United Republic of Tanzania

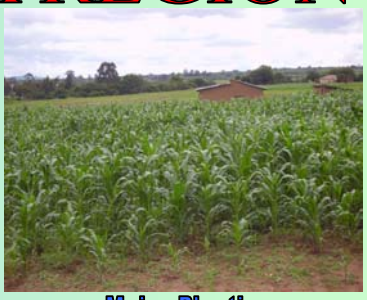
NATIONAL SAMPLE CENSUS OF AGRICULTURE
2002/2003

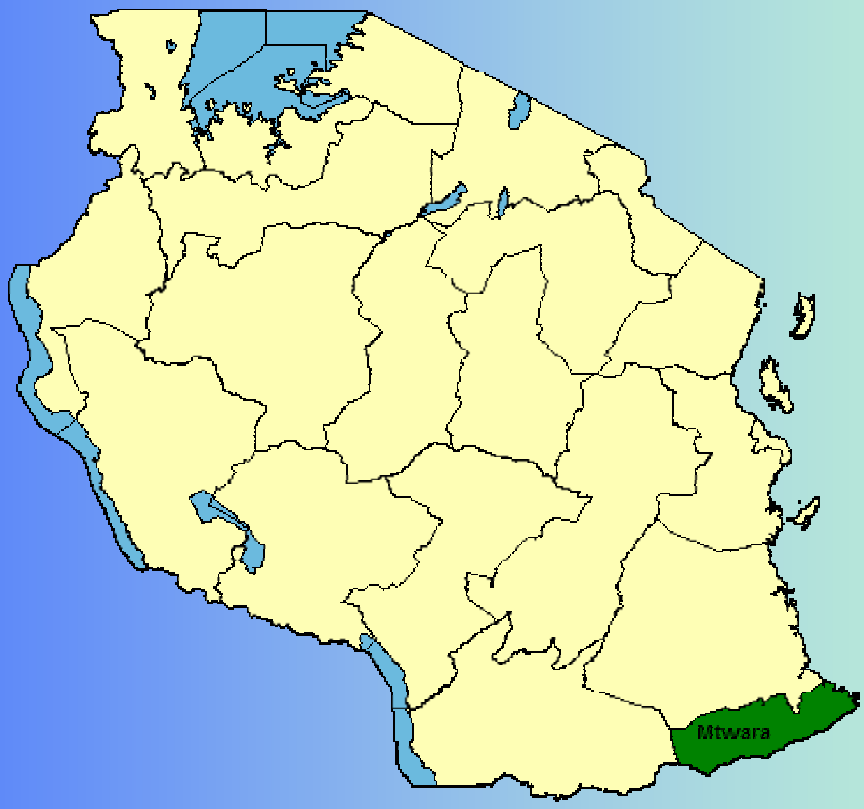
Volume Vi: REGIONAL REPORT: MTWARA REGION

Cattle Rearing

Fish Harvesting

Eggs Production


Maize Planting



Paddy Growing

Hand Cultivation

Indigenous Chicken

Irrigation Practice

Orange Marketing

Cassava Planting

Goats Rearing

National Bureau of Statistics, Ministry of Agriculture and Food Security, Ministry of Water and Livestock Development,
Ministry of Cooperatives and Marketing, Presidents Office, Regional Administration and Local Government
December 2007

United Republic of Tanzania

NATIONAL SAMPLE CENSUS OF AGRICULTURE 2002/2003

VOLUME Vi: REGIONAL REPORT: MTWARA REGION

National Bureau of Statistics, Ministry of agriculture and Food Security,
Ministry of Water and Livestock Development, Ministry of Cooperatives and Marketing,
Presidents Office, Regional Administration and Local Government,
Ministry of Finance and Economic Affairs – Zanzibar

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ACRONYMS

ASDP	*Agricultural Sector Development Project*
CSPro	*Census and Survey Processing Program*
DFID	*Department For International Development*
DIAS	*District Integrated Agricultural Survey*
DS	*District Supervisor*
EAS	*Expanded Agricultural Survey*
EAs	*Enumeration Areas*
EU	*European Union*
FE	*Field Enumerator*
GDP	*Gross Domestic Product*
Ha	*Hectares*
IAS	*Integrated Agricultural Survey*
ICR	*Intelligent Character Recognition*
IEC	*Information, Education and Communication*
JICA	*Japanese International Cooperation Agency*
LRS	*Long Rainy Season,*
MAFS	*Ministry of Agriculture and Food Security*
MCM	*Ministry of Co-operatives and Marketing*
MWLD	*Ministry of Water and Livestock Development*
NBS	*National Bureau of Statistics*
NGO	*Non Governmental Organization*
NMS	*National Master Sample*
NSCA	*National Sample Census of Agriculture*
NSGRP	*National Strategy for Growth and Reduction of Poverty*
PORALG	*President's Office, Regional Administration and Local Government*
PPS	*Probability Proportional to Size*
PSU	*Primary Sampling Unit*
RAAS	*Rapid Appraisal Agricultural Survey*
RS	*Regional Supervisor*
RSM	*Regional Statistical Manager*
SAC	*Scotts Agriculture Consultancy Ltd*
SPSS	*Statistical Package for Social Science*
SRS	*Short Rainy Season*
TOT	*Training of Trainers*
ULG	*Ultek Laurence Gould*
UNDP	*United Nations Development Programme*
UNFAO	*United Nations Food and Agriculture Organization*
VPO	*Vice President Office*

PREFACE

At the end of the 2002/03 Agriculture Year, the National Bureau of Statistics and the Office of the Chief Government Statistician in Zanzibar in collaboration with the Ministries of Agriculture and Food Security; Water and Livestock Development; Cooperatives and Marketing as well as the Presidents Office, Regional Administration and Local Government (PORALG) conducted the Agriculture Sample Census. This is the third Agriculture Census to be carried out in Tanzania, the first one was conducted in 1971/72, the second in 1993/94 and 1994/95 (during 1993/94 data on household characteristics and livestock count were collected and data on crop area and production in 1994/95).

It is considered that this census is one of the largest to be carried out in Africa and indeed in many other countries of the world. The census collected detailed data on crop production, crop marketing, crop storage, livestock production, fish farming, tree farming, access to infrastructures and services and poverty indicators.

In addition to this, the census was large in its coverage as it provides data that can be disaggregated at district level and thus allow comparisons with the 1998/99 District Integrated Agricultural Survey. The census covered smallholders in rural areas only and large scale farms. This report presents Mtwara region data disaggregated to district level. It was very difficult to discuss all variables collected in a single report hence the analysis was based on the most important smallholder variables. The rest of the variables are found in the attached annex of table of results. The analysis in the report includes time series comparisons using data from the previous censuses and surveys.

The extensive nature of the census in relation to its scope and coverage is a result of the increasing demand for more detailed information to assist in the proper planning of this sector and in the administrative decentralization of planning to district level. It is hoped that this report will provide new insights for planners, policy makers, researchers and others involved in the agricultural sector in order to improve the prevailing conditions faced by crop producers and livestock keepers in the country.

On behalf of the Government of Tanzania, I wish to express my appreciation for the financial support provided by the development partners, in particular, the European Union as well as DFID, UNDP, Japanese Government, JICA and others who contributed through the pool fund mechanism.

Finally, my appreciation goes to all those who in one-way or the other contributed to the success of the survey. In particular, I would also like to mention the enormous effort made by the Planning Group composed of professionals from the Agriculture Statistics Department of the National Bureau of Statistics (NBS), the Office of the Chief Government Statistician in Zanzibar (OCGS) and the Statistics Unit of the Ministry of Agriculture and Food Security (MAFS) with technical assistance provided by Ultec Lawrence Gould (ULG), Scotts Agriculture Consultancy Ltd and the Food and Agriculture Organisation of the United Nations (FAO).

Additionally, I would like to extend my appreciation to all professional staff of the National Bureau of Statistics, the sector Ministries of Agriculture and PORALG, the Consultants as well as Regional and District Supervisors and field enumerators for their commendable work. Certainly without their dedication, the census would not have been such a success.

Albina A. Chuwa
The Director General
National Bureau of Statistics

EXECUTIVE SUMMARY

The executive summary highlights the main survey results obtained during the National Sample Census of Agriculture 2002/03. This report covers small-scale agriculture households in rural areas of Mtwara region who were selected using statistical sampling techniques. The results in the report do not cover urban areas and large-scale farmers.

The highlights describe the important findings on agricultural production, productivity, husbandry, access to resources, levels of involvement in agricultural related activities and poverty in Mtwara region included are activities' indicators for one to get an overview, at regional level, of the rural agricultural households and their levels of involvement in agricultural and related activities.

i) Household Characteristics

The number of agricultural households in Mtwara region was 229,314 out of which 204,241 (89.1%) were involved in growing crops only, 112 (0.0%) rearing livestock only and 24,961 (10.9%) were involved in crop production as well as livestock keeping. In summary, Mtwara region had 229,202 households involved in crop production and 25,073 involved in livestock production.

Most of the agricultural households ranked annual crop farming as an activity that provides most of their cash income followed by permanent crop farming, tree/forest resources, off farm income, livestock keeping/herding, remittances and fishing/hunting & gathering.

The region has a literacy rate of 62 percent. The highest literacy rate is in Masasi (73%) followed by Newala district (67%) and Mtwara Urban district (63%). Mtwara Rural and Tandahimba districts have the lowest literacy rates of 57 and 56 percent respectively. The literacy rate for the heads of households in the region was 65.6 percent.

The number of heads of agricultural households with formal education in Mtwara region was 146,360 (64%), those without education were 79,566 (35%) and those with only adult education were 3,389 (1%). The majority of heads of agricultural households (61%) had primary level education whereas only 3 percent had above primary education.

In Mtwara region of the households with a household member involved in off-farm income generating activities, 93,214 households (59%) had only one member involved in such activities, 41,978 (27%) had only two members involved and 21,486 (14%) more thamn two household members involved in off-farm income generating activities.

ii) Crop Production

- **Land Area**

The total area of land available to smallholders was 476,196 ha. The regional average land area utilised for agricultural production per agricultural growing household was only 1.8 ha. This figure is below the national average of 2.0 hectares.

- **Planted Area**

The area planted with annual crops and vegetables was 256,405 hectares out of which 481 hectares (0.2%) were planted during dry season and 255,923 hectares (99.8%) during wet season.

An estimated area of 114,309 ha (44.6% of the total planted area with annual and vegetable crops) was with roots and tubers, followed by 106,835 hectares (41.7%) of cereals, 19,849 ha (7.7%) of oils seeds and nuts, 14,171 ha (5.5%) of pulses, 949 ha (0.4%) of fruit and vegetables and cash crops were not planted in this region..

- **Cassava**

Cassava was the dominant annual crop grown in Mtwara region and it had a planted area 1.59 times greater than maize, which had the second largest planted area. The area planted with cassava constitutes 45 percent of the total area planted with annual crops. Other crops in order of their importance (based on area planted) were sorghum, groundnuts, paddy, bambaranuts, cowpeas and simsim.

There was a sharp increase in cassava production (122%) over the period of 1997 to 1999, whereas there was a sharp decrease in cassava production (46%) over the period from 2000 to 2003.

- **Maize**

The total production of maize in 2002/03 was 29,607 tonnes. The average area planted with maize per household ranged from 0.3 hectares in Mtwara Rural and Urban districts to 0.5 hectares in Masasi district. Masasi district had the largest planted area of maize (41,922 ha) followed by Newala (15,543 ha), Tandahimba (8,427 ha), Mtwara Rural (5,617 ha) and Mtwara Urban (505 ha).

- **Sorghum**

Sorghum was the second most important cereal crop in the region in terms of planted area. The number of households that grew sorghum in Mtwara region during the wet season was 66,919. This represented 30 percent of the total households growing annual crops in Mtwara Region in the wet season.

- **Fruit and Vegetables**

The total production of fruit and vegetables was 2,123 tonnes. The most cultivated fruit and vegetable crop was tomatoes. Its production f was 1,326 tonnes, which represented 62.4 percent of the total fruit and vegetable production. It was followed by pumpkins 299 tonnes (14%) and okra 278 tonnes (13%). The production of the other fruit and vegetable crops was relatively small.

- **Permanent Crops**

The smallholders planted area with permanent crops was 247,188 hectares which was equivalent to 96 percent of the area planted with annual crops in the region. The most important permanent crop was cashewnuts which accounted for 92 percent of the total area planted with permanent crops followed by pigeon peas (3%), coconuts (2%) and mangoes (1.5%).

- **Improved Seeds**

The area planted using improved seeds was 7,691 ha which represented 3 percent of the total area planted area with annual crops and vegetables. The percentage use of improved seed in the wet season was the same 3 percent since improved seeds were not used in the dry season.

- **Use of Fertilizers**

Most annual crop growing households did not use any fertilisers. The planted area without fertilisers for annual crops was 236,820 hectares representing 92.4 percent of the total area planted with annual crops. Of the planted area with fertiliser application, farm yard manure was applied to 10,110 ha which represented 3.9 percent of the total planted area and (63.7 % of the area planted with fertiliser application). This was followed by inorganic fertilisers (6,792, 34.7%). Compost was used on a very small area which represented only 13.7 percent of the area applied with fertilizers.

- **Irrigation**

In Mtwara region, the area of annual crops and vegetables under irrigation was 2,337 ha 1.0 percent of the total area planted. There was no area under irrigation during the dry season.

- **Crop Storage**

There were 161,435 crop growing households (70% of the total crop growing households) that reported storing various agricultural products in the region.

The most important stored crop was maize with 135,282 households storing 5,745 tonnes as of 1st January 2004. This was followed by sorghum and millet (47,730 households and 852 tonnes), beans and pulses (35,793 households and 526 tonnes), groundnuts and bambara nuts (35,613 households and 1,040 tonnes), paddy (23,989 households and 972 tonnes) and cashwnuts (1,421 households and 37 tonnes).

- **Crop Marketing**

The number of households that reported selling crop was 149,163 which represents 65.0 percent of the total number of crop growing households. The percent of crop growing households selling crops was highest in Newala (70%) followed by Tandahimba (69%), Mtwara Rural (66%), Masasi (61%) and Mtwara Urban (46%).

- **Agricultural Credit**

In Mtwara region, few agricultural households (1,509, 0.7%) accessed credit, out of which 1,410 (93%) were male-headed households and 99 (7%) were female headed households. In Masasi, Tandahimba and Mtwara Urban districts only male-headed households accessed credit but in Newala district both male and female headed households accessed credit. There was no household that accessed credit in Mtwara rural district.

- **Crop Extension Services**

The number of agricultural households that received crop extension was 40,456 (18% of total crop growing households in the region). Some districts had more access to extension services than others. Tandahimba district had a relatively high proportion of households that received crop extension messages (24%), followed by Mtwara rural (20%), Masasi (18%), Mtwara urban (12%), and Newala (8%).

- **Soil Erosion and Water Harvesting Facilities**

The number of agricultural households that reported the presence of soil erosion and water harvesting facilities on their farms was 1,474. This number represented 0.6 percent of total number of agricultural households in the region. The proportion of farmers with soil erosion control and water harvesting facilities was highest in Mtwara urban district (3%) followed by Masasi (1.3%), Newala (0.2%) and both in Tandahimba and Mtwara rural (0%).

iii) Livestock and Poultry Production

- **Cattle**

The total number of cattle in the region was 17,158. Goats rearing was the dominant livestock type in the region followed by sheep, cattle and pigs. The region had 0.1 percent of the total cattle population on the Tanzanian Mainland. The number of indigenous cattle was 16,383 head (95.5% of the total number of cattle in the region), 775 (4.5%) were dairy breeds but there were no beef breeds.

- **Goats**

The number of goat-rearing-households in the region was 32,950 (14.4% of all agricultural households) with a total of 196,675 goats giving an average of 6 heads of goats per goat-rearing-households.

- **Sheep**

The number of sheep-rearing households was 3,487 (1.5% of all agricultural households) with a total of 25,275 sheep giving an average of 7 heads of sheep per sheep-rearing household.

- **Pigs**

The number of pig-rearing households in the region was 3,355 (1.5% of the total agricultural households) rearing about 6,293 pigs. This gives an average of 2 pigs per pig-rearing household.

- **Chicken**

The number of households keeping chickens was 97,384, raising 710,132 chickens. This gives an average of 7 chickens per chicken-rearing household. In terms of total number of chickens in the country Mtwara ranked nineteenth out of the 21 Mainland regions.

- **Use of Draft Power**

The region had no oxen at all.

- **Fish Farming**

The number of households involved in fish farming was 477 (0.2 percent of the total agricultural households in the region). Masasi was the only district with 477 agricultural households involved in fish farming (0.5%). Fish farming was not practiced in other districts.

iv) Poverty Indicators

- **Availability of Toilets**

It was estimated that 94.0 percent of all rural agricultural households used the traditional pit latrines, 2.2 percent had flush toilets and 0.8 percent used improved pit latrine. Households with no toilet facilities accounted for 3 percent of the total agriculture households in the region.

- **Household Assets**

The bicycle was the asset owned by the highest percent of households (44.8% of households) followed by radios (42.6%), iron (14.0%), wheelbarrow (1.1%), vehicle (1.0%), television/video (0.5%), mobile phone (0.3%) and landline phone (0.1%).

- **Source of Lighting Energy**

Wick lamp was the most common source of lighting energy in the region. About 69.6 percent of the agricultural households used this source of energy followed by hurricane lamp (24.5%), pressure lamp (2.7%), firewood (0.9%), mains electricity (0.8%), candle (0.4%) and biogas (0.1%).

- **Energy for Cooking**

The most prevalent source of energy for cooking was firewood, which was used by 98.03 percent of all rural agricultural households. The second most common source of energy for cooking was charcoal (1.30%). The rest of energy sources accounted for 0.58 percent. These were crop residues (0.27%), paraffin/kerosene (0.19%), bottled gas (0.08%), mains electricity (0.08%) and solar (0.04%).

- **Roofing Materials**

The most used roofing material (for the main dwelling) was grass and/or leaves and it was used by 72.7 percent of the rural agricultural households however, this was closely followed by iron sheets (21.7%). Other roofing materials were grass/mud (4.2%), tiles (0.7%), asbestos (0.5%) and concrete (0.2%).

- **Number of Meals per Day**

About 33.8 percent of the holders in the region took three meals per day, 57.3 percent took two meals, 8.7 percent took one meal and 0.2 percent took four meals.

- **Food Security**

Households which seldom had problems in satisfying their food needs represented 33 percent of the total number of agriculture households in the region. Households with recurring food shortage problems represented 11.4 percent whereas those with little problems represented 8.2 percent. About 6 percent of agriculture households always faced food shortages whilst 41 percent had problem in satisfying their food requirements.

- **Main Source of Cash Income**

Selling of food crops was the main cash income earning activity reported by 46.2 percent of the rural agricultural households. The second main cash income earning activity was cash crops (37.0%) followed by casual labour (3.8%), businesses (3.3%) and cash remittances (2.2%). Other income earning activities were sale of forest products (2.0%), employment (1.8%), fishing (1.5%), sale of livestock products (0.5%) and sale of livestock products (0.2%).

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1. BACKGROUND INFORMATION

1.1 Introduction

This part of the report presents a brief description of the regional profile by providing information on the geographical location, land area, climate, administrative set up, population and the socio-economic situation. The information aims at providing the user with a general understanding of the region and its resources.

1.2 Geographical Location and Boundaries

Mtwara region is situated at the Southern-East corner of Tanzania between 10^0 and 11^0degrees below the Equartor and 38^0 – $40^0$30' degrees East of the Greenwich Meridian. Mtwara shares borders with Lindi region to the North, the Indian Ocean, to the east and the southern boundary is the great Ruvuma River, which separates Tanzania from the Republic of Mozambique and Ruvuma region to the west. .

The region comprises five districts namely Mtwara Rural, Newala, Masasi, Tandahimba and Mtwara Urban. The region headquarters is located in the Mtwara Urban District.

1.3 Land Area

The region has an area of 16,720 square kilometers, it accounts for 1.9% of the total area of Tanzania Mainland, which is 885,978 square kilometers.

1.4.0 Climate

The region receives only the long rains which normally start from November/December to April/may. This is the wet rainy (Masika) season.

1.4.1 Temperature

The dominant climate is warm and wet. The mean annual maximum temperature in the region varies between 23^0C during July and 27^0C during December.

1.5 Population

According to the 2002 Population and Housing Census, there were 1,128,523 inhabitants in Mtwara region. The population of Mtwara region ranked 16th of the 21 regions on Tanzania Mainland..

1.6 Socio - Economic Indicators

The regional Gross Domestic Product (GDP) at current prices for the year 2003 was estimated to be TShs 292,085 million with a per capita income of shillings 255,860. The region held 17th position among regions on GDP and contributed about 3.0 percent to the national GDP[1]

Mtwara region has agriculture as its main economic activity, employing about 90% of the economically active population.

It has variety of tourist attractions, which include; virgin beaches on a 125 – kilometer coastline, scenic Msimbati bay, the Mikindani historical old town and Monuments. The Game reserves are Msanjesi and Lukwisa/Lumese, which are rich in a variety of wildlife species.

[1] Hali ya Uchumi wa Taifa Katika Mwaka 2003

The region is famous for producing both food and cash crops. The main food crops produced in Mtwara region include: maize, paddy, cassava and sorghum. The main cash crop is tobacco. Livestock keeping is also an important economic activity in the region.

2. INTRODUCTION

This part of the report provides the technical and operational description of the National Sample Census of Agriculture (NSCA), carried out in the rural areas of Tanzania Mainland and Zanzibar during the 2002/03 agricultural year. It details the background and the rationale for carrying out the NSCA in 2002/03 agricultural year. It also explains the sampling procedures, designing and implementation of the data processing system.

2.1 The Rationale for Conducting the National Sample Census of Agriculture

In 2003, the Government of Tanzania launched the Agricultural Sample Census as an important part of the Poverty Monitoring Master Plan which supports the production of statistics for advocacy of effective public policy, including poverty reduction, access to services, gender, as well as the standard crop production data normally collected in an agriculture census. The census is intended to fill the information gap and support planning and policy formulation by high level decision making bodies. It is also meant to provide critical benchmark data for monitoring Agriculture Sector Development Programme (ASDP) and other agriculture and rural development programs as well as prioritising specific interventions of most agriculture and rural development programs.

Following the decentralisation of the Government's administration and planning functions, there has been a pressing need for agriculture and rural development data disaggregated at regional and district levels. The provision of district level estimates will provide essential baseline information on the state of agriculture and support decision making by the Local Government Authorities in the design of District Agricultural Development and Investment Projects (DADIPS). The increase in investment is an essential element in the national strategy for growth and reduction of poverty.

This report (Volume V) is among the 21 regional reports for the mainland. Other Census reports include the Technical Report (Volume I), crop sector at national and regional levels including Zanzibar estimates (Volume II), Livestock Report (Volume III), Smallholder Household Characteristics and Access to Natural Resources Report (Volume IV), 21 Regional Reports for the Mainland (Volume V), Large Scale Farms Report (Volume VI) and a separate report for Zanzibar (Volume VII). In order to address the specific issue of gender, a separate thematic report on gender has been published. Other thematic reports will be produced depending on the demand and availability of funds. In addition to these reports two dissemination applications have been produced to allow users to create their own tabulations, charts and maps.

The report is divided into five main sections: Background Information, Introduction, Results, Evaluation and Conclusion and Appendices. The definitions relating to all aspects of this report can be found in the questionnaire (Appendix III).

2.2 Census Objectives

The 2003 Agriculture Sample Census was designed to meet the data needs of a wide range of users down to district level including policy makers at local, regional and national levels, rural development agencies, funding institutions, researchers, Non government Organisations (NGOs), farmer organisations, etc. As a result, the dataset is both more numerous in its sample and detailed in its scope compared to previous censuses and surveys. To date this is the most detailed Agricultural Census carried out in Africa. The census was carried out in order to:

- Identify structural changes if any, in the size of farm household holdings, crop and livestock production, farm input and implement use. It also seeks to determine if there are any improvements in rural infrastructure and in the level of agriculture household living conditions;

- Provide benchmark data on productivity, production and agricultural practices in relation to policies and interventions promoted by the Ministry of Agriculture and Food Security and other stake holders.
- Establish baseline data for the measurement of the impact of high level objectives of the Agriculture Sector Development Programme (ASDP), National Strategy for Growth and Reduction of Poverty (NSGRP) and other rural development programs and projects.
- Obtain benchmark data that will be used to address specific issues such as: food security, rural poverty, gender, agro-processing, marketing, service delivery, etc.

2.3 Census Coverage and Scope

The census was conducted for both large and small scale farms. The National Sample Census of Agriculture covered a total of 3,221 selected rural villages of Tanzania Mainland out of which 215 villages were from Tanga region.

The census covered agriculture in detail as well as many other aspects of rural development and was conducted using three types of questionnaires:

- Small scale farm questionnaire
- Community level questionnaire
- Large scale farm questionnaire

The small scale farm questionnaire was the main census instrument and it includes questions related to crop and livestock production and practices; population demographics; access to services, resources and infrastructure; issues on poverty, gender and subsistence versus profit making production units. The main sections covered are as follows:

- Identification (i.e. region, district, ward and village)
- Household and holding characteristics
- Household information
- Land ownership/tenure
- Land use
- Access and use of resources
- Crop and vegetable production
- Agro processing and by-Products
- Crop storage and marketing
- On-farm investment
- Access to farm inputs and implements
- Use of credit for agricultural purposes
- Tree farming/agro-forestry
- Crop extension services
- Livelihood constraints
- Animal contribution to crop production
- Livestock
- Livestock products
- Fish farming
- Livestock extension
- Labour use

- Access to infrastructure and other services
- Household facilities

The community level questionnaire was designed to collect village level data such as access and use of common resources, community tree plantation and seasonal farm gate prices.

The large scale farm questionnaire was administered to large scale farms that were either privately or corporately managed. There will be a national report on large scale farming on Tanzania Mainland.

2.4 Legal Authority of the National Sample Census of Agriculture

The NSCA 2002/03 was conducted under the legal authority of the 2000 National Bureau of Statistics Act which, among other things, makes data collected from individuals strictly confidential and to be used for statistical purposes only.

2.5 Reference Period

Two types of reference periods were used namely the agricultural year and the reference date for livestock enumeration. The agricultural year 2002/03 (that is October 2002 to September 2003) was used for the data items that are related to crop production. The reference date of enumeration for livestock and poultry count was 1st October 2003.

2.6 Census Methodology

The main focus at all stages of the census execution was on data quality and this is emphasised in this section. The main activities undertaken include:

- Census organisation
- Tabulation plan preparation
- Sample design
- Design of census questionnaires and other instruments.
- Field pretesting of the census instruments
- Training of trainers, supervisors and enumerators
- Information Education and Communication (IEC) campaign
- Data Collection
- Field supervision and consistency checks
- Data processing:
    - Scanning
    - ICR extraction of data
    - Structure formatting application
    - Batch validation application
    - Manual data entry application
    - Tabulation preparation using SPSS
- Table formatting and charts using Excel, map generation using ArcView and Freehand.
- Report preparation using Word and Excel.

2.6.1 Census Organization

The Census was conducted by the National Bureau of Statistics in collaboration with the sector ministries of agriculture, and the Office of the Chief Government Statistician in Zanzibar. At the national level the Census was headed by the

Director General of the National Bureau of Statistics with assistance from the Director of Economic Statistics. The Planning Group, made up of staff from the National Bureau of Statistics, Department of Agricultural Statistics and three representatives from the Ministry of Agriculture and Food Security (Department of Policy and Planning), oversaw the overall operational aspects of the Census. At the regional level, implementation of census activities was overseen by the Regional Statistical Officer of NBS and the Regional Agriculture Supervisor from the Ministry of Agriculture and Food Security. At the District level, two supervisors from the President's Office, Regional Administration and Local Government (PORALG), managed the enumerators who also came from the same ministry.

Members of the Planning Group had a minimum qualification of a bachelor degree, the regional supervisors were either agricultural economists, statisticians or statistical officers. The district supervisors and enumerators had diploma level qualifications in agriculture.

The Census and Surveys Technical Working Group provided support in sourcing financing, approving budget allocations and technical assistance inputs as well as monitoring the progress of the census. A Technical Committee for the census was established with members from key stakeholder organisations (i.e. NBS, sector ministries of agriculture, President's Office, Planning and Privatization (POPP), PORALG, University of Dar es Salaam (UDSM), Tanzania Food and Nutrition Centre (TFNC) and the Office of Chief Government Statistician (OCGS) in Zanzibar). The main function of the committee was to approve the proposed instruments and procedures developed by the Planning Group. It also approved the tabulations and analytical reports prepared from the Census data.

2.6.2 Tabulation Plan

The tabulation plan was developed following three user group workshops and thus reflects the information needs of the end users. It took into consideration the tabulations from previous census and surveys to allow trend analysis and comparisons.

2.6.3 Sample Design

The Mainland sample consisted of 3,221 villages. These villages were drawn from the National Master Sample (NMS) developed by the National Bureau of Statistics (NBS) to serve as a national framework for the conduct of household based surveys in the country. The National Master Sample was developed from the 2002 Population and Housing Census. In most cases, within each selected village, data was collected from a sub-sample of fifteen agricultural households. In few large villages thirty households were selected. The total Mainland sample was 48,315 agricultural households. In Zanzibar a total of 317 EAs were selected and 4,755 agricultural households were covered. Nationwide, all regions and districts were sampled with the exception of three urban districts (two from Mainland and one from Zanzibar).

In both Mainland and Zanzibar a stratified two stage sample was used. In the first stage, villages/enumeration areas (EAs) were selected with probability proportional to the number of villages in each district. In the second stage, 15 households were selected from a list of farming households in each Village/EA using systematic random sampling. Table 2.1 gives the sample size of households, villages and districts for Tanzania Mainland and Zanzibar.

Table 2.1: Census Sample Size

Number of	Mainland	Zanzibar	Total
Households	48,315	4,755	53,070
Villages/Eas	3,221	317	3,539
Districts	117	9	126
Regions	21	5	26

2.6.4 Questionnaire Design and Other Census Instruments

The census questionnaires were designed following user/producer meetings to ensure that the information collected was in line with their data needs. Several features were incorporated into the design of the questionnaire to increase the accuracy of the data:

- Where feasible all variables were extensively coded to reduce post enumeration coding error.
- The definitions for each section were printed on the opposite page so that the enumerator could easily refer to the instructions whilst interviewing the farmer.
- The responses to all questions were placed in boxes printed on the questionnaire, with one box per character. This feature made it possible to use scanning and ICR technologies for data entry.
- Skip patterns were used to avoid asking unnecessary questions
- Each section was clearly numbered, which facilitated the use of skip patterns and provided a reference for data type coding for the programming of CSPro, SPSS and the dissemination applications.

Besides the questionnaires, there were other instruments used:

- Village listing forms that were used for listing households in the villages and from these list a systematic sample of 15 agricultural households were selected from each village.
- Training manual which was used by the trainers for the cascade/pyramid training of supervisors and enumerators. This manual was trainers guiding document on the procedures to follow during tha training
- Enumerator Instruction Manual which was used as reference material.

2.6.5 Field Pre-Testing of the Census Instruments

The Questionnaire was pre-tested in five locations (Arusha, Dodoma,,Tanga, Unguja and Pemba). This was done purposely to test the wording, flow and relevance of the questions and to finalise crop lists, questionnaire coding and manuals. In addition to this, several data collection methodologies had to be finalised, namely, livestock numbers in pastoralist communities, cut flower production, mixed cropping, use of percentages in the questionnaire and finalising skip patterns and documenting consistency checks.

2.6.6 Training of Trainers, Supervisors and Enumerators

Cascade/pyramid training techniques were employed to maintain statistical standards. The top level training was provided to 66 national and regional supervisors (3 per region plus Zanzibar). The trainers were members of the Planning Group and the trainees were from the National Bureau of Statistics and the sector ministries of agriculture. The second level training was for the district supervisors and enumerators. This training was conducted in the regions. In each region three training sessions were conducted for the district supervisors and enumerators. In addition to training in field level Census methodology and definitions, emphasis was placed on training the enumerators and supervisors in consistency checking. Tests were given to the enumerators and supervisors and the best 50 percent of the trainees were selected to administer the smallholder and community level questionnaires. This increased the number of interviews per enumerator but it also released finance to increase the number of supervisors and hence the Supervisor Enumerator Ratio. The household listing exercise was carried out by all trained enumerators.

2.6.7 Information, Education and Communication (IEC) Campaign

Information, Education and Communication (IEC) is an important aspect of any census/survey undertaking. This is due to the fact that inadequately informed and hence uncooperative citizens may jeopardize the entire census/survey. As far as the

2002/03 Agricultural Sample Census was concerned, the main objective of the IEC program was to sensitize and mobilize Tanzanians to support, cooperate and participate in the census exercise.

Radio, television, newspapers, leaflets, t-shirts and caps were used to publicise the Sample Census. T-shirts and caps were used by the field staff and the village chairmen as official uniforms during the field work. The village chairmen helped to locate the selected households.

2.6.8 Household Listing

The household listing exercise was done in seven days. During the listing exercise, forms ACLF1 and ACLF2 were administered. The information collected included the number of fields operated by the household, the number of different types of livestock and poultry. This information was used to determine the agricultural households. From the list of agricultural households, 15 households were selected for the interview. The selection was done using the Random Number Table.

2.6.9 Data Collection

Data collection activities for the 2002/2003 Agricultural Sample Census took three months from January to March 2004. The data collection methods used during the census were by interview and no physical measurements, e.g., crop cutting and field area measurement were taken. Field work was monitored by a hierarchical system of supervisors at the top of which was the Mobile Response Team followed by the national, regional, and district supervisors.

The Mobile Response Team consisted of three principal supervisors who provided overall direction to the field operation and responded to queries arising outside the scope of the training exercise. The mobile response team consisted of the Manager of Agriculture Statistics Department, Long-term Consultant and Desk Officer for the Census. Decisions made on definitions and procedures were then communicated back to all enumerators via the national, regional and district supervisors.

District supervision and enumeration were done by staff from the President's Office, Regional Administration and Local Government (PORALG). National and regional supervisions were provided by senior staff of the National Bureau of Statistics and the sector ministries of agriculture. During the household listing exercise 3,221 extension staff were used. For the enumeration of the small holder questionnaire, 1,611 enumerators were used and additional 5 percent enumerators were held in reserve in case of drop outs during the enumeration exercise.

2.6.10 Field Supervision and Consistency Checks

Enumerators were trained to probe the respondents until they were satisfied with the responses given before they recorded them in the questionnaire. The first check of the questionnaires was done by enumerators in the field during enumeration. The second check was done by the district supervisors followed by regional and national supervisors. Supervisory visits at all levels of supervision focused on consistency checking of the questionnaires. Inconsistencies encountered were corrected, and where necessary a return visit to the respondent was made by the enumerator to obtain the correct information. Further quality control checks were made through a major post enumeration checking exercise where all questionnaires were checked for consistencies by all supervisors in the district offices.

2.6.11 Data Processing

Data processing consisted of the following processes:

- Manual editing
- Data entry
- Data structure formatting
- Batch validation
- Tabulation
- Illustration production
- Report formatting

Manual Editing

Prior to scanning, all questionnaires underwent a manual cleaning exercise. This involved checking that the questionnaire had a full set of pages, correct identification and good handwriting. A score was given to each questionnaire based on the legibility and the completeness of enumeration. This score will be used to assess the quality of enumeration and supervision in order to select the best field staff for future censuses/surveys.

Data entry/Scanning and ICR extraction technologies

Scanning and ICR data capture technology was used for the small holder questionnaire. This not only increased the speed of data entry, it also increased the accuracy due to the reduction in keystroke errors. Interactive validation routines were incorporated into the ICR software to track errors during the verification process. The scanning operation was so successful that it is highly recommended that this technology be adopted for future censuses/surveys.

The Census and Surveys Processing Program (CSPro) was used to enter 2,880 of small holder questionnaires that were rejected by the Intelligent Character Recognition (ICR) extraction application.

Data structure formatting

A program was developed in visual basic to automatically alter the structure of the output from the scanning/extraction process in order to harmonise it with the manually entered data. The program automatically checked and changed the number of digits for each variable, the record type code, the number of questionnaires in the village, the consistency of the Village Identification (ID) code and saved the data of one village in a file named after the village code.

Batch validation

A batch validation program was developed in order to identify inconsistencies within a questionnaire. This is in addition to the interactive validation during the ICR extraction process. The procedures varied from simple range checking within each variable to more complex checking between variables. It took six months to screen, edit and validate the data from the smallholder questionnaire. After the long process of data cleaning, the results were prepared based on a pre-designed tabulation plan.

Tabulations

Statistical Package for Social Sciences (SPSS) was used to produce the Census results and Microsoft Excel was used to organize the tables and compute additional indicators.

Analysis and report preparation

The analysis in this report focuses on regional and district production estimates, districts comparisons and time series analysis. Microsoft Excel was used to produce charts; whereas Microsoft Word was used to compile the report.

Data quality

A great deal of emphasis was placed on data quality throughout the whole exercise from planning, questionnaire design, training, supervision, data entry, validation and cleaning/editing. As a result of this NBS believes that the Census is highly accurate and representative of what was experienced at field level during the Census year. With very few exceptions the variables in the questionnaire are within the norms for Tanzania and they follow expected time series trends when compared to historical data. Standard Errors and Coefficients of Variation for the main variables can be found in the Technical Report (Volume I).

2.7 Funding Arrangements

The Agricultural Sample Census was supported mainly by the European Union (EU) who financed most of the operational activities. Other funds for operational activities came from the Government of Tanzania, Government of Japan, United Nations Development Programme (UNDP) and other partners in the Pool Fund of the Vice President's Office (VPO). In addition to this, technical assistance was provided by the European Union (EU), Department for International Development (DFID) and Japanese International Cooperation Agency (JICA). Technical assistances were managed by Ultek Laurence Gould Consultants (ULG), Scotts Agriculture Consultancy Ltd (SAC) and the Food and Agriculture Organisation (FAO).

3. CENSUS RESULTS

This part of the report presents the results of the census for Mtwara region based on the statistical tables presented in Appendix A2. The results are presented in different forms including brief summaries, charts, condensed tables, graphs and maps in order to make it easier for the users to understand. Comparisons are made between related variables and between districts. Comparisons are also made with past censuses and surveys' results such as the 1994/95 National Sample Census of Agriculture (NSCA), the 1995/96 and the 1996/97 Expanded Agricultural Surveys, the 1997/98 Integrated Agricultural Survey, the 1998/99 District Integrated Agricultural Survey and the 1999/00 Rapid Agricultural Appraisal Survey. The results are divided into four main sections which are household characteristics, crop results, livestock results and poverty indicators. Compared to previous census and surveys, more effort has been placed in analyzing the results in order to formulate solid conclusions.

3.1 Household Characteristics

3.1.1 Type of Household

The number of agricultural households in Mtwara region was 229,314. The largest number of agriculture households was in Masasi (96,421) followed by Mtwara rural (45,154), Newala (43,065), Tandahimba (41,823) and Mtwara urban (2,850) (Map 3.1). The highest density of households was found in Mtwara urban (1,668/km^2) followed by Newala (67/km$^{2)}$ (Map 3.2). Most households (204,241, 89.1%) were involved in growing crops only, 112 (0.0%) rearing livestock only and 24,961 (10.9%) were involved in crop production as well as livestock keeping (Chart 3.1) (Map 3.3, 3.4, 3.5 and 3.6).

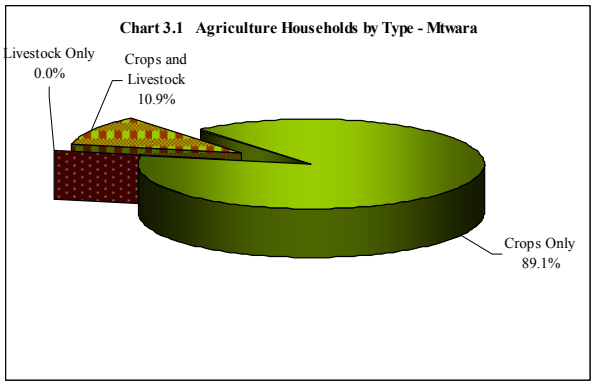


Table 3.1 The Livelihood Activities/Source of Income of the Households Ranked in Order of Importance by District

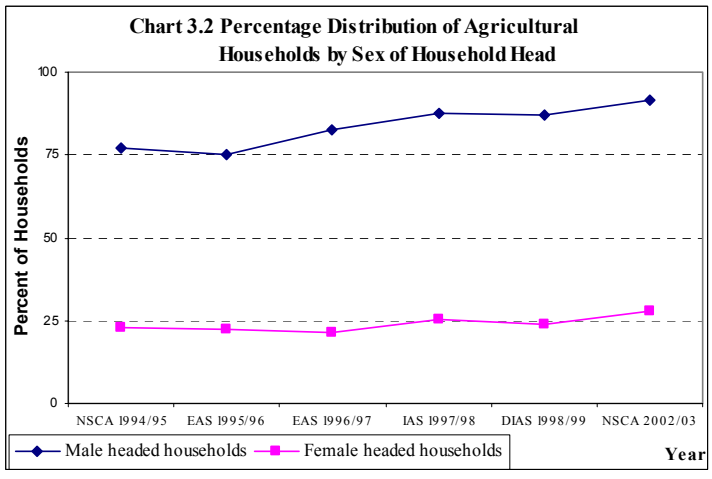
District	Livelihood Activity						
	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Off Farm Income	Remittances	Fishing / Hunting & Gathering	Tree / Forest Resources
Mtwara Rural	1	4	5	3	6	7	2
Newala	1	3	4	5	6	7	2
Masasi	1	3	5	4	6	7	2
Tandahimba	1	2	3	4	5	7	6
Mtwara Urban	2	4	5	3	6	7	1
Total	1	2	5	4	6	7	3

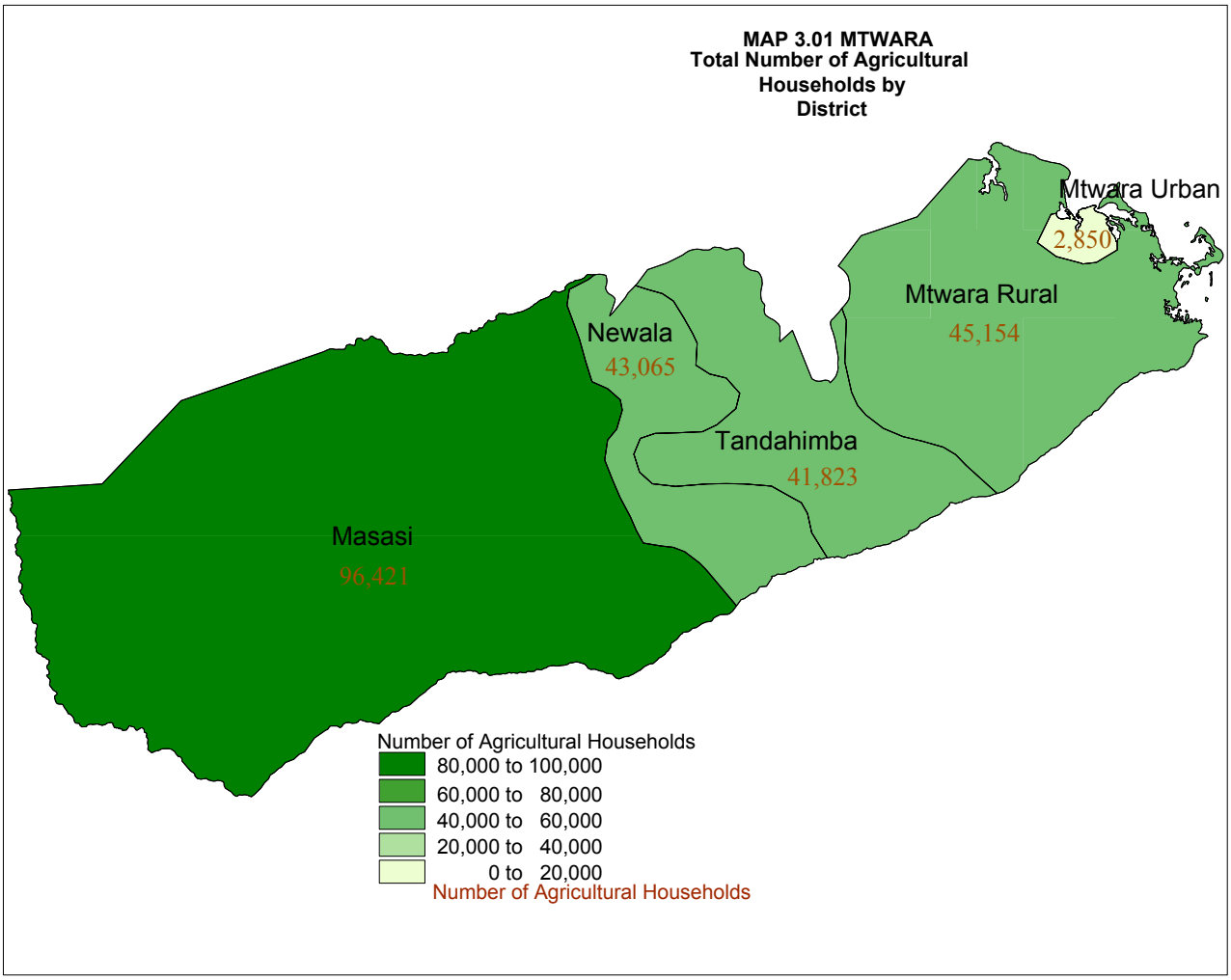
3.1.2 Livelihood Activities/Source of Income

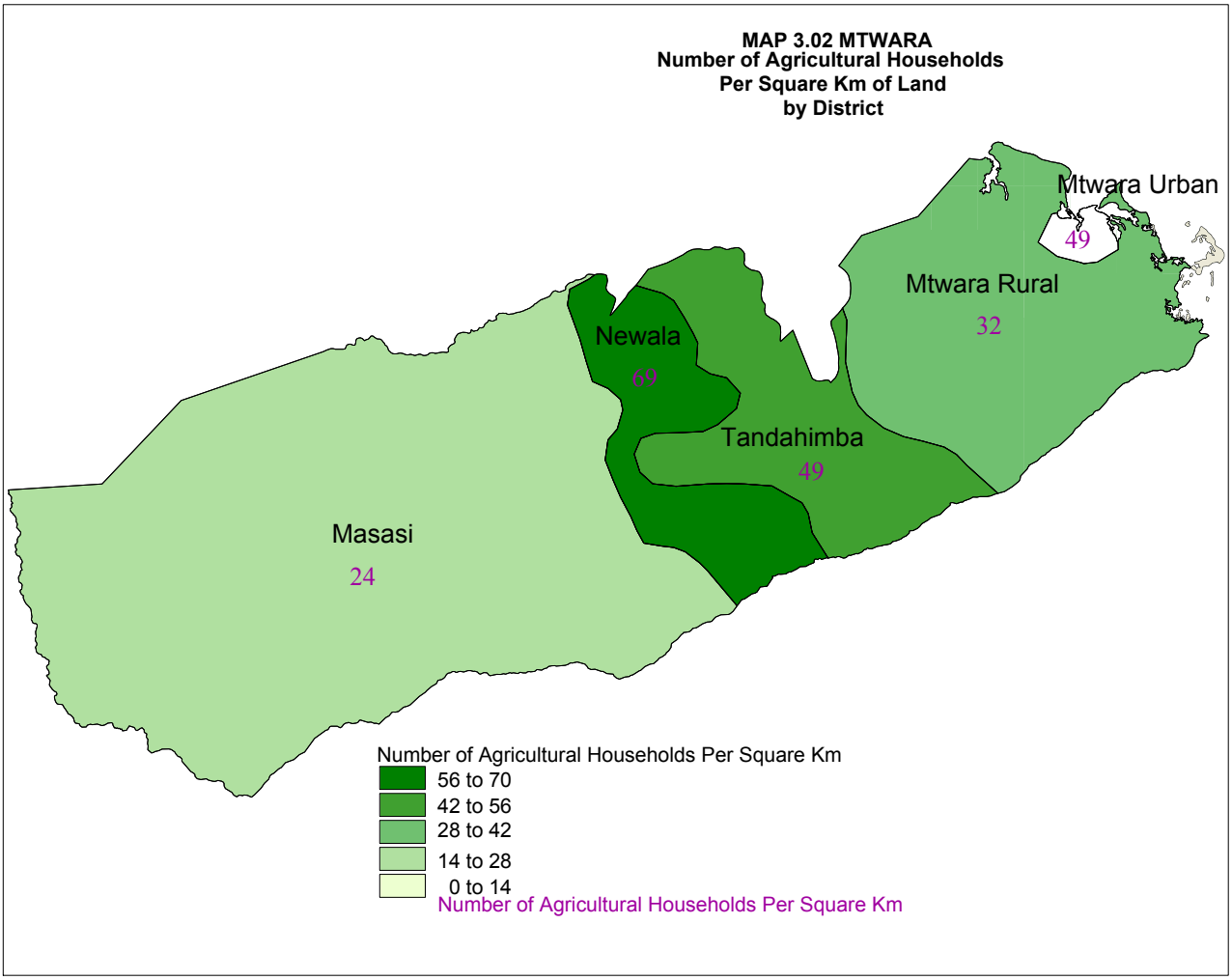
The census results for Mtwara region indicates that most of the agricultural households ranked annual crop farming as an activity that provides most of their cash income followed by permanent crop farming, tree/forest resources, off-farm income, livestock keeping/herding, remittances and fishing/hunting & gathering (Table 3.1).

3.1.3 Sex and Age of Heads of Households

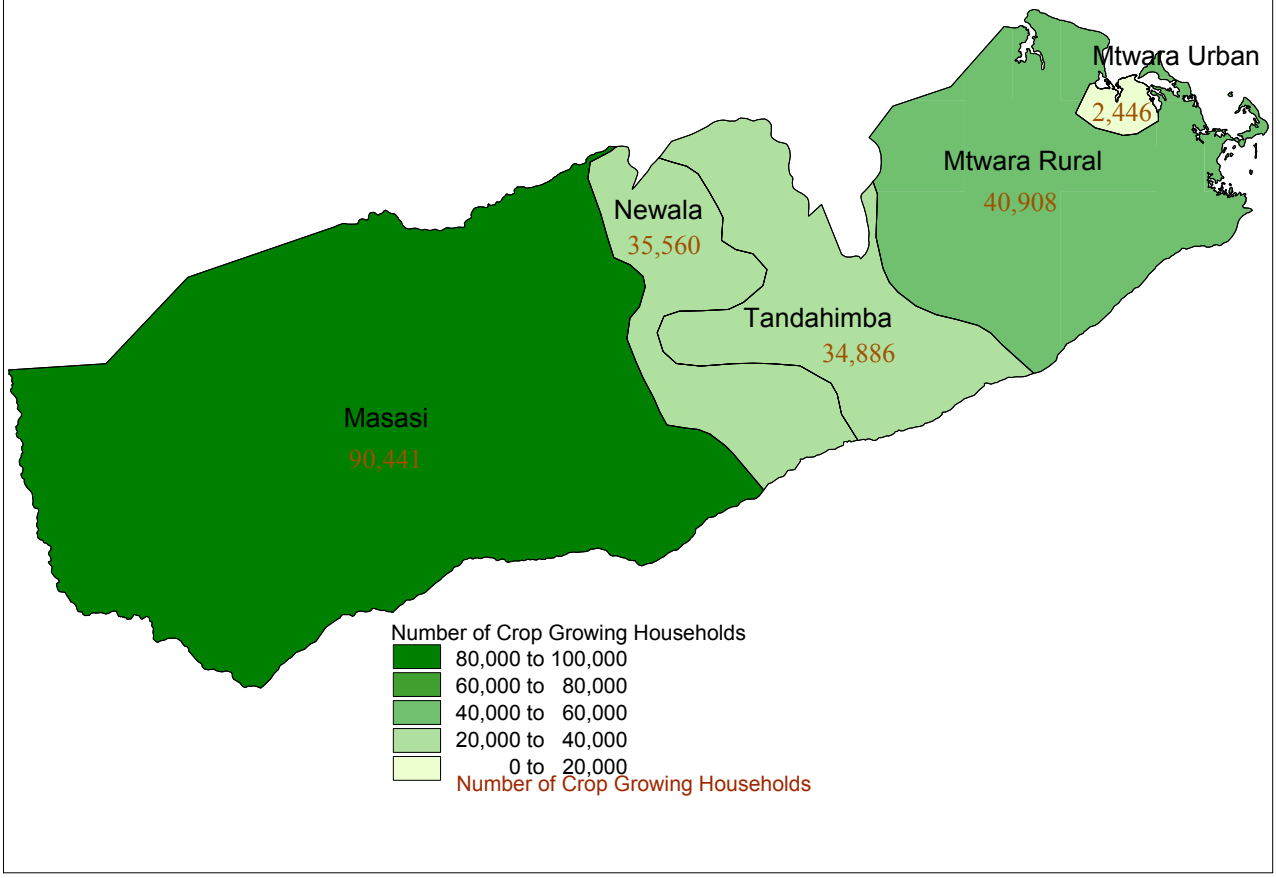
The number of male-headed agricultural households in Mtwara region was 175,579 (76.6% of the total regional agricultural households) whilst the female-headed households it were 53,735 (23.4% of the total regional agricultural households). The mean age of household heads was 45 years (44 years for male heads and 50 years for female heads) (Chart 3.2).



