118,500 out of the TZS 18,265,000 of revenue collected. As a result, some villages, such as Lichwachwa, had to make their expenditures through the VNRC account due to delays in their allocation of shares. Village leaders complained that the delay is a result of control imposed at the district level forest department, forcing the village to submit their budgets and work plans.

**Delay of allocation of revenue from village account to District council and VNRC accounts:** In Limamu village, Namtumbo district, a total amount of TZS 15,086,000 was collected, with the last buyer depositing money into the village account in March 2024. However, this amount is still in the village account with no clear reason for the delay. The money was supposed to be distributed as follows: 10% to the District Council, 40% to the VNRC, and 50% to the Village Council. No development projects have been decided by the village to utilize the funds collected from selling logs and processed timber.

**Inadequate capacity among forest management institutions to interpret benefit-sharing allocations:** It was observed that some forest management institutions leaders use the allocation of forest revenue shares interchangeably with expenditure. The allocation of forest revenue shares and expenditures are distinct financial processes within forest management. Allocation refers to distributing forest revenues among various entities, such as Village Councils (VC), Village Natural Resource Committees (VNRC), and District Councils (DC), according to established guidelines. Expenditure, on the other hand, involves the actual spending of these allocated funds on specific activities and projects, such as operational costs, development initiatives, and conservation efforts. While allocation determines how much each entity receives, expenditure details how the received funds are utilized. Understanding this distinction is crucial for ensuring proper financial management and accountability within forest management institutions.

The allocation is carried out as a routine practice, without reflecting the actual needs of all parties involved in the benefit-sharing process. There are overlaps in roles between the Natural Resources Committee (NRC) and the Village Council (VC), especially regarding the use of forest-derived funds after allocation. This may be caused by an inadequate balance in the distribution of forest revenue. Proper distribution will enable each institution to conduct its activities as specified in the Forest Management Plans (FMPs).

**Sustainability of the revenue distributed to VNRC:** The sustainability of the revenue allocated to the VNRC is questionable. In many cases, most of the VNRC budget developed from revenue distribution is directed towards patrolling activities. For example, in Limamu village in Namtumbo district, the VNRC budget focuses solely on supporting patrolling activities, with no plans to initiate income-generating projects to ensure the sustainability of VNRC initiatives. Similarly, in Mkwela village in Tunduru district, the revenue distributed to VNRC is used primarily for patrolling activities.

### Challenges

**Fiscal recentralization:** Legal provisions allow communities to retain and make decisions on the use of all revenues accrued from the Village Land Forest Reserves (VLFRs). However, the current model reallocates decision-making on the use of funds for extension services to the district authority, reducing the capacity and opportunities for communities to influence their use. In many cases, these funds support other district priorities, and extension officers often fail to deliver services to the communities due to a "shortage of money." This situation is commonly described as "*Money that goes up does not come down*".

**Shortage of empirical evidence:** The model lacks local empirical evidence for resource allocation and decision-making. For example, there is no clear data on the per hectare costs of reducing deforestation or the per unit cost of producing logs from the VLFR. Generally, the proportional allocation of revenues among Village Councils, VNRC, and Local Government Authorities is not supported by cost-benefit analysis.

**Lack of effective independent monitoring mechanism:** The lack of an effective independent monitoring mechanism poses a significant challenge within the benefit sharing model. It fails to adequately outline the establishment and financing of independent monitoring systems for forest management within the village. Questions arise concerning the financing of independent financial auditing, crucial for ensuring transparency and accountability. Additionally, the financing mechanisms for objectively monitoring sustainable harvesting practices remain unclear. Without a robust framework for independent oversight, there is a risk of inefficiency, mismanagement, and potential exploitation of natural resources, undermining the sustainability goals of the forest management initiative.

### Opportunities

**Partnerships:** Collaborating with external stakeholders such as NGOs, government agencies, and international organizations can provide access to additional funding, expertise, and technical support.

**Market Diversification:** Exploring alternative revenue streams such as eco-tourism, carbon offset projects, and non-timber forest products can diversify income sources and reduce reliance on traditional forestry activities.

**Capacity Building:** External support can facilitate capacity building initiatives within the village, including training programs, technology adoption, and knowledge exchange networks, enhancing the community's ability to manage forest resources sustainably.

#### **Key issues identified.**

**Use of Forest Harvesting Registration Licenses by Non-Approved and Approved Registered Forest Traders:** The misuse of forest harvesting licenses by non-registered traders has been widely observed across all districts. For example, some village councils, such as those in Nandenje, Mchichili, and Lichwachwa, traders are registered and approved to engage in the forest products business. However, instead of operating the business themselves, they transfer their licenses to unqualified individuals who then operate under the name of the registered traders. This practice undermines the regulatory framework and facilitates unsustainable harvesting practices.

**Actions Sustaining Unsustainable Timber Harvesting:** Carpentry workshops supported by the program has insufficient legally sourced timber from the VLFR, with no evidence verifying the legality of the timber used. For instance, surveys of three carpentry workshops—Tumaini Furniture Group and Limamu Furniture Group in Limamu Village, and Liwangula Furniture Group in Liwangula Village—revealed no documentation to confirm that the timber used was legally obtained. This gap fosters illegal harvesting within the VLFR, exacerbating deforestation and loss of forest resources.

**Limited Market for Timber and Other Forest Produce:** Data from 25 villages indicate that only 16,760 cubic meters of timber, equivalent to 2% of their allowable cut of 794,724.5 cubic meters, has been sold since the project's inception. Encroachments are likely to occur in VLFRs where harvesting has not yet commenced. For example, in Mischela Village, villagers have already marked areas within the VLFR for farming due to the forest's abundance since its establishment. It is crucial to support these villages in marketing their timber to ensure that harvesting starts promptly, preventing illegal land use.

**Inconsistent Record-Keeping at Village and Enterprise Group Levels:** There is a lack of consistency in record-keeping, particularly regarding revenues collected from forest sales by the Village Natural Resource Committees (VNRCs). While license and receipt books are kept at the District Forest Office (DFO) for effective control, records are inconsistently maintained at the village level. This inconsistency was noted in many villages surveyed. Additionally, carpenter groups across all districts fail to document production costs and revenues, hindering accurate data collection and financial transparency.

**Overlapping Duties and Responsibilities Between VNRC and Village Councils:** There is an overlap of duties and responsibilities between VNRCs and Village Councils, as outlined in

forest management plans, laws, and regulations. Key Informant Interviews (KIIs) and document reviews with village forest management leaders revealed that VNRCs sometimes contribute their revenue share to village development projects beyond their normal allocation, leading to the procurement of equipment outside their primary role. To improve effectiveness, additional contributions from the VNRC should be deposited into the village government account, allowing the VNRC to focus on forest management.

