

ZAMBIA INTEGRATED FOREST LANDSCAPE PROJECT [ZIFLP]

Socio-economic Baseline Survey Report





Republic of Zambia

Zambia Integrated Forest Landscape Project

Socio-economic Baseline Survey Report

Ministry of National Development Planning
Lusaka, Zambia

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Finally, a big thank you to our survey team whose passion and energy led to the delivery of this report within a short space of time. I hope the results contained in this report and the rich data set upon which it is based will find use among policy makers, researchers and other data users for the betterment of the Zambian Population.



Dr. Tasila Banda

NATIONAL PROJECT COORDINATOR - ZIFLP

ACRONYMS

7NDP	The Seventh National Development Plan
CSA	Census Supervisory Area
CSO	Central Statistical Office
EA	Enumeration Area
ERPA	Emission Reduction Purchase Agreement
FAO	Food and Agriculture Organization of the United Nations
FD	Forestry Department
FGD	Focus Group Discussion
FLES	Forest Livelihood and Economic Survey
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GHG	Greenhouse Gas
GIS	Geographical Information System
GMA	Game Management Area
GRZ	Government of the Republic of Zambia
HH	Household
HHD	Household Head
IDA	International Development Agency
ILUA	Integrated Land Use Assessment
ISFL	Initiative for Sustainable Forest Landscape
KII	Key Informant Interview
LUV	Land Use/Vegetation type
MNDP	Ministry of National Development Planning
NGO	Non-Governmental Organization
NPU	National Project Unit
NTFP	Non-timber Forest Products
NWFP	Non-wood Forest Product
PA	Protected Area
PDO	Project Development Objective
PPES	Probability Proportional to Estimated Size
PPIU	Provincial Project Implementation Unit
PSU	Primary Sampling Unit
REDD+	Reduced Emissions from Deforestation and Forest Degradation
SEA	Standard Enumeration Area
SDG	Sustainable Development Goals
TFP	Timber Forest Products
ZAFFICO	Zambia Forest and Forestry Industrial Corporation
ZIFLP	Zambia Integrated Forest Landscape Project

FORWARD

Between April and May 2019, the Zambia Integrated Forest Landscape Project (ZIFLP) conducted a baseline survey in Eastern Province. The ZIFLP project objective is to improve landscape management and increase environmental and economic benefits for targeted rural communities in the Eastern Province (EP) and to improve the recipient's capacity to respond promptly and effectively to an Eligible Crisis or Emergency. In order to properly measure future progress, a baseline survey was conducted to assess the current status.

The 2019 Baseline survey was designed to provide estimates at district level in rural Eastern Province. The study sought to provide the basis for subsequent assessments on how efficiently the activities of the project are being implemented and the eventual results of the project. Using the 2010 Census frame, the survey sampled 140 EAs and further stratified these EAs by extent of forest cover. The survey collected information on many aspects of the household such as Demographic Characteristic, General Household Characteristics, Access to Agricultural and Forest Land user rights, Crop Production and Management practices, Crop stocks and Sales, Vegetable, Fruit and Sugarcane sales, Household Income and Expenditure; food production, Household food insecurity, Collection of Wood and Non-wood forest products and Incomes, access to both Forest and Agricultural extension services, Energy sources and Utilisation, etc.

This survey provides a solid basis upon which the project contribution to the 7NDP are founded and upon which successes will be measured.

I would like to take this opportunity to thank the Government of the Republic of Zambia (GRZ) and the World Bank for funding the 2019 ZIFLP Baseline Survey activities from survey design and preparation to data analysis and report writing. Further, I would also like to extend my sincere thanks and appreciation to the households surveyed, for their patience, cooperation and truthfulness when responding to our data collectors. I also thank all the staff involved in the different stages of the survey for ensuring the successful implementation. I hope the results contained in this report, and the rich dataset upon which it is based will find use among policy makers, programme managers, researchers and other data users for the betterment of the Zambian population.



NATIONAL PROJECT COORDINATOR - ZIFLP

EXECUTIVE SUMMARY

The Zambia Integrated Forest Landscape Project Baseline Survey (ZIFLP) was conducted in April/May 2019 and covered 140 Enumeration areas in rural Eastern Province. Survey results show that 7 out of 10 households residing in rural Eastern Province were male-headed. Further, 59.6 percent of the households were headed by persons aged between 24 to 50 years, 11.5 percent by persons aged 65 years or older and 0.3 percent of the households were headed by persons below 20 years of age. Analysed by educational level of the head, results show that, 21.0 percent of the households had never attended school, 51.5 had only attended primary school, 15.7 percent had only completed Junior secondary, 8.4 percent had completed senior secondary school and 2.9 percent had done Tertiary education.

By marital status, 79.6 percent of the household Heads in rural Eastern were Married, 7.5 percent Divorced, 1.4 percent had Never Married and 10.2 percent were widowed. Further, 11.5 percent of the households in rural Eastern have at least one member of the household with a disability.

The total area planted to Maize seed in rural Eastern Province was 302,657 hectares. The average area planted per household was 1.08 hectares. Results also revealed that the total area planted to Soya bean seed in rural Eastern Province was 74,479 hectares and that a household on average planted 0.79 hectares of Soya bean seed.

Analysed by the Agricultural Tillage Method used by household, 35.7 percent used Ridging, 33.7 percent ploughed, 20.7 percent used Conventional hand hoeing, 3.9 used Ripping, 3.9 used Zero tillage, 2.0 percent used Planting basins and 0.2 used Bunding. Further, 1.2 percent of households that grew maize used Lime while 0.7 of the households that grew Soya Beans used Lime. The average yield rate of maize in rural Eastern Province was 1.92 metric tonnes per hectare. The average yield rate of soya beans in rural Eastern Province was 1.04 metric tonnes per hectare.

Of the households that reported growing vegetables, 30.2 percent grew Pumpkin leaves, the most widely grown vegetable, followed by those that grew Pumpkins at 18.7 percent. Both Spinach and Carrots were the least grown vegetables at 0.1 percent each.

Further results show that Mangoes were the most widely grown fruits by households at 47.8 percent followed Guavas at 15.2 percent. Grapefruit and Pine Apples were the least grown fruits at 0.04 and 0.09 percent, respectively.

On the other hand, 336,686 households in rural Eastern Province used Agro Chemicals.

Analysed by food insecurity experienced by households in rural Eastern Province, 41.8 percent reported being food secure, 0.6 percent mild food insecurity, 10.8 percent moderate food insecurity and almost half (46.8 percent) of the households in rural Eastern reported having severe food insecurity in the 12 months preceding the survey.

Among the households that indicated having cleared the forest area, 6.2 percent of households indicated that they cleared the forest areas for different reasons while 18.5 percent had done so to allow cropland to regrow. Further, 0.24 hectares was the average area allocated to replanted forest.

Analysing collection of Wood and Non-wood products by district, Petauke had the highest percentage at 14.9.

Asked to rank the contribution made by forest products to household income on a Rickert Scale, 32.2 percent of the households ranked it third, followed by those who ranked it fourth at 22.2 percent and 9.2 ranked it the least contributor to household income. The average Income from Forest products was ZMW 234.45.

Further, survey results show that 44.2 percent of the households in rural Eastern Province accessed forest extension services.

Analysing household ownership of assets by type results show that a hoe, bicycle, cell phone, radio, solar panel & equipment, plough, sprayer, television, scotch cart, storage facility, cow shed, poultry house, motorcycle ripper and pigsty represent the top 15 assets owned by the households in rural Eastern.

Chapter I: Introduction

1.1 ZIFLP Background

Zambia's long-term development strategy is articulated in the "Vision 2030: A prosperous middle-income nation by 2030." To reach this objective, the Government of the Republic of Zambia (GRZ) aims to steadily grow the country's GDP by at least 2 percent every year in the next 5 years. Currently, the sectoral strategy for achieving this desired economic growth is outlined in the GRZ's 7th National Development Plan (7NDP), which has three overarching development pillars: Infrastructure Development, Rural Development, and Human Development. The Government has prepared the 7th National Development Plan (7NDP) and rural development is high priority on the national development agenda as agriculture, mining, and tourism contribute greatly to the Zambian economy. The 7NDP focuses on building a diversified and resilient economy.

Zambia's natural resources capital such as forests are under pressure from various developmental sectors, including mining, energy, infrastructure and agriculture. Some of the main drivers of deforestation emanate from these sectors. The mechanism for reducing deforestation and forest degradation (REDD+) presents an opportunity for Zambia to address deforestation in a comprehensive and integrated manner by involving identified sectors and key actors. All the key drivers of deforestation must be analyzed by showing the interrelationships that exist in order to formulate sustainable interventions for deforestation and forest degradation. Zambia has developed the National REDD+ Strategy focusing on tackling different drivers of deforestation in both the forestry and other identified key sectors in particular, agriculture, energy, mining and infrastructure. The Vision of this Strategy is to contribute to a prosperous climate change resilient economy by 2030, anchored on sustainable management and utilisation of the nation's natural resources towards improved livelihoods. Its Goal is to contribute to national reductions in greenhouse gas emissions by improving forest and landscape management and to ensure equitable sharing of both carbon and non-carbon benefits among stakeholders.

To facilitate the implementation of the National REDD+ strategy, and overall transitional arrangements from REDD+ Readiness to implementation, Government developed the Zambia Integrated Forest Landscape Project (ZIFL-P). The Zambia Integrated Forest Landscape Project's (ZIFLP) is co-financed by the Government of Zambia (GRZ), through the Ministry of National Development Planning (MNDP), the World Bank, through the International Development Agency (IDA), Bio-Carbon Fund Initiative for Sustainable Forest Landscapes (BioCFplus-ISFL), the Global Environmental Facility (GEF) and contributions from beneficiary communities.

1.2 Project Development Objective (PDO)

The Zambia Integrated Forest Landscape Project's (ZIFLP) Development Objective is "to improve landscape management and increase environmental and economic benefits for targeted rural communities in the Eastern Province (EP) and to improve the Recipient's capacity to respond promptly and effectively to an Eligible Crisis or Emergency."

1.3 Project Beneficiaries

The ZIFLP's key beneficiaries are people in targeted rural communities in Eastern Province that are most directly dependent on agriculture and forest resources for livelihoods and the most vulnerable to climate

change. An estimated 214,955 persons including provincial and national government staff will directly benefit from the project's investments. It is intended that at least 30 percent of the beneficiaries will be female.

1.4 Project Components

To achieve this Project Development Objective, the ZIFLP is organized around four components which are;

COMPONENT 1: ENABLING ENVIRONMENT

This component (i) builds conditions for implementation of the livelihood investments under Component 2 and (ii) develops the country capacity for emission reduction purchases. The component includes two subcomponents (a) District and local planning in support of integrated district development and local planning including land use and action planning through participatory processes; and (b) Emissions Reduction framework, which will help establish the instruments needed for a future Emission Reduction Purchase Agreement (ERPA).

COMPONENT 2: LIVELIHOOD AND LOW CARBON INVESTMENTS

This component provides financing to on-the-ground activities that improve rural livelihoods, conserve ecosystems and reduce GHG emissions. It has two subcomponents: Agriculture and Forestry management, and Wildlife management. Although the sub-components are sectoral in nature, the cross-sectoral and landscape approach of the planning activities that will underlie the activities will ensure a landscape approach is retained.

COMPONENT 3: PROJECT MANAGEMENT

This component will finance activities related to national- and provincial-level project coordination and management, including annual work planning and budgeting; fiduciary aspects (financial management [FM] and procurement); human resource management; safeguards compliance monitoring; M&E and impact assessment studies; and communication strategy and citizen engagement. There are two subcomponents, one for the National Project Unit (NPU) and one for the Provincial Project Implementation Unit (PPIU).

COMPONENT 4: CONTINGENCY EMERGENCY RESPONSE

This is a zero-budget component which is included to facilitate the use of IDA funds in the event of a crisis or emergency that is related to the project and to be able to respond quickly to a potential Government request to reallocate some funding from existing World Bank projects to provide emergency relief.

1.5 Main Objectives of the Ziflp Socio-Economic Baseline Study

This socio-economic baseline study was commissioned in April, 2019 by CSO. The study aimed at providing an independently assessed information base relevant to the project against which the project's progress and effectiveness can be monitored and assessed both during the implementation of the project's activities and after the completion of the project. The baseline study, an early element of the project monitoring framework, is in effect the first step in the project monitoring and evaluation system. The study seeks to provide the basis for subsequent assessments on how efficiently the activity of the project is being implemented and the eventual results of the project.

The study has attempted to capture the before project implementation socio-economic and environmental indicators whose baseline figures were not captured at project design but are vital given the proposed theory of change for the ZIFLP. As such, the study captured baseline data for relevant additional indicators that are not reflected in the project results framework but are critical in showing how the project interventions lead to the desired change. Additionally, the baseline study was intended to provide the project staff, partners and implementing agencies with detailed baseline data on key project indicators.

Chapter 2: Survey Methodology

2.1 Introduction

This chapter gives an outline of the activities that were undertaken during the 2019 ZIFLP Socio-economic Baseline Survey in rural Eastern Province of Zambia. It encompasses issues related to survey management, sample design, survey instruments, data processing and response rate. The sample drawn was adequate to give representative results at district level.

2.2 Target Population

The target population was all households residing in rural Eastern Province at the time of the survey, excluding those residing within protected areas, institutionalised population groups and diplomats accredited to Zambia. The survey was conducted in all the 14 districts of the Eastern Province namely: Chadiza, Chasafu, Chipangali, Chipata, Kasenengwa, Katete, Lumezi, Lundazi, Lusangazi, Mambwe, Nyimba, Petauke, Sinda and Vubwi.

2.3 Sample Design

2.3.1 Sampling Frame

Zambia is administratively divided into 10 provinces, each of which is further subdivided into districts. These districts are subdivided into constituencies which are in turn also subdivided into wards. For statistical purposes, each ward is further subdivided into Census Supervisory Areas (CSAs), which in turn nest Standard Enumeration Areas (SEAs). For data collection purposes, the SEA is the smallest geographical unit assigned to each enumerator.

The sampling frame for this study was constructed using the 2010 Census frame. This work was done by Geographical Information System (GIS) officers from the Forestry Department and the Central Statistical Office (CSO). The sampling frame is a list of standard enumeration areas, also referred to as primary sampling units (PSUs). The frame was further categorised into three strata but it excluded PSUs located inside the protected areas. The three categories are based on the extent of forest cover for each enumeration area i.e. 0-30%, 31-70% and over 70% forest cover.

2.3.2 Sample Size

The 2019 ZIFLP Socio-economic Baseline Survey was based on 140 Standard Enumeration Areas, equivalent to 2,800 households. The sample covered all the Districts in the Province.

The sample size was adequate to give reliable estimates at District level, for the three categories/domains. These categories/domains represent the extent of forest cover.

2.3.3 Sample Allocation And Stratification

The sampling frame was stratified by extent of forest cover. The Square Root N Allocation Method was used to allocate the number of enumeration areas across the study domains.

2.3.4 Sample Distribution

The table below shows the percentage distribution of the sampled areas by District in rural Eastern Province in 2019. Chipata and Petauke had the largest share of sample areas 11.4 percent each while Lusangazi had the smallest share at 2.9 percent.

Table 2.1: Percentage Distribution of the Sample by District, Rural Eastern Province 2019.

District	Sampled Areas	Percentage
Chadiza	8	5.7
Chasefu	10	7.1
Chipangali	10	7.1
Chipata	16	11.4
Kasenengwa	10	7.1
Katete	12	8.6
Lumezi	10	7.1
Lundazi	12	8.6
Lusangazi	4	2.9
Mambwe	8	5.7
Nyimba	10	7.1
Petauke	16	11.4
Sinda	8	5.7
Vubwi	6	4.3
Grand Total	140	100

2.4 Organisation of the Survey

2.4.1 Questionnaire Design

For the purpose of the baseline survey, three survey data collection instruments were used.

1. An electronic household-based questionnaire
2. Community focused group discussion questionnaire
3. Key informant questionnaire

The following topics were covered:

- Demographic Characteristics
- General Household Characteristics
- Access to Agricultural and Forest Land user rights
- Crop Production and Management practices
- Crop stocks and Sales
- Vegetable, Fruit and Sugar-cane Sales
- Herbicides and Pesticides Utilisation
- Household Expenditure and Consumption
- Food Purchases and Food Aid/ Relief for home Consumption
- Household Food Insecurity
- Household Forest Clearing, Planting and Regeneration
- Collection of Wood and Non-wood forest Products
- Forestry income
- Income from Non-agricultural and Forest Activities
- Buying and Bartering of Wood and Non-wood Forest Products
- Access to Forest Extension Services

- Access to Agricultural Extension Services
- Energy Sources and Utilisation
- Household Assets/ Implement Ownership

2.4.2 Training of Field Staff

A training workshop for data collectors and supervisors was conducted in Chipata for a period of 10 days.

2.4.3 Data collection was done in 28 Days

Data collection in all sampled areas was done within a period of 28 days.

2.4.4 Data Editing and Processing

Data analysis and report writing was conducted within a Month.

2.5 Map of selected Standard Enumeration Areas (SEA)

Chapter 3: Demographic Characteristics

The socio-economic characteristics of any given population of interest, commonly referred to as “demographic characteristics” are important in understanding the welfare of the population through the impact they may have on the prevailing socio-economic situation.

In addition, demographic characteristics gives background information and serves as a platform for understanding other aspects of the population of interest, including economic activities, household food security and vulnerability of the population. Information on all aspects of living conditions become more informative when disaggregated by demographic characteristics such as age, sex and geographical area.

The 2019 Zambia Integrated Forest landscape Project (ZIFLP) Baseline Survey collected data on the following demographic characteristics:

- Population size, age, sex and geographical distribution
- Household size and headship
- Marital status
- Educational level
- Disability
- Household income.

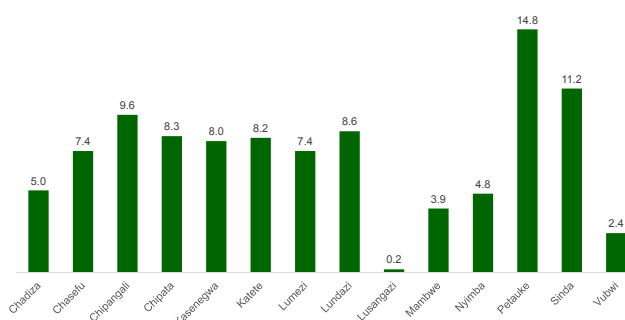
3.1 Population Size and Distribution

Figure 3.1.1 shows the percentage distribution of the population by district in rural Eastern Province in 2019. Petauke and Sinda districts had the largest and second largest shares of the population in rural Eastern at 14.8 and 11.2 percent, respectively. Lusangazi District, one of the newly created districts, had the smallest share of the population at 0.2 percent. Petauke’s share of the population was 74 times as much as that of Lusangazi.

Table 3.1.1 shows the percentage distribution of households by Level of Education of Head in rural Eastern Province 2019. Overall, results show that 51.5 percent of the household Heads completed primary school representing the highest percentage followed by those who had never attended school at 21 percent. Less than 1 percent had not completed any level of education.

Analysed by district, the highest level of education completed by most of the household Heads in the rural parts of Eastern Province was Primary school. Lundazi, Nyimba and Lumezi districts at 61.6 , 57.9 and 56.9 percent, respectively, were among the three districts with the highest proportions of Heads that had completed primary school while Vubwi and Sinda had the least at 34.5 and 44 percent, respectively.

Figure 3.1.1: Population Distribution of Households by District, Rural Eastern Province, 2019



Further, Junior secondary represented the second highest level of education completed among household Heads in rural Eastern. Mambwe at 23.7 percent had the largest share of household Heads with Junior secondary while Chadiza had the lowest share at 6.7 percent. In addition, in more than half the number of districts in Eastern, the proportion of household Heads with Senior secondary education level was more than the provincial average at 8.4 percent. Sinda and Lusangazi district had the least shares at 2.7 and 2.8 percent, respectively.

Vubwi and Chipata districts at 6.4 and 5.8 percent, respectively reflected the highest and second highest proportion of Heads with Tertiary education. However, Katete and Petauke had less than 1 percent of its household Heads with Tertiary education.

Table 3.1.1: Percentage Distribution of Households by Level of Education of Head, Rural Eastern Province, 2019.

District	Total	Never attended	None	Primary	Junior Secondary	Senior Secondary	Tertiary
Total	100.0	21.0	.4	51.5	15.7	8.4	2.9
Chadiza	100.0	36.6	0.0	46.2	6.7	7.3	3.2
Chasefu	100.0	13.6	0.0	53.7	20.6	8.8	3.4
Chipangali	100.0	9.5	0.0	55.1	21.0	11.3	3.1
Chipata	100.0	17.5	0.0	52.0	17.4	7.3	5.8
Kasenengwa	100.0	23.8	.9	44.6	14.7	13.2	2.8
Katete	100.0	30.7	.8	49.6	11.0	7.6	.2
Lumezi	100.0	12.5	0.0	56.9	17.4	9.5	3.8
Lundazi	100.0	11.7	0.0	61.6	14.7	8.9	3.0
Lusangazi	100.0	20.0	0.0	54.9	18.4	2.8	3.9
Mambwe	100.0	8.5	.3	48.9	23.7	14.5	4.2
Nyimba	100.0	8.1	1.8	57.9	15.8	12.2	4.2
Petauke	100.0	25.3	1.2	52.8	13.8	5.9	1.0
Sinda	100.0	36.1	0.0	44.0	14.8	2.7	2.3
Vubwi	100.0	36.3	0.0	34.5	13.9	8.9	6.4

Table 3.1.2 shows average Household Size by Age-group; Level of Education and Sex of Head in rural Eastern Province in 2019. Overall, results show that the average Household Size in rural Eastern was 5.4 persons. Male-headed households on average were 1.2 times larger than female headed households at 5.6.

Analysed by Age group of Head, average household size tended to increase with increase in age group of Head up to 49 years. However, beyond 49 years of age, average household size tended to reduce as the age of the household Head increased.

Analysing average household Size by Education level completed reveals no clear distinction. Further, regardless of education level completed, female-headed households tended to have smaller household sizes in rural Eastern Province.

Table 3.1.2: Average Household Size by Age-group and Level of Education Completed by Sex of Head of Household, Rural Eastern 2019.

Age Group	Households		
	Total	Male Headed	Female Headed
Total	5.4	5.6	4.5
18- 19	3.6	3.6	4.0
20 - 24	3.5	3.5	3.1
25 - 29	4.0	4.0	3.7
30 - 34	5.0	5.1	4.5
35 - 39	5.9	6.1	5.2
40 - 44	6.6	7.0	5.3
45 - 49	6.6	7.0	5.4
50 - 54	6.1	6.7	4.4
55 - 59	5.7	6.1	4.5
60 - 64	5.1	6.1	3.7
65+	4.7	5.1	4.0
Level of Education			
Never attended	5.3	5.9	4.2
None	4.1	4.8	2.4
Primary	5.5	5.6	4.8
Junior Secondary	5.3	5.4	4.7
Senior Secondary	5.3	5.3	5.1
Tertiary	5.3	5.8	3.6

Table 3.1.3 shows the percentage distribution of Households by Sex of Head and District in rural Eastern Province in 2019. Overall, results show that almost 8 out of every 10 households in rural Eastern were male-headed.

Analysis of results by district show that 7 out of every 10 households residing in rural Eastern Province were male-headed. Lundazi had the highest proportion of male-headed households in the province where nearly 9 out of every 10 households were male-headed while Mambwe had the lowest proportion with 7 out of every 10 households being male-headed. Mambwe District had the highest proportion of households that were female-headed. Nearly 3 out of every 10 households were female headed.

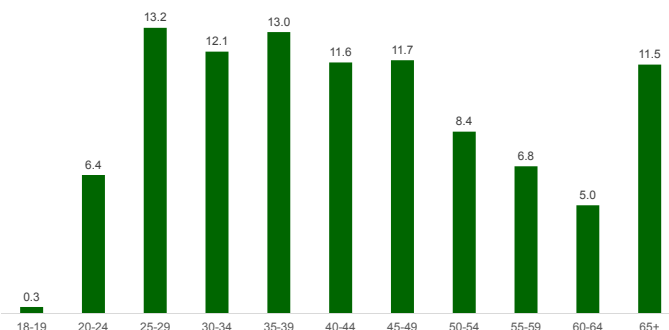
Table 3.1.3: Percentage Distribution of Households by Sex of Head by District, Rural Eastern, 2019

District	Sex of Head					
	Total		Male		Female	
	Share	Count	Count	Row N %	Count	Row N %
Total	318,570	100.0	248,530	78.0	70,040	22.0
Chadiza	15,982	5.0	12,340	77.2	3,643	22.8
Chasefu	23,728	7.4	20,311	85.6	3,417	14.4
Chipangali	30,585	9.6	25,057	81.9	5,527	18.1
Chipata	26,410	8.3	20,062	76.0	6,348	24.0
Kasenengwa	25,643	8.0	18,364	71.6	7,279	28.4
Katete	26,131	8.2	19,306	73.9	6,826	26.1
Lumezi	23,602	7.4	18,673	79.1	4,928	20.9
Lundazi	27,270	8.6	23,922	87.7	3,348	12.3
Lusangazi	524	0.2	432	82.5	92	17.5
Mambwe	12,515	3.9	8,786	70.2	3,729	29.8
Nyimba	15,415	4.8	11,751	76.2	3,664	23.8
Petauke	47,286	14.8	35,629	75.3	11,657	24.7
Sinda	35,792	11.2	28,457	79.5	7,335	20.5
Vubwi	7,687	2.4	5,440	70.8	2,246	29.2

Figure 3.1.2 shows the percentage distribution of Households by Age-group of Head in rural Eastern Province 2019. Results show that 59.6 percent of the households in rural Eastern were headed by persons aged between 24 and 50 years while 11.5 percent of the households were headed by persons aged 65 years or older and 0.3 percent of the households were headed by persons below 20 years of age.

Further, results show that 16.5 percent of the households in rural Eastern Province were headed by persons aged 60 years or older. This implies that almost 2 out of every 10 households were headed by persons who might soon be requiring some form of social protection.

Figure 3.1.2: Percentage Distribution of Households by Age group of Head in Rural Eastern Province, 2019



3.1.1 Marital Status

Table 3.1.4 shows the percentage distribution of Households by Marital status of Head and District, rural Eastern Province 2019. Overall, 79.6 percent of the Heads in rural Eastern were Married, 7.5 percent Divorced, 1.4 percent had Never Married and 10.2 percent were Widowed.

Analysed by district, results show that the majority of the household Heads in all the rural parts of each district in Eastern Province were married. Lundazi and Chasefu had the highest and second highest percentage of households headed by persons that were married at 91.7 and 89.1 percent, respectively. Katete and Mambwe districts had the least proportions at 71.4 and 72.4 percent, respectively.

Further, Katete, Kasenengwa and Chipata districts, relatively, had higher percentages of household Heads that were divorced at 14.0, 12.2 and 11.2 percent, respectively. Chasefu and Lundazi districts had the least percentages of household Heads that were divorced at 3.1 and 1.6 percent, respectively.

Analysing widowhood by district, results show that only Chasefu, Chipangali, Lumezi, Lundazi, Lusangazi and Sinda districts had widowhood proportions below that of the provincial average of 10.2 percent. The proportions of widowers in the rest of the districts in rural Eastern were higher than the provincial average with Petauke and Chadiza representing the highest and second highest proportions at 13.7 and 13 percent, respectively.

Table 3.1.4 : Percentage Distribution of Households by Marital Status of Head and District, Rural Eastern, 2019

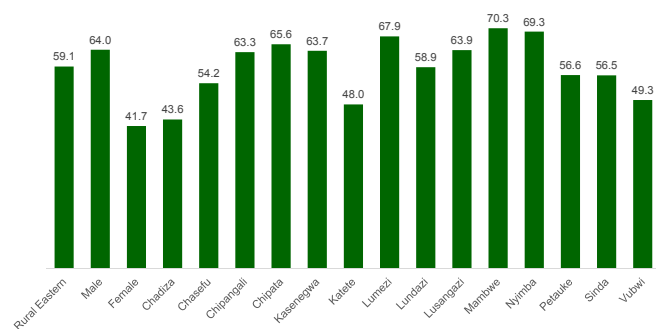
Districts	Never Married	Married	Separated	Divorced	Widowed	Total
Total	1.4	79.6	1.3	7.5	10.2	100.0
Chadiza	1.8	77.8	1.6	5.7	13.0	100.0
Chasefu	.6	89.1	.8	3.1	6.5	100.0
Chipangali	.3	83.1	2.2	4.8	9.5	100.0
Chipata	1.4	75.3	1.5	11.2	10.5	100.0
Kasenengwa	2.8	74.1	.2	12.2	10.7	100.0
Katete	4.1	71.4	.3	14.0	10.2	100.0
Lumezi	.9	84.0	1.0	4.5	9.7	100.0
Lundazi	0.0	91.7	1.6	1.6	5.1	100.0
Lusangazi	0.0	87.5	0.0	5.5	7.0	100.0
Mambwe	3.5	72.4	2.8	10.6	10.7	100.0
Nyimba	2.0	76.2	3.0	6.8	12.1	100.0
Petauke	.6	76.1	.8	8.7	13.7	100.0
Sinda	1.0	81.5	1.0	7.0	9.6	100.0
Vubwi	3.9	75.2	3672.7	6.2	12.0	100.0

Figure 3.1.3 shows the Literacy Levels of Households in rural Eastern by Sex of Head and by District in 2019. Overall, 59 out of every 100 household Heads in rural Eastern were literate. Disaggregated by Sex of Head, 64 out of every 100 male-headed households were literate compared to nearly 42 out of every 100 female-headed households.

Analysed by district, though differing marginally, Mambwe and Nyimba districts had the highest literacy levels in rural Eastern. The results show that 70 out of every 100 households in Mambwe and 69 out of every 100 households in Nyimba were literate, respectively. Chadiza, Katete and Vubwi districts respectively represent the districts which had the least literacy levels in rural Eastern. Almost 44 out of every 100 households in Chadiza, 48 out of every 100 households in Katete and 49 out of every 100 households in Vubwi were literate.

Table 3.1.5 shows the percentage distribution of Households in rural Eastern Province by Reason Cited for Never Having Attended School. Overall, about 67 out of every 100 household Heads cited “lack of financial support” while 13 out of every 100 households cited “school not important.” Furthermore, 8 out of every 100 household Heads cited “ school too far.”

Figure 3.1.3: Literacy Level of Households by Sex of Head and District, Rural Eastern Province, 2019



Notably, 2 out of every 100 household heads in rural Eastern cited “school too expensive” and another 2 out of every 100 cited “unsafe to travel” as reasons for having never attended school.

Analysed by district, results indicate that nearly 88 out of every 100 household Heads in Chipangali, Mambwe and Petauke districts cited “lack of financial support” compared to a minimum of about 13 out of every 100 household Heads in Lusangazi and Nyimba districts who cited the same reason. Further, a minimum of 15 out of every 100 household Heads in Nyimba, Katete, Kasenengwa, Lusangazi, Chipata and Lumezi districts cited “school not important” with Lumezi having the highest proportion of household Heads citing that reason.

Among the Heads that cited “unsafe to travel to school”, only those from Nyimba, Lusangazi and Kasenengwa districts gave that reason. It is interesting to note that nearly 20 out of every 100 household Heads in Kasenengwa, Nyimba and Lumezi districts could not give a reason for never having attended school.

Table 3.1.5: Percentage Distribution of Households by Reason Cited for Having Never Attended School by District, Rural Eastern, 2019.

District	Under-age	Could not get a place	Expensive	No financial support	School too far	Illness/injury	School not important	Unsafe to travel to school	Other	Total
Total	0	0.2	2	65.6	8.4	0.7	13.2	2	8.1	100
Chadiza	0	0	0	78.4	17.1	0	0	0	4.5	100
Chasefu	0	0	34.8	46.1	9.6	0	9.6	0	0	100
Chipangali	0	0	0	90.3	9.7	0	0	0	0	100
Chipata	0	1.6	0	55.6	6.3	0	30.1	0	6.3	100
Kasenengwa	0	0	0	41.9	0	0	24.7	1.3	32.1	100
Katete	0	0	0	69.2	11.9	0	18.9	0	0	100
Lumezi	0	0	0	43.9	2.4	0	34.1	0	19.7	100
Lundazi	0	0	8.7	72.4	10.6	0	0	0	8.3	100
Lusangazi	0	0	0	12.8	29.1	0	29.1	16.3	12.8	100
Mambwe	0	0	0	88	0	6	0	0	6	100
Nyimba	0	0	0	13.5	5.2	15.2	15.2	20.4	30.4	100
Petauke	0	0	0	87.6	0.4	0	7.2	0	4.9	100
Sinda	0	0	0	65.4	11.5	0	11.5	11.5	0	100
Vubwi	0	0	0	61.1	31.5	0	7.3	0	0	100

3.1.2 Disability

Table 3.1.6 shows the percentage distribution of Households by Disability, Sex of Head & District in rural Eastern in 2019. Overall, 11.5 percent of the households in rural Eastern have at least one member of the household with a disability. Disaggregated by Sex of household Head, 11.8 percent of female-headed households had a member with a disability compared to 11.2 percent of male-headed households.

Analysed by district, results show that Nyimba (20.6 percent) and Kasenengwa (16 percent) had the largest and second largest shares of households with persons with a disability. Chipangali at 5.7 percent had the smallest share.

Analysed by Sex of Head, Nyimba and Kasenengwa districts still had the highest proportions of household Heads with a disabled member. However, female-headed households in these districts had higher proportions of household Heads with persons living with a disability compared to their male counterparts at 21.8 and 16.7 percent, respectively.

District	Disabled Household Heads		
	Total	Male	Female
Total	11.5	11.2	11.8
Chadiza	9.3	9.7	8.8
Chasefu	6.2	6.5	5.9
Chipangali	5.7	5.5	5.8
Chipata	12.9	11.7	14
Kasenengwa	16	15.2	16.7
Katete	12.2	13.1	11.3
Lumezi	9.4	8.5	10.2
Lundazi	8.9	10.3	7.7
Lusangazi	9.1	8.6	9.5
Mambwe	11.4	8.8	13.7
Nyimba	20.6	19.4	21.8
Petauke	14.5	14.9	14.1
Sinda	11.7	10.2	13.3
Vubwi	11.3	11	11.7

Figure 3.1.4 shows the proportional distribution of household Heads by Disability, Age group, Educational level and Sex, rural Eastern Province 2019. Overall, 18 out of every 100 households in rural Eastern had someone with a disability. Of these households, 14 out of every 100 were male-headed while about 32 out of every 100 were female-headed.

Analysed by age-group, results show that the older the Head of household, the more likely that household was to have someone with a disability. Households headed by persons in the age group 50 years or older were twice as likely to have a person with a disability. Households headed by persons aged 65 years or older had the largest share of persons with a disability at 50.4 percent.

Analysed by sex, results further show that only household Heads aged 20-24 years had the lowest proportion of persons with a disability than female-headed households. Notably, female-headed households were twice as likely to have someone with a disability than male-headed households.

Figure 3.1.4: Proportional Distribution of Household Heads by Disability, Age group, and Sex, Rural Eastern Province, 2019

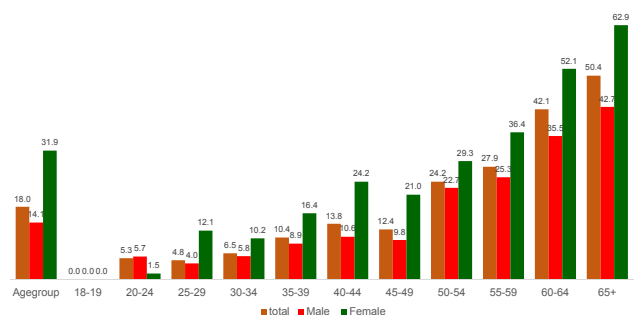
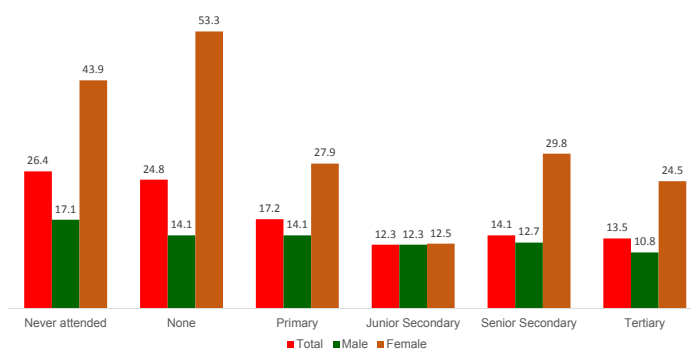


Figure 3.1.5 shows the proportional distribution of Households by Disability, Educational level of Head and Sex, rural Eastern Province 2019. Survey results show that 26 out of every 100 households headed by persons who had never attended school had someone with a disability representing the largest share. Further, almost 23 out of every 100 households headed by persons who had not completed any level of education had someone with a disability. Households headed by persons with junior secondary level of education had the smallest share at 12 out of every 100 households.

Figure 3.1.5: Proportional Distribution of Households by Disability, Educational level and Sex of Head, rural Eastern Province, 2019



Categorised by Sex of Head, female-headed households were twice as likely to have a household member with a disability as male-headed households.