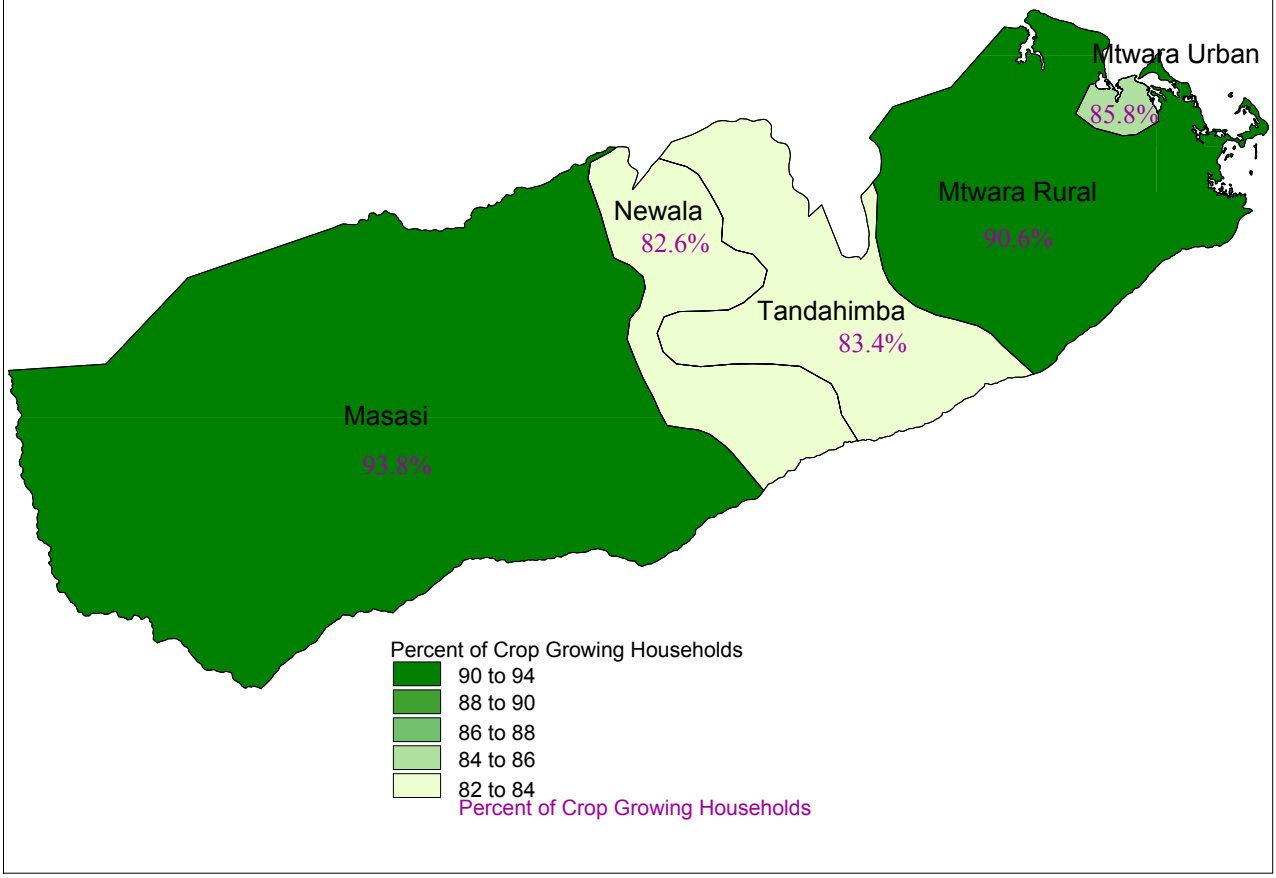

MAP 3.01 MTWARA
Total Number of Agricultural Households by District
Mtwara Urban
2,850
Mtwara Rural
45,154
Newala
43,065
Tandahimba
41,823
Masasi
96,421
Number of Agricultural Households
80,000 to 100,000
60,000 to 80,000
40,000 to 60,000
20,000 to 40,000
0 to 20,000
Number of Agricultural Households


MAP 3.02 MTWARA
Number of Agricultural Households Per Square Km of Land by District
Mtwara Urban
49
Mtwara Rural
32
Newala
69
Tandahimba
49
Masasi
24
Number of Agricultural Households Per Square Km
56 to 70
42 to 56
28 to 42
14 to 28
0 to 14
Number of Agricultural Households Per Square Km

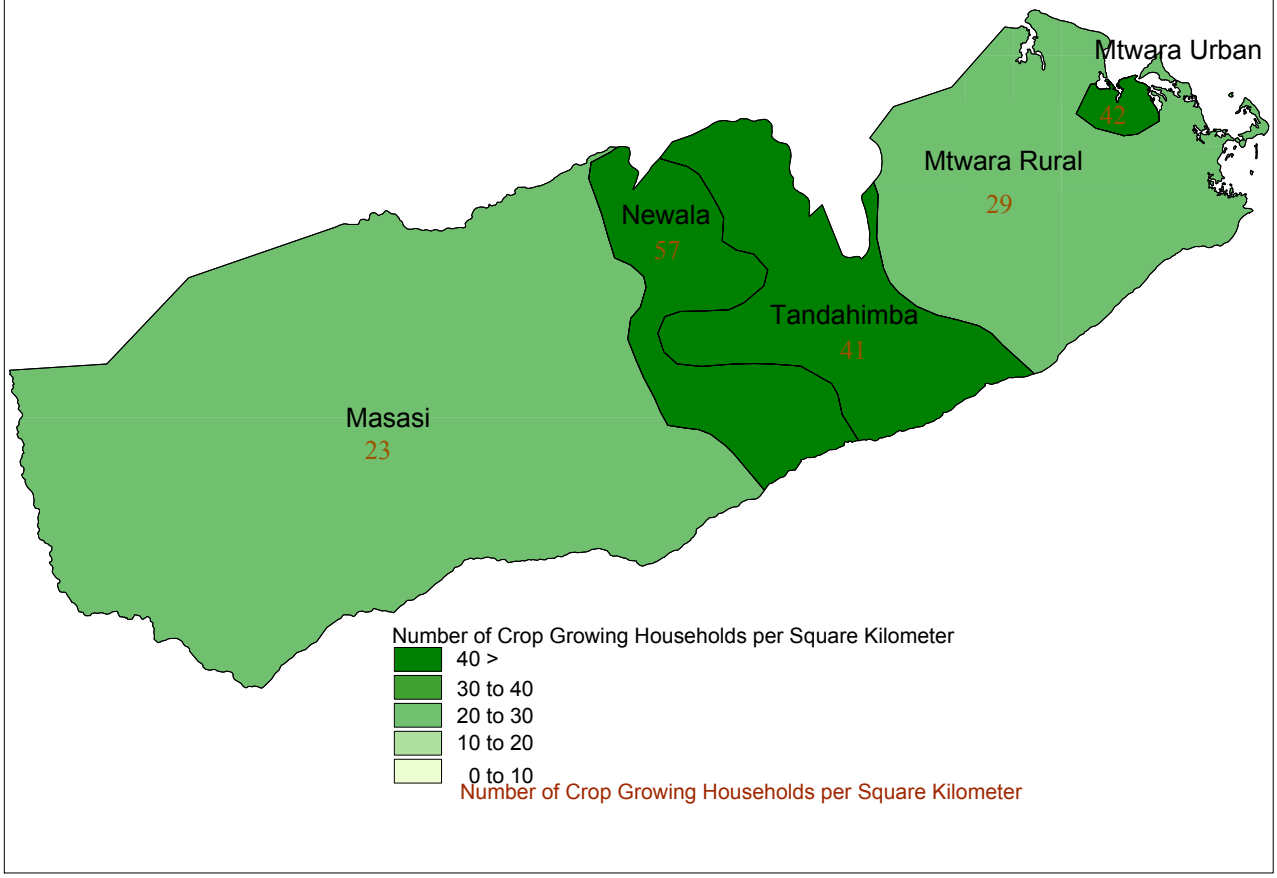
MAP 3.03 MTWARA
Number of Crop Growing Households by District



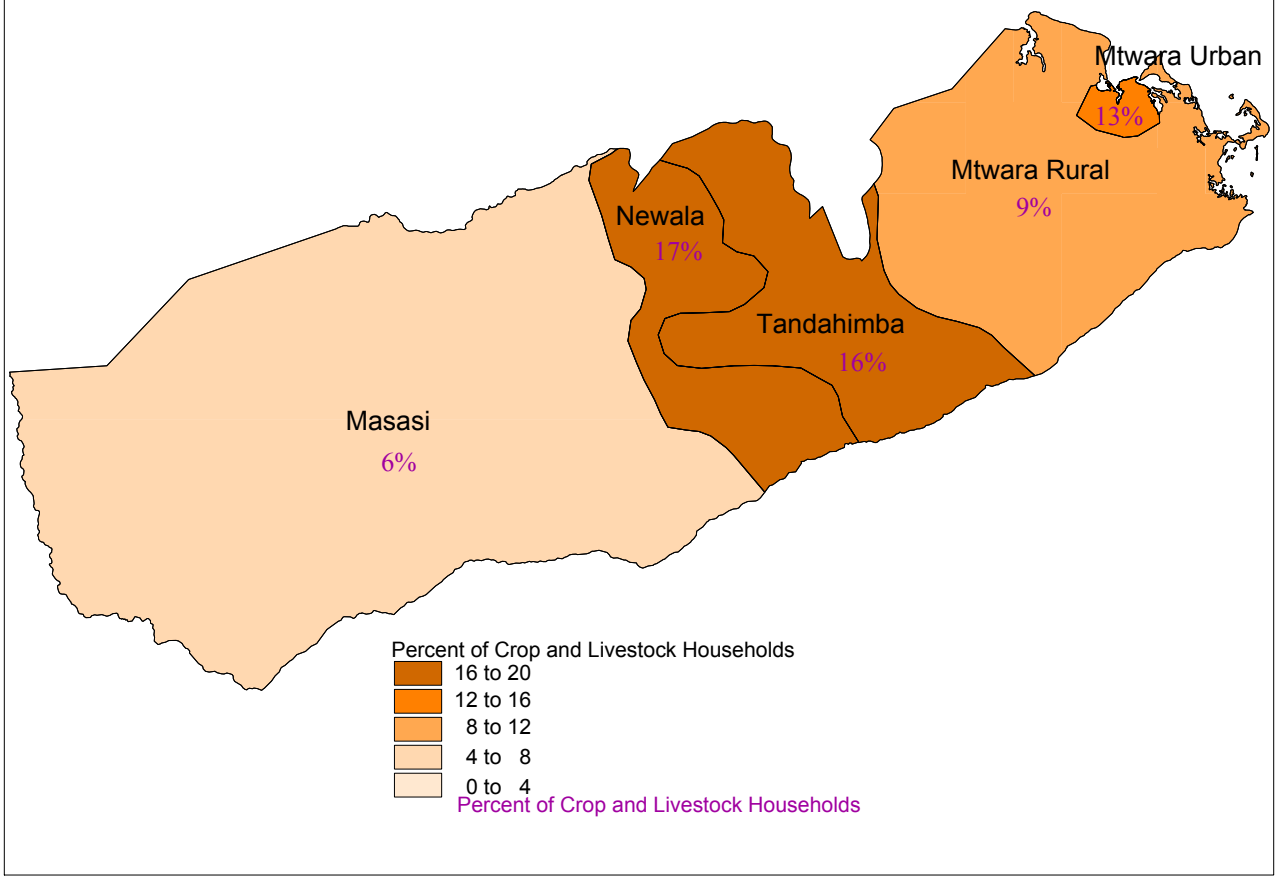
MAP 3.04 MTWARA
Percent of Crop Growing Households by District



MAP 3.05 MTWARA
Number of Crop Growing Households per Square Kilometer of Land by District



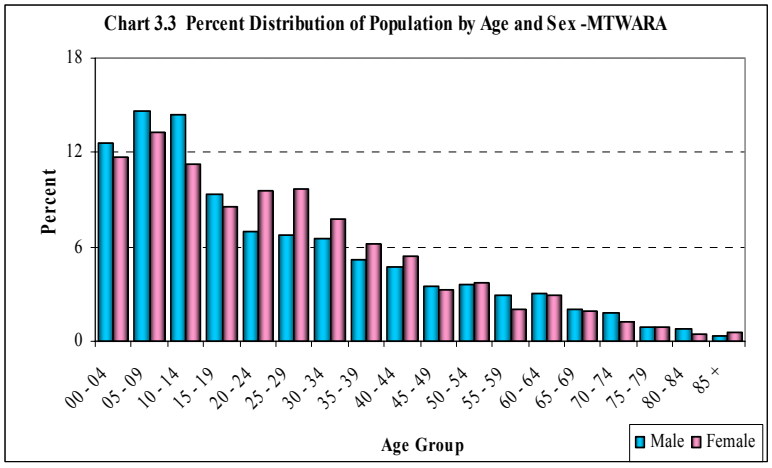
MAP 3.06 MTWARA
Percent of Crop and Livestock Households by District



The percentage trend for six censuses/surveys years shows that there has not been any significant change in the distribution of agricultural households by the sex of the household head.

3.1.4 Number and Age of Household Members

Mtwara region had a total rural agricultural population 928,521 of which 448,169 (48%) were males and 480,353 (52%) were females. Whereas age group 0-14 was constituted 39 percent of the total rural agricultural population, age group 15–64 (active population) was only 56 percent. Mtwara region had an average household size of 4.0 with Newala district having the lowest household size of 3.7 (Chart 3.3).

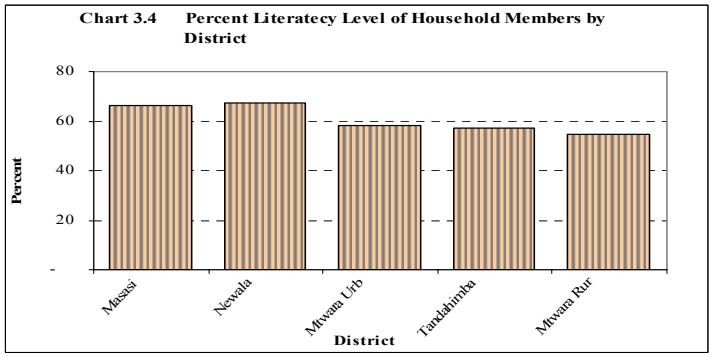


3.1.5 Level of Education

In order to obtain information on the level of education, information on literacy and education attainment were obtained for all persons aged five years and above in all households.

Literacy

The information on literacy level for family members aged five years and above was obtained by asking individual private households if their respective family members could read and write in Kiswahili only, English only, both English and Swahili or in any other language. Literacy is based on the ability to read and write Swahili, English or both.

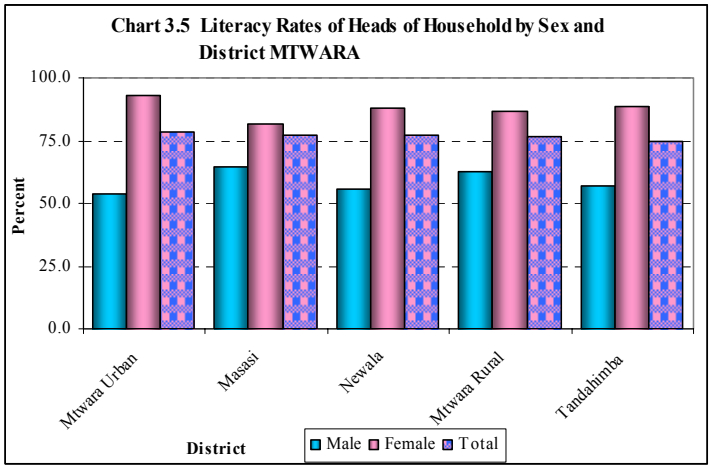


Literacy Level for Household Members

Mtwara region had a total literacy rate of 62 percent. The highest literacy rate was found in Newala district (67%) followed by Masasi district (66%). Mtwara rural, Tandahimba and Mtwara urban had the lowest literacy rates of 55, 57 and 58 percent respectively (Chart 3.4).

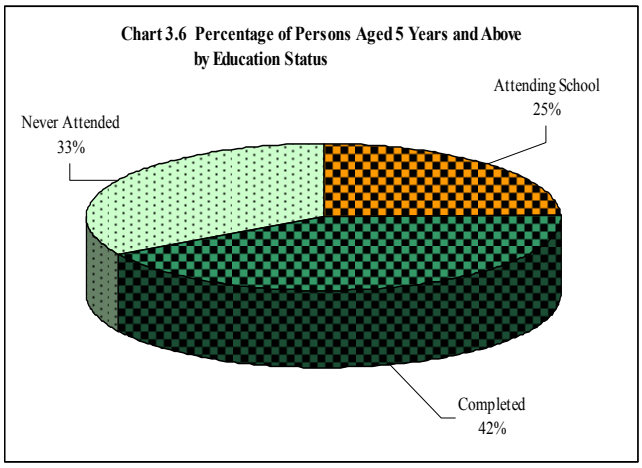
Literacy Rates for Heads of Households

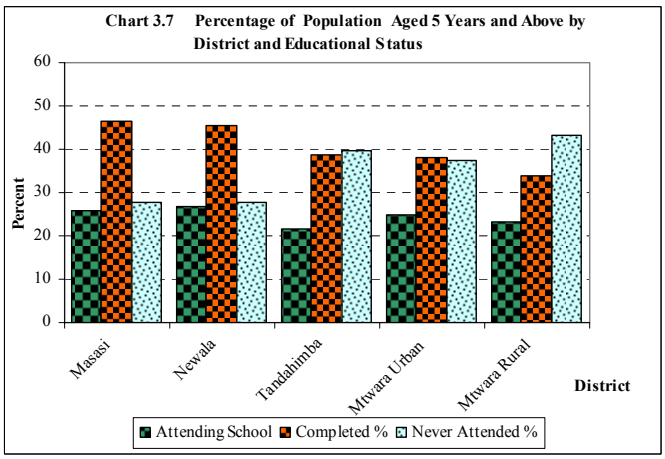
The literacy rate for the heads of households in the region was 66 percent. The literacy rate for the male heads was 73 percent and that of female heads was 42 percent. and female heads of households were 60 and 85 percent respectively. The literacy rate of male heads was higher than that of females in all districts. The district with the highest literacy rate amongst heads of households was Mtwara Urban (78.6%) followed by Masasi (77.2%), Newala (Mtwara Rural (76.4%), and Tandahimba (74.8%) (Chart 3.5).



Educational Status

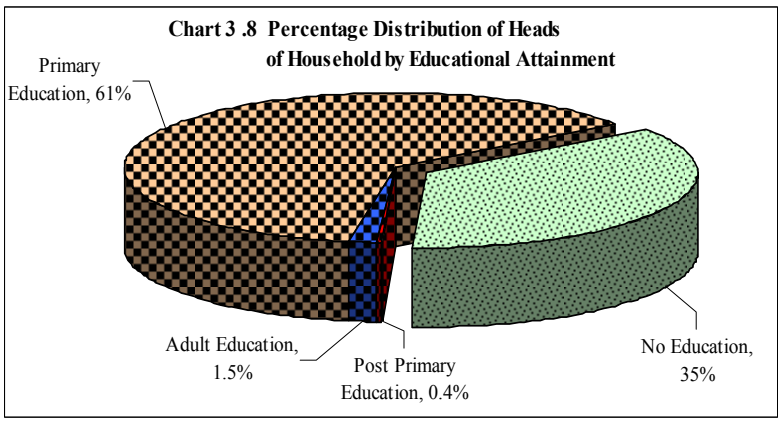
Information on educational status was collected from individual agricultural households. The results show that 42 percent of the population aged 5 years and above in agricultural households in the region had completed different levels of education and 25 percent were still attending school. Those who had never attended school were 33 percent (Chart 3.6).





Agricultural households in Masasi district had the highest percentage (47%) of population aged 5 years and above who had completed various levels of education. This was followed by Newala 46 percent, Tandahimba districts 39 percent, Mtwara urban district 38 percent, the last district is Mtwara rural with 34 percent (Chart 3.7).

The number of heads of agricultural households with formal education in Mtwara region was 146,360 (64%), those without education were 79,566 (35%) and those with only adult education were 3,389 (1%). The majority of heads of agricultural households (61%) had primary level education whereas only 3 percent had above primary education.



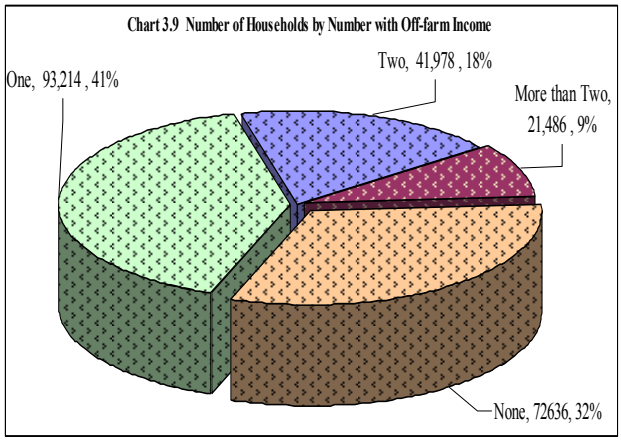
With regard to the heads of agricultural households with primary or secondary education in Mtwara region, Masasi district had the highest percentages (49% for primary and 47% for secondary). This was followed by Newala (20% primary and 13% secondary), Mtwara rural (15% primary and 22% secondary) and Tandahimba (15% primary and 16% secondary). Mtwara urban had the lowest percentage of heads of agricultural households with both primary education (1%) and secondary education (2%) (Chart 3.8).

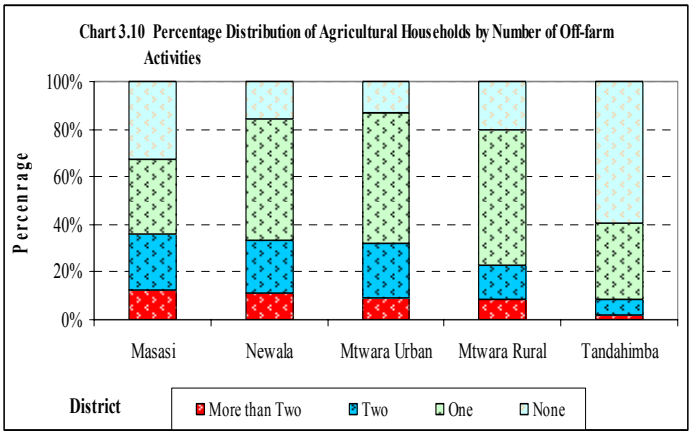
3.1.6 Off-farm Income

Off-farm income refers to cash generated from non-agricultural activities. This can be either from permanent employment (i.e., government, private sector or other), temporary employment or laborers. It also includes cash generated from working on farms belonging to other farmers. Off-farm income is important amongst agriculture households in Mtwara with 68 percent of households having at least one member with off-farm income. In the agricultural household more than two members involved in off-farm income generating activities 93,214 households (41%) had only one member aged 5 and

above involved in only one off-farm income generating activity and 41,978 households (18%) had two members involved in off-farm income generating activities.

Mtwara Urbarn district had the highest percentage of agriculture households with off-farm income (over 80% of total agriculture households in the district). Other districts with high percent of agriculture households with off-farm income



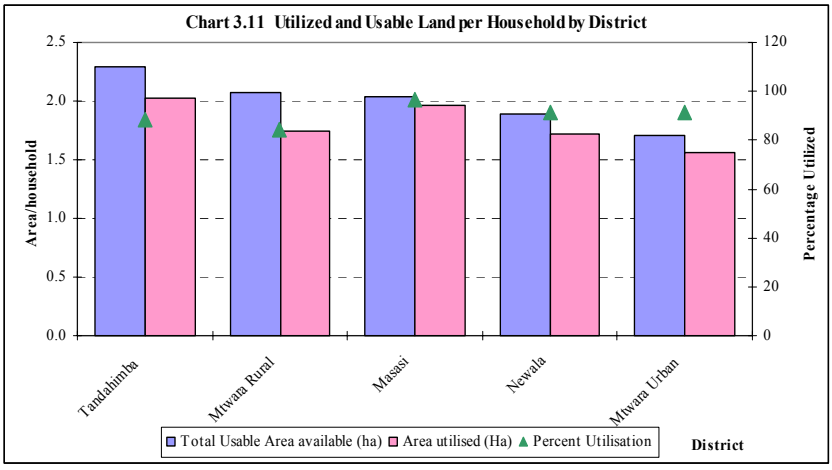


were Newala (84%) and Mtwara Rural (79%). Masasi and Tandahimba districts had the lowest percent of agriculture households with off-farm income (67%) % and 41% respectively). The district with the highest percent of agriculture households with more than one member with off-farm income was Masasi (36%). Tandahimba district had very few households with more than one member having off-farm income (8%).

3.3.1 Land Use

Land area and planted area are two different types of area measurements. Land area refers to the physical area of land and is the same regardless of the number of crops planted on it in one year. Planted area is the total area of crops planted in a year and the area is summed if there were more than one crop on the same land per year. A number of terms are used in this section which requires defining for clarification as follows:

Land available refers to the area of land that has been allocated to smallholders through customary law, official title or other forms of ownership. Land available does NOT mean the total area of land that is designated as agriculture land in the country, but it is the land that is available to smallholders given the location of villages and lack of access to more remote parcels of unused agriculture designated land.



Usable land refers to the available land minus the land that cannot be used e.g. bare rock, shallow soils, steep slopes, swamp areas etc. It does however include un-cleared bush, Utilised land refers to the land that was used during the year.

3.3.1.1 Area of Land Utilised

The total area of land available to smallholders was 476,196 ha. The regional average land area utilised for agriculture per household was only 1.8 ha. This figure is below the national average which is estimated at 2.0 hectares. Eighty eight percent of the total land available to smallholders was utilised. Only 12 percent of the land available to smallholders was not used (Chart 3.11 and Map 3.7).

Large differences in land area utilised per household exist between districts with Masasi and Tandahimba utilizing between 2.0 and 2.0 ha per household. The smallest land area utilised per household was found in Mtwara Urban (1.6 ha). The percentage utilized of the usable land per household was highest in Masasi (96%) and lowest in Mtwara Rural (84%).

3.3.1.2 Types of Land Use

The area of land under temporary mixed crops was 136,667 hectares (28.7% of the total land available to smallholders in Mtwara), followed by permanent mono crops (105,477 ha, 22.1%), permanent/annual mix (98,209 ha, 20.6%), temporary mono crops (63,675 ha, 13.4%), uncultivatable usable land (34,159 ha, 7.2%), permanent mixed crop (11,863 ha, 2.5%), area under fallow (11,536 ha, 2.4%), area under natural bush (6,356 ha, 1.3%), unusable area (4,543 ha, 1.0%), area rented to others (2,280 ha, 0.5%), area under pasture (1,027 ha, 0.2%) and area planted with trees (403 ha, 0.1%).

Chart 3.12 Land Area by Type of Use

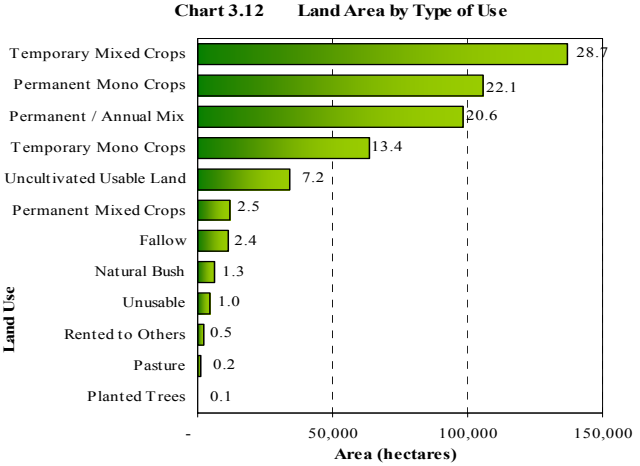
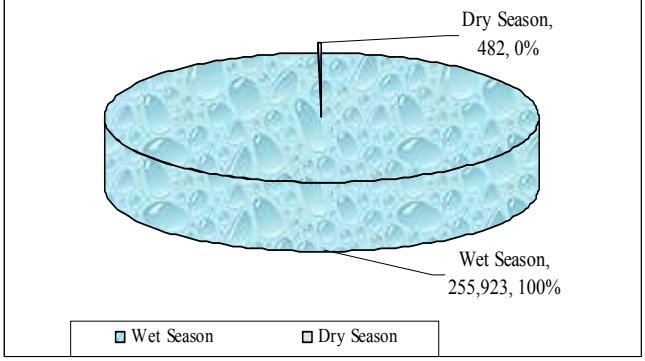


Chart 3.13 Area Planted with Annual Crops by Season (hectares)



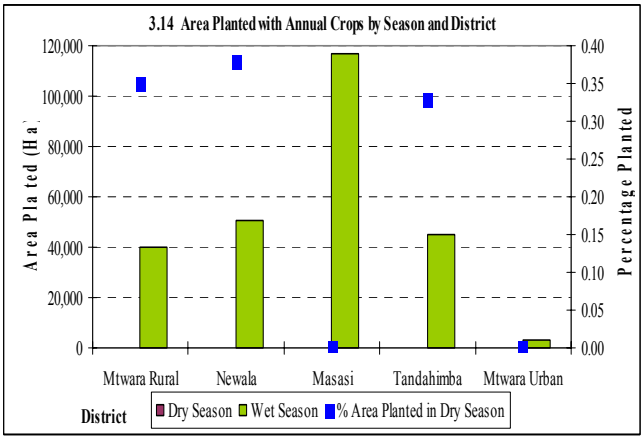
3.3.2 Annual Crop and Vegetable Production

Mtwara region has two seasons, namely the dry season (October to November) and the wet season (April to May). The quantity of crops produced in both seasons will be used as a base for comparison with the past surveys and censuses.

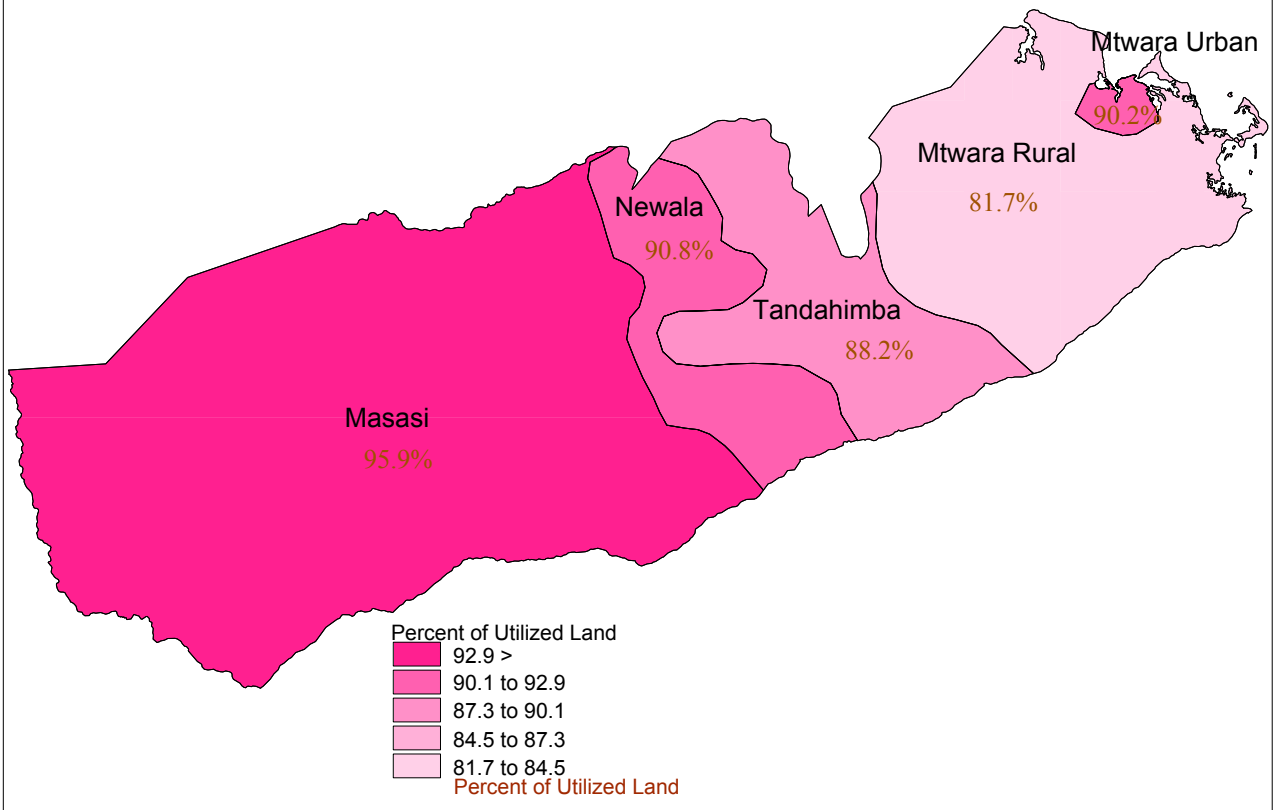
3.3.2.1 Area Planted

The area planted with annual crops and vegetables was 256,404 hectares out of which 482 hectares (0.2%) were planted during dry season and 255,923 hectares (99.8%) during wet season. The average areas planted per household during the dry and wet seasons were 1.7 and 1.1 ha respectively. The districts with the largest area planted per household (the average of the two seasons) were Masasi (1.21 ha) followed by Newala (1.18 ha). The district with the smallest average area planted was Mtwara Rural (0.89 ha). The average area planted during the wet season is higher than that of the dry season in all districts (Chart 3.14 and Map 3.8).

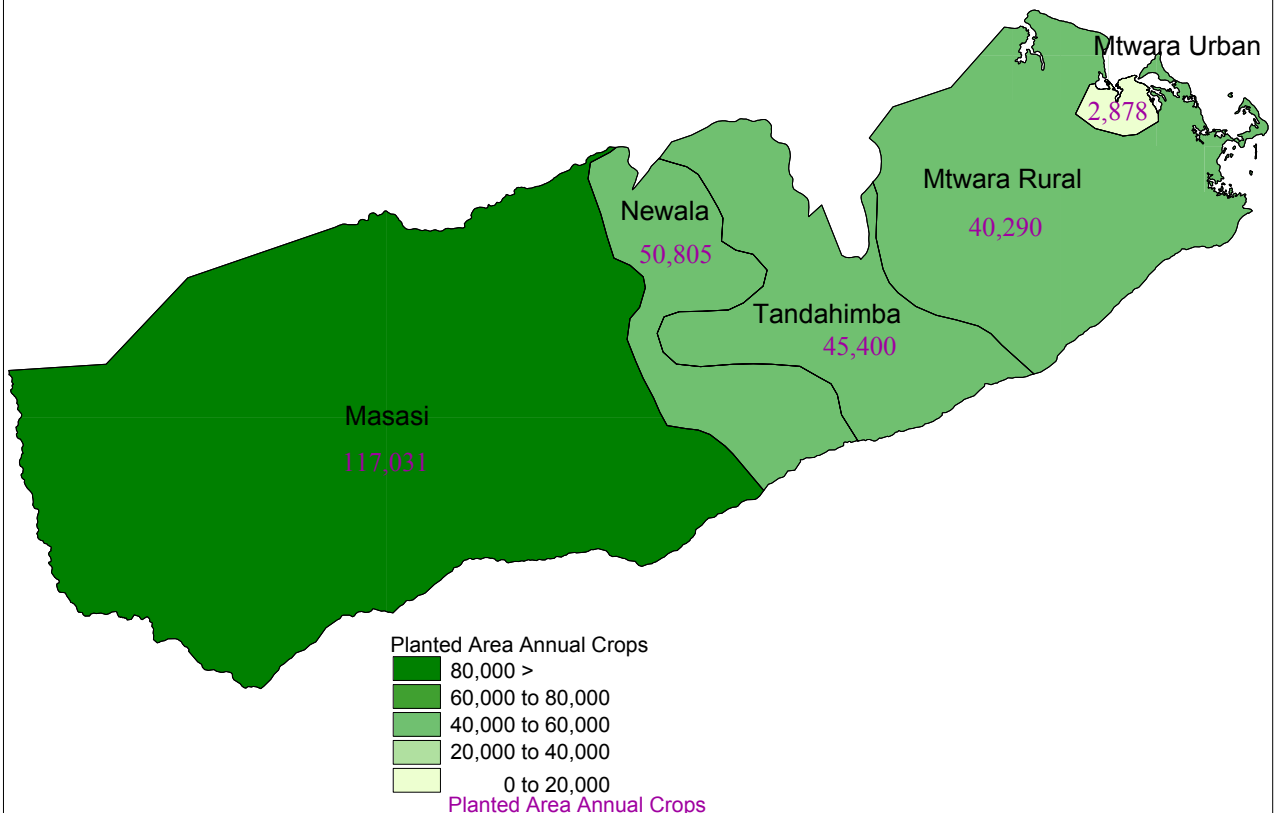
3.14 Area Planted with Annual Crops by Season and District



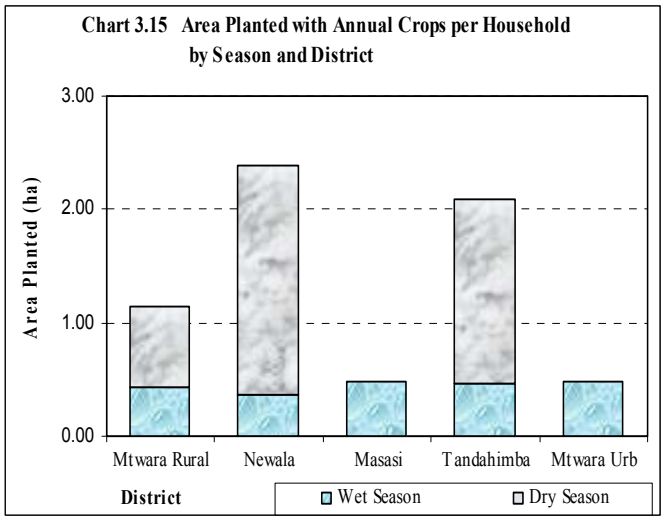
MAP 3.07 MTWARA
Utilized Land Area Expressed as a Percent of Available Land by District



MAP 3.08 MTWARA
Total Planted Area Annual Crops by District



The planted area occupied by roots and tubers was 114,309 ha (44.6% of the total area planted with annuals). This was followed by cereals (106,835 hectares, 41.7%), oil seeds and oil nuts (19,849 hectares, 7.7%), pulses (14,171 hectares, 5.5%), fruit and vegetables (949 hectares, 0.4%), and cash crops (291 hectares, 0.1%). The average area planted per household during the wet season in Mtwara region was 1.1 hectares, however, there were large district differences. Newala had the largest planted area per household (2.4 ha) followed by Tandahimba (2.1 ha) The smallest planted area per household was for Mtwara rural (1.1 ha), Masasi and Mtwara urban 0.5 each. In Newala the area planted per household in the dry season represented 0.38 percent of the total planted area per household, whereas in Masasi and Mtwara urban the corresponding figure were 0.0 percent per each (Chart 3.15).

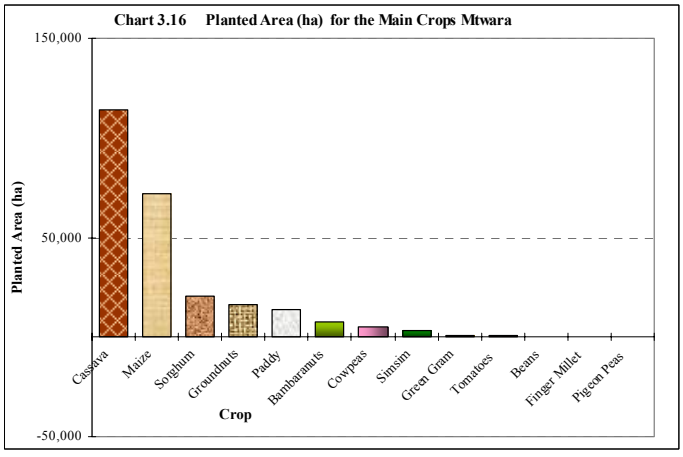


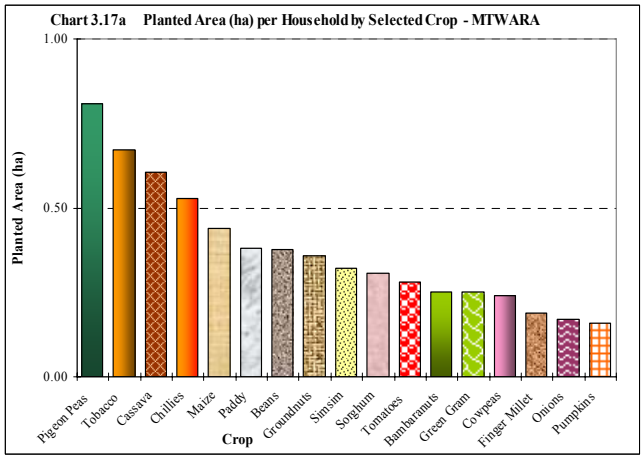
Analysis of the Most Important Crops

Results on crop production are presented in two different sections. The first section compares the importance of each crop regardless of whether they are annual or permanent. The second section contains a more detailed analysis on production based on crop types.

3.3.2.2 Crop Importance

Cassava was the dominant annual crop grown in Mtwara region and it had a planted area 1.59 times greater than maize, which had the second largest planted area. The area planted with cassava constituted 45% percent of the total area planted with annual crops in the region. Other crops in order of their importance (based on area planted) were sorghum, groundnuts, paddy, bambaranuts and cowpeas (Chart 3.16). Households that grew pigeon peas, tobacco and cassava had larger planted areas per household than for other crops (Chart 3.17a).





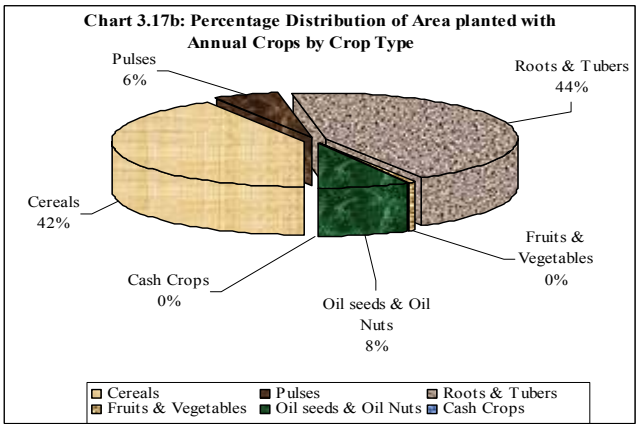
3.3.2.3 Crop Types

Roots and tubers were the main crops grown in Mtwara region. The area planted with roots and tubers was 114,309 ha (44.6% of the total planted area), followed by cereals with 106,835 ha (41.7%), oil seeds and oil nuts 19,849 ha (17.7%),

pulses 14,171 ha (15.5%), fruits and vegetables 949 ha (0.4%) and cash crops 291 ha (0.1%). Tobacco with an area of about 291 ha (0.1%) was the only annual cash crop grown in the region (Chart 3.17b).

Roots/tubers and cereals were the dominant crops in both seasons. Other crop types are of minor importance in comparison. There was little difference in the proportions of the different crop types grown between seasons and the because dry season's production was very small compared to the wet season it is inappropriate to make detailed comparisons between the two seasons (Chart 3.18).

Chart 3.17b: Percentage Distribution of Area planted with Annual Crops by Crop Type



3.3.2.4 Cereal Crop Production

The total production of cereals was 39,730 tonnes. Maize was the dominant cereal crop with a proportion of 29,607 tonnes which was 75 percent of total cereal crops produced, followed by sorghum (13%) paddy (12%), finger millet and bulrush millet (0.18% each). Masasi district had the largest planted area of Cereals in the region (54,483 ha) followed by Newala, (21,541ha), Tandahimba (15,371ha), Mtwara rural (14,622ha) and Mtwara urban (818ha) (Map 3.9).

Table 3.2: Area, Production and Yield of Cereal Crops by Season

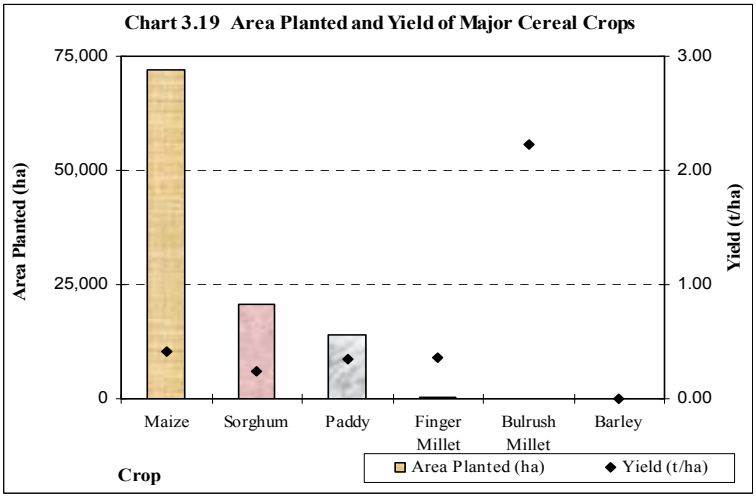
Crop	Dry Season			Wet Season			Total		
	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)
Maize	272	94	345	71,743	29,512	411	72,015	29,607	411
Paddy	0	0	0	14,018	4,932	352	14,018	4,932	352
Sorghum	0	0	0	20,569	5,048	245	20,569	5,048	245
Bulrush Millet	0	0	0	32	71	2,223	32	71	2,223
Finger Millet	0	0	0	201	73	361	201	73	361
Wheat	0	0	0	0	0	0	0	0	0
Barley	0	0	0	0	0	0	0	0	0
Total	**272**	**94**		**106,563**	**39,635**		**106,835**	**39,730**	

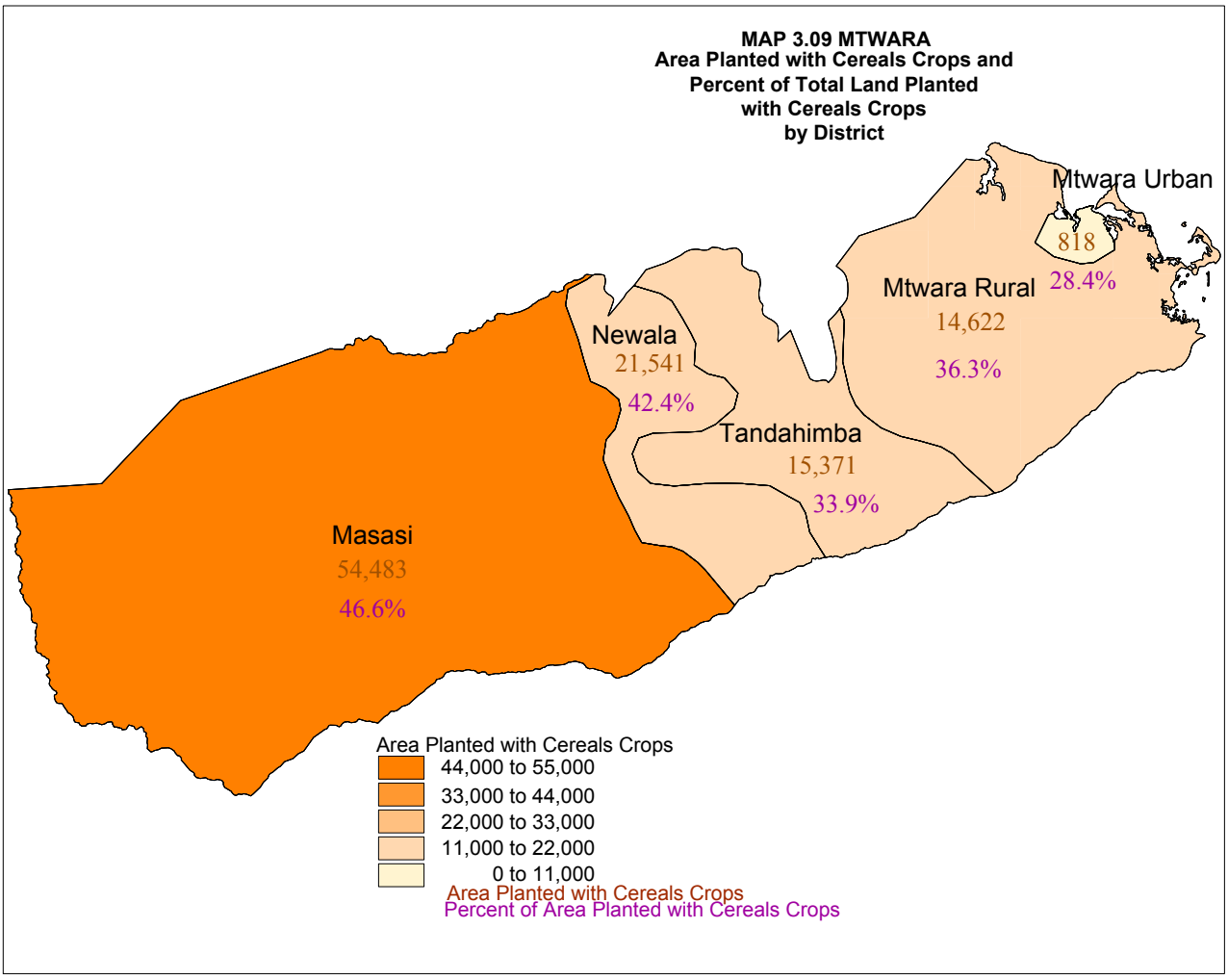
The total area planted with cereals during the year was 106,835 ha out of which 272 ha (0.25%) were planted in dry season and 106,563 ha (99.75%) were planted during the wet season. The wet season accounted for 99.8 percent of the total cereals produced in both seasons. The area planted with maize during the dry season was 100 percent of the total area planted with cereals in that season. (Table 3.2).

The area planted with maize was dominant and it represented 67.4 percent of the total area planted with cereal crops, then followed by sorghum (19.3%), paddy (13.1), finger millet (0.2) and bulrush millet (0.03). Wheat and barley were not grown in the region. (Chart 3.19).

The yield of bulrush was 2,223 kg/ha, followed by maize (411 kg/ha), finger millet (361 kg/ha), paddy (352 kg/ha) and sorghum (245 kg/ha) (Chart 3.19).

Chart 3.19 Area Planted and Yield of Major Cereal Crops

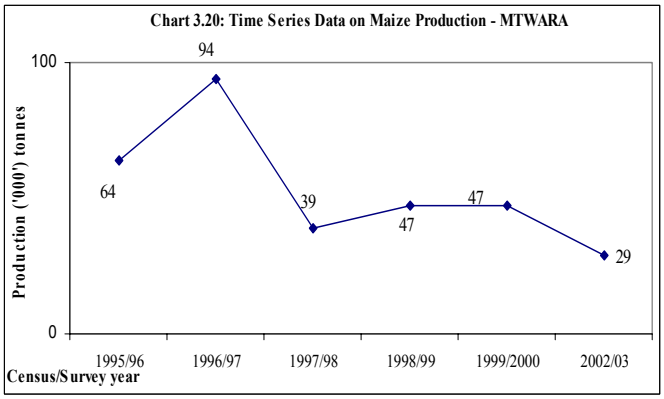


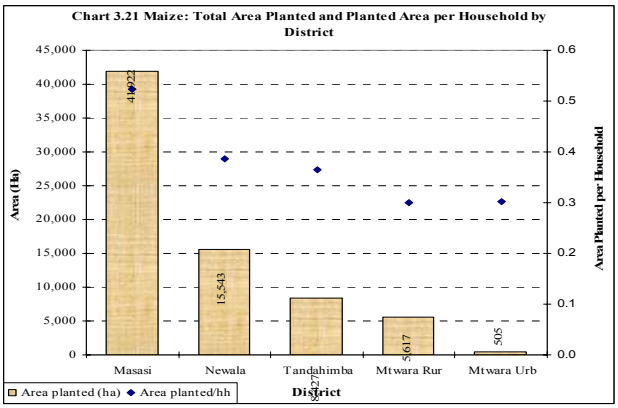

MAP 3.09 MTWARA
Area Planted with Cereals Crops and
Percent of Total Land Planted
with Cereals Crops
by District
Mtwara Urban
818
28.4%
Mtwara Rural
14,622
36.3%
Newala
21,541
42.4%
Tandahimba
15,371
33.9%
Masasi
54,483
46.6%
Area Planted with Cereals Crops
44,000 to 55,000
33,000 to 44,000
22,000 to 33,000
11,000 to 22,000
0 to 11,000
Area Planted with Cereals Crops
Percent of Area Planted with Cereals Crops

3.3.2.4.1 Maize

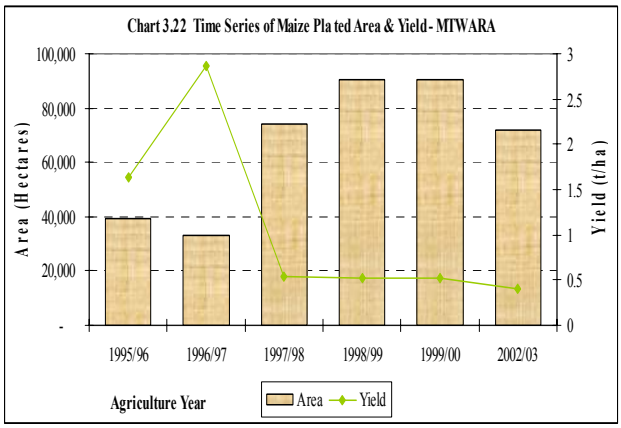
Maize dominated the production of cereal crops in the region. The number of households growing maize in Mtwara region during the wet season was 163,573, (72% of the total household growing annual crops in the region during the wet season). The total production of maize was 29,607 tonnes from a planted area of 72,015 hectares resulting in a yield of 0.4 t/ha.

Chart 3.20 shows the maize production (in thousand metric tones) for the combined wet and dry seasons. There was a47 percent increase in maize production in 1995 to 1996 after which the production dropped sharply in 1997. The average area planted with maize per household was 0.44 hectares, however it ranged from 0.3 hectares in Mtwara rural and Mtwara urban district to 0.5 hectares in Masasi district (Map 3.11). Masasi district had the largest area of maize (41,922 ha) followed by Newala (15,543 ha), Tandahimba (8,427 ha), Mtwara rural (5,617 ha) and Mtwara urban (505 ha) (Chart 3.21 and Map 3.10).