**Turnover and Handover Issues in the VNRC Office:** High turnover rates among VNRC members and the lack of formal handover procedures for newly established committees result in inconsistencies in VNRC office management and information availability. This issue has been observed in several villages, such as Nahanga, Mchichili, and Lichwachwa in the Ruangwa District, leading to disruptions in forest management activities and knowledge transfer.

**Limited Value Addition and Diversification in the Beekeeping Value Chain:** Most beekeeping groups surveyed in the Lindi Cluster focus primarily on honey production, neglecting other potential bee products. Representatives of these groups reported limited capacity in value-addition techniques. Although a few groups in Liwale received honey containers, most beekeepers sell honey in used water bottles without proper labeling, packaging, or quality assurance. This lack of market information forces them to sell honey locally at low prices, ranging from 3,500 to 5,000 TZS per liter (Liwale district).

**Impact of Bad Weather Conditions on Honey Production:** Honey production levels are inadequate compared to FORVAC's investment in beekeeping enterprise groups. Despite the provision of modern beekeeping hives, production remains low, likely due to climate change impacts. For instance, many beekeepers reported that heavy rainfall during the 2023/24 season adversely affected honey production across all areas. In Nyasa District, beneficiaries complained that excessive rainfall during the 2023/24 season resulted in significantly lower honey production compared to the previous season.

## Recommendations

**Developing and implementing dividend benefit sharing model:** This involves creating a system where households can independently receive and utilize revenues generated from the forest. This approach enables greater autonomy and flexibility in the allocation and utilization of funds within the community. By fostering entrepreneurship and innovation, it moves away from the traditional focus on social services and encourages a more dynamic and creative use of resources.

**Community-guided allocation decisions with FPIC:** Communities should have the authority to decide how forest revenues are allocated, ensuring their rights are respected through a Free, Prior, and Informed Consent (FPIC) approach. This approach empowers communities to make informed decisions about the management of their resources, promoting transparency and inclusivity.

**Timely and equal distribution of shares:** Ensuring that revenues are distributed promptly and equitably among benefiting institutions fosters trust and cooperation within the

community. This timely distribution enables institutions to effectively plan and implement development projects, maximizing the impact of forest revenues on local development.

**Compliance to the FMP guideline:** Compliance with Forest Management Plan (FMP) guidelines is essential for sustainable forest management. Adhering to these guidelines helps maintain ecosystem health, biodiversity, and the long-term viability of forest resources, ensuring continued revenue generation for the community.

**Regular review of the sharing model:** Regularly reviewing the benefit sharing model allows for adjustments based on changes in forest revenue collection trends. This ensures that resource allocation remains rational and responsive to evolving community needs and priorities, maximizing the effectiveness of forest management efforts.

**Designing incentive mechanisms:** Incentive mechanisms should be designed to incentivize conservation, equitable resource distribution, and community empowerment. This could include rewards for sustainable harvesting practices, capacity-building programs for community members, and support for income-generating activities that are aligned with conservation goals. These mechanisms can help reinforce positive behaviors and outcomes within the community, contributing to the long-term sustainability of forest management initiatives.

## ANNEXES

### KII Participants: RFO & District officials - 6 surveyed districts

#### KII Participants: RFO & District officials - 6 surveyed districts

Cluster	District	Name of the respondents	Title	Sex	
Ruvuma	Songea	Africanus Chale	RFO	M	
	Namtumbo	Moses E Komba	CDO	M	
		Revocatus Kavishe	DITIO	M	
		Gravas Mwalombo	DFO	M	
		Prisca Msuha	DNRO	F	
	Nyasa	Shanel M Mbunda	DCDO	M	
		Sada S Rukaya	Ag. DITRIO	F	
		Emmanuel M Mwasaga	DFO	M	
	Tunduru	Jecelyne Mganga	CDO	F	
		Maulid A Ramadhani	Ag. DTO	M	
		Abdallah A Hamisi	DFO	M	
	Lindi	Lindi Municipal	Zawadi Jilala	RNRO	M
		Liwale	Mselela M. Sucha	DFO	M
Deogratus Justus Simwanza			DNRO	M	
Anthony Gasper Kawishe			AO 1	M	
Ruangwa		Joachim Leonard Mpena	DGO	M	
		Evans Polini Masashua	DFO	M	
		Salimu Msangi	AO	M	
		Rashi O. Namkulala	DCDO	M	
Nachingwea		Lilian Mwalipungu	DCDO	F	
		David Mkiramwene	DBO	M	
		Linston Nzunda	DNRO	M	
		Pyton Kamnana	DFO	M	
		Musa Mnali	DBO	M	
	Festo Kondrad Komba	FO	M		
	Mohamedi Bahari	AO	M		

### KII Participants: VC and VNRC members – Lindi cluster

District	Village	Name of the respondents	Title	Gender	Age	Mobile
Liwale	Barikiwa	Halifa Saidi Kimbwanda	Village chairperson	M	43	784707998
		Hafidhu Mshamu mazito	Acting VEO	M	35	783208008
		Hamisi Saidi Makanwa	VNRC chairperson	M	45	789394290

	Jarafi Kimbwanda	VNRC secretary	M	39	784010132
	Amisha Hashimu Kinaki	VNRC treasure	F	36	683762315
<b>Chimbuko</b>	Kaimu Salum Mandandu	VNRC chairperson	M	42	683442209
	Hamza Ahmadi Maimba	VNRC secretary	M	36	686818015
	Zaruna Nassoro Mchungulike	VNRC treasure	F	35	682741725
	Hafidhu Mshamu Mazito	Acting VEO	M	35	783208008
	Juma Jabiri Mnoche	Village chairperson	M	49	682491066
<b>Chigugu</b>	Hemedy Ally Mtimbage	Village chairperson	M	55	622293610
	Mohamedi Hemid Seifa	VEO	M	58	622010348
	Hemedi Kassimu Ndela	VNRC chairperson	M	39	787732907
	Maliki Rajabu Muheka	VNRC secretary	M	32	783210232
	Hadija Habibu Mbogo	VNRC treasure	F	34	787774223
<b>Luwele</b>	Yahaya Mohamedi Ndondwa	Village chairperson	M	53	786763996
	Hemedi Saidi Makombo	VEO	M	50	787959982
	Hassani Hashim Mbukuli	VNRC chairperson	M	42	620401670
	Ally Ahmadi Maluwa	VNRC secretary	M	33	621445054
	Sikuzani Nassoro Malindi	VNRC treasure	F	39	621450965
<b>Mtawata wa</b>	Juma Mohamedi Mkinde	VNRC chairperson	M	43	782560429
	Hamisi Hamisi Ntila	Village chairperson	M	33	756324860
	Haji Makame Hadi	VEO	M	37	754905502
	Rajabu Saidi Machwiko	VNRC secretary	M	32	787858507
	Mwazana Chande Mbite	VNRC treasure	F	30	683409134
<b>Nangano</b>	Omari Change Kinyanyite	Village chairperson	M	71	717729087
	Mohamed Omar Njungwa	VEO	M	51	719735214
	Maongezi Juma Kalioi	VNRC chairperson	M	40	717683753
	Kassimu Habibu Ngalondola	VNRC secretary	M	32	652198997
	Mohamedi Abdallah Mpaleje	VNRC treasure	M	32	675599177
<b>Nahoro</b>	Ngapaila Halifa Ngapaila	VEO	M	29	620552824
	Yahya Issa Makelu	VNRC chairperson	M	33	727664819