Table 3.1.7 shows the average Monthly Household Income by Sex of Head and District in rural Eastern, 2019. Results show that the average monthly Income for households in rural Eastern was ZMW1, 918.01. Further, average monthly household Income for male-headed households at ZMW2, 100.37 was ZMW828.80 more than that of female-headed households whose average monthly household Income was ZMW1, 271.57.

At district level, Nyimba (ZMW3, 731.17) and Mambwe (ZMW2, 881.15) districts had the highest and second highest average monthly incomes, respectively. Chadiza at ZMW984.82 had the lowest average monthly income.

Disaggregated by Sex of household Head, male-headed households in general earned more than their female counterparts in all the districts. Nonetheless, Nyimba and Mambwe districts, still had the highest average monthly household income regardless of sex of the household Head.

Table 3.1.7: Average Monthly Household Income by Sex, Education level and Age group of household Head by District, Rural Eastern, 2019.

District	Sex of Household Head		
	Total Mean	Male Mean	Female Mean
Total	1,918.01	2,100.37	1,271.57
Chadiza	984.82	1,122.75	517.57
Chasefu	1,536.39	1,625.28	1,007.93
Chipangali	2,210.58	2,489.09	947.91
Chipata	2,597.52	2,815.86	1,907.56
Kasenengwa	1,629.97	1,788.04	1,231.20
Katete	2,202.49	2,436.20	1,541.47
Lumezi	2,029.79	2,339.39	858.34
Lundazi	1,186.93	1,209.77	1,025.28
Lusangazi	1,101.89	1,284.67	240.20
Mambwe	2,881.55	2,972.48	2,667.34
Nyimba	3,731.17	4,171.08	2,320.30
Petauke	2,025.29	2,291.45	1,211.79
Sinda	1,171.70	1,352.49	470.26
Vubwi	1,427.16	1,430.20	1,419.79

Table 3.1.8 shows the average Monthly Household Income by Level of Education completed by Head in rural Eastern Province in 2019. Generally, the higher the Level of Education completed by the household Head, the higher the average monthly household income of that household is likely to be. With an average monthly household Income of ZMW6,046.01; Heads with tertiary education earned the highest level of Income which was 5.8 times as much as that of a household headed by persons who had never attended school. Households headed by persons who had never attended school had the lowest average monthly income at ZMW1,034.55 which is 1.2 times lower than that of households headed by persons who had not completed any level of educational.

Analysed by Sex of Head, results show that male-headed households on average earned higher monthly household Income than female-headed households. Although both male and female-headed households with tertiary education earned the highest monthly household Incomes, male-headed households on averaged earned 1.6 times as much as their female counterparts at ZMW 6,559.76 and ZMW 3,878.46, respectively.

Highest Level Completed by Household Head	Total	Male	Female
Never attended	1,034.55	1,219.12	688.00
No completed any level	1,243.81	1,688.52	65.18
Primary	1,763.06	1,912.04	1,228.66
Junior Secondary	2,200.74	2,116.69	2,747.33
Senior Secondary	3,147.27	3,275.31	1,746.05
Tertiary	6,046.01	6,559.76	3,878.46

Figure 3.1.6 shows the average Monthly Income of a Household Headed by Persons with a Disability in rural Eastern Province in 2019. Survey results show that these households on average earned ZMW 1,637.07 per month.

Disaggregated by Sex of Head, the average monthly household income earned by a male Head with a disability was ZMW393.09 more than the provincial average of ZMW 1,637.07 and 2.3 times as much as the average monthly income earned by a female Head with a disability whose average monthly income was ZMW 757.89.

Figure 3.1.6: Average Monthly Income (ZMW) of a Household Headed by a Person with a Disability, Rural Eastern Province, 2019

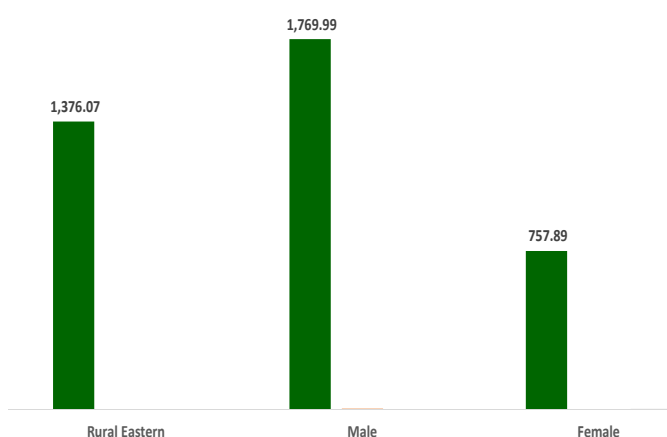


Figure 3.1.7 shows average Monthly Income earned by Disabled Household Heads in rural Eastern Province in 2019.

Overall, the average monthly income earned by a disabled household Heads was ZMW541.94 less than the average monthly income earned by their non-disabled counterparts at ZMW1,918.01.

Analysed by Sex of Head, male-headed households earned more than their female counterparts whether disabled or not at ZMW2,100.37 and ZMW1,769.99, respectively.

Further, non-disabled male-headed households earned more than their disabled male counterparts. This implies that non-disabled male Heads earned ZMW330.38 more than their male disabled counterparts. The pattern was similar among female Heads. Non-disabled female Heads earned ZMW513.68 more than their disabled female counterparts whose average monthly household income was ZMW757.89.

Notably, the widest gap in average monthly household income was more pronounced among females where a disabled female Head earned almost twice as much less than their non-disabled counterparts. Thus disabled female Heads are more likely to be vulnerable than their disabled male counterparts.

Figure 3.1.7: Comparison of Average Monthly Household Income earned between an Able-bodied and differently-abled Household Headed, Rural Eastern Province, 2019

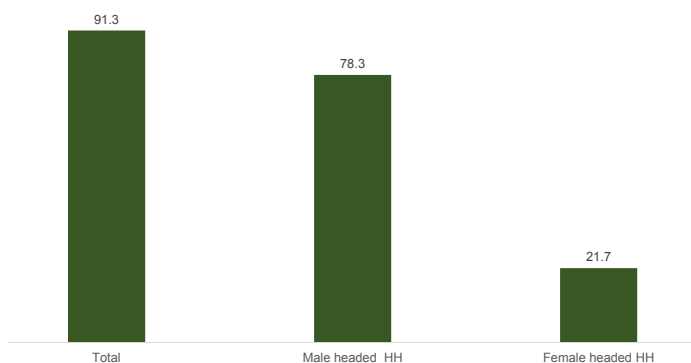


Land Ownership and Use

Figure 3.1.8 shows the overall percentage distribution of Households that Own Land in rural Eastern Province by Sex of the Head in 2019. Results show that 91.3 percent of the households own land

Table 3.1.9 shows the percentage distribution of Households that Own Land by Sex of household Head and Joint ownership in rural Eastern Province in 2019. Results show that 91 percent of the households own land. 40.7 percent of the land owners are male, 16.2 percent are female and 43.1 percent own land jointly.

Figure 3.1.8 Percentage Distribution of Households That Own Land in Rural Eastern Province by Sex of the Head of the Household In 2019



Analyzed by district, Lundazi had the highest percentage of households owning land at 98 percent and Chipangali had the lowest at 82 percent.

Table 3.1.9 Percentage Distribution of Households That Own Land by Sex of Head and Joint ownership in rural Eastern Province In 2019

District		Households owning land	Percentage of households owning land	Male owned	Female owned	Jointly owned
Total	318,570	290,966	91	40.7	16.2	43.1
Chadiza	15,982	15,131	95	41.7	18.0	40.3
Chasefu	23,728	22,447	95	49.8	7.4	42.8
Chipangali	30,585	24,950	82	53.3	14.8	31.9
Chipata	26,410	22,700	86	45.8	17.8	36.4
Kasenengwa	25,643	23,874	93	26.1	19.6	54.3
Katete	26,131	24,655	94	56.4	25.1	18.5
Lumezi	23,602	21,549	91	36.9	15.1	48.0
Lundazi	27,270	26,602	98	38.4	5.3	56.3
Lusangazi	524	479	91	34.0	14.3	51.6
Mambwe	12,515	11,590	93	28.9	22.4	48.7
Nyimba	15,415	13,545	88	30.7	14.2	55.1
Petauke	47,286	42,634	90	31.7	17.3	51.0
Sinda	35,792	33,448	93	43.9	18.2	37.9
Vubwi	7,687	7,363	96	40.5	19.3	40.2

Table 3.1.10 shows the average Area of Land Owned by Type of Use by District in rural Eastern Province over the last 5 years. Overall, results show that a household in rural Eastern Province, on average, owned 3.61 hectares of land. Of that average land owned by a household, 18.6 percent was specifically used for growing trees, 57.0 percent for crop production and 24.4 percent set aside for other uses.

Analysed by district, results show that a household in Chipangali and Chipata districts, on average, owned the largest piece of land at 8.01 and 6.82 hectares, respectively. However, a household in Sinda, on average, owned the smallest piece of land at 1.92 hectares.

Further analysis on how land owned was used by district, results show that Chipata and Lundazi districts had the highest proportions of households that specifically allocated their land to growing trees at 69.9 and 36.3 percent, respectively. The least being Chadiza at 0.2 percent.

Analysed by allocation of land owned to crop production by district, results show that Chadiza and Kasenengwa had the highest proportions of households allocating their land to crop production at 89.8 and 89.4 percent, respectively. Chipata District had the lowest proportion at 23.2 percent.

By allocation of land owned to other uses, results show that Chipangali District had the highest proportion at 53.7 percent, followed by Lusangazi and Lumezi that differed marginally at 36.8 and 36.3 percent, respectively. Chipata at 6.9 percent had the lowest proportion of households that allocated their land to other uses.

Table 3.1.10: Average Land Owned and the Percentage Share Used Specifically To Grow Trees in Rural Eastern Province in the Last 5 Years

District	Area Owned	Area Used Specifically for Growing Trees		Crop Production		Other uses	
	Hectares	Hectares	Percent	Hectares	Percent	Hectares	Percent
Total	3.61	0.67	18.6	2.06	57.0	0.88	24.4
Chadiza	2.15	0.00	0.2	1.93	89.8	0.22	10.0
Chasefu	2.98	0.08	2.6	2.16	72.4	0.74	25.0
Chipangali	8.01	0.76	9.5	2.95	36.8	4.30	53.7
Chipata	6.82	4.76	69.9	1.58	23.2	0.47	6.9
Kasenegwa	2.66	0.07	2.4	2.38	89.4	0.22	8.2
Katete	2.50	0.10	3.8	1.66	66.5	0.74	29.7
Lumezi	5.20	0.49	9.4	2.83	54.3	1.89	36.3
Lundazi	4.02	1.46	36.3	2.01	50.0	0.55	13.7
Lusangazi	2.51	0.04	1.6	1.55	61.6	0.92	36.8
Mambwe	2.45	0.33	13.5	1.45	59.2	0.67	27.3
Nyimba	2.30	0.24	10.6	1.49	64.6	0.57	24.9
Petauke	2.20	0.08	3.8	1.85	84.0	0.27	12.2
Sinda	1.92	0.05	2.6	1.67	86.8	0.20	10.6
Vubwi	4.41	0.13	3.0	3.17	71.8	1.11	25.2

The survey collected information from households on total land area (ha) used for growing trees (planted or natural forest or nursery)- forest management, excluding fallow area and areas used for fruit trees and agroforestry by district in rural Eastern Province by extent of forest cover. Results in table 3.1.11 show that at national level, an average of 0.67 hectares of land was used for growing trees in rural Eastern Province. Results further show that for those households that lived in 0-30 percent forest cover owned an average land size of 3.95 hectares and used 0.91 hectares for the purpose of growing trees. Those in 31-69 percent forest cover owned an average land size of 2.98 hectares and used 0.14 hectares of land specifically for growing trees. Those living in 70 percent and/or more of forest cover had an average of 2.49 hectares and used an average of 0.14 hectares for growing trees.

By sex, male headed households owned an average of 3.59 hectares of land and used 0.36 hectares of that land to grow trees compared to Female headed households who had an average of 3.67 hectares of land and used 1.81 hectares to grow trees showing that female headed households used a substantially larger area of land for the purpose of planting trees.

Table 3.1.11: Proportion of total land (ha) used for growing trees by Forest cover, sex of household head by Province 2019.

		Area Owned	Area used specifically for growing trees (hectares)
Forest Cover Category	Total	3.61	0.67
	0-30% Forest Cover	3.95	0.91
	31-69% Forest Cover	2.98	0.14
	70%+ Forest Cover	2.49	0.14
Sex of head	Male	3.59	0.36
	Female	3.67	1.81

Figure 3.1.10 shows the average land area owned and used specifically for growing trees by district in rural Eastern Province in 2019. Results show that households in Chipangali, on average, had the largest piece of land at 8.01 hectares, followed by Chipata (6.82 hectares) and Lumezi (5.20 hectares) with the Sinda having the least at 1.92 hectares. The results further show that households in Chipata used the largest land area for planting trees at an average of 4.76 hectares followed by Lundazi and Chipangali at 1.46 and 0.76 hectares respectively.

Figure 3.1.10: Average Land Area Owned and Used specifically for Growing Trees by District, Rural Eastern Province, 2019.

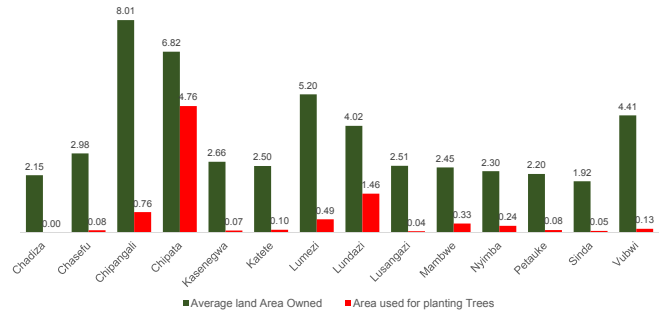


Figure 3.1.11 shows the average land area owned and used specifically for growing trees by age group of household head in rural Eastern Province in 2019. Results show that the age group 60-64 years owned the largest average piece of land (10.00 hectares), followed by the age group 55-59 years (5.23 hectares) and 45-49 years (4.44 hectares). Results further reveal that the age group 60-64 used the largest piece of land specifically for planting trees at 7.32 hectares followed by the groups 45-49 and 65 or older at 1.22 and 0.31 hectares, respectively.

Figure 3.1.11: Average land area owned and used specifically for growing trees by Age-group of Household head, Rural Eastern Province, 2019.

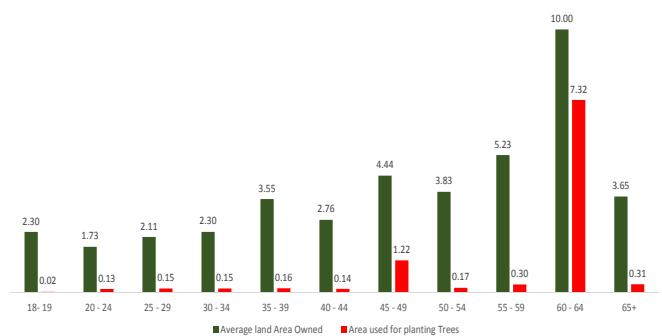
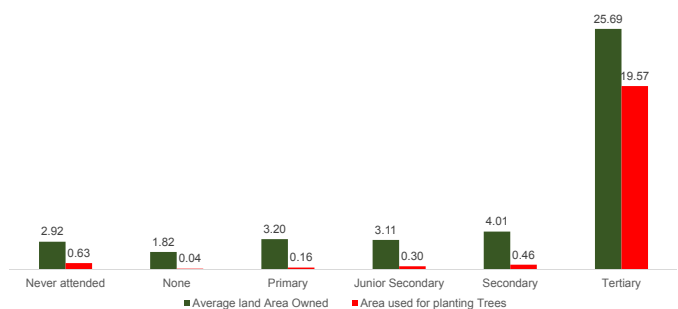


Figure 3.1.12 shows the average land area owned and used specifically for growing trees by level of education of household head in rural Eastern Province in 2019. Results show that households whose heads had tertiary level education owned significantly larger portions of land and used the largest piece of land specifically for growing trees compared to households headed by persons with other levels of education.

Figure 3.1.12: Average land area owned and used specifically for growing trees by Level of Education of Household Head, Rural Eastern Province, 2019.



Chapter 4: Crop Production and Management Practices

Crop management begins with the sowing of seeds, continues with crop maintenance during growth and development, and ends with crop harvest, storage, and distribution (Tivy, 1990).

4.1 Area and Quantity of Seed Planted

Table 4.1.1 shows the area and quantity planted to maize seed by district during the 2017/18 Agricultural season in rural parts of Eastern Province.

Results show that the total area planted to Maize seed in rural Eastern Province was 302,657 hectares. The average area planted per household was 1.08 hectares at provincial level.

A total quantity of 9,776,909 Kgs of Maize seed was planted in rural Eastern Province. The average quantity of seed planted per household was 35.06 Kgs.

At district level, Chipangali had the biggest area planted to Maize seed at 37,227 hectares. The average area planted to maize per household in Chipangali District was 1.34 hectares.

Katete District reported the biggest quantity of Maize seed planted at 1,586,930 Kgs. On average, each household planted 68.8 Kgs of maize seed.

District	Area Planted (Hectares)	Average Area Planted per Household (Ha)	Quantity of Seed Planted (Kg)	Average Quantity of Seed Planted per Household (Kg)
Chadiza	4,409	1.01	1,376,941	36.81
Chasefu	22,687	1.11	710,492	34.76
Chipangali	37,227	1.34	728,216	26.18
Chipata	5,538	0.72	502,967	23.36
Kasenengwa	26,530	1.16	510,997	22.43
Katete	22,024	0.95	1,586,930	68.84
Lumezi	24,980	1.28	889,643	45.75
Lundazi	21,107	0.96	898,155	40.79
Lusangazi	429	0.90	13,126	27.67
Mambwe	8,048	0.73	581,916	52.58
Nyimba	13,630	1.09	642,291	53.78
Petauke	52,589	1.21	581,916	52.58
Sinda	30,077	0.91	701,202	21.26
Vubwi	13,384	1.77	99,696	39.70
Total	302,657	1.08	9,776,909	35.06

Table 4.1.2 shows the average area and quantity planted to Soya bean seed by district during the 2017/18 Agricultural Season in rural Eastern Province.

Results show that the total area planted to Soya bean seed in rural Eastern Province was 74,479 hectares. The average area planted to Soya bean seed per household was 0.79 hectares at provincial level.

A total quantity of 4,632,375 Kgs of Soya bean seed was planted in rural Eastern Province. The average quantity of seed planted per household was 49.0 Kgs.

At district level, Lundazi had the largest area planted to Soya bean with 14,510 hectares. The average area planted to Soya beans per household in Lundazi was 0.82 hectares.

Lundazi District reported the largest quantity of Soya bean seed planted at 1,109,742 Kgs. On average, each household planted 62.8 Kgs of Soya bean seed.

Table 4.1.2: Area and Quantity Planted to Soya bean Seed by District, 2017/18 Agricultural Season.				
District	Area Planted (Hectares)	Average Area Planted per Household (Ha)	Quantity of Seed Planted (Kg)	Average Quantity of Seed Planted (Kg)
Chadiza	7,191	0.74	7,045	45.23
Chasefu	6,959	0.84	459,163	55.73
Chipangali	9,195	0.89	314,352	30.45
Chipata	4,719	0.55	205,239	23.75
Kasenengwa	2,971	0.64	111,385	24.18
Katete	7,302	0.67	44,999	40.90
Lumezi	9,173	1.19	522,519	67.59
Lundazi	14,510	0.82	1,109,742	62.79
Lusangazi	3	0.50	144	25.00
Mambwe	114	0.72	4,386	27.71
Nyimba	103	0.56	16,308	87.84
Petauke	1,613	0.57	537,951	188.86
Sinda	4,942	0.59	179,566	21.36
Vubwi	5,683	1.08	289,577	55.21
Total	74,479	0.79	4,632,375	48.96

4.2 Tillage Method Used

Tillage is used to prepare the soil prior to sowing crops. It involves applying power to break up and rearrange the entire top soil structure. The primary aim is not only to destroy weeds and pests but also important for incorporating, redistributing or releasing nutrients and making the soil texture suitable for seed sowing, seed germination and for easy penetration of seedling roots.

Tables 4.2.1 and 4.2.2 shows the number and percentage distribution of households practicing various types of tillage methods by district during the 2017/18 Agricultural season.

4.2.1 Conventional Hand Hoeing

Conventional Hand Hoeing is a tillage method where a hand-hoe is used to turn the soil in the field.

Results of the survey show that in rural Eastern Province, 20.7 percent (57,750 households) used conventional hand hoeing. At district level, 29.2 percent (5,967 households) of the households in Chasefu used conventional hand hoeing as the main tillage method while only 8.9 percent (1,962 households) in Lundazi used conventional hand hoeing as the main tillage method.

4.2.2 Planting Basins (Potholes)

Planting basins (potholes) is a land preparation practice where the crop is planted in planting holes or basins. This practice does not involve use of plough or conventional plough.

According to the results of the survey, only an estimated 2.0 percent (1,430 households) used planting basins (potholes) in rural Eastern Province as the main tillage method.

At district level, 12.9 percent (1,430 households) of the households in Mambwe used planting basins (potholes) as the main tillage method while less than one (1) percent of the households in Katete, Petauke and Sinda districts used planting basins (potholes) as their main tillage method.

4.2.3 Zero Tillage

Zero tillage is a land preparation method where the land is left undisturbed, with the exception of planting stations.

An estimated 3.9 percent (10,837 households) used Zero tillage in rural Eastern Province as the main tillage method.

At district level 26.9 percent (2,896 households) of the households in Mambwe used Zero tillage as the main tillage method. Less than one (1) percent of the households in Chadiza, Chasefu, Chipangali, Chipata and Katete districts used Zero tillage as the main tillage method.

4.2.4 Ploughing

Ploughing is a land preparation method that involves turning the soil with a plough. This could either be done using a tractor or oxen.

An estimated 33.7 percent (94,214 households) used Ploughing in rural Eastern Province as the main tillage method.

At district level 71.2 percent (13,064 households) of the households in Petauke used Ploughing as the main tillage method. Only 1.6 percent of the households in Chipangali reported using Ploughing as their main tillage method.

Table 4.2.1: Number of Households by Type of Tillage Method Practiced, by District, 2017/18 Agricultural Season

District	Total	Conventional Hand Hoeing	Planting Basins (Pot-holes)	Zero Tillage	Ploughing	Ripping	Ridging	Bunding
Chadiza	14,320	1,640	137	-	9,407	127	3,008	-
Chasefu	20,441	5,967	389	-	2,942	590	10,554	-
Chipangali	27,816	2,945	530	105	455	1,980	17,801	-
Chipata	21,527	5,790	233	76	3,806	622	11,001	-
Kasenengwa	22,778	4,269	227	301	4,827	910	12,243	-
Katete	23,129	3,936	220	220	5,502	1,053	12,198	-
Lumezi	19,447	6,839	820	1,366	4,224	820	5,378	-
Lundazi	22,016	1,962	426	306	4,883	1,999	12,411	30
Lusangazi	474	94	7	49	170	13	140	-
Mambwe	11,067	3,209	1,430	2,896	435	156	2,820	122
Nyimba	12,452	3,922	866	2,647	2,401	709	1,722	186
Petauke	43,633	5,376	-	2,039	31,064	669	4,484	-
Sinda	32,981	10,359	277	832	15,678	958	4,600	277
Vubwi	7,548	1,442	114	-	4,420	183	1,389	-
Total	279,630	57,750	5,676	10,837	94,214	10,789	99,748	615

4.2.5 Ripping

Ripping is a form of minimum tillage where land is left undisturbed, with the exception of planting lines, which are ripped with a ripper.

An estimated 3.9 percent (10,789 households) used Ripping in rural Eastern Province as the main tillage method.

At district level, 9.1 percent (1,999 households) of the households in Lundazi used Ripping as the main tillage method. Less than one (1) percent of the households in Chadiza reported using Ripping as their main tillage method.

4.2.6 Ridging

Ridging is a form of land preparation that involves making ridges with a ridger or hand-hoe which is done before planting or sometimes during the rainy season.

An estimated 35.7 percent (99,148 households) used Ridging in rural Eastern Province as the main tillage method.

At district level 64.0 percent (17,801 households) of the households in Chipangali used Ridging as the main tillage method. Only 10.3 percent (4,484 households) of the households in Petauke reported using Ridging as their main tillage method.

4.2.7 Bunding

Bunding is a form of land preparation that involves making mounds with a hand-hoe.

An estimated 0.2 percent (615 households) used Bunding in rural Eastern Province as the main tillage method. At district level bunding was not commonly used as a tillage method.

District	Total	Conventional Hand Hoeing	Planting Basins (pot-holes)	Zero Tillage	Ploughing	Ripping	Ridging	Bunding
Chadiza	100.0	11.5	1.0	0.0	65.7	.9	21.0	0.0
Chasefu	100.0	29.2	1.9	0.0	14.4	2.9	51.6	0.0
Chipangali	100.0	10.6	1.9	.4	16.0	7.1	64.0	0.0
Chipata	100.0	26.9	1.1	.4	17.7	2.9	51.1	0.0
Kasenengwa	100.0	18.7	1.0	1.3	21.2	4.0	53.7	0.0
Katete	100.0	17.0	.9	.9	23.8	4.6	52.7	0.0
Lumezi	100.0	35.2	4.2	7.0	21.7	4.2	27.7	0.0
Lundazi	100.0	8.9	1.9	1.4	22.2	9.1	56.4	0.1
Lusangazi	100.0	19.9	1.6	10.4	35.9	2.8	29.5	0.0
Mambwe	100.0	29.0	12.9	26.2	3.9	1.4	25.5	1.1
Nyimba	100.0	31.5	7.0	21.3	19.3	5.7	13.8	1.5
Petauke	100.0	12.3	0.0	4.7	71.2	1.5	10.3	0.0
Sinda	100.0	31.4	.8	2.5	47.5	2.9	13.9	0.8
Vubwi	100.0	19.1	1.5	0.0	58.6	2.4	18.4	0.0
Total	100.0	20.7	2.0	3.9	33.7	3.9	35.7	0.2

4.3 Number and Percentage of Households that tilled before the rains.

Table 4.3.1 shows the number and percentage of households tilling Maize fields before and during the rainy season in the 2017/18 Agricultural Season.

Results show that 25.9 percent (72,302 households) of the households tilled their Maize fields before the rains. At district level, 55.3 percent (6,123 households) of the households in Mambwe District tilled their Maize fields before the onset of the rains. Only 5.8 percent (1,181) of the households in Chasefu District tilled their Maize fields before the rains

Table 4.3.1: Number and Percentage of Households that Tilled Maize Fields Before and During the Rainy Season in the 2017/18 Agricultural Season.

District	Total	Percent	Before the Rainy Season		During the Rainy Season	
			Number of Households	Percent	Number of Households	Percent
Chadiza	14,320	100.0	3,208	22.4	11,112	77.6
Chasefu	20,441	100.0	1,181	5.8	19,260	94.2
Chipangali	27,816	100.0	11,715	42.1	16,101	57.9
Chipata	21,527	100.0	86,78	40.3	12,849	59.7
Kasenengwa	22,778	100.0	9,510	41.8	13,268	58.2
Katete	2,3129	100.0	4,472	19.3	1,8657	80.7
Lumezi	19,447	100.0	7,156	36.8	12,291	63.2
Lundazi	22,016	100.0	3,911	17.8	18,105	82.2
Lusangazi	474	100.0	118	24.9	356	75.1
Mambwe	11,067	100.0	6,123	55.3	4,944	44.7
Nyimba	12,452	100.0	3,156	25.3	9,296	74.7
Petauke	43,633	100.0	6,262	14.4	37,371	85.6
Sinda	32,981	100.0	5,243	15.9	27,739	84.1
Vubwi	7,545	100.0	1,570	20.8	5,978	79.2
Total	279,630	100.0	72,302	25.9	207,328	74.1

Table 4.3.2 below shows the number and percentage of households that tilled Soya bean fields before and during the rainy season in the 2017/18 Agricultural Season.

Survey results show that 13.5 percent (12,764 households) of the households tilled their Soya bean fields before the rains. At district level, 25.9 percent (1,999 households) of the households in Lumezi District tilled their Soya bean fields before the onset of the rains. The results show that no households in Lusangazi, Mambwe and Nyimba districts tilled their Soya bean fields before the rains

Table 4.3.2 Number and Percentage of Households that Tilled Soya bean Fields Before and During the Rainy Season during the 2017/18 Agricultural Season.

District	Total	Percent	Before the Rainy Season		During the Rainy Season	
			Number of Households	Percent	Number of Households	Percent
Chadiza	9,662	100.0	682	7.1	8,980	92.9
Chasefu	8,239	100.0	675	8.2	7,564	91.8
Chipangali	10,324	100.0	2,116	20.5	8,208	79.5
Chipata	8,643	100.0	1,835	21.2	6,809	78.8
Kasenengwa	4,607	100.0	1,170	25.4	3,437	74.6
Katete	10,879	100.0	983	9.0	9,897	91.0
Lumezi	7,731	100.0	1,999	25.9	5,731	74.1
Lundazi	17,769	100.0	2,253	12.7	15,517	87.3
Lusangazi	6	100.0	-	-	6	100.0
Mambwe	158	100.0	-	-	158	100.0
Nyimba	186	100.0	-	-	186	100.0
Petauke	2,848	100.0	197	6.6	2,652	93.1
Sinda	8,406	100.0	681	5.6	7,726	91.9
Vubwi	5,245	100.0	174	3.3	5,071	96.7
Total	94,704	100.0	12,764	4.6	81,940	86.5

4.4 Time of Weeding

4.4.1 Maize Fields

Table 4.4.1 shows the percentage distribution of households by time of first weeding of Maize fields by district during the 2017/18 Agricultural season. Results of the survey show that 14.4 percent of the households in rural Eastern Province weeded their Maize fields within one (1) week of planting. Fifty two point three (52.3%) percent of the households did their weeding after two weeks of planting. Twenty five point two (25.2%) of the households weeded their Maize fields after three weeks of planting while only 8.1 percent did their weeding after three weeks of planting.

At district level, 29.5 percent of the households in Lusangazi District weeded their Maize fields within one week of planting while 60.1 percent of households in Lundazi did the weeding after two weeks of planting. Thirty percent (30.0%) of the households in Katete District did the weeding after three weeks of planting while 16.3 percent of the households in Sinda District did the weeding after four weeks of planting.

District	Time of Weeding after planting									
	Total		Within one week		After two weeks		After three weeks		After four weeks	
	Number	Per-cent	Number	Per-cent	Number	Per-cent	Number	Per-cent	Number	Per-cent
Total	279,630	100.0	40,136	14.4	146,232	52.3	70,515	25.2	22,747	8.1
Chadiza	14,320	100.0	1,610	11.2	8,308	58.0	3,477	24.3	925	6.5
Chasefu	20,441	100.0	3,188	15.6	10,677	52.2	4,434	21.7	2,142	10.5
Chipangali	27,816	100.0	2,706	9.7	16,169	58.1	7,101	25.5	,840	6.6
Chipata	21,527	100.0	3,750	17.4	11,094	51.5	5,384	25.0	1,299	6.0
Kasenengwa	22,778	100.0	4,072	17.9	10,942	48.0	5,917	26.0	847	8.1
Katete	23,129	100.0	946	4.1	13,579	58.7	6,929	30.0	1,675	7.2
Lumezi	19,447	100.0	1,975	10.2	11,036	56.7	4,850	24.9	1,586	8.2
Lundazi	22,016	100.0	2,411	11.0	13,226	60.1	5,564	25.3	814	3.7
Lusangazi	474	100.0	140	29.5	160	33.7	127	26.8	48	10.0
Mambwe	11,067	100.0	2,806	25.4	5,364	48.5	2,479	22.4	418	3.8
Nyimba	12,452	100.0	3,929	31.6	4,889	39.3	2,726	21.9	909	7.3
Petauke	43,633	100.0	8,861	20.3	21,627	49.6	10,309	23.6	2,836	6.5
Sinda	32,981	100.0	2,495	7.6	15,552	47.2	9,565	29.0	5,369	16.3
Vubwi	7,548	100.0	1,246	16.5	3,609	47.8	1,654	21.9	1,039	13.8

4.4.2 Soya bean Fields

Table 4.4.2 shows the distribution of households by time of first weeding of Soya bean fields by district during the 2017/18 Agricultural season. Results of the survey show that 12.4 percent of the households in rural Eastern Province weeded their Soya bean fields within one (1) week of planting. An estimated 48.4 percent of the households did their weeding after two weeks of planting. Thirty point two (30.2%) of the households weeded their Soya bean fields after three weeks of planting while only 9.1 percent did their weeding after three weeks of planting.

At district level, all the households that reported to have grown soya beans in Lusangazi District weeded their Soya bean fields within one week of planting while 60.5 percent of households in Chadiza did the weeding after two weeks of planting. Seventy seven point one (77.1%) of the households in Mambwe District did the weeding after three weeks of planting while 22.9 percent of the households in Mambwe did the weeding after four (4) weeks of planting.

Table 4.4.2 Distribution of Households by Time of First Weeding of Soya bean Fields by District during the 2017/18 Agricultural Season.

District	Time of Weeding after planting									
	Total		Within one week		After two weeks		After three weeks		After four weeks	
	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent
Total	94,704	100.0	11,707	12.4	45,800	48.4	28,565	30.2	8,632	9.1
Chadiza	9,662	100.0	1,052	10.9	5,844	60.5	2,114	21.9	652	6.7
Chasefu	8,239	100.0	421	5.1	4,033	48.9	,806	4.1	978	11.9
Chipangali	10,324	100.0	1,357	13.1	6,069	58.8	2,507	24.3	392	3.8
Chipata	8,643	100.0	1,976	22.9	3,497	40.5	2,376	27.5	795	9.2
Kasenengwa	4,607	100.0	717	15.6	2,224	48.3	1,174	25.5	492	10.7
Katete	10,879	100.0	1,202	11.1	4,334	39.8	3,864	35.5	1,478	13.6
Lumezi	7,731	100.0	973	12.6	4,123	53.3	1,867	24.2	767	9.9
Lundazi	17,769	100.0	1,796	10.1	9,139	51.4	6,122	34.5	712	4.0
Lusangazi	6	100.0	6	100.0	-	-	-	-	-	-
Mambwe	158	100.0	-	-	-	-	122	77.1	36	22.9
Nyimba	186	100.0	47	25.6	-	-	138	74.4	-	-
Petauke	2,848	100.0	489	17.2	1,180	41.4	983	34.5	197	6.9
Sinda	8,406	100.0	895	10.6	3,000	35.7	3,088	36.7	1,424	16.9
Vubwi	5,245	100.0	775	14.8	2,357	44.9	1,404	26.8	709	13.5

4.5 Distribution of Households Applying Manure to Crop

4.5.1 Maize Crop

Table 4.5.1 shows the distribution of households applying manure to maize crop by districts in the 2017/18 Agricultural season. Out of the estimated households (279,630) that grew maize, only 11.3 percent of the households applied manure to the maize crop. At district level, 13.7 percent of households in Kasenengwa applied manure while only 3.1 percent in Lusangazi District applied manure to maize crop.

Table 4.5.1: Distribution of Households Applying Manure to Maize Crops by District, 2017/18 Agricultural Season.

District	Distribution of Households Applying Manure					
	Total		Yes		No	
	Number	Percent	Number	Percent	Number	Percent
Chadiza	14,320	100.0	1,795	12.5	12,525	87.5
Chasefu	20,441	100.0	570	2.8	19,871	97.2
Chipangali	27,816	100.0	2,623	9.4	25,193	90.6
Chipata	21,527	100.0	2,587	12.0	18,940	88.0
Kasenengwa	22,778	100.0	3,130	13.7	19,648	86.3
Katete	23,129	100.0	3,095	13.4	20,034	86.6
Lumezi	19,447	100.0	2,278	11.7	17,169	88.3
Lundazi	22,016	100.0	2,733	12.4	19,284	87.6
Lusangazi	474	100.0	15	3.1	460	96.9
Mambwe	11,067	100.0	820	7.4	10,247	92.6
Nyimba	12,452	100.0	1,695	13.6	10,757	86.4
Petauke	43,633	100.0	5,052	11.6	38,581	88.4
Vubwi	7,548	100.0	675	8.9	6,873	91.1
Total	279,630	100.0	31,693	11.3	247,938	88.7

4.5.2 Soya bean crop

Table 4.5.2 shows the distribution of households applying manure to soya bean crop by district in the 2017/18 Agricultural season. Out of an estimated 94,704 households that grew soya beans, only 2.7 percent of the households applied manure to the soya bean crop. At district level, no households in Chasefu, Chadiza, Lumezi, Lundazi, Lusangazi Mambwe, Nyimba and Petauke districts reported having applied manure to soya bean crop.

Table 4.5.2: Distribution of Households Applying Manure to Soya bean Crop by District, 2017/18 Agricultural Season.