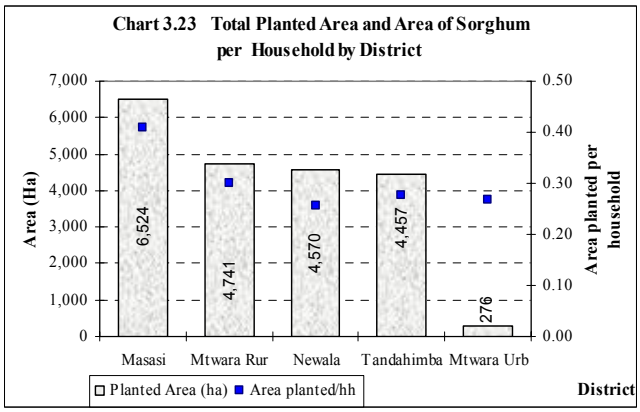


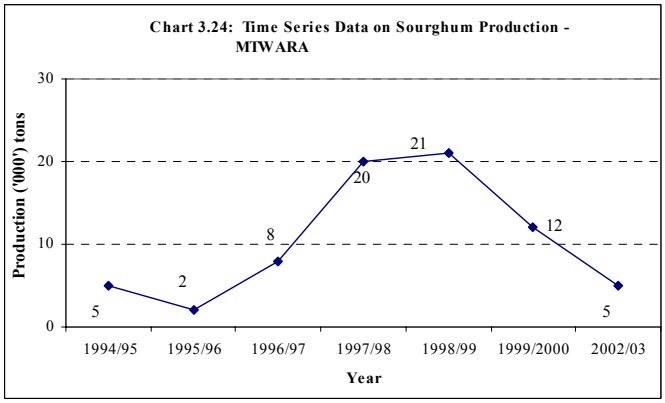
Charts 3.20 and 3.22 show that, the yield of maize as well as production dropped sharply from the year 1996 to 1997, inspite of the increase in the area under production. The area planted with maize remained constant over the period from 1998 to 1999 but it had decreased by the year 2002/03. The yield of maize increased (from 0.5t/ha in 1997 to 0.4 t/ha in 2003) (Chart 3.22).



3.3.2.4.2 Sorghum

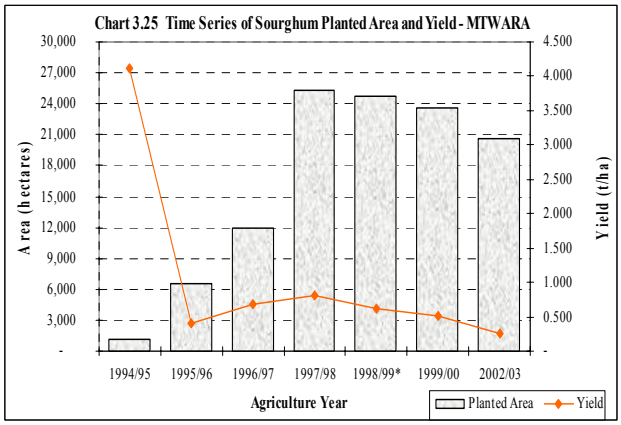
Sorghum was the second most important cereal crop in the region in terms of planted area. The number of households that grew sorghum in Mtwara region during the wet season was 66,919. This represented 30 percent of the total household growing annual crops in Mtwara region in the wet season. The total production of sorghum was 5,048 tonnes from a planted area of 20,569 hectares resulting in a yield of 0.25t/ha. The district with the largest area planted with sourghum was Masasi (6,524 ha) followed by Mtwara rural (4,741 ha), Newala (4,570 ha), Tandahimba (4,457 ha), and Mtwara urban (276 ha) (Map 3.12). There were small insignificant variations in the average area planted per crop growing household among the districts ranging from 0.25 ha in Newala to 0.41 ha in Masasi (Chart 3.23 and Map 3.13).





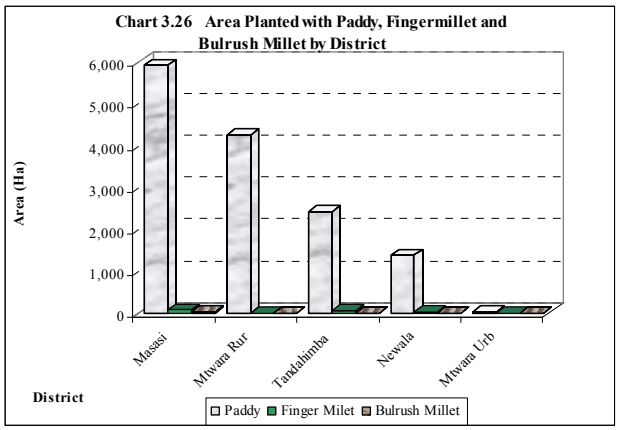
There was a rise in the production of sorghum in 1996/97 compared to 1995/96. The production rose from 2,000 tons in 1995/96 to 8,000 tones in 1996/97 after which it increased further to 20,000 tones in 1997/98. Thereafter the production increased slightly to 21,000 tones in 1998/1999, followed by a sharp decline to 12 tones in and 5, 000 tones in 2002/03.

Charts 3.24 and 3.25 show that, the yield of sorghum has dropped dramatically over the previous 8 years, but the area planted increased. The area planted with sorghum increased over the period 1995 to 1997 after which it declined slightly by the year 2000. There was a sharp decline in the yield for the period from 1994 to 1995 (down to 1.0 t/ha) and it has remained at this low level since then (Chart 3.25).



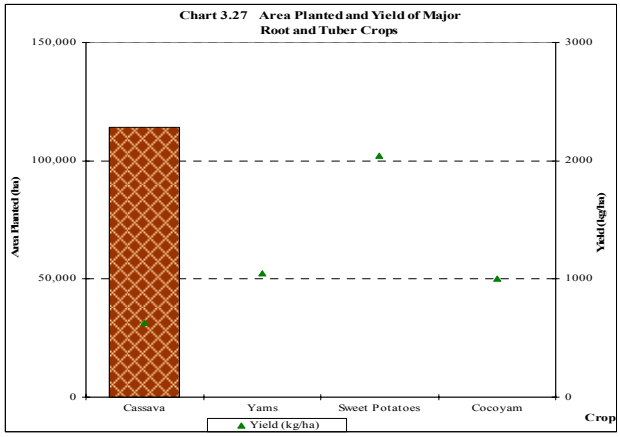
3.3.2.4. 3 Other Cereals

Other cereals were produced in small quantities. A small quantity of paddy was produced in Masasi (5,914 ha), followed by Mtwara rural (4,264 ha), Tandahimba (2,419 ha), Newala (1,385 ha) and Mtwara urban (36 ha). Fingermillet was produced in Masasi district (90 ha), Tandahimba (68 ha) and Newala (43 ha). Bulrush Millet was produced in Masasi district only (32 ha) (Chart 3.26).

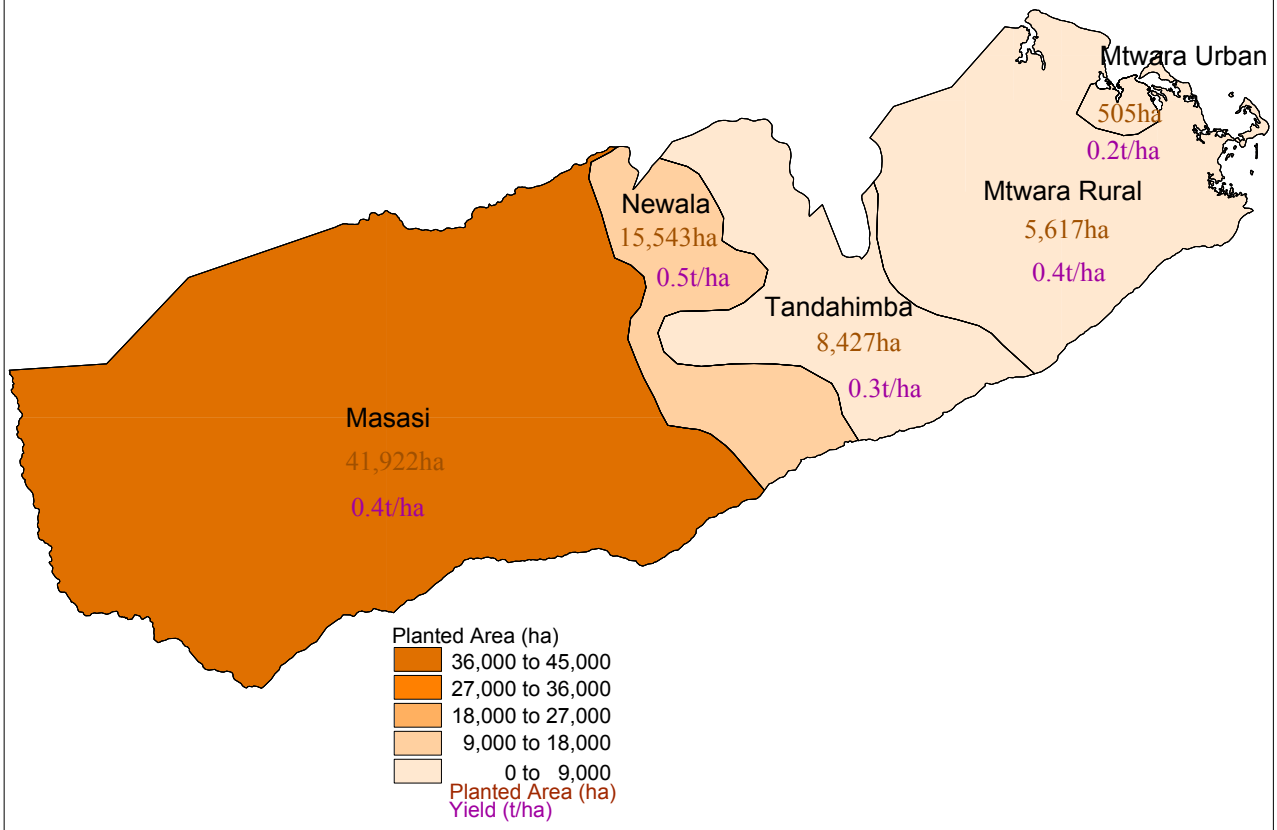


3.3.2. 5 Roots and Tuber Crops Production

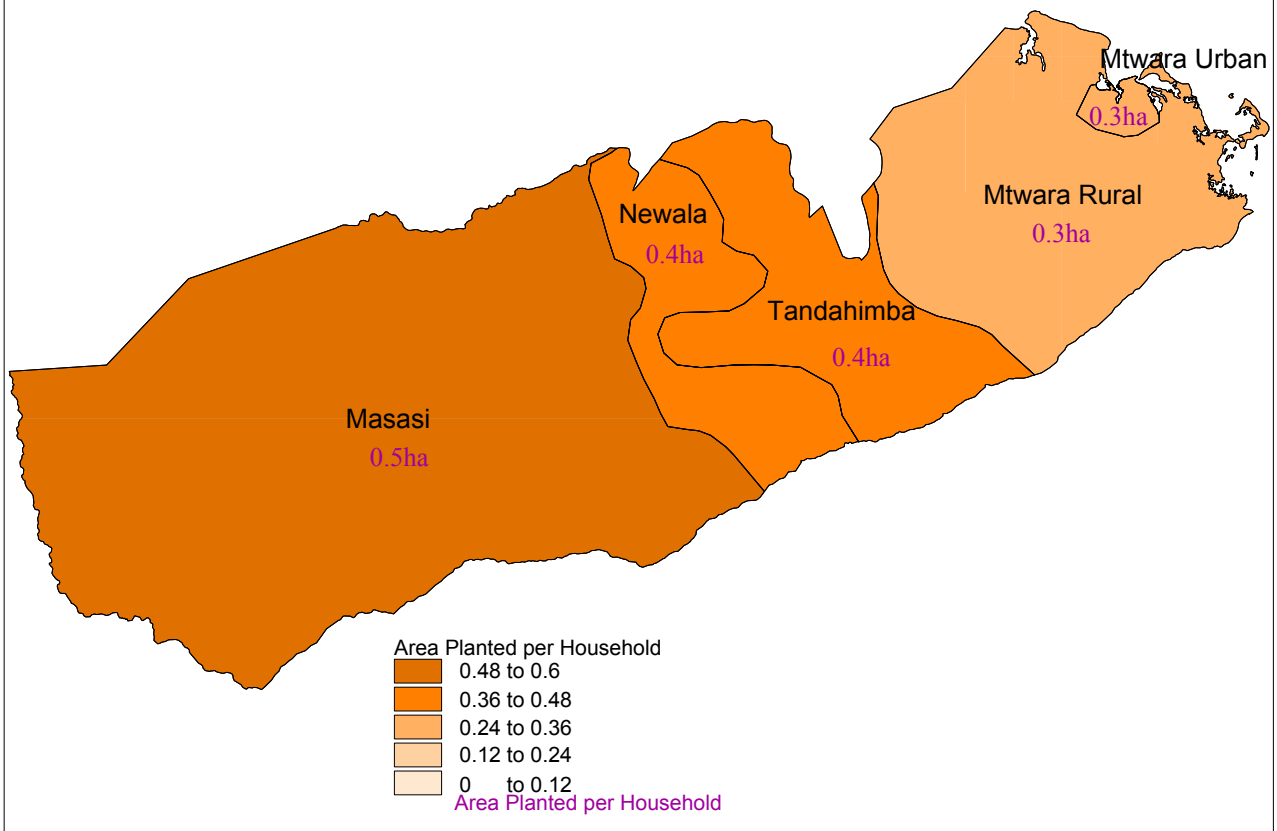
The total production of roots and tubers was 72,274 tonnes. Cassava production the highest for roots and tuber crops in the region with a total production of 72,087 tonnes representing 99.7 percent of the total root and tuber crops production. This was followed by yams with 78 tonnes



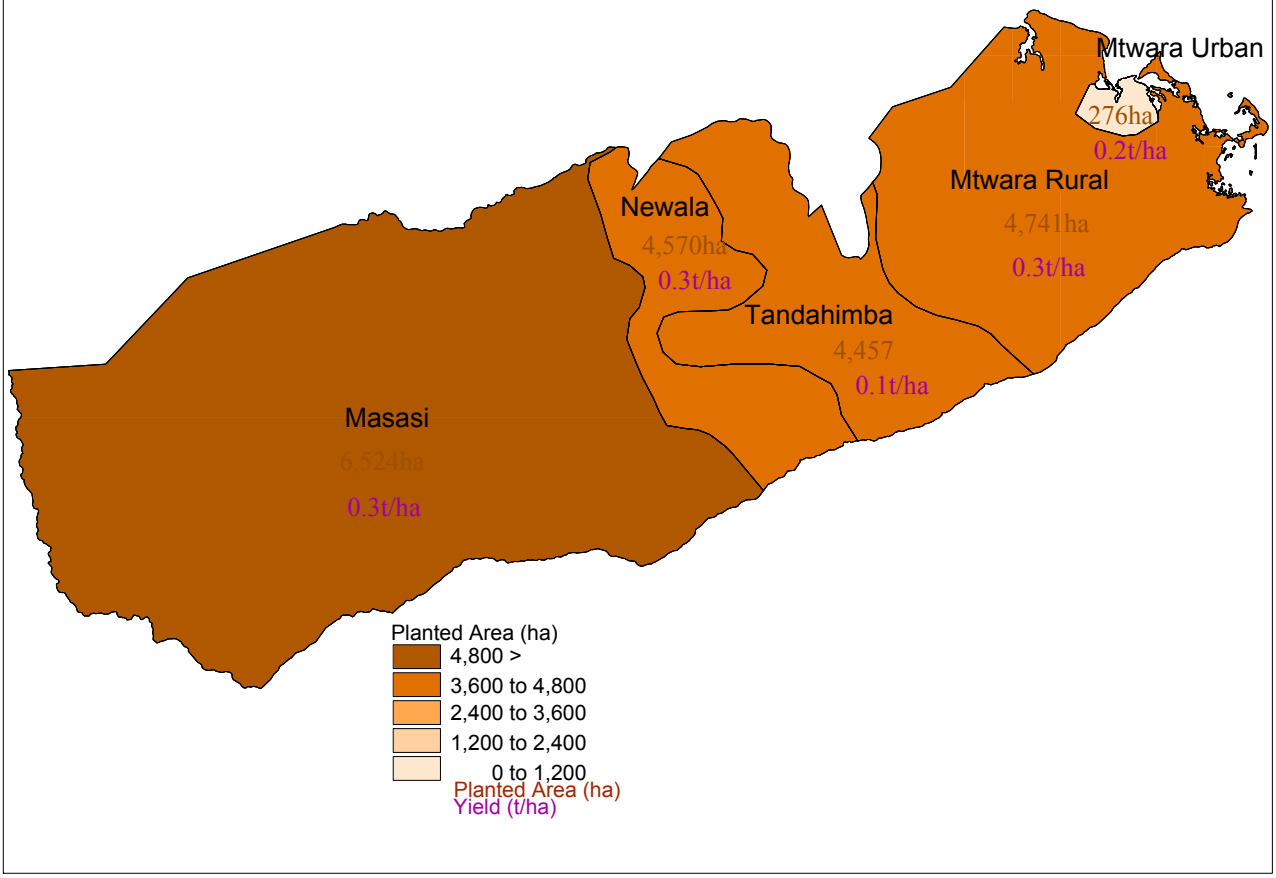
MAP 3.10 MTWARA
Planted Area and Yield of Maize by District



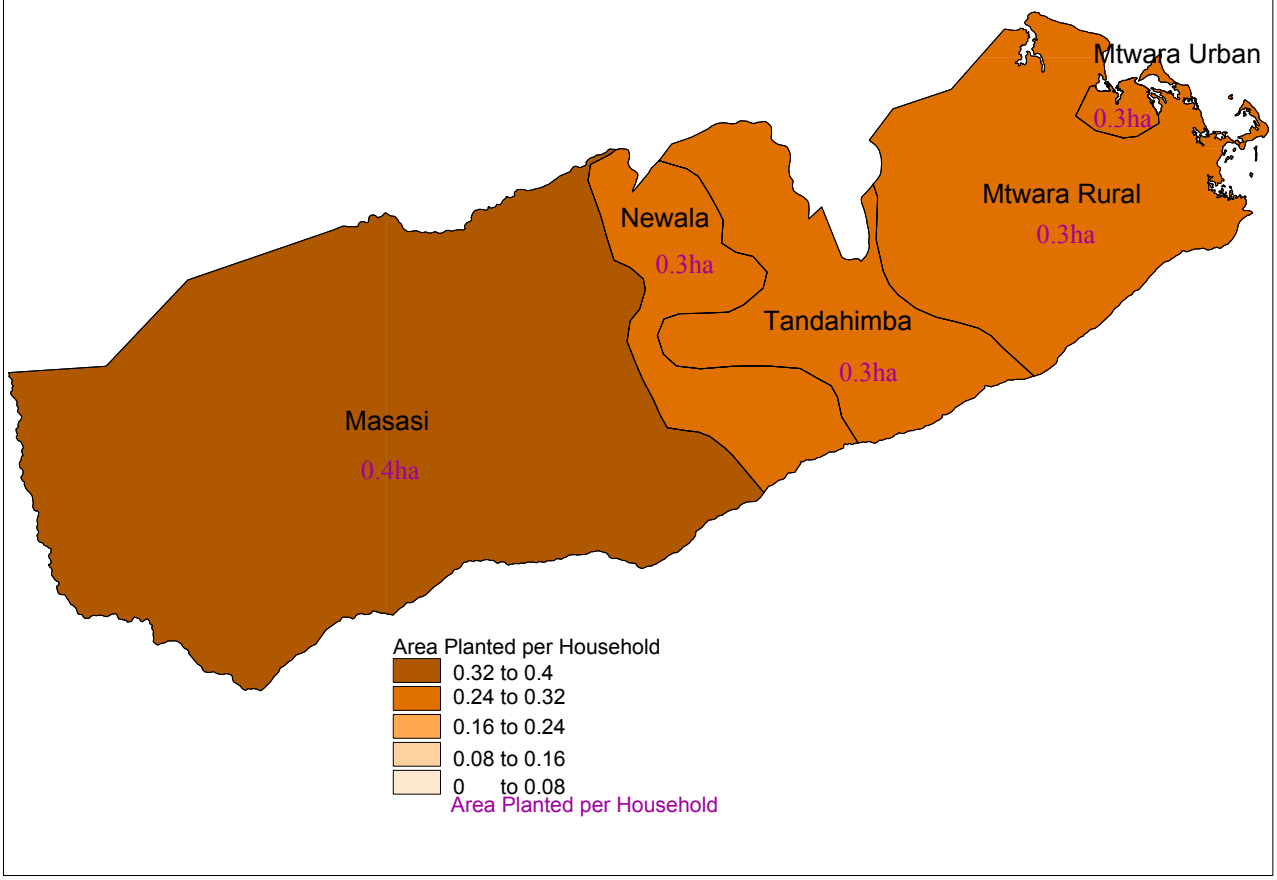
MAP 3.11 MTWARA
Area Planted per Maize Growing Household by District



MAP 3.12 MTWARA
Planted Area and Yield of Sorghum by District



MAP 3.13 MTWARA
Area Planted per Sorghum Growing Household by District



(0.1%), sweet potatoes (77t, 0.1%) and cocoyams (29t, 0.0%) (Table 3.3). The area planted with cassava was larger than any other root and tuber crops and it was the most important annual crop in Mtwara in terms of planted area (44.5% of the total area planted with annual crops and vegetables) and it accounted for 99.9 percent of the area planted with roots and tubers, followed by yams (0.1%).

Table 3.3: Area, Production and Yield of Root and Tuber Crops by Season

Crop	Dry Season			Wet Season			Total		
	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)
Cassava	61	50	823	114,097	72,037	631	114,157	72,087	631
Sweet Potatoes	0	0	0	38	77	2,043	38	77	2,026
Irish Potatoes	0	0	0	10	2	198	10	2	198
Yams	0	0	0	75	78	1,046	75	78	1,046
Cocoyam	0	0	0	29	29	1,001	29	29	1,001
Total	**61**	**50**		**114,248**	**72,224**		**114,309**	**72,274**	

Note: Cassava is produced in both the wet and dry season. However, it was not possible to separate cassava production in the different growing seasons as the growth period spans both seasons and even over a year in certain varieties. Because of this, cassava has been combined and is reported in the wet season only.

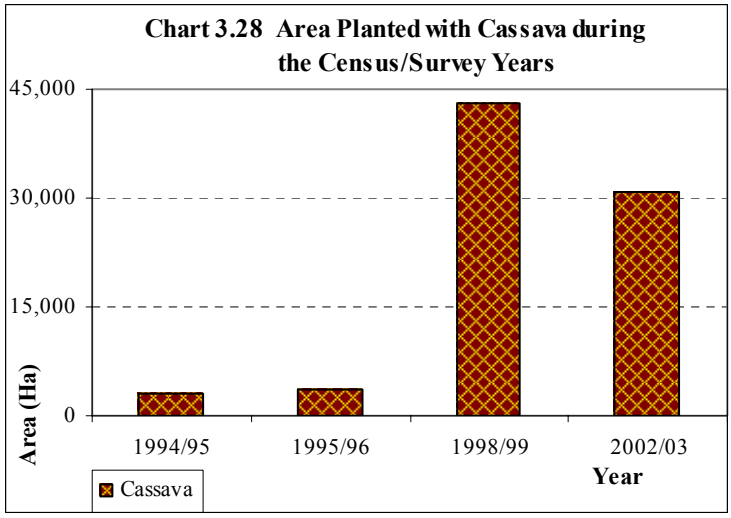
It is difficult to determine the total planted area and production for the dry and wet seasons for roots and tubers as the total production of cassava has been reported under the wet season. However, excluding cassava, there was no area planted with roots and tubers during the dry season. While a relatively high percent of sweet potatoes and yams having (0.11%) each, was produced during the wet season.

The total production of roots and tubers was estimated at 72,274 tones. Cassava with an estimate of 72,087 tonnes was the most important root and tuber crop. It almost accounted for the entire production of roots and tubers in the region.

The estimated yield was highest for sweet potatoes (2.0 t/ha), followed by yams and cocoyams (1.0 t/ha each), cassava (0.6 t/ha) and Irish potatoes (0.2 t/ha).

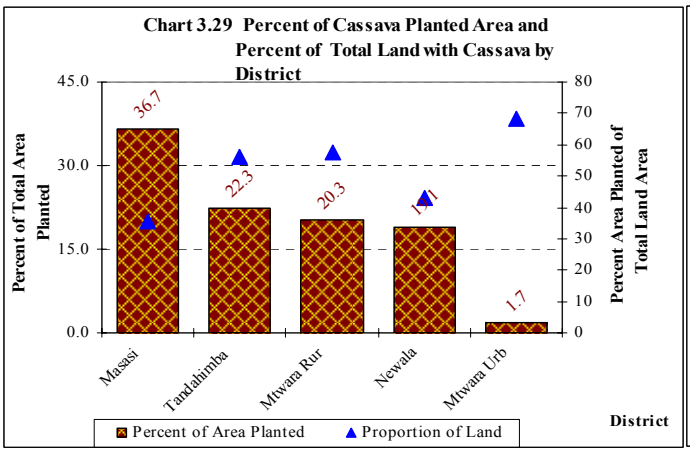
3.3.2. 5.1 Cassava

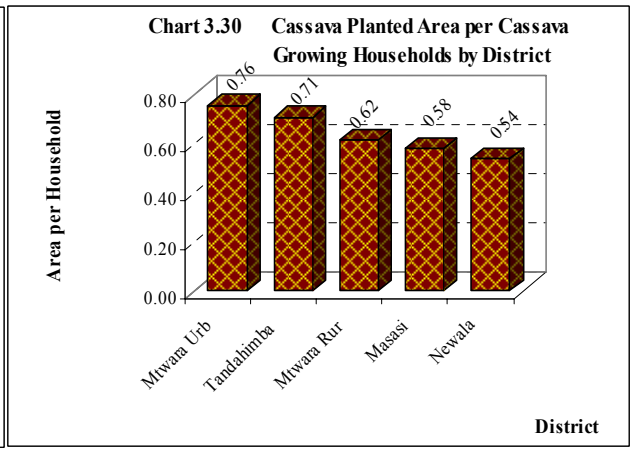
The number of households growing cassava in the region was 188,744. This represents 33 percent of the total crop growing households in the region. The total production of cassava during the census year was 72,087 tonnes from a planted area of 114,157 hectares resulting in a yield of 0.6t/ha.



Previous censuses and surveys indicate that the area planted with cassava increased for the period 1996 to 1999. Since 1999 the area planted with cassava dropped from 43,000 ha in 1999 to 30,732 ha in 2003 (Chart 3.28).

The area planted with cassava accounted for 45 percent of the total area planted with annual crops and vegetables in the census year. Masasi district had the largest planted area for cassava (41,873ha, 37% of the cassava planted area in the region), followed by Tandahimba (25,434 ha, 22%), Mtwara rural (23,126 ha, 20%), Newala (21,752 ha, 19%) and Mtwara urban (1,972 ha, 2%) (Map 3.14). However, the highest proportion of land planted with cassava, expressed as a percent of the total land area was in Masasi district (16%). This was followed by Tandahimba (10%), Mtwara rural (9%), Newala (8%), and Mtwara urban (0.8%) (Chart 3.29).

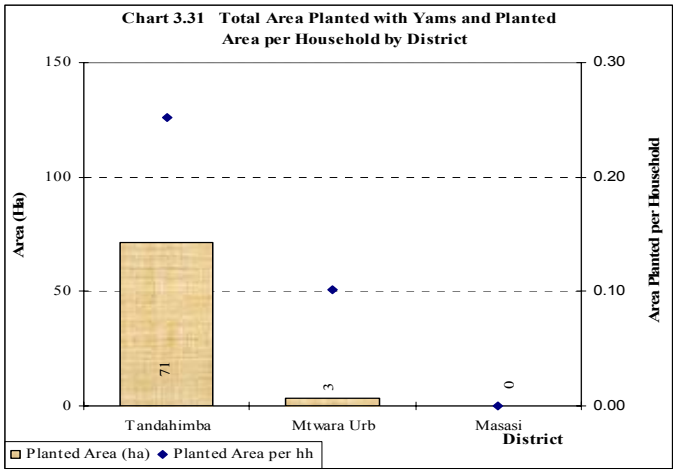




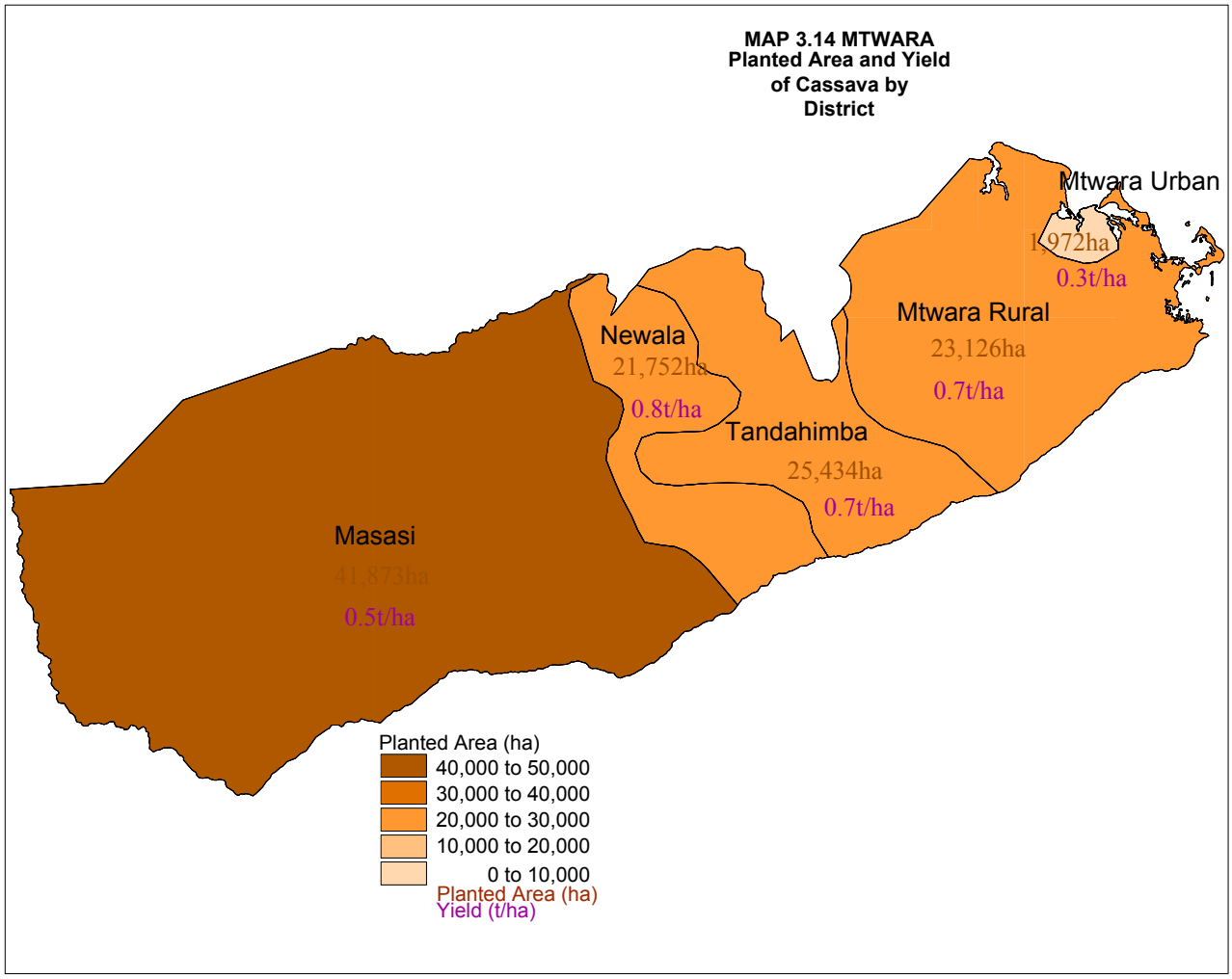
The average cassava planted area per cassava growing household was 0.6 hectares. However, there were small district variations. The area planted per cassava growing household was highest in Mtwara urban (0.8 ha). This was followed by Tandahimba (0.7 ha), Mtwara rural and Masasi (0.6 ha) each, and Newala (0.5 ha) (Chart 3.30 and Map 3.15).

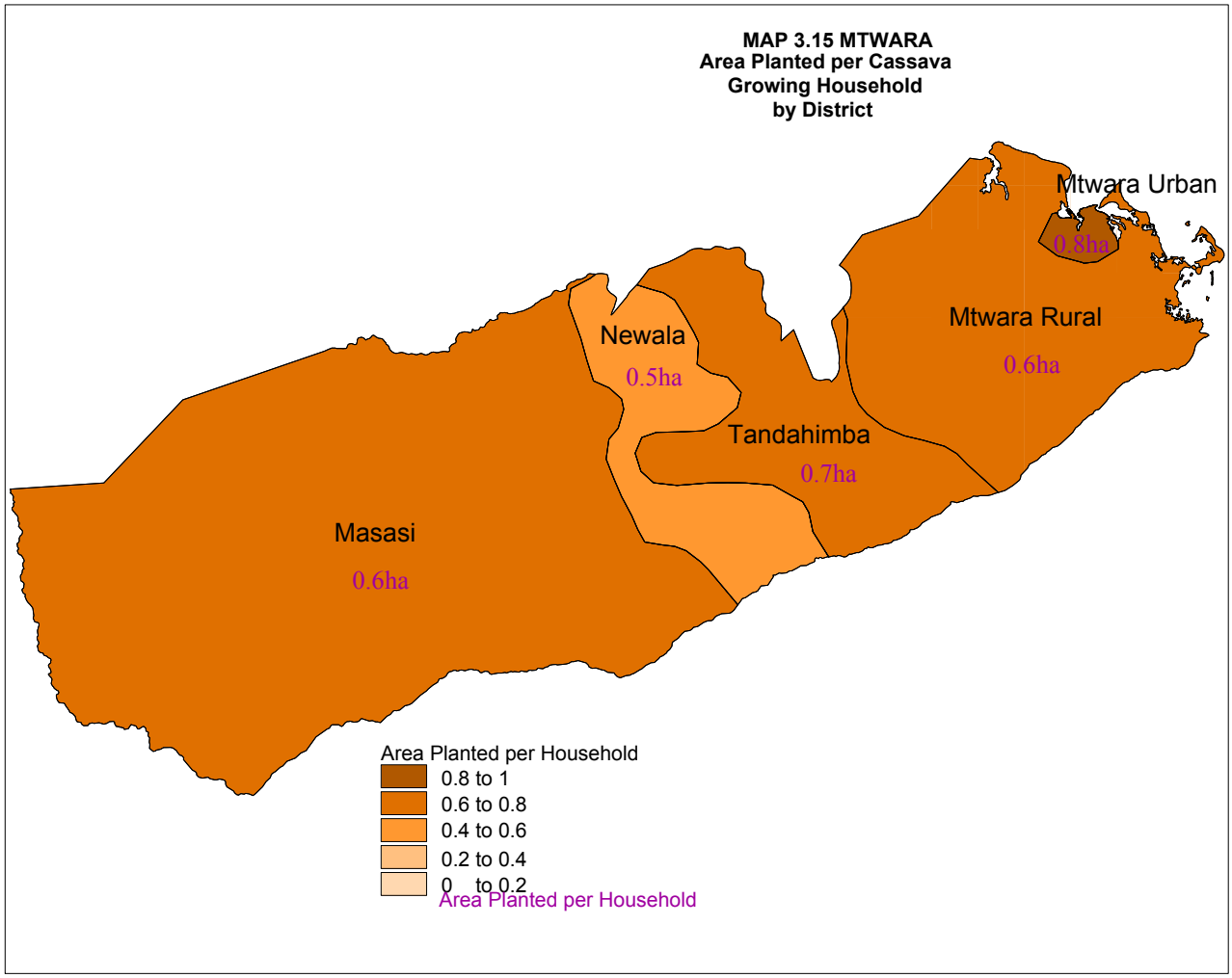
3.3. 2. 5.2 Yams

The number of households growing yam in Mtwara region was 315. The total production of yams during the census year was 78 tonnes from a planted area of 75 hectares resulting in a yield of 1.0t/ha.



Tandahimba District had the largest planted area for yam (71 ha, 95.6%), followed by Mtwara urban (3ha, 4.4%). Yams were not grown in the other districts of Mtwara region(Chart 3.31). Other root and tuber crops were of minor importance in terms of area planted compared to cassava and yams.


MAP 3.14 MTWARA
Planted Area and Yield
of Cassava by
District
Mtwara Urban
1,972ha
0.3t/ha
Mtwara Rural
23,126ha
0.7t/ha
Newala
21,752ha
0.8t/ha
Tandahimba
25,434ha
0.7t/ha
Masasi
41,873ha
0.5t/ha
Planted Area (ha)
40,000 to 50,000
30,000 to 40,000
20,000 to 30,000
10,000 to 20,000
0 to 10,000
Planted Area (ha)
Yield (t/ha)

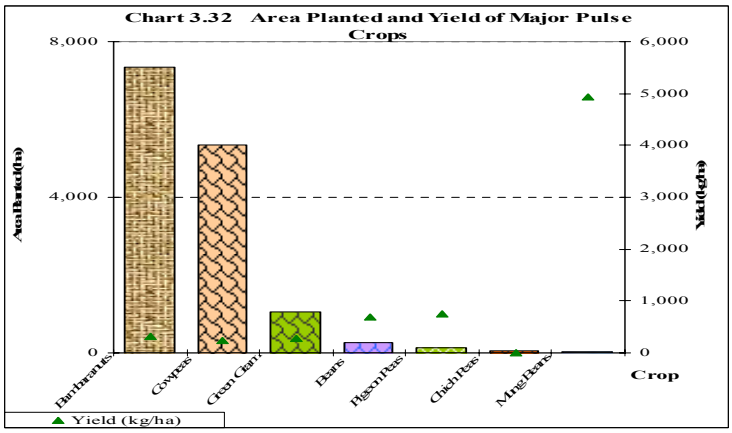

MAP 3.15 MTWARA
Area Planted per Cassava
Growing Household
by District
Mtwara Urban
0.8ha
Mtwara Rural
0.6ha
Newala
0.5ha
Tandahimba
0.7ha
Masasi
0.6ha
Area Planted per Household
0.8 to 1
0.6 to 0.8
0.4 to 0.6
0.2 to 0.4
0 to 0.2
Area Planted per Household

3.3.2. 6 Pulse Crops Production

The total area planted with pulses was 14,171 hectares out of which 7,346 ha were planted with bambaranuts (52 percent of the total area planted with pulses), followed by cow peas (5,333 ha, 37.6%), green gram (1,040 ha, 7.3%), beans (260 ha, 1.8%), pigeon peas (131 ha, 0.9%), chich peas (40 ha, 0.3%) and mung beans (21 ha, 0.2%). Field peas were not cultivated in the region. The bambaranut crop was therefore the dominant crop.

Table 3.4: Area, Production and Yield of Pulses by Season

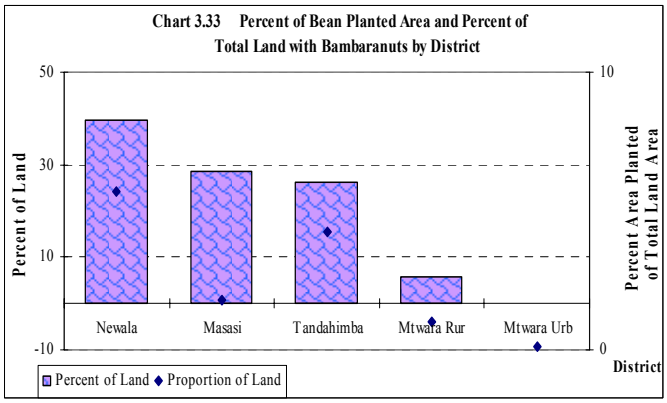
Crop	Dry Season			Wet Season			Total		
	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)
Mung Beans	0	0	0	21	105	4,940	21	105	4,940
Beans	0	0	0	260	177	681	260	177	681
Cowpeas	0	0	0	5,333	1,229	230	5,333	1,229	230
Green Gram	0	0	0	1,040	279	269	1,040	279	269
Pigeon Peas	0	0	0	131	97	741	131	97	741
Chich Peas	0	0	0	40	0	0	40	0	0
Bambaranuts	0	0	0	7,346	2,366	322	7,346	2,366	322
Field Peas	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**		**14,171**	**4,253**		**14,171**	**4,253**	

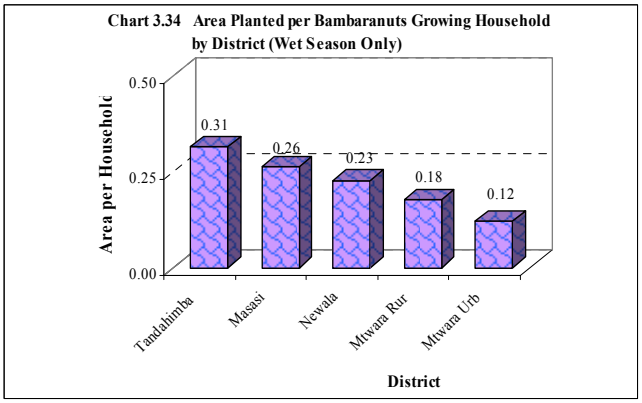


The pulses were not grown in the dry season during the year. The total production of pulses was 4,253 tonnes. Bambaranuts were the most cultivated crop producing 2,366 tonnes which accounted for 55.6 percent of the total pulse production. This was followed by cow peas (1,229t, 28.9%), green gram (279t, 6.6%), beans (177t, 4.2%), mung beans (105t, 2.5%) and pigeon peas (97t, 2.3%). Mung beans had the highest yields of 4,940 kgs/ha. The yields of the rest of the pulses in kilograms per hectare were pigeon peas 741kgs/ha, beans 681 kgs/ha, bambaranuts 322 kgs/ha, green gram 269 kgs/ha and cowpeas 230 kgs/ha (Chart 3,32).

3.3.6.1 Bambaranuts

Bambaranuts dominated the production of pulse crops in the region. The number of households growing bambaranuts in Mtwara region was 29,205. The total production of bambaranuts in the region was 2,366 tonne from a planted area of 7,346 hectares resulting in a yield of 0.3 t/ha.





The largest area planted with bambaranuts in the region was in Newala (2,902 ha, 39.5%) (Chart 3.33 and Map 3.16), however, the largest area planted with bambaranuts per household was in Tandahimba district (0.31 ha) (Chart 3.34). The average area planted per household in the region during the wet season was 0.25 ha. With exception of Tandahimba

district, the variations in area planted with bambaranuts per household for the rest of the districts were small ranging from 0.1 ha in Mtwara urban to 0.3 ha in Masasi district (Map 3.17).

3.3.2. 7 Oil Seed Production

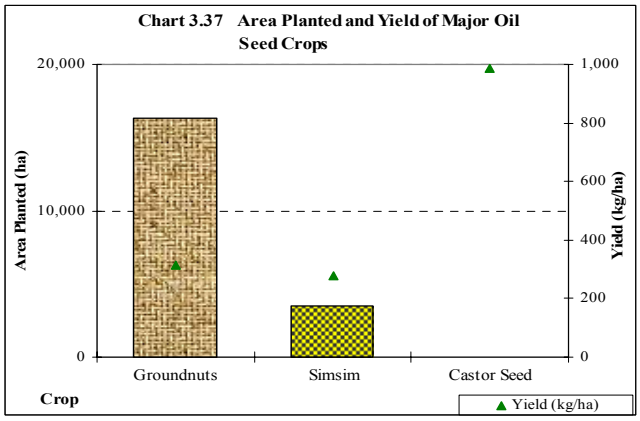
The total production of oilseed crops was 6,124 tonnes planted from an area of 19,849 hectares. The total planted area of oilseeds in the wet season was 19,849 ha representing 100 percent of the total area planted with oil seeds.

Table 3.5: Area, Quantity Harvested and Yield of Oil Seed Crops by Season

Crop	Dry Season			Wet Season			Total		
	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)
Sunflower	0	0	0	0	0	0	0	0	0
Simsim	0	0	0	3,512	979	279	3,512	979	279
Groundnuts	0	0	0	16,330	5,137	315	16,330	5,137	315
Soya Beans	0	0	0	0	0	0	0	0	0
Castor Seed	0	0	0	8	8	988	8	8	988
Total	0	0		19,849	6,124		19,849	6,124	

Groundnut was the most important oilseed crop with 16,330 ha (82% of the total area planted with oil seeds) and followed by simsim (18%) (Chart 3.37). The yield of castor seed was moderate (988 kg/ha). Groundnuts had a yield of 315 kg/ha and simsim 279 kg/ha.

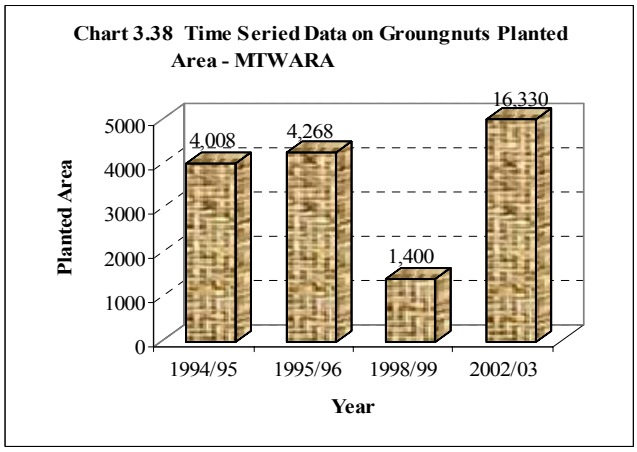
The production of groundnuts was 5,137 tonnes and accounted for 84 percent of the total production of oil seeds, followed by simsim (16%).



3.3.2. 7.1 Groundnuts

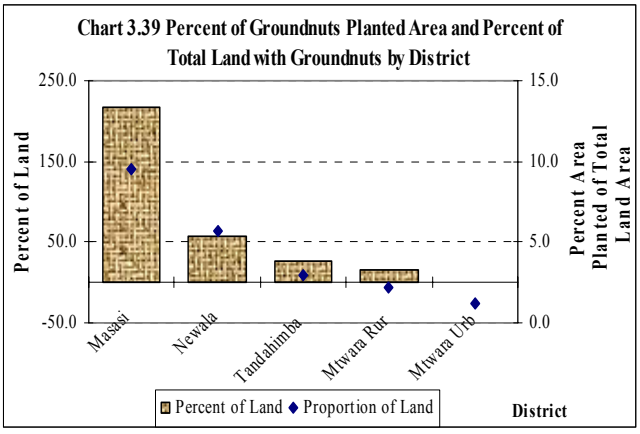
The number of households growing groundnuts in Mtwara region was 45,840. The total production of groundnuts in the region was 5,137 tonnes from a planted area of 16,330 hectares resulting in a yield of 0.3 t/ha.

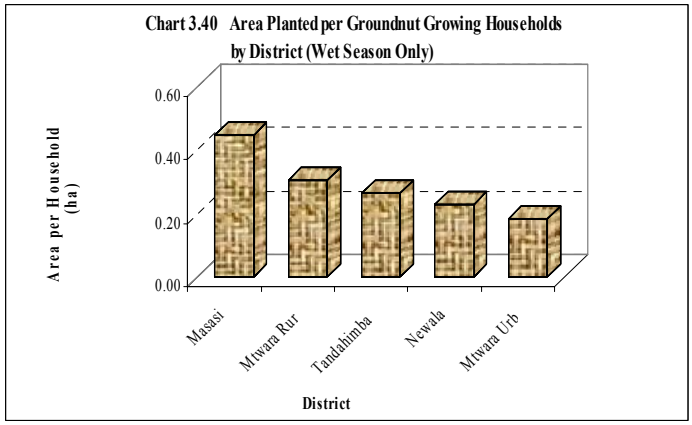
Area planted increased from 4,008 hectares in 1994/95 to 4,268 hectares in 1995/96 after which it decreased to 1,400 hectares in 1998/99 and then increased to 16,330 in 2002/03. (Chart 3.38)



Sixty nine percent of the area planted with groundnuts was located in Masasi District (11,180 ha) followed by Newala (2,918ha, 17.9%), Tandahimba (1,333 ha, 8.2%), Mtwara rural (862 ha, 5.3%) and Mtwara urban (36 ha, 0.2%). (Map 3.18). The highest proportion of land with groundnuts was found in Masasi followed by Newala, Tandahimba, Mtwara rural, and Mtwara urban (Chart 3.39 and Map 3.1920).

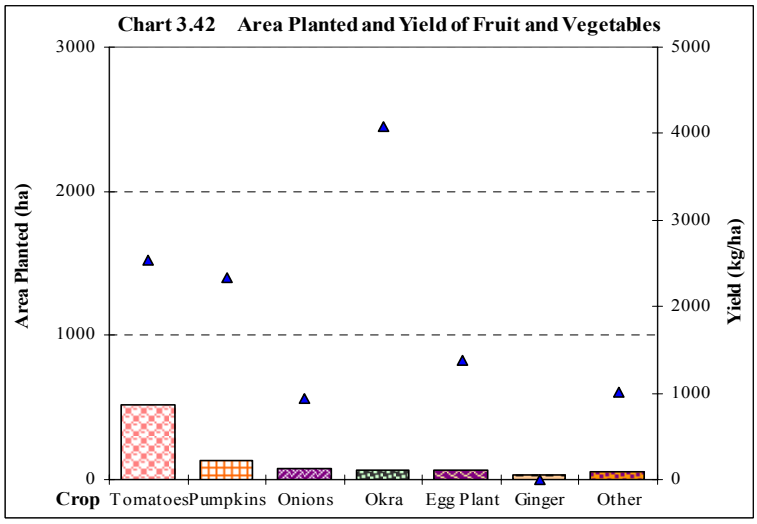
The largest area planted per groundnut growing household was found in Masasi District (0.45 ha) and the lowest was in Mtwara urban (0.18). The range between the district with the highest and the lowest area planted per household depicts small variations in area planted among the districts (Chart 3.40).





3.3.2. 8 Fruits and Vegetables

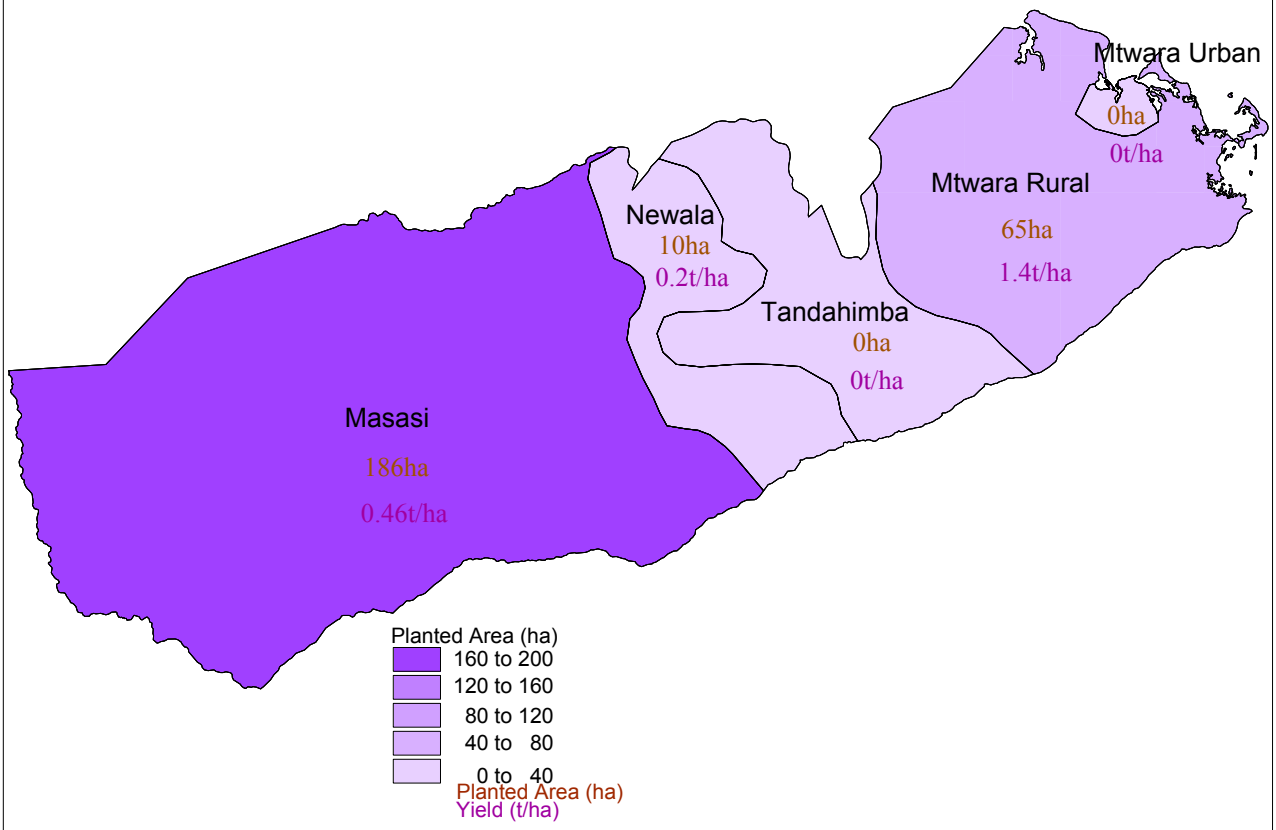
The collection of fruit and vegetables production data was difficult due to the small quantities produced per household. Most of the data presented here gives the production of smallholders who grew these crops as cash crops and not merely for household consumption. Most fruit production is from permanent crops and only water melon is reported as an annual crop in this section. Fruit and vegetables were not grown in dry season. Reliable historical data for time series analysis of fruit and vegetables were not available.