		3. Aina Bakari Matulilo	VNRC treasure	F	43	733757303	
		4. Halidi chande Majumba	VNRC secretary	M	27	738753465	
Ruangwa	Nandenje	Rashidi Bakari Daudi	Village Chairperson	M	49	626299049	
		Hassani Mohamedi kalembo (VEO 46)	VEO	M	46	627611443	
		Mikadadi Rashidi	VC member	M	52	626667078	
		Mwanahawa Juma Shabani	VC member	F	37	628822247	
		Fadhili Ally Mkango	VNRC chairperson	M	34	622669629	
		Victory Simon Nyagali	VNRC Secretary	M	34	6275667577	
		Bakari Omari Ngamonaga	VNRC member	M	45	621574374	
		Hamisi Selemeni Kanduru	VNRC treasure	M	23	624098381	
		Nahanga	Hemedi Saidi Kaimba	VNRC treasure	M	38	623553928
			Salumb Abdallah Mnunguye	VNRC secretary	M	38	719038532
			Samli Saidi Nnjonga	VNRC member	M	48	738013765
			Ramadhani Kandidas Mayemba	VNRC chairperson	M	53	625002504
			Salama Saidi Lutando	VNRC member	F	21	621804200
			Maulidi Bakari Mchelanye	VNRC member	M	38	624969326
			Omari Salum Mchalaganya	VC member	M	46	683168848
			Athumani Bakari Athumani	VEO	M	40	710233446
			Yahaya Saidi Ngunula	Village chairperson	M	55	625155076
		Mchichili	Bakir shaibu ndogaji	Village chairperson	M	24	620677846
			Kadiru mohamedi mkumba	VEO	M	34	710125132
			Mohamed Omari Nambara	VNRC chairperson	M	34	620673349
			Hassani hamisi Mandingo	VNRC treasure	M	22	621151486
			Rajabu Abdillah mtoi	VNRC member	M	34	718772633
			Zaudia Saidi Lyuba	VC member	F	49	620479664
			Asia Saidi kaimba	VNRC member	F	40	679279930
			Mariamumu mohamed kiweta	VNRC member	F	38	621980973
			Amina Mohamedi Kipande	VC member	F	52	
			Jelina Amri Mchotika	VNRC member	F	58	620644838
			Esha Saidi Chiputa	VC member	F	56	713093035
			Juma Athumani Ngale	VNRC member	M	26	623196509
	Lichwach wa	Bakari Hamisi Hemedi	Village chairperson	M	57	748485799	
		Edward Rashidi Mnonjela	VEO	M	57	713862212	
		Athumani Saidi Tuesi	VNRC chairperson	M	46	620510959	
		Jumanne Haruna Abdallah	VNRC Secretary	M	48	622271742	
		Hereswida Thomas Chilumba	VNRC treasure	F	30	627378294	
		Bakari Ally Mbogolo	VNRC member	M	31	673117843	
		Hamisi Issa Mawata	VC member	M	31	673219742	
		Seleman Rashidi Ndojime	VNRC member	M	31	620510942	



		Seleman Abdallah Punga	VC member	M	57	652269403	
		Bakari Juma Chapa	VC member	M	57	763589834	
		Esha Sebastian Chitanda	VC member	F	30	620644800	
		Issa Athumani Mtengela	VNRC member	M	26	652075442	
	<b>Ngau</b>	Adrian Simon Mandenga	Village chairperson	M	64	789864692	
		Fadhili Ismail Namachi	VEO	M	27	786010668	
		Rajabu Athumani Mfaume	VNRC chairperson	M	69	685521809	
		Kosman Kilyani Mpwapwa	VNRC secretary	M	52	782673734	
		Benigna Saidi Omari	VNRC treasurer	F	47	718269588	
		Faustini Joseph Ndambalilo	VNRC member	M	56	783431419	
		Hassani athumani Jiwani	VNRC member	M	36	686784117	
		Elizabeth John Membe	VNRC member	F	37	788251579	
		Habiba Athumani Mchalaganyi	VC member	F	47	686082727	
		Rashidi Seifu Ghale	VC member	M	45	692677799	
		Priska trifoni Mnali	VC member	F	51	573724051	
		Andrea Chijoka	VC member	M	54	783737792	
		Mohamedi M. Mnyika	VC member	M	64	683601851	
<b>Nachingwea</b>	<b>Majonanga</b>	Gabriel gabriel mbule	Village Chairperson	M	44	629509622	
		Anna Ludwick	VEO	F	22	625725604	
		Jackob Simon Eriyo	VNRC chairman	M	45	623363624	
		Farida Fanuel Mrope	VNRC treasure	F	36	678768016	
		Lucas Kosmass Mrope	VC member	M	49	620105219	
		John Kadri Kinaki	VC member	M	45	629524893	
		Chrispin Msuwau Mkuti	VC member	M	40	623350462	
		Issack alto namajojo	VNRC member	M	43	627732382	
		Mwasifa Nassir Eriyo	VNRC member	F	43	623311610	
		Daudi Erick Mkova	VNRC member	M	45	621246143	
		Rasuli Mfaume Ally	VNRC member	M	23	625917348	
		<b>Kilimaron do</b>	Suzana U. Chialo	Village Chairperson	F	53	738226239
			Zainabu O. Salum (Ke)	VEO	F	25	733050402
			Hamza S. Mayanga	VNRC chairman	M	39	738218399
			Imakulata U. Chialo (Ke)	VNRC treasure	F	40	738206864
			Roben A. Mkulile (Me)	VC member	M	40	738573052
			Dickson C.Litimba	VNRC member	M	34	738322019
			Herman D. Likwani	VC member	M	43	738302019
			Bonavencha Y. Nyitu	VC member	M	52	738206924
			Manfred D.Mkunga	VNRC member	M	42	738190054
			Lenard R.Milanzi	VC member	M	48	738321310
			Frank E. Mpunga	VNRC member	M	45	738286331
			Joshua A. Dayo	VC member	M	32	
		<b>Mbond</b>	Haji Mshamu Mwembe	Village Chairperson	M	47	738202783