District	Distribution of Households Applying Manure					
	Total		Yes		No	
	Number	Percent	Number	Percent	Number	Percent
Chadiza	9,662	100.0	788	8.2	8,874	91.8
Chasefu	8,239	100.0	-	0.0	8,239	100.0
Chipangali	10,324	100.0	362	3.5	9,962	96.5
Chipata	8,643	100.0	282	3.3	8,362	96.7
Kasenengwa	4,607	100.0	39	.8	4,568	99.2
Katete	10,879	100.0	403	3.7	10,477	96.3
Lumezi	7,731	100.0	-	0.0	7,731	100.0
Lundazi	17,769	100.0	-	0.0	17,769	100.0
Lusangazi	6	100.0	-	0.0	6	100.0
Mambwe	158	100.0	-	0.0	158	100.0
Nyimba	186	100.0	-	0.0	186	100.0
Petauke	2,848	100.0	-	0.0	2,848	100.0
Sinda	8,406	100.0	555	6.6	7,852	93.4
Vubwi	5,245	100.0	132	2.5	5,113	97.5
Total	94,704	100.0	2,560	2.7	92,144	97.3

4.6 Lime Application

Lime is a valuable soil amendment that helps plants flourish by raising soil pH. A low soil pH, or acidic soil, is often the underlying problem when it comes to many common farmland problems. But even with a healthy farmland, liming can improve soil quality, helping crops to flourish.

Adding lime to soil, has many benefits. Because liming improves the quality of the soil, crops can reap all the benefits of a healthy soil environment. At a neutral pH, existing soil nutrients are unlocked, and readily available for plant uptake. Neutral soil pH allows microbes and worms to prosper, organic matter to break down, and soil to truly become the living environment it desires to be. In addition, fertilizer is more effective at a neutral pH. When acidic soil is corrected, plants are greener, stronger, use less water, and are more able to resist diseases.

Lime is also an important source of calcium for crops. Liming a field is a great way to improve the soil, and the overall health of crops

4.6.1 Maize fields

Table 4.6.1 shows the distribution of households applying lime to maize crop by district in the 2017/18 Agricultural season. Out of the estimated 279,630 households that grew maize, only 1.2 percent applied lime to maize crop. At district level, no households in Chasesfu, Lusangazi Mambwe, Petauke, Sinda and Vubwi districts reported having applied lime to maize.

District	Distribution of Households Applying Lime to Maize Fields					
	Total		Yes		No	
Chadiza	14,320	100.0	10	.1	14,309	99.9
Chasesfu	20,441	100.0	-	0.0	20,441	100.0
Chipangali	27,816	100.0	212	.8	27,604	99.2
Chipata	21,527	100.0	357	1.7	21,170	98.3
Kasenengwa	22,778	100.0	678	3.0	22,100	97.0
Katete	23,129	100.0	220	0.9	22,910	99.1
Lumezi	19,447	100.0	1,203	6.2	18,244	93.8
Lundazi	22,016	100.0	276	1.3	21,740	98.7
Lusangazi	474	100.0	-	0.0	474	100.0
Mambwe	11,067	100.0	-	0.0	11,067	100.0
Nyimba	12,452	100.0	415	3.3	12,037	96.7
Petauke	3,633	100.0	16	.0	43,617	100.0
Sinda	32,981	100.0	-	0.0	32,981	100.0
Vubwi	7548	100.0	0	0.0	7548	100.0
Total	279,630	100.0	3,386	1.2	276,244	98.8

4.6.2 Soya bean

Table 4.6.2 shows the distribution of households applying lime to soya beans by district in the 2017/18 Agricultural season. Out of an estimated 94,704 households that grew soya beans, only 0.7 percent of the households applied lime to soya beans. At district level, no households in Chasesfu, Chipata, Kasenengwa, Katete, Lumezi, Lundazi, Lusangazi Mambwe, Nyimba and Petauke districts reported having applied lime to soya beans.

Table 4.6.2: Distribution of Households Applying lime to Soya beans by District, 2017/18 Agricultural Season.

District	Distribution of Households Applying Lime to Soya bean Fields					
	Total		Yes		No	
	Number	Percent	Number	Percent	Number	Percent
Chadiza	9,662	100.0	136	1.4	9,526	98.6
Chasefu	8,239	100.0	-	0.0	8,239	100.0
Chipangali	10,324	100.0	181	1.8	10,143	98.2
Chipata	8,643	100.0	-	0.0	8,643	100.0
Kasenengwa	4,607	100.0	-	0.0	4,607	100.0
Katete	10,879	100.0	-	0.0	10,879	100.0
Lumezi	7,731	100.0	-	0.0	7,731	100.0
Lundazi	17,769	100.0	-	0.0	17,769	100.0
Lusangazi	6	100.0	-	0.0	6	100.0
Mambwe	158	100.0	-	0.0	158	100.0
Nyimba	186	100.0	-	0.0	186	100.0
Petauke	2,848	100.0	-	0.0	2,848	100.0
Sinda	,406	100.0	277	3.3	8,129	96.7
Vubwi	5,245	100.0	69	1.3	5,176	98.7
Total	94,704	100.0	664	.7	94,040	99.3

4.7 Percentage Distribution of Households by Method of Disposal of Maize Crop Residues by District in Rural Eastern Province, 2017-18 Agriculture Season

4.7.1 Maize Crop Residues

Table 4.7.1 shows the percentage distribution of households by mode a disposal of most of the maize crop residues in rural Eastern Province during the 2017-18 Agricultural Season. Overall, results show that 78.5 percent of the households left most of the maize crop residues in the field while 11.4 percent of the households burned them. At district level, 89.6 percent of the households in Petauke District left the maize crop residues in the fields, 21.8 percent in Chadiza burned them, 15.4 and 15.1 percent in Sinda and Lundazi districts fed to animals in the field, respectively

Table 4.7.1: Percentage Distribution of Households by Mode of Disposing most of the Maize Crop Residues by District from the 2017/18 Agricultural Season.

District	Mode of Disposing most of the Maize crop residues from the 2017/18 Season						
	Total Number of Households Reporting	Burned them	Left them in the fields	Collected for animal feed	Fed to animals in field	Threw them away	Gave away
Chadiza	14,320	21.8	60.6	2.7	14.8	0.0	0.0
Chasefu	20,441	15.1	70.8	.9	13.2	0.0	0.0
Chipangali	27,816	12.3	77.8	.7	9.2	0.0	0.0
Chipata	21,527	18.6	75.2	1.3	4.1	.8	0.0
Kasenengwa	22,778	11.3	79.5	.2	8.3	.8	0.0
Katete	23,129	9.9	77.4	1.7	10.9	0.0	0.0
Lumezi	19,447	16.2	77.2	1.8	4.2	.5	0.0
Lundazi	22,016	13.1	69.3	2.5	15.1	0.0	0.0
Lusangazi	474	15.4	80.7	0.0	4.0	0.0	0.0
Mambwe	11,067	13.7	84.5	0.0	1.7	0.0	0.0
Nyimba	12,452	10.4	87.7	0.0	1.9	0.0	0.0
Petauke	43,633	4.5	89.6	.5	5.0	.5	0.0
Sinda	32,981	2.7	81.7	.2	15.4	0.0	0.0
Vubwi	7,548	20.0	74.5	.2	5.2	0.0	0.0
Total	279,630	11.4	78.5	1.0	8.9	.2	0.0

4.7.2 Soya bean Crop Residues

Table 4.7.2 shows the percentage distribution of households by mode of disposal of most of the Soya bean crop residues in rural Eastern Province in the 2017-18 Agriculture season. Results show that 58.1 percent of the households left most of the Soya bean crop residues in the field while 24.1 percent of the households burned them. At district level, all the households interviewed in Petauke District left the soya bean crop residues in the fields.

Table 4.7.2: Percent Distribution of Households by Mode of Disposing most of the Soya bean Crop Residues by District from the 2017/18 Season.

District	Mode of Disposing most of the soya bean crop residues from the 2017/18 Season						
	Number of Households Reporting	Burned them	Left them in the fields	Collected for animal feed	Fed to animals in field	Threw them away	Gave away
Chadiza	662	18.5	54.6	10.7	6.8	9.5	0.0
Chasefu	8,239	40.8	49.4	2.2	2.2	5.3	0.0
Chipangali	10,324	23.4	59.2	4.5	8.3	4.5	0.0
Chipata	8,643	22.3	49.3	8.0	3.0	17.4	0.0
Kasenengwa	4,607	13.2	81.1	0.0	2.4	3.3	0.0
Katete	10,879	9.4	79.8	2.0	1.3	7.5	0.0
Lumezi	7,731	28.2	51.0	2.3	4.6	13.9	0.0
Lundazi	17,769	43.8	39.7	2.6	3.6	9.5	.8
Lusangazi	6	100.0	0.0	0.0	0.0	0.0	0.0
Mambwe	158	77.1	22.9	0.0	0.0	0.0	0.0
Nyimba	186	0.0	100.0	0.0	0.0	0.0	0.0
Petauke	2,848	0.0	86.2	0.0	6.9	6.9	0.0
Sinda	8,406	4.0	83.8	0.0	12.1	0.0	0.0
Vubwi	5,245	24.1	41.2	15.1	3.7	16.0	0.0
Total	94,704	24.1	58.1	4.2	4.9	8.5	.1

4.7.3 Sunflower Crop Residues

Table 4.7.3 shows the percentage distribution of households by mode of disposal of most of the Sunflower crop residues in rural Eastern Province in the 2017-18 Agriculture season. Results show that 80.6 percent of the households left most of the sunflower crop residues in the field while 13.4 percent of the households burned them. At district level, all the households interviewed in Petauke District left the soya bean crop residues in the fields.

Table 4.7.3: Percentage Distribution of Households by Mode of Disposing most of the Soya bean Crop Residues by District from the 2017/18 Season.

District	Mode of Disposing most of the sunflower crop residues from the 2017/18 Season						
	Number of Households Reporting	%	%	%	%	%	%
Chadiza	6,136	16.1	75.2	2.1	6.7	0.0	0.0
Chasefu	5,062	20.0	76.4	0.0	3.6	0.0	0.0
Chipangali	7,505	13.3	86.7	0.0	0.0	0.0	0.0
Chipata	7,693	17.1	77.1	1.4	2.3	2.1	0.0
Kasenengwa	8,745	18.5	75.5	0.0	1.3	4.7	0.0
Katete	5,550	20.3	74.5	0.0	5.1	0.0	0.0
Lumezi	6,374	14.4	72.3	0.0	10.4	2.8	0.0
Lundazi	7,972	15.1	83.3	1.6	0.0	0.0	0.0
Lusangazi	73	0.0	100.0	0.0	0.0	0.0	0.0
Mambwe	2,402	6.5	93.5	0.0	0.0	0.0	0.0
Nyimba	1,259	11.0	89.0	0.0	0.0	0.0	0.0
Petauke	13,433	7.3	80.9	0.0	8.9	2.9	0.0
Sinda	11,973	6.9	89.7	0.0	3.4	0.0	0.0
Vubwi	1,397	15.0	71.8	5.0	8.2	0.0	0.0
Total	85,572	13.4	80.6	.5	4.1	1.3	0.0

4.7.4 Groundnuts Crop Residues

Table 4.7.4 shows the percentage distribution of household by mode of disposal of the groundnuts crop residues in the field in rural Eastern Province during the 2017-18 Agriculture season. Results show that 82.2 percent of the households left most of the groundnuts crop residues in the field while 9.0 percent of the households fed them to animals. At district level, 93.7 percent of the households interviewed in Nyimba District left the groundnuts crop residues in the fields representing the highest proportions. In a nutshell, most of the households in rural Eastern left most of the groundnut crop residues in the field.

District	Mode of Disposing most of the groundnuts crop residues from the 2017/18 Season						
	Total Number of Households Reporting	Burned them	Left them in the fields	Collected for animal feed	Fed to animals in field	Threw them away	Gave away
Chadiza	6,585	4.3	81.3	4.2	8.3	1.9	0.0
Chasefu	8,480	26.2	64.8	2.4	6.5	0.0	0.0
Chipangali	21,605	5.8	78.0	4.0	10.3	1.9	0.0
Chipata	15,245	4.8	87.8	2.2	4.2	1.1	0.0
Kasenengwa	21,528	5.4	84.4	.9	9.3	0.0	0.0
Katete	9,437	5.0	75.4	3.1	16.5	0.0	0.0
Lumezi	12,118	9.1	75.9	4.4	10.5	0.0	0.0
Lundazi	8,250	6.1	75.4	1.7	16.8	0.0	0.0
Lusangazi	160	24.5	71.9	0.0	3.6	0.0	0.0
Mambwe	7,132	6.6	89.5	1.7	.5	1.7	0.0
Nyimba	7,070	6.1	93.7	.2	0.0	0.0	0.0
Petauke	28,504	4.6	87.0	.7	7.0	.7	0.0
Sinda	19,686	1.4	84.0	0.0	14.6	0.0	0.0
Vubwi	3,790	8.5	82.8	0.0	5.1	3.7	0.0
Total	169,589	6.2	82.2	1.9	9.0	.7	0.0

4.8 Main Crop Planted by Households in same field; 2016/17; 2017/18; 2018/19 Agricultural Season by type of Crop, District and Province

4.9 Seed Varieties Planted

4.9.1 Groundnuts Seed

Table 4.8.1 shows the percentage distribution of households by type of Groundnut seed variety used by district in the 2017/18 Season. According to the results of the survey, 24.8 percent of the households in rural Eastern Province used hybrid groundnut seed while 69.4 percent used local groundnut seed and 5.5 percent used recycled groundnut seed. At district level, Petauke had the highest proportion of households using local groundnut seed with 80.3 percent.

Table 4.8.1: Percentage Distribution of Households by Type of Groundnut Seed Variety Used by District, 2017/18 Season.

District	Number of Households Reporting	Seed variety			
		Improved	Local	Recycled	Do not know
Chadiza	6,585	50.6	47.5	1.9	0.0
Chasefu	8,480	20.8	75.8	3.4	0.0
Chipangali	21,605	25.2	65.3	9.5	0.0
Chipata	15,245	20.9	66.1	13.0	0.0
Kasenengwa	21,528	27.9	63.7	8.4	0.0
Katete	9,437	22.4	75.3	2.3	0.0
Lumezi	12,118	25.6	67.4	7.0	0.0
Lundazi	8,250	19.5	64.2	16.3	0.0
Lusangazi	160	24.5	67.3	8.2	0.0
Mambwe	7,132	28.4	71.6	0.0	0.0
Nyimba	7,070	24.6	73.4	2.0	0.0
Petauke	28,504	17.2	80.3	2.5	0.0
Sinda	19,686	28.7	71.3	0.0	0.0
Vubwi	3,790	30.3	62.8	6.9	0.0
Total	169,589	24.8	69.4	5.8	0.0

4.9.2 Maize Seed

Table 4.9.2 shows the Percentage distribution of households by type of maize seed variety used by district, 2017/18 Agriculture Season.

Results show that 49.1 percent of the households in rural Eastern Province used local maize seed while 6.1 percent used recycled maize seed. At district level, Mambwe had the highest proportion of households using local maize seed at 70.1 percent.

Table 4.9.2: Percentage Distribution of Households by Type of Maize Seed Variety Used by District, 2017/18 Agriculture Season.

District	Number of Households Reporting	Type of Seed variety			
		Improved	Local	Recycled	Do not know
Chadiza	14,320	32.1	64.2	3.7	0.0
Chasefu	20,441	75.4	23.7	.9	0.0
Chipangali	27,816	57.1	36.0	6.9	0.0
Chipata	21,527	56.5	32.8	10.3	.4
Kasenengwa	22,778	41.2	44.5	11.1	3.1
Katete	23,129	35.4	58.6	6.1	0.0
Lumezi	19,447	46.2	41.7	11.9	.1
Lundazi	22,016	51.5	36.9	11.4	.1
Lusangazi	474	15.4	64.8	19.9	0.0
Mambwe	11,067	28.8	70.1	1.1	0.0
Nyimba	12,452	50.6	46.0	1.1	2.2
Petauke	43633	32.7	61.9	5.0	.5
Sinda	32,981	29.5	68.0	2.5	0.0
Vubwi	7,548	59.6	39.9	.5	0.0
Total	279,630	44.3	49.1	6.1	.5

4.9.3 Soya bean Seed

Table 4.9.3 shows the percentage distribution of households by type of Soya bean seed variety used by district in the 2017/18 Agricultural season.

According to results of the survey, 58.4 percent of the households in rural Eastern Province used local soya bean seed while 13.3 percent used recycled soya bean seed. At district level, all the households interviewed in Mambwe reported to have used local Soya bean seed.

District	Number of Households	Seed variety			
		Improved	Local	Recycled	Do not know
Chadiza	9,662	40.2	53.0	6.8	0.0
Chasefu	8,239	17.8	81.0	1.2	0.0
Chipangali	10,324	14.6	63.0	22.4	0.0
Chipata	8,643	28.1	54.0	17.9	0.0
Kasenengwa	4,607	52.4	40.3	7.4	0.0
Katete	10,879	41.0	59.0	0.0	0.0
Lumezi	7,731	25.5	53.3	21.2	0.0
Lundazi	17,769	12.2	55.6	31.5	.7
Lusangazi	6	100.0	0.0	0.0	0.0
Mambwe	158	0.0	100.0	0.0	0.0
Nyimba	186	25.6	74.4	0.0	0.0
Petauke	2,848	30.4	55.8	0.0	13.8
Sinda	8,406	39.7	57.0	0.0	3.3
Vubwi	5,245	27.3	65.5	7.2	0.0
Total	94,704	27.4	58.4	13.3	0.8

4.9.4 Sunflower Seed

Table 4.9.4 shows the percentage distribution of households by type of Sunflower seed variety used by district in the 2017/18 Agricultural season.

Results show that 62.5 percent of the households in rural Eastern Province used local sunflower seed while 8.7 percent used recycled sunflower seed. At district level, households interviewed in Chasefu reported to have used local sunflower seed at 85.7 percent representing the highest proportion.

Table 4.9.4: Percentage Distribution of Households by Type of Sunflower Seed Variety used by District, 2017/18 Season.

District	Number of Households	Seed variety			
		Improved	Local	Recycled	Do not know
Chadiza	6,136	29.1	68.9	2.1	0.0
Chasefu	5,062	14.3	85.7	0.0	0.0
Chipangali	7,505	33.3	56.7	10.0	0.0
Chipata	7,693	23.7	61.6	14.7	0.0
Kasenengwa	8,745	31.0	63.8	5.2	0.0
Katete	5,550	20.9	66.0	13.2	0.0
Lumezi	6,374	39.3	51.0	9.6	0.0
Lundazi	7,972	17.0	52.9	30.1	0.0
Lusangazi	73	0.0	79.8	20.2	0.0
Mambwe	2,402	54.3	39.2	6.5	0.0
Nyimba	1,259	25.6	69.5	3.8	1.1
Petauke	13,433	34.2	64.3	1.5	0.0
Sinda	11,973	31.7	63.2	5.2	0.0
Vubwi	1,397	5.0	81.9	13.1	0.0
Total	85,572	28.8	62.5	8.7	.0

4.10 Percentage distribution of Households by week & Month of finishing planting

4.11 Average yield (MT/Ha) rate of Crops by district, 2017/18 Agriculture Season.

Table 4.10.1 shows the estimated production and average yield rate by type of crop and by district in the 2017/18 agricultural season.

Results show that the average yield rate of maize in rural Eastern Province was 1.92 metric tonnes per hectare.

At district level, Vubwi recorded the highest average yield rate of maize at 2.50 metric tonnes per hectare followed by Chasefu at 2.43 metric tonnes per hectare. Lusangazi District recorded the lowest average at 1.40 metric tonnes per hectare.

The results of the survey revealed that the average yield rate of groundnuts in rural Eastern Province was 0.69 metric tonnes per hectare.

At district level, Petauke recorded the highest average yield rate of groundnuts with 0.84 metric tonnes per hectare followed by Lumezi with 0.79 metric tonnes per hectare. Lundazi recorded the lowest with 0.49 metric tonnes per hectare.

The average yield rate of soya beans in rural Eastern Province was 1.04 metric tonnes per hectare.

At district level, Lundazi recorded the highest average yield rate of soya beans at 1.22 metric tonnes per hectare followed by Vubwi at 1.19 metric tonnes per hectare. Lusangazi District recorded the lowest average at 0.29 metric tonnes per hectare.

The average yield rate of sunflower in rural Eastern Province was 0.68 metric tonnes per hectare.

At district level, Chipata recorded the highest average yield rate of sunflower at 1.29 metric tonnes per hectare followed by Mambwe at 0.92 metric tonnes per hectare. Katete District recorded the lowest sunflower yields at 0.47 metric tonnes per hectare.

Table 4.10.1: Estimated Production and Yield Rate by Type of Crop and by District, 2017/18 Agricultural Season.

District	Quantity Produced and Yield in Metric Tonnes							
	Maize		Groundnuts		Soya beans		Sunflower	
	Production	Yield Rate	Production	Yield Rate	Production	Yield Rate	Production	Yield Rate
Chadiza	23,251	1.73	3,634	0.61	9,224	1.09	2,969	0.52
Chasefu	49,400	2.43	4,408	0.56	6,773	0.86	3,447	0.74
Chipangali	58,395	2.10	11,390	0.54	11,051	1.07	4,372	0.59
Chipata	45,256	2.13	8,251	0.57	8,747	1.06	9,308	1.29
Kasenengwa	31,511	1.55	12,785	0.64	3,736	1.01	4,469	0.58
Katete	39,373	1.73	5,910	0.68	7,941	0.77	2,620	0.47
Lumezi	35,634	1.92	8,616	0.79	6,416	0.91	3,620	0.64
Lundazi	50,034	2.32	3,575	0.49	18,758	1.22	5,931	0.79
Lusangazi	655	1.40	79	0.54	2	0.29	34	0.51
Mambwe	16,197	1.48	5,160	0.73	121	0.76	2,202	0.92
Nyimba	21,037	1.75	5,164	0.78	71	0.38	960	0.90
Petauke	82,144	1.93	22,228	0.84	2,420	0.91	7,785	0.63
Sinda	52,238	1.59	15,183	0.78	9,839	1.17	6,207	0.54
Vubwi	18,903	2.50	2,852	0.77	6,148	1.19	713	0.51
Total	524,029	1.92	109,235	0.69	91,246	1.04	54,635	0.68

4.12 Crop Stocks and Sales (2017/18)

4.12.1 Average Household Income Realised from the Sale of Crops

Table 4.11.1 shows the average income realised from the sale of crops by district during the 2018/19 Agricultural Marketing Season.

On average, a household in rural Eastern Province earned ZMW 1,712.91 from the sale of crops. Female-headed households on average earned ZMW 1001.79 while their male counterparts earned ZMW 1,874.59.

At district level, the survey revealed that households in Chipangali earned ZMW 4053.62 from the sale of crops. Female-headed households on average earned ZMW 3001.06 while male-headed households on average earned ZMW 4238.97.

Table 4.11.1: Average Income Realised from the Sale of Crops by District, 2018/19 Agricultural Marketing Season.

District	Sex of head		
	Total	Male	Female
	Average (ZMW)	Average (ZMW)	Average (ZMW)
Total	1712.91	1874.59	1001.79
Chadiza	771.62	794.04	678.80
Chasefu	1076.51	1181.21	374.00
Chipangali	4053.62	4238.97	3001.06
Chipata	886.23	975.21	551.00
Kasenengwa	1372.97	1594.28	449.14
Katete	858.39	882.46	782.68
Lumezi	2497.75	2610.76	1953.02
Lundazi	2717.83	2994.29	579.18
Lusangazi	1268.96	1295.82	1105.84
Mambwe	1019.46	981.51	1142.99
Nyimba	613.18	617.54	600.67
Petauke	1109.88	1266.02	614.04
Sinda	862.01	939.69	398.03
Vubwi	2624.58	3089.35	1143.80

4.13 Distance to the Main Markets.

4.13.1 Distance to the Main Market for Groundnuts (i.e. of the largest transaction)

Table 4.12.1 shows the average distance to the main market by crop (i.e. of the largest transaction) by district, 2017/18 Agricultural Season.

Results of the survey indicate that the average distance to the main market for groundnuts in rural Eastern Province was 11.6 kilometres.

At district level, results indicate that households in Sinda and Lumezi travelled longer distances to reach the main markets for Groundnuts at 32.2 and 24.2 kilometres respectively. Farmers in Vubwi reported travelling for less than a kilometre to the nearest main market for Groundnuts.

The average distance to the main market for Maize in rural Eastern Province was 2.6 kilometres.

At district level, results indicate that households in Petauke travelled an average distance of 8.4 kilometres to reach the main markets for Maize. The distance to the main market for maize for households in Chadiza, Lusangazi and Mambwe was less than a kilometer each.

Table 4.12.1: Average Distance to the Main Market in Kilometres by Type of Crop (i.e. of the largest transaction) by District, 2017/18 Agricultural season.

District	Crop			
	Groundnuts	Maize	Soya beans	Sunflower
Chadiza	1.7	0.6	1.6	0.7
Chasefu	3.2	2.3	3.3	1.1
Chipangali	1.3	1.0	2.0	0.1
Chipata	3.5	1.2	3.8	2.2
Kasenegwa	18.0	1.7	5.0	1.9
Katete	3.0	1.3	4.0	6.5
Lumezi	24.2	2.0	1.5	1.4
Lundazi	1.9	1.0	2.1	1.3
Lusangazi	1.4	0.7	25.0	9.3
Mambwe	5.9	0.2	2.0	0.1
Nyimba	5.5	1.5	10.7	2.7
Petauke	18.3	8.4	0.8	2.2
Sinda	32.2	3.4	1.3	0.6
Vubwi	0.6	1.2	0.3	-
Total	11.6	2.6	2.4	1.7

The average distance to the main market for Soya beans in rural Eastern Province was estimated at 2.4 Kilometres.

At district level, results indicate that households in Lusangazi travelled an average distance of 25 Km to reach the main markets for Soya beans representing the longest distance. The distance to the main market for soya beans for households in Petauke and Vubwi districts was less than a Kilometre each.

The average distance to the main market for Sunflower in rural Eastern Province was estimated at 1.7 kilometres.

At district level, results indicate that households in Lusangazi travelled an average distance of 9.3 kilometres to reach the main markets for Sunflower. The distance to the main market for sunflower for households in Chadiza, Chipangali, Mambwe and Sinda districts was less than a kilometre each, representing the shortest distance

4.14 Quantity of Crop in Storage

Table 4.13.1 shows the quantity of crop held in storage on the survey day in rural Eastern Province. On average, households in rural Eastern Province held 81 Kgs of groundnuts in storage on survey day. At district level, on average, households in Mambwe had 152 Kgs of groundnuts in storage. Households in Lusangazi on average had 2 Kgs of groundnuts in storage reflecting the lowest quantity .

Maize

On average, 323 Kgs of Maize were held in storage by each household in rural Eastern Province. At district level, a household in Vubwi, on average had 1,092 Kgs of Maize in storage representing the largest quantity in storage among the districts. A households in Nyimba had the lowest, on average, 119 Kgs of maize in storage.

Soya Beans

A household had on average 88 Kgs of Soya beans in storage on the survey date in rural Eastern Province. At district level, households in Lundazi on average had 247 Kgs of soya beans in storage. Households in Lusangazi, Mambwe and Nyimba district reported no soya beans in storage.

Sunflower

On average, 42 Kgs of Sunflower was held in storage by each household on the survey date in rural Eastern Province. At district level, a household in Vubwi had 42 Kgs of Sunflower in storage. No household in Nyimba District reported having Sunflower in storage.

Table 4.13.1: Quantity of Crop held in storage in kilogrammes on Survey day by District.

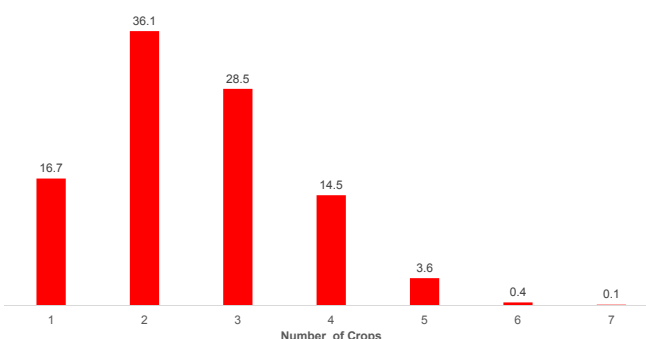
District	Crop Type			
	Groundnuts	Maize	Soya beans	Sunflower
Chadiza	71	616	76	64
Chasefu	17	251	147	24
Chipangali	90	254	135	37
Chipata	42	357	89	46
Kasenegwa	74	417	65	36
Katete	71	209	54	42
Lumezi	36	155	21	20
Lundazi	121	322	247	66
Lusangazi	2	248	-	53
Mambwe	16	178	-	84
Nyimba	152	119	-	-
Petauke	113	243	25	31
Sinda	45	299	45	28
Vubwi	96	1,092	116	102
Total	81	323	88	42

4.15 Crop Diversification

The baseline survey defined Crop diversification as addition of a new crop to the existing cropping system. Further, the more the number of crops grown by a household, the more likely to be resilient to crop failure that household is likely to be.

Figure 4.5.3 shows the percentage distribution of households by number of crops grown per household in rural Eastern province during the 2017/18 Agricultural season. Results show that 16.7 percent of the households grew 1 crop, 36.1 percent grew 2 crops representing the highest percentage and 28.5 percent grew 3 crops. Only a paltry 0.1 percent share of households in rural Eastern grew 7 crops.

Figure 4.1.1: Percentage Share of Households by Number of Crops Cultivated (1-7), 2017/18 Agricultural Season



Chapter 5: Vegetables, Fruit and Sugarcane Sales

5.1 Introduction

This chapter highlights results of households that grew vegetables, sugarcane and fruits for home consumption and for sale in the rural parts of Eastern Province in 2019.

5.1.1 Growing of vegetables

The following vegetables were widely grown in rural Eastern Province in 2019; Pumpkin leaves, Pumpkin, Rape, Tomato, Sweet potato leaves, Okra, Onion, Green maize, Cowpea leaves, Cabbage, Green beans, Cassava Leaves, Eggplant, Chilies, Chomolia, Carrots and Spinach. Vegetables make a significant difference to smallholder livelihoods. Unlike most crops, vegetable production may require only a small area of land, with minimal capital outlay and can provide access to valuable food under subsistence conditions, but also has the potential to provide an initial step towards establishing an income base for poorer households.

Table 5.1.1 shows the percentage distribution of households that reported growing vegetables in rural Eastern Province in 2019. Of the total number of households that reported growing vegetables, 30.2 percent grew pumpkin leaves, the most widely grown vegetable followed by households that grew Pumpkins at 18.7 percent. Spinach and Carrots were the least grown vegetables at 0.1 percent each.

Vegetable	Count	Percentage
Total	386,228	100
Cabbage	8,051	2.0
Rape	45,287	11.7
Spinach	261	0.1
Tomato	41,083	10.6
Onion	12,010	3.1
Okra	17,799	4.6
Eggplant	2,665	0.7
Pumpkin	72,047	18.7
Chilies	1,326	0.3
Chomolia	680	0.2
Carrots	411	0.1
Green beans	5,688	1.5
Green maize	9,016	2.3
Cassava leaves	3,936	1.0
Sweet potato leaves	24,663	6.4
Pumpkin leaves	116,505	30.2
Cowpea leaves	8,991	2.3
Other vegetables	15,806	4.1

Table 5.1.2 shows the percentage distribution of households that grew vegetables by district, rural Eastern Province 2019. Overall, results show that, 46.9 percent of the households in rural Eastern Province grew vegetables during the 2017/2018 Agricultural Season.

Analysed by district, Chipangali had the largest share of households that grew vegetables at 76.1 percent followed by Chasefu at 62.9 percent while Kasenengwa had the smallest share at 5.1 percent.

District	Households	Count	Percent	Male	Female
Total	318,570	149,292	46.9	80.0	20.0
Chadiza	15,982	5,992	37.5	76.4	23.6
Chasefu	23,728	14,935	62.9	90.6	9.4
Chipangali	30,585	23,282	76.1	84.1	15.9
Chipata	26,410	14,535	55.0	80.6	19.4
Kasenengwa	25,643	1,304	5.1	77.2	22.8
Katete	26,131	10,824	41.4	78.1	21.9
Lumezi	23,602	14,565	61.7	81.0	19.0
Lundazi	27,270	13,163	48.3	87.8	12.2
Lusangazi	524	186	35.5	85.0	15.0
Mambwe	12,515	5,200	41.5	65.1	34.9
Nyimba	15,415	9,200	59.7	80.0	20.0
Petauke	47,286	23,245	49.2	77.0	23.0
Sinda	35,792	9,351	26.1	73.0	27.0
Vubwi	7,687	3,510	45.7	71.0	29.0

Table 5.1.3 shows the average Income realised from sale of vegetables by district and sex of head, rural Eastern Province 2019.

At provincial level, the average household income realised from the sale of Vegetables was ZMW428.9. By sex, male-headed households earned the highest average income from sale of vegetables at ZMW441.1 compared to female-headed households whose average income was ZMW315.5.

Analysed by district, Katete on average earned the highest level of income from sale of vegetables at ZMW665.70 followed by Chipata at ZMW600.30. Lusangazi District earned the lowest average income from sale of vegetables at ZMW138.80.

Table 5.1.3 Average Household Income (ZMW) Realised from the Sale of Vegetables by District and Sex, 2017/2018 Agricultural Season.

District	Total	Male	female
Total	428.9	441.1	315.5
Chadiza	316.8	204.5	726
Chasefu	313.4	327	101.9
Chipangali	245.5	232.2	548.2
Chipata	600.3	643.9	332.4
Kasenengwa	482.7	476.3	539.3
Katete	665.7	690.8	333.9
Lumezi	357.1	381.8	135
Lundazi	342	356.6	132.6
Lusangazi	138.6	131	162.5
Mambwe	474.3	475.3	463.7
Nyimba	226.4	238.1	171.9
Petauke	281.9	285.4	258.2
Sinda	447	491.7	30
Vubwi	319	358.7	86.9

5.2. Growing of Fruit Trees

Among the fruits widely grown in rural Eastern Province were the following: Mangoes, Guavas, Bananas, Pawpaws, Oranges, Lemons, Cashew Nuts, Avocados, Watermelons, Pineapples and Grape fruits. Fruits have huge health benefits to the household such as provisions of vital vitamins that help to fight diseases and maintain a healthy body. Apart from the health benefits household enjoy, there are also economic benefits. The household is able to raise income from the sale of fruits. This income can be used to pay for various household financial needs such as groceries, children's school fees and many more.

Table 5.2.1 shows the percentage distribution of households that grew fruits by type in rural Eastern Province, 2019.

Results show that Mangoes were the most widely grown fruit by households at 47.8 percent followed Guavas at 15.2 percent. Grapefruit and Pine Apples were the least grown fruits with only 0.04 and 0.09 percent of the households reporting having grown them respectively.

Table 5.2.1 Percentage Distribution of Households That Grew Fruit Trees in Rural Eastern Province, 2017/2018 Agricultural Season.

Fruit Name	Percentage
Mangoes	47.77
Guavas	15.23
Bananas	14.83
Paw paws	6.88
Oranges	4.85
Lemons	3.52
Other fruits	1.84
Cashew nuts	1.78
Avocado	1.59
Water melon	1.57
Pineapple	0.09
Grapefruit	0.04
Total	100.00

Table 5.2.2 shows the percentage distribution of households that grew fruit trees by district in rural Eastern Province 2019. Overall, results show that, 58.7 percent of the households in Eastern grew fruit trees during the 2017/2018 Agricultural Season.

Analysed by district, Vubwi had the largest share of households that grew vegetables at 74.2 percent followed by Nyimba at 68.2 percent while Kasenengwa had the smallest share at 44.6 percent.

Table 5.2.2: Percentage Distribution of Households that grew Fruit Trees by District, rural Eastern Province 2019.

District	Households	Count	Percentage
Total	318,570	186,855	58.65
Chadiza	15,982	10,786	67.49
Chasefu	23,728	13,742	57.91
Chipangali	30,585	15,365	50.24
Chipata	26,410	17,914	67.83
Kasenengwa	25,643	11,459	44.69
Katete	26,131	15,563	59.56
Lumezi	23,602	14,952	63.35
Lundazi	27,270	18,307	67.13
Lusangazi	524	346	66.00
Mambwe	12,515	7,910	63.20
Nyimba	15,415	10,516	68.22
Petauke	47,286	27,755	58.70
Sinda	35,792	16,535	46.20
Vubwi	7,687	5,705	74.22

Table 5.2.3 shows the average household income realised from sale of fruits by district and sex of head in rural Eastern Province in the 2017-18 Agriculture season. The average household income realised from the sale of fruit trees was ZMW213.20. At provincial level, male headed households earned the highest average income of ZMW215.10 compared to female headed households whose average income was ZMW200.20

Analysed by district, Sinda earned the highest average income from sale of fruit trees at ZMW618.70 followed by Kasenengwa at ZMW448.10. Lumezi and Lusangazi districts earned the least average income at ZMW72.30 and ZMW100.00, respectively.