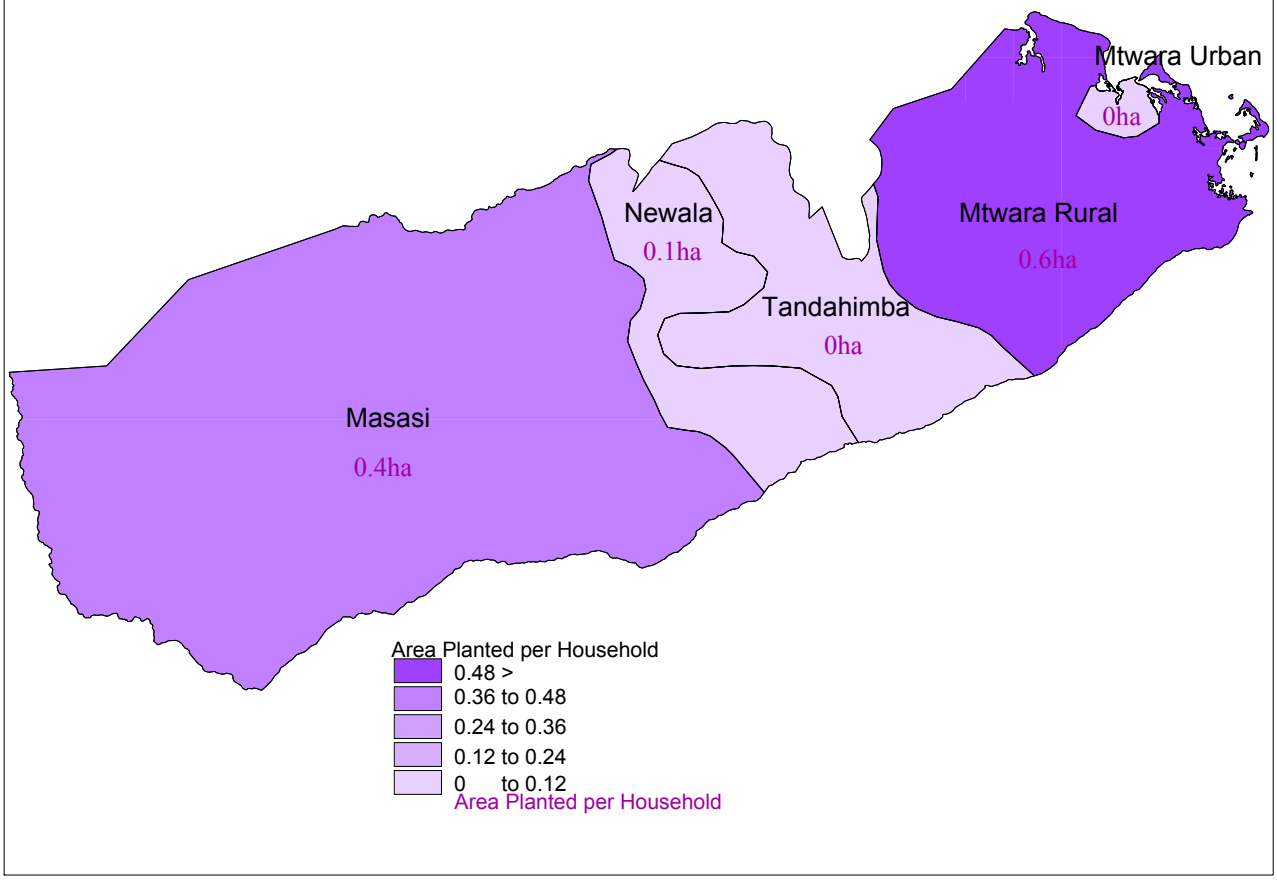
The total production of fruits and vegetables was 2,123 tonnes. The most cultivated fruit and vegetable crop was tomatoes with a production of 1,326 tonnes (62% of the total fruit and vegetables produced) followed by pumpkins (299t, 14%) and okra (278t, 13%). The production of the other fruit and vegetables crops was relatively small (Table 3.6).

The yield of okra was 4,117 kg/ha, tomatoes (2,543 kg/ha), water mellon (2,422 kg/h), pumpkins (2,337 kg/ha) and egg plant (1,370 kg/ha), onion (937 kg/h), cucumber and amaranths had yields of 166 and 25 kg/ha respectively (Chart 3.42).

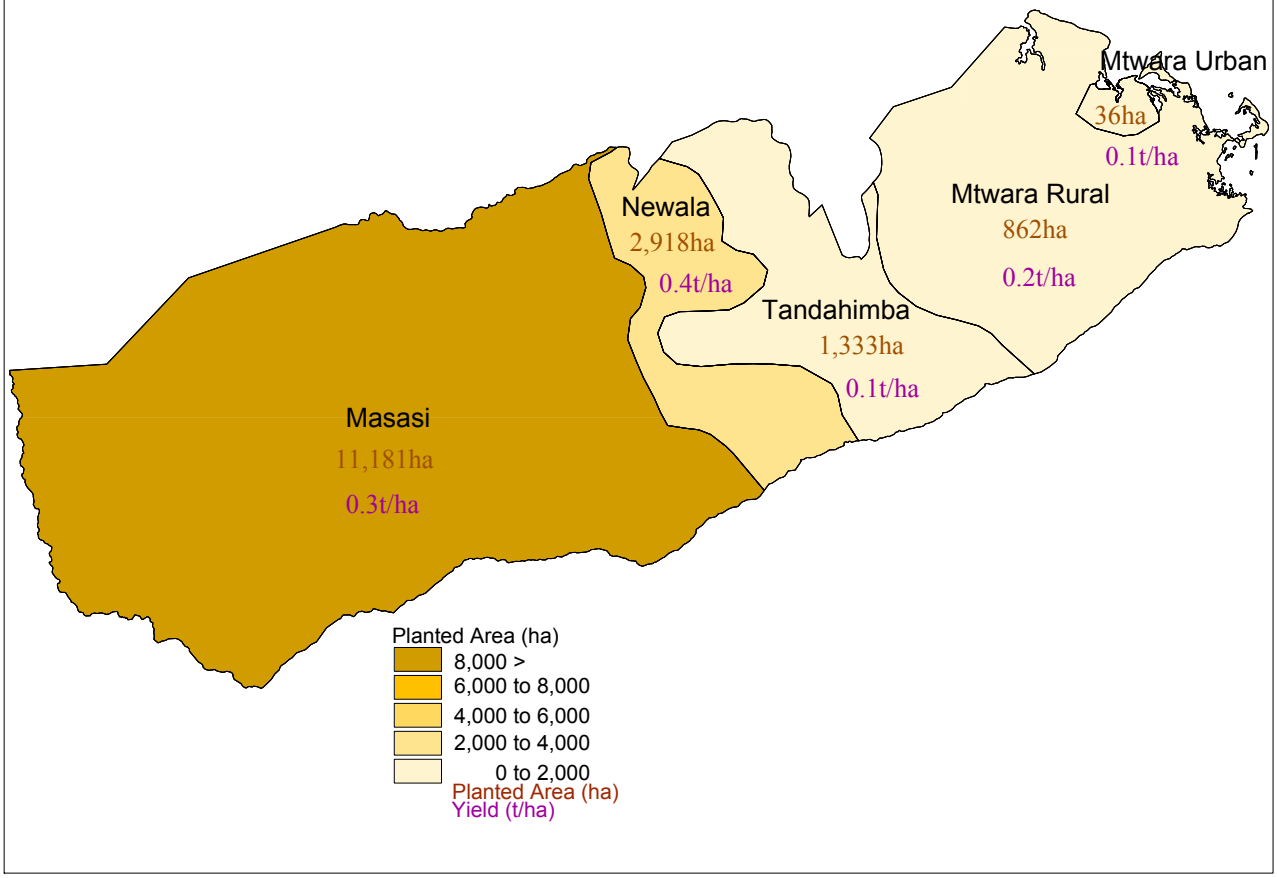
MAP 3.16 MTWARA
Planted Area and Yield of Beans by District



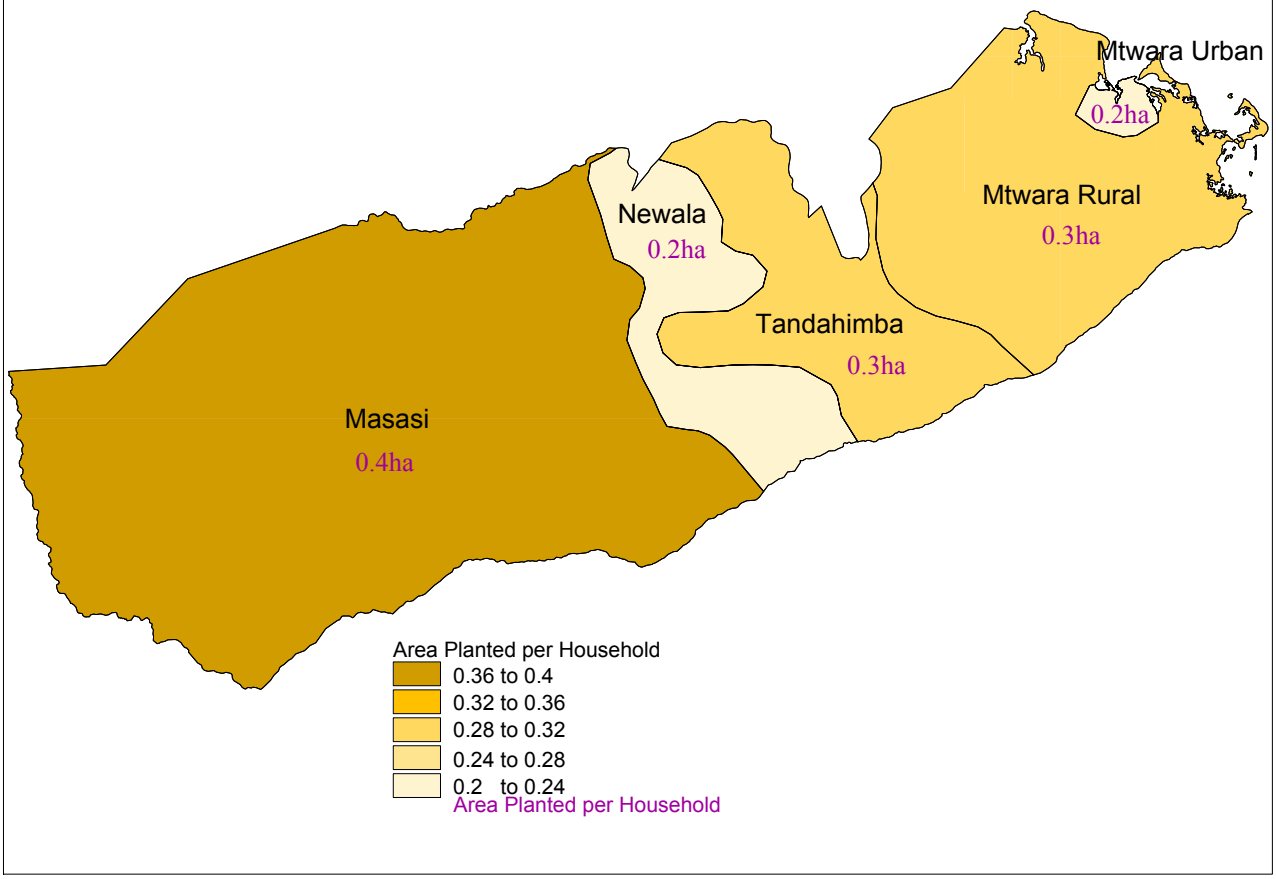
MAP 3.17 MTWARA
Area Planted per Beans Growing Household by District



MAP 3.18 MTWARA
Planted Area and Yield of Groundnuts by District



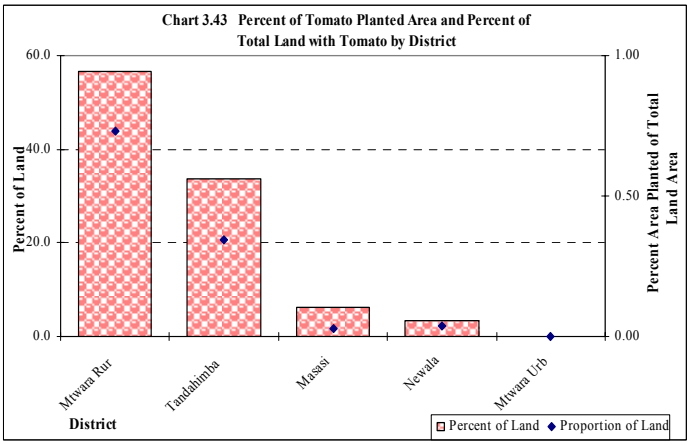
MAP 3.19 MTWARA
Area Planted per Groundnuts Growing Household by District



3.3. 2. 8. 1 Tomatoes

The number of households growing tomatoes in the region during the wet season was 1,856 and there were no households growing tomatoes in the dry season. This represented 0.8 percent of the total crop growing households in the region during the wet season.

Chart 3.43 Percent of Tomato Planted Area and Percent of Total Land with Tomato by District



Mtwara rural district had the largest planted area of tomatoes (56.6% of the total area planted with tomatoes in the region), followed by Tandahimba (33.6%), Masasi (6.3%), Newala (3.5%) and there was no tomatoes planted area in Mtwara urban district. (Map 3.20).

The highest percentage of land with tomatoes was found in Mtwara rural, followed by Tandahimba district. With exception of Mtwara rural district, the rest of the districts have relatively low percentage of land used for tomato production (Chart 3.43). (Chart 3.44 and Map 3.21). The total area planted with tomatoes accounted for 0.2 percent of the total area planted with annual crops and vegetables during the dry and wet seasons.

Table 3.6: Area, Production and Yield of Fruits and Vegetables by Season

Crop	Dry Season			Wet Season			Total		
	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)
Okra	0	0	0	68	278	4,117	68	278	4,117
Onions	0	0	0	75	71	937	75	71	937
Ginger	0	0	0	35	0	0	35	0	0
Tomatoes	0	0	0	521	1,326	2,543	521	1,326	2,543
Amaranths	0	0	0	20	0	25	20	0	25
Pumpkins	0	0	0	128	299	2,337	128	299	2,337
Cucumber	0	0	0	12	2	1666	12	2	166
Egg Plant	0	0	0	68	94	1,370	68	94	1,370
Water Mellon	0	0	0	22	53	2,422	22	53	2,422
Total	0	0		**949**	**2,123**		**949**	**2,123**	

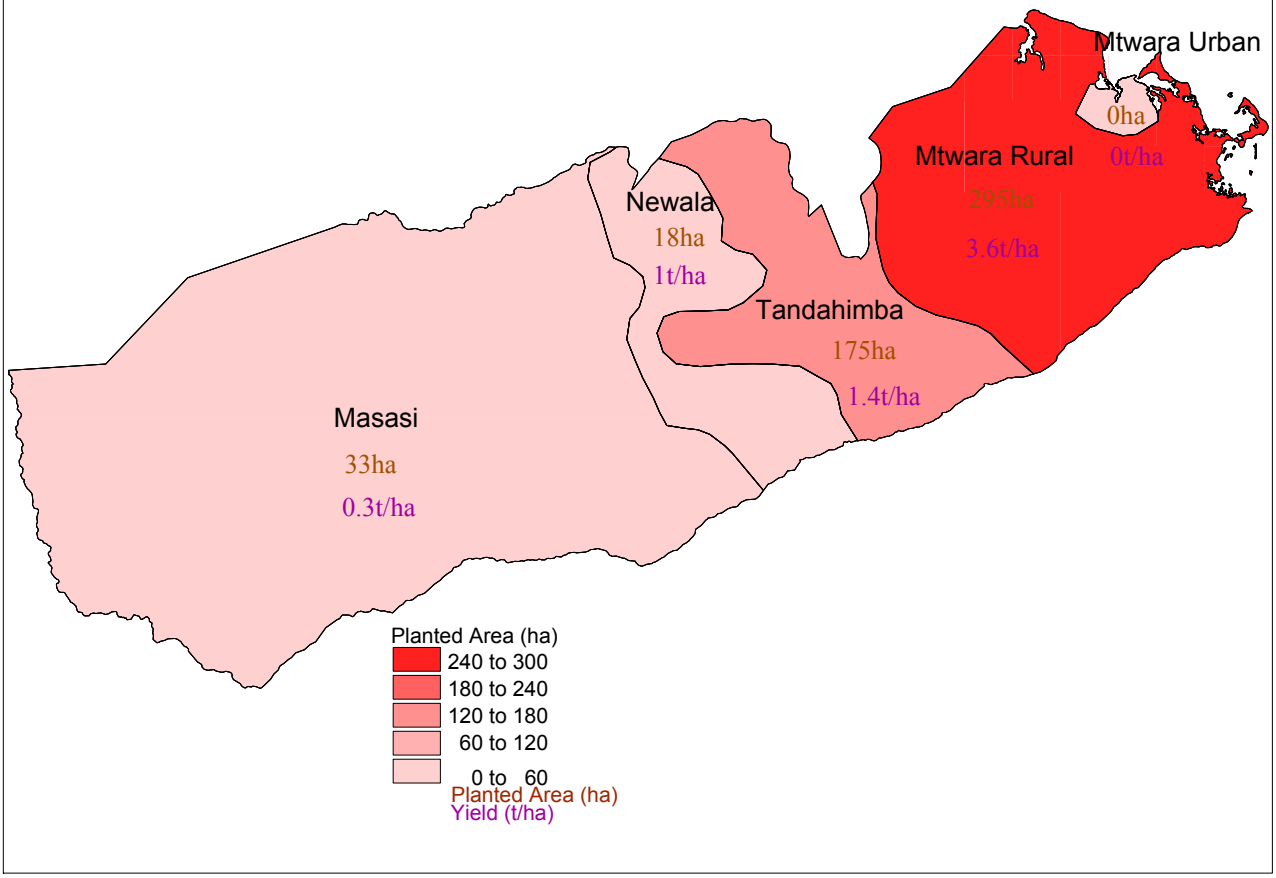
3.3. 2. 8. 2 Pumpkins

The number of households growing pumpkins in the region during the wet season was 796 and there were no households growing pumpkins in the dry season. This represented 0.4 percent of the total crop growing households in the region in the wet season.

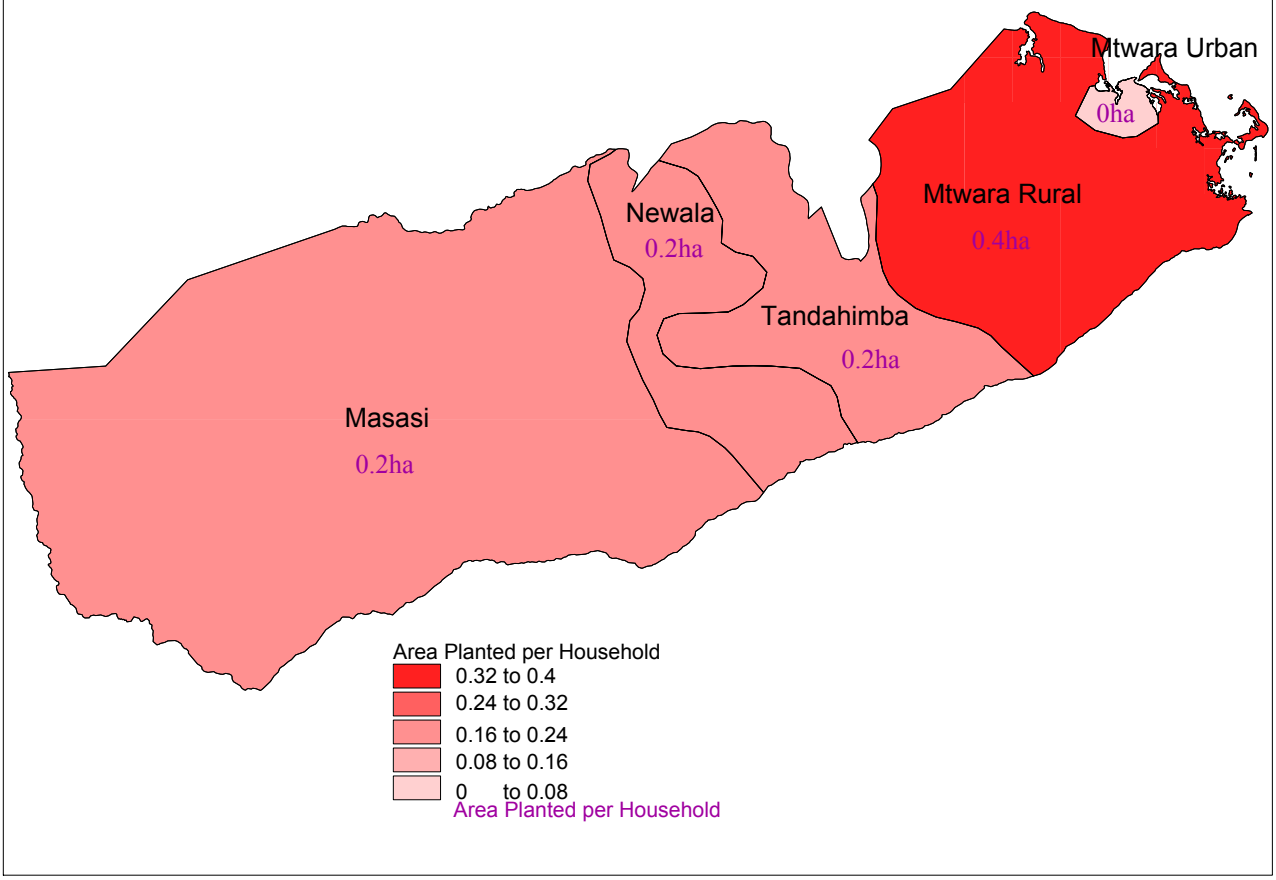
Table 3.7: Area, Production and Yield of Annual Cash Crops by Season

Crop	Dry Season			Wet Season			Total		
	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)
Tobacco	149	61	412	142	32	2,926	291	93	319
Total	149	61	412	142	32	2,926	291	93	319

MAP 3.20 MTWARA
Planted Area and Yield of Tomatoes by District

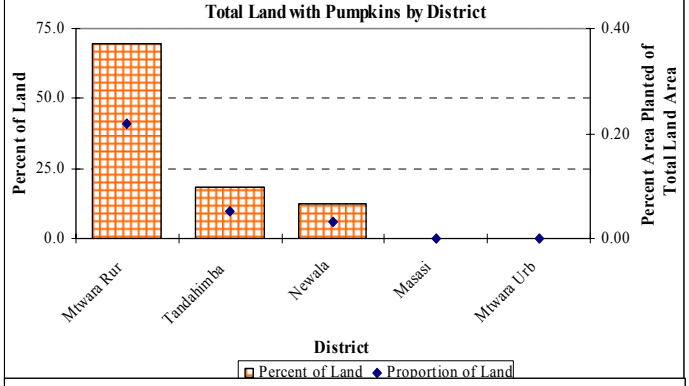


MAP 3.21 MTWARA
Area Planted per Tomatoes Growing Household by District



Mtwara rural district had the largest area planted with pumpkins (89 ha, 69% of the total area planted with pumpkins in the region), followed by Tandahimba (23 ha, 18%) and Newala (16 ha, 12%). The remaining districts had no planted area for pumpkins. (Chart 3.45). The total area planted with pumpkins accounted for 0.05 percent of the total area planted with annual crops and vegetables during the dry and wet seasons.

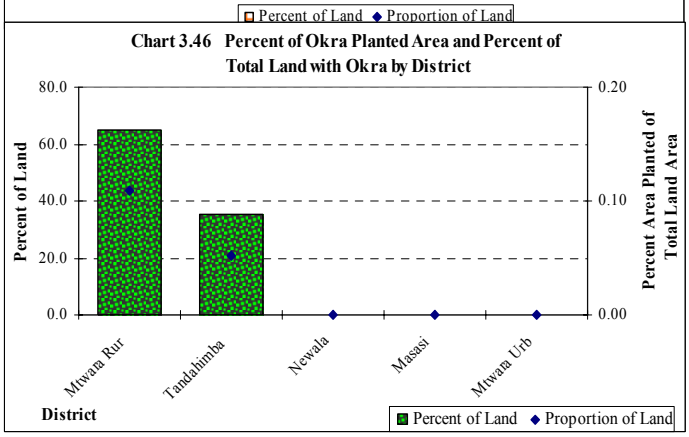
Chart 3.45 Percent of Pumpkins Planted Area and Percent of Total Land with Pumpkins by District



3.3. 2. 8.3 Okra

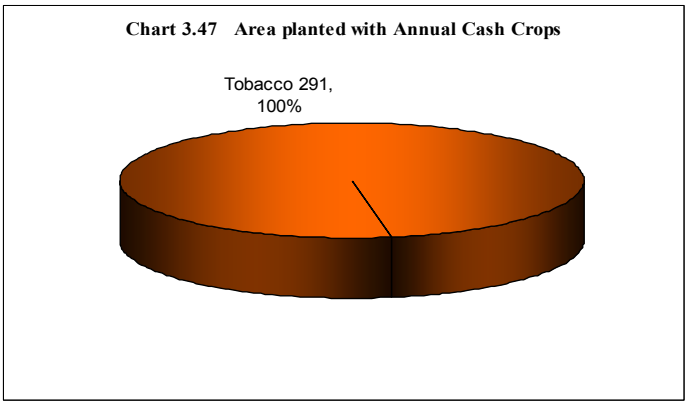
The number of households growing okra in the region during the wet season was 357 households and there was no household growing okra in the dry season. This represented 0.12 percent of the total crop growing households in the region in the wet season. Mtwara rural district had the largest planted area for chillies (44 ha, 64.7% of the total area planted with okra in the region) and followed by Tandahimba district (24 ha, 35.1%). Okra was not produced in Newala, Masasi and Mtwara districts. The largest proportion of the area planted with okra was found in Mtwara rural district (0.11%) and Tandahimba (0.05%) only. (Chart 3.46).

Chart 3.46 Percent of Okra Planted Area and Percent of Total Land with Okra by District



The total area planted with okra accounted for 0.03 percent of the total area planted with annual crops and vegetables during the short and long rainy seasons.

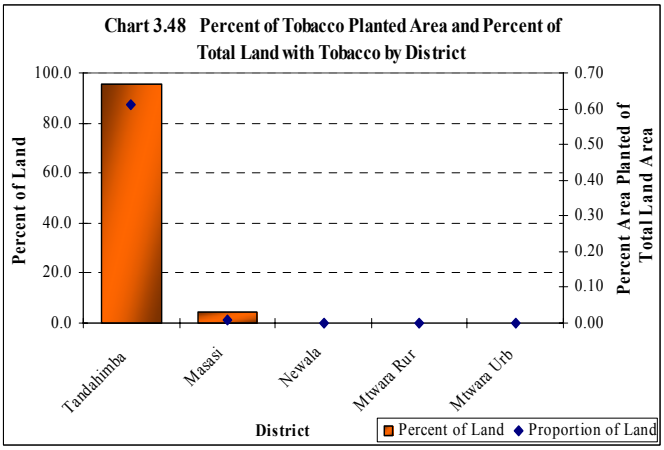
Chart 3.47 Area planted with Annual Cash Crops



3.3. 2. 9 Other Annual Crop Production

Most of the other annual crops are cash crops. An area of 291 ha was planted with other annual crops and tobacco was the only prominent cash crop. The area planted with annual cash crops in dry season was 149 ha which represents 51 percent of the total area planted with other annual cash crops in dry and wet season.

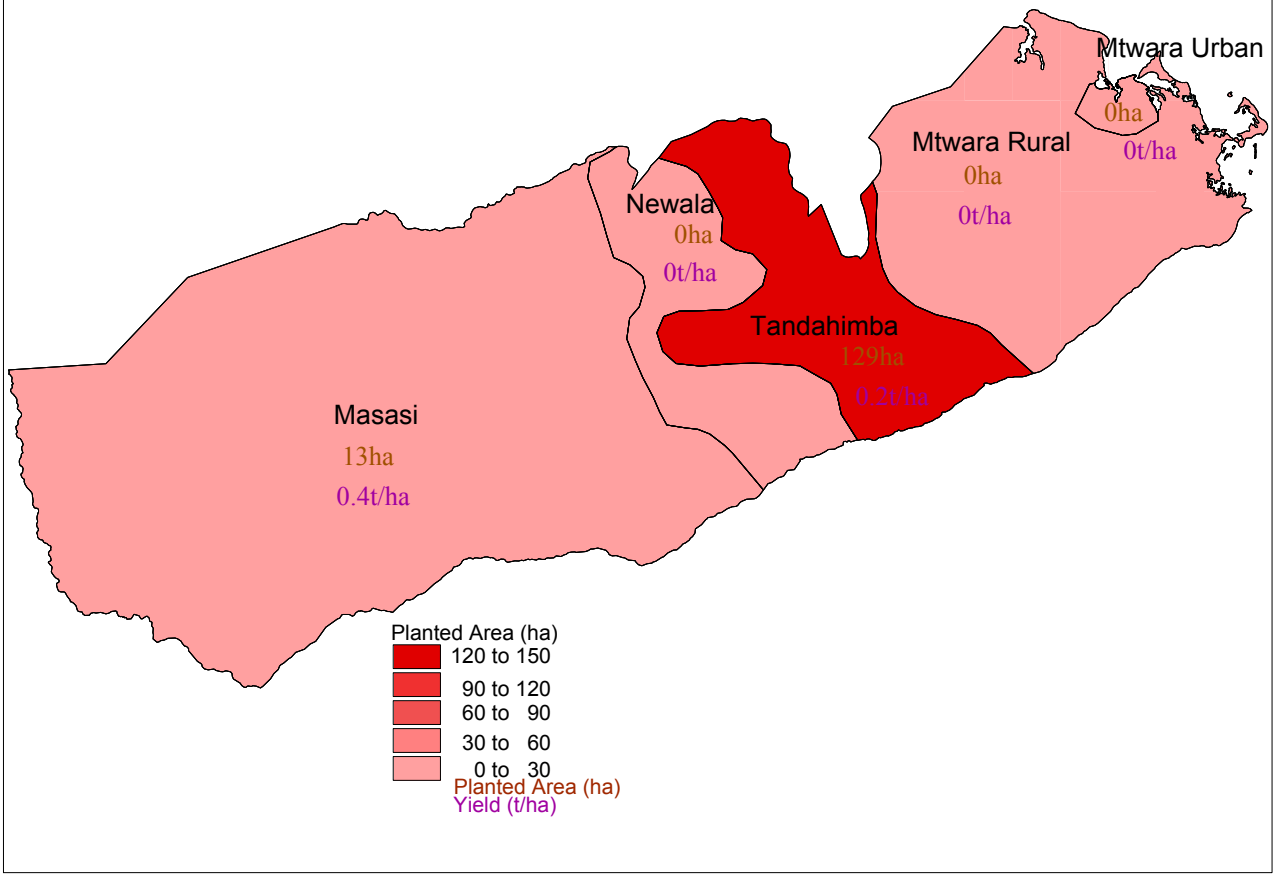
Chart 3.48 Percent of Tobacco Planted Area and Percent of Total Land with Tobacco by District



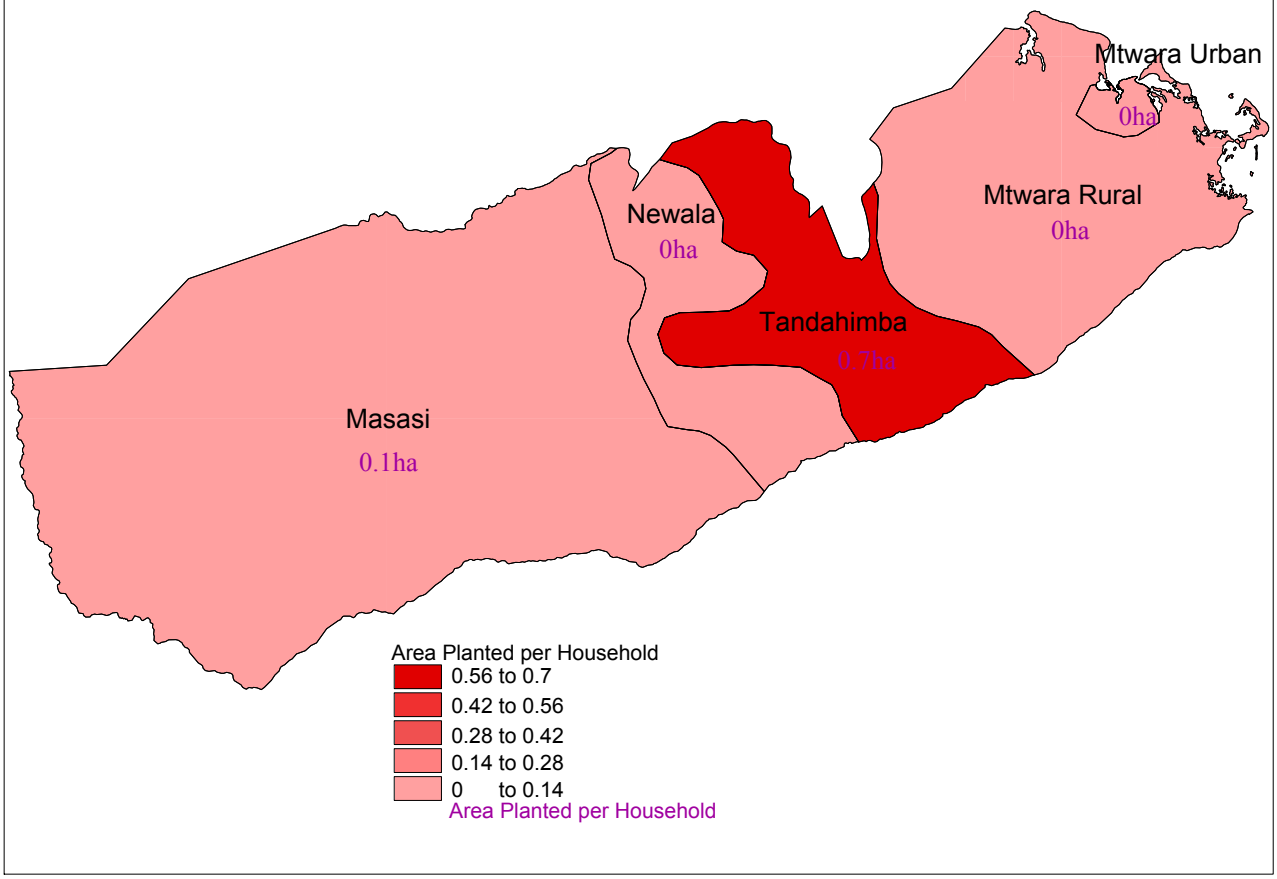
3.3. 2. 9. 1 Tobacco

The quantity of tobacco produced was 93 tonnes. Tobacco had a planted area of 291 ha, most of which was planted in the wet season. Tobacco production was concentrated in 2 districts with Tandahimba having the largest planted area (63% of total area planted with tobacco in the region) and followed by Masasi. (Map 3.22 and 3.23).

MAP 3.22 MTWARA
Planted Area and Yield of Tobbaco by District



MAP 3.23 MTWARA
Area Planted per Tobbaco Growing Household by District

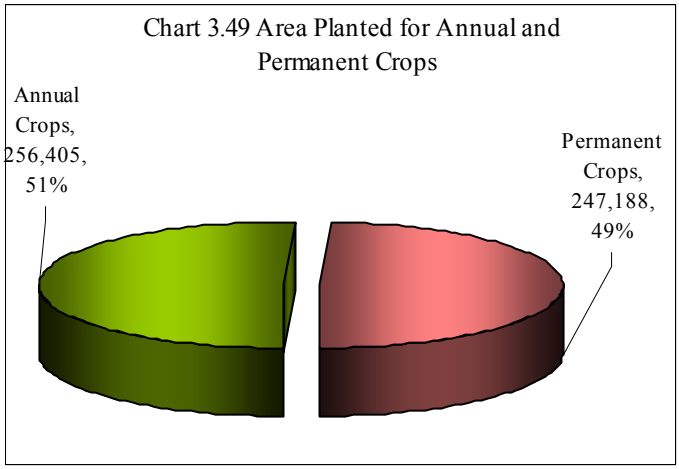


3. 3.3 Permanent Crops

Permanent crops (sometimes referred to perennial crops) are crops that normally take over a year to mature and once mature can be harvest for a number of years. For most crops, it is easy to determine if they are annual or permanent. However, for crops like cassava and bananas the distinction is not so clear. Cassava has varieties that mature within a year and produces only one harvest, whilst other varieties survive for more than one year and produce several harvests. In this census, cassava is treated as an annual crop. Conversely, bananas normally take less than a year to mature, survive for more than one year and are thus treated as a permanent crop. In this report the agriculture census results are presented for the most important permanent crops in terms of production, yield and area planted. Previous censuses and surveys did not measure these variables for permanent crops, therefore no time series analysis is made in this section.

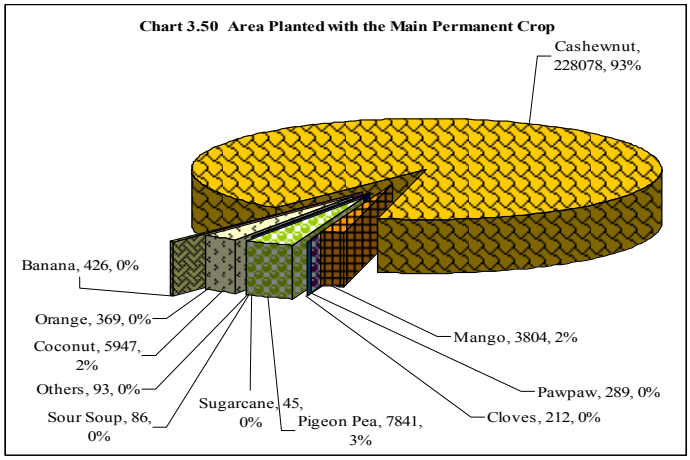
The area of smallholders planted with permanent crops was 247,188 hectares (49% of the area planted with crops in the region). However, the area planted with annual crops is not the actual physical land area as it includes the area of crops planted more than once on the same land, whilst the planted area for permanent crops is the same as physical planted land area. So the percentage of physical area planted with permanent crops would be higher than indicated in Chart 3.49.

Chart 3.49 Area Planted for Annual and Permanent Crops



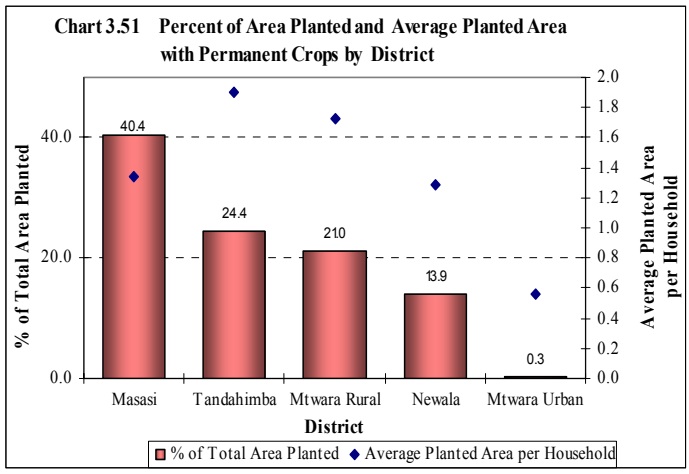
The most important permanent crop in Mtwara region was Cashewnut which had a planted area of 228,078 ha, (93% of the planted area of all permanent crops) followed by pigeon peas (7,841 ha, 3%), coconut (5,947 ha, 2%), mango (3,804 ha, 2%). Each of the remaining permanent crops had an area of zero percent of the total area planted with permanent crops (Chart 3.50).

Chart 3.50 Area Planted with the Main Permanent Crop



Masasi district had the largest area under smallholder permanent crops (99,923 ha, 40.4%). This was followed by Tandahimba (60,206 ha, 24.4%), Mtwara rural (51,953 ha, 21%), Newala (34,377 ha, 13.9%) and Mtwara Urban (680 ha, 0.3%). However, Tandahimba had the largest area per permanent crop growing household (1.9 ha) followed by Mtwara rural (1.7 ha), Masasi and Newala (1.3 ha) each and Mtwara Urban (0.6 ha) (Chart 3.51).

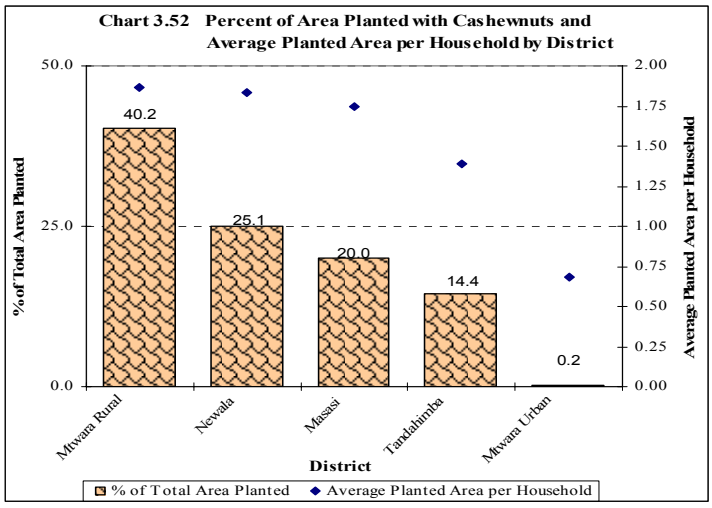
Chart 3.51 Percent of Area Planted and Average Planted Area with Permanent Crops by District



In terms of area of permanent crops planted expressed as a percentage of the total area planted with crops per district, Tandahimba had the highest percent (57%) followed by Mtwara rural (56%), Masasi (46%), Newala (40%) and Mtwara Urban (19%).

3.3.3. 1 Cashewnut

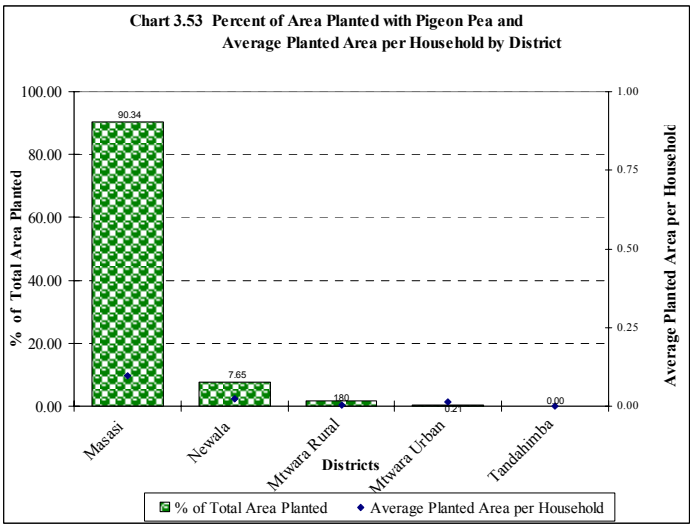
The total production of cashewnuts by smallholders was 38,295 tonnes. In terms of area planted, cashewnuts was the most important permanent crop grown by smallholders in the region. They were grown by 131,000 households (57.2% of the total crop growing households). The average area planted with Cashewnuts per household was relatively small at around 1.74 ha per cashewnut growing household and the average yield obtained by smallholders was 302 kg/ha from a harvest area of 126,660 hectares.



Mtwara rural had the largest area of cashewnuts in the region (91,793.9 ha, 40.2%) followed by Newala (57,200.5 ha, 25.1%), Masasi (45,632.5 ha, 20%), Tandahimba (32,956.5 ha, 14.4%) and Mtwara Urban (494.1 ha, 0.2%). (Map 3.24). Likewise, the average area planted with cashewnuts per cashewnuts growing household was highest in Mtwara rual (1.87 ha) followed by Newala (1.83 ha), Masasi (1.74 ha), Tandahimba (1.39 ha) and Mtwara Urban (0.68 ha) (Chart 3.52 and Map 3.25).

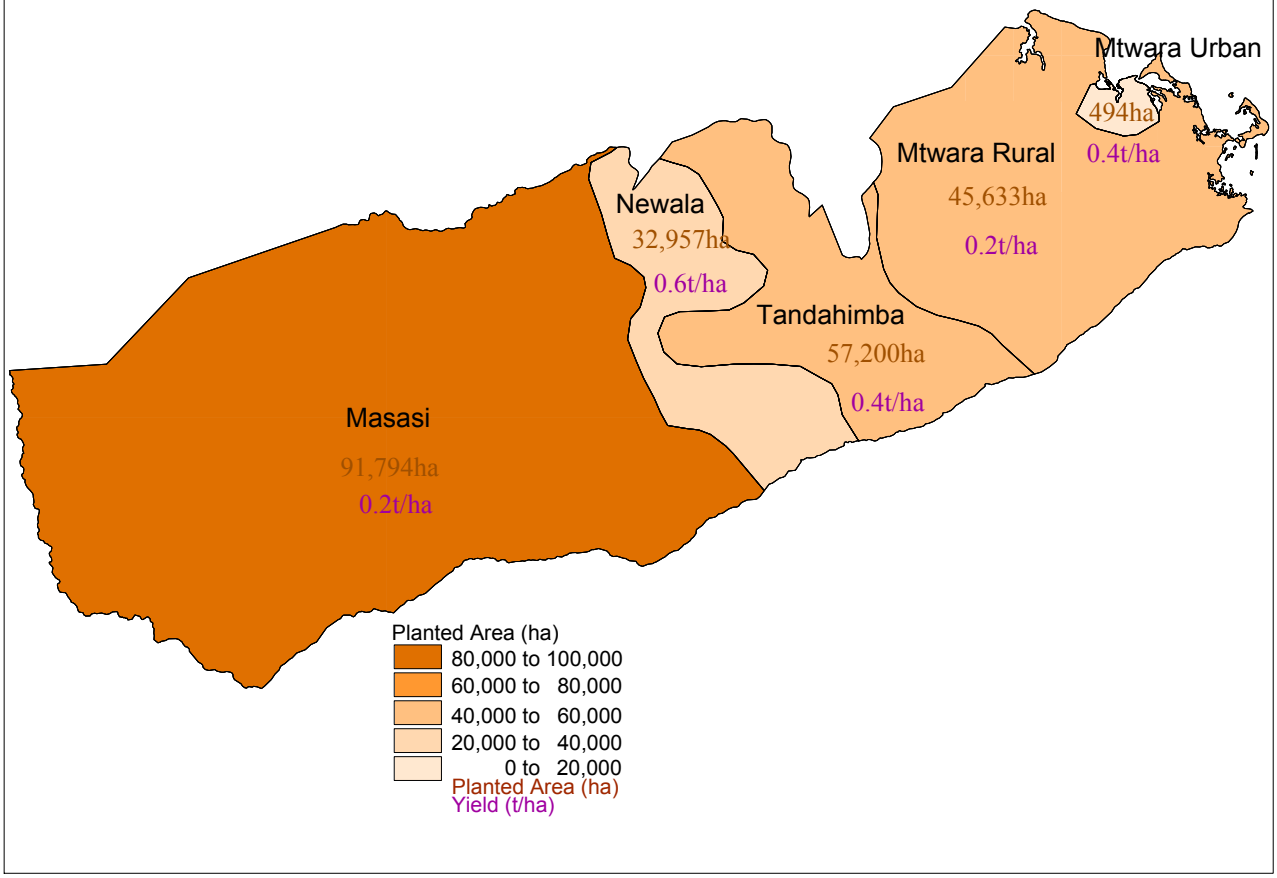
3. 3.3. 2 Pigeon peas

The total production of pigeon peas by smallholders was 1,836 tonnes. In terms of area planted, pigeon pea was the second most important permanent crop grown by smallholders in the region. It was grown by 25,949 households (11.3% of the total crop growing households). The average area planted with pigeon pea per household was relatively small at around 0.30 ha per pigeon pea growing household and the average yield obtained by smallholders was 99 kg/ha from a harvest area of 18,518 hectares.

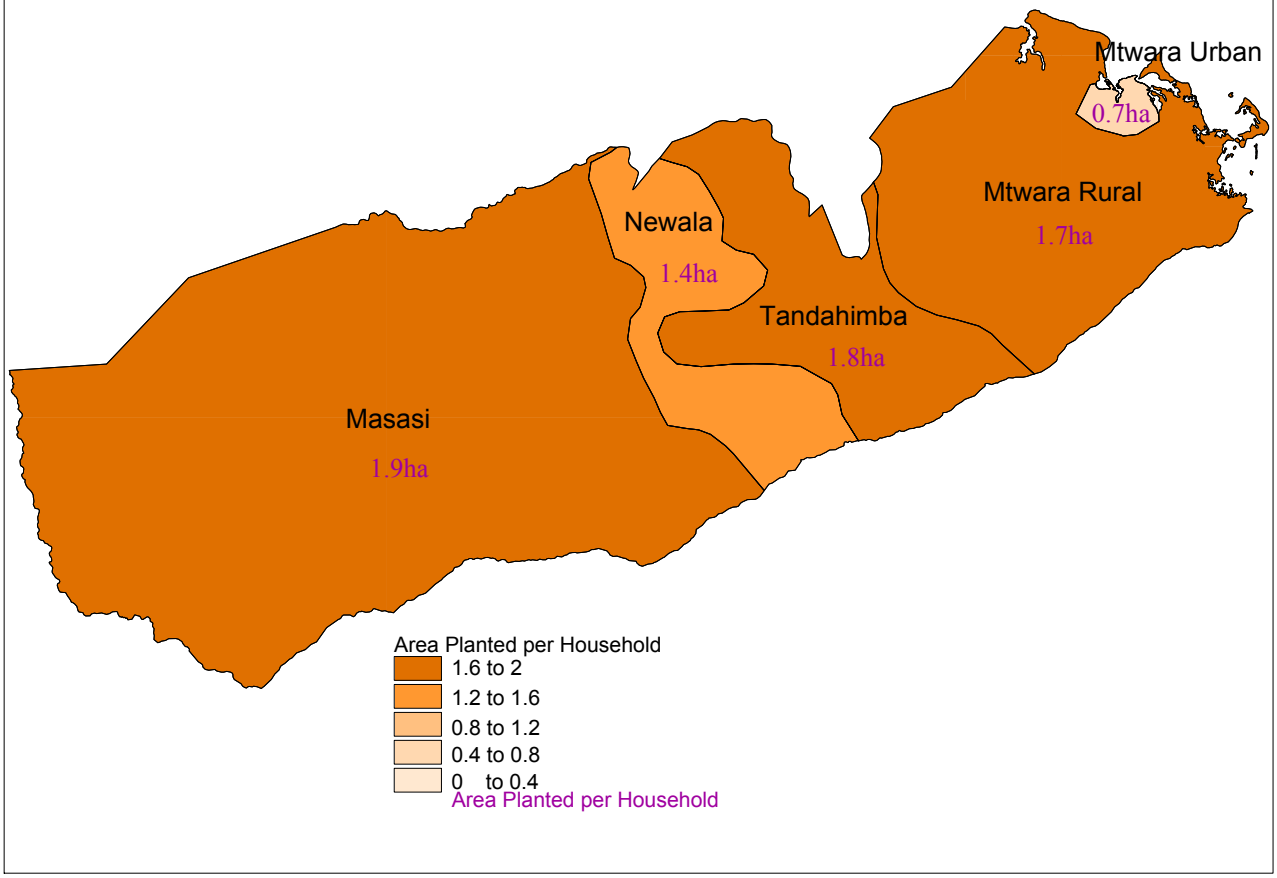


Masasi had the largest area of pigeon peas in the region (7,084 ha, 90.3%) followed by Newala (600 ha, 7.7%), Mtwara rural (141 ha, 1.8%), Mtwara urban (16 ha, 0.2%) and there was no area planted with pegion peas in Tandahimba district. (Map 3.2633). However, the average area planted with pigeon pea per pigeon pea planting household was highest in Masasi (0.09 ha) followed by Newala (0.02 ha), Mtwara urban (0.01 ha) and the rest of the districts had zero average area planted with pigeon pea per pigeon pea planting household. (Chart 3.53 and Map 3.27).