		Devid John Mrope	VEO	M	25	737029574
		Hamisi Msham Mwembe	VNRC Secretary	M	53	738573449
		Gayo James Mathayo	VC member	M	28	738397007
		Haji Abdallah Mmonde	VC member	M	49	734365715
		Rukia Mshamu Gwechi	VC member	F	60	738573486
		Mahmood Brash Namkwanga	VC member	M	50	738206747
		Chande Rajabu Huruko	VNRC member	M	32	733368997
		Asia Saidi Chamba	VNRC member	F	40	738056667
		Omari Awadhi Mbunda	VNRC member	M	40	737502939
		Anusiata Severianu Matei	VNRC member	F	25	738321822
		Lucas Victor Mchayo	VNRC member	M	64	738206754
	<b>Ngunichile</b>	Sefu Saidi Ng'wang'wa	Village Chairperson	M	61	653033712
		Sadati Ally Mahundu	VEO	M	32	658462187
		Kassimu Abasi Matumbulo	VNRC chairperson	M	36	714833897
		Omari Abdallah Maokola	VNRC Secretary	M	57	717204730
		Issa Mahmudu Chitanda	VNRC member	M	58	653201339
		Hijja Mohamedi Cosmo	VNRC member	M	34	772641503
		Hassani Abdull Baltazari	VNRC member	M	52	678676085
		Fintali Elieza Chingugile	VC member	M	47	713516448
		Halidi Rashidi Mpiruka	VC member	M	48	674577391
		Agatha Veleth Issaya	VC member	F	24	710442791
	<b>Lipuyu</b>	Ally Selemani Chimbae	Village Chairperson	M	35	735034966
		Jafari Maulidi Maliki	VEO	M	54	734176617
		Gabriel Hamisi Mpunga	VNRC chairperson	M	34	735034971
		Moses Musa Liwanje	VNRC Secretary	M	21	786072856
		Erick Saidi Athumani	VNRC member	M	35	738398416
		Shakifu Genfrid William	VNRC member	M	31	734817664
		Amidu Christian Bakari	VC member	M	39	783472905
		Rashidi Ally	VC member	M	38	738002986
		Maua Mohamedi Mnyanga	VC member	F	40	735034211
		Rajabu Ally Lipunguti	VNRC member	M	20	787955608

## KII Participants: VC and VNRC members – Ruvuma Cluster

District	Village	Name of the respondents	Title	Gender
<b>Namtumbo</b>	<b>Limamu</b>	Magnus K Ndunguru	Village chairperson	M
		Agness Vitus Nchimbi	VEO	F
		Adimu Saidi Mhagama	VNRC chairperson	M
		Omari H Kazingoma	VNRC secretary	M
		Oliva P Nali	VNRC treasurer	F
		Elias G Ponera	VNRC member	M
		Halima A Kunguru	VNRC member	F

	<b>Chengena</b>	Samwel C Nilongo	Village chairperson	M
		Kremenc K Ngonyani	VEO	M
		Flowin Komba	VNRC chairperson	M
		Sikuzani Ngonyani	VNRC secretary	F
		Halima A Mbawala	VNRC treasurer	F
		Titus Ndeye	VNRC member	M
		Hilalius Mpombo	VNRC member	M
	<b>Kumbara</b>	Silvesta A Tumbi	Village chairperson	M
		Rosemary M Msangwa	VEO	F
		Linus Clinton Kapinga	VNRC chairperson	M
		Charles Thobias Nikata	VNRC secretary	M
		Fulko John Mkili	VNRC treasurer	M
		Helolimus H Mapunda	VNRC member	M
		Idda Haule	VNRC member	F
	<b>Njalamatata</b>	John Yohane Nyoka	Village chairperson	M
		Charles Max Mhuva	VEO	M
		Florence Stephani Kifarua	VNRC chairperson	M
		Jefridi Oscar Ally	VNRC secretary	M
		Veronica Klavery Ponera	VNRC treasurer	F
Fotunata Fusi		VNRC member	F	
Abdallah A Mbelembe		Patrol Commander	M	
<b>Nyasa</b>	<b>Liuli</b>	Petro Petro Mkwela	Village chairperson	M
		Nicholaus Emmanuel Katyale	VEO	M
		Ernest F Nindi	VNRC chairperson	M
		Charles Grave Vumu	VNRC member	M
		Michael A Shauri	VNRC member	M
		Joyce M Nyirenda	VNRC member	F
		Julius Katembo	VNRC member	M
	<b>Nkalachi</b>	Ezekiel Petro Haule	Village chairperson	M
		Simon Simon Nkondola	VEO	M
		Charles Evans Mpombo	VNRC member	M
		John Kastory Mbonde	VNRC member	M
		Haduma A Nicondera	VNRC member	M
		Edwin W Nyiriri	VNRC member	M
		Latifa A Sankibwe	VNRC member	F
	<b>Mkali A</b>	Barnabas Boniface Mbele	Village Chairperson	M
		Abas Gines Gama	VEO	M
		Devid Augustino Henjewe	VNRC chairperson	M
		Wilson Thadei Willa	VNRC Secretary	M
		George G Mbunda	VNRC member	M
Yusta P Kayombo		VNRC member	F	