District	Average income	Male	Female
Chadiza	139.10	139.10	140
Chasefu	135.10	136.40	1
Chipangali	113.40	79.60	220.20
Chipata	305.60	305.70	305.20
Kasenengwa	448.10	448.10	0
Katete	210.90	210.90	0
Lumezi	72.30	68.40	100
Lundazi	220	228.70	30
Lusangazi	100	0	200
Mambwe	278.10	300.70	120
Nyimba	210.30	222.90	164.40
Petauke	117.60	88.40	182
Sinda	618.70	618.70	0
Vubwi	351.80	498	100
Total	213.20	215.10	200.20

5.3.1 The Effect of Vegetable and Fruit Tree Growing on Women's Income by District

This section considers how growing of vegetables and fruit trees contributed to women's income.

Respondents were asked to rank the contribution to women's income made by the practice of vegetable and fruit tree growing on a scale of 1-5. Accordingly, 1 reflects the lowest contribution to women's income while 5 reflects the highest contribution to women's income. Vegetables and fruit tree growing can affect women income in two ways; increased savings by consuming own production and income from the sale of own production. Table 5.3.1 shows the share of households by rank assigned based on contribution of vegetable and fruit tree growing to women's income in rural Eastern Province, 2019. At provincial level, out of 318, 570 households, 29.4 percent of the households gave a ranking of 1; 20 percent gave a ranking of 2; 13.9 percent gave a ranking of 3; 8.1 percent gave a ranking of 4; 8.7 percent gave a rank of 5 and 19.8 percent of households did not give their ranking.

At district level, Katete had 16.5 percent of its households giving a ranking of 5 implying the most effective while Petauke district had 38.6 percent at its household assigning a rank 1 implying the least effective. Sinda District had 42.9 percent of its households who did not know how the growing of vegetable and fruit trees affected the income of women.

Table 5.3: Contribution of Vegetables and Fruit Tree growing to Women's Income, Rural Eastern Province 2017/2018 Agricultural Season.

District	Scale						
	Total households	1	2	3	4	5	Don't Know
Total	318,570	29.4	20	13.9	8.1	8.7	19.8
Chadiza	15,982	11.2	18.4	26.5	18.4	15.5	10.1
Chasefu	23,728	23.9	17.9	19.1	8.2	15.1	15.7
Chipangali	30,585	37.8	24.5	20.2	11.4	3.8	2.3
Chipata	26,410	39.1	14.3	11.4	13.6	6.5	15
Kasenengwa	25,643	26.9	17	7.6	5	2.3	41.1
Katete	26,131	30.9	16.9	14	6.8	16.5	15
Lumezi	23,602	28	29.6	19.8	11	3.4	8.2
Lundazi	27,270	28.5	20.2	12.5	6	6.3	26.5
Lusangazi	524	33	17.8	14.7	6.4	6.7	21.4
Mambwe	12,515	34.4	20	13.7	5.7	5	21.2
Nyimba	15,415	23	28.4	17.5	6.2	9.5	15.4
Petauke	47,286	38.6	23.5	11.4	6.3	5.7	14.5
Sinda	35,792	21.1	12.5	5	2.5	16	42.9
Vubwi	7,687	15.2	18.1	13.8	12	12	28.8

5.4. Growing and Sale of Sugarcane

In rural Eastern Province, households grow a lot of sugarcane mainly for sale. Most of the sugarcane is grown in the dambo areas and along the river banks. Sugarcane growing brings economic benefits to households as they are able to raise income from their sale. This income can be used to pay for various household financial needs such as groceries, children's school fees and many more.

Table 5.4 shows the percentage distribution of households that grew Sugarcane by district in rural Eastern Province in 2019. Results show that 5.9 percent of the households (18,766) grew sugarcane. Analysed by district, Mambwe had the largest share of households that grew sugarcane at 15.1 percent followed by Chipata and Lundazi both at 10.9 percent. Lusangazi district had the smallest share at 1.3 percent.

Table 5.4 Percentage Distribution of Households That Grew Sugarcane by District in Rural Eastern Province 2017/2018 Agricultural Season.

District	Households	Count	Percent
Total	318,570	18,766	5.9
Chadiza	15,982	1,314	8.2
Chasefu	23,728	488	2.1
Chipangali	30,585	923	3.0
Chipata	26,410	2,883	10.9
Kasenengwa	25,643	905	3.5
Katete	26,131	2,456	9.4
Lumezi	23,602	1,052	4.5
Lundazi	27,270	2,969	10.9
Lusangazi	524	7	1.3
Mambwe	12,515	1,884	15.1
Nyimba	15,415	1,079	7.0
Petauke	47,286	866	1.8
Sinda	35,792	1,449	4.0
Vubwi	7,687	490	6.4

Table 5.5 shows the average household income realised from the sale of sugarcane by district and sex of head in the 2017/2018 Agricultural season. Overall, results show that the average income realised from sugarcane sales in rural Eastern Province in the 2017/2018 Agricultural Season was ZMW554.00.

By sex of head, male headed households earned the highest average income from sales of sugarcane at ZMW579.00 compared to female headed households whose average income was ZMW352.00. This implies that male headed households earned ZMW 227 more than their female counterparts.

Analysed by district, Katete had the highest average household income of ZMW1, 617.00 followed by Vubwi at ZMW582.00. Lusangazi and Sinda districts recorded no income from the sale of sugarcane.

Table 5.5 Total Average Income Realised From Sale of Sugarcane by District and Sex Head			
District	Average income	Male	Female
Total	554.00	579	352
Chadiza	302	277	460
Chasefu	83	83	-
Chipangali	236	236	-
Chipata	328	335	295
Kasenengwa	326	326	-
Katete	1,617	1,844	70
Lumezi	220	220	-
Lundazi	579	579	-
Lusangazi	-	-	-
Mambwe	450	450	-
Nyimba	110	110	-
Petauke	300	-	300
Sinda	-	-	-
Vubwi	582	106	171

Table 6.1 shows the percentage distribution of households by type of plant protection chemicals used by district in rural Eastern Province, 2019.

Overall, results show that 63.9 percent of the households in rural Eastern do not use any plant protection chemicals. However, among those that used plant protection chemicals, 19.9 percent used insecticides to control pests, 9.0 percent used herbicides to control weeds, 3.6 percent used fungicides to control diseases and a paltry 1.0 percent used nematodes to protect the roots.

By district, Lusangazi had the largest proportion of households that had insecticides while Mambwe had the largest proportion of households that used herbicides. Further, Lusangazi and Kasenengwa had the largest proportions of households that used fungicides and nematodes at 12.3 percent and 3.5 percent, respectively.

Chapter 6: Herbicides and Pesticide Utilization

6.1 Introduction

Agricultural chemicals are characterised in many forms such as herbicides, fungicides, insecticides and nematicides used in agriculture to control pests, diseases and weeds.

6.2 Agriculture Chemicals used in the Analysis

Insecticides-These are chemicals primarily used in protecting plants from harmful insects. Insecticides are chemicals that destroy or inhibit specific developmental stages of insects. There are three different types of insecticides: systemic insecticides, contact insecticides, and ingested insecticides. All are either natural (organic), man-made (synthetic) formulas, or preparations that are used to control or kill unwanted insects.

Herbicides-Is a pesticide used to kill unwanted plants. Selective herbicides kill certain targets while leaving the desired crop relatively unharmed. Some pesticides are used to clear entire crops regardless of its use.

Fungicides-Is a chemical used to fight fungal infections in plants. Fungicides are pesticides that kill or prevent the growth of fungi and their spores. They can be used to control fungi that damage plants, including rusts, mildews and blights.

Nematicides-A Nematicide is a type of chemical pesticide used to kill plant-parasitic nematodes. Nematicides have tended to be broad-spectrum toxicants possessing high volatility or other properties promoting migration through the soil. (www.fao.org)

Due to different ecological issues, there is a need for farmers to enhance their production by utilising many agro-chemicals to fight off pests and disease which lower the production expectations. The ZIFLP baseline survey collected information from households about the usage of these various agricultural chemicals.

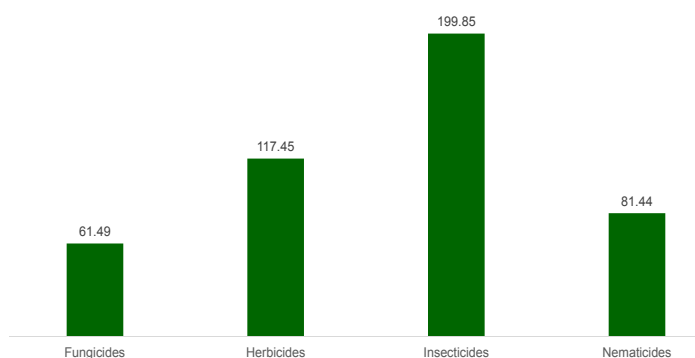
Table 6.1 shows percentage distribution of households by type of plant protection chemical used. in rural Eastern Province in 2019. Results show that 336,686 households used Agro Chemicals. At district level Lusangazi, Lundazi and Katete had the highest proportion of households using Fungicides at 12.3, 9.8 and 8.7 percent respectively. Lusangazi (37 percent), Mambwe (33.2 percent) and Kasenengwa (31.2 percent) had the highest proportion of households using Insecticides. Herbicides were mostly used in Mambwe (29.1 percent), Households in Lusangazi and Nyimba both used 23.7 percent. Nematicides were the least used chemicals with Kasenengwa having the highest proportion of households using them at 3.5 percent followed by Katete and Mambwe both reporting 2.3 percent of their households using nematicides.

Table 6.1: Percent distribution of Households by Type of Plant Protection Chemical used by District, Rural Eastern Province, 2019.

District	Total	Fungicide (Disease control)	Insecticide (Pest control)	Herbicide (weed control)	Nematodes (Root protection)	Other	None
Total	336,686	3.6	19.9	9.0	1.0	2.5	63.9
Chadiza	15,982	.1	9.9	.1	0.0	.9	89.1
Chasefu	23,760	.8	15.1	7.8	0.0	.8	75.5
Chipangali	33,038	2.5	24.3	6.2	1.6	13.7	51.7
Chipata	28,726	4.2	22.0	4.8	1.1	2.5	65.3
Kasenengwa	29,000	1.7	31.2	14.1	3.5	.4	49.1
Katete	29,053	8.7	18.0	8.0	2.3	2.8	60.1
Lumezi	23,938	3.5	28.1	11.0	1.5	5.3	50.5
Lundazi	27,156	9.8	12.3	5.8	0.0	.5	71.6
Lusangazi	653	12.3	37.3	23.7	0.0	0.0	26.7
Mambwe	17,315	5.0	33.2	29.1	2.3	0.0	30.4
Nyimba	15,419	.6	8.9	23.7	.9	0.0	65.9
Petauke	48,170	1.3	11.3	7.7	0.0	1.0	78.6
Sinda	36,535	4.7	25.6	3.6	0.0	0.0	66.1
Vubwi	7,939	.9	14.2	4.6	0.0	0.0	80.3

Figure 6.1: Average Agro-chemical Expenditure Rural Eastern Province, 2019

Figure 6.1 shows the average monthly household expenditure on agriculture chemicals in rural Eastern Province in 2019. Results show that rural households in Eastern Province spent the largest amounts on insecticides at ZMW199.85 followed by herbicides at ZMW117.45 and nematicides at ZMW81.44. Households spent the lowest amounts on fungicides at ZMW61.49.



The survey also collected information on household average expense on chemicals. Results show that Lusangazi, Chipata & Chipangali districts had the highest average expenditure on Fungicides at ZMW260.65, ZMW129.03 and ZMW113.91, respectively. Expenditure on insecticides was highest in Lusangazi (ZMW218.35), followed by Kasenengwa and Chipata with ZMW167.34 and ZMW124.06 respectively. Vubwi (ZMW1147.04), Chipata (ZMW361.66) and Katete (ZMW283.40) had the highest average expenditure on Herbicides while Kasenengwa (ZMW127.38), Lumezi (ZMW120.0) and Nyimba (ZMW80.0) had the highest average expenditure on Nematicides with some households not reporting having spent anything on Nematicides.

Table 6.2: Average household expenditure by type of plant protection chemical used by district and Province 2019.

District	Total	Fungicide (Disease control)	Insecticide (Pest control)	Herbicide (weed control)	Nematicides (Root protection)	Other	None
Total	50.91	61.49	117.45	199.85	81.44	166.14	0.08
Chadiza	8.10	0.00	80.81	200.00	-	0.00	0.00
Chasefu	16.56	10.95	77.69	53.08	-	75.00	0.00
Chipangali	74.41	113.91	105.83	141.32	62.93	262.88	0.08
Chipata	52.60	129.03	124.06	361.66	32.12	70.58	0.00
Kasenengwa	95.68	92.32	167.34	211.98	127.38	0.00	0.03
Katete	51.67	46.50	121.08	283.40	50.00	64.19	0.00
Lumezi	60.91	94.19	118.66	120.21	120.00	50.30	0.00
Lundazi	30.67	19.39	48.34	262.09	-	-	0.00
Lusangazi	152.21	260.65	218.35	156.42	-	-	0.00
Mambwe	110.47	71.97	151.29	190.01	46.21	-	0.00
Nyimba	77.21	32.50	113.81	245.71	80.00	-	1.44
Petauke	24.90	64.77	121.11	128.44	-	0.00	0.00
Sinda	30.28	43.94	93.64	79.57	-	-	0.00
Vubwi	69.10	50.00	109.75	1147.04	-	-	0.14

Chapter 7: Household Food Insecurity

7.1 Introduction

Household food security status is one of the useful indicators to track livelihoods interventions. In this survey, unlike the traditional ways of assessing food security through determinants such as food availability or consequences such as poor-quality diets, anthropometric failures, and other signs of malnutrition, the Food Insecurity Experience Scale (FIES) was used to measure access to food at the level of individuals or households. The FIES measures severity of food insecurity based on people's responses to questions about constraints on their ability to obtain adequate food. It is based on a well-grounded construct of the experience of food insecurity composed of three domains: uncertainty/anxiety (mild food insecurity), changes in food quality, and changes in food quantity (moderate food insecurity) and experiencing hunger (severe food insecurity).

Using 12 months' recall period, respondents were asked a set of "Yes or No" questions focusing on self-reported food-related behaviours and experiences associated with increasing difficulties in accessing food due to resource constraints.

Table 7.1 shows the percentage distribution of households by food insecurity, by month, by district, rural Eastern Province 2019. Overall, June, May and July were the three months over the 12-month period in which households in rural Eastern Province were most food secure at 13.9, 12.7 and 11.6 percent, respectively while January, February and March represented the months with the lowest proportion of households reporting being food secure at 2.3, 2.1 and 4.2 percent, respectively.

Analysed by moderate food insecurity over a 12-month period, the highest proportion of households experienced moderate food insecurity in the month of May at 21.1 percent, followed by March and February at 20.3 and 19.6 percent, respectively. The lowest proportion of households experiencing moderate food insecurity occurred in the month of September at 2.5 percent.

Analysed by severe food insecurity over a 12-month period, a minimum of 66 percent of the households in rural Eastern Province experienced severe food insecurity throughout the period under consideration.

Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	6606	12.7	0.0	21.1	66.2
June 2018	5201	13.9	0.0	6.9	79.2
July 2018	5216	11.6	0.0	6.1	82.3
August 2018	7321	7.7	0.0	8.4	83.9
September 2018	6993	6.9	.5	2.5	90.2
October 2018	12273	4.7	1.5	12.6	81.2
November 2018	15244	7.3	.6	16.6	75.6
December 2018	31390	4.4	.6	16.6	78.4
January-2019	76757	2.3	1.1	18.9	77.8
February-2019	143364	2.1	.7	19.6	77.6
March-2019	57588	4.2	.8	20.3	74.7
April-2019	12611	7.1	.0	14.3	78.5

Tables 7.1.1-14 shows the percentage distribution of households by Food Insecurity experienced by Month and District, rural Eastern Province 2019. Overall, results show that Lumezi District had the highest proportion of households that were food secure over the 12-month period in rural Eastern Province. In general, higher proportions of households in each district in rural Eastern Province experienced severe food insecurity over the 12-month period.

Table 7.1.1: Percentage Distribution of Household by Food Security, by Month and Chadiza, Rural Eastern Province 2019.

Chadiza					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	157	0.0	0.0	0.0	100.0
June 2018	137	0.0	0.0	0.0	100.0
July 2018	283	0.0	0.0	0.0	100.0
August 2018	789	0.0	0.0	0.0	100.0
September 2018	789	0.0	0.0	0.0	100.0
October 2018	420	0.0	0.0	2.5	97.5
November 2018	283	0.0	0.0	0.0	100.0
December 2018	1589	0.0	0.0	8.6	91.4
January-19	4577	0.0	0.0	14.5	85.5
February-19	10391	0.0	0.0	14.2	85.8
March-19	2648	0.0	0.0	24.3	75.7
April-19	545	0.0	0.0	50.1	49.9

Table 7.1.2: Percentage Distribution of Household by Food Security, by Month and Chasefu, Rural Eastern Province 2019

Chasefu					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	491	0.0	0.0	0.0	100.0
June 2018	389	0.0	0.0	0.0	100.0
July 2018	573	0.0	0.0	0.0	100.0
August 2018	287	0.0	0.0	35.6	64.4
September 2018	402	0.0	8.1	0.0	91.9
October 2018	554	0.0	0.0	0.0	100.0
November 2018	303	0.0	0.0	0.0	100.0
December 2018	217	0.0	0.0	0.0	100.0
January-19	2475	0.0	0.0	57.1	42.9
February-19	10448	0.0	1.0	34.9	64.1
March-19	4594	0.0	0.0	24.1	75.9
April-19	185	0.0	0.0	0.0	100.0

Table 7.1.3: Percentage Distribution of Household by Food Security, by Month and Chipangali, Rural Eastern Province 2019

Chipangali					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	362	0.0	0.0	100.0	0.0
July 2018	105	0.0	0.0	0.0	100.0
August 2018	212	0.0	0.0	0.0	100.0
September 2018	288	0.0	0.0	0.0	100.0
October 2018	393	0.0	0.0	46.1	53.9
November 2018	787	23.0	0.0	27.1	49.9
December 2018	3570	0.0	0.0	32.3	67.7
January-19	8579	0.0	0.0	23.8	76.2
February-19	15979	0.0	0.0	15.6	84.4
March-19	8663	0.0	0.0	27.2	72.8
April-19	1602	0.0	0.0	29.2	70.8

Table 7.1.4: Percentage Distribution of Household by Food Security, by Month and Chipata, Rural Eastern Province 2019

Chipata					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	861	10.1	0.0	32.7	57.2
June 2018	514	0.0	0.0	0.0	100.0
July 2018	390	0.0	0.0	0.0	100.0
August 2018	709	0.0	0.0	27.5	72.5
September 2018	709	0.0	0.0	24.5	75.5
October 2018	1289	0.0	0.0	28.6	71.4
November 2018	1289	0.0	6.7	31.5	61.8
December 2018	2122	0.0	0.0	20.2	79.8
January-19	5970	1.5	0.0	22.7	75.9
February-19	11269	2.1	.8	20.0	77.1
March-19	4735	3.1	0.0	21.7	75.2
April-19	850	0.0	0.0	14.6	85.4

Table 7.1.5: Percentage Distribution of Household by Food Security, by Month and Kasenengwa, Rural Eastern Province 2019

Kasenengwa					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	641	29.4	0.0	0.0	70.6
June 2018	453	0.0	0.0	0.0	100.0
July 2018	453	0.0	0.0	0.0	100.0
August 2018	641	0.0	0.0	0.0	100.0
September 2018	678	0.0	0.0	0.0	100.0
October 2018	1546	12.2	12.2	12.2	63.5
November 2018	1358	0.0	0.0	13.9	86.1
December 2018	3017	6.2	0.0	16.2	77.5
January-19	5236	5.7	2.2	5.7	86.4
February-19	10898	2.1	0.0	16.6	81.3
March-19	3734	0.0	0.0	19.2	80.8
April-19	1473	0.0	0.0	5.3	94.7

Table 7.1.6: Percentage Distribution of Household by Food Security, by Month and Katete, Rural Eastern Province 2019

Katete					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
June 2018	259	0.0	0.0	0.0	100.0
July 2018	259	0.0	0.0	0.0	100.0
August 2018	141	0.0	0.0	0.0	100.0
September 2018	259	0.0	0.0	0.0	100.0
October 2018	831	0.0	0.0	44.1	55.9
November 2018	580	0.0	0.0	37.9	62.1
December 2018	2149	0.0	0.0	29.0	71.0
January-19	4792	0.0	0.0	24.4	75.6
February-19	10717	0.0	0.0	30.0	70.0
March-19	3680	9.9	0.0	24.6	65.4
April-19	907	0.0	0.0	24.2	75.8

Table 7.1.7: Percentage Distribution of Household by Food Security, by Month and Lumezi, Rural Eastern Province 2019

Lumezi					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	1465	19.3	0.0	24.4	56.3
June 2018	1387	33.3	0.0	25.8	40.9
July 2018	1053	43.8	0.0	17.0	39.2
August 2018	1644	34.4	0.0	10.9	54.8
September 2018	1107	34.8	0.0	0.0	65.2
October 2018	1697	22.7	0.0	12.1	65.2
November 2018	2263	17.0	0.0	24.9	58.0
December 2018	3675	10.5	0.0	18.2	71.3
January-19	8399	2.5	4.3	21.1	72.2
February-19	13805	5.4	0.0	24.7	69.9
March-19	6956	6.6	0.0	24.3	69.1
April-19	1722	17.9	0.0	22.3	59.9

Table 7.1.8: Percentage Distribution of Household by Food Security, by Month and Lundazi, Rural Eastern Province 2019

Lundazi					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	257	36.8	0.0	0.0	63.2
June 2018	294	42.8	0.0	0.0	57.2
August 2018	138	0.0	0.0	100.0	0.0
September 2018	232	40.6	0.0	0.0	59.4
October 2018	978	0.0	0.0	14.1	85.9
November 2018	1533	6.2	0.0	9.0	84.8
December 2018	3823	9.0	0.0	14.3	76.7
January-19	7132	6.7	0.0	17.1	76.1
February-19	14283	5.9	3.3	26.7	64.2
March-19	9326	7.3	3.0	22.9	66.9
April-19	1201	21.5	0.0	11.5	67.0

Table 7.1.9: Percentage Distribution of Household by Food Security, by Month and Lusangazi, Rural Eastern Province 2019

Lusangazi					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	6	0.0	0.0	0.0	100.0
June 2018	6	0.0	0.0	0.0	100.0
July 2018	11	50.0	0.0	0.0	50.0
September 2018	7	0.0	0.0	0.0	100.0
October 2018	6	0.0	0.0	0.0	100.0
November 2018	19	0.0	0.0	39.0	61.0
December 2018	29	0.0	0.0	0.0	100.0
January-19	118	6.2	4.9	12.5	76.4
February-19	195	3.8	0.0	16.4	79.8
March-19	66	8.8	0.0	20.0	71.2
April-19	19	30.5	30.5	0.0	39.0

Table 7.1.10: Percentage Distribution of Household by Food Security, by Month and Mambwe, Rural Eastern Province 2019

Mambwe					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
June 2018	34	0.0	0.0	0.0	100.0
July 2018	69	0.0	0.0	0.0	100.0
August 2018	34	0.0	0.0	0.0	100.0
September 2018	69	0.0	0.0	0.0	100.0
October 2018	261	0.0	0.0	13.8	86.2
November 2018	349	9.8	0.0	35.0	55.2
December 2018	1398	2.5	0.0	8.7	88.8
January-19	4113	3.0	0.0	8.0	89.0
February-19	6100	2.0	0.0	4.0	94.0
March-19	2610	0.0	0.0	6.0	94.0
April-19	122	0.0	0.0	100.0	0.0

Table 7.1.11: Percentage Distribution of Household by Food Security, by Month and Nyimba, Rural Eastern Province 2019

Nyimba					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	1860	10.0	0.0	0.0	90.0
June 2018	1660	8.3	0.0	0.0	91.7
July 2018	1275	10.8	0.0	10.8	78.3
August 2018	1184	0.0	0.0	0.0	100.0
September 2018	1473	0.0	0.0	0.0	100.0
October 2018	1412	0.0	0.0	3.4	96.6
November 2018	2821	14.7	0.0	13.2	72.1
December 2018	3781	11.0	0.0	14.7	74.3
January-19	7374	4.8	1.9	9.4	83.9
February-19	7411	4.1	.2	10.2	85.5
March-19	3552	13.4	0.0	7.9	78.7
April-19	1882	17.2	0.0	0.0	82.8

Table 7.1.12: Percentage Distribution of Household by Food Security, by Month and Petauke, Rural Eastern Province 2019

Petauke					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	393	0.0	0.0	100.0	0.0
July 2018	393	0.0	0.0	0.0	100.0
August 2018	866	0.0	0.0	0.0	100.0
October 2018	1983	0.0	0.0	0.0	100.0
November 2018	1999	0.0	0.0	.8	99.2
December 2018	3982	0.0	4.9	10.3	84.8
January-19	13483	1.5	1.5	19.0	78.1
February-19	18604	3.2	1.5	18.9	76.4
March-19	3375	0.0	5.8	6.3	87.9
April-19	866	0.0	0.0	0.0	100.0

Table 7.1.13: Percentage Distribution of Household by Food Security, by Month and Sinda, Rural Eastern Province 2019

Sinda					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
August 2018	555	0.0	0.0	0.0	100.0
September 2018	832	0.0	0.0	0.0	100.0
October 2018	895	0.0	0.0	0.0	100.0
November 2018	1109	0.0	0.0	25.0	75.0
December 2018	1664	0.0	0.0	0.0	100.0
January-19	2281	0.0	0.0	12.2	87.8
February-19	8885	0.0	0.0	3.1	96.9
March-19	2558	10.8	0.0	10.8	78.3
April-19	895	0.0	0.0	0.0	100.0

Table 7.1.14: Percentage Distribution of Household by Food Security, by Month and Vubwi, Rural Eastern Province 2019

Vubwi					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	114	0.0	0.0	0.0	100.0
June 2018	69	0.0	0.0	0.0	100.0
July 2018	351	0.0	0.0	0.0	100.0
August 2018	123	0.0	0.0	0.0	100.0
September 2018	147	0.0	0.0	0.0	100.0
October 2018	9	0.0	0.0	0.0	100.0
November 2018	550	0.0	0.0	0.0	100.0
December 2018	375	2.4	0.0	18.4	79.2
January-19	2227	0.0	0.0	29.8	70.2
February-19	4378	0.0	0.0	25.9	74.1
March-19	1090	0.0	0.0	12.9	87.1
April-19	342	0.0	0.0	0.0	100.0

Table 7.2 shows percentage distribution of households by Food Insecurity Experienced, Education of Head and District, Rural Eastern Province 2019. Results show that 41.8 percent of the households reported to have been food secure, 0.6 percent experienced mild food insecurity, 10.8 percent moderate food insecurity with almost half (46.8 percent) of the households reporting to have experienced severe food insecurity in the 12 months preceding the survey.

Analysed by district, Chadiza (74 percent) had a relatively higher proportion of households reporting to have experienced hunger or severe food insecurity in the 12-month preceding the survey while Sinda had the lowest (35 percent) proportion of respondents that experienced severe food insecurity.

Analysed by educational level of the head, results show that the majority of the households (70 percent) that had indicated not having faced any difficulties in obtaining food had at least attained tertiary education. For those that had never been to school, less than 41 percent of the respondents reported not having faced any difficulties in obtaining food in the 12 months period prior to the survey.

Table 7.2: Percentage Distribution of Households by Food Security Experienced, Education of Head and District, Rural Eastern Province 2019.					
	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
Rural Eastern	318,570	41.8	.6	10.8	46.8
Never attended	66,952	40.4	.5	8.7	50.4
None	1,348	30.9	0.0	10.3	58.9
Primary	164,026	38.5	.4	10.5	50.6
Junior Secondary	50,121	46.7	1.0	14.2	38.1
Senior Secondary	26,864	46.7	.3	13.1	39.9
Tertiary	9,260	70.0	1.9	7.7	20.4
Chadiza					
Total	15,982	16.0	0.0	9.3	74.7
Never attended	5,845	18.0	0.0	15.6	66.4
None	0	0.0	0.0	0.0	0.0
Primary	7,378	10.0	0.0	5.8	84.2
Junior Secondary	1,073	11.8	0.0	13.7	74.6
Senior Secondary	1,169	10.8	0.0	0.0	89.2
Tertiary	516	100.0	0.0	0.0	0.0
Chasefu					
Total	23,728	43.7	.6	16.2	39.5
Never attended	3,221	44.5	0.0	14.6	40.9
None	0	0.0	0.0	0.0	0.0
Primary	12,735	38.6	.8	16.3	44.3
Junior Secondary	4,881	52.1	.7	18.9	28.3
Senior Secondary	2,094	46.9	0.0	13.7	39.5
Tertiary	797	61.6	0.0	12.8	25.6

Table 7.2: Continued.

	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
Chipangali					
Total	30,585	36.4	0.0	14.0	49.6
Never attended	2,914	26.4	0.0	13.1	60.5
None	0	0.0	0.0	0.0	0.0
Primary	16,855	34.4	0.0	15.1	50.5
Junior Secondary	6,425	34.9	0.0	13.4	51.7
Senior Secondary	3,454	43.7	0.0	11.3	45.0
Tertiary	937	88.8	0.0	11.2	0.0
Chipata					
Total	26,410	43.9	.3	12.8	43.0
Never attended	4,622	25.1	0.0	13.8	61.1
None	0	0.0	0.0	0.0	0.0
Primary	13,728	45.9	0.0	13.6	40.5
Junior Secondary	4,588	39.5	0.0	16.7	43.7
Senior Secondary	1,937	66.8	4.5	5.6	23.2
Tertiary	1,536	66.9	0.0	0.0	33.1
Kasenengwa					
Total	25,643	43.1	.4	7.6	48.8
Never attended	6,108	27.2	0.0	8.6	64.2
None	227	0.0	0.0	0.0	100.0
Primary	11,425	39.0	1.0	4.6	55.4
Junior Secondary	3,773	73.9	0.0	3.0	23.1
Senior Secondary	3,394	53.3	0.0	17.8	28.9
Tertiary	717	47.4	0.0	26.3	26.3
Katete					
Total	26,131	50.3	0.0	12.7	37.0
Never attended	8,025	43.6	0.0	11.3	45.1
None	220	100.0	0.0	0.0	0.0
Primary	12,958	56.0	0.0	4.8	39.2
Junior Secondary	2,872	45.5	0.0	34.4	20.1
Senior Secondary	1,991	39.3	0.0	40.4	20.2
Tertiary	65	100.0	0.0	0.0	0.0
Lumezi					
Total	23,602	31.5	.8	15.9	51.9
Never attended	2,950	39.1	0.0	11.3	49.6
None	0	0.0	0.0	0.0	0.0
Primary	13,422	24.5	0.0	18.5	57.0
Junior Secondary	4,101	54.3	0.0	15.7	30.0
Senior Secondary	2,234	23.0	0.0	12.6	64.3
Tertiary	896	28.5	20.0	0.0	51.5
Lundazi					
Total	27,270	37.1	2.2	17.3	43.4
Never attended	3,193	39.1	.9	9.0	51.0
None	0	0.0	0.0	0.0	0.0
Primary	16,808	34.0	1.8	18.5	45.7
Junior Secondary	3,999	37.8	6.8	21.9	33.5
Senior Secondary	2,439	38.6	0.0	18.1	43.3
Tertiary	831	83.4	0.0	0.0	16.6

Table 7.2: Continued.

	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
Lusangazi					
Total	524	46.4	0.0	7.5	46.1
Never attended	105	37.5	0.0	0.0	62.5
None	0	0.0	0.0	0.0	0.0
Primary	288	42.4	0.0	11.1	46.4
Junior Secondary	97	56.0	0.0	0.0	44.0
Senior Secondary	15	50.0	0.0	50.0	0.0
Tertiary	20	100.0	0.0	0.0	0.0
Mambwe					
Total	12,515	41.0	0.0	2.4	56.7
Never attended	1,061	32.7	0.0	0.0	67.3
None	34	0.0	0.0	0.0	100.0
Primary	6,117	36.8	0.0	2.3	61.0
Junior Secondary	2,966	37.7	0.0	1.2	61.2
Senior Secondary	1,814	55.7	0.0	6.7	37.5
Tertiary	523	76.6	0.0	0.0	23.4
Nyimba					
Total	15,415	25.7	.1	10.2	64.0
Never attended	1,245	27.2	0.0	3.8	69.0
None	276	0.0	0.0	50.0	50.0
Primary	8,925	16.6	.2	7.8	75.4
Junior Secondary	2,436	26.6	0.0	20.9	52.5
Senior Secondary	1,881	54.7	0.0	7.3	37.9
Tertiary	652	71.5	0.0	7.3	21.2
Petauke					
Total	47,286	46.9	1.4	8.8	42.8
Never attended	11,945	45.1	2.3	4.6	48.0
None	590	33.3	0.0	0.0	66.7
Primary	24,968	47.4	.8	8.9	42.9
Junior Secondary	6,536	44.5	3.0	15.3	37.2
Senior Secondary	2,798	58.0	0.0	7.6	34.3
Tertiary	450	52.7	0.0	43.7	3.6
Sinda					
Total	35,792	62.6	0.0	1.5	35.8
Never attended	12,930	65.4	0.0	2.1	32.5
None	0	0.0	0.0	0.0	0.0
Primary	15,766	54.8	0.0	0.0	45.2
Junior Secondary	5,306	71.5	0.0	5.2	23.3
Senior Secondary	958	71.1	0.0	0.0	28.9
Tertiary	832	100.0	0.0	0.0	0.0
Vubwi					
Total	7,687	22.3	0.0	15.2	62.4
Never attended	2,787	18.8	0.0	17.9	63.4
None	0	0.0	0.0	0.0	0.0
Primary	2,654	13.1	0.0	18.1	68.8
Junior Secondary	1,068	29.5	0.0	0.0	70.5
Senior Secondary	688	32.8	0.0	17.9	49.4
Tertiary	490	62.6	0.0	14.1	23.3

Table 7.3 below provides detailed data on the prevalence of household food insecurity in rural Eastern Province by Month and District in 2019. Overall, results show that May, June and July are the three most food secure months in rural Eastern. June was the most food secure month at 13.9 percent.

Table 7.3: Percentage distribution of household Food security Month Rural Eastern Province 2019.

Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	6606	12.7	0.0	21.1	66.2
June 2018	5201	13.9	0.0	6.9	79.2
July 2018	5216	11.6	0.0	6.1	82.3
August 2018	7321	7.7	0.0	8.4	83.9
September 2018	6993	6.9	.5	2.5	90.2
October 2018	12273	4.7	1.5	12.6	81.2
November 2018	15244	7.3	.6	16.6	75.6
December 2018	31390	4.4	.6	16.6	78.4
January-19	76757	2.3	1.1	18.9	77.8
February-19	143364	2.1	.7	19.6	77.6
March-19	57588	4.2	.8	20.3	74.7
April-19	12611	7.1	.0	14.3	78.5

Table 7.3.1: Percentage distribution of household Food security Month and Chadiza Rural Eastern Province 2019.

Chadiza

Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	157	0.0	0.0	0.0	100.0
June 2018	137	0.0	0.0	0.0	100.0
July 2018	283	0.0	0.0	0.0	100.0
August 2018	789	0.0	0.0	0.0	100.0
September 2018	789	0.0	0.0	0.0	100.0
October 2018	420	0.0	0.0	2.5	97.5
November 2018	283	0.0	0.0	0.0	100.0
December 2018	1589	0.0	0.0	8.6	91.4
January-19	4577	0.0	0.0	14.5	85.5
February-19	10391	0.0	0.0	14.2	85.8
March-19	2648	0.0	0.0	24.3	75.7
April-19	545	0.0	0.0	50.1	49.9

Table 7.3.2: Percentage distribution of household Food security Month and Chasefu Rural Eastern Province 2019.

Chasefu					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	491	0.0	0.0	0.0	100.0
June 2018	389	0.0	0.0	0.0	100.0
July 2018	573	0.0	0.0	0.0	100.0
August 2018	287	0.0	0.0	35.6	64.4
September 2018	402	0.0	8.1	0.0	91.9
October 2018	554	0.0	0.0	0.0	100.0
November 2018	303	0.0	0.0	0.0	100.0
December 2018	217	0.0	0.0	0.0	100.0
January-19	2475	0.0	0.0	57.1	42.9
February-19	10448	0.0	1.0	34.9	64.1
March-19	4594	0.0	0.0	24.1	75.9
April-19	185	0.0	0.0	0.0	100.0

Table 7.3.3: Percentage distribution of household Food security Month and Chipangali 2019.

Chipangali					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	362	0.0	0.0	100.0	0.0
July 2018	105	0.0	0.0	0.0	100.0
August 2018	212	0.0	0.0	0.0	100.0
September 2018	288	0.0	0.0	0.0	100.0
October 2018	393	0.0	0.0	46.1	53.9
November 2018	787	23.0	0.0	27.1	49.9
December 2018	3570	0.0	0.0	32.3	67.7
January-19	8579	0.0	0.0	23.8	76.2
February-19	15979	0.0	0.0	15.6	84.4
March-19	8663	0.0	0.0	27.2	72.8
April-19	1602	0.0	0.0	29.2	70.8

Table 7.3.4: Percentage distribution of household Food security Month and Chipata 2019.