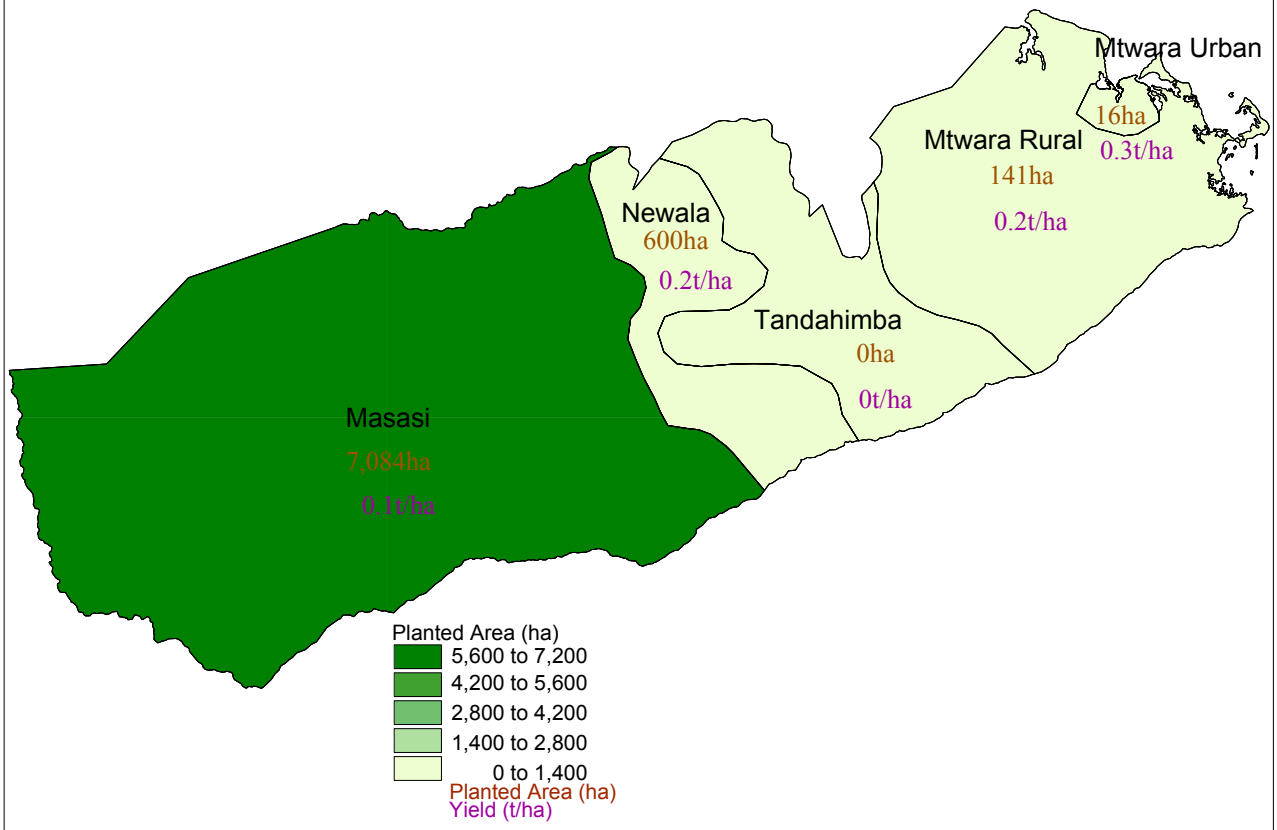
MAP 3.24 MTWARA
Planted Area and Yield of Cashewnuts by District



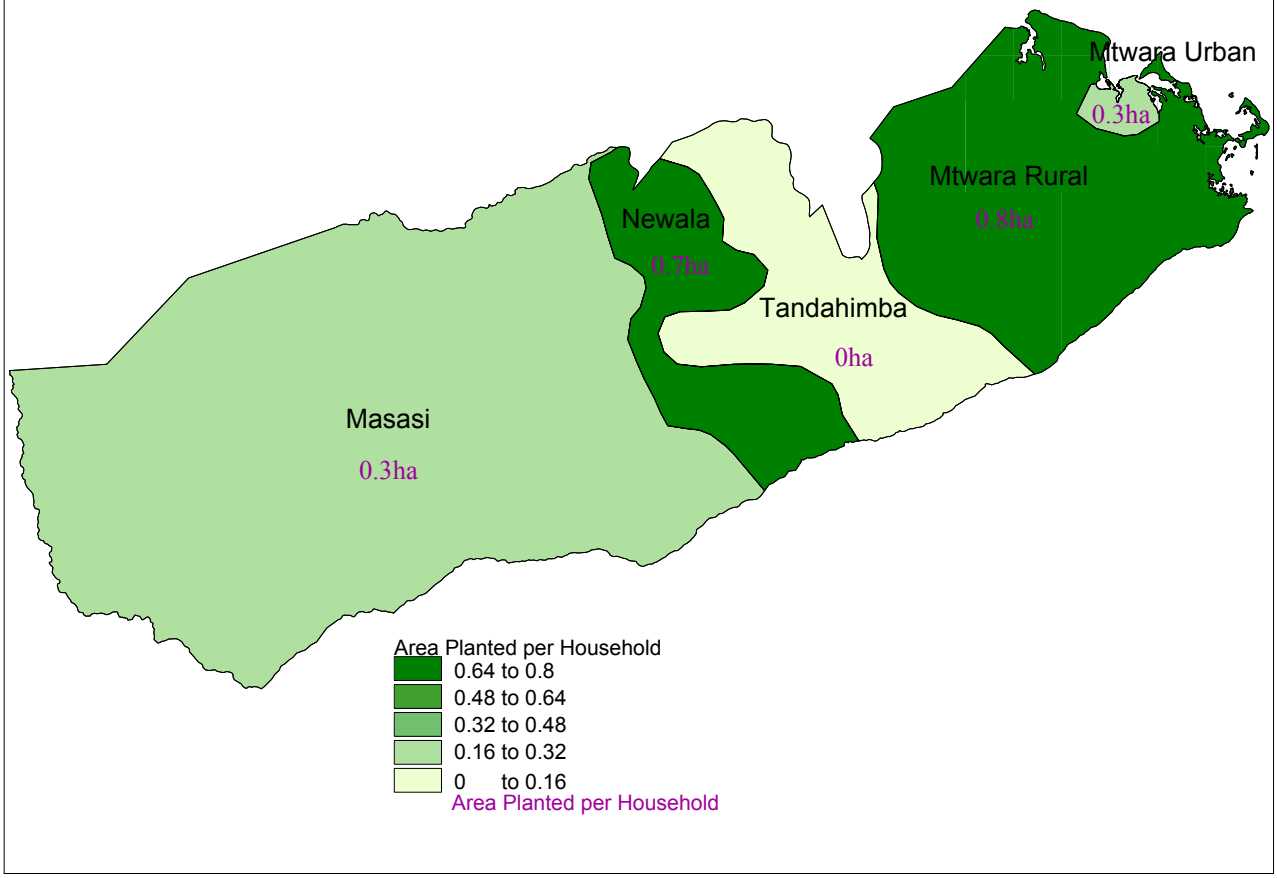
MAP 3.25 MTWARA
Area Planted per Cashewnuts Growing Household by District



MAP 3.26 MTWARA
Planted Area and Yield of Pigeon Peas by District



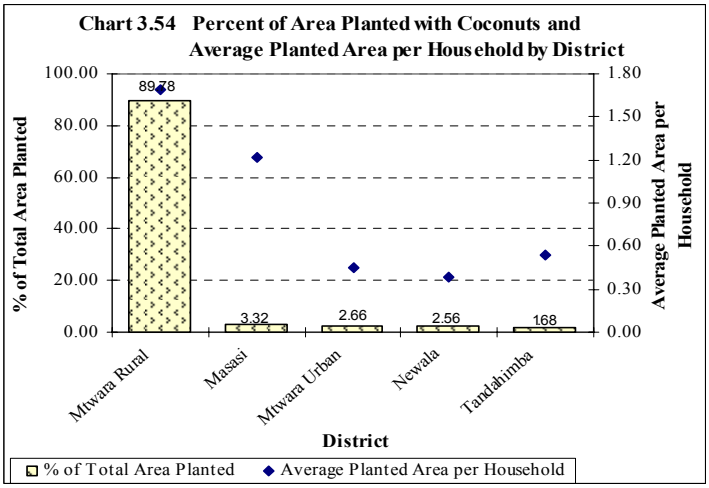
MAP 3.27 MTWARA
Area Planted per Pegion Peas Growing Household by District



3.3. 3. 3 Coconut

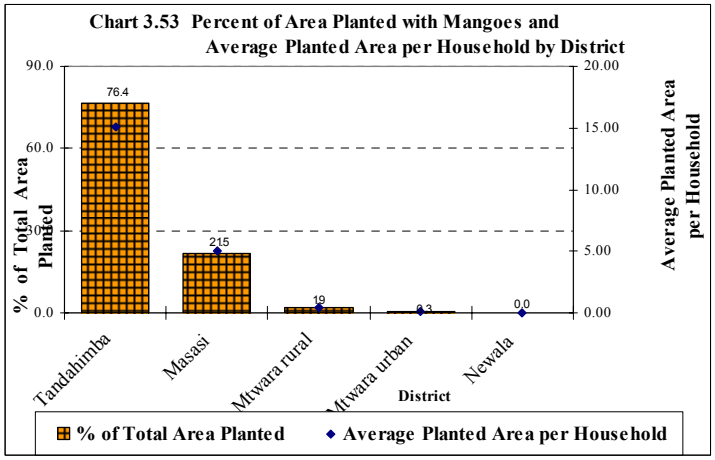
The total production of coconuts by smallholders was 1,931 tonnes. In terms of area planted, coconut was the third most important permanent crop grown by smallholders in the region. It was grown by 4,255 households (1.9% of the total crop growing households). The average area planted with coconut per household was around 1.4 ha per coconut growing household and the average yield obtained by smallholders was 1,017 kg/ha from a harvested area of 1,898 hectares.

Mtwara rural had the largest planted area of coconut in the region (5,339 ha, 89.8%) followed by Masasi (197 ha, 3.3%), Mtwara urban (158 ha, 2.7%), Newala (152 ha, 2.6%) and Tandahimba (100 ha, 1.7%) (Map 3.28). However, the area planted with coconut per coconut growing household was highest in Mtwara rural (1.69 ha), followed by Masasi (1.21 ha), Tandahimba (0.54 ha), Mtwara urban (0.45 ha) and Newala (0.39 ha) (Chart 3.49 and Map 3.29).

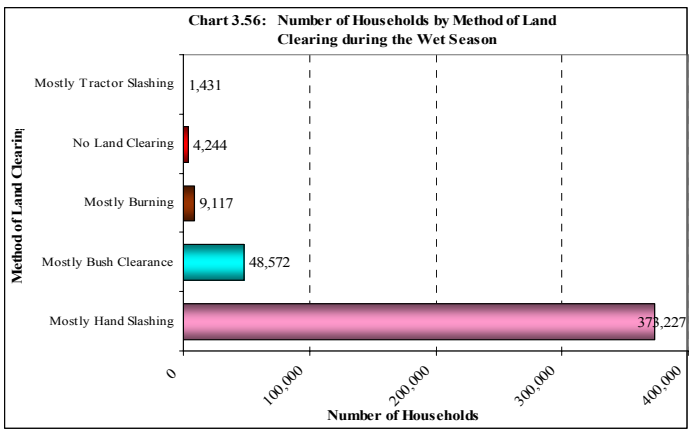


3.3. 3. 4 Mango

The total production of mangoes by smallholders was 313 tonnes. In terms of area planted, mango was the fourth most important permanent crop grown by smallholders in the region. It was grown by 605 households (0.26% of the total crop growing households). The average area planted with mango per household was around 6.29 ha per mango growing household and the average yield obtained by smallholders was 6,803 kg /ha from a harvest area of 46 hectares.



Tandahimba district has the largest area of mangoes in the region (2,906 ha, 76%) followed by Masasi (817 ha, 21%), Mtwara rural (71 ha, 1.9%), Mtwara urban (11 ha, 0.3%) and there was no area planted with mangoes in Newala district. (Map 3.37). Likewise, the average area planted per mango growing household was highest in Tandahimba (15.12 ha), followed by Masasi (4.98 ha), Mtwara rural (0.39 ha), and Mtwara urban (0.15 ha) (Map 3.31). Newala district reported no mango production.

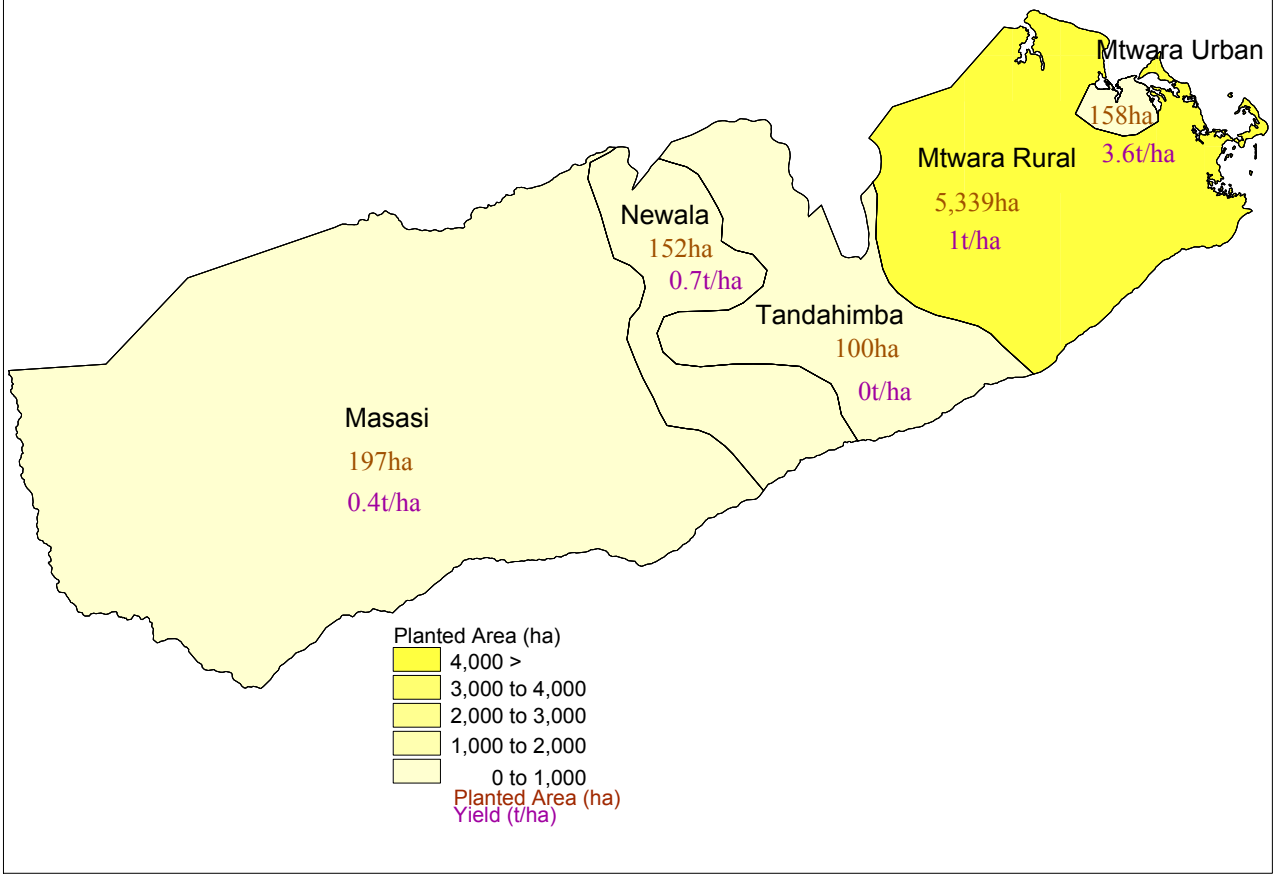


3.3. 4 Input/Implement Use

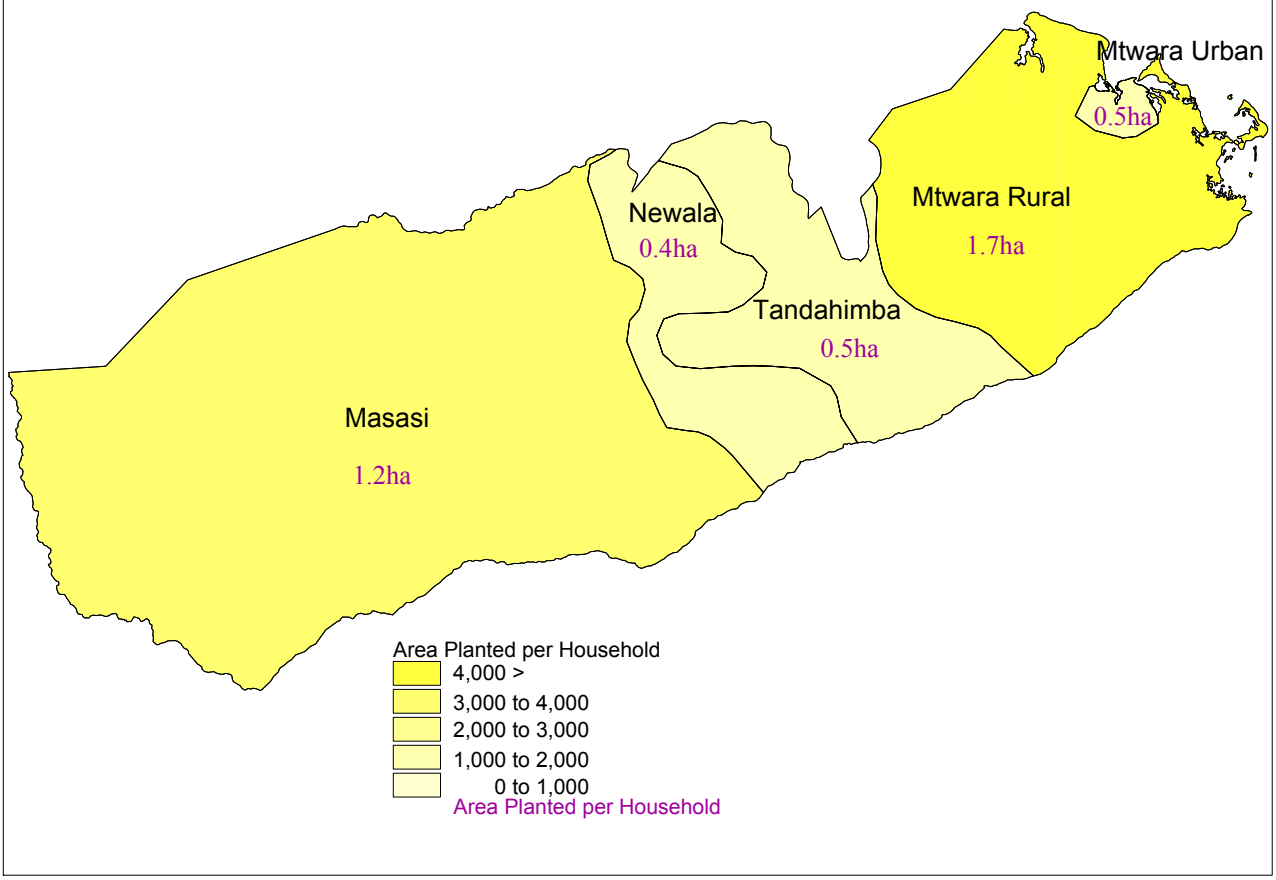
3.3. 4. 1 Methods of Land Clearing

Land clearing is a common pre-tillage operation practiced by most farmers in the region. Land clearing is divided into two categories: bush clearing, which by definition implies either expansion into virgin areas or into

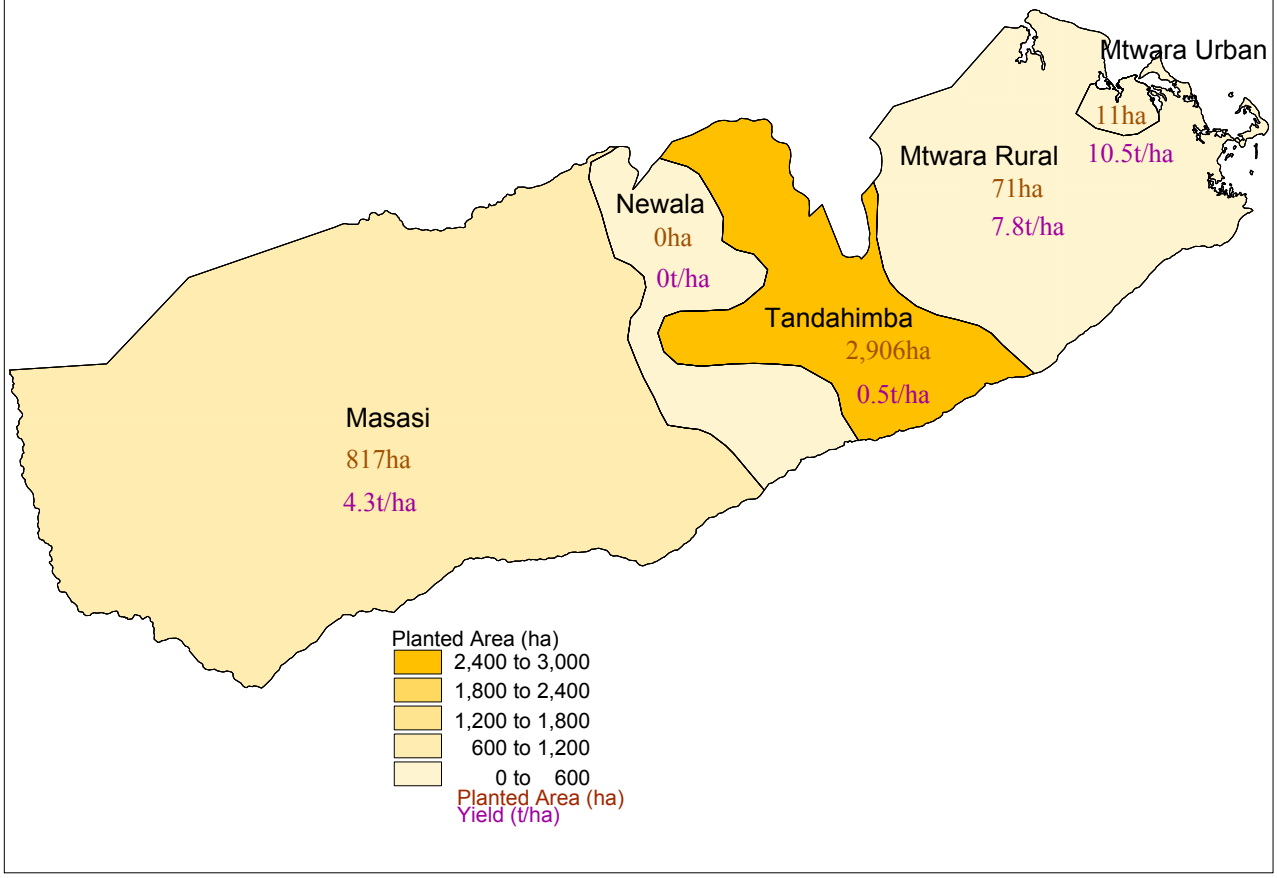
MAP 3.28 MTWARA
Planted Area and Yield of Coconuts by District



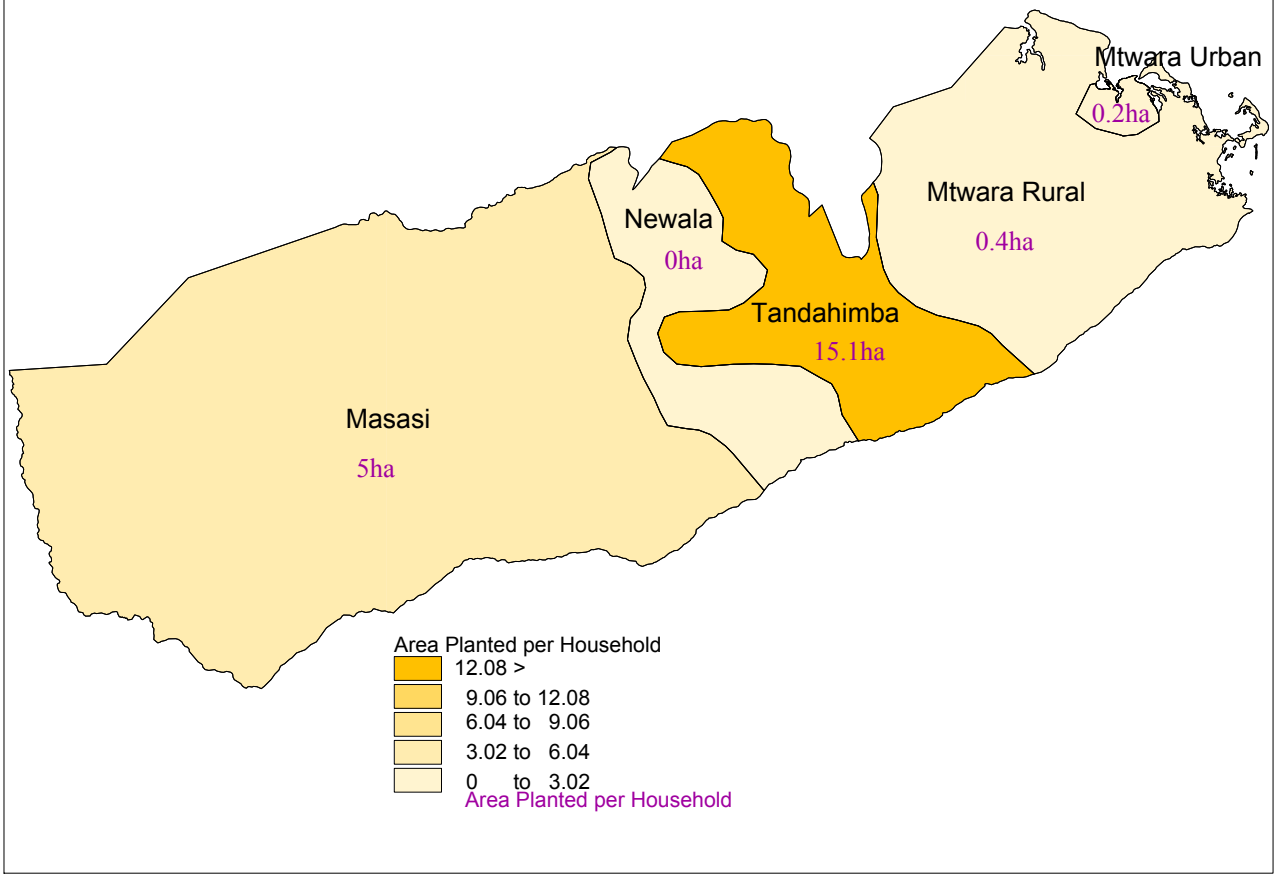
MAP 3.29 MTWARA
Area Planted per Coconuts Growing Household by District



MAP 3.30 MTWARA
Planted Area and Yield of Mango by District



MAP 3.31 MTWARA
Area Planted per Mango Growing Household by District

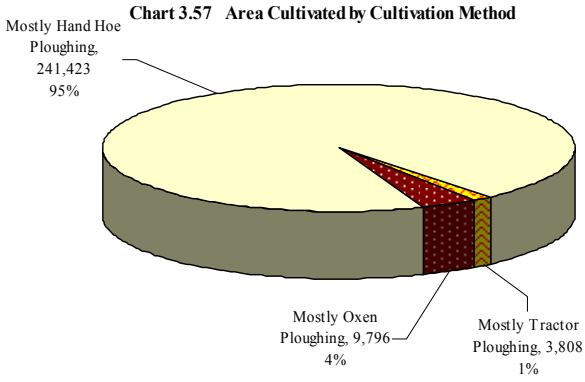


areas which have been left fallow for a long period. The other category, which includes burning, hand slashing or tractor slashing, is normally an annual clearing exercise to remove vegetation growth from the previous season.

3.3. 4. 2 Methods of Soil Preparation

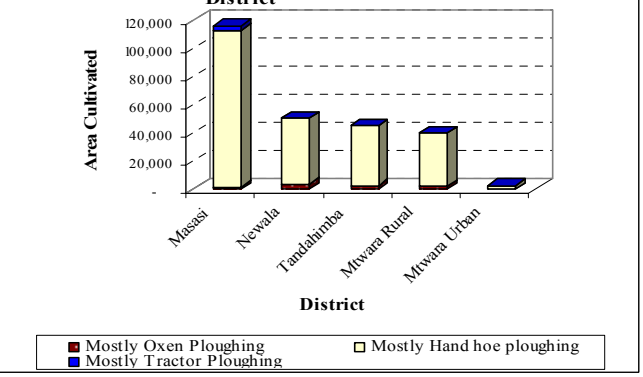
Hand cultivation is the most used method for soil preparation and was used in an area of 241,423 ha which represented 95 percent of the total planted area, followed by ox-ploughing (9,796 ha, 4%) and tractor ploughing (3,808 ha, 1%).

Chart 3.57 Area Cultivated by Cultivation Method



Slightly more hand cultivation was used during dry rainy season at 100 percent against 95 percent for the wet season, whereas, oxen and tractor ploughing was more common in the wet season with 3 percent and 1 percent respectively. The oxen and tractor ploughing were not used in the dry season.

Chart 3.58 Area Cultivated by Method of Cultivation and District



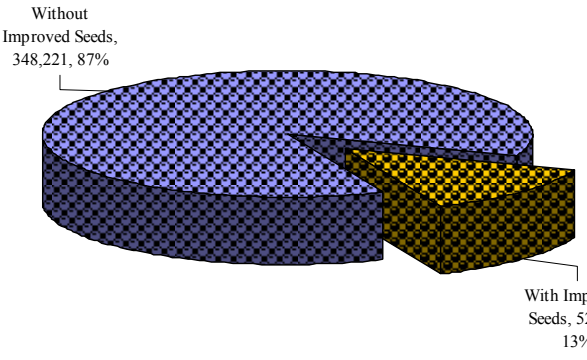
In Mtwara region, Newala district has the largest planted area cultivated with oxen (3,734 hectares, 7.4%) followed by Tandahimba (2,580 ha, 5.7%), Mtwara Rural (2,034 ha, 5.1%), Masasi (1,664 ha, 1.4%) and Mtwara Urban (16 ha, 0.6%).

During the wet season, 80.8 percent of the total area cultivated by using oxen was planted with roots and tubers followed by cereals (16.4%), pulses (2.4%) and oil seeds (0.4%).

3.3. 4. .3 Improved Seed Use

The planted area using improved seeds was estimated at 7,691 ha which represents 3 percent of the total planted with the annual crops and vegetables area. The percentage use of improved seed in the wet season was the same 3 percent, since there was no use of improved seed in the dry season.

Chart 3.59 Planted Area of Improved Seeds - TANGA



Roots and Tubers had the largest planted area with improved seeds (112,932 ha, 44% of the planted area with improved seeds) followed by cereals (106,644 ha, 42%), and Oil seed (19,849 ha, 8%) and Pulses (14,171 ha, 6%) (Chart 3.60). However, the use of improved seed in cereals and roots and tubers is much greater than in other crop types (48% and 34% respectively) (Chart 3.61).

Chart 3.60 Planted Area with Improved Seed by Crop Type

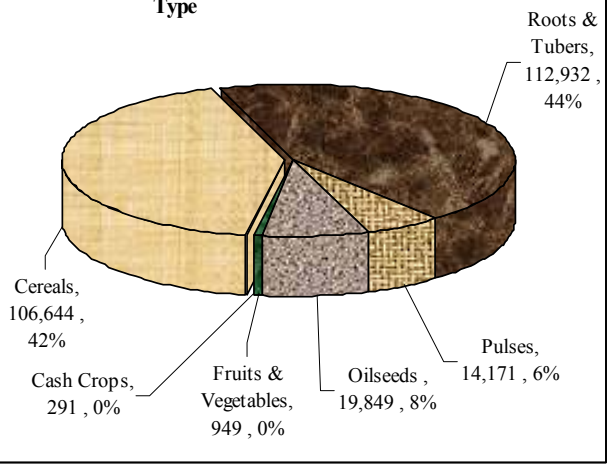
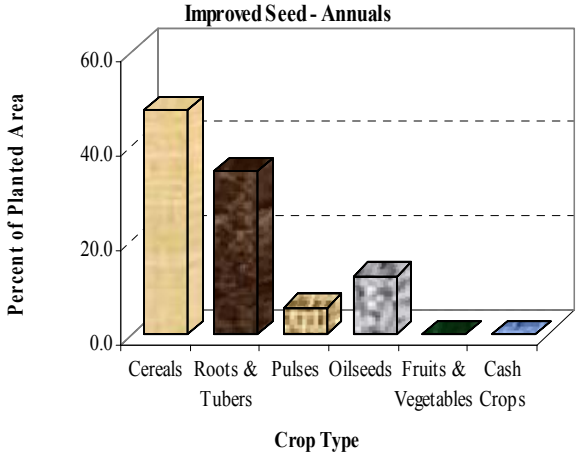


Chart 3.61 Percentage of Crop Type Planted Area with Improved Seed - Annuals



3. 3. 4. 4 Fertilizer Use

The use of fertilisers on annual crops is very small with a planted area of only 57,966 ha (15.6% of the total planted area in the region). The planted area without fertiliser for annual crops was 370,460 hectares representing 86.5 percent of the total planted area with annual crops. Of the planted area with fertiliser application, farm yard manure was applied to 40,772 ha which represents 9.5 percent of the total planted area (70.3% of the area planted with fertiliser application in the region). This was followed by compost (12,226 ha, 21.1%). Inorganic fertilizers were used on a very small area and represented only 8.6 percent of the area planted with fertilizers.

Chart 3.62 Area of Fertiliser Application by Type of Fertiliser

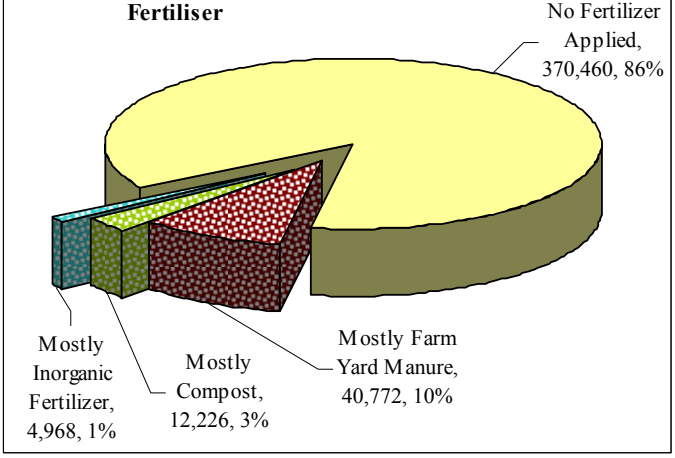
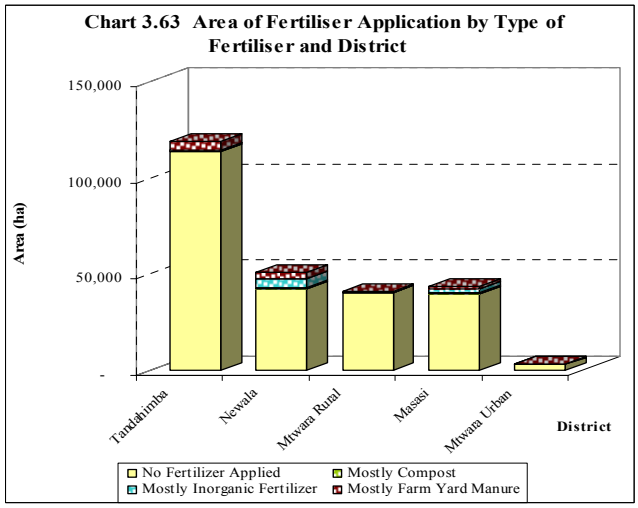


Chart 3.63 Area of Fertiliser Application by Type of Fertiliser and District



The highest percentage of the area planted with fertilizer (all types) was in Tandahimba district (47.8%) followed by Newala (17.7%), Mtwara Rural (16.8%), Masasi (16.6%), and Mtwara urban (1.1%) (Table 3.9 and Charts 3.62 and 3.63

Most annual crop growing households do not use any fertiliser (approximately 543,109 households, 94.2%) (Map 3.32). The percentage of the planted area with applied fertilizer was highest for cereal (65% of the area planted with these cereal during the wet season had an application of fertilizers). This was followed by roots and tubers (32%), oil seeds (2%) and pulses (1%). There was no fertilizer application in cash crops (Table 3.10).

Table3.9 Planted Area by Type of Fertiliser Use and District - Wet and Dry Rainy Season

District	Fertilizer Use				No Fertilizer Applied
	Mostly Farm Yard Manure	Mostly Compost	Mostly Inorganic Fertilizer	Total applied	
Tandahimba	4,929	520	189	5,638	113,222
Newala	3,345	869	4,778	8,992	41,813
Mtwara Rural	486	459	30	976	39,762
Masasi	1,260	794	1,755	3,809	39,315
Mtwara Urban	89	41	41	171	2,707
Total	10,110	2,683	6,792	19,585	236,819

Table 3.10: Number of Crop Growing Households and Planted Area by Type of Fertilizer Use and District – Wet Season

	Fertilizer Use									
	Mostly Farm Yard Manure		Mostly Compost		Mostly Inorganic Fertilizer		No Fertilizer Applied		Total	
Districts	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area
Mtwara rural	945	486	618	459	100	30	1,473	471	3,136	1,447
Newala	7,259	3,345	2,134	869	7,729	4,778	120,235	41,622	137,357	50,614
Masasi	1,940	1,260	1,429	794	970	1,755	238,133	113,222	242,471	117,031
Tandahimba	8,126	4,929	1,336	520	286	189	88,323	39,613	98,071	45,251
Mtwara urban	193	89	100	41	99	41	5,587	2,707	5,979	2,878
Total	18,463	10,110	5,617	2,683	9,183	6,792	453,751	197,636	487,015	217,221

3.3. 4. 4.1 Farm Yard Manure Use

The total planted area applied with farm yard manure in Mtwara region was 10,110 ha. The number of households that applied farm yard manure in their annual crops during the wet season was 18,463 and it was applied to 10,110 ha representing 52.1 percent of the total area planted during that season (Table 3.10). Cereals had the highest percent of the total area planted with applied farm yard manure (55%), followed by roots and tubers (40%), pulses (2%), Oil seeds (2%) and fruit and vegetables (1%).

Chart 3.64 Planted Area with Farm Yard Manure by Crop Type - MTWARA

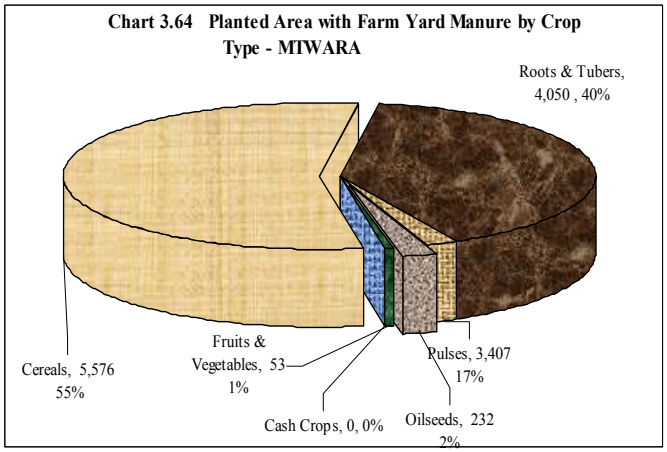
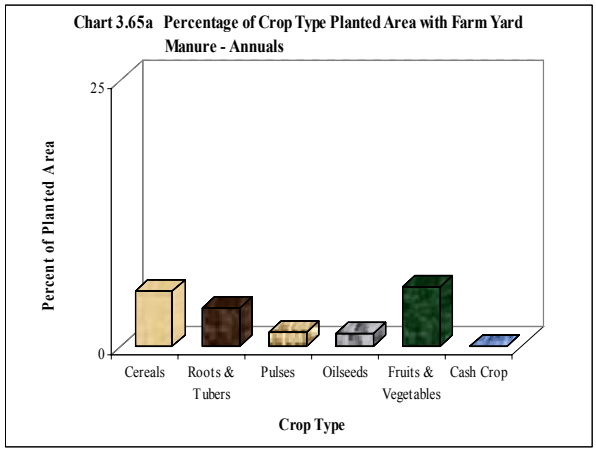


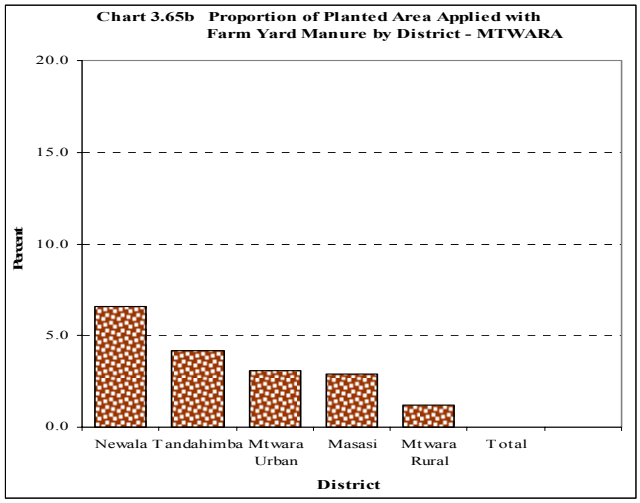
Chart 3.65a Percentage of Crop Type Planted Area with Farm Yard Manure - Annuals



However, fruit and vegetables had the highest percent of the planted area with farm yard manure (5.5% of the total area of fruit and vegetables in Mtwara). This was followed by cereals (5.2%), roots and tubers (3.5%), pulses (1.4%) and oil seeds (1.2%) (Chart 3.64).

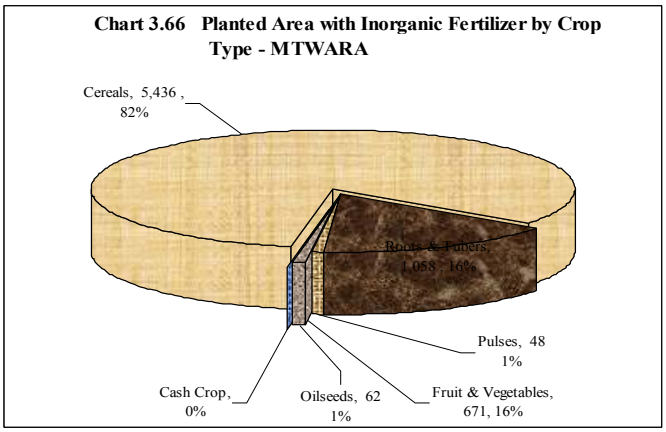
Farm yard manure is mostly used in Newala (6.6% of the total planted area in the district), followed by Tandahimba (4.1%), Mtwara Urban (3.1%), Masasi (2.9) and Mtwara Rural (1.2%) (Chart 3.65b).

For permanent crops, most farm yard manure is used for the production of tomatoes (10%), followed by apples (31.8%) and coffee (25.7%).

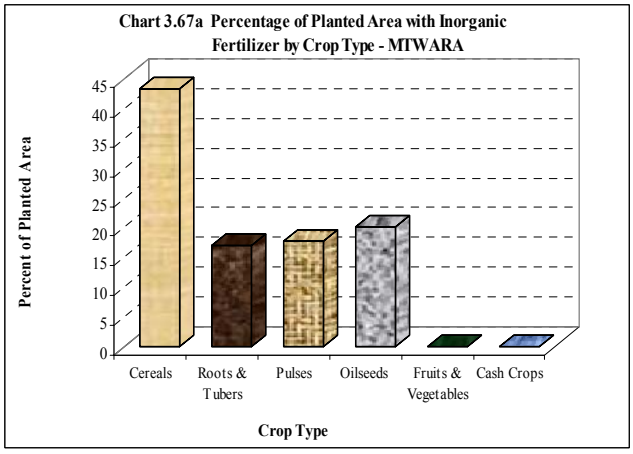


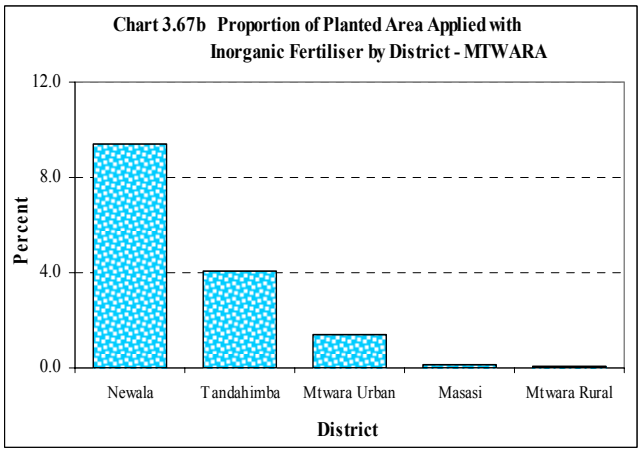
3.3. 4. 4. 2 Inorganic Fertiliser Use

The total planted area applied with inorganic fertilisers in Mtwara region was 6,603 ha which represents 2.58 percent of the total planted area with annuals in the region and 34.0 percent of the total planted area with fertiliser. The number of households that applied inorganic fertilizer on their annual crops during the wet season was 9,183 and it was applied to 6,792 ha representing 3.1 percent of the total area planted during that season (Table 3.10). The largest area applied with inorganic fertilizers was on cereals (43% of the total area applied with inorganic fertilizers), followed by Oilseeds (20%), pulses (18%) and roots and tubers (17%) (Chart 3.66). However, the proportion of fruit and vegetables with inorganic fertilizers was 12.7 percent higher than other crop types, followed by roots and tubers (1.1%), Pulses (0.8%) and cereals (0.3%) (Chart 3.67a).



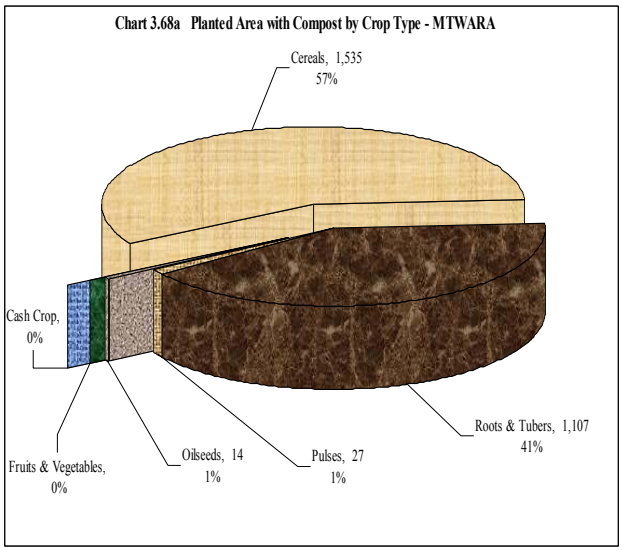
Inorganic fertiliser is mostly used in Newala (9.4% of the total planted area in the district), followed by Mtwara Rural (2.1%), Masasi (1.5%), Mtwara Urban (1.4%) and Tandahimba (0.4%). (Chart 3.67b). In permanent crops inorganic fertiliser were used on tea (5.2%), followed by sugarcane (1.1%), coconut (0.3%), mangoes (0.15%) and oranges (0.14%).



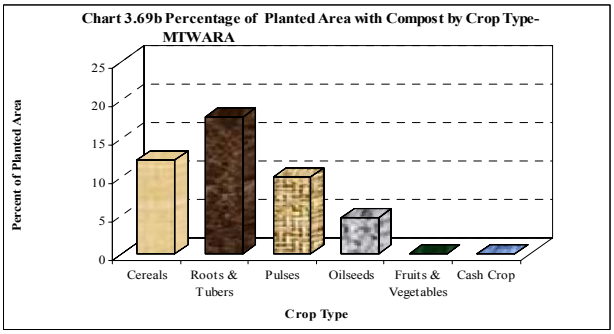


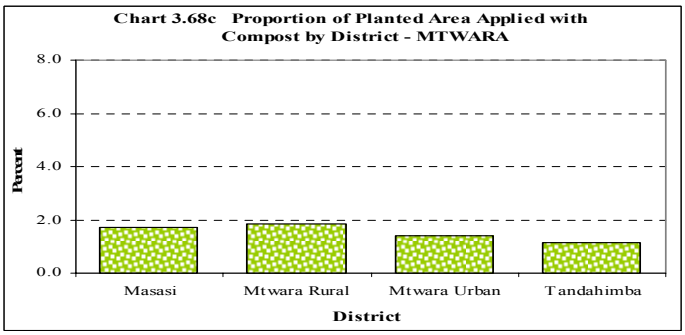
3.3. 4. 4.3 Compost Use

The total planted area applied with compost was 2,683 ha which represents only 1.0 percent of the total planted area with annual crops in the region and 14 percent of the total planted area with fertiliser in the region. The number of households that applied compost manure on th eir annual crops during the wet season was 5,617 and it was applied to 2,683 ha representing 1.0 percent of the total area planted (Table 3.10 and Chart 3.68a). The proportion of area applied with compost was not very low for each type of crop (5 to 10%); however the distribution of the total area using compost manure shows that 57.2 percent of this area was cultivated with cereals, followed by roots & tubers (41.2%), pulses (1%), and oilseeds (0.5%)(Chart 3.68b).



Compost is mostly used in Masasi (1.8% of the total planted area in the district), and this is closely followed by Newala (1.7%), Mtwara Urban (1.4%), Mtwara rural (1.1%) and Tandahimba (0.4%). (Chart 3.67b).

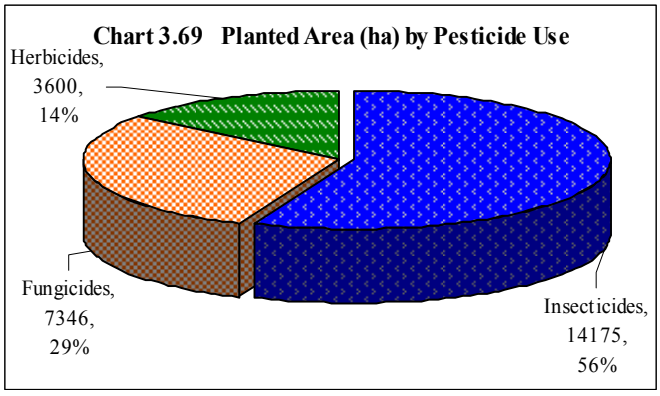




In permanent crops, compost was mostly used to durian (100.0%) followed by cloves (8.6%), pears (7.8%), avocado (5.3%) cinnamon (4.7%) and mango (4.0%).

3.3. 4. 5 Pesticide Use

Pesticides are chemicals used for controlling insects, diseases and weeds. This section analyses the use of these chemicals by smallholders on both annual and permanent crops in the region. Pesticides were applied to a planted area of 25,121 ha of annual crops and vegetables.



Insecticides are the most common pesticide used in the region (56% of the total area applied with pesticides). This was followed by fungicides (29%) and herbicides (14%) (Chart 3.69).

3.3. 4. 5.1 Insecticide Use

The planted area applied with insecticides was estimated at 6,259 ha which represented 2.4 percent of the total planted area for annual crops and vegetables.

Chart 3.70 Planted Area Applied with Insecticides by Crop Type

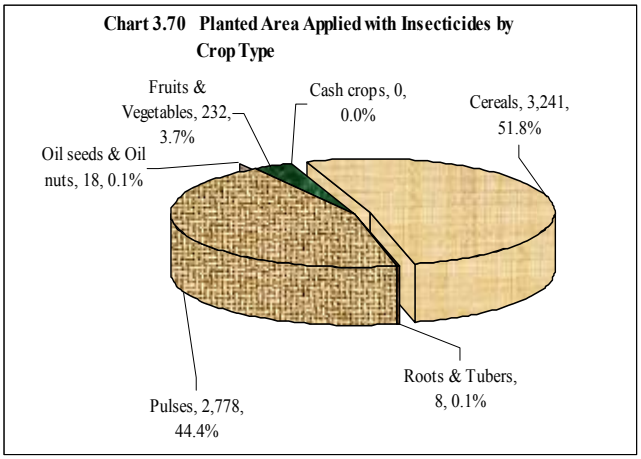
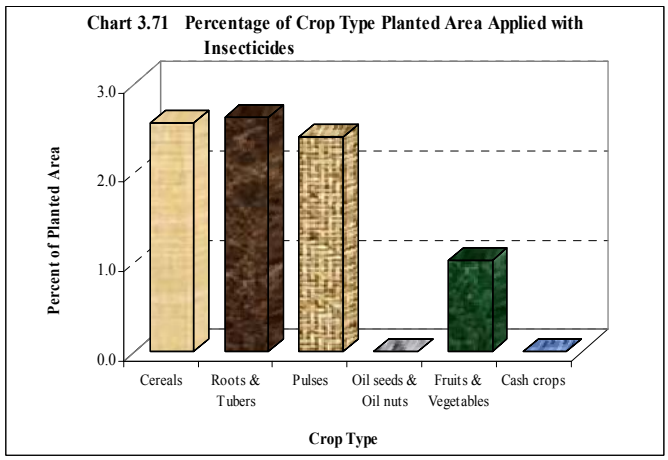


Chart 3.71 Percentage of Crop Type Planted Area Applied with Insecticides

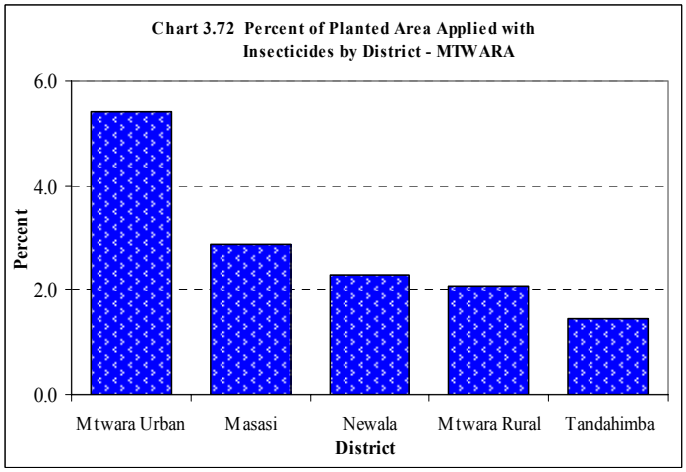


Cereals had the largest planted area applied with insecticides (3,241 ha, 51.8% of the total planted area with insecticides) followed by pulses (2,778 ha, 44.4%), fruit and vegetables (232 ha, 3.7%), roots and tubers (8 ha, 0.1%), but insecticides were not applied on cash crops and oil seed (Chart 3.70). However, t he percent of insecticides used in cereal, roots and tubers and pulses is much greater than in other crop types (2.6%, 2.6% and 2.4% respectively), while only 1.0 percent of fruits and vegetables crops were applied with insecticides (Chart 3.71).

There was no annual Crops used insecticide with more than 50 percent.

Mtwara Urban had the highest percent of planted area with insecticides (5.4% of the total planted area with annual crops in the district). This was closely followed by Masasi (2.9%) then Newala (2.3%) and Mtwara rural (2.1%). The smallest percentage use was recorded in Tandahimba (1.5%) (Chart 3.72).