		Joseph M Mkombwe	VNRC member	M	
	<b>Mkali B</b>	Ernest Damas Nsuha	Village chairperson	M	
		Bulabilo Mashauri Kasuka	VEO	M	
		Angela Y Mtaya	VNRC member	F	
		Lucas P Sanganya	VNRC member	M	
		Jemas Mahay	VNRC member	M	
		Emmanuel Sanganya	VNRC member	M	
		William Chiwia	VNRC member	M	
<b>Tunduru</b>	<b>Mkowela</b>	Suleman D Somanga	Village chairperson	M	
		Regina R Duwe	VEO	F	
		Faustine Dastani Hassani	VNRC chairperson	M	
		Vitus Edward Vincent	VNRC secretary	M	
		Bela Agrey Malembe	VNRC treasurer	F	
		Juma Rashidi	VNRC member	M	
		Feisi William Malembe	VNRC member	F	
	<b>Liwangula</b>	Rashid Ausi Ching'andilo	Village Chairperson	M	
		Omari Mohamedi Laddah	VEO	M	
		Hassani H Hassani	VNRC chairperson	M	
		Saidi A Bakari	VNRC secretary	M	
		Mwanauni M Wanja	VNRC treasurer	F	
		Amina A Chikaule	VNRC member	F	
		Mustapha Amimu	VNRC member	M	
	<b>Misechela</b>	Salumu Saidi Msonjele	Village chairperson	M	
		Saidi Issa Jabu	VEO	M	
		Shaibu Mustafa Bakari	VNRC chairperson	M	
		Mohamedi Dadi Ahamadi	VNRC treasurer	M	
		Ashura Ally Hassani	VNRC member	F	
		Nassoro Mohamedi Abdallah	VNRC member	M	
		Mpeka Shaibu Abdallah	Patrol Commander	M	
	<b>Kajima</b>	Issa Adam Kajao	Acting Village chairperson	M	
		Juma Chalamanda Ally	VEO	M	
		Abilahi Issa Ndomondo	VNRC member	M	
		Abdala I Kaindi	VNRC member	M	
Mwanahamisi Y Bushiri		VNRC member	F		
Sophia Mohamedi		VNRC member	F		

### Household questionnaire

S/N	Questions	Options
1	Choose FORVAC cluster	1. Ruvuma 2. Lindi

		3. Tanga
2	Choose region	See attached
3	Choose district	See attached
4	Choose village	See attached
5	First and second name of the respondent	
6	Sex of the respondent	1. Male 2. Female
7	Age of the respondent	
8	Marital status of the respondent	1. Married 2. Single 3. Widowed 4. Divorced
9	Position of the respondent in the household	1. Husband 2. Wife 3. Son 4. Daughter 5. Relative 6. Male 7. relative female
10	Sex of the household head	1. Male 2. Female
11	Household size	
12	Age set of the household members	1. 0-5 _____ 2. 6-13 _____ 3. 14-18 _____ 4. 19-22 _____ 5. 23-35 _____ 6. 35-60 _____ 7. 60+ _____
13	Are there members of the following village forest management institutions in your household?	1. Village Council (how many?) 2. Village Natural resource Committee (how many?) 3. None
14	Education level of the respondent	1. Primary Education 2. Secondary Education 3. Certificate 4. Diploma 5. Bachelor 6. Masters and Above 7. No Formal Education
15	Education level of the household head	1. Primary Education 2. Secondary Education 3. Certificate 4. Diploma 5. Bachelor 6. Masters and Above 7. No Formal Education
16	<i>Source of household energy for cooking and heating in the study area</i>	1. Firewood 2. Charcoal 3. Electricity 4. Kerosene 5. Biogas 6. Gas-LPG
17	<i>Source of household energy for lighting and charging in the study area</i>	1. Electricity 2. Kerosene 3. Candle 4. Generator 5. Biogas 6. Firewood 7. Solar
18	<i>Primary farming tools/equipment used by the household's household</i>	1. Handholes 2. Ox-plough 3. Power tiller

		4. Tractor
19	<i>Household's access to improved farming tools/ equipment</i>	<ol style="list-style-type: none"> <li>1. Owned Ox-plough</li> <li>2. Hired Ox-plough.</li> <li>3. Owned Power tiller</li> <li>4. Hired Power tiller.</li> <li>5. Owned tractor</li> <li>6. Hired tractor</li> </ol>
20	<i>Status of food security over the past 12 months</i>	<ol style="list-style-type: none"> <li>1. Surplus sold.</li> <li>2. Self-sufficient food production</li> <li>3. Additional bought to supplement own production.</li> <li>4. Always insufficient</li> </ol>
21	Types of forest-based enterprises that household members are involved	<ol style="list-style-type: none"> <li>1. Timber</li> <li>2. Beekeeping</li> <li>3. Charcoal</li> <li>4. Firewood</li> <li>5. Weaving</li> <li>6. Curving</li> <li>7. Wild vegetables &amp; fruits</li> <li>8. Medicine`</li> <li>9. Formal employment</li> <li>10. Informal employment</li> </ol>
22	Investments owned by respondent's household <i>(indicate the number for each item)</i>	<ol style="list-style-type: none"> <li>1. Shop</li> <li>2. Milling machine</li> <li>3. Video hall</li> <li>4. Mean petrol vending facility</li> <li>5. Restaurant</li> <li>6. Poultry</li> <li>7. Carpentry</li> <li>8. Barber shop</li> <li>9. Money lending</li> <li>10. Pesticide sprayer</li> <li>11. Sewing machine</li> <li>12. Mobile phone charging</li> <li>13. Bee apiary</li> <li>14. Wheelbarrow</li> <li>15. Ox-driven carts</li> <li>16. Vehicle</li> <li>17. Motorcycle</li> <li>18. Bicycle</li> <li>19. Solar panel</li> </ol>

#### Household's non- forest income

23	Household's occupations	<ol style="list-style-type: none"> <li>1. Farming</li> <li>2. Business</li> <li>3. Pastoralists/ Livestock keeping</li> <li>4. Formal Employment</li> <li>5. Agro-pastoralist</li> <li>6. Forestry</li> </ol>
24	Household's main occupation	<ol style="list-style-type: none"> <li>1. Farming</li> <li>2. Business</li> <li>3. Pastoralists / Livestock keeping</li> <li>4. Formal Employment</li> <li>5. Agro-pastoralist</li> <li>6. Forestry</li> </ol>
25	<i>Crops cultivated by the household households. (please indicate the size cultivated for each in the past 12</i>	<ol style="list-style-type: none"> <li>7. Cash crops</li> <li>8. Food crops</li> </ol>