Chipata					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	861	10.1	0.0	32.7	57.2
June 2018	514	0.0	0.0	0.0	100.0
July 2018	390	0.0	0.0	0.0	100.0
August 2018	709	0.0	0.0	27.5	72.5
September 2018	709	0.0	0.0	24.5	75.5
October 2018	1289	0.0	0.0	28.6	71.4
November 2018	1289	0.0	6.7	31.5	61.8
December 2018	2122	0.0	0.0	20.2	79.8
January-19	5970	1.5	0.0	22.7	75.9
February-19	11269	2.1	.8	20.0	77.1
March-19	4735	3.1	0.0	21.7	75.2
April-19	850	0.0	0.0	14.6	85.4

Table 7.3.5: Percentage distribution of household Food security Month and Kasanengwa 2019.

Kasenengwa					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	641	29.4	0.0	0.0	70.6
June 2018	453	0.0	0.0	0.0	100.0
July 2018	453	0.0	0.0	0.0	100.0
August 2018	641	0.0	0.0	0.0	100.0
September 2018	678	0.0	0.0	0.0	100.0
October 2018	1546	12.2	12.2	12.2	63.5
November 2018	1358	0.0	0.0	13.9	86.1
December 2018	3017	6.2	0.0	16.2	77.5
January-19	5236	5.7	2.2	5.7	86.4
February-19	10898	2.1	0.0	16.6	81.3
March-19	3734	0.0	0.0	19.2	80.8
April-19	1473	0.0	0.0	5.3	94.7

Table 7.3.6 Percentage distribution of household Food security Month and Katete 2019.

Katete					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
June 2018	259	0.0	0.0	0.0	100.0
July 2018	259	0.0	0.0	0.0	100.0
August 2018	141	0.0	0.0	0.0	100.0
September 2018	259	0.0	0.0	0.0	100.0
October 2018	831	0.0	0.0	44.1	55.9
November 2018	580	0.0	0.0	37.9	62.1
December 2018	2149	0.0	0.0	29.0	71.0
January-19	4792	0.0	0.0	24.4	75.6
February-19	10717	0.0	0.0	30.0	70.0
March-19	3680	9.9	0.0	24.6	65.4
April-19	907	0.0	0.0	24.2	75.8

Table 7.3.7: Percentage distribution of household Food security Month and Lumezi 2019.

Lumezi					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	1465	19.3	0.0	24.4	56.3
June 2018	1387	33.3	0.0	25.8	40.9
July 2018	1053	43.8	0.0	17.0	39.2
August 2018	1644	34.4	0.0	10.9	54.8
September 2018	1107	34.8	0.0	0.0	65.2
October 2018	1697	22.7	0.0	12.1	65.2
November 2018	2263	17.0	0.0	24.9	58.0
December 2018	3675	10.5	0.0	18.2	71.3
January-19	8399	2.5	4.3	21.1	72.2
February-19	13805	5.4	0.0	24.7	69.9
March-19	6956	6.6	0.0	24.3	69.1
April-19	1722	17.9	0.0	22.3	59.9

Table 7.3.8: Percentage distribution of household Food security Month and Lundazi 2019.

Lundazi					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	257	36.8	0.0	0.0	63.2
June 2018	294	42.8	0.0	0.0	57.2
August 2018	138	0.0	0.0	100.0	0.0
September 2018	232	40.6	0.0	0.0	59.4
October 2018	978	0.0	0.0	14.1	85.9
November 2018	1533	6.2	0.0	9.0	84.8
December 2018	3823	9.0	0.0	14.3	76.7
January-19	7132	6.7	0.0	17.1	76.1
February-19	14283	5.9	3.3	26.7	64.2
March-19	9326	7.3	3.0	22.9	66.9
April-19	1201	21.5	0.0	11.5	67.0

Table 7.3.9: Percentage distribution of household Food security Month and Lusangazi 2019.

Lusangazi					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	6	0.0	0.0	0.0	100.0
June 2018	6	0.0	0.0	0.0	100.0
July 2018	11	50.0	0.0	0.0	50.0
September 2018	7	0.0	0.0	0.0	100.0
October 2018	6	0.0	0.0	0.0	100.0
November 2018	19	0.0	0.0	39.0	61.0
December 2018	29	0.0	0.0	0.0	100.0
January-19	118	6.2	4.9	12.5	76.4
February-19	195	3.8	0.0	16.4	79.8
March-19	66	8.8	0.0	20.0	71.2
April-19	19	30.5	30.5	0.0	39.0

Table 7.3.10: Percentage distribution of household Food security Month and Mambwe 2019.

Mambwe					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
June 2018	34	0.0	0.0	0.0	100.0
July 2018	69	0.0	0.0	0.0	100.0
August 2018	34	0.0	0.0	0.0	100.0
September 2018	69	0.0	0.0	0.0	100.0
October 2018	261	0.0	0.0	13.8	86.2
November 2018	349	9.8	0.0	35.0	55.2
December 2018	1398	2.5	0.0	8.7	88.8
January-19	4113	3.0	0.0	8.0	89.0
February-19	6100	2.0	0.0	4.0	94.0
March-19	2610	0.0	0.0	6.0	94.0
April-19	122	0.0	0.0	100.0	0.0

Table 7.3.11: Percentage distribution of household Food security Month and Nyimba 2019.

Nyimba					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	1860	10.0	0.0	0.0	90.0
June 2018	1660	8.3	0.0	0.0	91.7
July 2018	1275	10.8	0.0	10.8	78.3
August 2018	1184	0.0	0.0	0.0	100.0
September 2018	1473	0.0	0.0	0.0	100.0
October 2018	1412	0.0	0.0	3.4	96.6
November 2018	2821	14.7	0.0	13.2	72.1
December 2018	3781	11.0	0.0	14.7	74.3
January-19	7374	4.8	1.9	9.4	83.9
February-19	7411	4.1	.2	10.2	85.5
March-19	3552	13.4	0.0	7.9	78.7
April-19	1882	17.2	0.0	0.0	82.8

Table 7.3.12: Percentage distribution of household Food security Month and Petauke 2019.

Petauke					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	393	0.0	0.0	100.0	0.0
July 2018	393	0.0	0.0	0.0	100.0
August 2018	866	0.0	0.0	0.0	100.0
October 2018	1983	0.0	0.0	0.0	100.0
November 2018	1999	0.0	0.0	.8	99.2
December 2018	3982	0.0	4.9	10.3	84.8
January-19	13483	1.5	1.5	19.0	78.1
February-19	18604	3.2	1.5	18.9	76.4
March-19	3375	0.0	5.8	6.3	87.9
April-19	866	0.0	0.0	0.0	100.0

Table 7.3.13: Percentage distribution of household Food security Month and Sinda 2019.

Sinda					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
August 2018	555	0.0	0.0	0.0	100.0
September 2018	832	0.0	0.0	0.0	100.0
October 2018	895	0.0	0.0	0.0	100.0
November 2018	1109	0.0	0.0	25.0	75.0
December 2018	1664	0.0	0.0	0.0	100.0
January-19	2281	0.0	0.0	12.2	87.8
February-19	8885	0.0	0.0	3.1	96.9
March-19	2558	10.8	0.0	10.8	78.3
April-19	895	0.0	0.0	0.0	100.0

Table 7.3.14: Percentage distribution of household Food security Month and Vubwi 2019.

Vubwi					
Rural Eastern total	Total	Food secure	Mild food insecurity	Moderate food insecurity	Severe food insecurity
May 2018	114	0.0	0.0	0.0	100.0
June 2018	69	0.0	0.0	0.0	100.0
July 2018	351	0.0	0.0	0.0	100.0
August 2018	123	0.0	0.0	0.0	100.0
September 2018	147	0.0	0.0	0.0	100.0
October 2018	9	0.0	0.0	0.0	100.0
November 2018	550	0.0	0.0	0.0	100.0
December 2018	375	2.4	0.0	18.4	79.2
January-19	2227	0.0	0.0	29.8	70.2
February-19	4378	0.0	0.0	25.9	74.1
March-19	1090	0.0	0.0	12.9	87.1
April-19	342	0.0	0.0	0.0	100.0

Chapter 8: Household Forest Clearing, Planting and Regeneration

8.1 Introduction

Clearing of woods and forests is the process by which vegetation, such as trees and bushes, together with their roots are permanently removed. The main aim of this process is to clear areas of forest, woodland or scrub in order to use the soil for another purpose, such as pasture land, arable farming, human settlement or the construction of roads.

Table 8.1 shows the proportion of households that cleared the forest area in rural Eastern Province in 2019. Overall, 6.2 percent of the households cleared the forest area.

Analysed by sex, 6.9 percent of the males in rural Eastern Province compared to 3.7 percent of their female counterparts cleared forest area.

Analysed by district, Vubwi and Nyimba districts had the largest and second largest proportions of households involved in forest clearing at 11.9 and 10.7 percent, respectively. Kasenengwa had the smallest proportion at less than 1 percent.

Table 8.1: Share of Households that Cleared the Forest Area in the last 5 years, Rural Eastern Province,

District		Total	Male	Female
Total	318,570	6.2	6.9	3.7
Vubwi	7,687	11.9	10.7	14.7
Nyimba	15,415	10.7	11.6	7.5
Mambwe	12,515	10.3	9.7	11.7
Lundazi	27,270	9.9	10.2	7.9
Chasefu	23,728	8.7	9.6	3.0
Chipangali	30,585	7.4	7.4	7.1
Lumezi	23,602	6.9	7.4	4.7
Chadiza	15,982	6.0	6.7	3.5
Katete	26,131	5.3	4.9	6.4
Petauke	47,286	5.2	6.9	0.0
Lusangazi	524	5.0	6.1	0.0
Chipata	26,410	3.6	4.7	0.0
Sinda	35,792	3.5	4.3	0.0
Kasenengwa	25,643	0.6	0.8	0.0

Table 8.2 shows the average forest area in hectares cleared by households in rural Eastern Province over the last 5 years. Results show that rural households in Eastern cleared 0.48 hectares of forest area on average.

Analysed by district, Lumezi, Chasefu and Petauke were among the three districts whose average cleared forest areas were highest in the province at 0.70; 0.63 and 0.62 hectares respectively. Katete and Kasenengwa districts had the least cleared forest areas at 0.23 and 0.18 hectares, respectively.

Table 8.2: Average forest Area Cleared (Ha), Rural Eastern Province in the last 5 years.

District	Sex of Head		
	All Households	Male	Female
Total	0.48	0.48	0.49
Lumezi	0.70	0.55	1.58
Chasefu	0.63	0.63	0.81
Petauke	0.62	0.62	-
Sinda	0.56	0.56	-
Chipangali	0.56	0.58	0.48
Vubwi	0.51	0.49	0.54
Mambwe	0.49	0.61	0.24
Chadiza	0.47	0.45	0.61
Lundazi	0.32	0.33	0.30
Lusangazi	0.32	0.32	0.00
Chipata	0.27	0.27	-
Nyimba	0.27	0.24	0.38
Katete	0.23	0.25	0.20
Kasenengwa	0.18	0.18	-

Table 8.3 shows the percentage share of households by reason cited for clearing forest area in rural Eastern Province over the last 5 years. Overall, results show that 6.2 percent of the households in rural Eastern Province about 19,658 households in absolute terms cleared the forest areas. Disaggregated by sex, males were 6.6 times more likely to be involved in forest clearing relative to their female counterparts.

Further, of the 6.2 percent households that reported having cleared forest areas, 3.2 percent cited cropping as the reason for clearing the forest area, 0.9 percent cited firewood, and another 0.9 percent cited infrastructure/settlements. Charcoal production, livestock fodder production and tree plantation were among the reasons least cited for clearing forest areas.

Analysed by district, Vubwi had the largest proportion of households citing cropping as reason for clearing forest areas at 10.0 percent while Lundazi had the largest proportion citing firewood at 4.8 percent. Chasefu had the largest share of its population citing both infrastructure and charcoal production as reasons for clearing forest areas at 4.3 and 0.9 percent respectively.

Table 8.3: Percentage Share of Households by Reasons for Clearing the Forest Area, Rural Eastern Province, in the last 5 years.

	Households		Total	Sex of head	
				Male	Female
			Percent share		
Total	318,570	19658	6.2	5.4	0.8
Cropping		10329	3.2	2.7	0.5
Firewood		2979	0.9	0.9	0.0
Infrastructure/settlements		2874	0.9	0.7	0.2
Other		1937	0.6	0.5	0.1
To produce ash for fertilizer		919	0.3	0.3	0.0
Charcoal production		419	0.1	0.1	0.0
Livestock fodder production		185	0.1	0.1	0.0
Tree plantation		16	0.0	0.0	0.0
Chadiza	15,982	956	6.0	5.2	0.8
Cropping		547	3.4	2.6	0.8
Firewood		263	1.6	1.6	0.0
Infrastructure/settlements		136	0.9	0.9	0.0
Other		10	0.1	0.1	0.0
Chasefu	23,728	2056	8.7	8.2	0.4
Infrastructure/settlements		1011	4.3	3.8	0.4
Other		287	1.2	1.2	0.0
Charcoal production		204	0.9	0.9	0.0
Cropping		185	0.8	0.8	0.0
Livestock fodder production		185	0.8	0.8	0.0
Firewood		185	0.8	0.8	0.0
Chipangali	30,585	2251	7.4	6.1	1.3
Cropping		1327	4.3	3.4	0.9
To produce ash for fertilizer		636	2.1	2.1	0.0
Other		288	0.9	0.6	0.3
Chipata	26,410	942	3.6	3.6	0.0
Cropping		796	3.0	3.0	0.0
Infrastructure/settlements		108	0.4	0.4	0.0
Other		38	0.1	0.1	0.0
Kasenengwa	25,643	152	0.6	0.6	0.0
Firewood		113	0.4	0.4	0.0
Other		39	0.2	0.2	0.0
Katete	26,131	1391	5.3	3.6	1.7
Cropping		1019	3.9	3.1	0.8
Infrastructure/settlements		220	0.8	0.0	0.8
Firewood		152	0.6	0.6	0.0
Lumezi	23,602	1617	6.9	5.9	1.0
Cropping		848	3.6	2.7	0.9
Firewood		308	1.3	1.2	0.1
To produce ash for fertilizer		282	1.2	1.2	0.0
Other		179	0.8	0.8	0.0
Lundazi	27,270	2713	9.9	9.0	1.0
Firewood		1313	4.8	4.8	0.0
Cropping		1137	4.2	3.2	1.0
Charcoal production		168	0.6	0.6	0.0
Other		94	0.3	0.3	0.0
Lusangazi		26	5.0	5.0	0.0
Other		13	2.5	2.5	0.0
Cropping		7	1.4	1.4	0.0
Firewood		6	1.1	1.1	0.0

Table 8.3: Percentage Share of Households by Reasons for Clearing the Forest Area, Rural Eastern Province, in the last 5 years.

	Households		Total	Sex of head	
				Male	Female
Mambwe	12,515	1291	10.3	6.8	3.5
Cropping		769	6.1	5.6	0.5
Infrastructure/settlements		401	3.2	1.2	2.0
Other		122	1.0	0.0	1.0
Nyimba	15,415	1643	10.7	8.9	1.8
Cropping		982	6.4	4.6	1.8
Infrastructure/settlements		462	3.0	3.0	0.0
Firewood		152	1.0	1.0	0.0
Charcoal production		47	0.3	0.3	0.0
Petauke	47,286	2471	5.2	5.2	0.0
Cropping		1668	3.5	3.5	0.0
Other		590	1.2	1.2	0.0
Infrastructure/settlements		197	0.4	0.4	0.0
Tree plantation		16	0.0	0.0	0.0
Sinda	35,792	1235	3.5	3.5	0.0
Infrastructure/settlements		340	1.0	1.0	0.0
Firewood		340	1.0	1.0	0.0
Cropping		277	0.8	0.8	0.0
Other		277	0.8	0.8	0.0
Vubwi	7,687	914	11.9	7.6	4.3
Cropping		766	10.0	6.7	3.3
Firewood		147	1.9	0.9	1.0

Table 8.4 shows the percentage share of households by type of forest area cleared in rural Eastern Province in the last 5 years. Overall, results show that 3.1 percent of the households cleared a primary natural forest, 2.6 percent a secondary forest area and 0.6 percent of the households cleared some other type of forest area other than the ones in the table.

Analysed by district, Lundazi and Nyimba had the largest proportions of their populations that cleared a primary forest at 6.4 and 5.9 percent respectively. Vubwi and Kasenengwa had the smallest proportions that cleared a primary forest area at 0.9 and 0.6 percent respectively.

Table 8.4: Percentage Share of Households by Type of Forest Area Cleared, rural Eastern Province in the last 5 years.

District	Count	Households				
		Primary natural forest	Secondary forest	Forest plantation	Other	
Total	318,570	9,886	3.1	2.6	0.0	0.6
Lundazi	27,270	1,749	6.4	3.0	0.0	0.5
Nyimba	15,415	905	5.9	2.7	0.0	3.0
Mambwe	12,515	696	5.6	4.8	0.0	0.0
Chipangali	30,585	1,285	4.2	2.2	0.3	0.6
Petauke	47,286	1,606	3.4	1.4	0.0	0.8
Lumezi	23,602	745	3.2	3.4	0.0	0.8
Chadiza	15,982	430	2.7	3.3	0.0	0.0
Sinda	35,792	958	2.7	0.0	0.0	0.8
Katete	26,131	592	2.3	3.1	0.0	0.8
Lusangazi	524	11	2.2	0.0	0.0	2.8
Chasefu	23,728	369	1.6	7.1	0.0	0.0
Chipata	26,410	319	1.2	1.7	0.0	0.7
Vubwi	7,687	69	0.9	11.9	0.0	0.0
Kasenengwa	25,643	152	0.6	0.0	0.0	0.0

Table 8.5 shows the percentage share of households by type of forest area from which trees were cut in the last five years. Overall, 6.2 percent of the households in rural Eastern cut trees from various forest areas. Of those who cut trees, 5.4 percent were males and 0.8 percent were females.

Further analysis of results show that 4.2 percent of the households in rural Eastern, about 13,226 in absolute terms cut the trees from land on which they already had rights, 1.6 percent in a new area on customary land not previously used or owned, 0.1 from protected areas not previously used or owned by households, another 0.1 percent from other state land (not including protected area or GMA) and lowest source from GMA not previously used or owned by the household.

Table 8.5: Percentage Share of Households by Type of Forest Area where Trees were cut, rural Eastern Province in the last 5 year

	Count	Households		Male	Female
		Count	Percentage	Percentage	Percentage
Total	318,570	19,658	6.2	5.4	0.8
On land to which HH already have rights		13,226	4.2	3.7	0.5
In a new area on customary land, not previously used or owned		4,998	1.6	1.2	0.3
Other		843	0.3	0.2	0.0
In protected areas not previously used or owned by HH		292	0.1	0.1	0.0
On other state land (not including protected area or GMA)		252	0.1	0.1	0.0
In GMA not previously used or owned by HH		47	0.0	0.0	0.0
Outside HH land on land which is on lease		0	0.0	0.0	0.0

Table 8.6 shows the percentage distribution of households that did selective cutting of trees in rural Eastern Province in the last five years. Overall, 47.3 percent of the household in the province did selective cutting of trees. Of these households, 38.7 percent were males and 8.6 percent were females.

Analysed by district, Vubwi and Sinda districts at 69.6 and 58.5 percent had the highest percentage share of households that did selective cutting of trees while Chasefu and Lusangazi at 30.4 and 26.6 percent respectively had the least shares.

Table 8.6: Percentage Distribution of Households that did Selective Cutting, rural Eastern Province in the last 5 years.

District	Households	Count	Percent share	Sex of head	
				Male	Female
				Percent share	
Total	318570	150832	47.3	38.7	8.6
Chadiza	15982	9293	58.1	46.8	11.4
Chasefu	23728	7206	30.4	24.9	5.4
Chipangali	30585	14450	47.2	42.0	5.3
Chipata	26410	10644	40.3	33.2	7.1
Kasenengwa	25643	13548	52.8	41	11.9
Katete	26131	15107	57.8	48	10.0
Lumezi	23602	10946	46.4	42	4.5
Lundazi	27270	8567	31.4	29	2.7
Lusangazi	524	139	26.6	25	1.1
Mambwe	12515	6623	52.9	41.6	11.3
Nyimba	15415	6285	40.8	32.1	8.7
Petauke	47286	21751	46.0	36.8	9.2
Sinda	35792	20921	58.5	44.3	14.1
Vubwi	7687	5353	69.6	53.0	16.6

Table 8.7 shows the percentage distribution of households that allowed cropland to regrow in rural Eastern Province in the last 5 years. Overall, 18.5 percent of the households in the province allowed cropland to regrow. Of these, 15.6 percent were males and 2.9 percent were females.

Further analysis show that 9.7 percent of those who allowed cropland to regrow had completed primary school, 3.4 percent had never attended school, 3.3 percent had junior secondary school, 1.6 percent had senior secondary and 0.1 percent had not completed any level of education.

Table 8.7: Percentage Distribution of Households that allowed Cropland to Regrow in rural Eastern Province in the last 5 years.

Level of Education		Sex of head			
		Total	Male	Female	
Total	318570	58943	18.5	15.6	2.9
Primary		30877	9.7	8.2	1.5
Never attended		10822	3.4	2.5	0.9
Junior Secondary		10409	3.3	3.0	0.3
Senior Secondary		5049	1.6	1.4	0.2
Tertiary		1528	0.5	0.4	0.1
None		259	0.1	0.1	0.0

Table 8.8 shows the average area in hectares of replanted forest by district and sex of the Head of the household in the last 5 years. Overall, results show that the provincial average area of replanted forests was 0.24 hectares. Disaggregated by sex, male headed households replanted an average of 0.26 ha while female headed households replanted an average of 0.11 ha.

At district level, Vubwi had the highest average area replanted of 1.14 ha and 1.39 for male headed households followed by Lumezi with 0.53 ha and 0.56 ha for male-headed households. Petauke was the lowest with an average of 0.03 ha.

Table 8.8: Average Area in Hectare of Replanted Forest by District and Sex of the Head of the Household in the Last 5 Years

District	Sex of head		
	Total	Male	Female
	Trees planted		
Total	0.24	0.26	0.11
Vubwi	1.14	1.39	0.00
Lumezi	0.53	0.56	0.06
Mambwe	0.45	0.59	0.10
Nyimba	0.28	0.31	0.00
Chipangali	0.26	0.26	0.25
Chadiza	0.17	0.18	0.00
Katete	0.16	0.16	
Lundazi	0.15	0.15	0.17
Chasefu	0.15	0.15	0.21
Chipata	0.15	0.18	0.04
Kasenegwa	0.11	0.11	0.07
Lusangazi	0.09	0.09	
Sinda	0.05	0.05	
Petauke	0.03	0.04	0.00

Table 8.9 shows the percentage distribution of households by method of forest regrowth allowed in rural Eastern Province by district and sex of household head in the last 5 years by seedlings.

At district level, Chasefu had the highest percentage of households that allowed forest regrowth through sprouting from stumps at 74.7 percent. Chipangali had the highest percentage of households that allowed regrowth of the forest through planting of trees at 19.1 percent. Katete had the largest share of households that allowed forest regrowth through natural regeneration by Seedlings at 63.2 percent.

Table 8.9: Percentage Distribution of Households by Method of Forest Regrowth Allowed In Rural Eastern Province by District and Sex of Household Head in the Last 5 Years.

District	Total				Male				Female			
	Sprouting from stumps	Natural regeneration by seedlings	Planting	Other	Sprouting from stumps	Natural regeneration by seedlings	Planting	Other	Sprouting from stumps	Natural regeneration by seedlings	Planting	Other
Total	42.3	36.3	3.5	17.9	41.1	36.3	3.6	19.0	47.9	36.0	2.9	13.2
Chadiza	23.0	46.1	0.0	31.0	22.3	45.1	0.0	32.6	25.7	50.0	0.0	24.3
Chasefu	74.7	14.3	1.7	9.4	73.6	15.5	1.9	9.0	81.3	6.7	0.0	12.1
Chipangali	36.0	29.0	19.1	15.9	37.3	27.9	18.0	16.9	29.9	34.6	24.3	11.1
Chipata	35.9	46.5	1.5	16.0	37.4	44.7	1.9	16.0	29.4	54.6	0.0	16.0
Kasenengwa	55.7	20.9	0.0	23.4	54.6	19.3	0.0	26.2	59.8	26.4	0.0	13.8
Katete	29.6	63.2	0.0	7.2	29.0	62.9	0.0	8.2	32.8	64.6	0.0	2.6
Lumezi	45.2	32.0	8.7	14.1	44.3	32.9	10.4	12.4	49.6	27.7	1.0	21.8
Lundazi	59.7	9.0	4.3	26.9	58.6	8.8	4.7	27.8	71.5	11.8	0.0	16.8
Lusangazi	39.6	35.8	0.0	24.7	37.0	38.9	0.0	24.2	69.5	0.0	0.0	30.5
Mambwe	30.1	39.4	2.1	28.4	23.5	43.5	1.1	31.9	46.4	29.1	4.6	19.9
Nyimba	29.4	57.7	.6	12.3	30.2	55.6	.7	13.5	26.5	65.6	0.0	7.9
Petauke	33.4	51.8	0.0	14.8	30.4	54.0	0.0	15.6	46.3	42.1	0.0	11.7
Sinda	58.4	21.4	0.0	20.2	51.3	25.1	0.0	23.6	86.9	6.6	0.0	6.6
Vubwi	31.4	38.5	1.3	28.8	33.8	32.4	1.7	32.1	25.0	55.4	0.0	19.6

Table 8.10 shows the percentage distribution of households by type of tree species grown by district and sex of household Head in rural Eastern Province in the last 5 years. Overall, 2.3 percent of the households grew *Faideherbia Albiada* commonly known as Musangu, 0.7 percent *Tephrosia Vogetii* commonly known as Ububa, 6.5 percent *Gilricidia Sepium* locally known as Gilicidia, 1.8 percent *Acacia Polycanta* locally known as Munungamunshi and 10.1 percent of the households grew some other species other than the ones mentioned.

Analysing each tree species grown by households across districts, amongst the households that grew Musangu, 7.1 and 7.0 percent, respectively were found in Mambwe and Lusangazi districts, representing the highest proportions. Nyimba had the lowest share at 0.7 percent.

For *Tephrosia Vogetii* (Ububa), Chipangali at 4.6 percent had the largest share of households that grew it while Sinda had the lowest 0.2 percent.

For households that grew *Gilricidia Septum* (Gilicidia), Chipangali had the largest share at 26.4 percent, followed by Lumezi and Mambwe at 14.2 and 8.8 percent, respectively. Sinda had the lowest share at 0.8 percent.

Among the households that grew *Acacia Polycanta* (Munungamunshi) Chipangali had the largest share at 12.0 percent, followed by Lumezi at 4.3 percent. Chipata had the lowest share of households that grew Munungamunshi at 0.6 percent.

For households that grew other tree species, Chipata had the largest share at 17.2 percent, followed by Chipangali at 15.1 percent. Lundazi had the lowest share at 7.3 percent.

Table 8.10: Percentage Distribution of Households by Type of Tree Species Grown by District and Sex of the Household Head in Rural Eastern Province in the Last 5 Years.

		Faideherbia Albiada (Musangu)	Tephrosia Vogetii (Ububa)	Gilricidia Septum (Gilicidia)	Acacia Polycanta (Munungamunshi)	Other
Total	318570	2.3	0.7	6.5	1.8	10.1
Chadiza	15982	0.9	0.0	.9	0.0	11.5
Chasefu	23728	0.8	0.0	1.7	0.0	8.7
Chipangali	30585	2.4	4.6	25.4	12.0	15.1
Chipata	26410	3.1	0.0	5.4	0.6	17.2
Kasenengwa	25643	4.0	0.7	3.4	0.0	9.6
Katete	26131	4.5	0.0	4.9	0.7	9.8
Lumezi	23602	2.0	0.8	14.2	4.3	10.7
Lundazi	27270	5.0	0.5	6.0	1.6	7.3
Lusangazi	524	7.0	0.0	5.6	0.0	8.9
Mambwe	12515	7.1	0.0	8.8	2.0	7.8
Nyimba	15415	0.7	0.9	7.3	0.0	8.9
Petauke	47286	0.8	0.0	2.7	0.0	9.6
Sinda	35792	0.0	0.2	.8	0.0	4.2
Vubwi	7687	0.0	0.0	.0	0.0	13.1

Table 8.11 shows the percentage distribution of households by use of each tree species grown at provincial level in rural Eastern Province in the last 5 Years. Results show that 38.9 percent of households used Faideherbia Albiada (Musangu) to increase the value of the land while 22.8 percent for agroforestry. Further, among the households that grow Tephrosia Vogeti commonly known as Ububa, 45.9 percent grew it to be used to make other products for own use, 13.6 percent for wind protection and 11.5 percent to increase the value of land. Further 32.1 percent of the households that grew Gilricidia Septum used it to increase the value of the land and 9.8 percent for domestic fuel wood. Among the households that grew Acacia Polycanta (Munungamunshi), 38.2 percent used it as timber/poles as part of own production.

Table 8.11 Percentage Distribution of Households by Use of Each Tree Species Grown In Rural Eastern Province in the Last 5 Years

	Faideherbia Albiada (Musangu)	Tephrosia Vogetii (Ububa)	Gilricidia Septum (Gilicidia)	Acacia Poly-canta (Munungamunshi)	Other
	7306	2109	20666	5698	32103
Fuel wood for domestic use	2.9	0.0	9.8	3.7	3.6
Fuel wood for sale	.6	0.0	.5	0.0	.3
Fodder for own use	0.0	0.0	1.2	6.4	.4
Fodder for sale	0.0	0.0	0.0	0.0	.6
Timber/poles for own use	.4	0.0	5.5	38.3	8.8
Timber/poles for sale	2.5	0.0	1.4	3.1	1.0
Production of edible tree products	0.0	0.0	.4	3.1	30.9
For production of edible tree products (e.g. fruits) for sale	0.0	0.0	0.0	0.0	11.8
Other products for own use	2.6	45.9	9.6	23.1	3.4
Other products for sale	0.0	0.0	.5	0.0	.4
For shade	1.9	6.6	5.1	8.2	20.2
For wind protection	1.9	13.6	2.4	2.1	4.0
Carbon sequestration	2.5	5.0	9.9	2.4	.2
Other environmental services	7.0	8.6	3.3	0.0	1.9
Land demarcation	0.0	8.9	.5	0.0	1.7
To increase the value of my land	38.9	11.5	32.1	2.1	1.7
Agroforestry	22.8	0.0	11.6	2.3	2.7
To allow my children and/or grandchildren to see these trees	0.0	0.0	0.0	0.0	0.0
Don't know (e.g. planted the trees because another HH member)	0.0	0.0	1.9	0.0	0.0
Person not available to answer	2.5	0.0	.2	1.8	.2
Other purpose	13.4	0.0	4.1	3.2	6.2

Table 8.12 shows the average crop land in hectares (ha) allowed to regrow by Sex and Educational level of the Head of household in rural Eastern Province in the Last 5 Years. Results show that the average crop land (ha) allowed to regrow was 0.66 hectares. Further, male-headed households, on average, allowed 0.2 hectares more for crop land to regrow than their female counterparts at 0.69 hectares relative to 0.49 hectares.

Table 8.12: Average Crop Land (ha) allowed to Regrow by Sex and Educational level of the Head of the Household in rural Eastern Province in the Last 5 Years.

Education Status	Total	Male	Female
Total	.66	.69	.49
Never attended	.41	.45	.31
None	.75	.75	
Primary	.68	.68	.67
Junior Secondary	.79	.82	.49
Senior Secondary	.86	.94	.17
Tertiary	.49	.57	.05

Chapter 9 Storage Facility Used

Table 9.1 shows the percentage distribution of households that utilize improved crop storage facilities in rural Eastern Province by sex of head of household and district, 2017-18 Agriculture Season. Results of the survey show that 11.1 percent of the households used an improved crop storage facility. At district level, Chasefu had the largest share of households that used an Improved crop storage facility among the districts in rural Eastern at 40.3 percent. Only 1.9 percent of the households in Vubwi used an improved crop storage facility representing the lowest share.

Among male-headed households, 11.3 percent of the households used an improved crop storage facility. At district level, 41.7 percent of male-headed households in Chasefu used an improved crop storage facility. Only an estimated 2.5 percent of the households in Vubwi District used an improved crop storage facility.

For female-headed households, 10.4 percent in rural Eastern Province used an improved crop storage facility. At district level, 40.9 percent of the female-headed households in Nyimba reported using an improved storage facility. None of the female-headed households interviewed in Chadiza, Lundazi, Lusangazi, Sinda and vubwi districts reported using an improved storage facility.

District	Sex of head								
	Total			Male			Female		
	Total	Tradi-tional	Im-proved	Total	Tradi-tional	Im-proved	Total	Tradi-tional	Im-proved
Total	154,808	88.9	11.1	120,064	88.7	11.3	34,744	89.6	10.4
Chadiza	5,921	97.9	2.1	4,519	97.2	2.8	1,401	100.0	-
Chasefu	7,855	59.7	40.3	6,662	58.3	41.7	1,193	67.4	32.6
Chipangali	21,031	96.4	3.6	17,301	96.3	3.7	3,730	97.2	2.8
Chipata	14,487	80.9	19.1	11,256	83.6	16.4	3,231	71.2	28.8
Kasenengwa	19,722	96.9	3.1	14,742	97.2	2.8	4,979	96.2	3.8
Katete	8,142	72.8	27.2	5,912	70.4	29.6	2,230	79.0	21.0
Lumezi	10,454	95.6	4.4	8,172	94.7	5.3	2,282	98.9	1.1
Lundazi	6,984	83.1	16.9	6,362	81.4	18.6	622	100.0	-
Lusangazi	147	96.1	3.9	114	95.0	5.0	34	100.0	-
Mambwe	6,798	93.6	6.4	4,776	91.6	8.4	2,022	98.3	1.7
Nyimba	6,452	77.9	22.1	4,311	87.2	12.8	2,142	59.1	40.9
Petauke	25,262	91.1	8.9	18,698	91.2	8.8	6,564	91.0	9.0
Sinda	17,833	90.7	9.3	14,443	88.5	11.5	3,390	100.0	-
Vubwi	3,721	98.1	1.9	2,796	97.5	2.5	925	100.0	-

9.1 Conservation Farming

Conservation farming is one of the most widely-promoted approaches to climate change adaptation in Zambia. It aims to produce high crop yields while reducing the costs of production and maintaining soil fertility. The basic principles of conservation farming is to minimize disturbance of the soil and keep the soil covered as much as possible and rotate crops.

Tables 9.2 and 9.3 shows the Number and Percentage Distribution of households across the district practicing Conservation farming by Type during the 2017/18 Agricultural season. Results show that 6,867 households in rural Eastern Province practiced mulching of which 50.4 percent where in Katete District while less than one (1) percent each where in Mambwe and Lusangazi districts.

Further, 27,831 households in rural Eastern Province practiced Intercropping. Of these households, 19.9 percent where in Katete, 18.2 percent in Lundazi and 10.0 percent in Chipangali representing the highest, second highest and third highest, respectively. Lusangazi had the lowest proportion of households that practiced intercropping at 0.1 percent.

An estimated 26,367 households in rural Eastern Province reported to be practicing Conservation Agriculture out of which 20.4 percent where in Katete while less than one (1) percent where in Lusangazi. Further, results indicated that Crop rotation was the most widely practiced conservation farming method. A total of 210,402 households in rural Eastern Province practiced Crop rotation. Out of these, 13.6 percent where in Petauke while less than one (1) percent where in Lusangazi District.

In addition 2,050 households in rural Eastern Province reported practicing integrated crop-livestock management out of which 19.0 percent and 18.4 percent where in Lundazi and Kasenengwa, respectively. No household reported practicing integrated Crop-Livestock management in Chadiza, Chasefu, Chipata, Lusangazi, Petauke and Vubwi districts.

An estimated 11,363 households engaged in Agro-forestry during the 2017/18 Agricultural season. Out of these households, 17.4 percent where in Chipangali District while Lusangazi District had less than one (1) percent

Results further indicated that 405 households practiced Improved grazing during the reference period. Out of these households, 48.1 percent where in Chipata while none of the households interviewed in Chasefu, Chipangali, Kasenengwa, Katete, Lumezi, Lusangazi, Mambwe, Petauke, Sinda and Vubwi reported practicing Improved grazing.

Further, 540 households in rural Eastern Province reported to be practicing Improved water management out of which 51.1, 36.1 and 12.8 percent were in Lundazi, Chipata and Vubwi districts respectively. None of the households in the rest of the districts reported practicing Improved water management.

Table 9.2: Number of Households Practicing Conservation Farming by Type and District, 2017/18 Agricultural season.