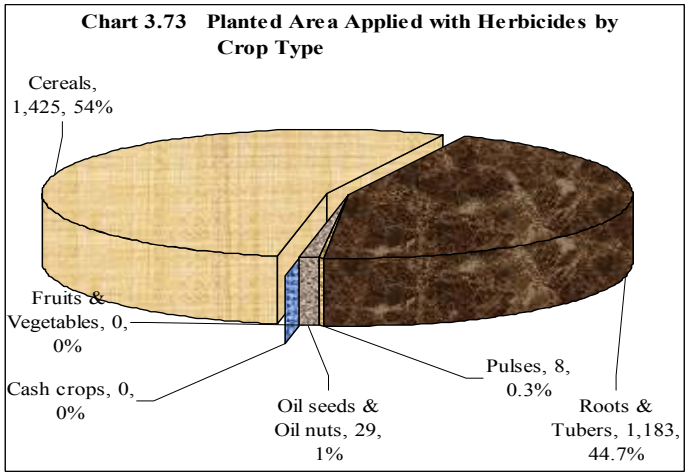
Chart 3.72 Percent of Planted Area Applied with Insecticides by District - MTWARA



3.3. 4. 5 .2 Herbicide Use

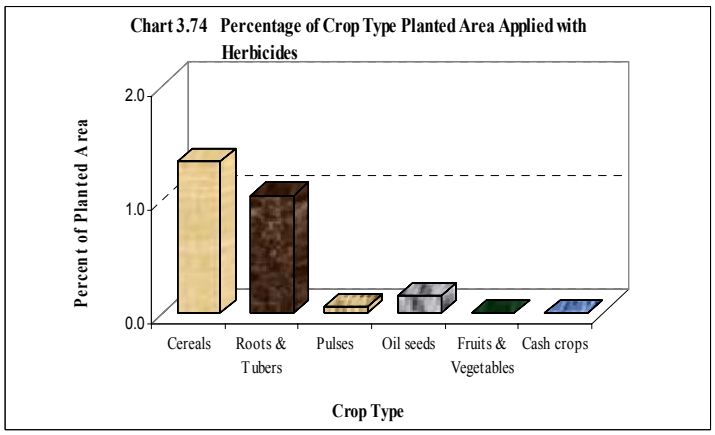
The planted area applied with herbicides was 2,645 ha which represented 1.0 percent of the total planted area annual crops and vegetables. Cereals had the largest planted area applied with herbicides (1,425 ha, 54%) followed by roots and tuber (1,183 ha, 44.7%), oil seed (29 ha, 1%) and pulses (8 ha, 0.3%). There was no area planted with fruits and vegetables as well as cash crops applied with herbicides. (Chart 3.73).

Chart 3.73 Planted Area Applied with Herbicides by Crop Type



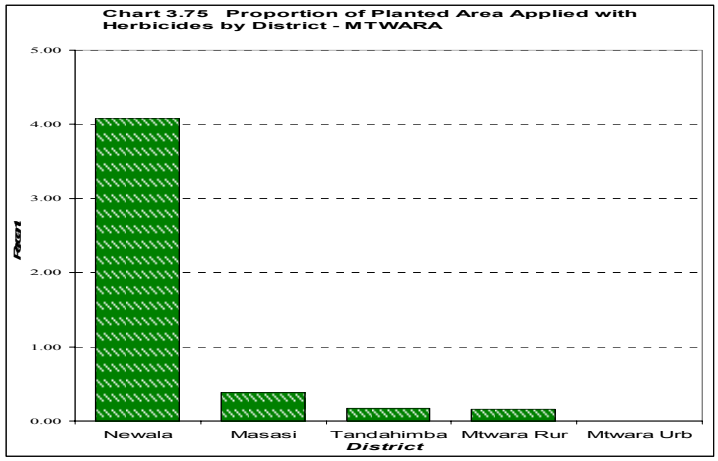
However, the percent of herbicide use on creal and roots and tubers was much greater than in other crop types (1.3% and 1.0% respectively) while only 0.1 percent of pulses and oil seeds was applied with herbicides (Chart 3.74). The top six annual crops with highest percentage use of herbicides in terms of planted area were maize (1.5%), Sorghum (1.2%), Cassava (1.0%), paddy (0.9%), groundnuts (0.2%) and bambaranut (0.1%).

Newala had the highest percent of planted area with herbicides (4.1% of the total planted area with annual crops in the district). This was followed by Masasi (0.4%) then Tandahimba (0.2%) and Mtwara rural (0.2%). There was no planted area recorded in Mtwara urban district (Chart 3.75).

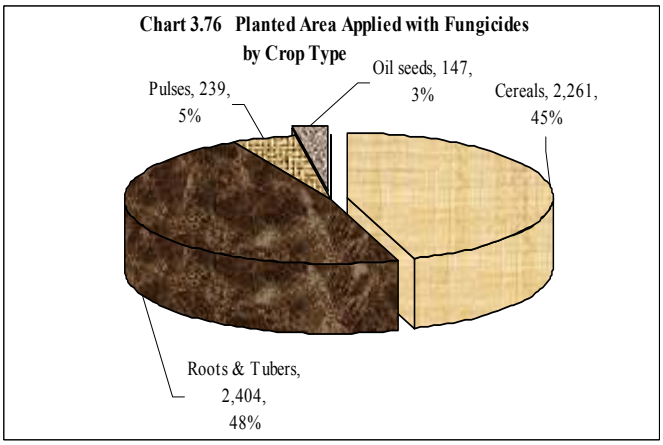


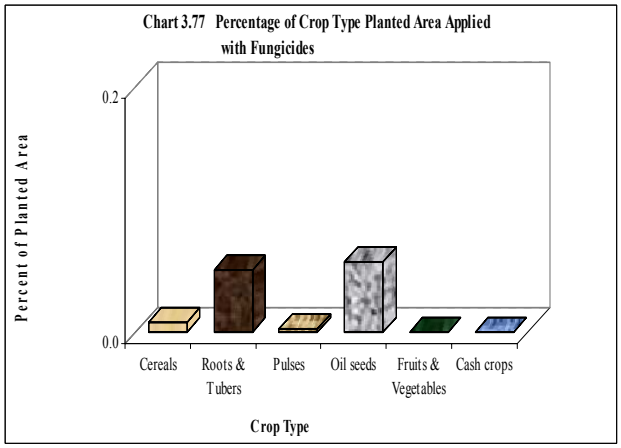
3.3. 4. 5.3 Fungicide Use

The planted area applied with fungicides was 5,051 ha which represented 1.9 percent of the total area planted with annual crops and vegetables. The use of fungicides was in the wet season and no fungicides were applied in the dry season. Roots and tubers (2,404 ha, 48%) had the largest planted area applied with fungicides, followed by cereals (2,261 ha, 45%), pulses (239 ha, 5.0%) and oil seeds (147 ha, 3%) (Chart 3.76).



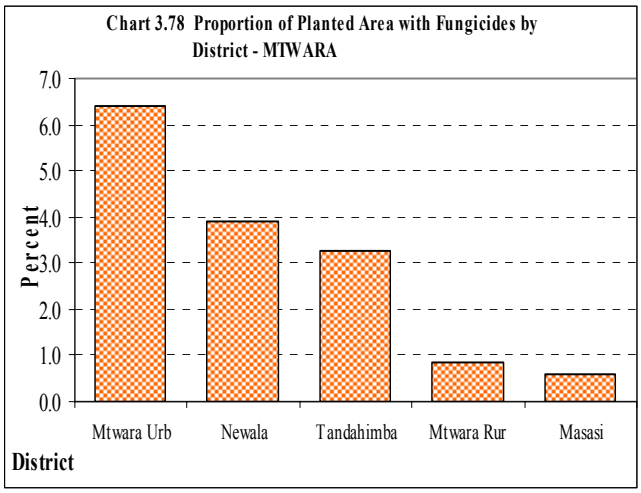
However, the percentage use of fungicide in oil seeds and roots and tubers was much greater than in other crop types (0.057% and 0.050% respectively), while only 0.008 percent of cereals and 0.003 percent of pulses were applied with fungicides (Chart 3.77).





Annual crop with more than 40 percent fungicide use was only castor seed (100%).

Mtwara urban had the highest percent of planted area with fungicides (6.4% of the total planted area with annual crops in the district). This was closely followed by Newala (3.9%) and Tandahimba (3.3%). The smallest percentage use was recorded in Mtwara rural district (0.9%) and Masasi district (0.6%) (Chart 3.78).



3.3. 4. 6 Harvesting Methods

The main harvesting method for cereals was reported to be by hand. Very small amounts of maize (0.8%) and sorghum (0.2%) were harvested by draft animals and sorghum (0.2%) was harvested by machine. All other cereals and annual crops were harvested by hand.

3.3. 4.7 Threshing Methods

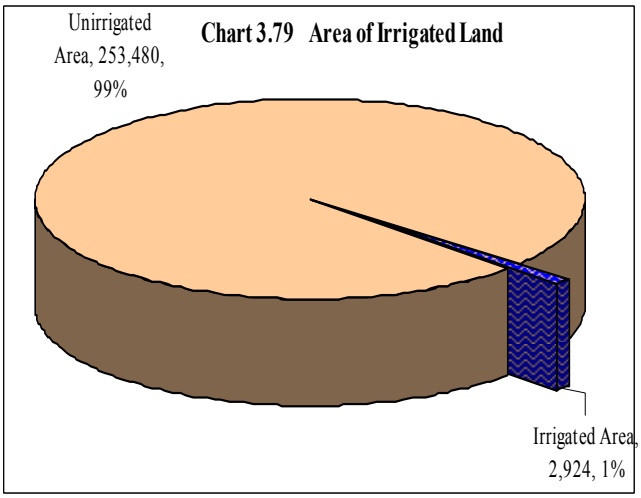
Hand threshing was the most common method used, with 87 percent of the total area planted with cereals during the wet season being threshed by hand. Draft animals, human powered tools and engine driven machines were used on crops harvested from 0.2 percent, 2.1 percent and 0.1 percent of the total planted area respectively.

3.3.5 Irrigation

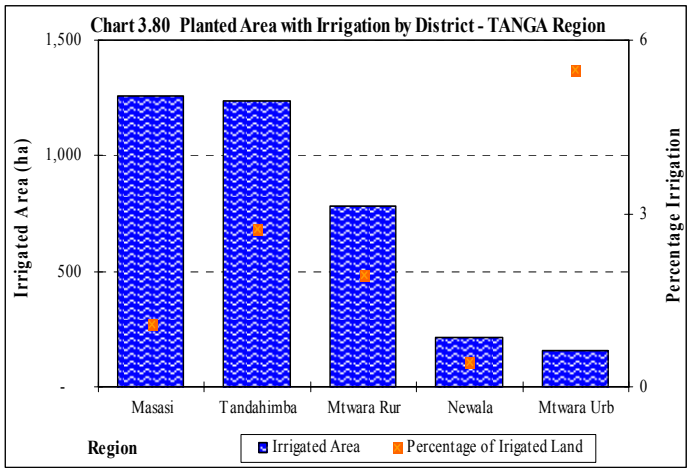
Water is the limiting factor to crop production in the majority of areas in Tanzania and without water most other agricultural practices applied to crops do not result in significant increases in yields. This section deals with the area under irrigation by different crops and the means by which water was extracted from the source and applied to the field.

3.3.5.1 Area Planted with Annual Crops and Under Irrigation

In Mtwara region, the area of annual crops under irrigation was 2,924 ha representing 1.1 percent of the total area planted (Chart 3.79). The area under irrigation during the wet season was 2,924 ha accounting for 1.1 percent of the total area under irrigation. Some crops, especially vegetables, were predominantly grown in the wet season with irrigation. In the wet season, 46 percent of the area planted with vegetables was irrigated, whilst there was no crop irrigated in the dry season.

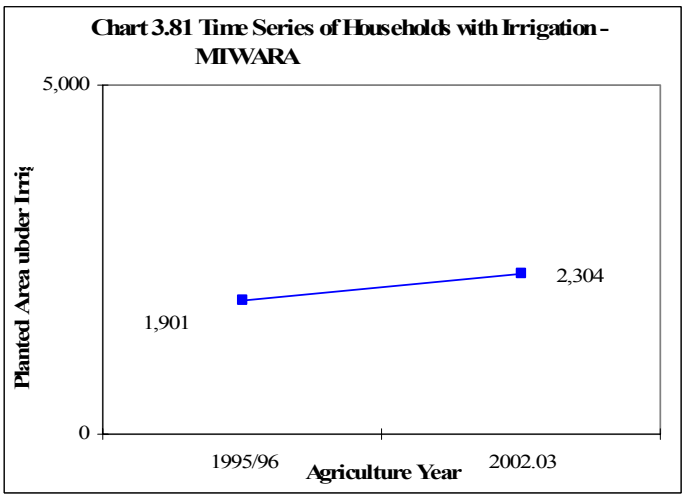


The district with the largest planted area under irrigation with annual crops was Masasi (1,257 ha, 34.5% of the total irrigated planted area with annual crops in the region). This was closely followed by Tandahimba with (1,237 ha, 33.9%) and then Mtwara rural (784 ha, 21.5%), Newala (214, 5.9%) and Mtwara Urban (158, 4.3%). When expressed as a percentage of the total area planted in each district, Mtwara urban had the highest with 5.5 percent of the planted area in the district under irrigation. This was followed by Tandahimba (2.7%), Mtwara rural (1.9%), Masasi (1.1%) and Newala (0.4%) (Chart 3.80 and Map 3.33).



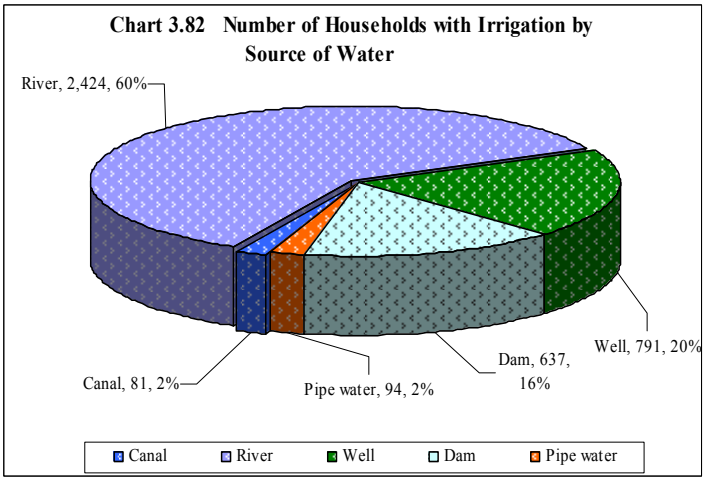
Of all the different crops and in terms of proportion of the irrigated planted area, Okra was the most irrigated crops with 65 percent irrigation followed by pumpkins (63%), tomatoes (55%) and egg plant (32%).

In terms of crop type, the largest area under irrigation was cereals was 1,328 ha (46% of the total area under irrigation), followed by and tubers with 1,014 ha (35%), fruit and vegetables (439 ha, 15%), pulses (77 ha, 3%) and oil seeds (67 ha, 2%). All of the irrigation on cereals was applied to paddy, maize and sorghum.



The area of fruit and vegetables under irrigation was 439 ha which represents 46 percent of the total planted area with fruit and vegetables. Tomatoes, pumpkins and okra were the most irrigated crops. Irrigation was not used on annual cash crops.

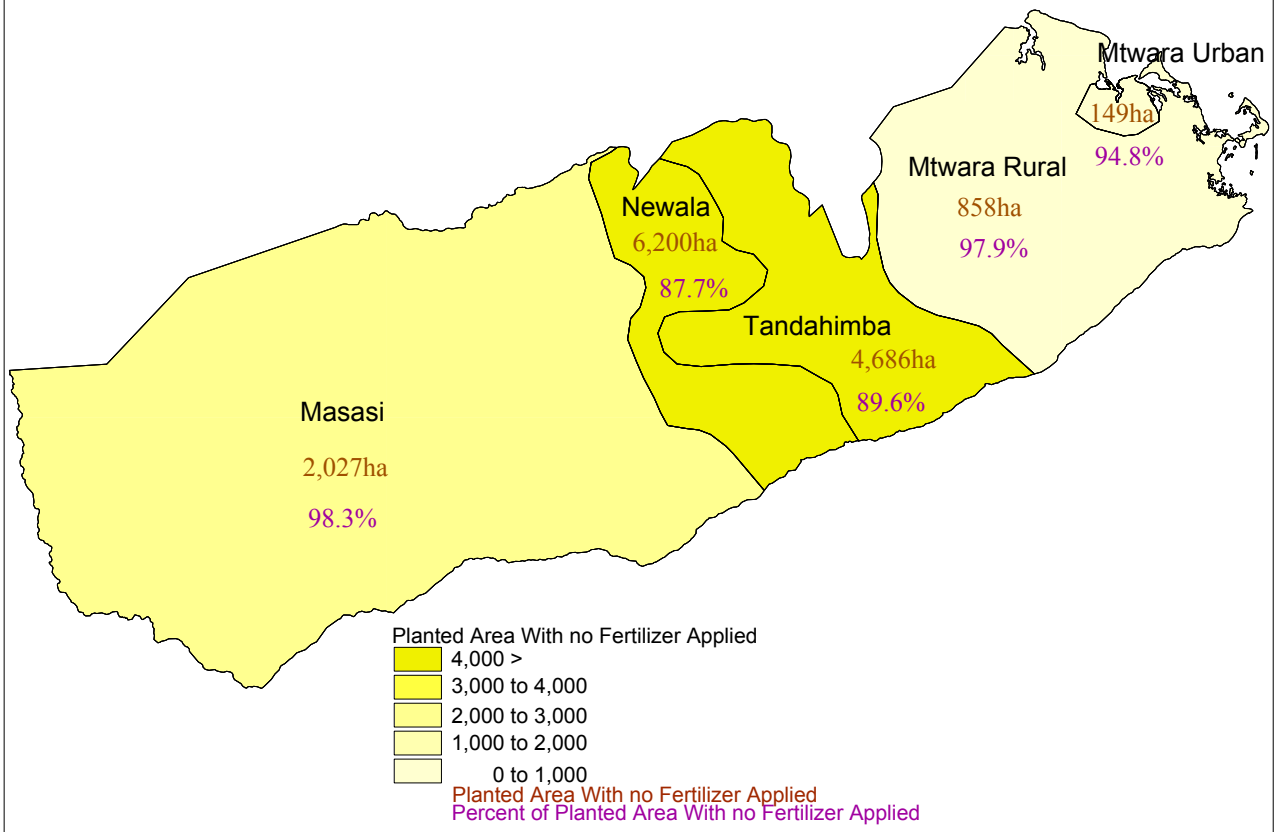
The Planted area with irrigation in Mtwara region appears to have increased over the 10 year intercensal period from 1,901 to 2,304 hectares. This may not be statically significant due to the small number of households sampled with irrigation.



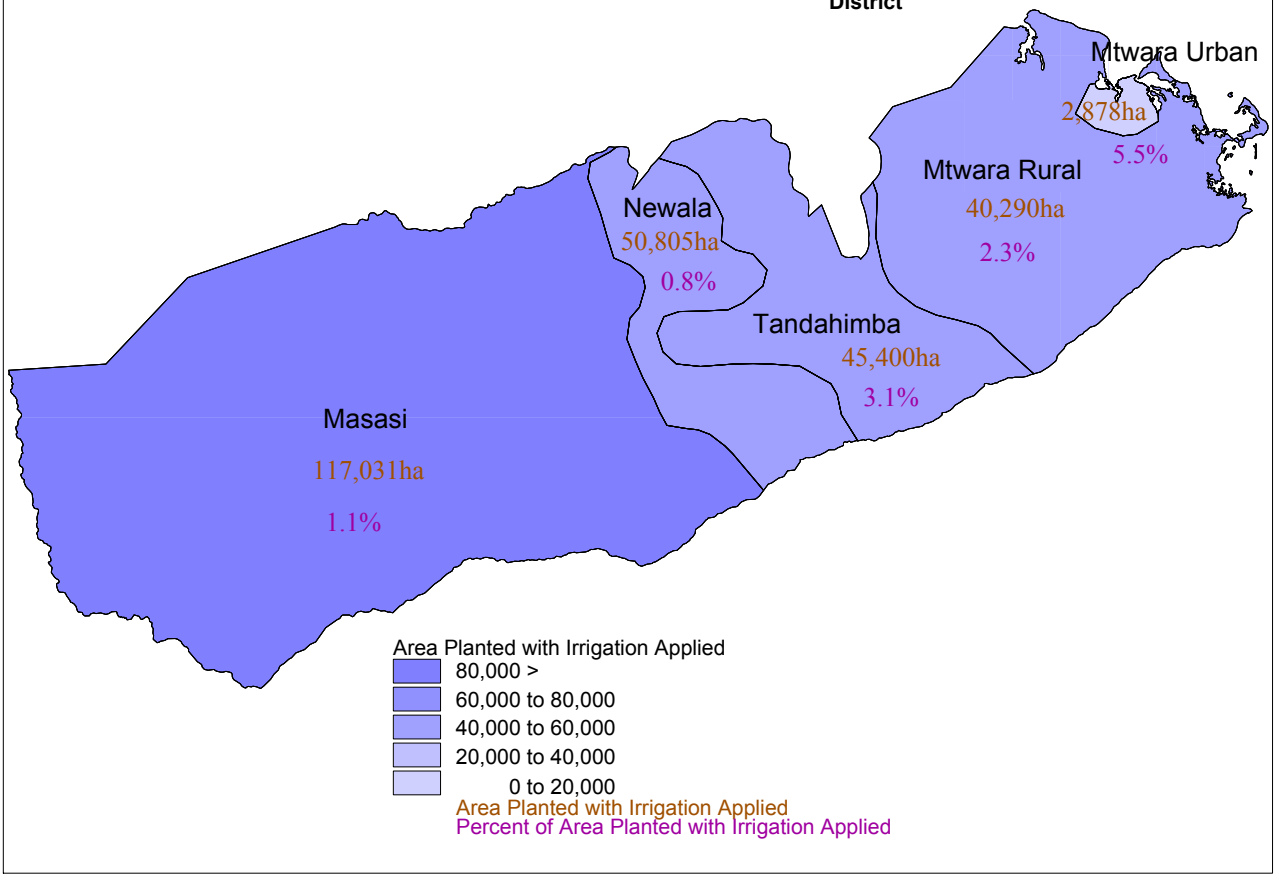
3.3. 5.2 Sources of Water Used for Irrigation

The main source of water used for irrigation was the river (60% of households with irrigation). This was followed by wells (20%) and dams (16%). There was no households using water from boreholes and the proportions of households that used pipe water and canals as sources of water for irrigation were very few (2.3% and 2.0% respectively). Most households practicing irrigation in Mtwara rural (100%) and Masasi (100%) get their irrigation water from dams and piped water, respectively.

MAP 3.32 MTWARA
Planted Area and Percent of Planted Area with No Application of Fertilizer by District

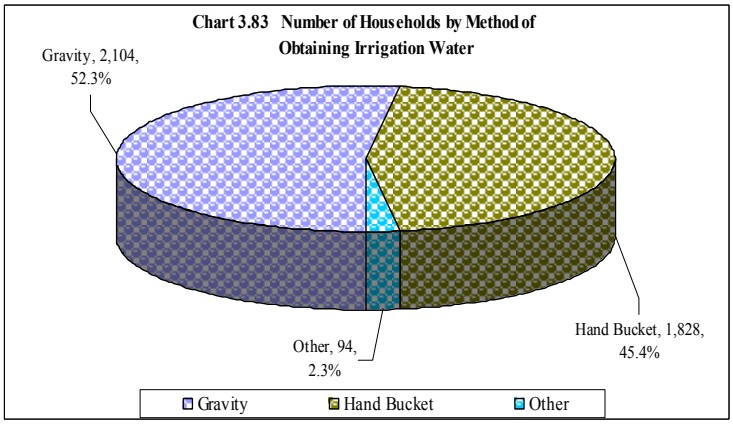


MAP 3.33 MTWARA
Area Planted and Percent of Total Planted Area with Irrigation by District



3.3.5.3 Methods of Obtaining Water for Irrigation

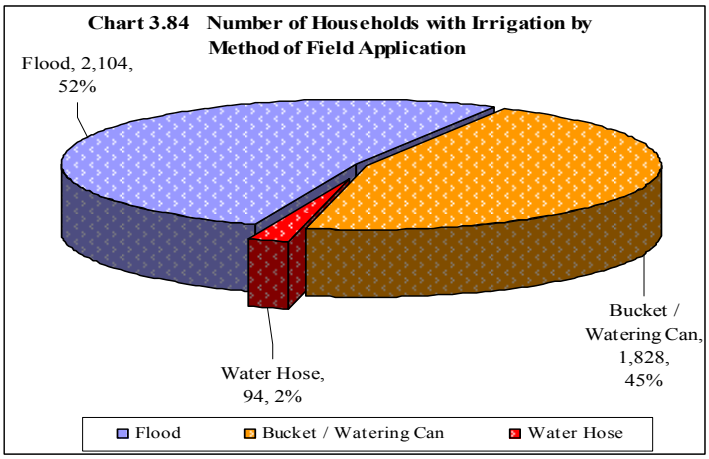
Gravity was the most common method getting water for irrigation with 52.3 percent of households using this method. This was closely followed by hand bucket with 45.4 percent of households. The remaining methods were of minor importance (Chart 3.83).



Gravity was used by all households with irrigation in Tandahimba. Hand bucket was more common in Masasi with 60.7 percent of households using the method to get water for irrigation, followed by Mtwara rural (34.9). Although the method of obtaining irrigation water by hand bucket was the most common method in three districts, Newala districts used other methods apart from gravity and hand bucket for obtaining water.

3.3. 5. 4 Methods of Water Application

Most households used flooding (52% of households using irrigation) as a method of field application. This was closely followed by hand bucket/watering can (45%). Water hose were not widely used (2%).

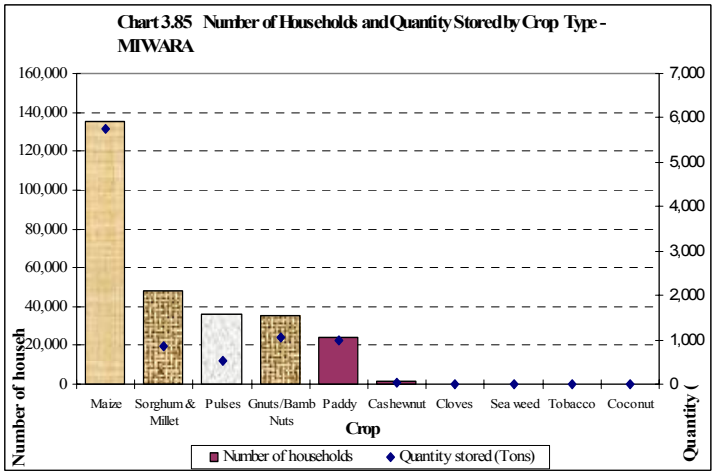


3.3. 6 Crop Storage, Processing and Marketing

3.3. 6.1 Crop Storage

Crop storage means keeping a crop for a certain period of time as food for the household, in order to sell at a higher prices or as seed for planting in the following season.

The results for Mtwara region show that there were 161,435 crop growing households (70% of the total crop growing households) that stored various agricultural products in the region.

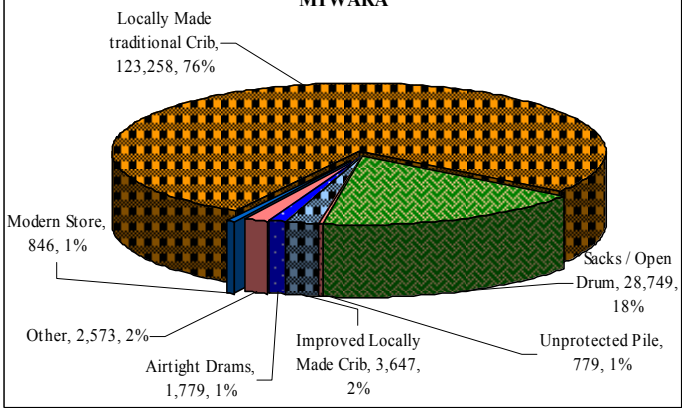


The most important stored crop was maize with 135,282 households storing 5,745 tonnes as of 1st January 2004. This was followed by sorghum and millet (47,730 households, 852t), pulses (35,793 households, 526t), groundnuts and bambara nuts (35,613 households, 1,040t), paddy (23,989 households, 972t) and cashew nut (1,421 households, 37t).

Methods of Storage

The region had 123,258 crop growing households storing their produce in locally made traditional structures (76% of households that stored crops in the region). The number of households that stored their produce in sacks and/or open drums was 28,749 (18%). This was followed by improved locally made structures (3,647 households, 2%), air tight drums (1,779 households, 1%) and modern stores (846 households, 1%), unprotected piles (779 households, 1%) and modern store (846 households, 1%) and other methods (2,573, 2%).

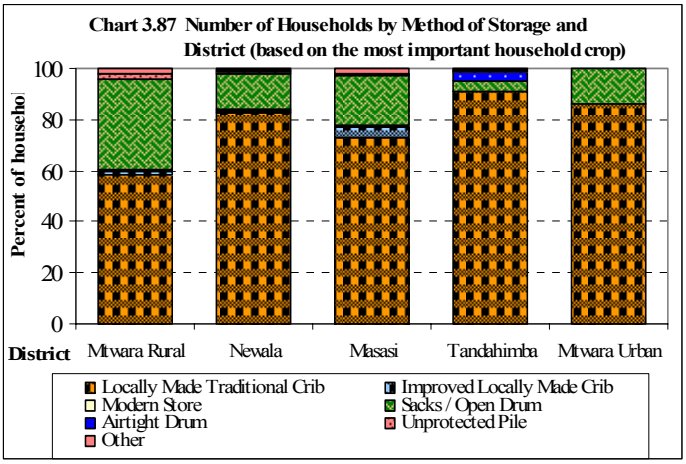
Chart 3.86 Number of households by Storage Methods - MTWARA



Locally made traditional structures was the dominant storage method in all districts, with the highest percent of households in Tandahimba using this method (91% of the total number of households storing crop products). This was followed by Mtwara Urban (86%), Newala (83%), Masasi (73%) and Mtwara rural (59%), (Chart 3.80).

The highest percent of households using sacks and open drum was in Mtwara rural districts (36% of the total number of households storing crops), followed by Masasi (19%), Newala and Mtwara urban (14%) each and Tandahimba (4%).

Chart 3.87 Number of Households by Method of Storage and District (based on the most important household crop)

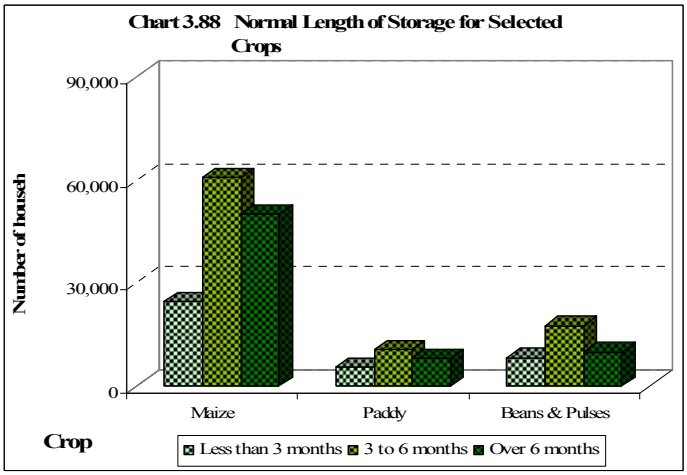


Duration of Storage

Most households (44% of the households storing crops) stored their produce for a period of 3 to 6 months followed by those who stored for a period of more than 6 months (38%). The households that stored their crops for a period of less than 3 months constituted eighteen percent of the households storing crops.

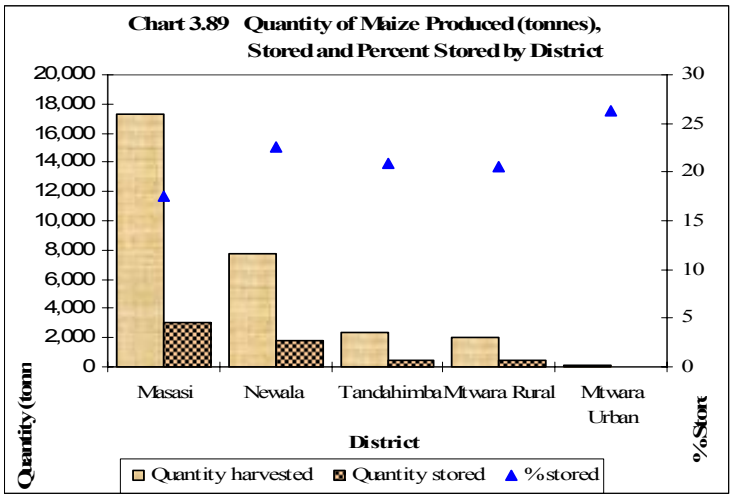
Most households that stored beans and pulses stored for a period of 3 months followed by over 6 months. A small number of households stored pulses for the period of less than 3 months. (Chart 3.88).

Chart 3.88 Normal Length of Storage for Selected Crops



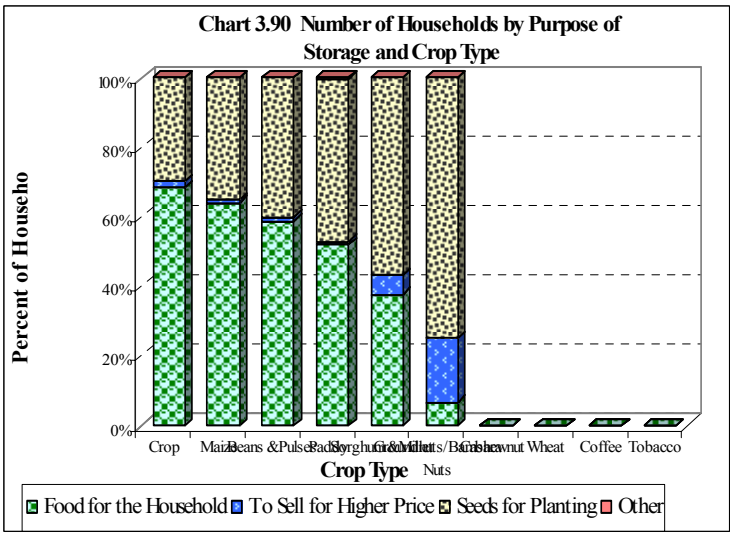
The proportion of households that stored their produce for the duration of 3 to 6 months was highest in Mtwara urban district (54%) followed by Mtwara rural (48%), Newala and Tandahimba (46% each) and Masasi (41%) (Map 3.34).

District comparison of duration of storage cannot be done for all crops combined. The analysis has therefore been done for maize only as it is the most commonly stored crop. In general, the quantity stored was related to the quantity produced. Districts with greater production had a higher percent of their crop stored as on 1st October 2003 (Chart 3.89). However, there are districts where households tored relatively little maize in comparison to the quantity produced indicating that the quantity stored was determined by the food and seed requirements of the households and not to sell during the "off-season" when the farm gate price of maize is higher.



Purposes of Storage

Subsistence food crops (maize, paddy, sorghum and millet, beans and pulses) are mainly stored for the purpose of household consumption. The percent of households that stored maize for household consumption as the main purpose of storage was 68.5 percent followed by seed for planting. Practically all stored annual cash crops were stored for selling at a higher price. A high percent of the stored permanent crops was used for household consumption as was the case for cashewnuts (6.7%). This was followed by selling at a higher price (18.3%). (Chart 3.90).



The Magnitude of Storage Loss

About 81 percent of households that stored crops had little or no loss, however the proportion of households that experienced a loss of more than a quarter was higher for food crops than crops that are produced for sale such as tobacco, cashewnut, groundnut and bambara- nuts.

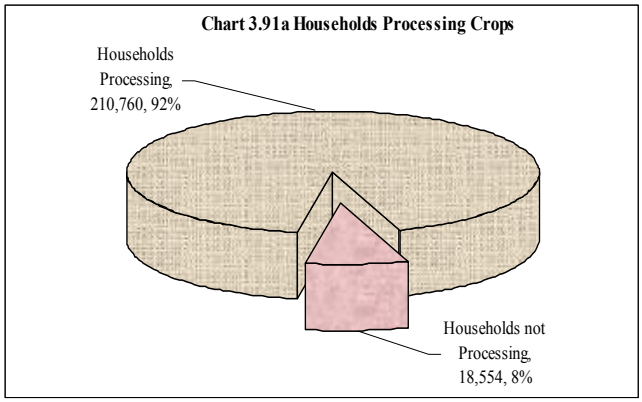
Table 3.11: Number of Households Storing Crops by Estimated Storage Loss and District

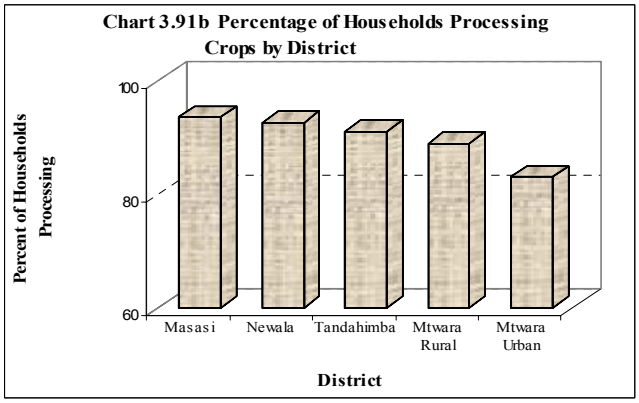
District	Estimate Storage Loss				
	Little or no Loss	Up to 1/4 Loss	Between 1/4 and 1/2 Loss	Over 1/2 Loss	Total
Mtwara Rural	17,871	1,586	874	80	20,411
Newala	30,275	6,203	1,160	296	37,934
Masasi	62,987	11,720	1,896	1,289	77,892
Tandahimba	19,473	4,388	384	0	24,245
Mtwara Urban	982	168	0	0	1,149
Total	131,588	24,064	4,315	1,665	161,631

The proportion of households that reported a loss of more than a quarter was greatest for maize, sorghum and millet (3% of the total number of households that stored crops). This was followed by paddy (1%) and groundnuts and bambaranut (1%). All households that stored cash crops such as cashewnut had no loss. Most households storing groundnuts and bambara nuts had little or no storage loss (86%) (Table 3.10).

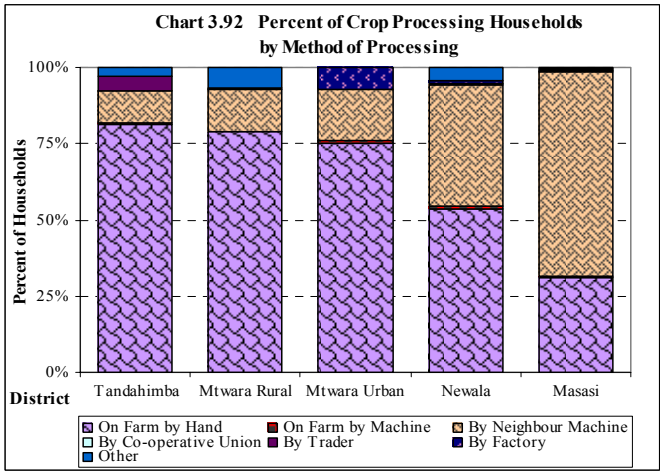
3.3.6.2 Agro processing and By-products

Agro processing refers to a process that converts a crop product from one form to another form in order to add value or increase the palatability of the product. Agro-processing was practiced in most crop growing households in Mtwara region (210,760 households, 92% of the total crop growing households) (Chart 3.91a).





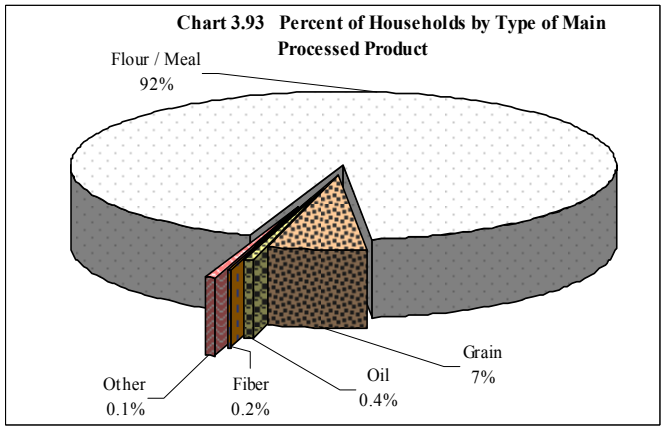
The percent of households processing crops was very high in most districts (above 90%). Mtwara urban and Mtwara rural had the lowest percent of households processing crops (89% and 83% of crop growing households respectively) (Chart 3.91b).



Processing Methods

Most crop processing households processed their crops on-farm by hand a method used by 113,971 households (54% of households that processed crops).. This was followed by those processing by neighbour's machines (86,481 households, 41%) and trader (2,294 households, 1%). The remaining methods of processing were used by very few households each method by less than one percent.

Although processing by hand and machine were the most common processing method in all districts in Mtwara region, however district differences existed. Tandahimba had a higher percent of hand processing than other districts (81.3%) followed by Mtwara rural (79.0%), Mtwara Urban (74.9%) and Newala (53.5%). Processing by neighbour machine was more common in Masasi and Newala (67.2% and 39.2% respectively), whilst processing by factory was more prevalent in Mtwara Urban (7.2%) (Chart 3.92).

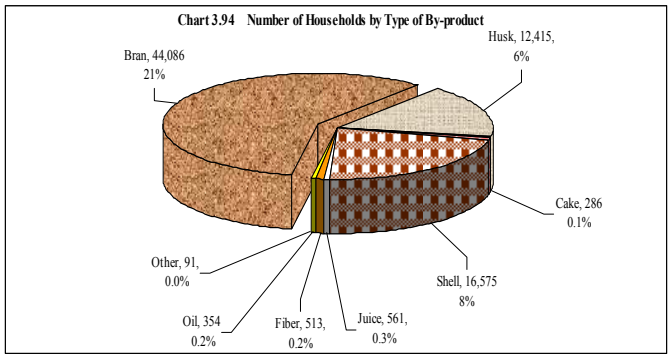


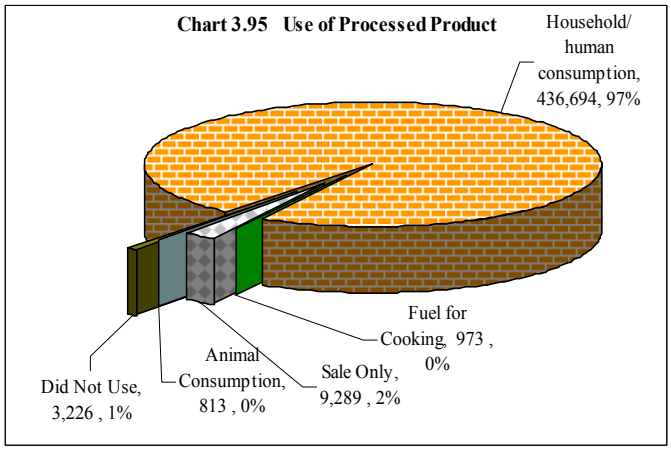
Main Agro-processing Products

Two types of products can be produced from agro-processing namely the main product and the by-product. The main product is the major product after processing and the by-product is the secondary product after processing. For example the main product after processing maize is normally flour whilst the by-product is normally the bran.

The main processed product was flour/meal with 193,922 households processing crops into flour (92% of the households processing crops) followed by grain with 15,423 households (7%). The remaining products were produced by a small number of households (Chart 3.93).

The number of households producing by-products accounted for 35.8 percent of the households processing crops. The most common by-product produced by crop processing households was bran with 44,086 households (21%) followed by shell (16,575 households, 8%), Husks (12,415 households, 6%). The remaining by-products were produced by a small number of households (Chart 3.94).

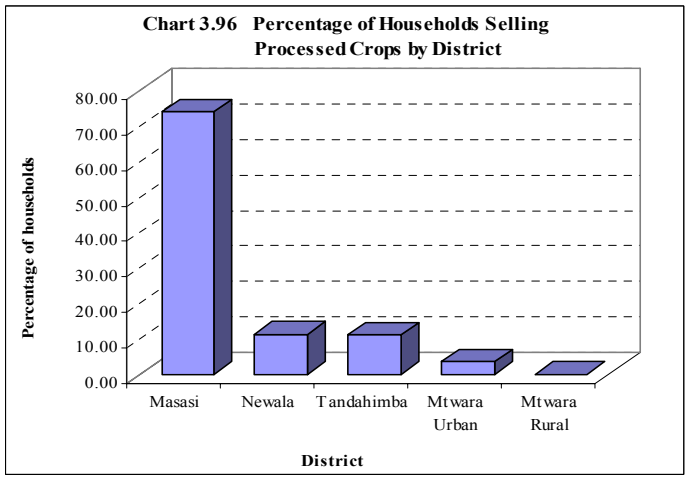




Main Use of Primary Processed Products

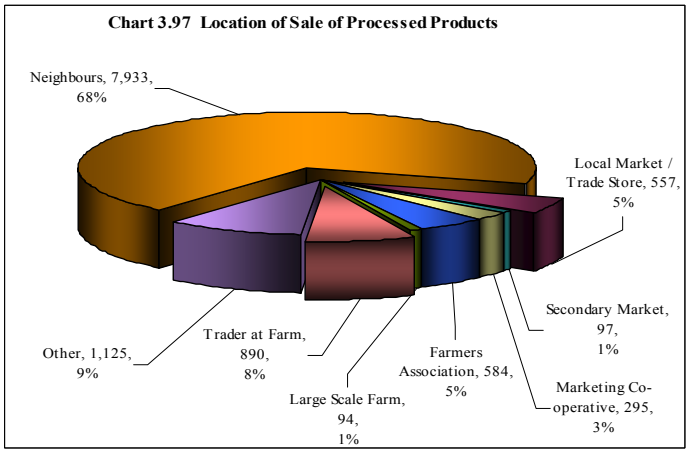
Primary processed products were used for households/ human consumption, fuel for cooking, for selling and for animal consumption. The most important use was for household/human consumption which represented 97 percent of the total households that processed crop (Chart 3.95). Newala was the only district that used primary products for animal consumption.

Out of 873 households that sold processed products, 871 were from Masasi (74% of the total number of households selling processed products in the region), followed by Newala with 99 households (11.3%), Tandahimba with 97 households (11.1%) and Mtwara urban with 31 households (3.6%) (Chart 3.96). Compared to other districts in Mtwara region, Mtwara rural had the highest percent of households that sold processed products. This was followed by Tandahimba (0.72), Newala and Mtwara urban districts had (0.25%) each.

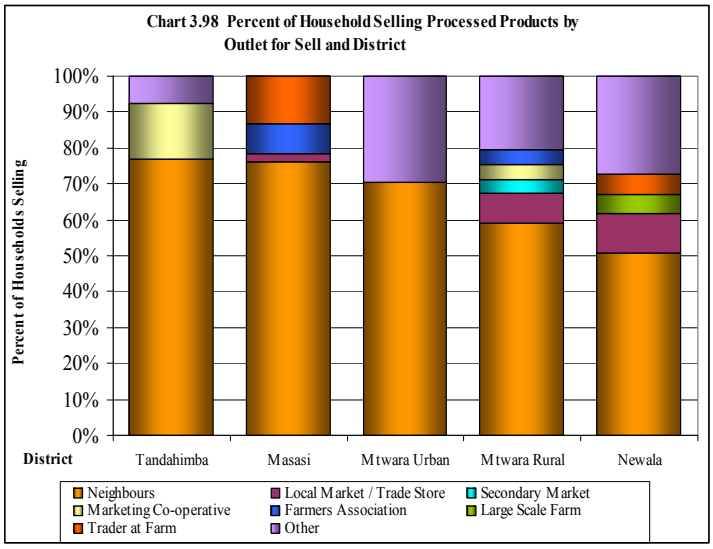


Outlets for Sale of Processed Products

Most households that sold processed products sold them to neighbours (7,933 households, 68% of households that sold crops). This was followed by selling to trader at farm (890 households, 8%), local market and trade stores (557 households, 5%), Farmers Associations (584 households, 5%), marketing co-operatives (295 households, 3%), secondary market (97 households, 1%) and large scale farm (94 households, 1%). (Chart 3.97).



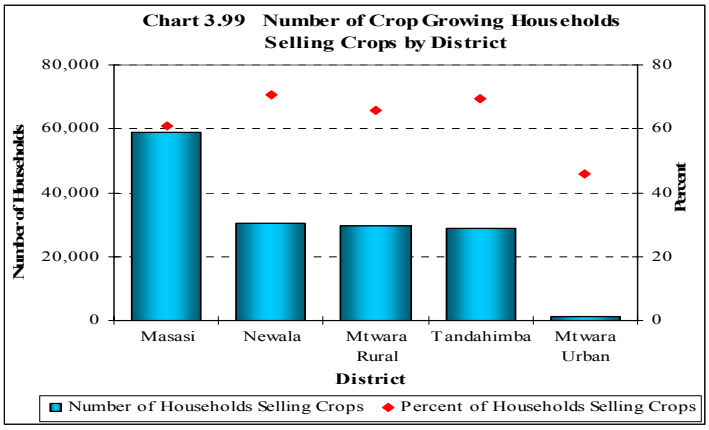
There were large differences between districts in the proportion of households selling processed products to neighbours with Tandahimba district having the largest percent of households selling to neighbours (77%), whereas Newala had only 51 percent. Newala had the largest percent of households selling to the local markets/trade stores (11%).



Compared to other districts, Masasi had the highest percent of households selling processed products to traders at farm. In Masasi, the sale of processed produce to farmer associations was most prominent compared to other districts. The district that had the highest proportion of household selling processed products to marketing cooperative was Tandahimba.

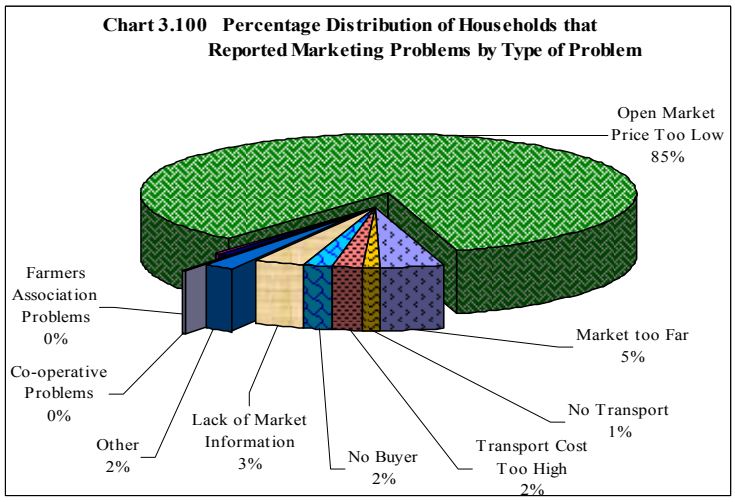
3.3.6.3 Crop Marketing

The number of households that reported selling crops was 149,163 which represent 65.0 percent of the total number of crop growing households. The percent of crop growing households selling crops was highest in Newala (70%) followed by Tandahimba (69%), Mtwara rural (66%), Masasi (61%) and Mtwara urban (46%) (Chart 3.99 and Map 3.35).