	<i>months) (if 3 or 5 in question 23)</i>	9. Both food and cash crops
26	<p><i>Types of crops cultivated by the households in the past 12 months)</i></p> <p><i>(for each crop indicate quantity produced over the past 12 months)</i></p> <p><i>(if 3 or 5 in question 23)</i></p>	<p>1. Mung bean</p> <p>2. Banana</p> <p>3. Paddy</p> <p>4. Sorghum</p> <p>5. Finger millet</p> <p>6. Groundnuts</p> <p>7. Sunflower</p> <p>8. Pigeon peas</p> <p>9. Beans</p> <p>10. Cashew nuts</p> <p>11. Coffee</p> <p>12. Cassava</p> <p>13. Sesame</p> <p>14. Maize</p> <p>15. Cow peas</p> <p>16. Bambara groundnuts</p> <p>17. Others (specify _____)</p>
27	Indicate the size of land owned and used by the household	<p>1. Total land owned (acres)</p> <p>_____</p> <p>2. Land used for farming in the past 12 months (acres) _____</p>
28	Please indicate the costs (TZS) of production of your crops over the past 12 months	<p>1. Land rent</p> <p>2. Seeds and planting materials</p> <p>3. Fertilizers and manure application</p> <p>4. Pests and disease control</p> <p>5. Labor costs</p> <p>6. Equipment and machinery</p> <p>7. Fuel</p> <p>8. Transport</p> <p>9. Others (specify _____)</p>
29	<p>Households owning farm animals in the study area</p> <p><i>(For each animal indicate the number owned by the household over the past 12 months)</i></p> <p><i>(if 3 or 5 in question 23)</i></p>	<p>1. Cattle</p> <p>2. Goats</p> <p>3. Sheep</p> <p>4. Donkey</p> <p>5. Poultry</p> <p>6. Duck</p> <p>7. Swine</p> <p>8. Others (specify _____)</p>
30	Please indicate the quantity of the following produce from your farm animals over the past 12 months (if 3 or 5 in question 23)	<p>1. Eggs</p> <p>2. Milk</p> <p>3. Manure</p>
31	Please provide the costs (TZS) for rearing farm animals over the past 12 months (if household has livestock keeping as occupation) (if 3 or 5 in question 23)	<p>1. Feed and nutrition</p> <p>2. Housing and Shelter</p> <p>3. Water and utilities</p> <p>4. Veterinary services</p> <p>5. Breeding</p> <p>6. Labor costs</p> <p>7. Equipment and machinery</p> <p>8. Transport</p> <p>9. Others (specify _____)</p>
32	Please indicate the household's net income from the following sources over the past 12 months.	<p>1. Business</p> <p>2. Employment</p> <p>3. Remittances</p>
33	Categories of household's monthly income	<p>1. Low (<math>\leq</math> to 30,000)</p> <p>2. Medium (<math>&gt;30,000 &lt; 60,000</math>)</p> <p>3. High (<math>\geq</math> 60,000)</p>

**Household income derived from forests.**

34	Did the household engaged in forest-based enterprises in the past 12 months?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
35	Indicate the Type(s) of forest-based enterprises that the household members were involved in the past 12 months.	<ol style="list-style-type: none"> <li>1. Timber</li> <li>2. Beekeeping</li> <li>3. Charcoal</li> <li>4. Firewood</li> <li>5. Weaving</li> <li>6. Carving</li> <li>7. Wild vegetable and fruits</li> <li>8. Medicine</li> <li>9. Laborer (employed)</li> <li>10. Others (specify _____)</li> </ol>
36	Indicate the household's total revenue generated from the sale of products or services related to the forest-based enterprises enterprise	<ol style="list-style-type: none"> <li>1. Timber</li> <li>2. Beekeeping</li> <li>3. Charcoal</li> <li>4. Firewood</li> <li>5. Weaving</li> <li>6. Carving</li> <li>7. Wild vegetable and fruits</li> <li>8. Medicine</li> <li>9. Laborer (employed)</li> <li>10. (specify _____)</li> </ol>
37	Indicate the direct costs incurred by the household associated with production including fees and other costs related to obtaining the raw materials, labor, equipment maintenance or rent, transportation, and any other expenses directly related to the production process.	<ol style="list-style-type: none"> <li>1. Timber</li> <li>2. Beekeeping</li> <li>3. Charcoal</li> <li>4. Firewood</li> <li>5. Weaving</li> <li>6. Carving</li> <li>7. Wild vegetable and fruits</li> <li>8. Medicine</li> <li>9. Laborer (employed)</li> <li>10. (specify _____)</li> </ol>
38	Compared to previous years how do you describe your gross income from forest-based enterprises	<ol style="list-style-type: none"> <li>1. Increasing</li> <li>2. Decreasing</li> <li>3. Just the same</li> </ol>
39	If the gross income is increasing, what could be the reason(s)	<ol style="list-style-type: none"> <li>1. Improving availability of raw materials due to improved conservation efforts</li> <li>2. Better harvesting plans</li> <li>3. Diversification of forest products</li> <li>4. Access to better market</li> <li>5. Value addition</li> <li>6. Better branding</li> <li>7. Improved skills to produce better products.</li> <li>8. Adoption of better harvesting, processing, and storage technologies</li> <li>9. Better collaboration and partnerships with technical expertise, financial resources, and market linkages</li> <li>10. Better state policies that encourage you to invest in forest-based enterprises.</li> <li>11. Other reasons (specify _____)</li> </ol>
40	If the gross income from forest-based enterprises is decreasing or just the same, what are the barriers for growth?	<ol style="list-style-type: none"> <li>1. Resource depletion due to overexploitation or unsustainable harvesting of forest resources</li> </ol>



		<ol style="list-style-type: none"> <li>2. Market fluctuations</li> <li>3. Government policies creating bureaucratic stumbling blocks for enterprise development.</li> <li>4. extreme weather events, that affects productivity of the resources.</li> <li>5. Poor infrastructure for production, processing, storage, and transportation of the products.</li> <li>6. Limited access to financial services, credit, and investment capital.</li> <li>7. Shifts in societal values, consumer preferences, lifestyle choices, and cultural norms related to forest products.</li> <li>8. Other reasons (specify _____)</li> </ol>
41	<p>Compared to previous years, how do you consider the accessibility and availability of the following forest products</p> <p>Indicator</p> <ol style="list-style-type: none"> <li>1. Better off</li> <li>2. Worse off</li> <li>3. Just the same</li> </ol>	<ol style="list-style-type: none"> <li>1. Medicinal plants</li> <li>2. Fuelwood</li> <li>3. Fodder</li> <li>4. Construction materials</li> <li>5. Honey</li> <li>6. Wild foods</li> <li>7. Other NTFP collected for use, cultural purposes, or sale in local markets</li> </ol>