District	Mulching	Inter-cropping	Conservation Agriculture	Crop Rotation	Integrated crop-Livestock Management	Agro-forestry	Improved Grazing	Improved Water Management
Total	6,867	27,831	26,367	210,402	2,050	11,363	405	540
Chadiza	263	2,515	1,286	10,041	-	390	10	-
Chasefu	-	791	1,426	15,737	-	-	-	-
Chipangali	286	2,777	4,066	22,239	107	1,981	-	-
Chipata	985	2,025	1,874	18,072	-	1,175	195	195
Kasenengwa	227	903	1,698	20,779	377	414	-	-
Katete	3,463	5,548	5,375	17,711	183	1,647	-	-
Lumezi	103	2,257	2,433	15,387	282	1,077	-	-
Lundazi	276	5,070	1,831	19,613	390	1,610	138	276
Lusangazi	13	34	20	267	-	28	-	-
Mambwe	34	580	1,967	8,071	158	1,083	-	-
Nyimba	295	1,674	1,018	6,056	276	138	62	-
Petauke	669	1,456	787	28,548	-	1,820	-	-
Sinda	-	1,664	2,193	22,433	277	-	-	-
Vubwi	253	540	393	5,449	-	-	-	69

Table 9.3: Percentage Distribution of Households Across the Districts in Rural Eastern Province Practicing Conservation Farming during the 2017/18 Agricultural season.

District	Mulching	Inter-cropping	Conservation agriculture	Crop rotation	Integrated crop-livestock management	Agro-forestry	Improved grazing	Improved water management
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Chadiza	3.8	9.0	4.9	4.8	-	3.4	2.6	-
Chasefu	-	2.8	5.4	7.5	-	-	-	-
Chipangali	4.2	10.0	15.4	10.6	5.2	17.4	-	-
Chipata	14.3	7.3	7.1	8.6	-	10.3	48.1	36.1
Kasenengwa	3.3	3.2	6.4	9.9	18.4	3.6	-	-
Katete	50.4	19.9	20.4	8.4	8.9	14.5	-	-
Lumezi	1.5	8.1	9.2	7.3	13.8	9.5	-	-
Lundazi	4.0	18.2	6.9	9.3	19.0	14.2	34.1	51.1
Lusangazi	0.2	0.1	0.1	0.1	-	0.2	-	-
Mambwe	0.5	2.1	7.5	3.8	7.7	9.5	-	-
Nyimba	4.3	6.0	3.9	2.9	13.5	1.2	15.2	-
Petauke	9.7	5.2	3.0	13.6	-	16.0	-	-
Sinda	-	6.0	8.3	10.7	13.5	-	-	-
Vubwi	3.7	1.9	1.5	2.6	-	-	-	12.8

9.2 Climate Smart Agriculture

Table 9.4 shows the Number and Percentage distribution of Households practicing Climate Smart Agriculture (CSA) by District, 2017/18 Agricultural Season. Results show that out of the 287,572 households that were interviewed, only 16.0 percent of the households practiced CSA. At district level 35.9 percent of the households in Katete practiced CSA followed by Lundazi at 26.5 percent and Mambwe at 22.7 percent representing the first, second and third highest proportions. Petauke and Chasefu districts had the least proportions of households that practiced CSA at 6.7 percent and 7.6 percent, respectively.

Table 9.4: Shows the Number and Percentage Distribution of Households Practicing Climate Smart Agriculture by District, 2017/18 Agricultural Season.

District	Total		Practicing CSA		Not Practicing CSA	
	Number	Percent	Number	Percent	Number	Percent
Total	287,572	100.0	45,879	16.0	241,693	84.0
Chadiza	14,993	100.0	2,779	18.5	12,214	81.5
Chasefu	20,879	100.0	1,595	7.6	19,284	92.4
Chipangali	28,390	100.0	6,029	21.2	22,361	78.8
Chipata	22,251	100.0	4,477	20.1	17,775	79.9
Kasenengwa	23,458	100.0	2,939	12.5	20,519	87.5
Katete	23,831	100.0	8,563	35.9	15,268	64.1
Lumezi	20,218	100.0	3,127	15.5	17,091	84.5
Lundazi	23,582	100.0	6,253	26.5	17,329	73.5
Lusangazi	489	100.0	50	10.2	439	89.8
Mambwe	11,592	100.0	2,634	22.7	8,958	77.3
Nyimba	12,638	100.0	1,197	9.5	11,441	90.5
Petauke	43,846	100.0	2,952	6.7	40,894	93.3
Sinda	33,788	100.0	2,621	7.8	31,167	92.2
Vubwi	7,617	100.0	663	8.7	6,954	91.3

Chapter 10: Collection of Wood and Non-Wood Forest Products in the last 12 months

Forests constitute an integral part of the social and cultural wellbeing of those living around and within it in rural Eastern Province. Forests play a very important role in complimenting other sources of subsistence inputs and income. In addition, ease of access to forests, low capital and skill thresholds of entry, and proximity to widely dispersed rural markets for the products enable large numbers of people to generate some income from forest products (FAO, 1987). Income from forest products seldom seem to account for a large share of a household's total income but often comes in handy to fill in the void left due to seasonal or other cash flow gaps. It helps people cope with particular expenses or respond to unusual welfare challenges.

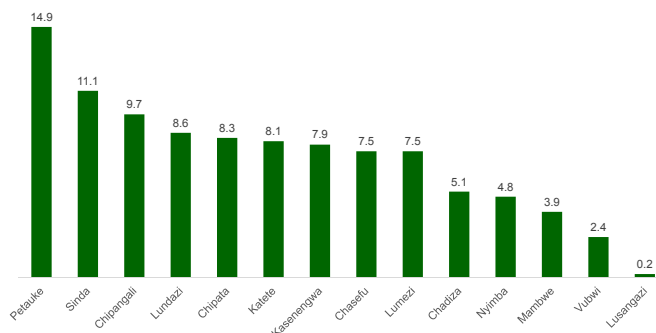
The careful management and conservation of biodiversity are fundamental for sustaining ecosystems and livelihoods but are increasingly difficult to achieve in contexts of persistent poverty, a growing international demand for timber and non-timber forest products (NTFP), and climate change (www.forestreesagroforestry.org). In rural Eastern Province, households collect a number of wood and non-wood forest products which are meant for both home and commercial use.

10.1.1: Household Wood and Non-Wood Forest Products Collection

The survey collected data from households on Wood and Non-Wood products by Type, Various Sources of those products and the Type of Harvesting Used in rural Eastern Province in 2019.

Figure 10.1 shows the percentage distribution of households that collected wood and non-wood forest products by district in rural Eastern Province, 2019. Results show that Petauke (14.9 percent) had the highest percentage of households that collected Wood and Non-Wood forest products, followed by Sinda (11.1 percent) and Chipangali (9.7 percent). Vubwi and Lusangazi had the least percentages at 2.4 and 0.2 percent respectively.

Figure 10.1: Percentage distribution of households that collected Wood and Non-Wood Forest products by district, Rural Eastern Province 2019



10.1.2 Frequently collected Wood and Non-Wood Forest Products

The survey captured data on frequently collected Wood and Non-Forest products. Households were asked to provide data on products that they frequently collected from the Forest, the Reason for collecting by district in rural Eastern Province in 2019. Results show that Chipata was the only district that collected products from the forest for the purpose of regeneration. Results show that households in Petauke collected higher products for Charcoal, Fodder and Dyeing & Tanning more frequently than any other household in the remaining districts at 17.9, 43.0 and 75.0 percent, respectively.

Results further show that households that regularly collected wood and non-wood forest product for Dying and Tanning, Regeneration and Industrial wood had one of the least shares in rural Eastern Province.

Table 10.1: Percentage Distribution of Households That Regularly Collected Wood and Non-Wood Forest Products by District, Rural Eastern Province 2019.

	Chad- iza	Chase- fu	Chi- pangali	Chipa- ta	Kasen- egwa	Katete	Lumezi	Lun- dazi	Lusan- gazi	Mam bwe	Nyimba	Pet- auke	Sinda	Vubwi
Industrial wood	0.0	0.0	0.0	29.1	0.0	0.0	21.1	13.0	.6	0.0	7.8	28.5	0.0	0.0
Fuel wood	5.2	7.6	9.9	8.1	8.0	7.8	7.6	8.6	.2	3.9	4.7	14.9	11.3	2.4
Charcoal	3.7	6.6	15.8	11.7	9.9	4.9	3.3	2.6	.1	8.2	9.6	17.9	2.9	2.8
Wood for wood carvings	1.2	0.0	22.1	11.5	27.1	13.3	10.4	1.6	.4	0.0	7.2	2.3	2.7	0.0
Wood for poles	2.5	.0	14.0	9.6	13.2	12.9	7.3	2.7	.1	6.3	4.6	11.1	14.6	1.0
Fruits, nuts, seeds, roots, berries	.1	1.8	11.3	14.6	16.6	17.5	12.8	5.9	.2	3.8	5.7	9.5	0.0	.2
Mushrooms	6.6	2.1	11.0	8.6	10.3	11.2	13.6	7.4	.1	2.3	7.4	11.3	5.2	3.0
Fodder	0.0	22.3	0.0	19.0	0.0	14.1	0.0	0.0	1.6	0.0	0.0	43.0	0.0	0.0
Rattan	4.1	1.8	6.4	0.0	14.6	31.4	14.2	6.5	.1	1.8	5.3	0.0	10.7	3.0
Plant medicines	4.5	0.0	11.6	9.7	14.6	15.3	10.3	3.4	.2	.6	9.7	13.6	5.1	1.4
Herbs and Spices	9.2	.5	25.3	7.4	12.6	6.1	6.0	4.6	.4	4.1	17.1	6.6	0.0	0.0
Dying and Tanning	0.0	0.0	0.0	0.0	0.0	24.7	0.0	0.0	0.0	0.0	0.0	75.3	0.0	0.0
Regeneration	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fibres (for rope etc.)	3.3	0.0	9.9	10.4	9.1	20.5	8.4	7.1	.1	3.9	1.3	11.5	13.0	1.4
Wildlife (including Mice, bush meat)	.5	.7	2.1	18.5	27.7	22.1	4.2	1.8	.1	14.8	.6	2.8	3.3	.7
Beekeeping activities /honey collection	8.0	2.2	13.9	4.6	8.6	11.3	18.9	6.0	.2	9.0	6.9	7.1	0.0	3.3
Caterpillar	8.1	1.8	5.8	11.2	12.4	7.9	20.2	4.8	.1	5.2	8.6	2.8	5.3	5.7
Other	0.0	2.4	0.0	11.8	4.3	0.0	.6	36.5	.2	28.9	0.0	7.3	6.4	1.6

10.1.3: Methods of Collection/Harvesting Forest Products

The survey collected data from households on methods that households mainly used to collect/harvest forest products. Table 10.2 shows the percentage distribution of households by Method used to Collect/Harvest forest products in rural Eastern Province in 2019. Results show that Petauke had the highest percentage share of households that collected/harvested forest products by hand and cutting down trees at 13.4 and 13.7 percent respectively, while Katete had the highest percentage of households cutting down branches to get forest products at 15.7 percent. Kasenengwa and Katete had the highest percentage of households shaking the tree to drop fruits at 23.6 and 22.3 percent, respectively. Lusangazi district had the lowest overall share of households that used any of the methods cited to collect/harvest forest products.

Table 10.2: Percentage distribution of Methods used in Collecting/Harvesting forest products by district, Rural Eastern Province 2019.

District	Collecting by hand	Cutting down tree	Cutting down branch	Shaking the tree to make fruits drop	Up-rooting the entire plant/tree	Fire & smoking	Other
Chadiza	5.2	4.4	1.8	.0	1.2	0.0	1.7
Chasefu	5.6	4.0	.8	0.0	0.0	0.0	2.2
Chipangali	8.8	12.7	11.9	11.5	23.9	34.9	8.7
Chipata	9.4	7.9	14.2	16.4	8.9	12.1	15.4
Kasenengwa	10.8	9.8	11.3	23.6	8.9	12.0	14.7
Katete	9.5	12.9	15.7	22.3	18.6	13.8	21.4
Lumezi	9.0	7.5	4.5	9.2	15.3	8.9	7.1
Lundazi	7.5	5.8	6.6	5.3	.3	3.0	8.4
Lusangazi	.2	.1	.1	0.0	.1	.2	.1
Mambwe	4.6	2.7	5.1	1.8	2.7	7.7	11.6
Nyimba	5.7	4.9	2.8	5.8	6.1	1.0	2.1
Petauke	13.4	13.7	9.0	4.1	4.9	5.4	4.5
Sinda	8.0	10.9	15.4	0.0	7.5	.9	.6
Vubwi	2.5	2.7	1.0	0.0	1.5	0.0	1.6

10.1.4 Place of collection for Forest Products

Households were also asked where they collect Wood and Non-Wood Forest products from for their various uses/activities. Table 10.3 shows the percentage distribution of households by place of collection of Wood and Non-Wood Forest products by district, rural Eastern Province in 2019. Results show that Petauke (14.1 percent) had the highest percentage of households who collected their forest products from Primary forests, followed by Katete (13.3 percent) and Sinda (11.9 percent). Lusangazi at 0.2 percent had the lowest share of households who collected from a primary forest. Katete at 44.8 percent had the highest percentage share of households collecting their forest products from forest plantations, followed by Chipata at 13.9 percent and Petauke at 10.3 percent. The least being Lusangazi and Vubwi, districts both at 0.1 percent.

Further, Chipangali and Katete districts at 26.8 percent and 16.1 percent had the largest and second largest share of households collecting forest products from grasslands (Dambos, wetland, swamp), respectively. Petauke had the largest share of households collecting from bare land at 33.4 percent. Lastly, Chipangali had the largest share of households collecting from both cultivated land and village built-up areas at 16.8 percent and 23.8 percent, respectively.

Table 10.3: Percentage Distribution of Households by Place of collection of Wood and Non-Wood Forest Products by District, Rural Eastern Province 2019.

District	Primary forest (i.e. older forest)	Secondary forest (i.e. regenerated forest)	Forest plantation	Grass-land (dambos, wetland, swamp)	Bare land	Cultivated land	Village, built-up area	Other
Chadiza	1.9	7.9	.8	.9	6.5	3.3	5.0	6.4
Chasefu	1.4	8.9	0.0	0.0	1.6	.2	4.3	3.1
Chipangali	11.2	7.6	9.9	26.8	.6	16.8	23.8	8.7
Chipata	8.6	10.5	13.9	15.7	6.7	11.9	8.0	16.9
Kasene-gwa	10.1	9.1	0.0	16.1	5.9	16.6	5.7	20.2
Katete	13.3	12.0	44.8	7.3	4.5	9.4	4.1	6.0
Lumezi	10.8	5.4	7.1	14.8	6.7	8.7	7.6	3.0
Lundazi	4.6	10.4	1.8	5.3	12.9	3.7	1.6	3.4
Lusangazi	.2	.0	.1	.0	.2	.2	.2	.5
Mambwe	4.7	4.7	1.7	3.8	4.3	5.8	12.1	10.6
Nyimba	6.6	3.8	8.6	.5	12.5	1.3	1.8	3.8
Petauke	14.1	6.4	10.3	.6	33.4	12.1	9.5	9.7
Sinda	11.9	9.0	.8	6.7	3.5	8.4	14.2	3.4
Vubwi	.8	4.2	.1	1.6	.6	1.5	2.0	4.4

10.2 Wood and Non-Wood Forest Products Uses

There are wide variety of uses to which households put the forest products they get. Households were asked to report on what main uses they put the forest products they acquired. Table 10.4 shows the percentage distribution of households by use to which a forest product was put by district in rural Eastern Province in 2019. Results show that Petauke (12.4 percent) had the highest percentage share of households mainly using forest products collected/harvested for domestic purposes, followed by Katete (11.6 percent) and Kasene-gwa (10.9 percent) while Lusangazi (0.2 percent) and Vubwi (2.1 percent) had the least. Results also show that only five districts used the forest products for bartering with other goods and these were Sinda (42.6 percent), Chipata (20.3 percent), Mambwe (15.3 percent), Chipangali (13.2 percent) and Vubwi (8.7 percent). Katete, Petauke and Mambwe districts had the highest percentage of households whose use for Forest products was selling at 19.9, 12.2 and 9.0 percent, respectively, with Lusangazi and Vubwi being the least at 0.1 and 1.7 percent respectively.

Table 10.4: Percentage Distribution of Households by Use of Forest Products and District, Rural Eastern Province 2019.

District	Home Use (Domestic)	Sale	Bartering	Other
Chadiza	4.4	3.0	0.0	0.0
Chasefu	4.2	6.2	0.0	4.9
Chipangali	10.5	8.6	13.2	34.8
Chipata	9.4	6.5	20.3	20.5
Kasene-gwa	10.9	6.7	0.0	0.0
Katete	11.6	19.9	0.0	3.1
Lumezi	9.0	5.2	0.0	8.6
Lundazi	6.7	7.4	0.0	0.0
Lusangazi	.2	.1	0.0	0.0
Mambwe	4.4	9.0	15.3	11.7
Nyimba	5.0	7.3	0.0	0.0
Petauke	12.4	12.2	0.0	7.6
Sinda	9.2	6.1	42.6	0.0
Vubwi	2.1	1.7	8.7	8.8

10.3: Time taken to collect Forest Product

Households were asked to report how long it took them to undertake a round trip to collect forest products. Figure 10.2 shows the average time taken by a household to successfully undertake a round trip when collecting forest products in rural Eastern Province in 2019. Results show that households collecting seed for regeneration took the longest time (90 minutes), followed by households collecting Rattan at 63.6 minutes and Dyeing/Tanning at 60.0 minutes respectively. Households collecting/harvesting charcoal took the shortest round trip lasting 29 minutes.

Figure 10.2: Percentage distribution of Households Time Taken for a Round Trip to Collect Forest Products, Eastern Province 2019

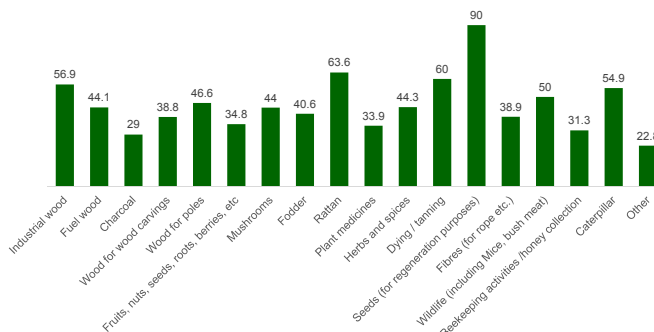


Table 10.5 shows the average time taken by households to collect forest products by type and district, rural Eastern Province in 2019. To collect fuel wood, households in Kasenengwa, Katete and Lundazi took the longest time of 55.4; 54 and 50.6 minutes respectively. Households in Nyimba and Lusangazi districts took the shortest times at 31.8 and 20.1 minutes respectively. Further, households in Lundazi and Lumezi districts spent the longest time collecting charcoal at 98.4 and 65.6 minutes, respectively while households in Sinda took the shortest time at 7.3 minutes. To get wood for poles, households in Kasenengwa and Chipangali took the longest times of 60.7 and 57.1 minutes respectively while households in Chasefu took the shortest time of 15 minutes. To get mushrooms, Katete and Mambwe households took the longest time at 57.2 and 54.2 minutes respectively while Chipangali households took the shortest time of 33 minutes.

Further, to get rattan, households in Chipangali and Lusangazi took the longest times on average at 173.5 and 120 minutes while households in Mambwe took the shortest time of 18.5 minutes. In case of wildlife, households in Katete and Sinda took the longest and second longest times of 78.4 and 70 minutes, respectively while Chasefu households took the shortest time of 3 minutes. Households in Lusangazi and Katete districts collecting Caterpillars took the longest times of 206.3 and 83.2 minutes respectively. Petauke households took the shortest time of 11.8 minutes.

Table 10.5: Taken in minutes by Households collecting Forest Products by Type and District, Rural Eastern Province 2019.

	Industrial wood	Fuel wood	Charcoal	Wood for wood carvings	Wood for poles	Fruits, nuts, seeds, roots, berries, etc	Mushrooms	Fodder	Rattan	Plant medicines	Herbs and spices	Dying/tanning	Seeds (for regeneration purposes)	Fibres (for rope etc.)	Wildlife (including Mice, bush meat)	Beekeeping activities / honey collection	Caterpillar	Other
Chadiza	-	45.3	15.9	60.0	34.5	23.0	42.8	-	30.3	6.2	33.3	-	-	32.4	5.0	16.2	25.5	-
Chasefu	-	33.4	47.1		15.0	34.6	51.5	60.0	60.0	-	15.0	-	-	-	3.0	10.0	30.0	0.0
Chipangali	-	43.1	16.7	18.1	57.1	16.0	33.0		173.5	39.7	20.6	-	-	19.1	31.9	13.3	18.7	-
Chipata	115.5	46.5	20.8	24.1	40.8	33.4	51.1	30.0	-	42.4	27.7	-	90.0	29.4	47.3	40.9	67.8	15.9
Kasengewa	-	55.4	14.1	45.5	60.7	41.8	43.6	-	110.9	37.7	30.5	-		30.5	41.3	38.4	80.7	90.0
Katete	-	54.0	24.9	67.7	44.2	59.9	57.2	60.0	42.3	42.3	180.0	60.0	-	48.1	78.4	37.4	83.2	-
Lumezi	12.5	42.8	65.6	9.3	44.8	20.1	37.6	-	33.2	13.5	40.0	-	-	21.0	59.0	22.2	57.3	-
Lundazi	30.0	50.6	98.4	107.0	46.0	45.4	49.7	-	110.1	59.2	120.0	-	-	92.2	20.2	27.0	74.7	11.6
Lusangazi	5.0	20.1	40.2	83.5	55.5	24.0	35.9	10.0	120.0	35.8	38.1	-	-	58.4	33.8	99.3	206.3	0.0
Mambwe	-	42.3	37.1		38.2	24.8	54.5	-	18.5	22.5	15.0	-	-	51.7	30.1	86.0	64.0	25.6
Nyimba	27.2	31.8	24.7	70.9	37.5	21.6	36.2	-	27.2	31.9	37.4	-	-	23.1	10.0	21.7	28.4	-
Petauke	51.4	37.3	35.4	23.6	38.8	26.5	41.1	30.0	-	29.7	60.0	60.0	-	37.7	63.4	38.3	11.8	0.0
Sinda	-	45.2	7.3	45.0	45.5		46.7	-	54.5	34.5	-	--	-	35.7	70.0		37.5	60.0
Vubwi	-	48.9	27.2		44.0	10.0	46.1	-	54.7	30.0	-	-	-	38.8	48.7	16.8	59.6	0.0

Table 10.6 shows the distance in kilometres covered by households from the homestead to access forest products by type and district, rural Eastern Province, 2019. Results show that the furthest distance households travelled to collect forest products was 21.0 Kilometers in Lumezi when collecting Charcoal, followed by households collecting wood poles in Chadiza at 17.8 Kilometers, the shortest distance travelled was in Chipangali (0.7 kilometers) and Nyimba (0.2 kilometers) for households doing beekeeping activities /honey collection and collecting Wildlife (including Mice, bush meat) respectively.

Table 10.6 Distance (KMS) Covered from the Homestead to Access Forest Products by Type and District in Rural Eastern Province, 2019

	Industrial wood	Fuel wood	Charcoal	Wood for wood carvings	Wood for poles	Fruits, nuts, seeds, roots, berries, etc	Mushrooms	Fodder	Rattan	Plant medicines	Herbs and spices	Dying / tanning	Seeds (for regeneration purposes)	Fibres (for rope etc.)	Wildlife (including Mice, bush meat)	Beekeeping activities / honey collection	Other		
Total	4.0	3.0	3.0	3.6	3.0	3.0	3.1	2.0	4.3	1.9	2.3	3.2	2.0	2.0	2.6	2.5	3.0	2.0	
Chadiza		3.1	0.7	5.0	17.8	1.5	2.3		2.3	2.3	2.5			1.2	7.0	1.9	2.3		
Chasefu		1.4	2.4		1.0	2.4	1.9	1.0	5.0		0.0				0.0	1.0	1.0	0.0	
Chipangali		1.8	1.5	1.0	1.3	1.0	1.8		4.3	1.5	1.4			1.1	3.1	0.7	1.8		
Chipata	7.3	4.2	1.1	3.3	4.4	1.9	2.6	2.0		2.6	2.0		2.0	2.1	2.6	2.0	2.3		1.4
Kasenegwa		3.0	5.4	4.4	3.7	2.1	2.8		7.9	1.6	2.0			1.9	3.0	2.5	5.8		4.0
Katete		2.8	1.1	2.5	2.8	7.4	2.6	4.0	4.2	2.1	1.5	4.0		2.0	3.0	2.2	4.2		
Lumezi	0.6	2.0	21.0	1.0	0.9	4.3	2.5		1.3	0.9	5.0			1.3	1.4	4.3	2.6		
Lundazi	2.0	9.5	3.3	15.2	2.6	1.5	10.9		4.7	2.2	1.5			2.5	0.4	1.2	2.6		3.0
Lusangazi	1.0	0.8	1.7	8.7	2.1	1.2	1.8	0.0	5.0	2.4	3.0			3.7	2.0	3.8	17.2		0.0
Mambwe		2.2	1.4		2.1	1.2	3.1		0.7	1.4	0.0			3.5	1.4	4.3	4.2		1.3
Nyimba	4.3	2.9	1.7	13.3	3.2	1.8	3.1		4.3	1.5	2.1			2.1	0.2	1.4	3.6		
Petauke	4.1	2.3	3.8	0.9	2.3	1.8	2.8	2.0		2.8	7.0	3.0		3.6	3.8	2.8	1.3		0.0
Sinda		1.5	0.7	1.5	2.7		1.4		5.5	1.7				1.7	2.0		1.3		1.0
Vubwi		2.8	2.5		1.2	1.0	2.8		2.9	2.0				0.8	1.6	2.0	1.9		0.0

10.4: Change in Distance to Point of Collection of Forest Products

The survey collected data from households about the change in distance to the point of collection of the forest products. Figure 10.3 shows percentage increase in distance to the point of collection of forest product in rural Eastern Province over the five-year period. Results show that for households that collected fuel wood, the distance increased by 40 percent, those that collected wood for poles, distance increased by 13.1 percent followed by those who collected mushrooms, at 9.8 percent. The least increase in distance was for the households that collected Industrial wood and fodder at 0.2 and 0.1 percent respectively.

The survey also collected information from households in each district across the province to determine the average percentage increase in distance to the point of collection of some selected forest products.

Firewood

Figure 10.4 shows the average percentage increase in distance to point of collection of firewood by district in rural Eastern Province in 2019. Results show that households in Chasefu reported the highest average percentage increase in distance to the point of collection of Fuel wood at 71.2 percent, followed by Vubwi (62.1 percent) and Chadiza (61.8 percent). Kasenengwa and Katete had the least average percentage increase in distance at 40.3 and 30.2 percent respectively.

Mushroom

Figure 10.5 shows the average percentage increase in distance to the point of collection of mushrooms by district in rural Eastern Province in 2019. Results show that households in Lumezi and Nyimba had the highest average percentage increase in distance to the point of collection of mushrooms at 14.6 percent each, followed by Lundazi at 13.0 percent. Mambwe and Sinda had the lowest average percentage increase in distance to the point of collection at 2.9 and 1.3 percent respectively.

Figure 10.3: Percentage increase in Distance to point of collection of Forest Products Rural Eastern Province 2019

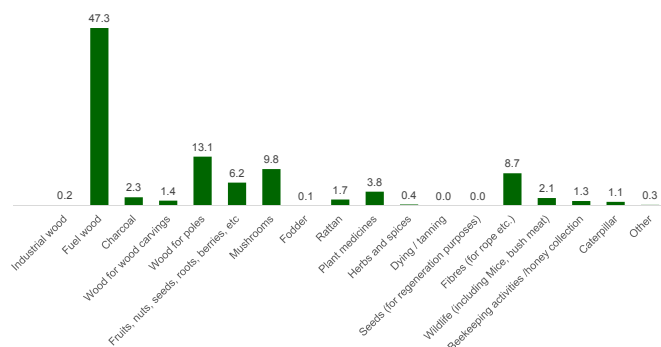


Figure 10.4: Average percentage increase in Distance to point of collection for Fuel wood by district, Rural Eastern 2019.

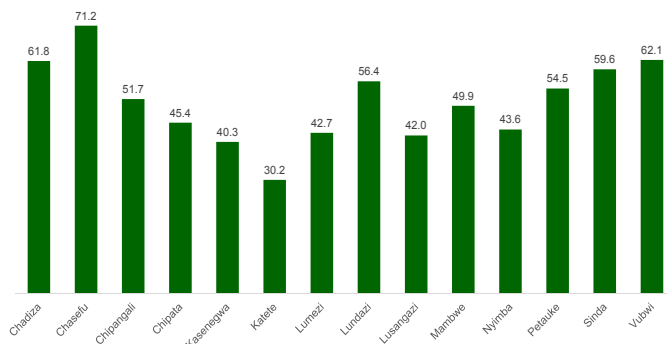
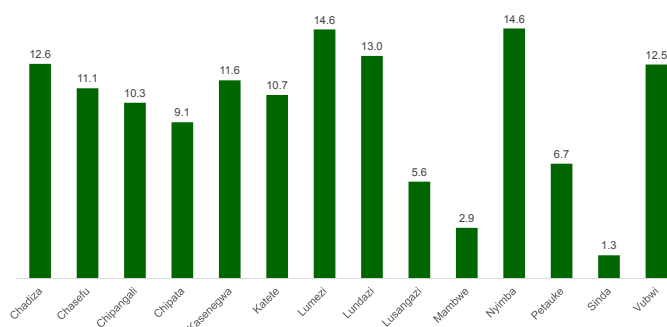


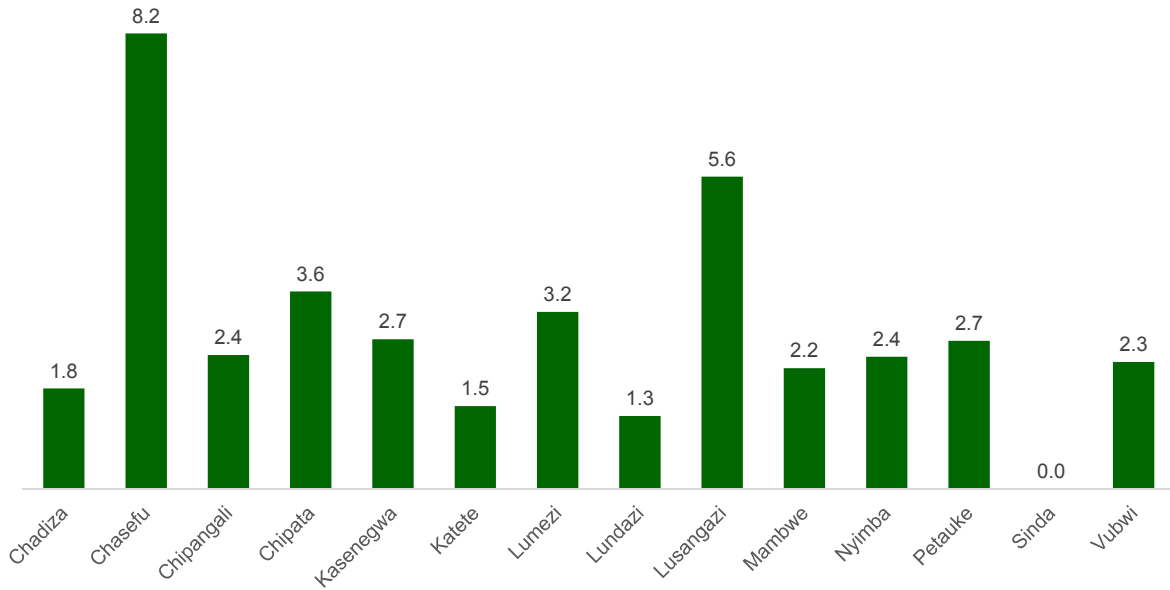
Figure 10.5: Average Percentage Increase in Distance to the Point of collection of Mushrooms by district, Rural Eastern Province 2019.



Charcoal

Figure 10.6 shows the average percentage increase in distance to the point of collection of charcoal by district in rural Eastern Province in 2019. Results show that household's in Chasefu had the highest average increase in distance to the point of collection at 8.2 percent, followed by Lusangazi and Chipata at 5.6 and 3.6 percent respectively. Katete and Lundazi had the least average increase in distance to the point of collection at 1.5 and 1.3 percent respectively.

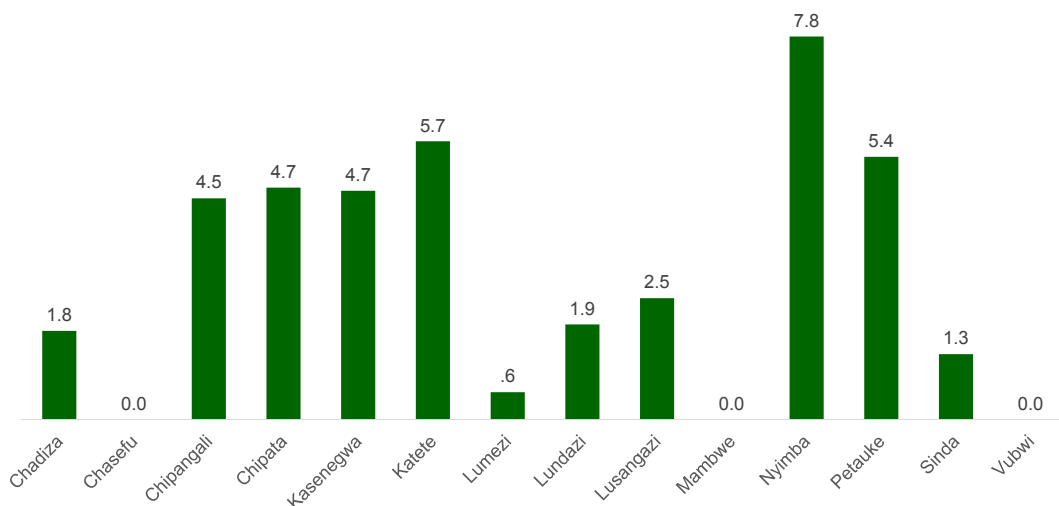
Figure 10.6: Average Percentage Increase in Distance to Point of Collection for Charcoal by District, Rural Eastern Province, 2019



Plant Medicines

Figure 10.7 shows the average percentage increase in distance to point of collection of Plant Medicine by district in rural Eastern Province in 2019. Results show that household's in Nyimba had the highest average increase in distance to the point of collection at 7.8 percent, followed by Katete and Petauke at 5.7 and 5.4 percent respectively. Sinda and Lumezi had the least average increase in distance to the point of collection at 1.3 and 0.6 percent respectively. Mambwe, Vubwi and Chasefu remained stable.

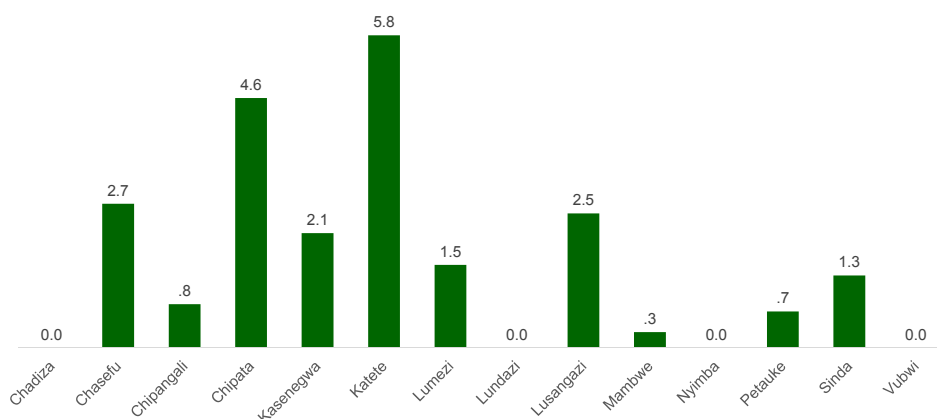
Figure 10.7: Average Percentage Increase in Distance to Point of Collection for Plant Medicine by District, Rural Eastern Province 2019.



Wild life (Mice & bush meat)

Figure 10.8 shows the average percentage increase in distance to point of collection of wildlife (Mice and Bush Meat) by district in rural Eastern Province in 2019. Results show that household's in Katete had the highest average increase in distance to the point of collection (5.8 percent), followed by Chipata and Chasefu at 4.6 and 2.7 percent respectively. Petauke and Mambwe had the least average increase in distance to the point of collection at 0.7 and 0.3 percent respectively.