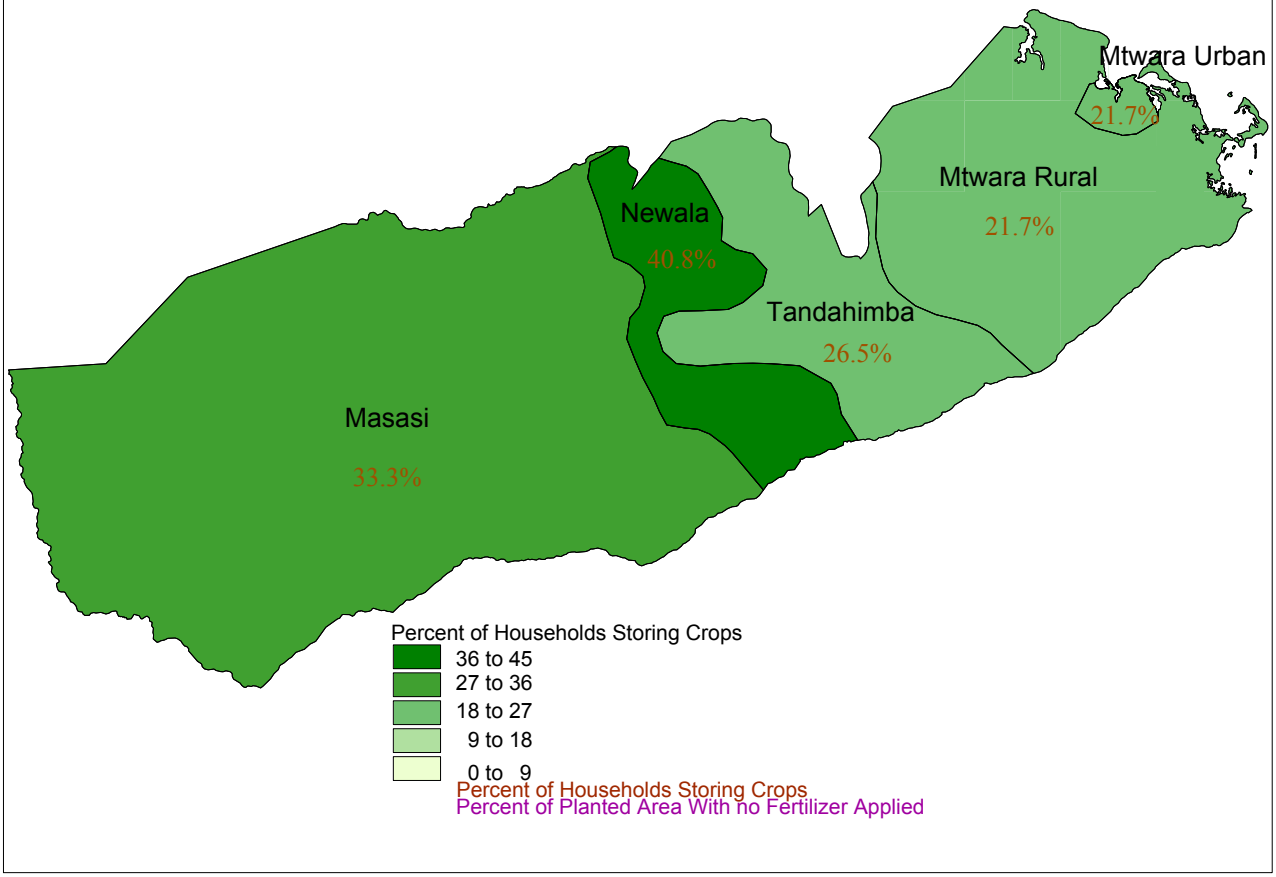


Main Marketing Problems

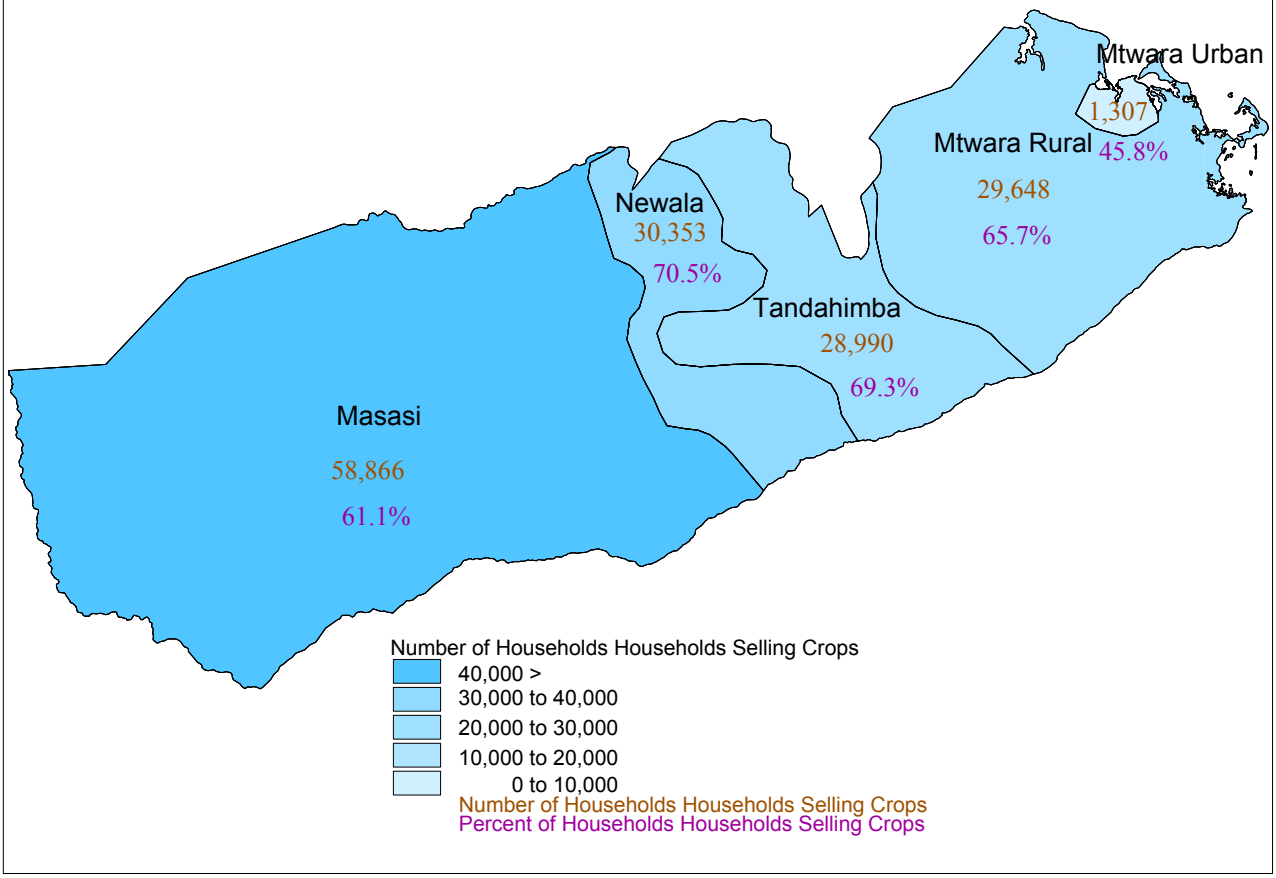
Low price for agricultural produce was the main marketing problem reported by households (85% of crop growing households). Apart from low market prices, other problems were longer distances to the markets (5%), lack of market information (3%), lack of buyers (2%), high transport costs (2%) and lack of transport (1%). Other marketing problems are minor and represented by 2 percent of the total reported problems.



MAP 3.34 MTWARA
Percent of Households Storing Crops for 3 to 6 Months by District



MAP 3.35 MTWARA
Number of Households and Percent of Total Households Selling Crops by District



Reasons for Not Selling Crops

The main reason for not selling crops was reported as "insufficient production to sell", representing 86 percent of the smallholders. The remaining reasons for not selling are in such low numbers that it is not appropriate to rank their importance (Table 3.11). This general trend applies to all districts except for Mtwara Urban and Tandahimba where the proportion of households reporting other reasons for not marketing their agricultural products is relatively high (39% and 13% respectively).

Table 3.12 Reasons for Not Selling Crop Produce

Main Reason	Household Number	%
Production Insufficient to Sell	94,174	86.2
Other	7,717	7.1
Price Too Low	3,515	3.2
Trade Union Problems	1,961	1.8
Co-operative Problems	769	0.7
Market Too Far	158	0.1
Government Regulatory Board Problems	422	0.4
Farmers Association Problems	582	0.5
Total	**109,299**	**100.0**

3.3.7 Access to Crop Production Services

3.3.7.1 Access to Agricultural Credit

The census result shows that in Mtwara region very few agricultural households (1,509, 0.7%) accessed credit out of which 1,410 (93%) were male-headed households and 99 (7%) were female headed households. In Masasi, Tandahimba and Mtwara Urban districts only male headed households accessed agricultural credit whereas in Newala district both male and female headed households accessed agricultural credit. There was no household which received credit in Mtwara rural district (Table 3.12).

Table 3.13 Number of Agricultural Households that Received Credit by Sex of Household Head and District

District	Male		Female		Total
	Number	%	Number	%	
Newala	291	75	99	25	390
Masasi	964	100	0	0	964
Tandahimba	96	100	0	0	96
Mtwara Urban	58	100	0	0	58
Mtwara Rural	0	0	0	0	0
Total	**1,410**	**93**	**99**	**7**	**1,509**

Source of Agricultural Credit

The major agricultural credit providers in Mtwara region were cooperative which provided credit to 716 agricultural households (47% of the total number of households that accessed credit), followed by family, friends and relatives (30%), saving and credit society (11%), commercial bank (10%) and religious organizations/Non Governmental Organizations/ projects (2%) (Chart 3.101). Cooperatives were the sole source of credit in Tandahimba district as well as the major credit facility in Newala district. Family, friends and relatives were somehow greater credit providers in Mtwara urban district compared to religious Organization/NGO/Project. (Chart 3.102).

Chart 3.101 Percentage Distribution of Households Receiving Credit by Main Source

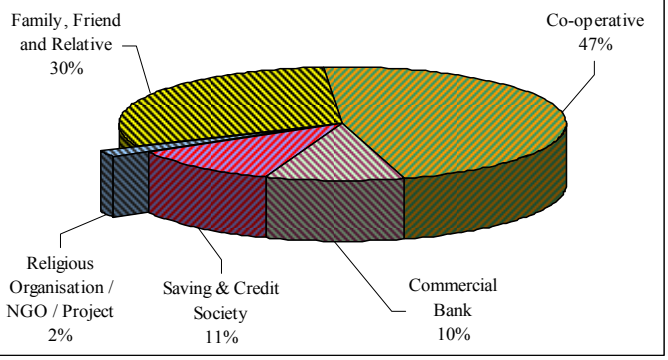
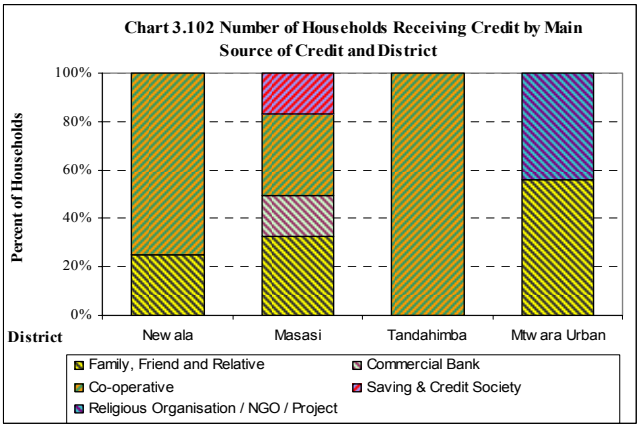
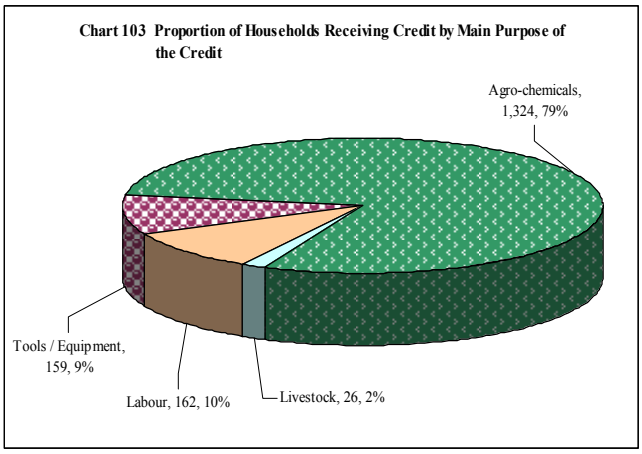


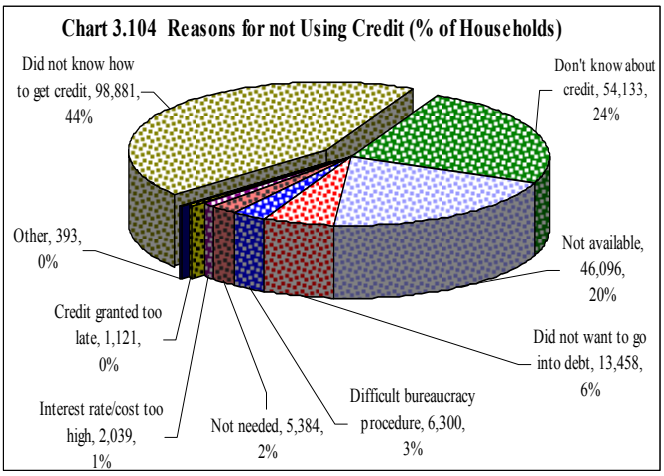
Chart 3.102 Number of Households Receiving Credit by Main Source of Credit and District



Use of Agricultural Credit

A large proportion of the agricultural credit provided to agricultural households in the region were used on agro-chemicals (79%), followed by hiring labour (10%), tools/equipment (9). The proportion of credits intended to be used for livestock rearing was very low (2%) (Chart 3.103).



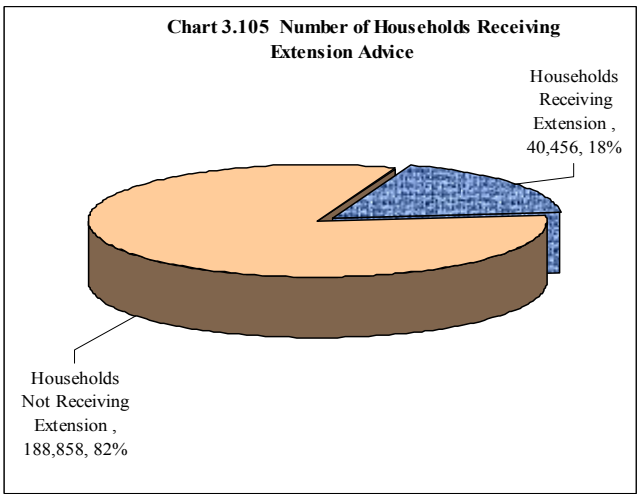


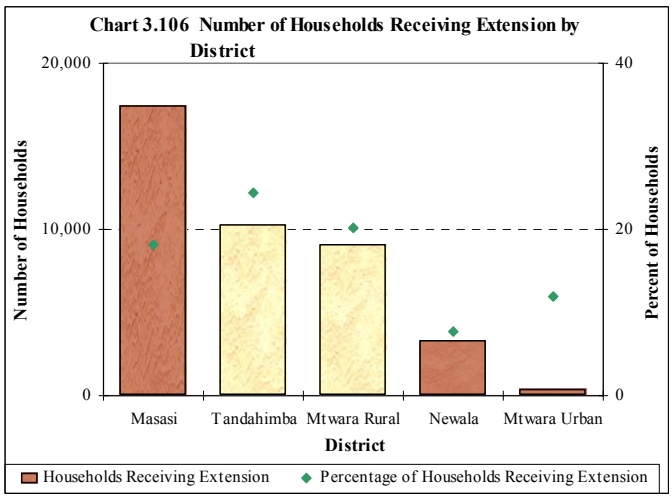
Reasons for Not Using Agricultural Credit

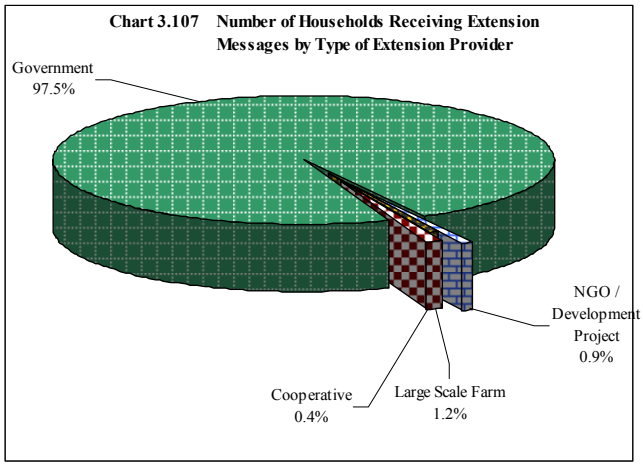
The main reason for not using agricultural credit as a source of finance was little credit awareness accounting to 68 percent of the agricultural households ("did not know how to get credit" and "don't know about credit"). This was followed by households reporting the un-availability of credit (20.2%), followed by "not wanting to go into debt" (5.9%) The rest of the reasons were collectively reported by about 7 percent of the households.

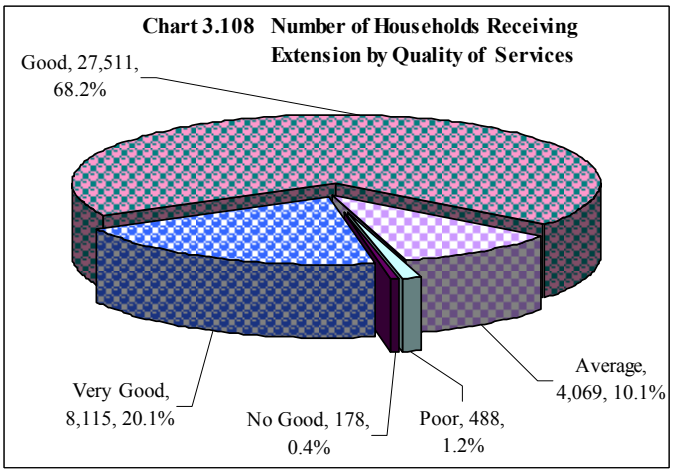
3.3.7.2 Crop Extension

The number of agricultural households that received crop extension was 40,456 (18% of total crop growing households in the region) (Chart 3.105). Some districts have more access to extension services than others, with Tandahimba having a relatively high proportion of households (24%) that received crop extension messages in the district followed by Mtwara rural (20%), Masasi (18%), Mtwara urban (12%) and Newala (8%) (Chart 3.106 and Map 4.36).









Sources of Crop Extension Messages

Of the households receiving extension advice the government provided the greatest proportion (97.5%, 39,227 households). NGOs provided 0.9 percent, large scale farms 1.2 percent and the cooperative 0.4 percent. (Chart 3.107), however district differences existed with the proportion of the households receiving advice from government services ranging from 90.7 percent in Mtwara Urban to 99.1 percent in Masasi district.

Quality of Extension

An assessment of the quality of extension indicates that 68.2 percent of the households receiving extension ranked the service as being good followed by very good 20.1%), average (10.1 %), poor (1.2%) and no good (0.4%) (Chart 3.108). However, care should be exercised when making decisions on quality of extension and also other variables in the extension report as all the enumerators were extension agents and some degree of bias is expected.

3.3.8 Access to Inputs

Access to inputs in this section refers to all crop growing households in Mtwara region regardless of whether the household grew annual or permanent crops. In previous sections the reference was on annual crops only. Because of this, some of the figures presented in this section may be slightly different from the previous section on inputs use (Section 3.5). Data on source of inputs is only found in this section and it applies to both annual and permanent crops.

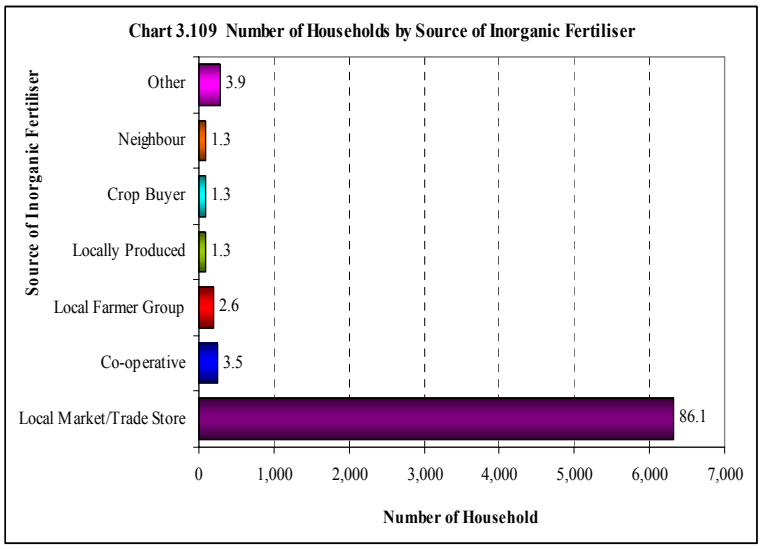
Table 2.14 Access to Inputs

Type of Input	Households With Access to Input		Households Without Access to Inputs	
	Number	%	Number	%
Insecticide/Fungicide	52,961	23.1	176,241	76.9
Farm Yard Manure	11,334	4.9	217,868	95.1
Improved Seeds	8,531	3.7	220,671	96.3
Inorganic Fertiliser	7,333	3.2	221,869	96.8
Compost	5,038	2.2	224,164	97.8
Herbicide	189	0.1	229,013	99.9

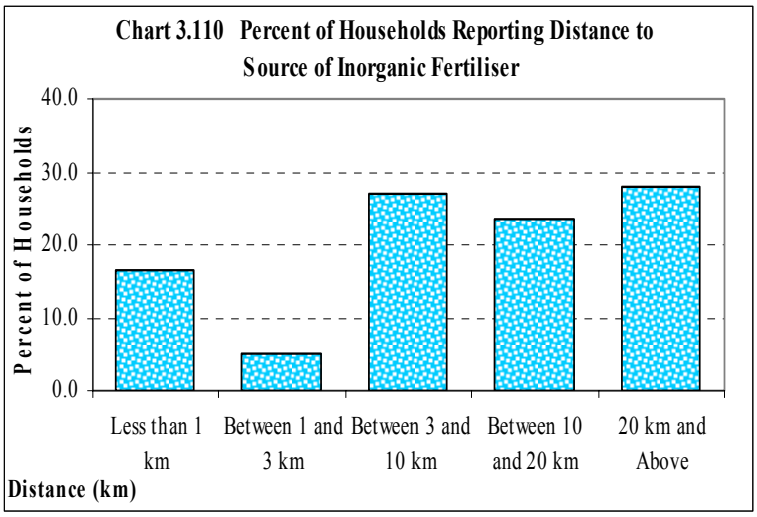
A small number of households use inputs and this is particularly true of inputs that are not produced on farm eg. improved seeds, fungicides, inorganic fertiliser and herbicides. In Mtwara region pesticides/fungicides were used by 52,961 households which represent 23.1 percent of the total number of crop growing households. This was followed by households using farm yard manure (4.9%), improved seeds (3.7%), inorganic fertiliser (3.2%), compost (2.2%), and herbicide (0.1%) (Table 2.14).

3.3.8.1 Inorganic Fertilisers

Smallholders that used inorganic fertilisers in Mtwara region mostly purchased them from the local market/trade store (89.7% of the total number of inorganic fertiliser users). The remaining sources of inorganic fertilisers are minor (Chart 3.109).



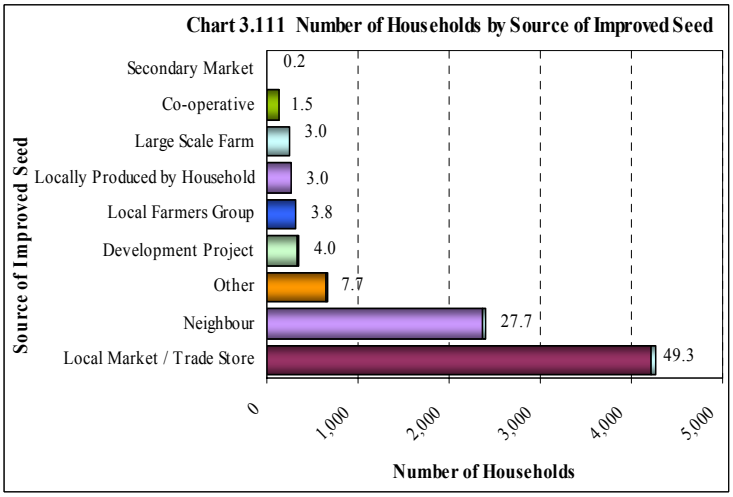
Access to inorganic fertiliser was mainly more than 20 km from the household with 28 percent of the households residing 20 km and above from the source, followed by between 3 and 10 km (27%) and between 10 and 20 km (24%) (Chart 3.110). Due to the very small number of households using inorganic fertilisers coupled with the small number of households (21%) responding to "not available" as the reason for not using them, it may be assumed that access to inorganic fertilisers was not the main reason for not using them. Other reasons such as cost are more important with 69 percent of households responding to cost factors as the main reason for not using the fertilisers. In other words, if the cost was affordable the demand would be higher and inorganic fertiliser would be made more available.



More smallholders used inorganic fertilisers in Newala than in other districts in Mtwara region with 81 percent of households using inorganic fertilisers, followed by Masasi (13%) and Tandahimba (4%). Other districts used very little inorganic fertilisers.

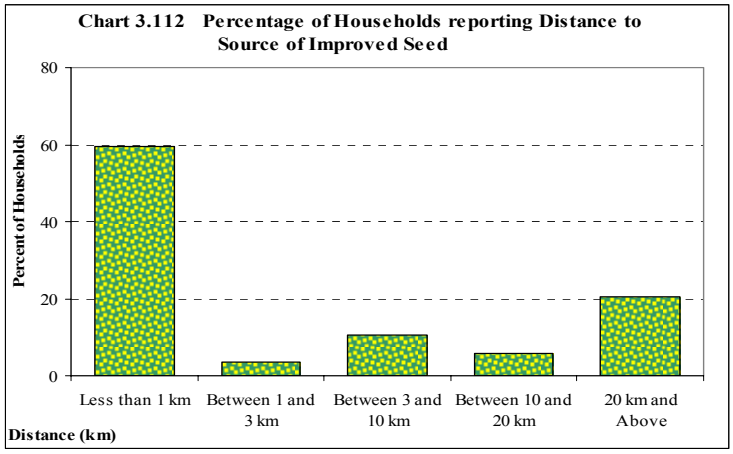
3.3.8.2 Improved Seeds

The percent of crop growing households that used improved seeds was 4 percent. Most of the improved seeds were from the local market/trade store (49.3%). Other less important sources of improved seed were neighbours (27.7%), projects (4.0%), farmer groups (3.8%), locally produced by households (3.0) and large scale farms (3.0%). Only 1.5 percent of households using improved seed obtain them from co-operatives (Chart 3.111).



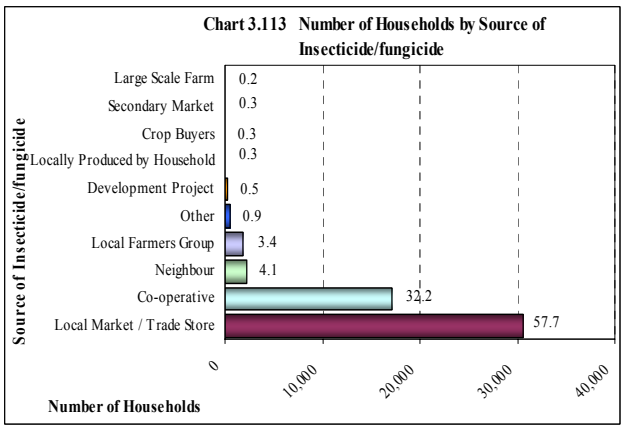
Access to improved seed was better than access to chemical inputs with 59 percent of households obtaining the input within 1 km of the household dwelling (Chart 3.112).

The districts that mostly use improved seeds most was Mtwara rural with 52.3 percent of the total number of households using improved seeds followed by Masasi (24.4%) and Tandahimba (14.5%). Use of improved seeds in other districts was very little (Map 3.37).



3.3.8.3 Insecticides and Fungicide

Most smallholder households using insecticides and fungicides mainly purchased them from local markets/trade stores (57.7% of the total number of fungicide users), followed by cooperatives (32.2%). Other sources of insecticides/ fungicides were of minor importance (Chart 3.113).



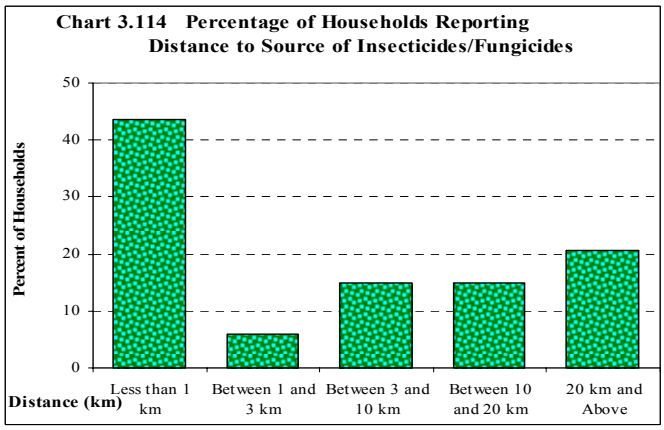
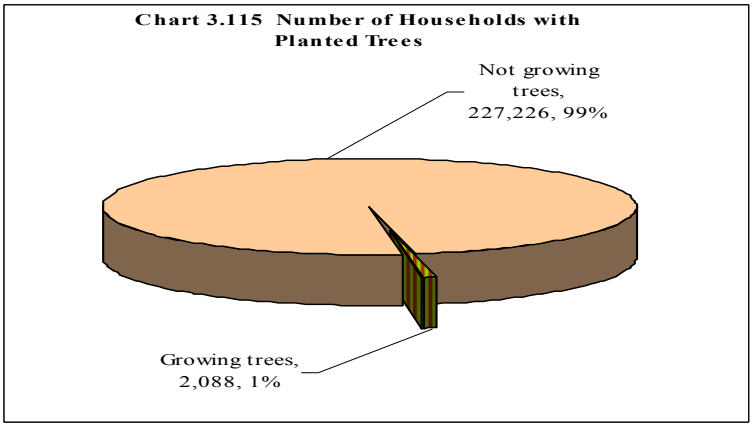


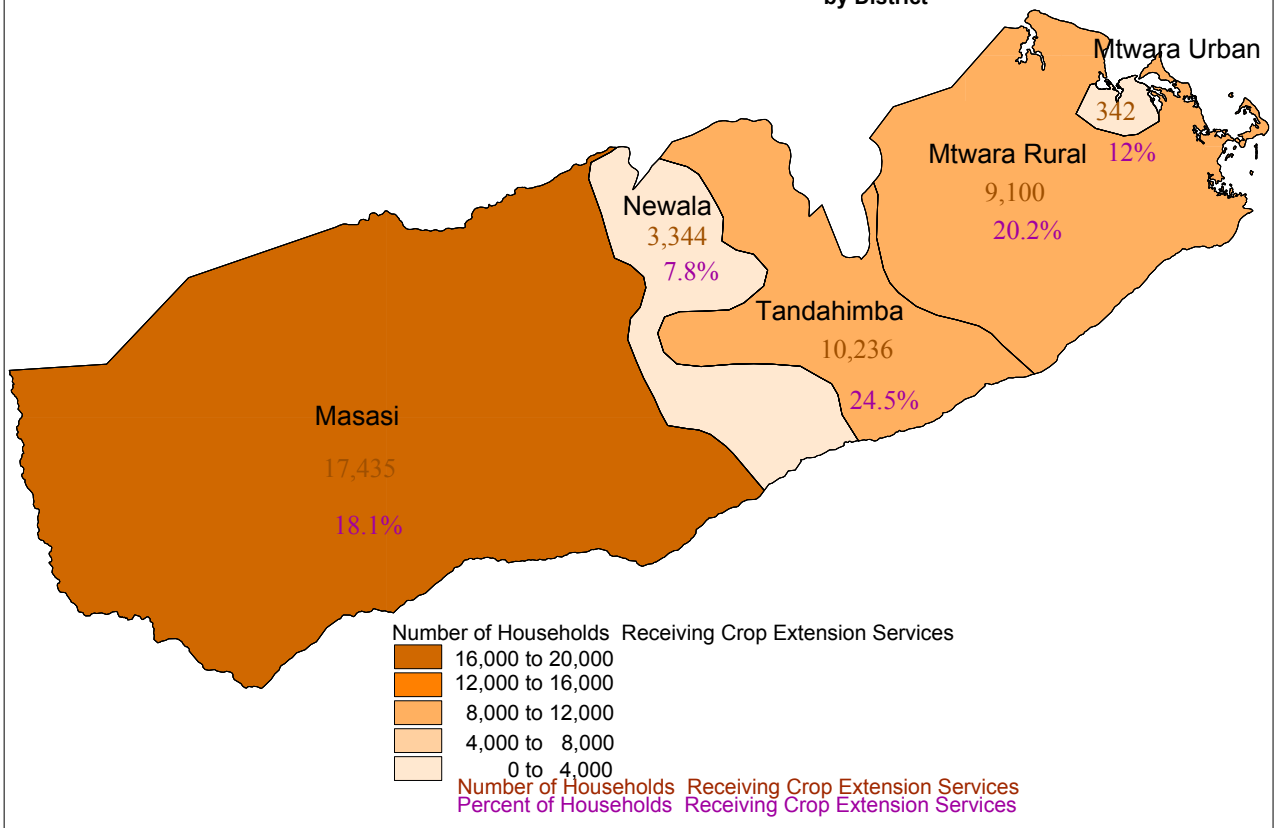
Chart 3.114 shows that there was no distinct pattern for the distance to the source of insecticides/fungicides. The small number of households using insecticides/fungicides coupled with the 12 percent of households responding to "not available" as the reason for not using them it may be assumed that access was not the main reason for not using the insecticides/fungicides. Other reasons such as cost were more important with 75 percent of households responding to cost factors as the main reason for not using them. In other words, if the cost was affordable, the demand would be higher and insecticides/fungicides would be made more available. Fungicide were used more in Tandahimba district (33.4 percent of the total number of households that used fungicides in the region), followed by Masasi (24.6%), Newala (21.3%), and Mtwara rural (19.8). Insecticides/fungicides use in Mtwara Urban was very minor.



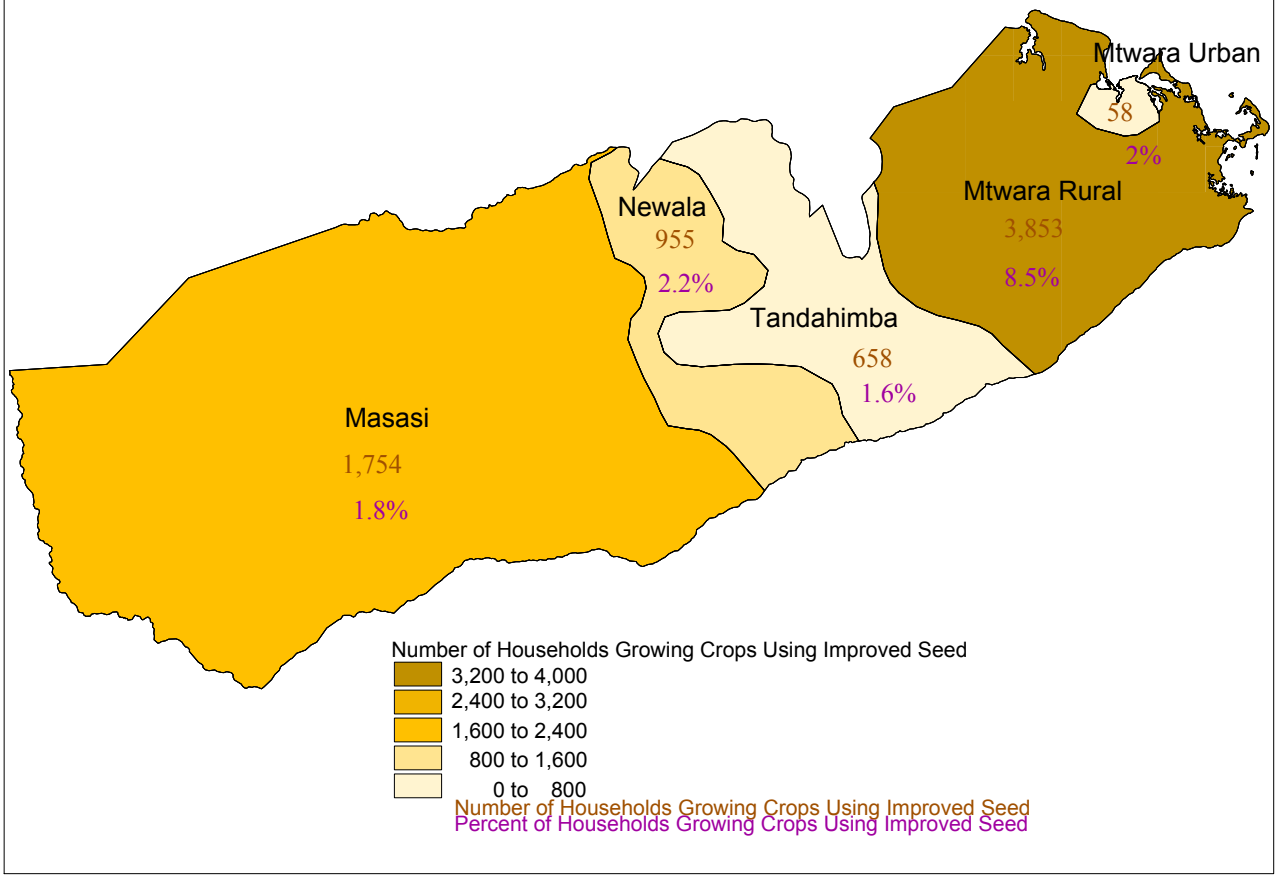
3.3.8.4 Tree Planting

The number of households involved in tree farming was 2,088 representing 1 percent of the total number of agriculture households (Chart 3.115).

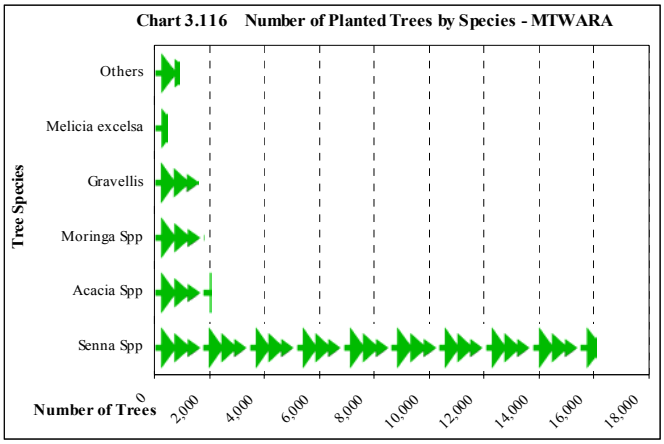
MAP 3.36 MTWARA
Number of Households and Percent of Total Households Receiving Crop Extension Services by District

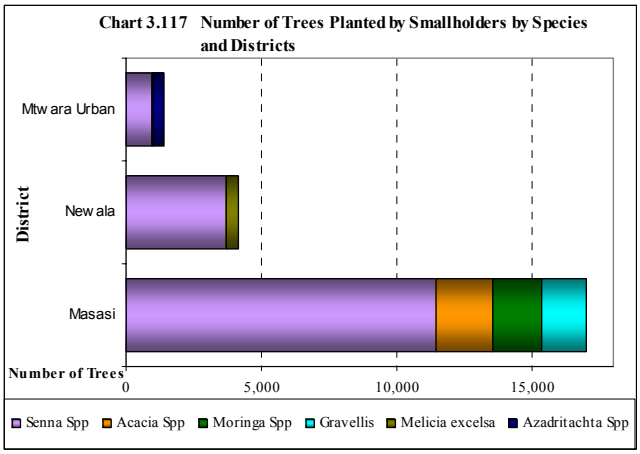


MAP 3.37 MTWARA
Number and Percent of Crop Growing Households using Improved Seed by District



The number of trees planted by smallholders on their allotted land was 23,051 trees. The average number of trees planted per household planting trees was 11 trees.

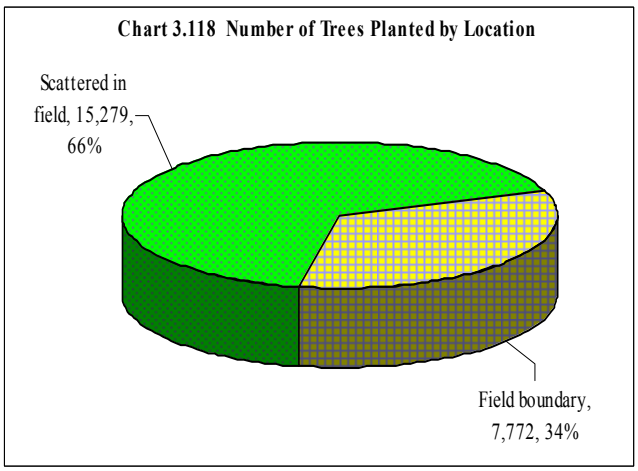


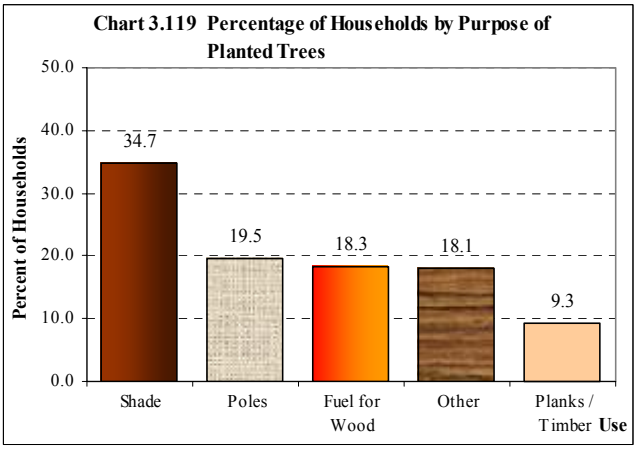


The main species planted by smallholders is Senna spp (16,086 trees, 75%), followed by Acacia spp (2,095, 10%), and Moringa spp (1,815, 9%). The remaining trees species were planted in comparatively small numbers (Chart116.). Masasi had the largest number of smallholders with planted trees (49.5%) and the trees were dominated by senna spp. This was followed by Mtwara urban (30.1%) with the trees also dominated by senna spp and to a lesser extent Azadritachta spp, then Newala (20.4%) with most of the trees being mainly senna spp (Chart 3.117 and Map 3.38.).

For most mallholders (66%) the trees were scattered around the fields. The proportion of households that planted trees on field boundaries was 37 percent. (Chart 3.118).

The main purpose of planting trees is to obtain shade (34.7%). This was followed by poles (19.5%), wood for fuel (18.35%) and planks/timber (9.3%). (Chart 3.119).



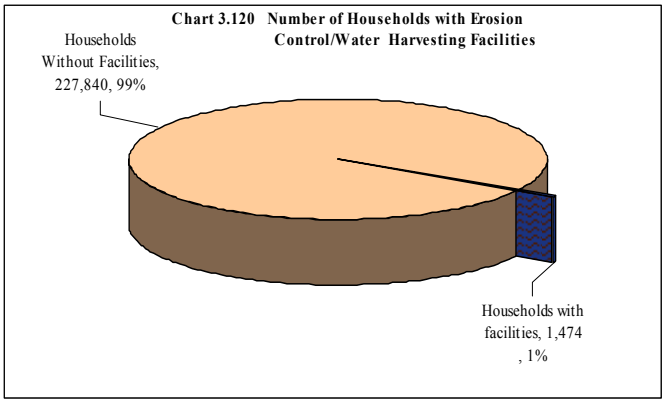


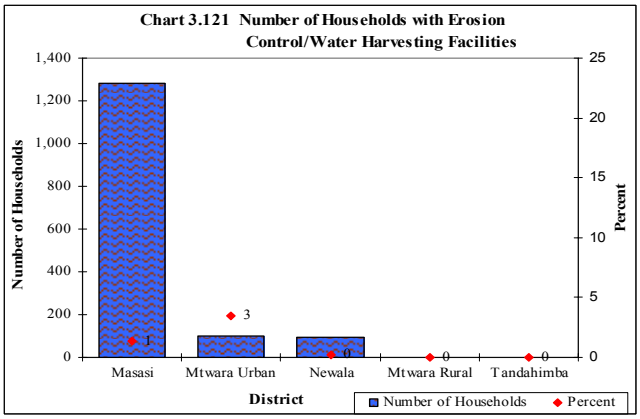
3.3.9 Irrigation and Erosion Control Facilities

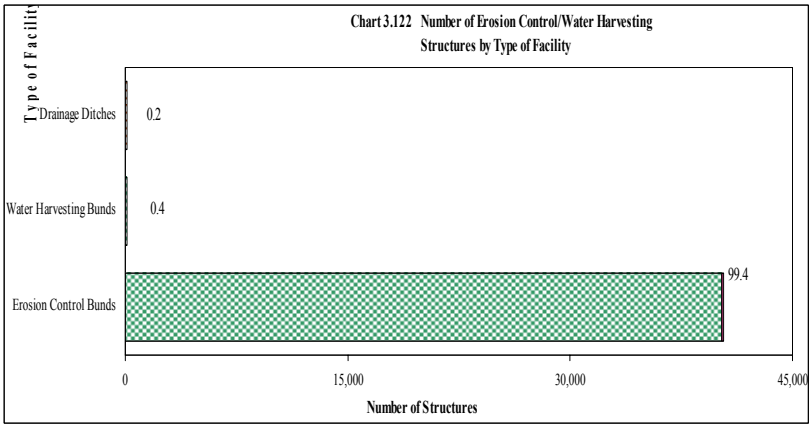
Erosion control and water harvesting facilities are grouped together as they normally have dual purposes of reducing erosion and increasing the amount of water available for crop production.

The number of agricultural households that had soil erosion and water harvesting facilities on their farms was 1,474 which represents 1 percent of the total number of agricultural households in the region (Chart 3.120).

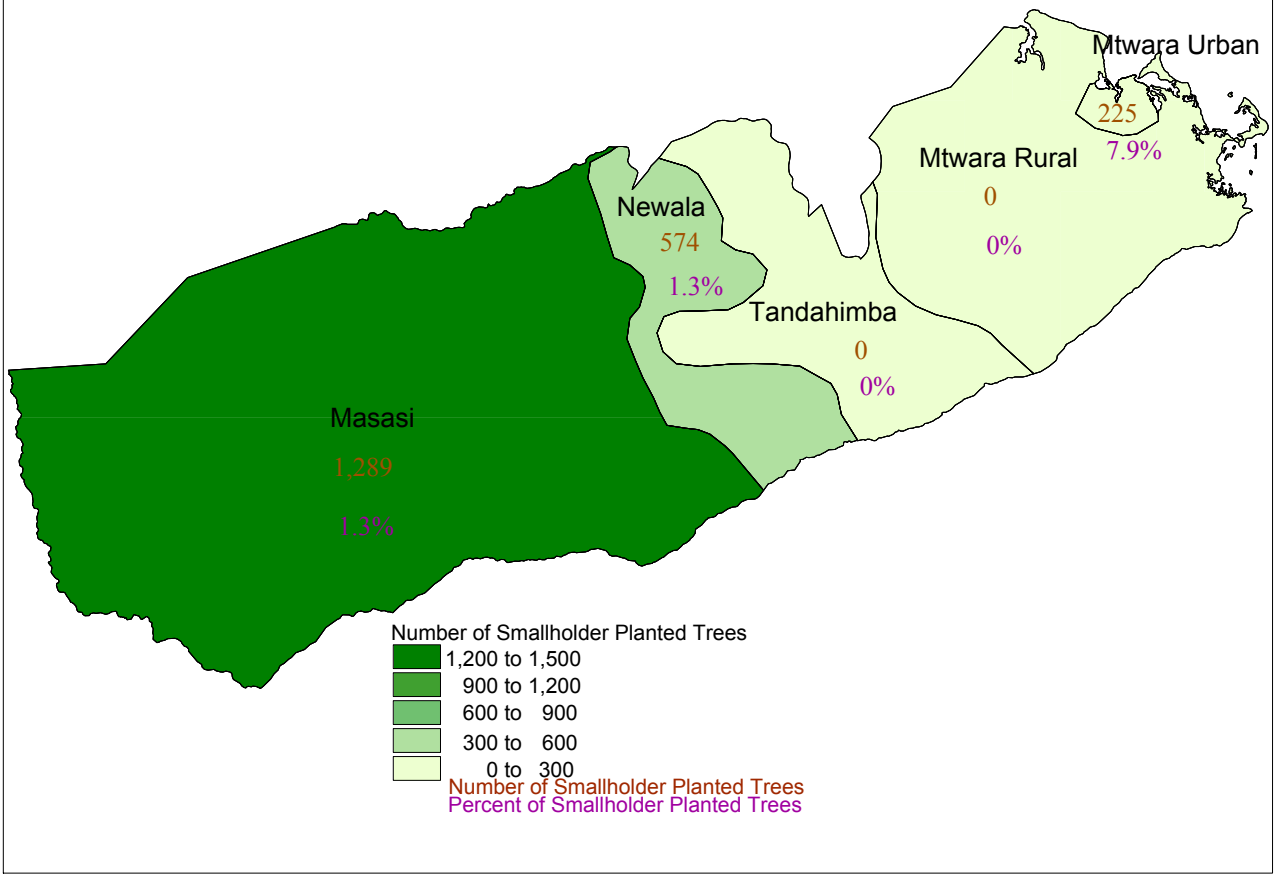
The proportion of households with soil erosion control and water harvesting facilities was highest in Mtwara urban district (3%) and followed by Masasi (1%).) (Chart 3.121). Erosion control bunds accounted for 99.4 percent of the total number of structures, followed by water harvesting bunds (0.4%) and drainage ditches (0.2%) (Chart 3.122 and Map 3.39). Erosion control bunds were 40,232 and all of them were in Masasi and Mtwara Urban districts.



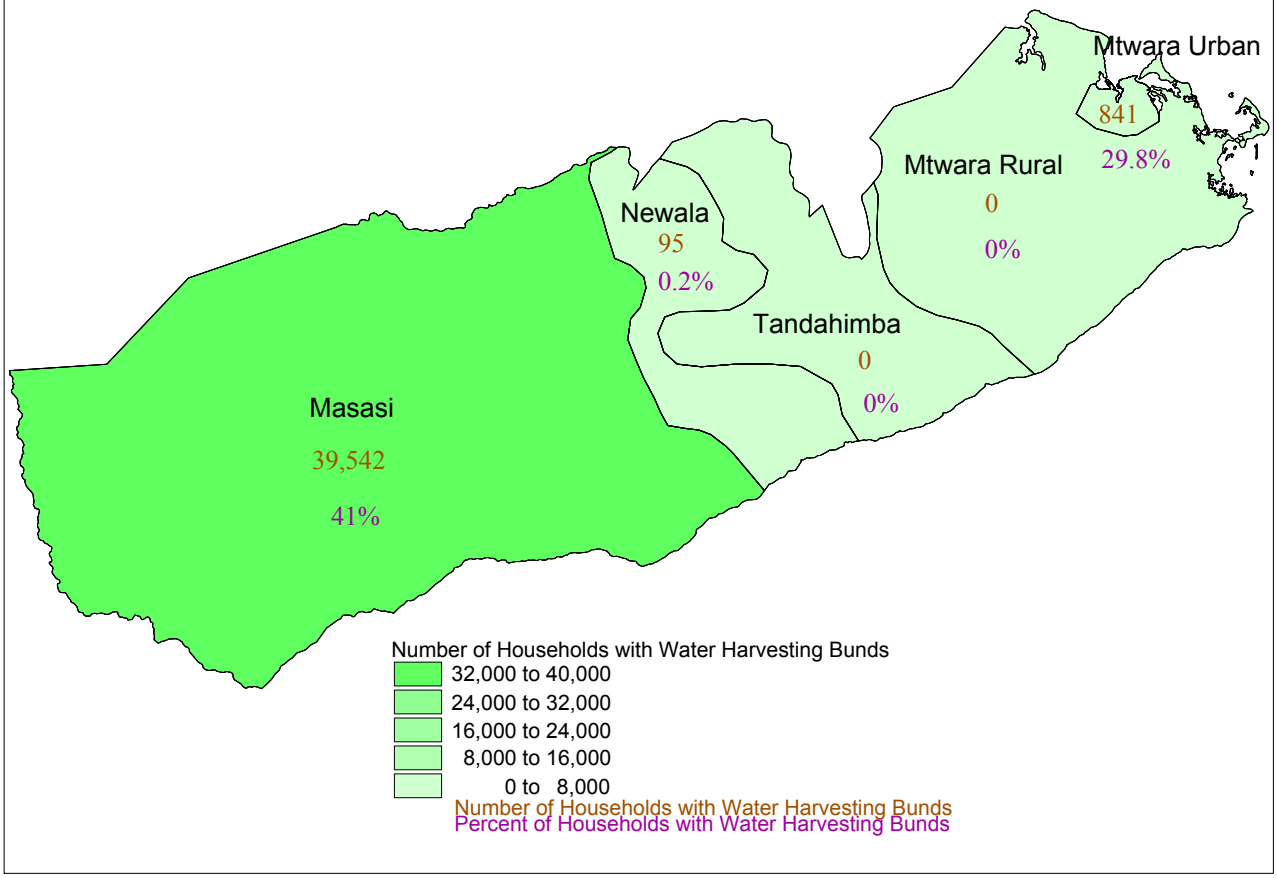




MAP 3.38 MTWARA
Number and Percent of Smallholder Planted Trees by District



MAP 3.39 MTWARA
Number and Percent of Households with Water Harvesting Bunds by District



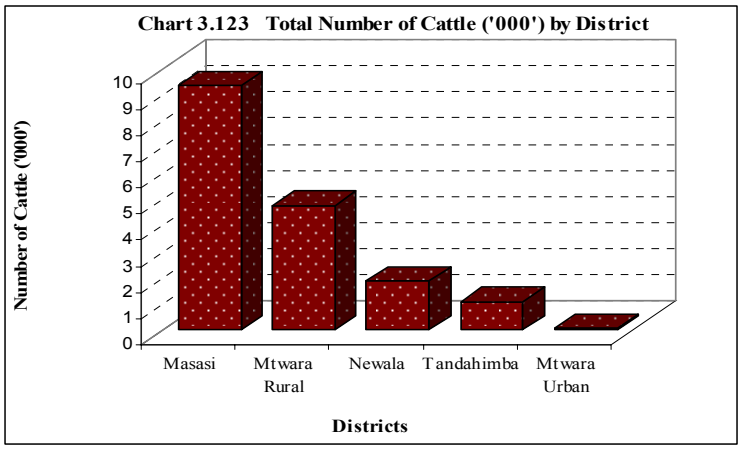
3.4 LIVESTOCK RESULTS

3.4.1 Cattle Production

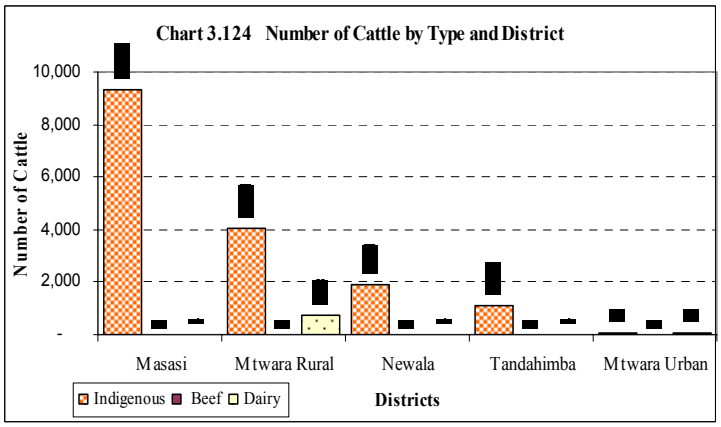
The total number of cattle in the region was 17,158. Cattle were the third most dominant livestock type in the region followed by pigs. The region had 0.1 percent of the total number cattle population on Tanzania Mainland.