**Effects of the forest-based enterprise income on household livelihoods and livelihood security**

42	<p>What do you consider as the implication of the forest-based enterprise development on your livelihoods</p>	<ol style="list-style-type: none"> <li>1. Better security of land and forest tenure</li> <li>2. Improved life resilience resulted from Reducing dependency on single income streams.</li> <li>3. Creation of employment, entrepreneurship, and wealth</li> <li>4. Skill development which has increased employability of family members,</li> <li>5. Skill development which has increased ability to pursue alternative livelihood options.</li> <li>6. Better social cohesion resulted from collective decision-making, cooperation, and collaboration among community members.</li> <li>7. Secured income to purchase food items, diversifying diets and improving nutritional outcomes for household.</li> <li>8. Better availability of wild foods, medicinal plants, and non-timber forest products.</li> </ol>
43	<p>Please provided your opinion on the status of the following livelihood elements in your household compared to the previous years.</p> <p>Indicator</p> <ol style="list-style-type: none"> <li>4. Better off</li> <li>5. Worse off</li> <li>6. Just the same</li> </ol>	<ol style="list-style-type: none"> <li>1. Access to basic needs such as food, shelter, healthcare, and education</li> <li>2. Food security.</li> <li>3. Water security</li> <li>4. Land tenure security</li> <li>5. Forest tenure security</li> <li>6. Diversification of livelihoods</li> <li>7. Health insurance</li> <li>8. Predictability of the household income</li> <li>9. Employability of family members</li> <li>10. Ability to create employments to others.</li> <li>11. Establishments of new production streams (entrepreneurship)</li> </ol>

		12. Ability to participate in loans and serving schemes.
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**Improved social services for villages**

44	Have you or your household received any direct and/or indirect benefits from the distribution of funds generated by the sale of forest produce in the past 12 months	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> <li>3. I'm not aware</li> </ol>
45	If yes, what kind of benefits ( <i>select all that applies</i> )	<ol style="list-style-type: none"> <li>1. Income support such as dividends or cash transfer during hardships</li> <li>2. Education such as school uniforms, school desks, school fees, books, food to school children</li> <li>3. Healthcare such as dispensary building and health insurance,</li> <li>4. Housing such as housing incentives, and homeless shelters</li> <li>5. Food assistances</li> <li>6. Child and family support such as childcare subsidies, subsidies to pregnant/nursing mother,</li> <li>7. Elderly and disability support</li> <li>8. Improved water supply such as piped water, drilling ground water,</li> <li>9. Land rights such as Certificates of Customary Rights of Occupancy, conflict resolutions,</li> <li>10. Energy such as electrical installations, improved cookstoves</li> <li>11. Others (specify _____)</li> </ol>
46	Please indicate the number of adult men and women, as well as children under 18, from your households benefited from the above services	<ol style="list-style-type: none"> <li>1. Men _____</li> <li>2. women _____</li> <li>3. Boys _____</li> <li>4. girls _____</li> </ol>
47	Indicate your perception on current status of each of the following services compared to the <b>previous years</b> . Health Education Water Renewable energy sources Village administrative services All weather roads Electricity	<p>Description</p> <ol style="list-style-type: none"> <li>1. Adequate number and quantity of the related structure,</li> <li>2. Functioning of service delivery system.</li> <li>3. Costs and expenses of related service are affordable.</li> </ol> <p>Indicators</p> <ol style="list-style-type: none"> <li>1. Increasing</li> <li>2. Decreasing</li> <li>3. Just the same</li> </ol>
48	Indicate the current walking distance and time required to access the following basic services. (kilometers)	<ol style="list-style-type: none"> <li>1. Health center</li> <li>2. Education facility</li> <li>3. Water point</li> <li>4. Renewable energy source</li> <li>5. Village government office</li> <li>6. Wall-weather roads</li> <li>7. Electric grid connections</li> </ol>

**Motivations to protect the forests.**

49	Compared to previous years, how do you perceive the benefits derived from VLFRs in terms of income, livelihood improvements, and other socio-economic factors	<ol style="list-style-type: none"> <li>1. Benefits are increasing.</li> <li>2. Benefits are neither increasing nor decreasing</li> <li>3. Benefits are increasing with some</li> </ol>
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		<p>concerns.</p> <p>4. Benefits are decreasing.</p>
50	Compared to previous years, how do you perceive the motivation of communities in this village to protect the forests?	<p>1. Motivation is increasing.</p> <p>2. Motivation is neither increasing nor decreasing.</p> <p>3. Motivation is increasing with some concerns.</p> <p>4. Motivation is decreasing.</p>
51	Are you aware of availability of any other well forested land outside the VLFR within your village land?	<p>1. Yes</p> <p>2. No</p> <p>3. Not sure</p>
52	If you were given opportunity to expand your VLFR, how would you consider the decision?	<p>4. I will put more forest land in the VLFR.</p> <p>5. I will support expansion with some concerns.</p> <p>6. I will encourage conservation of the existing VLFR only.</p>
53	What would you consider as major concerns in protection of the VLFR?	<p>1. Insecure tenure due to high risk of appropriation</p> <p>2. Shortage of basic forest resources due to restrictions imposed through bylaws.</p> <p>3. Increasing deforestation caused by people living adjacent to the forests.</p> <p>4. Increasing deforestation caused by people coming from other places.</p> <p>5. Centralized decisions on forest trade</p> <p>6. Limited benefits from the VLFRs</p> <p>7. Benefits unfairly distributed.</p> <p>8. In adequate law enforcements.</p> <p>9. Continued forest illegalities eg for timber</p> <p>10. Benefits not translated into meaningful improvements of community livelihoods.</p>
54	Are you aware of the boundaries of the Village land Forest Reserve?	<p>1. Yes</p> <p>2. No</p>
55	Are the boundaries of the Village Land Forest Reserve (VLFR) clearly defined and readily identifiable to individuals from neighboring areas?	<p>1. Yes</p> <p>2. No</p>
56	What are the physical markers of the VLFR boundaries?	<p>1. Painted boundary lines</p> <p>2. Placards</p> <p>3. Rivers and other natural features</p> <p>4. Cutlines</p>
57	Compared to previous years, how do you consider the rate of forest loss in your village (eg converting natural forests to farms)	<p>1. Increasing</p> <p>2. Decreasing</p> <p>3. Neither increasing nor decreasing</p>
58	Compared to previous years, how do you describe the number of incidences of forest illegalities in your village	<p>1. Increasing</p> <p>2. Decreasing</p> <p>3. Neither increasing nor decreasing</p>
59	What do you consider as major drivers of forest loss and degradation in this village	<p>1. Agricultural expansion or shifting cultivation.</p> <p>2. Illegal and unsustainable logging</p> <p>3. Firewood collection</p> <p>4. Charcoal production</p> <p>5. Infrastructure development</p> <p>6. Mining</p> <p>7. Urbanization</p> <p>8. Illegal wildlife hunting</p> <p>9. Bush fire</p> <p>10. Others (specify)</p>
60	If the rate of forest loss is decreasing, what could be	<p>1. Community participation and</p>

	the major reasons (If “decreasing” in question 58 above)	<ul style="list-style-type: none"> <li>empowerment</li> <li>2. Establishment of Village land Forest Reserves</li> <li>3. Decentralized revenues</li> <li>4. Improved law enforcements</li> <li>5. More support from district and national government in protecting the VLFRs</li> </ul>
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#### Increased number of dealers of forest produce and decision making