Figure 10.8: Average Percentage Increase in Distance to Point of Collection for Plant Medicine by district, Eastern 2019



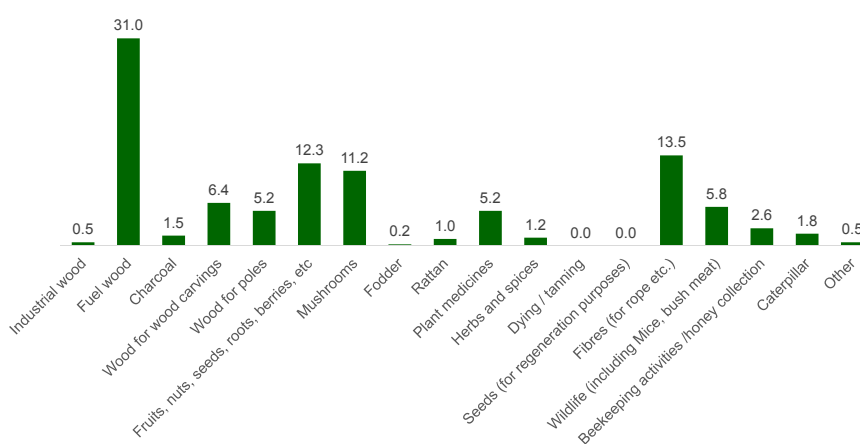
10.5 Change in Availability of Forest Products

The survey collected information from households on change in availability of forest products they collected. Households were asked to indicate whether, in their opinion, there was a change in the availability of forest products i.e. “Increase in Availability” or “Decrease in Availability” or “No Change in Availability” or if they did not know.

10.5.1 Increase in Availability of Forest Products

Figure 10.9 shows the percentage share of households reporting an increase in availability of forest products in rural Eastern Province in 2019. Results show that fuel wood (31.0 percent) had the highest percentage of households reporting an increase in availability followed by fibres and fruits, nuts, seeds, roots and berries etc at 13.5 and 12.3 percent respectively. Households reporting an increase in availability of fodder had the lowest percentage share at 0.2 percent.

Figure 10.9: Percentage Share of Households reporting an Increase in Availability of Forest Products in rural Eastern Province in 2019



10.5.2 Increase in Availability of Forest Products by District

The survey collected information from households at district level on the availability of Forest Products in rural Eastern Province in 2019. Results in Table 10.7 show that households that reported an increase in availability of fuel wood, had the highest proportion of households in each district compared to other forest products. Dying / tanning and Seeds (for regeneration purposes) were the only products that no household across the province reported an increase. Sinda District was also the only district with no household reporting an increase in availability of any single forest product. Results further show that Chadiza (78 percent) had the highest proportion of households reporting an increase in availability of forest Products followed by Lundazi and Chasefu at 67.5 and 50.0 percent, respectively. Wildlife (including Mice, bush meat) increase in availability was reported in 9 districts with Chasefu having the highest proportion of households reporting an increase in availability at 50.0 percent followed by Mambwe (37.9 percent) and Katete (14.4 percent).

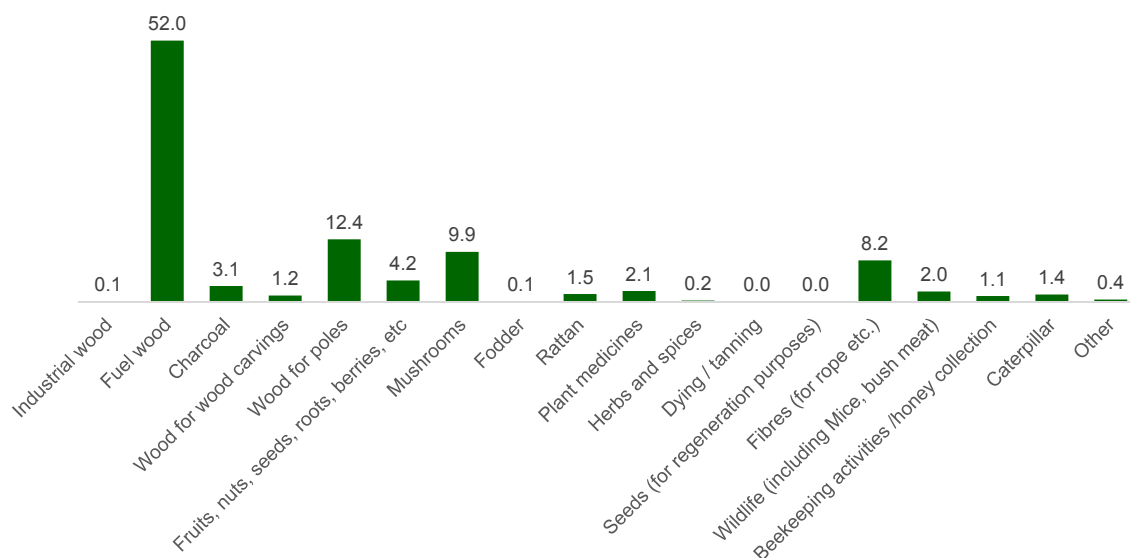
Table 10.7: Proportion of Households Reporting Increase in Availability of Forest Products by District, Rural Eastern Province 2019

District	Industrial wood	Fuel wood	Charcoal	Wood for wood carvings	Wood for poles	Fruits, nuts, seeds, roots, berries, etc	Mushrooms	Fodder	Rattan	Plant medicines	Herbs and spices	Dying / tanning	Seeds (for regeneration purposes)	Fibres (for rope etc.)	Wildlife (including Mice, bush meat)	Bee-keeping activities / honey collection	Cat-erpillar	Other
Chadiza	0.0	78.0	0.0	0.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chasefu	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0
Chipangali	0.0	32.7	0.0	15.5	0.0	8.4	11.3	0.0	0.0	4.1	1.6	0.0	0.0	22.1	1.8	0.0	2.5	0.0
Chipata	0.0	26.8	0.0	3.9	10.9	18.8	9.1	3.1	0.0	3.1	0.0	0.0	0.0	3.9	12.8	3.1	4.5	0.0
Kasenegwa	0.0	20.7	6.9	6.2	11.0	6.2	3.4	0.0	0.0	11.7	0.0	0.0	0.0	15.2	11.7	3.4	0.0	3.4
Katete	0.0	25.8	0.0	0.0	9.1	18.1	9.1	0.0	2.7	0.0	0.0	0.0	0.0	20.8	14.4	0.0	0.0	0.0
Lumezi	2.7	26.0	0.0	4.7	7.3	13.7	13.0	0.0	2.7	4.7	2.3	0.0	0.0	13.3	2.3	5.0	2.3	0.0
Lundazi	0.0	67.5	0.0	0.0	10.1	0.0	0.0	0.0	0.0	12.3	0.0	0.0	0.0	10.1	0.0	0.0	0.0	0.0
Lusangazi	0.0	43.8	0.0	0.0	0.0	9.6	0.0	0.0	0.0	12.3	0.0	0.0	0.0	21.9	12.3	0.0	0.0	0.0
Mambwe	0.0	10.6	0.0	0.0	0.0	16.6	10.6	0.0	0.0	0.0	0.0	0.0	0.0	3.0	37.9	10.6	10.6	0.0
Nyimba	0.0	40.0	1.0	0.0	5.6	16.6	21.1	0.0	2.8	4.1	2.8	0.0	0.0	0.0	0.0	5.6	.3	0.0
Petauke	0.0	33.8	8.3	0.0	0.0	24.8	16.6	0.0	0.0	8.3	0.0	0.0	0.0	8.3	0.0	0.0	0.0	0.0
Sinda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vubwi	0.0	45.2	0.0	0.0	0.0	27.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.4	0.0	0.0	0.0	0.0

10.5.3 Decrease in Availability of Forest Products by Province

Figure 10.10 shows the proportion of households who reported a decrease in availability of forest products in rural Eastern Province in 2019. Results show that fuel wood (52.0 percent) had the highest proportion of households reporting a decrease in availability followed by households who reported wood for poles (12.4 percent) and Mushrooms (9.9 percent). Households reporting a decrease in availability of Fodder and Industrial wood had the least proportions at 0.1 percent each.

Figure 10.10: Proportion of Households Reporting a decrease In Availability of Forest Products in Rural Eastern Province 2019



10.5.4 Decrease in Availability of Forest Products by District

Table 10.8 shows the proportion of households reporting a decrease in availability of forest products by district in rural Eastern Province in 2019. Results show that from the households that reported a decrease in availability of forest Products, Fuel Wood emerged as the forest product with the highest proportion of households reporting its decrease in all the districts with Chasefu having the highest proportion at 79.9 percent followed by Petauke at 62.3 percent and Sinda 59.9 percent. Kasenengwa and Katete had the least proportion of households reporting a decrease at 44.9 and 34.2 percent respectively.

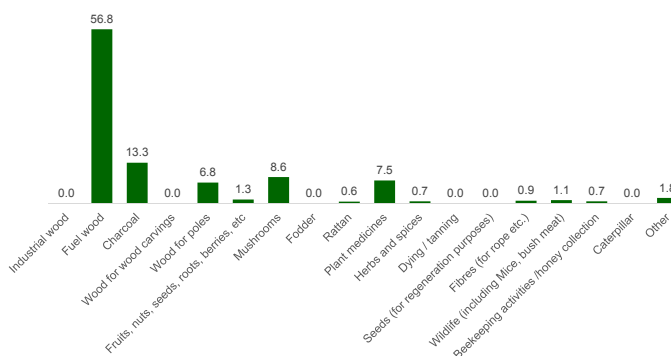
Table 10.8: Proportion of Households reporting a Decrease in availability of Forest Products by District, Eastern Province 2019.

District	Industrial wood	Fuel wood	Charcoal	Wood for wood carvings	Wood for poles	Fruits, nuts, seeds, roots, berries, etc	Mushrooms	Fodder	Rattan	Plant medicines	Herbs and spices	Dyeing/tanning	Seeds (for regeneration purposes)	Fibres (for rope etc.)	Wildlife (including Mice, bush meat)	Bee-keeping activities / honey collection	Caterpillar	Other
Chadiza	0.0	56.6	.7	.6	7.5	.0	17.4	0.0	1.9	3.0	0.0	0.0	0.0	5.5	.6	2.4	3.8	0.0
Chasefu	0.0	79.9	5.8	0.0	0.0	3.4	7.0	.6	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	0.0
Chipangali	0.0	50.1	5.8	0.0	18.0	3.3	11.2	0.0	1.6	3.2	.3	0.0	0.0	3.5	0.0	2.7	.3	0.0
Chipata	.5	46.2	4.8	1.8	10.3	7.1	9.7	0.0	0.0	3.7	.1	0.0	0.0	9.5	4.4	.2	1.3	.4
Kasenegwa	0.0	44.9	2.5	4.1	16.0	5.3	10.3	0.0	1.9	2.0	1.1	0.0	0.0	4.8	4.5	.9	1.6	0.0
Katete	0.0	34.2	.8	2.2	13.3	8.6	9.8	.1	3.5	3.9	0.0	.1	0.0	15.3	5.4	1.3	1.4	0.0
Lumezi	0.0	51.0	2.2	.7	9.5	6.5	14.7	0.0	3.0	.4	0.0	0.0	0.0	3.7	2.1	3.4	2.7	0.0
Lundazi	.3	57.8	1.5	.4	4.3	5.6	12.0	0.0	1.5	.3	.4	0.0	0.0	8.8	1.2	1.0	1.4	3.6
Lusangazi	1.9	50.6	4.2	8.5	14.1	0.0	6.6	0.0	0.0	0.0	0.0	0.0	0.0	7.4	0.0	4.2	2.4	0.0
Mambwe	0.0	54.2	5.6	0.0	20.5	4.0	3.6	0.0	0.0	.2	0.0	0.0	0.0	10.1	.2	.8	.8	0.0
Nyimba	.6	48.8	3.9	3.6	15.3	2.9	11.7	0.0	.2	5.8	.4	0.0	0.0	2.8	0.0	.5	3.7	0.0
Petauke	.2	62.3	5.9	.3	11.9	.5	6.9	.5	0.0	1.0	0.0	0.0	0.0	10.2	.2	0.0	.2	0.0
Sinda	0.0	59.9	.8	0.0	22.1	0.0	2.5	0.0	.8	.8	0.0	0.0	0.0	12.1	.8	0.0	0.0	0.0
Vubwi	0.0	58.9	3.4	0.0	6.2	0.0	16.4	0.0	3.0	0.0	0.0	0.0	0.0	5.6	0.0	.8	5.7	0.0

10.5.5 No Change in Availability of Forest Products

Figure 10.11 shows the proportion of households that reported no change in availability of forest products in rural Eastern Province in 2019. Results show that fuel wood (56.8 percent) had the highest proportion of households reporting no change in availability followed by households using Charcoal (13.3 percent) and Mushrooms (8.6 percent), respectively.

Figure 10.11: Proportion of Households reporting no change in availability of Forest Products in Rural Eastern Province 2019



10.5.6 Households response to the Decrease in availability of Forest Products

As the products that household collect from the forest decrease in availability, households have had to find ways of coping with the changing situation. The baseline survey asked households what they did in response to the decrease in availability of forest products that they use for domestic and commercial purposes. Table 10.9 shows the percentage distribution of households by their response to decrease in forest product availability by district, in rural Eastern Province in 2019. Results show that Chipangali had the highest percentage of households planting more trees as a response to the decrease at 33.5 percent followed by Lumezi (16.5 percent) and Petauke (10.7 percent). Vubwi and Lusangazi had the least percentages of households planting more trees at 0.2 percent each.

Chipangali also had the highest percentage of households reducing the harvesting of the forest products as a response to decrease in their availability, followed by Petauke and Sinda at 14.1 and 10.5 percent respectively. Lusangazi had the lowest percentage of households reducing the harvest of forest products as a response to the decreased in availability at 0.1 percent.

Table 10.9: Percentage distribution of household's response to the Decrease in Forest Products Availability by District, Eastern Province 2019.

District	It did not influence the HH harvest of forest products	Increase collection time (incl. travelling to areas further away)	Buy the product from other suppliers	Reduce harvesting of the product	Stop harvesting of the product	Substitute with other type of forest product	Substitute with agricultural products	Conserving standing trees	Planting trees	Restricting access/use of forest	Other
Chadiza	3.2	3.6	6.0	7.7	1.3	2.4	2.4	5.3	.8	8.4	3.9
Chasefu	5.1	4.2	6.4	3.9	15.5	0.0	.1	5.0	2.0	.5	2.2
Chipangali	9.3	10.8	21.6	16.7	5.9	20.7	23.7	41.7	33.5	7.8	1.0
Chipata	8.2	11.1	11.2	6.9	2.7	12.0	9.9	7.0	8.6	15.9	12.2
Kasenegwa	6.3	5.0	5.5	2.8	1.3	6.8	16.1	4.0	4.5	4.3	25.7
Katete	14.3	13.6	16.5	10.6	24.6	21.9	7.2	8.2	6.3	25.1	10.9
Lumezi	9.0	9.7	2.9	6.6	4.1	8.8	13.2	8.2	16.5	1.7	5.9
Lundazi	3.9	8.0	4.0	8.0	3.1	5.1	19.9	5.0	2.7	.8	9.3
Lusangazi	.1	.0	.0	.1	.0	.0	0.0	.0	.2	.1	.4
Mambwe	5.6	4.7	4.7	5.6	.4	2.3	2.2	1.1	3.7	15.3	4.0
Nyimba	3.9	6.8	5.6	2.1	.3	7.4	2.2	7.1	1.8	1.8	4.9
Petauke	10.9	13.8	9.3	14.1	12.0	3.4	2.3	3.2	10.7	2.8	15.3
Sinda	19.1	6.3	4.8	10.5	27.0	6.4	0.0	2.2	8.5	12.4	2.4
Vubwi	1.1	2.2	1.6	4.5	1.8	2.8	.7	2.0	.2	3.1	2.1

10.5.7 Households by Response to Decrease in Fuel Wood Availability by District in rural Eastern Province in 2019

Households were asked to give their responses to decrease in availability of various forest products.

Had no Influence on Their Harvest

Figure 10.12 shows the percentage distribution of households by districts that said it did not influence their harvest of forest product in rural Eastern Province in 2019. The results show that 82.7 percent of households in Chasefu said the decrease in fuel wood availability did not influence their harvest, followed by Vubwi (69.4 percent) and Lundazi (66.6 percent). Kasenengwa and Katete had the least percentage of households reporting that the decrease in availability did not have any influence on their harvest at 39.6 and 34.6 percent respectively.

Increase in Collection Time

Figure 10.13 shows the percentage distribution of households by districts that said the decrease in availability increased their time of collection of fuel wood in rural Eastern Province in 2019. Results show that 75.0 percent of the households in Chasefu said the decrease in fuel wood availability increased their time of collection, followed by Chadiza (71.1 percent) and Vubwi (64.9 percent). Katete and Mambwe had the least percentage share of households reporting that the decrease in fuel wood availability increased their time of collection at 35.2 and 30.3 percent respectively.

Reduced Harvesting of Fuel Wood

Figure 10.14 shows the percentage distribution of households by districts that said the decrease in availability of fuel wood reduced their Harvesting. Results show that 96.0 percent of households in Chasefu said the decrease in fuel wood availability reduced their Harvest of fuel wood, followed by Lusangazi (80.8 percent) and Sinda (72.6 percent). Nyimba and Katete had the least percentage shares at 41.0 and 34.1 percent respectively.

Figure 10.12: Percentage Distribution of Households by District that said the Decrease in Availability of Fuel wood did not influence their harvest in Rural Eastern Province, 2019

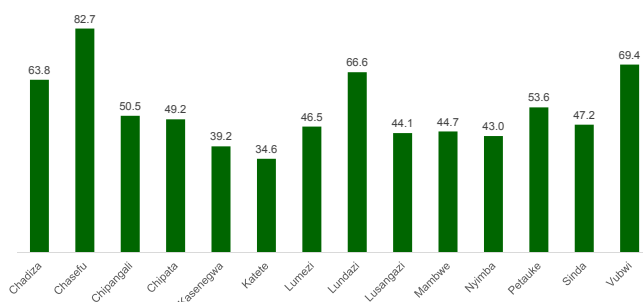


Figure 10.13: Percentage distribution of households by Districts that said the decrease in availability of Fuel wood increased their time of collection by District, in Rural Eastern Province 2019

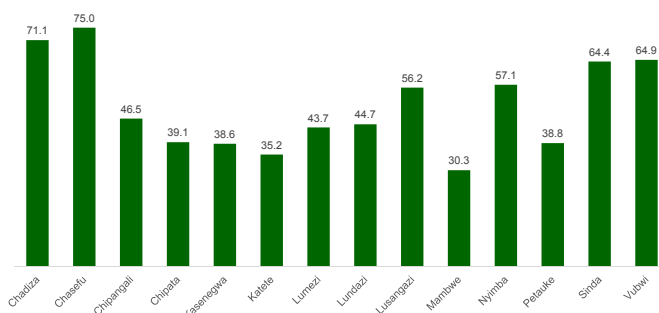
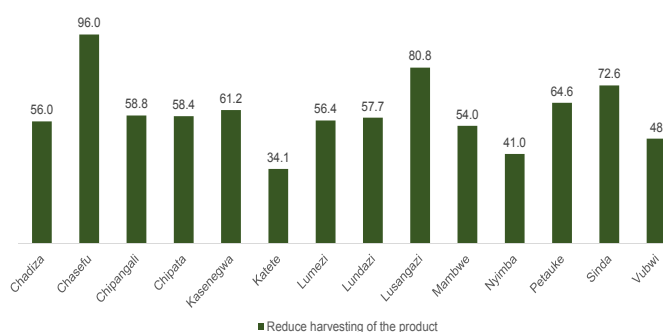


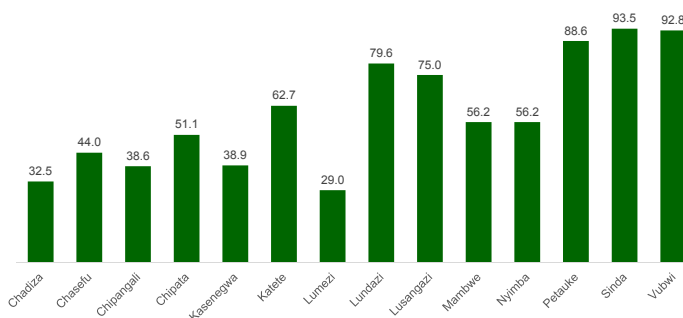
Figure 10.14: Percentage Distribution of Households by Districts that said the Decrease in availability for Fuel Wood Reduced their Harvesting rural Eastern Province 2019



Planting of Trees

Figure 10.15 shows the percentage distribution of households by district that said the decrease in availability of fuel wood made them plant trees, rural Eastern Province in 2019. Results show that 93.5 percent of households in Sinda said the decrease in fuel wood availability made them plant more trees, followed by Vubwi (92.8 percent) and Petauke (88.6 percent). Chadiza and Lumezi had the least percentage share of households at 32.5 and 29.0 percent respectively.

Figure 10.15: Percentage Distribution of Households by Districts that said the Decrease in Availability Fuel Wood made them Plant Trees by District, rural Eastern Province 2019



Chapter 11: Contribution of forest products to household income

Forestry Income in the last 12 months

Forest products have for a very long time been the source of livelihood for many communities living in and around forests. This has played a part in ensuring that households are able to generate income from the sale of various products derived from the forests. There are many products that are at the disposal of households for the purpose of generating income. The baseline survey collected information from households on the income they generate from various forest products.

The survey asked households to rank from 1 to 5, what they perceived to be the highest contributor to their income from forest products. Results in Figure 14.1 show that among all the households that said 'yes' to generating income from forest products for own consumption, those that ranked it 'third' had the highest proportion at 32.2 percent followed by those who ranked it 'forth' at 22.2 percent with the least being those who ranked it '1st' at 9.2 percent. 17.6 percent of households did not know how to rank the contribution to household Income made by Income generated from forest products.

Figure 11.2 shows that Industrial wood was ranked as the highest contributor to household income from forest products at 27.4 percent followed by Fuel wood at 9.3 percent and the lowest ranked forest product in terms of contribution to household income were caterpillars at 1.2 percent.

Figure 11.1: Households Ranking Of Forest Products Being A Source Of Income For Own Consumption, Eastern Province 2019

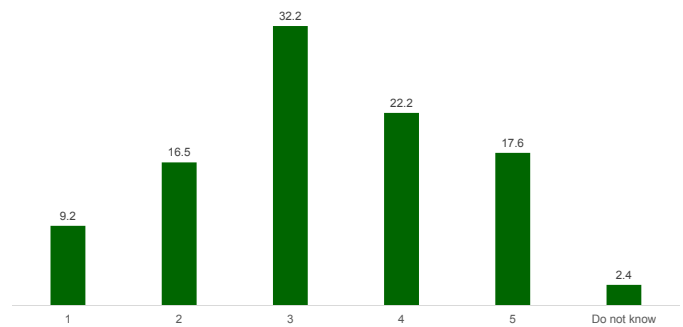


Figure 11.2: Ranking of Forest Products by Contribution to Household Income, Rural Eastern Province, 2019

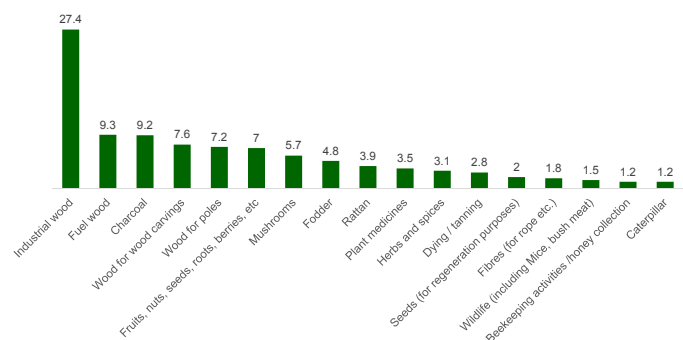


Figure 11.3a and Figure 11.3b show the ranking of forest products contribution to household income in Male headed households (figure 11.3a) and the Female headed households (figure 11.3b). The results show that there is a difference in ranking of forest products contribution to household income between Male headed households and Female headed households. In the Male headed households, the highest ranked forest product in terms of its contribution to household income is Industrial wood (26.6 percent), followed by Fuel wood and Charcoal at 9.7 percent and 8.9 percent respectively. In the female headed households, the highest ranked forest product in terms of its contribution to household income is Fuel wood with 31.0 percent, followed by Charcoal with 11.0 percent and thirdly Mushrooms at 8.2 percent.

The survey collected information from households on the ranking of the contribution towards household income from each type of wood and non-wood forest products. Table 11.1 shows the ranking by type of contribution to Household Income of wood and non-wood forest products, rural Eastern Province in 2019. Among the households that dealt with industrial wood, the highest proportion of household ranked it as the 4th contributor to household income at 48.7 percent. Households dealing with seed for regeneration purposes ranked it as the 3rd contributor to their household income at 58.5 percent.

In a nutshell, except for households dealing in fibres, wildlife (including bush meat) and bee keeping activities, the highest proportion of households dealing in the rest of the wood and non-wood forest products ranked them as the 3rd highest contributor to household income.

Figure 11.3a Shows the Ranking of Forest Products Contribution to Household Income in Male Headed Households, Rural Eastern Province, 2019

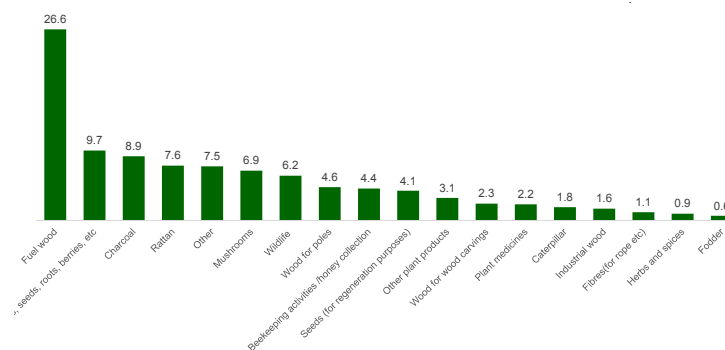


Figure 11.3b Shows the Ranking of Forest Products Contribution to Household Income in Female Headed Households Eastern Province, 2019

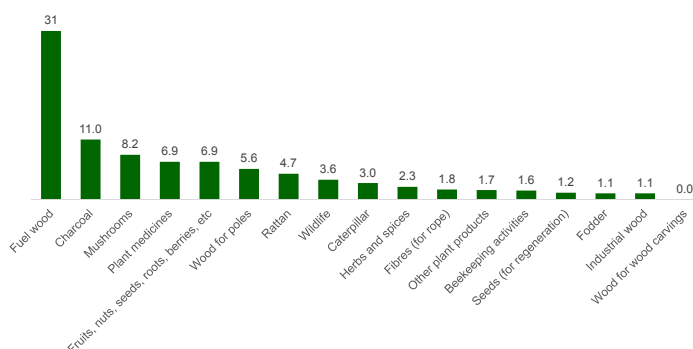


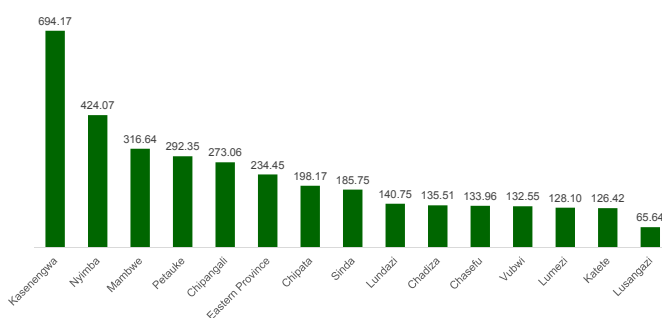
Table 11.1 Ranking of The Contribution Towards Household Income of Wood and Non-Wood Forest Products by Type, Rural Eastern Province Province, 2019.

Total	1	2	3	4	5	Do not know
Industrial wood	11.7	2.2	8.1	48.7	29.3	0.0
Fuel wood	9.2	15.5	27.5	28.5	16.7	2.5
Charcoal	7.2	19.1	19.1	14.7	35.0	4.8
Wood for wood carvings	13.9	8.5	36.1	9.8	31.6	0.0
Wood for poles	21.6	36.6	19.6	7.2	12.5	2.5
Fruits, nuts, seeds, roots, berries, etc	5.6	16.7	42.7	22.9	12.1	0.0
Mushrooms	17.5	13.3	37.1	10.7	16.3	5.1
Fodder	32.1	0.0	47.1	20.8	0.0	0.0
Rattan	10.1	22.9	31.2	10.1	25.7	0.0
Plant medicines	7.9	11.4	34.2	22.7	23.9	0.0
Herbs and spices	34.4	16.5	35.9	4.9	0.0	8.3
Seeds (for regeneration purposes)	0.0	26.6	58.5	14.9	0.0	0.0
Fibres (for rope etc.)	15.8	45.2	12.6	7.9	18.6	0.0
Other plant products	0.0	19.6	53.7	20.6	6.0	0.0
Wildlife (including bush meat)	7.1	10.3	31.7	35.3	15.7	0.0
Beekeeping activities / honey collection	4.7	9.4	28.6	36.5	13.2	7.5
Caterpillar	18.5	2.2	47.1	9.2	16.4	6.6
Other	0.0	10.7	38.7	31.9	15.7	2.8

Wood and Non-wood Forest Income

Figure 11.4: shows the average income from wood and non-wood forest products in rural Eastern Province in 2019. Results show that at Provincial level, the average Income from wood and non-wood forest products was ZMW 234.45. Kasenengwa earned the highest average income at ZMW 694.17 followed by Nyimba and Mambwe with ZMW 424.07 and ZMW 316.64 respectively.

Figure 11.4: Average Income from Wood and Non-wood Forest Products, Rural Eastern Province, 2019



The Survey also collected information from households to determine the average Incomes earned from Wood and Non-Wood Forest

products by sex household head. Table 11.2 shows average income from Wood and Non-wood Forest Products by Sex of Head and District, rural Eastern Province 2019. Results show that Female-headed households had a slightly higher average Income of ZMW 258.97 compared to their male counterparts at ZMW 228.45.

By district, females from Kasenengwa on average earned the highest income from wood and non-wood forest products at ZMW 1343.51 followed by Mambwe (ZMW 913.76) and Lumezi (ZMW 525.00), Chisepuku earned the lowest average income at ZMW 5.94. Among male headed households, the highest average income was earned by households from Kasenengwa at ZMW 495.77, followed by Nyimba and Petauke at ZMW 458.29 and ZMW 306.31 respectively. The lowest earning male-headed households were from Lusangazi at ZMW 47.93.

Table 11.2: Average Income from Wood and Non-Wood Forest Products by Sex of Head and District, Rural Eastern Province 2019.

District	Total	Male	Female
Total	234.45	228.45	258.97
Chadiza	135.51	154.31	61.40
Chasefu	133.96	146.05	5.94
Chipangali	273.06	252.84	305.56
Chipata	198.17	215.95	126.14
Kasenegwa	694.17	495.77	1343.51
Katete	126.42	152.31	68.05
Lumezi	128.10	89.05	525.00
Lundazi	140.75	142.54	20.00
Lusangazi	65.64	47.93	171.67
Mambwe	316.64	208.34	913.76
Nyimba	424.07	458.29	224.06
Petauke	292.35	306.31	268.04
Sinda	185.75	185.75	
Vubwi	132.55	178.89	83.15

The survey also collected information from households on Income earned from their main economic activity by Sex of household Head. Table 11.3 shows the provincial average income earned from main economic activities of households by Sex of household Head and District, rural Eastern Province in 2019. Results show that households in rural Eastern on average earned (from main economic activity) ZMW 1,918.01. Results further show that male headed households earned a higher average Income of ZMW2,100.37 compared to that of female-headed households at ZMW 1271.57.

Table 11.3: Average Income from Main Economic Activity by Sex and District Rural Eastern Province 2019.

District	Total	Male	Female
Total	1918.01	2100.37	1271.57
Chadiza	984.82	1122.75	517.57
Chasefu	1536.39	1625.28	1007.93
Chipangali	2210.58	2489.09	947.91
Chipata	2597.52	2815.86	1907.56
Kasenegwa	1629.97	1788.04	1231.20
Katete	2202.49	2436.20	1541.47
Lumezi	2029.79	2339.39	858.34
Lundazi	1186.93	1209.77	1025.28
Lusangazi	1101.89	1284.67	240.20
Mambwe	2881.55	2972.48	2667.34
Nyimba	3731.17	4171.08	2320.30
Petauke	2025.29	2291.45	1211.79
Sinda	1171.70	1352.49	470.26
Vubwi	1427.16	1430.20	1419.79

By district, households from Nyimba on average earned the highest income from their main economic activity at ZMW 3,731.17 followed by those from Mambwe and Kasenegwa at ZMW 2,881.55 and ZMW 1,629.97, respectively. Chadiza being the lowest earning at ZMW 984.2.

By sex of head, households from Nyimba and Mambwe among male-headed and female-headed households earned the highest income from their main economic activities at ZMW 4,171.08 and ZMW 2,667.34, respectively.

Chapter 12: Household income from non-agriculture and forest activities

The survey collected information from households on incomes from Non-Agriculture and Forest activities in the last 12 months prior to the survey. These incomes reflect a combined total earnings from Non-Agriculture and Forest activities. At provincial level, the average income earned was ZMW3479.70. At district level, Nyimba earned the highest average income at ZMW7750.20 followed by Chipata at ZMW5,925.41 and Mambwe at ZMW5,224.64. At provincial level, male-headed households earned a higher average income at ZMW3,879.70 while the female-headed households had an average income of ZMW2,226.79. Male-headed households also earned higher average incomes at district level with Nyimba having the highest at ZMW9,443.22 while the highest average incomes among female headed households was ZMW4,959.93 found in Chipata.

Table 12.1: Average household income from Non-Agriculture and Forest Activities in the last 12 months by sex and district, Eastern province 2019.

District	Total	Male	Female
Total	3479.70	3833.14	2226.79
Chadiza	1959.70	1970.13	1924.34
Chasefu	2459.74	2703.96	1007.93
Chipangali	4044.07	4727.02	947.91
Chipata	5925.41	6230.94	4959.93
Kasenengwa	3272.25	2655.86	4827.25
Katete	2717.20	3132.89	1541.47
Lumezi	2506.79	2942.45	858.34
Lundazi	2271.61	2447.67	1025.28
Lusangazi	2661.17	3174.70	240.20
Mambwe	5224.64	6310.10	2667.34
Nyimba	7750.20	9443.22	2320.30
Petauke	3530.63	4050.87	1940.55
Sinda	2189.56	2492.40	1014.58
Vubwi	4004.36	4384.76	3083.09

12.1 Buying and Bartering of Wood and Non-wood Products in the last 12 months

This chapter focuses on buying and bartering of Wood and Non-wood products in the last 12 months. The details include type of wood and non-wood products, who the main suppliers are, the distance to markets, value of money spent and the quantities acquired in the last 12 month.

12.2 Percentage Distribution of Households that bought/bartered Wood or Non-wood Forest Products by Type and District, Rural Eastern Province

The survey collected data on household purchases and/or bartering of forest and non-forest products. Table 12.2 shows percentage distribution of households across the districts in rural Eastern Province by type of forest or non-forest product bought and/or bartered in the last 12 months in 2019. Katete District had the highest percentage of households who reported to have purchased or bartered charcoal as well as fuel wood at 17.4 percent and 15.9 percent, respectively. Petauke District had the largest share of households that collected wild fruits at 44.3 percent.

Table 12.2: Percentage Distribution of Households who reported Buying or Bartering Forest and Non-forest Products by Type in the Last 12 Months in Rural Eastern Province in 2019

District	Fishing	Hunting	Processing of agricultural products for home consumption (crop, live-stock, fish)	Collection/harvesting of wood products (timber, poles, etc.)	Collection of fuel wood	Production of charcoal	Collection/harvesting of wood forest products (e.g. fruit)	Collection/harvesting of non-wood forest products (other than food, e.g. rattan)	Processing of wood products (e.g. for furniture)	Processing of non-wood forest products (food)	Processing non-wood forest products (other than food, e.g. basket weaving)	Other	Food acquired by buying/bartering/gift/aid
Total	3,322	74	5,706	2,341	8,547	9,412	3,995	1,473	3,072	4,107	1,686	820	5,446
Percent Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Chadiza	8.2	0.0	2.2	0.0	9.5	5.5	3.4	0.0	0.0	0.0	0.0	16.6	2.3
Chasefu	3.1	0.0	1.8	1.4	3.4	7.8	0.0	0.0	0.0	0.0	0.0	0.0	1.9
Chipangali	0.0	0.0	0.0	7.7	8.7	3.4	0.0	0.0	0.0	0.0	6.2	12.8	0.0
Chipata	4.4	51.1	14.3	18.5	10.5	11.8	6.9	42.2	20.2	17.6	43.3	23.8	14.7
Kasengega	0.0	0.0	2.0	4.8	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1
Katete	33.1	0.0	7.7	24.8	15.9	17.4	11.0	0.0	13.1	5.3	13.0	0.0	8.1
Lumezi	0.0	0.0	3.1	0.0	0.0	0.5	9.0	7.0	5.8	0.0	0.0	0.0	0.0
Lundazi	0.0	0.0	0.0	11.8	9.4	5.7	0.0	0.0	4.1	0.0	0.0	0.0	0.0
Lusangazi	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Mambwe	4.2	48.9	20.8	17.1	14.3	15.4	7.9	46.1	32.3	15.3	25.8	14.9	3.5
Nyimba	11.2	0.0	1.9	2.0	3.8	7.4	15.8	0.0	0.0	18.6	0.0	0.0	24.3
Petauke	20.6	0.0	41.4	0.0	14.3	16.7	44.3	0.0	6.4	43.1	11.7	0.0	39.7
Sinda	8.3	0.0	4.9	11.8	3.2	3.6	0.0	0.0	18.1	0.0	0.0	0.0	0.0
Vubwi	6.9	0.0	0.0	0.0	3.1	4.7	1.7	4.7	0.0	0.0	0.0	31.9	3.4

12.3 Total Value (ZMW) of Forest and Non-forest Food Products bought by Type, District and Province.

The survey collected information from households on total expenditure on forest and non-forest products in cash or kind in the last 12 months. Table 12.3 shows the average amounts in ZMW that were spent on each product by type and district in rural Eastern Province in 2019. For Non-forest food products, results show that households in rural Eastern Province over the 12 month period, on average, spent ZMW8,091,382 on crops, ZMW8,991,411 on vegetables, ZMW2,994,032 on Livestock and ZMW684,459 on Fish products.