61	Is your household a Member in the following forest-based organisation(s)	<ul style="list-style-type: none"> <li>1. Producers</li> <li>2. Processors</li> <li>3. Traders</li> <li>4. Is not a member of any of the above</li> </ul>
62	Are the forest-based organisation(s) that you belong registered? (if 1 or 2 or 3 in question 61)	<ul style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> <li>3. In the registration process</li> </ul>
63	How would you rate decision-making structure along forest-based enterprise value chains?	<ul style="list-style-type: none"> <li>1. <b>Excellent:</b> well-defined, transparent, and efficiently.</li> <li>2. <b>Good:</b> generally effective, though there may be some room for improvement.</li> <li>3. <b>Fair:</b> With some shortcomings, such as unclear roles or inefficient communication channels.</li> <li>4. <b>Poor:</b> inadequate, with frequent delays, conflicts, or suboptimal outcomes.</li> <li>5. <b>Very poor:</b> severely deficient, causing significant disruptions in the value chain.</li> </ul>
64	Please rate the time take in decision making processes related to forest-based enterprise value chains in VLFRs by the government authorities.	<ul style="list-style-type: none"> <li>1. Fast</li> <li>2. Moderate</li> <li>3. Slow</li> <li>4. Very slow</li> <li>5. Inconsistent</li> </ul>
65	Please rate how effective is the flow of information along the value chains in VLFRs, from the government authorities to other participants in the trade.	<ul style="list-style-type: none"> <li>1. Excellent</li> <li>2. Good</li> <li>3. Fair</li> <li>4. Poor</li> <li>5. Very poor</li> </ul>
66	How would you rate the costs associated with decision-making towards forest-based enterprise value chains in VLFRs.	<ul style="list-style-type: none"> <li>1. Low</li> <li>2. Moderate</li> <li>3. High</li> <li>4. Very high</li> <li>5. Uncertain</li> </ul>
67	Please rate relevance, feasibility, and effectiveness of decisions in addressing challenges or opportunities within the timber value chain.	<ul style="list-style-type: none"> <li>1. Highly relevant, feasible, and effective</li> <li>2. Relevant, feasible, and effective</li> <li>3. Somewhat relevant, feasible, and effective</li> <li>4. Not very relevant, feasible, and effective</li> <li>5. Irrelevant, infeasible, and ineffective</li> </ul>
68	Rate the extent to which decisions made by the government authorities concerning the forest-based enterprise value chains in VLFRs contributes to livelihoods, reducing deforestation and improve productivity.	<ul style="list-style-type: none"> <li>1. Highly contributory</li> <li>2. Moderately contributory</li> <li>3. Somewhat contributory</li> <li>4. Minimally contributory</li> <li>5. Non-contributory</li> </ul>

#### Understanding the Benefit Sharing Mechanisms

69	Are you aware of how benefits from the VLFR are distributed among stakeholders?	<ul style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ul>
70	In your opinion who collects the largest share of	<ul style="list-style-type: none"> <li>1. The VNRCs</li> </ul>

	revenues from the VLFR?	<ol style="list-style-type: none"> <li>2. The Village Council</li> <li>3. The Local Authority</li> </ol>
71	In your opinion which expenditure deserves the largest share of revenues from VLFR	<ol style="list-style-type: none"> <li>1. Forest management</li> <li>2. Community development</li> <li>3. Extension services</li> </ol>
72	How do you get information on income benefits from VLFR	<ol style="list-style-type: none"> <li>1. Through village notice boards</li> <li>2. Through VNRC meetings</li> <li>3. Through Village Council Meetings</li> <li>4. Through sub village Meetings</li> <li>5. Through Village general Assembly</li> <li>6. Through informal meetings with village leaders</li> </ol>
73	How do you participate in decision making on distribution of income benefits from VLFR	<ol style="list-style-type: none"> <li>1. Through VNRC meetings</li> <li>2. Through Village Council Meetings</li> <li>3. Through sub village Meetings</li> <li>4. Through Village general Assembly</li> </ol>
74	How many times did any of your household members participated in village general assembly to discuss income benefits from VLFR over the past 12 months?	<ol style="list-style-type: none"> <li>1. Once</li> <li>2. Twice</li> <li>3. Thrice</li> <li>4. Four times or more</li> <li>5. None</li> </ol>
75	How would you rate the village general assembly's (VGA) effectiveness in shaping decisions regarding benefit sharing mechanisms for the Village Land Forest Reserve (VLFR)?	<ol style="list-style-type: none"> <li>1. <b>Good:</b> The Village General Assembly (VGA) often alter the proposals put forward by the Village Council significantly.</li> <li>2. <b>Average:</b> The VGA modify certain proposals brought forth by the Village Council in just few cases.</li> <li>3. <b>Poor:</b> The VGA frequently finds itself limited to merely endorsing the proposals set forth by the Village Council.</li> </ol>
76	Are you aware that you have an opportunity to influence the decision-making process regarding the distribution of income among household members?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
77	In your opinion, do you think the current benefit sharing mechanism rewards people to stop deforestation?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> <li>3. Do no know</li> </ol>
78	How would you rate the extent to which individuals contributing to deforestation benefits from VLFR value chains	<ol style="list-style-type: none"> <li>1. Significant: Gives them special attention</li> <li>2. Moderate: Benefits reach to everybody in the village equally</li> <li>3. Poor: More benefits rewards people who are irresponsible for deforestation</li> </ol>

### Key Informant Interview and Focus Group Discussion

Na	Key data needed
1	The profile of CBFM villages, including Harvesting Plans developed under FORVAC
2	The profile of forest harvesting contracts contributing to the timber value chain managed in VLFRs.
3	The profile of lesser-known timber species promoted by FORVAC
4	The profile of Honey producer and other NWFP/NTFP producer groups in the value chain
5	Report on operationalization of the Sawmills purchased by FORVAC
6	Details of MoUs, joint ventures, PPP & other partnerships developed and operationalized
7	Database of stakeholders trained by the programme
8	Decision making processing in the VLFR timber trade value chains
9	The profile of guidelines related to CBFM enterprise value chains developed under FORVAC
10	Profile of community development projects implemented as a result of funds from CBFM enterprises