For non-forest products, results show that households in rural Eastern Province spent ZMW 8,091,382 on crops, ZMW 8,991,411 on vegetables, ZMW 2,994.032 on livestock and ZMW 684,459 on fish products.

Additionally, on forest food products, households in rural Eastern spent ZMW7,838,977 on Charcoal, ZMW 9,489,820 on collecting/harvesting non-wood forest food products such as fruits and mushrooms at ZMW3,491,426 harvesting wood products such as timber and poles. Further for results at district level, refer to Table 12.3.

Table 12.3 Total value in ZMW of Forest and Non-forest Food Products bought by Type, District, Rural Eastern Province Over Last 12 Months

District/ product	Crops	Vegetables	Fruits	Livestock	Fish farming	Fishing	Hunting	Processing of ag- ricultural products for home consump- tion (crop, livestock, fish)	Collec- tion/har- vesting of wood products (timber, poles, etc.)	Wood fuel	Charcoal produc- tion	Collec- tion/har- vesting of non- wood forest products (e.g. fruit)	Collec- tion/har- vesting of non- wood forest products (other than food, e.g. rattan)	Process- ing of products (e.g. for furniture)	Process- ing of non-wood products (food)	Process- ing non- wood products (other than food, e.g. basket weaving)	Other	Food acquired by buying/ bartering/ gift/aid
Total	8,091,382	8,991,411	2,675,490	2,994,032	50,706	684,459	148,710	13,519,093	3,491,426	6,247,325	7,838,977	9,489,820	7,200,837	8,058,225	10,607,220	6,599,287	1,020,090	13,296,146
Chadiza		5,244	829	4,428		16,337		2,531		69,107	94,983	3,404					2,723	22,142
Chasefu	71,818	9,234		110,809		10,200		61,203	6,518	92,545	350,895							5,100
Chipangali	1,631	26,942							1,631	34,465	48,504					947	947	
Chipata	2,525,600	3,295,994	1,376,858	781	973	164,807	94,425	4,344,996	652,520	1,716,190	1,789,507	1,587,121	3,911,607	3,911,607	3,100,550	4,344,215	519,359	4,250,763
Kasenerg- wa	18,838	50,065	5,632	1,126					39,421	6,788								5,632
Katele	230,423	42,248		3,232		41,296		45,909	203,778	246,531	352,083	5,272		30,752	43,932	15,376		219,660
Lumezi	27,242	18,292	1,611					1,611			14,000	3,222	15,495	1,611				
Lundazi	20,709	28,992		20,709	20,709				11,597	83,864	24,099			10,064				
Lusangazi	747									862								862
Mambwe	3,951,173	4,868,900	1,146,127	2,501,217		261,653	54,285	4,496,270	2,566,472	3,803,953	3,456,521	2,112,983	3,271,659	4,099,926	1,233,509	2,002,769	488,231	1,848,745
Nyimba	123,008	161,653	99,644	254,349	29,024	114,847		239,933	9,490	36,884	174,539	2,255,701			2,237,226			2,707,091
Petauke	1,031,481	400,669		54,940		10,051		4,324,146		98,525	1,478,079	3,520,042		1,770	3,992,003	235,980		4,229,754
Sinda	83,176	83,176		2,495		2,495		2,495			5,673			2,495				
Vubwi	5,535		44,789	39,946		62,772				57,643	50,094	2,076	2,076				8,831	6,398

12.4 Average Distance to the Markets where most of the products are bought by Type and Location in Rural Eastern Province, 2019

The survey collected information regarding the average distance from the homestead to various points of sale of forest and non-forest products. The points of sale include the homestead, roadside within the community, and other places within the community, Boma, within the District and within the Province. Table 12.4 shows the average distances to the various points of sale.

Overall, results show that the farthest distance to the market where most of products are bought is located at the Boma and and/or Township except for fruits, fish and hunting products. The average distance to the fish farming market to the Boma/Township was 95Km reflecting the farthest distance.

Table 12.4 Average Distance to the Markets where most of the Products are Bought by Type and Location, Rural Eastern Province, 2019

	Total	Home- stead	Road- side within the com- munity	Other place within the com- munity	Boma/ Town- ship	Within District	Within Prov- ince	Other
Crops	5.4	1.1	1.8	2.0	24.7	3.7	-	-
Vegetables	6.4	0.7	1.5	2.3	35.4	8.5	-	-
Fruits	4.7	3.0	0.7	0.9		12.1	15.0	-
Livestock	6.3	0.2	2.0	3.4	42.7	4.9	15.0	-
Fish farming	40.1	1.0		20.0	95.0			-
Fishing	3.0	2.1	0.7	3.1	1.0	4.2	15.0	-
Hunting	4.8			2.5		7.0	-	-
Processing of agricultural products for home consumption (crop, livestock, fish)	13.0	0.0	1.8	2.9	27.9	14.9	-	-
Collection/harvesting of wood products (timber, poles, etc.)	12.7	0.1	2.9	14.6	35.0	11.5	-	-
Wood fuel	6.5	1.4	1.6	4.3	38.7	8.3	-	-
Charcoal production	4.2	1.5	0.9	1.7	34.7	9.2	-	-
Collection/harvesting of non-wood food forest products (e.g. fruit)	17.0	4.0	1.3	4.7	31.6	15.2	-	-
Collection/harvesting of non-wood forest products (other than food, e.g. rattan)	13.9		1.7	3.0	57.5	12.0	-	-
Processing of wood products (e.g. for furniture)	9.0	1.0	1.5	0.9	55.0	12.0	-	-
Processing of non-wood forest products (food)	13.3	0.1	1.2	1.6	22.6	17.6	-	-
Processing non-wood forest products (other than food, e.g. basket weaving)	13.4	-	2.1		50.0	13.3	-	-
Other	13.1	1.3	0.8	5.4	50.0	14.3	-	-
Food acquired by buying/bartering/gift/aid	18.4	0.9	1.8	5.3	31.6	18.0	-	-

12.5 Average time taken by the Households to get to the Location where the products are bought by Mode of Transport by District, Rural Eastern Province 2019

The survey collected information regarding the amount of time in minutes households took to travel to the market where they purchased or bartered the forest and non-forest products. The information collected also includes the different Modes of Transport used such as oxcarts, bicycle, truck, car, boat, motorcycle and walking. This information was collected and compiled at district level to ascertain levels of access to markets. Table 12.5 shows the average time taken in minutes to reach buying points using various modes of transport in the district.

Table 12.5 Average time taken by Households in Minutes to get to the Location where the products are bought by Mode of Transport by District, Rural Eastern Province, 2019

District	Motor-cycle	Car	Truck	Boat/Canoe	On foot	Bicycle	Ox cart	Other
Chadiza	0.0	-	-	-	21.5	30.0	-	0.0
Chasefu	29.8	-	58.0	-	6.3	56.4	34.2	0.0
Chipangali	10.0	-	-	-	5.1	2.0	0.4	-
Chipata	0.0	44.6	-	-	1.2	41.9	163.2	-
Kasenengwa	-	36.3	-	-	6.4	50.0	-	-
Katete	-	18.2	-	-	35.2	9.4	16.1	0.0
Lumezi	3.0	-	-	-	12.0	18.6	-	-
Lundazi	7.5	3.0	-	-	46.4	12.5	60.3	-
Lusangazi	-	-	-	-	0.0	0.0	-	-
Mambwe	-	180.0	160.0	-	23.8	36.1	0.0	0.0
Nyimba	25.4	39.4	-	10.0	16.1	12.5	30.0	-
Petauke	33.6	46.7	-	-	12.5	17.7	90.0	0.0
Sinda	-	-	-	-	15.0	-	-	0.0
Vubwi	-	20.0	-	-	16.7	-	-	0.0

12.6 Proportional Distribution of Main Type of Sellers of Forest Food Products by District, Rural Eastern Province, 2019

The survey collected information regarding the main sellers of forest and non-forest products both at Province and district level. The main types of sellers included Private sellers (individuals), Marketeers, Traders, Associations or Organisations and Wholesalers. Table 12.6 shows the percentage distribution of main sellers by type and district, rural Eastern Province, 2019. At provincial level, private sellers accounted for 59.2 percent of the total sellers while association/ organisations only accounted for 0.6 percent of the total sellers

Analysed by district, except for Chipata, the rest of districts had main sellers of forest and non-forest products located within the communities.

Table 12.6 Percentage Distribution of Main sellers of forest food products by Type and District, Rural Eastern Province, 2019.

District	Private seller		Marketeer		Traders		Associations		Wholesalers		Other	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Total	18277	59.2	4003	13.0	5706	18.5	179	.6	497	1.6	2206	7.1
Chadiza	2523	90.6	0	0.0	136	4.9	0	0.0	0	0.0	127	4.5
Chasefu	1802	86.3	0	0.0	185	8.8	0	0.0	0	0.0	102	4.9
Chipangali	1253	82.1	0	0.0	105	6.9	0	0.0	169	11.0	0	0.0
Chipata	1731	73.4	282	11.9	146	6.2	0	0.0	113	4.8	87	3.7
Kasenengwa	526	56.0	113	12.0	188	20.0	0	0.0	0	0.0	113	12.0
Katete	1166	36.8	1315	41.5	687	21.7	0	0.0	0	0.0	0	0.0
Lumezi	1127	62.9	308	17.2	179	10.0	179	10.0	0	0.0	0	0.0
Lundazi	1494	84.4	0	0.0	138	7.8	0	0.0	0	0.0	138	7.8
Lusangazi	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	19	100.0
Mambwe	1652	66.7	109	4.4	593	24.0	0	0.0	122	4.9	0	0.0
Nyimba	852	35.6	342	14.3	1185	49.5	0	0.0	14	.6	0	0.0
Petauke	2222	31.1	1535	21.5	2163	30.3	0	0.0	79	1.1	1151	16.1
Sinda	618	69.0	0	0.0	0	0.0	0	0.0	0	0.0	277	31.0
Vubwi	1312	87.2	0	0.0	0	0.0	0	0.0	0	0.0	192	12.8

12.7 Proportional Distribution of Main Seller's Location by District and Province.

The survey collected information regarding the main sellers of forest and non-forest products by location and district level. The main sellers were based; within the community, boma tow, within the district, within the province, abroad and passersby. Table 12.7 shows the percentage distribution of sellers by province and district. At provincial level, sellers within the community accounted for 65.8 percent of the total sellers while those coming from abroad only accounted for 1.1 percent.

Table 12.7 Percentage Distribution of Main Seller's Location by District and Province.

District	Total	Count	%
Total	Total	18277	100.0
	Within community	12033	65.8
	boma town	1277	7.0
	within the district	3897	21.3
	within province	305	1.7
	Abroad	194	1.1
Chadiza	Total	2523	100.0
	Within community	2017	79.9
	boma town	253	10.0
	within the district	253	10.0
	within province	0	-
	Abroad	0	0.0
Chasefu	Total	1802	100.0
	Within community	1014	56.3
	within the district	603	33.5
	Abroad	185	10.3
Chipangali	Total	1253	100.0
	Within community	605	48.2
	boma town	181	14.5
	within the district	468	37.3
Chipata	Total	1731	100.0
	Within community	773	44.7
	within the district	849	49.1
	within province	0	-
Kasenengwa	Total	526	100.0
	Within community	225	42.8
	within province	188	35.8
	Passersby	113	21.4
Katete	Total	1166	100.0
	Within community	983	84.3
	boma town	183	15.7
	within the district	0	-
Lumezi	Total	1127	100.0
	Within community	948	84.1
	boma town	179	15.9
	within the district	0	-
Lundazi	Total	1494	100.0
	Within community	804	53.8
	boma town	138	9.2
	within the district	552	37.0
Lusangazi	Total	0	
	Within community	0	
Mambwe	Total	1652	100.0
	community	1026	62.1
	boma town	191	11.6
	within the district	401	24.2
	Passersby	34	2.1
Nyimba	Total	852	100.0
	Within community	652	76.5
	boma town	152	17.9
	within the district	0	-
	within province	47	5.6
Petauke	Total	2222	100.0
	community	1709	76.9
	boma town	0	-
	within the district	197	8.9
	within province	0	-
	Passersby	316	14.2
Sinda	Total	618	100.0
	Within community	340	55.1
	within the district	277	44.9
Vubwi	Total	1312	100.0
	Within community	937	71.4
	within the district	297	22.7
	within province	69	5.3
	Abroad	9	0.7

Chapter 13: Extension services

13.1 Access to Forest Extension Services in the last 12 months

Table A13.1 shows the percentage share of households that accessed forest extension services by Sex of Head and District, rural Eastern Province 2019. The study revealed that out of the 318,570 households interviewed, 44.2 percent (140,750) reported having accessed forest extension services in rural Eastern Province. A closer analysis of the data revealed that of the male headed households, 46.1 percent accessed forest extension services, compared to 37.4 percent observed among female headed households. Further extension services, were mostly provided by NGOs or Projects (86 percent) and the second most frequent source of advisory services were from associations.

As shown in Table A13.2 in the Annex, analysis of Bee-keeping Advice at district level, results show that Katete district had the highest share of households that received advice at 19.1 percent followed by Petauke and Chipangali at 14.5 and 11.7 percent, respectively. Lusangazi and Chadiza districts received the least advice at 0.3 percent.

On the other hand, with regard to the planting of tree species to be used as Nitrogen fixers & Improved fallows, results indicated that Chipangali district had the highest share of households that received advice at 16.5 percent followed by Katete and Lumezi at 13.6 and 10.9 percent respectively. Similar to advisory services on Bee-keeping, Lusangazi district had the lowest share of households at 0.2 percent.

13.2 Adoption of Climate Smart Agricultural Practices

Table A13.3 shows the percentage distribution of households that adopted Climate Smart Agricultural practices by Sex of Head and District in rural Eastern Province in 2019. Results show that 16 percent of the households adopt CSA practices in Eastern Province. Of the male-headed households, 16.6 percent adopted CSA technologies against 13.3 percent of the female headed households.

At district level, Katete had the highest proportion of households (35.9 percent) that adopted CSA practices followed by Lundazi and Mambwe at 26.5 and 22.7 percent, respectively. The lowest was Petauke district at 6.7 percent.

Annex Table 13.3 presents details relating to proportions of households that practice at least two CSA technologies on their agricultural land disaggregated by sex and district rural Eastern Province, 2019.

Chapter 14 Energy utilization

The survey collect data from households on main source of energy they used for cooking and heating, quantities used and their expenditure. Table 14.1 shows the percentage distribution of households that utilised fuelwood by Sex of Head and District in rural Eastern Province in 2019. Overall, results show that 20.3 percent of the households in rural Eastern Province used fuel wood (fire wood and charcoal) as their main source of energy for cooking and heating. By district, Katete at 44.4 percent had the largest share of households that used fuel wood while Lumezi had the smallest share at 4.5 percent.

Table 14.1. Percentage Distribution of Households that Utilised Fuelwood by Sex of Head and District in Rural Eastern Province, 2019

District	Sex of head			
	Households	Percent	Male	Female
Total	318,570	30.3	74.6	25.4
Chadiza	15,982	11.2	77.6	22.4
Chasefu	23,728	10.9	85.7	14.3
Chipangali	30,585	21.2	83.9	16.1
Chipata	26,410	35.1	78.4	21.6
Kasenegwa	25,643	25.9	58.5	41.5
Katete	26,131	44.4	73.5	26.5
Lumezi	23,602	4.5	85.4	14.6
Lundazi	27,270	14.1	93.1	6.9
Lusangazi	524	9.2	100.0	0.0
Mambwe	12,515	27.7	76.9	23.1
Nyimba	15,415	28.2	65.9	34.1
Petauke	47,286	20.8	68.4	31.6
Sinda	35,792	7.7	79.8	20.2
Vubwi	7,687	12.6	54.1	45.9

The baseline sought to investigate the average quantities of fuelwood utilized by households per month. Table 14.2 shows the quantity of fuel wood utilized by households per month by sex and district in rural Eastern Province in 2019. Results showed that on average households in the rural communities of Eastern Province used 13.472 bundles of fuelwood per month.

Further, male-headed households used 1.6 times as much bundles of fuel wood as female-headed households at 14.682. Female-headed households used 9,173 bundles of fuel wood.

By districts, Katete had the highest (27.3) average quantity of fuelwood used per month while Kasenegwa had the least (4.96). Table 14.2 below shows the quantity of fuel wood utilized by households per month by district and sex of head..

Table 14.2 Quantity of Fuel Wood Utilised per Month by Households Disaggregated by Sex and District, Rural Eastern Province, 2019

District	Sex of head		
	Total	Male	Female
Total	13.472	14.682	9.173
Chadiza	14.357	15.757	9.551
Chasefu	13.496	12.452	19.549
Chipangali	8.889	8.981	8.455
Chipata	7.939	6.854	11.390
Kasenegwa	4.960	5.653	3.153
Katete	27.319	35.326	5.265
Lumezi	10.390	11.517	6.246
Lundazi	18.818	20.162	9.633
Lusangazi	8.636	9.784	3.313
Mambwe	7.729	6.670	10.189
Nyimba	7.651	8.471	5.185
Petauke	11.406	10.511	14.335
Sinda	21.866	25.860	7.011
Vubwi	14.597	15.397	12.647

Table 14.3 shows average household monthly expenditure on charcoal in rural Eastern Province in 2019. Results show that households in rural Eastern on average spent ZMW 33.24 on charcoal per month. Analyzed by district, Vubwi had the highest average monthly expenditure at ZMW 403.27 per month while Lumezi had the lowest (ZMW 15.56) average expenditure per month.

Table 14.3 Average Household Monthly Expenditure on Charcoal by Sex of Head and District in Rural Eastern Province, 2019

District	Sex of head		
	Total	Male	Female
Total	33.24	32.55	35.25
Chadiza	20.02	18.80	24.22
Chasefu	40.69	41.65	35.00
Chipangali	21.25	19.21	31.90
Chipata	36.69	37.35	34.27
Kasenegwa	29.38	30.17	28.25
Katete	21.51	20.59	24.08
Lumezi	15.56	14.97	18.98
Lundazi	42.30	41.75	49.54
Lusangazi	30.62	30.62	
Mambwe	36.01	37.32	31.62
Nyimba	31.57	35.61	23.76
Petauke	19.33	18.14	21.90
Sinda	23.21	24.02	20.00
Vubwi	403.27	463.19	332.53

Chapter 15 Assets ownership

15.1 Household Asset/Implements, Buildings and Infrastructure

The Zambia Integrated Forest Landscape Baseline (ZIFLB) survey collected data on household ownership of assets. Household ownership of assets is an important indicator reflecting its productive capacity and as a measure of welfare. During lean periods, some of the assets owned by the household can be used to smoothen consumption. Further, ownership of productive assets such as farming implements can determine a household's ability to further generate income.

Table 15.1 shows the proportional distribution of households owning various assets by type in rural Eastern Province in 2019. Overall, a hoe, bicycle, cell phone, radio, solar panel & equipment, plough, sprayer, television, scotch cart, storage facility, cow shed, poultry house, motorcycle ripper and pigsty represent the top 15 assets owned by the households in rural Eastern. Notably, 950 out of every 1,000 households in rural Eastern own a hoe reflecting the highest owned assets. However, included among the least owned assets are shellers, harrows, rump press/oil expeller, trucks/ lorries, tractors, castration equipment and sprinklers. At least 1 out of every 1,000 households own one of these assets.

Asset Type	Rural Eastern Province	Male	Female
Hoes	95.1	74.3	20.8
Bicycles	48.3	42.8	5.5
Mobile phone	47.6	38.5	9.1
Radio	40.2	35.3	4.9
Solar Panel and Equipment	26.2	22.9	3.2
Ploughs	25.5	22.4	3.1
Sprayers	15.4	14.0	1.4
Television	11.6	10.4	1.2
Scotch-cart	9.5	8.9	0.6
Storage facilities (warehouses, granaries, etc.)	5.1	4.0	1.1
Cow-shed	4.3	3.8	0.4
Poultry Houses	3.8	3.2	0.6
Motorcycles	3.7	3.5	0.2
Rippers	2.5	2.3	0.2
Pig sty	2.0	1.7	0.3
Other	1.5	1.4	0.1
Sewing Machine	0.9	0.8	0.1
Pick-up/Vans/Cars	0.8	0.7	0.0
Hammer mills	0.7	0.7	0.0
Generator	0.5	0.4	0.0
Water Pump	0.4	0.3	0.0
Improved cook stove	0.3	0.3	0.0
Borehole	0.3	0.2	0.1
Cultivators	0.3	0.2	0.0

Table 15.1: (Continued)

Asset Type	Rural Eastern Province	Male	Female
Vet. Related tools and Equipment	0.3	0.2	0.0
Treadle Pump	0.2	0.2	0.0
Hand Hammer Mills	0.2	0.2	0.0
Sheller	0.2	0.2	0.0
Harrows	0.1	0.1	0.1
Rump press/Oil expeller	0.1	0.1	0.0
Trucks/Lorries	0.1	0.1	0.0
Tractor	0.1	0.0	0.0
Castration Equipment	0.1	0.1	0.0
Sprinklers	0.1	0.1	0.0
Hand Driven Tractor	0.0	0.0	0.0

Table 15.2 shows the percentage distribution of households owning various household assets/equipment in each district of the rural part of Eastern Province in 2019. Among the 15 top most common assets owned by households in each district were hoes, bicycles, mobile phones, radios, solar equipment, ploughs, sprayers, television sets, scotch carts, storage facilities, cowshed, poultry houses, motor cycles, rippers and pigsties.

Analysis by type of assets owned by household by district, results show that 302, 872 households reported owning a hoe. Of the total number of households that reported owning a hoe, the largest proportion lived in Petauke at 14.9 percent followed by Sinda District at 11.3 percent. Lusangazi District at 0.2 percent had the smallest proportion of households that reported owning a hoe. Further, a 153,787 households reported owning bicycles, the second highest most common owned asset in the province. Of these households, 15.9 percent of them lived in Petauke representing the largest percentage share, followed by another 11.1 percent that lived in Sinda. Lusangazi yet again had the smallest proportion of households who reported owning a bicycle at 0.2 percent.

Mobile phones were the third most popular household asset in rural Eastern. About 152,000 households reported owning a mobile phone. Of these households, 14.2 percent live in Petauke accounting for the largest share. Chipangali accounted for the second largest share at 11.3 percent differing marginally with Chipata by 1.3 percentage points which accounted for 10.0 percent. Lusangazi and Vubwi districts accounted for the least percentage shares of households owning a mobile phone at 0.1 and 2.4 percent, respectively.

A pigsty and a ripper were least owned among the 15 top most owned household assets. Of the 6,260 households that reported owning a pigsty, 54.7 percent lived in Chipangali District followed by 22.1 percent in Lumezi District. The least proportions of households that reported owning a pigsty lived in Chasenu and Kasenengwa districts where 3 percent of the households in both districts reported owning a pigsty. The rest of the details patterning to ownership of various assets by district can be checked in the Table 20.2

Table 15.2: Percentage Distribution of Households Owning various Household Assets/Equipment, by District, Rural Eastern Province, 2019.

Assets Type	Total Freq	Chad- iza	Chasefu	Chipan- gali	Chipa- ta	Kaseneng- wa	Katete	Lu- mezi	Lun- dazi	Lusangazi	Mambwe	Ny- imba	Pet- auke	Sin- da	Vubwi
		%	%	%	%	%	%	%	%	%	%	%	%	%	%
Tractor	222	0.0	0.0	0.0	48.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.3
Hand Driven Tractor	10	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ploughs	81,331	6.8	2.6	8.4	6.7	9.1	9.0	4.7	5.5	0.2	1.1	2.2	26.3	13.5	4.0
Harrowes	384	0.0	0.0	0.0	22.6	0.0	47.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.7
Cultivators	890	0.0	0.0	0.0	16.4	0.0	7.3	20.1	0.0	0.0	0.0	5.3	31.0	7.1	12.8
Sheller	591	0.0	0.0	48.4	18.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0
Rippers	7,983	2.0	3.6	21.4	7.4	9.4	17.0	2.9	12.0	0.0	2.0	1.8	10.8	5.1	4.6
Hammer mills	2,335	0.0	7.9	51.1	0.0	0.0	0.0	7.7	17.0	0.0	0.0	8.0	8.4	0.0	0.0
Hand Ham- mer Mills	754	0.0	0.0	27.9	0.0	0.0	0.0	3.4	17.6	0.0	0.0	51.1	0.0	0.0	0.0
Rump press/ Oil expeller	377	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sprayers	48,913	1.1	3.4	9.5	8.1	13.3	8.6	13.0	7.1	0.3	5.9	4.2	13.4	10.7	1.5
Hoes	302,872	4.5	7.2	9.7	8.4	8.1	8.4	7.6	8.4	0.2	4.1	5.1	14.9	11.3	2.4
Water Pump	1,168	0.0	0.0	0.0	9.3	0.0	18.8	15.3	32.3	0.0	10.5	4.1	0.0	0.0	9.8
Treadle Pump	778	0.0	0.0	69.9	13.9	0.0	0.0	0.0	16.2	0.0	0.0	0.0	0.0	0.0	0.0
Sprinklers	176	0.0	0.0	0.0	21.5	0.0	0.0	0.0	0.0	0.0	0.0	78.5	0.0	0.0	0.0
Borehole	1,067	0.0	0.0	25.7	38.5	3.7	0.0	19.2	12.9	0.0	0.0	0.0	0.0	0.0	0.0
Castration Equipment	197	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
Vet. Related tools & Equip	860	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
Radio	128,149	4.1	6.7	10.6	8.9	8.2	7.7	8.8	9.9	0.2	4.5	4.3	15.0	8.7	2.5
Television	37,068	2.2	7.0	11.5	13.4	12.2	6.5	8.8	9.2	0.1	5.8	7.2	9.7	4.1	2.4
Bicycles	153,787	5.0	4.8	9.0	9.4	6.8	9.1	7.5	9.6	0.2	4.3	4.6	15.9	11.1	2.8
Motorcycles	11,908	2.4	3.5	22.2	4.2	12.3	3.3	9.0	4.5	0.4	4.7	7.3	13.3	7.5	5.4
Trucks/Lorries	296	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.6	0.0	0.0	0.0	53.4	0.0	0.0
Pick-up/Vans/ Cars	2,426	0.4	0.0	35.4	12.7	12.4	0.0	16.9	0.0	0.0	6.4	7.7	8.1	0.0	0.0

Table 15.2: (Continued).

Assets 'Type	Total Freq	Chad- iza	Chasefu	Chipan- gali	Chipa- ta	Kaseneng- wa	Katete	Lu- mezi	Lun- dazi	Lusangazi	Mambwe	Ny- imba	Pet- auke	Sin- da	Vubwi
		%	%	%	%	%	%	%	%	%	%	%	%	%	%
Solar Panel and Equip- ment	83,313	2.4	5.6	11.7	8.6	10.4	7.2	7.6	10.6	0.1	3.2	5.6	15.3	9.7	1.9
Scotch-cart	30,391	2.2	1.7	12.1	7.6	11.9	16.0	3.2	5.9	0.0	1.0	2.1	25.0	8.5	2.7
Mobile phone	151,723	3.5	5.8	11.3	10.0	9.4	8.8	8.4	9.1	0.1	4.2	6.1	14.2	6.7	2.4
Sewing Ma- chine	2,851	0.0	0.0	12.7	12.5	10.6	2.7	13.5	9.3	0.0	5.5	19.5	13.8	0.0	0.0
Generator	1,514	0.0	0.0	30.9	19.3	0.0	0.0	1.7	8.3	0.0	0.0	21.7	18.2	0.0	0.0
Improved cook stove	1,084	1.0	17.0	0.0	20.4	10.4	20.3	0.0	12.7	0.0	0.0	0.0	18.1	0.0	0.0
Storage facilities (warehouses, granaries, etc.)	16,200	0.8	1.3	2.0	1.4	4.9	27.6	7.8	18.9	0.2	2.7	5.0	27.4	0.0	0.0
Poultry Houses	12,084	0.0	0.0	39.0	7.3	4.7	5.5	21.8	8.2	0.2	2.3	5.7	4.9	0.0	0.6
Cow-shed	13,624	0.0	4.9	36.2	1.1	8.8	0.0	10.1	11.8	0.0	2.8	3.6	18.5	2.0	0.0
Pig sty	6,260	0.0	3.0	54.7	0.0	3.0	0.0	22.1	6.2	0.0	4.7	0.0	6.3	0.0	0.0
Other	4,691	0.0	0.0	43.7	19.8	0.0	2.8	15.8	2.9	0.0	7.8	2.9	4.2	0.0	0.0

ANNEXES

Table A 13.1: Percentage distribution of households that Accessed Forest Extension Services by Sex of Head and District, Rural Eastern 2019

District	Sex of head																			
	Total						Male						Female							
	Total Households	Received Forest Extension Services		Did not receive Forest Extension Services		Total	Received Forest Extension Services	Did not receive Forest Extension Services		Total	Received Forest Extension Services	Did not receive Forest Extension Services		Total	Received Forest Extension Services	Did not receive Forest Extension Services				
		Count	Count	Row N %	Count			Row N %	Count			Count	Row N %			Count	Count	Row N %	Count	Count
Total	318570	140750	44.2	177820	55.8	248530	114559	46.1	133972	53.9	70040	26192	37.4	43848	62.6	70040	26192	37.4	43848	62.6
Chadiza	15982	5622	35.2	10360	64.8	12340	4980	40.4	7360	59.6	3643	642	17.6	3000	82.4	3643	642	17.6	3000	82.4
Chasefu	23728	5244	22.1	18484	77.9	20311	5026	24.7	15285	75.3	3417	217	6.4	3199	93.6	3417	217	6.4	3199	93.6
Chipangali	30585	19704	64.4	10881	35.6	25057	16487	65.8	8570	34.2	5527	3217	58.2	2311	41.8	5527	3217	58.2	2311	41.8
Chipata	26410	14481	54.8	11929	45.2	20062	11547	57.6	8515	42.4	6348	2934	46.2	3414	53.8	6348	2934	46.2	3414	53.8
Kasenengwa	25643	10337	40.3	15306	59.7	18364	7810	42.5	10554	57.5	7279	2527	34.7	4752	65.3	7279	2527	34.7	4752	65.3
Katete	26131	18411	70.5	7721	29.5	19306	14356	74.4	4950	25.6	6826	4055	59.4	2771	40.6	6826	4055	59.4	2771	40.6
Lumezi	23602	14521	61.5	9081	38.5	18673	11978	64.1	6696	35.9	4928	2543	51.6	2385	48.4	4928	2543	51.6	2385	48.4
Lundazi	27270	10528	38.6	16742	61.4	23922	9793	40.9	14129	59.1	3348	735	21.9	2613	78.1	3348	735	21.9	2613	78.1
Lusangazi	524	300	57.2	224	42.8	432	261	60.2	172	39.8	92	39	42.9	52	57.1	92	39	42.9	52	57.1
Mambwe	12515	6905	55.2	5610	44.8	8786	5127	58.4	3658	41.6	3729	1778	47.7	1951	52.3	3729	1778	47.7	1951	52.3
Nyimba	15415	6766	43.9	8649	56.1	11751	5624	47.9	6127	52.1	3664	1142	31.2	2522	68.8	3664	1142	31.2	2522	68.8
Petauke	47286	15267	32.3	32019	67.7	35629	11450	32.1	24179	67.9	11657	3818	32.7	7840	67.3	11657	3818	32.7	7840	67.3
Sinda	35792	10246	28.6	25546	71.4	28457	8305	29.2	20152	70.8	7335	1941	26.5	5394	73.5	7335	1941	26.5	5394	73.5
Vubwi	7687	2418	31.5	5269	68.5	5440	1814	33.3	3626	66.7	2246	604	26.9	1643	73.1	2246	604	26.9	1643	73.1

Table A 13.2: Percentage share of Households that Accessed Forest Extension Services by Type of advise and District, Rural Eastern 2019

District	Planting tree species to be used as nitrogen fixers & improved fallows		Bee keeping		Sustainable woodlots establishment		Human wildlife conflict		Fire management and prevention		Pest management		Establishment of tree nurseries for increased planting materials	
	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %
Total	104536	100.0	60933	100.0	12185	100.0	13359	100.0	24594	100.0	47004	100.0	24483	100.0
Chadiza	3362	3.2	157	.3	536	4.4	273	2.0	0	0.0	2502	5.3	400	1.6
Chasefu	2137	2.0	2217	3.6	523	4.3	507	3.8	572	2.3	2270	4.8	823	3.4
Chipangali	17284	16.5	7121	11.7	1043	8.6	1359	10.2	3798	15.4	6816	14.5	6955	28.4
Chipata	11228	10.7	5513	9.0	1202	9.9	816	6.1	3118	12.7	5754	12.2	1597	6.5
Kasene ngwa	7507	7.2	4375	7.2	377	3.1	1280	9.6	1958	8.0	4788	10.2	1544	6.3
Katete	14170	13.6	11666	19.1	4348	35.7	918	6.9	2701	11.0	7065	15.0	3793	15.5
Lumezi	11443	10.9	5385	8.8	641	5.3	2574	19.3	1564	6.4	3716	7.9	4360	17.8
Lundazi	7730	7.4	2953	4.8	1020	8.4	963	7.2	2182	8.9	4160	8.9	2113	8.6
Lusangazi	176	.2	169	.3	13	.1	126	.9	150	.6	61	.1	38	.2
Mambwe	4801	4.6	4187	6.9	1062	8.7	590	4.4	4551	18.5	4323	9.2	753	3.1
Nyimba	3631	3.5	4454	7.3	415	3.4	1663	12.4	1539	6.3	1462	3.1	1019	4.2
Petauke	11049	10.6	8849	14.5	95	.8	882	6.6	1354	5.5	2242	4.8	961	3.9
Sinda	8545	8.2	3453	5.7	832	6.8	1172	8.8	1109	4.5	895	1.9	126	.5
Vubwi	1475	1.4	436	.7	78	.6	237	1.8	0	0.0	952	2.0	0	0.0

Table A 13.3: Percentage Distribution of Households adopting Climate Smart Agricultural Practices by Sex of Head and District, Rural Eastern, 2019

District	Sex of head																		
	Total						Male						Female						
	Yes		No		Total	Yes		No		Total	Yes		No		Total	Yes		No	
	Count	Row N %	Count	Row N %		Count	Row N %	Count	Row N %		Count	Row N %	Count	Row N %		Count	Row N %	Count	Row N %
Total	287572	16.0	45879	16.0	227048	16.6	37802	16.6	189245	83.4	60524	8077	13.3	52447	86.7				
Chadiza	14993	18.5	2779	18.5	11867	19.2	2273	19.2	9594	80.8	3126	506	16.2	2620	83.8				
Chasefu	20879	7.6	1595	7.6	17953	7.9	1410	7.9	16543	92.1	2926	185	6.3	2741	93.7				
Chipangali	28390	21.2	6029	21.2	23361	21.4	4999	21.4	18362	78.6	5029	1031	20.5	3998	79.5				
Chipata	22251	20.1	4477	20.1	16997	22.4	3810	22.4	13187	77.6	5254	666	12.7	4588	87.3				
Kasenengwa	23458	12.5	2939	12.5	17610	15.4	2711	15.4	14899	84.6	5848	227	3.9	5620	96.1				
Katete	23831	35.9	8563	35.9	17810	41.0	7296	41.0	10515	59.0	6020	1267	21.0	4753	79.0				
Lumezi	20218	15.5	3127	15.5	15804	15.1	2383	15.1	13420	84.9	4414	744	16.8	3671	83.2				
Lundazi	23582	26.5	6253	26.5	20792	28.1	5839	28.1	14953	71.9	2791	414	14.8	2377	85.2				
Lusangazi	489	10.2	50	10.2	405	12.3	50	12.3	355	87.7	84	0	0.0	84	100.0				
Mambwe	11592	22.7	2634	22.7	8141	24.0	1953	24.0	6188	76.0	3451	681	19.7	2770	80.3				
Nyimba	12638	9.5	1197	9.5	9730	7.9	764	7.9	8966	92.1	2907	433	14.9	2474	85.1				
Petauke	43846	6.7	2952	6.7	33644	5.6	1890	5.6	31755	94.4	10202	1062	10.4	9139	89.6				
Sinda	33788	7.8	2621	7.8	27562	7.5	2067	7.5	25496	92.5	6226	555	8.9	5671	91.1				
Vubwi	7617	8.7	663	8.7	5371	6.6	357	6.6	5014	93.4	2246	306	13.6	1940	86.4				