3.4.1.1 Cattle Population

The number of indigenous cattle in Mtwara region was 16,383 (95.5 % of the total number of cattle in the region), 775 cattle (4.5%) were dairy breeds and there were no beef breeds.



The census results show that 3,567 livestock keeping households in the region (1.6% of total agricultural households) kept 0.02 million cattle. This was equivalent to an average of 5 heads of cattle per cattle-keeping-household. The district with the largest number of cattle was Masasi which had about 9,346 cattle (54.5% of the total number of cattle in the region). This was followed by Mtwara rural (4,775 cattle, 27.8%), Newala (1,891 cattle, 11.0%) and Tandahimba (1,083 cattle, 6.3%). Mtwara Urban district had the least number of cattle (63 cattle, 0.4%). (Chart 3.123 and Map 3.40). However Mtwara Rural and Newala districts had the highest density (3 head per km^2) (Map 3.41).

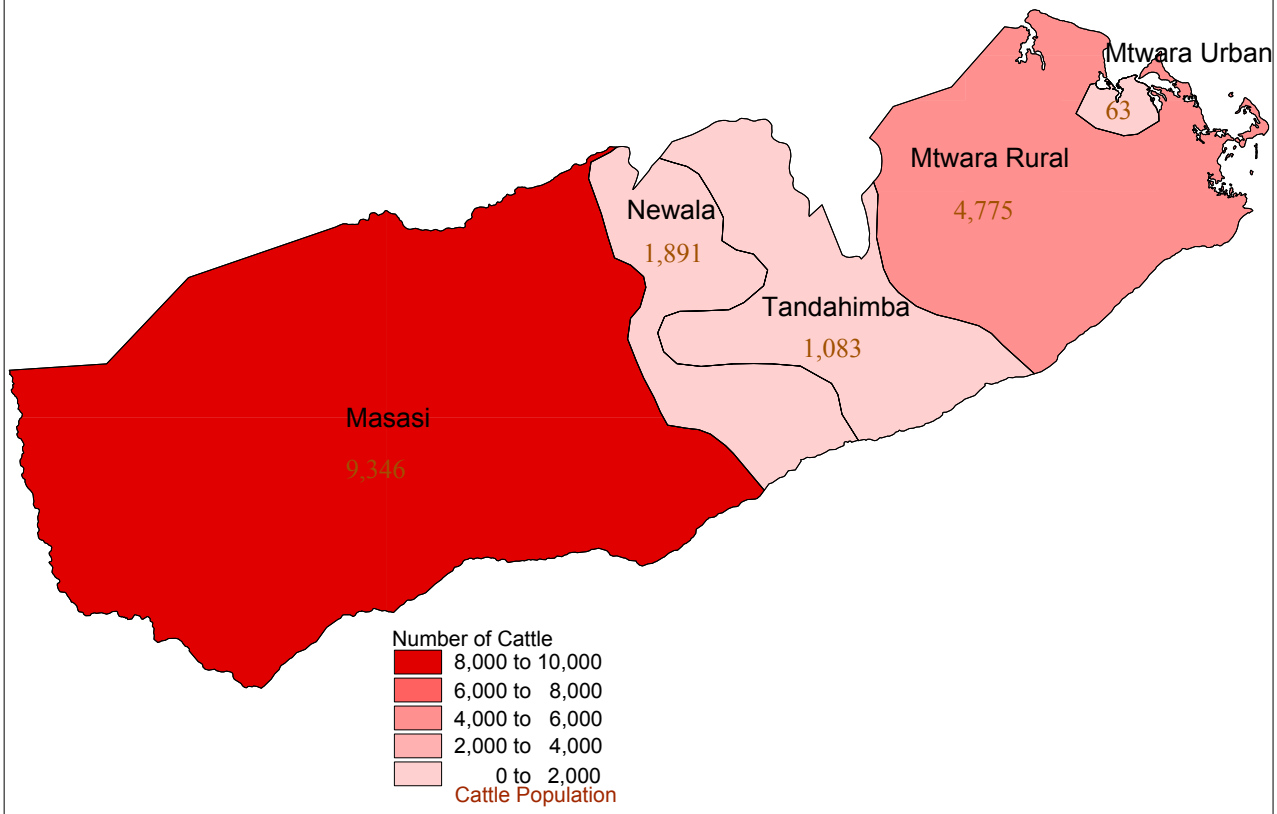


Although Masasi district had the largest number of cattle in the region, most of them were indigenous. The number of dairy cattle was very small and there were no beef cattle. Mtwara rural district had the largest number of diary cattle in the region (Chart 3.124).

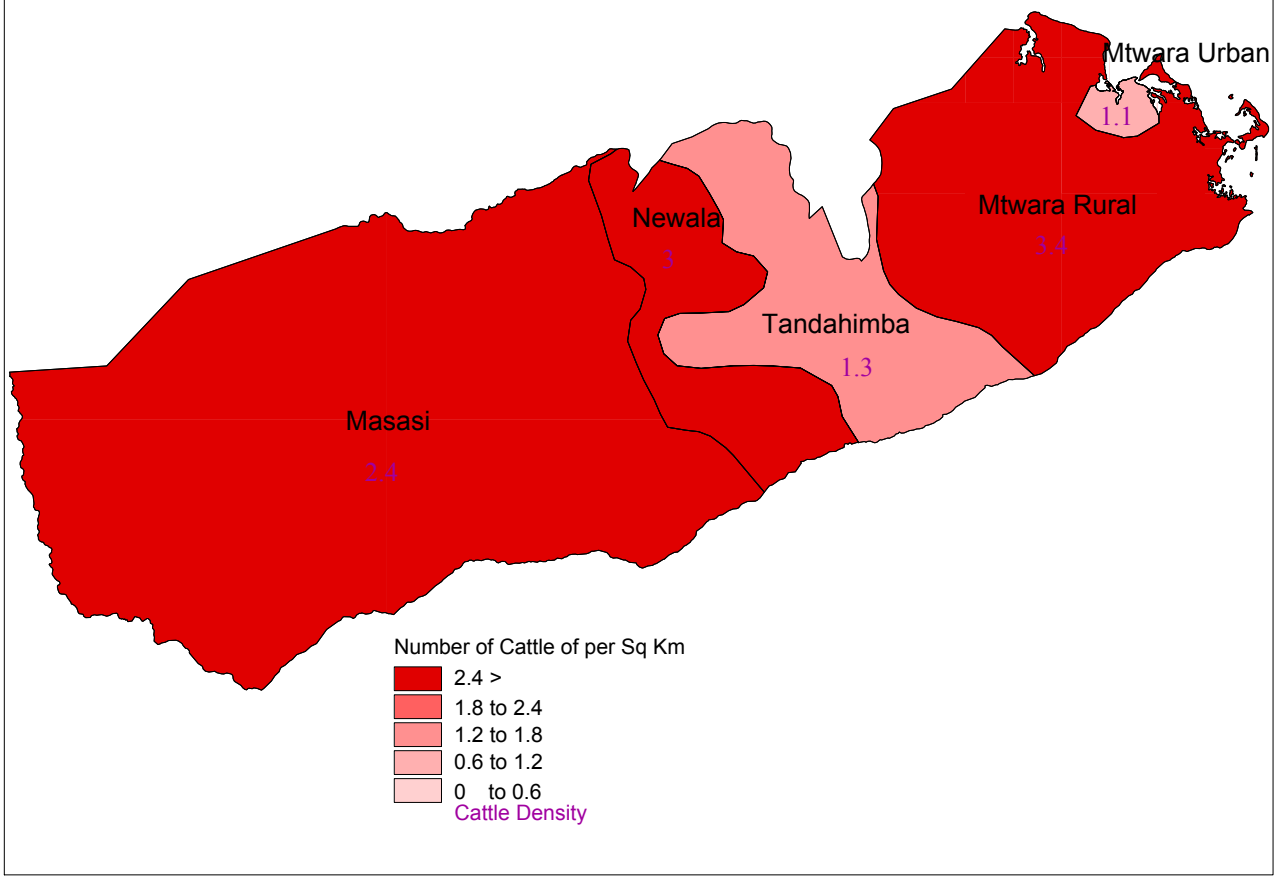
3.4.1.2 Herd Size

Seventy nine percent of the cattle-rearing households had herds of size 1-5 cattle with an average of three cattle per household. Herds size of 6-30 cattle accounted for about 56 percent of all cattle in the region. There was no cattle rearing households had herds of size of 31- 100 cattle. All cattle rearing households had herds of size 1-30 cattle.

MAP 3.40 MTWARA
Cattle Population by District as of 1st Octobers 2003

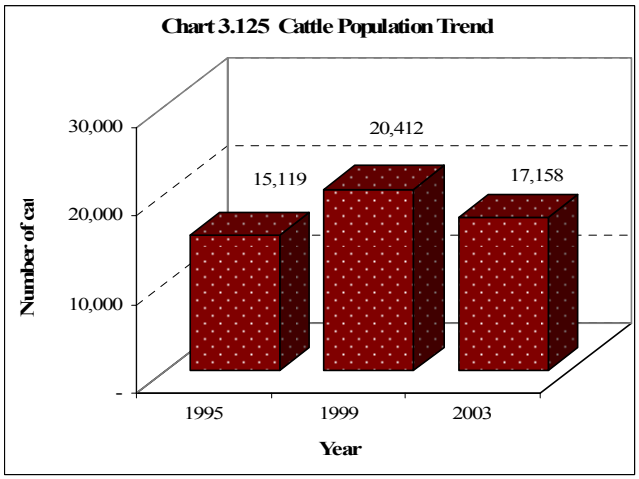


MAP 3.41 MTWARA
Cattle Density by District as of 1st October 2003



3.4.1.3 CattlePopulation Trend

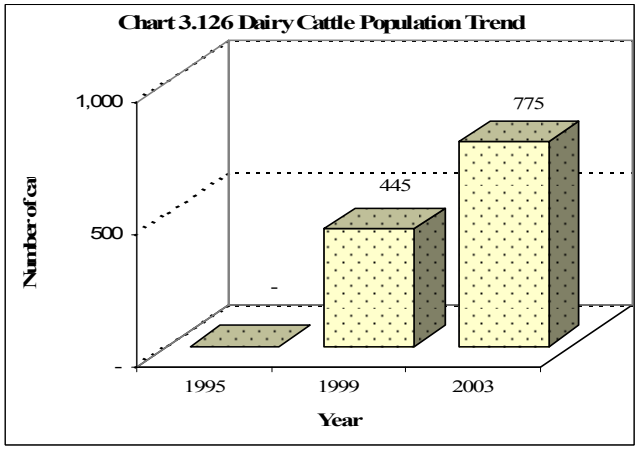
During the 8-year period cattle population in Mtwara increased from 15,119 in 1995 to 17,158 cattle in 2003. This implies an overall positive annual growth rate of -1.6 percent (Chart 3.125).



There was an increase in number of cattle over the 4-year period from 1995 to 1999 at an annual rate of 7.81 percent whereby the number increased from 15,119 to 20,412. However, the number of cattle decreased from 20,412 in 1999 to 17,158 in 2003 at the negative annual growth rate of -4.25 percent.

3.4.1.4 Improved Cattle Breeds

The total number of improved cattle in Mtwara region was 775 (all dairy breeds). The diary cattle constituted 4.5 percent of the total cattle and 100 percent of improved cattle in the region. There were no beef cattle breeds in the region. The number of dairy cattle increased from 445 in 1999 to 775 in 2003 at an annual growth rate of 14.9 percent. The annual rate of growth for the period from 1995 to 1999 was not determined due to lack of information for the year 1995 (Chart 126).

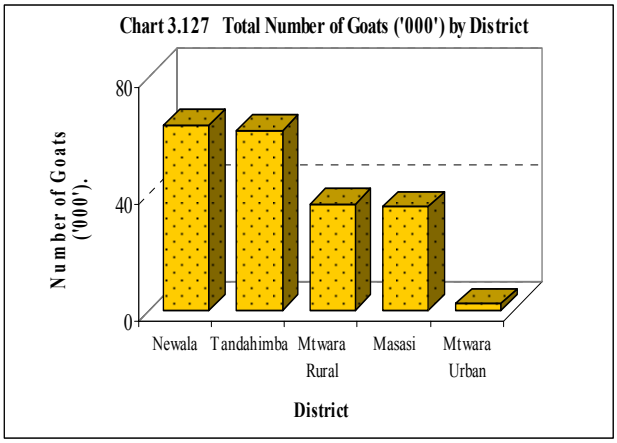


3.4.2. Goat Production

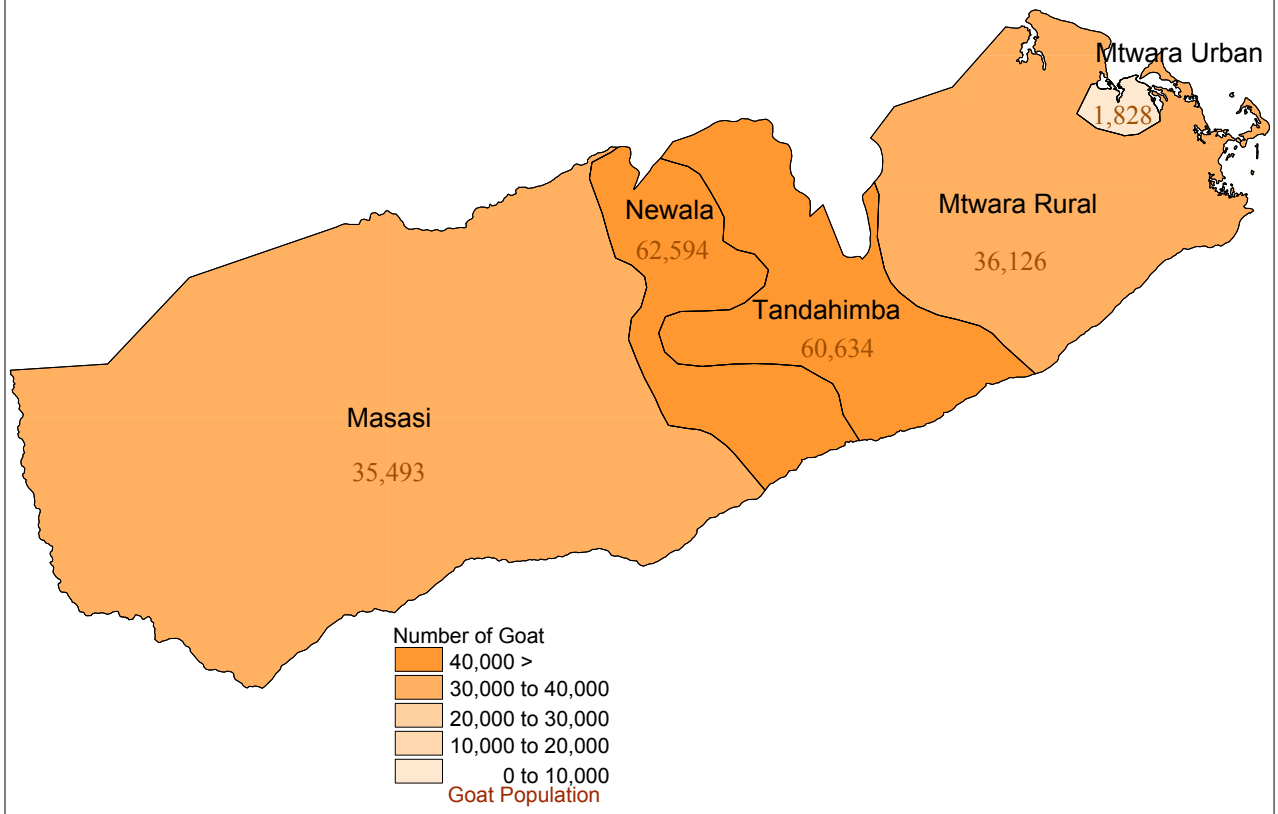
Goat rearing was the most important livestock keeping activity in the region followed by sheep and pig rearing. In terms of total number of goats on the Mainland, Mtwara region ranked 18 out of the 21 regions with 1.7 percent of the total goats on the Mainland.

3.4.2.1 Goat Population

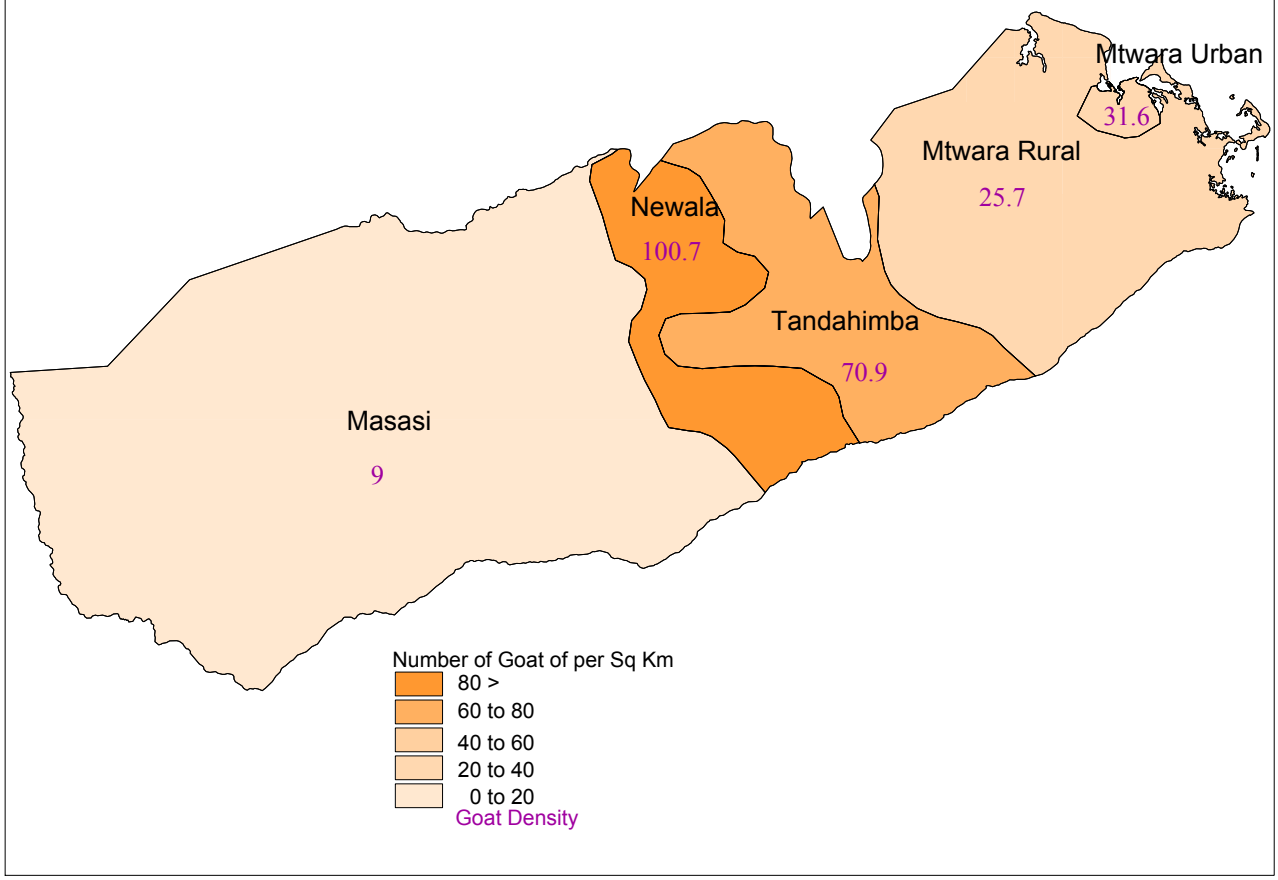
The number of goat-rearing-households in Mtwara region was 32,950 (14.4% of all agricultural households in the region) with a total of 196,675 goats giving an average of 6 head of goats per goat-rearing-household. Newala had the largest number of goats (62,594 goats, 32% of all goats in the region), followed by Tandahimba (60,634 goats, 31%), Mtwara rural (36,126 goats, 18%), and Masasi (35,493 goats, 18%). Mtwara Urban district had the least number of goats (1,828 goats, 1%) (Chart 3.127 and Map 3.42). Newala district had also the highest density (101 heads per km^2) (Map 3.43).



MAP 3.42 MTWARA
Goat Population by District as of 1st Octobers 2003



MAP 3.43 MTWARA
Goat Density by District as of 1st October 2003



3.4.2.2 Goat Herd Size

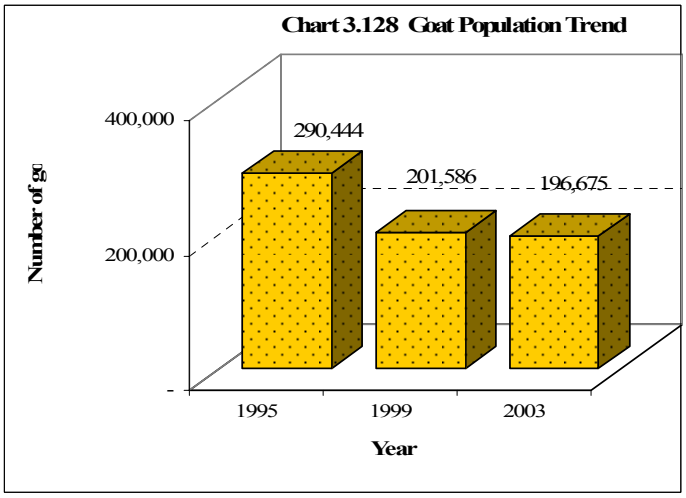
Forty eight percent of the goat-rearing households had herds of size 1-4 goats with an average of 2 goats per goat rearing household. Ninety four percent of total goat-rearing households had herds of size 1-14 goats and owned 78 percent of the total goats in the region resulting of an average of 5 goats per goat-rearing households. The region had 181 households (0.5%) with herd sizes of 40 or more goats each (7,227 goats in total), resulting in an average of 40 goats per household.

3.4.2.3 Goat Breeds

Goat husbandry in the region was dominated by the indigenous breeds that constituted 96 percent of the total goats in Mtwara region. Improved goats for meat and diary goats constituted 2 percent of total goats each.

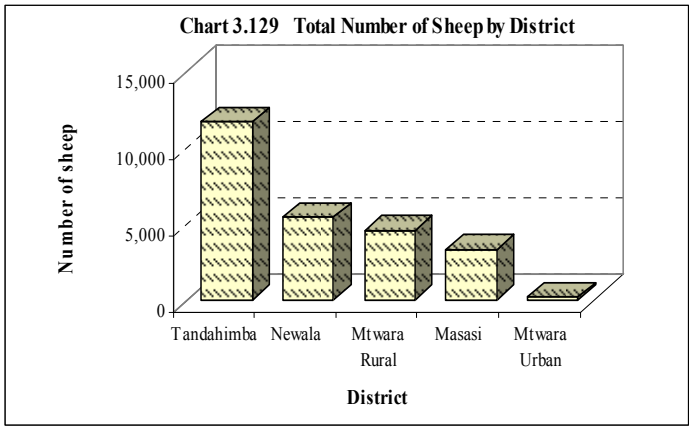
3.4.2.4 Goat Population Trend

The overall average annual growth rate of goat population from 1995 to 2003 was -4.8 percent. This negative trend implies eight years of population decrease from 290,444 in 1995 to 196,675 in 2003. The number of goats decreased from 290,444 in 1995 at an estimated average annual growth rate of -8.7 percent to 201,586 in 1999. From 1999 to 2003, the goat population decreased at an average annual growth rate of -0.6 percent (Chart 128).



3.4.3. Sheep Production

Sheep rearing was the second most important livestock keeping activity in Mtwara region after goats. The region ranked 17 out of 21 Mainland regions and had 0.6 percent of all sheep on Tanzania Mainland.

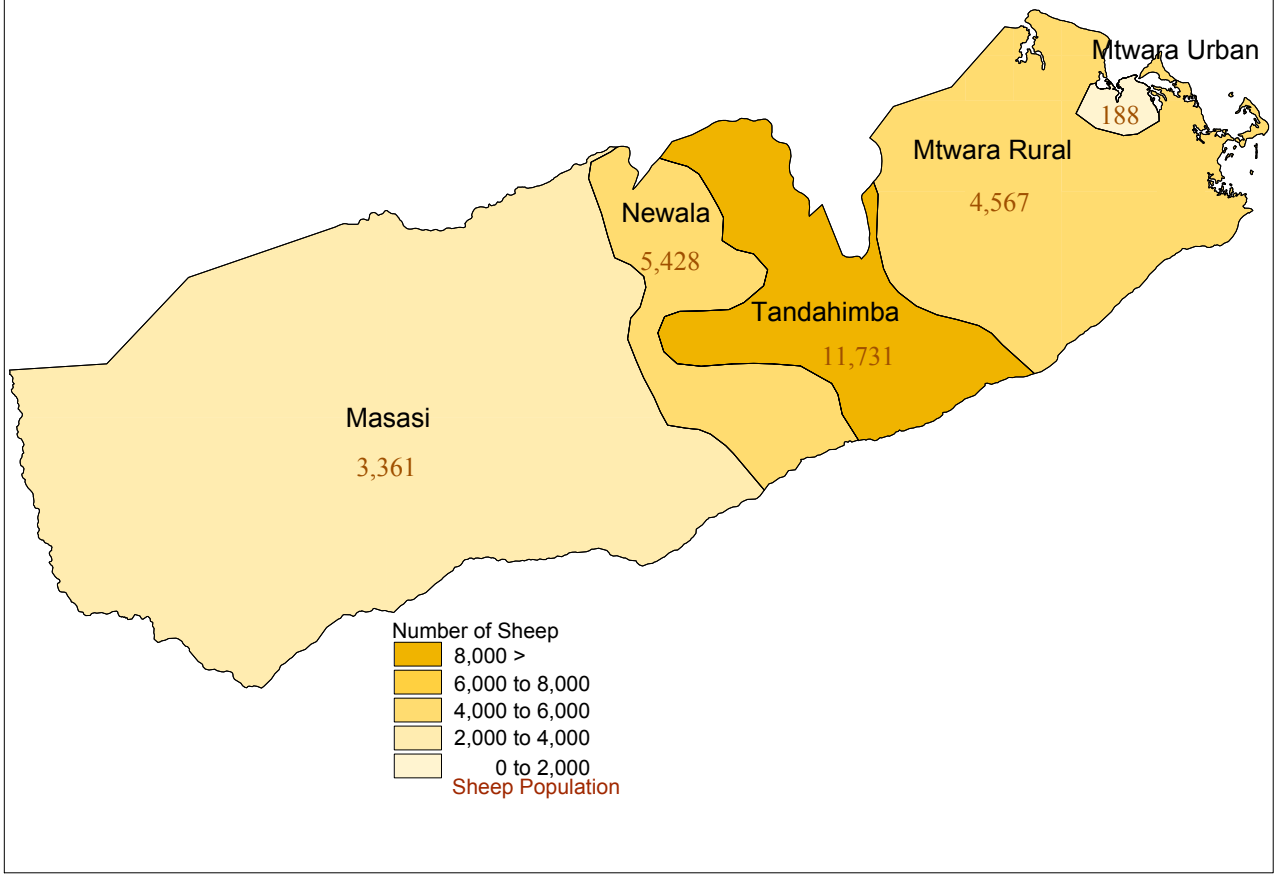


3.4.3.1 Sheep Population

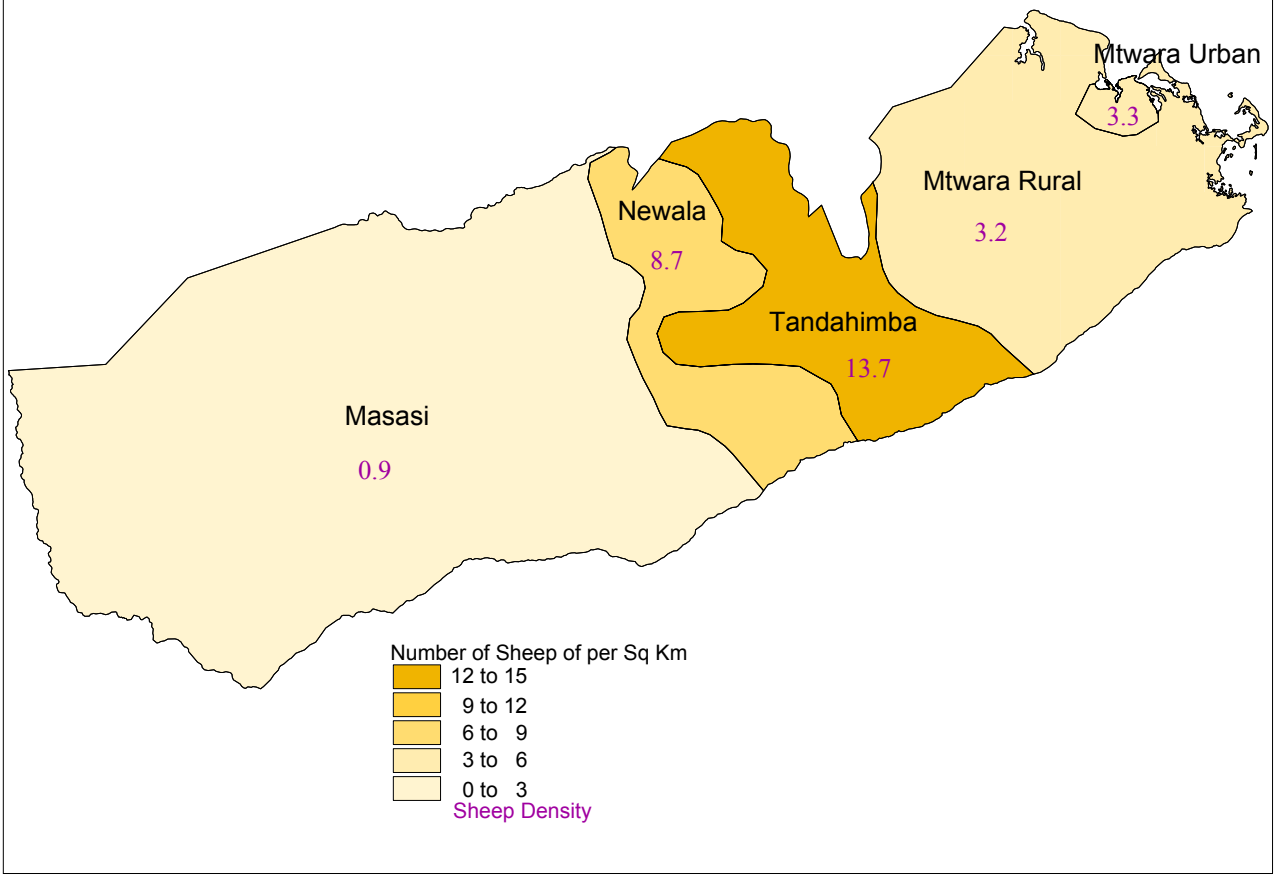
The number of sheep-rearing households was 3,487 (2% of all agricultural households in Mtwara region) rearing 25,275 sheep, giving an average of 7 heads of sheep per sheep-rearing household. The district with the largest number of sheep was Tandahimba with 11,731 sheep (46%of total sheep in Mtwara region) followed by Newala (5,428 sheep, 22%), Mtwara rural (4,567 sheep, 18%) and Masasi (3,361 sheep, 13%). Mtwara urban District had the least number of sheep (188 sheep, 1%) (Chart 3.129 and Map 3.44). Tandahimba district also had the highest density (14 head per km^2) (Map 3.45).

Sheep rearing was dominated by indigenous breeds which accounted for all sheep kept in the region.

MAP 3.44 MTWARA
Sheep Population by District as of 1st Octobers 2003

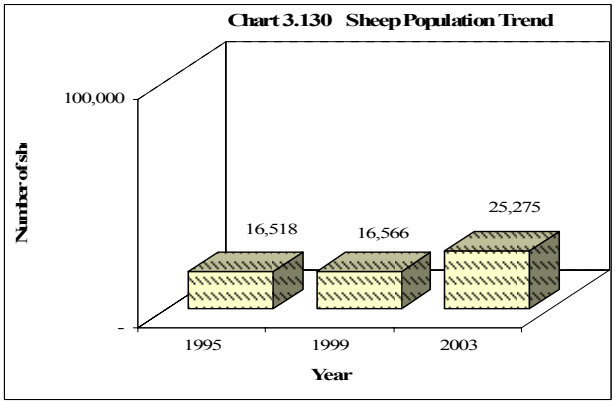


MAP 3.45 MTWARA
Sheep Density by District as of 1st October 2003



3.4.3.2 Sheep Population Trend

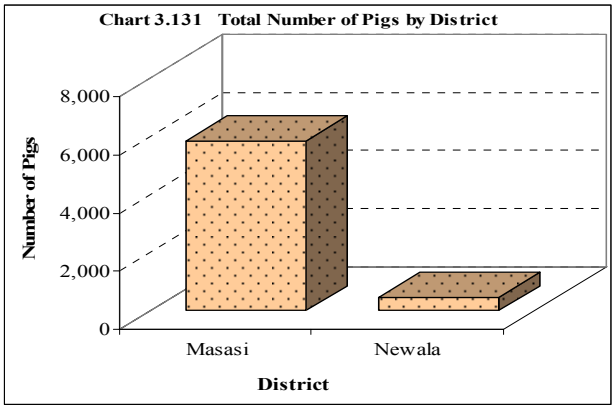
The overall annual growth rate of the sheep population over the eight-year period from 1995 to 2003 is estimated at 5.5 percent. The population increased at an average annual rate of growth of 0.1 percent from 16,518 in 1995 to 16,566 in 1999. From 1999 to 2003, sheep population increased at an average annual rate of growth of 11.1 percent (Chart 3.130).



3.4.4. Pig Production

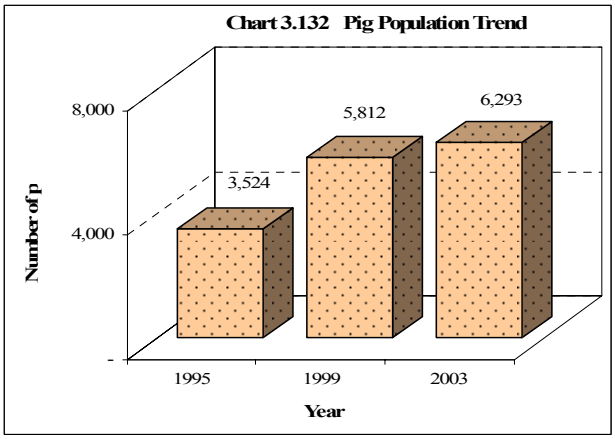
Piggery was the least important livestock keeping activity in the region after goats, sheep and cattle. The region ranked at 14 out of 21 Mainland regions and had 0.6 percent of the Mainland total pigs.

The number of pig-rearing agricultural households in Mtwara region was 3,355 (2% of the total agricultural households in the region) rearing 6,293 pigs. This gives an average of 2 pigs per pig-rearing household. The district with the largest number of pigs was Masasi with 5,826 pigs (93% of the total pig population in the region) followed by Newala (467 pigs, 7%), (Chart 3.131 and Map 3.46). Masasi district also had the highest density (2 head per km^2) (Map 3.47). No pigs were recorded in Tandahimba, Mtwara rural and Mtwara urban districts.

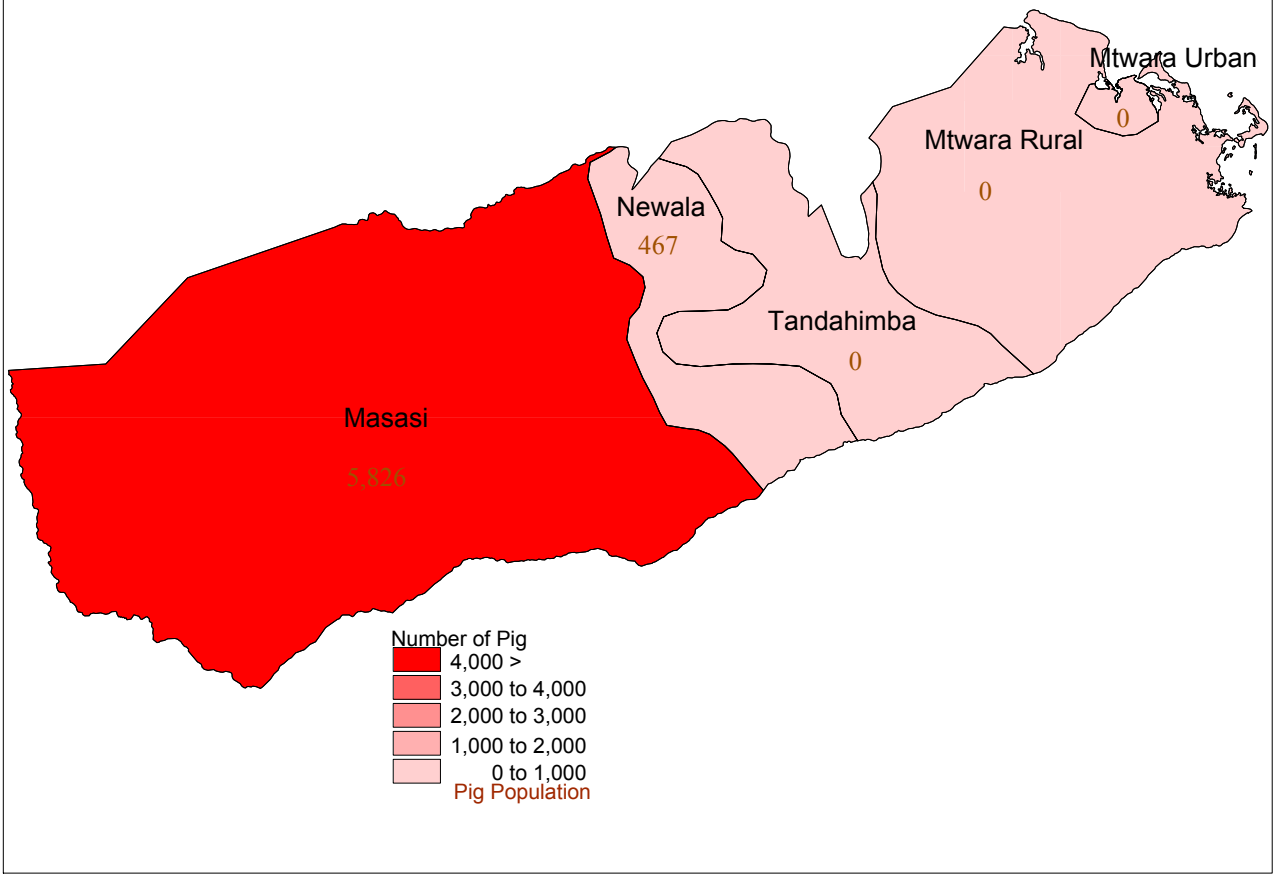


3.4.4.1 Pig Population Trend

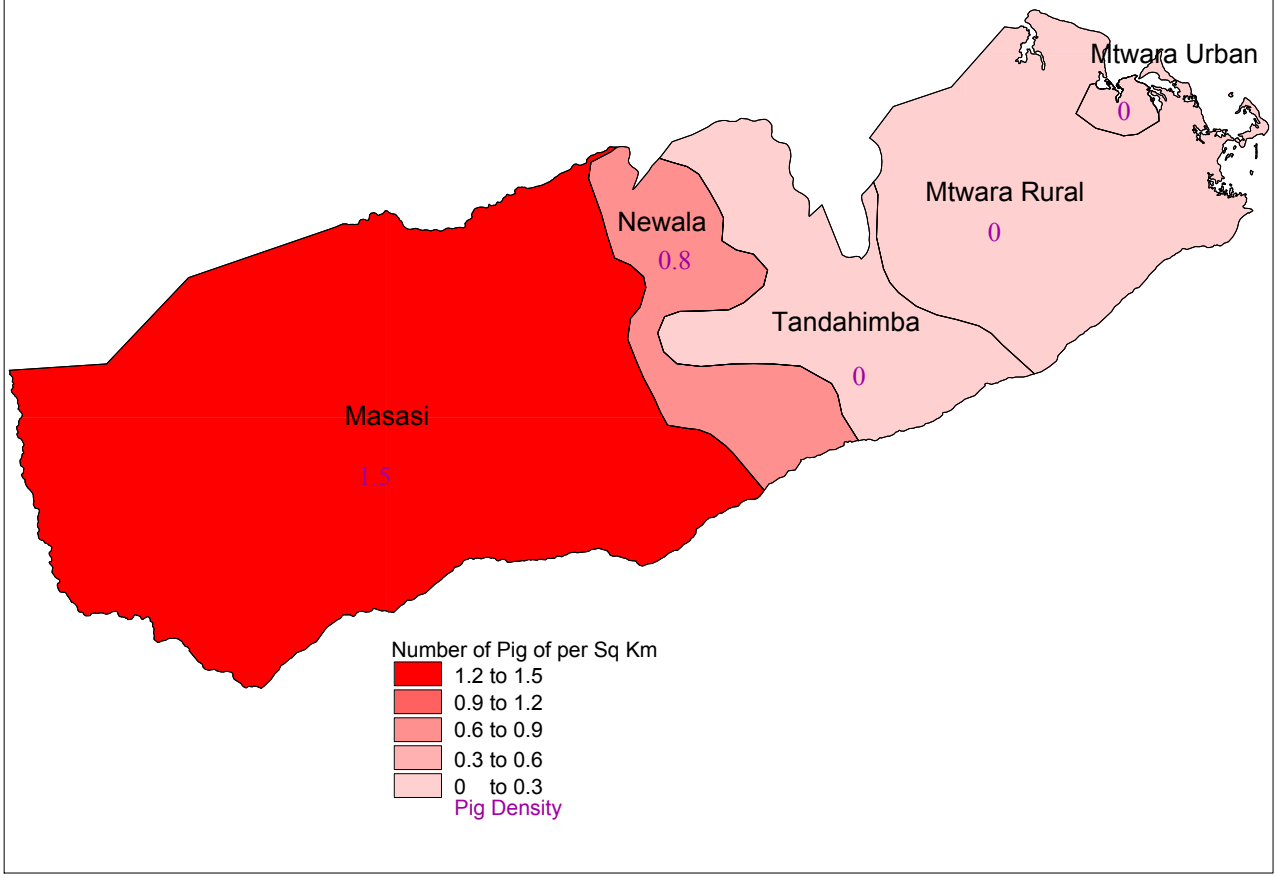
The overall average annual growth rate of the pig population over the eight-year period from 1995 to 2003 was 7.5 percent. During this period the population grew from 3,524 in 1995 to 6,293 in 2002. The pig population increased from 3,524 in 1995 to 5,812 in 1999 at a higher average annual growth rate of 13.3 percent. The growth rate dropped to 2.0 percent during the following four years from 1999 to 2003 in which pig population increased from 5,812 to 6,293 (Chart 3.132).



MAP 3.46 MTWARA
Pig Population by District as of 1st Octobers 2003



MAP 3.47 MTWARA
Pig Density by District as of 1st October 2003

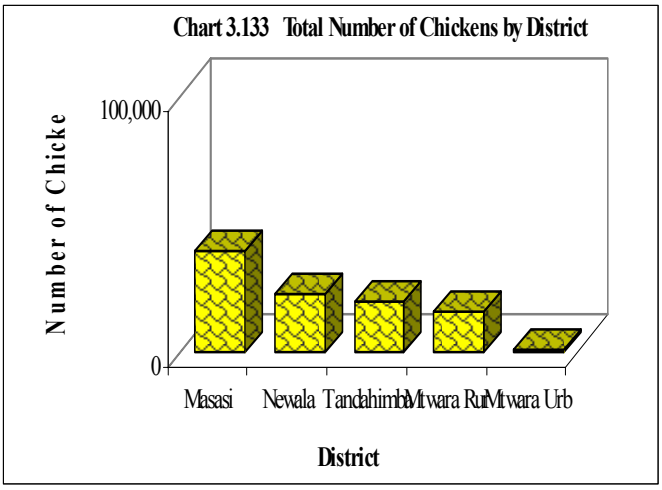


3.4.5 Chicken Production

The poultry sector in Mtwara region was dominated by chicken production. The region contributed 2.1 percent to the total chicken population on Tanzania Mainland.

3.4.5.1 Chicken Population

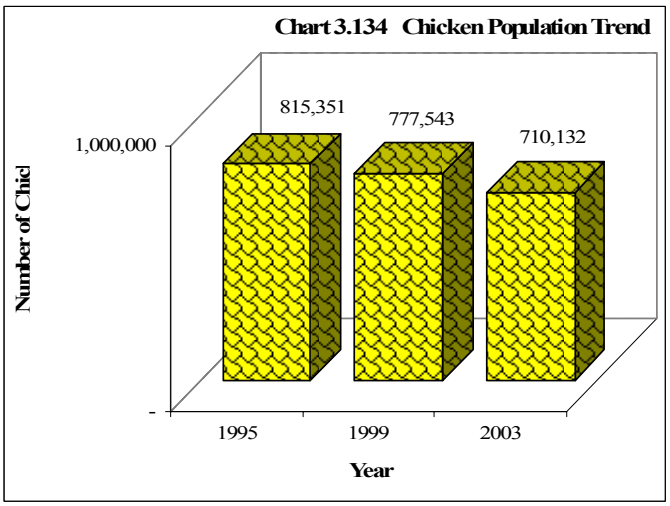
The number of households keeping chicken was 96,984 raising about 710,132 chickens. This gives an average of 7 chickens per chicken-rearing household. In terms of total number of chickens in the country, Mtwara region was ranked nineteenth out of the 21 Mainland regions.



The District with largest number of chickens was Masasi (298,246 chickens, 42% of the total number of chickens in the region) followed by Tandahimba (158,038, 22%), Newala (128,122, 18%), Mtwara rural (115,205, 16%) and Mtwara urban (10,521 chickens, 1%). (chart 133 and Map 3.48)

3.4.5.2 Chicken Population Trend

The overall average annual chicken population growth rate during the eight-year period from 1995 to 2003 was -1.7 percent. The population decreased at a rate of -1.2 percent from 1995 to 1999 after which the rate decreased further to -2.2 percent over the four year period from 1999 to 2003 (Chart 3.134 and Map 3.49).



Ninety nine percent of all chicken in Mtwara region were of indigenous breed. The dominance of indigenous breed makes the population trend for the indigenous chicken more-or-less the same as that of the total chickens in the region.

3.4.5.3 Chicken Flock Size

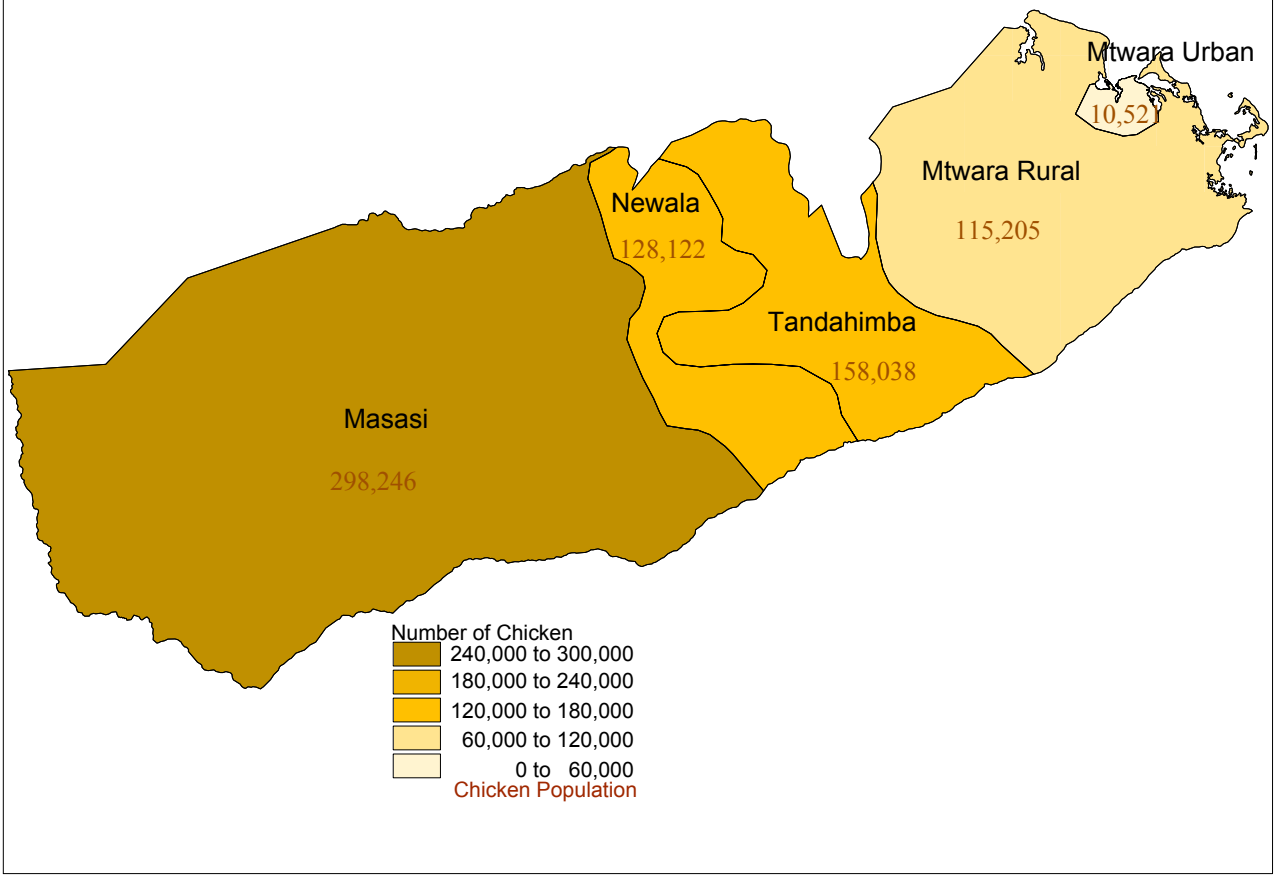
The results indicate that about 94 percent of all chicken-rearing households were keept 1-19 chickens at an average of 6 chickens per holder. About 6 percent of holders were reported to be keeping the flocks of size 20 to 99 chickens at an average of 31 chickens per holder.

Only 0.3 percent of holders had flock sizes of more than 100 chickens at an average of 285 chickens per holder (Table 3.14).

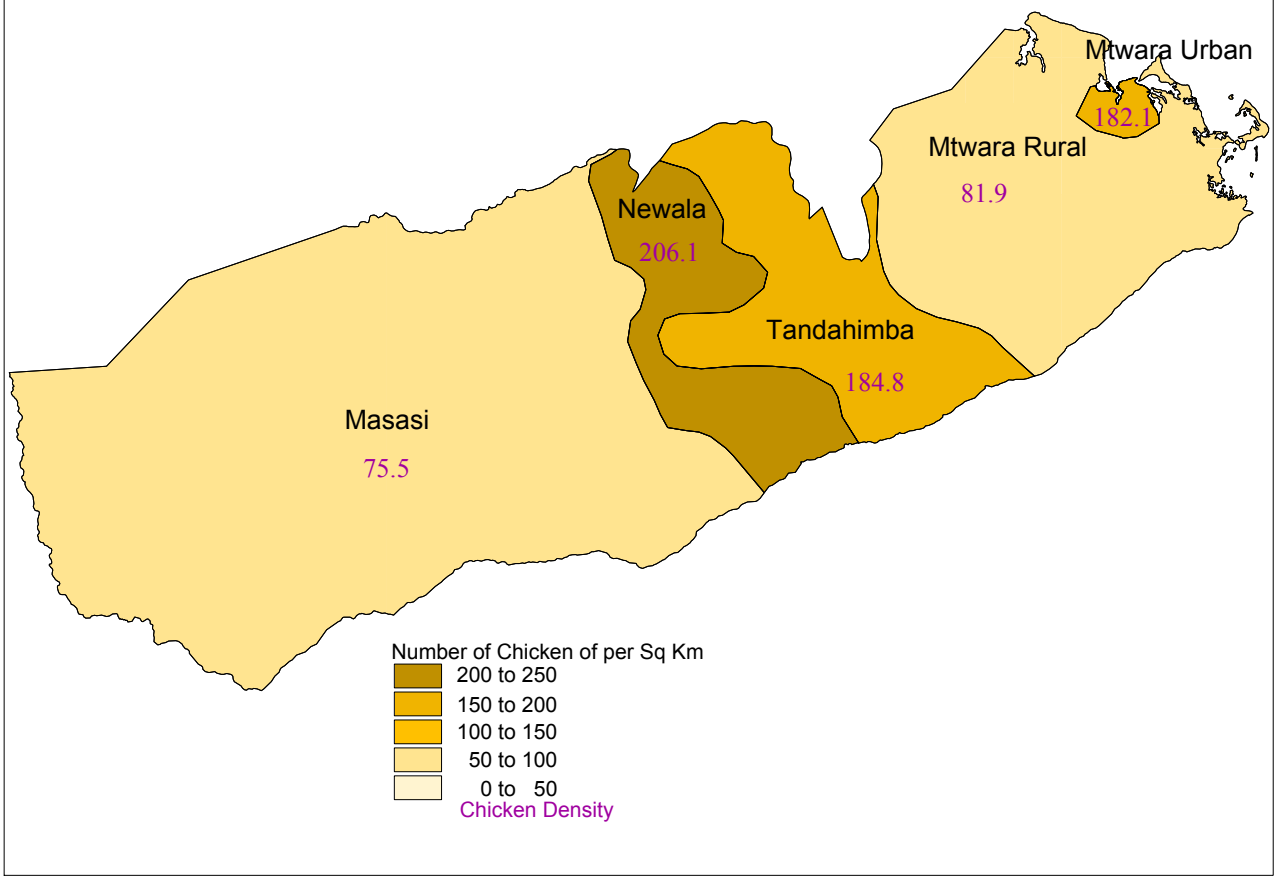
Table 3.15 Number of Households and Chickens Raised by Flock Size

Flock Size	Number of Households	%	Number of Chicken	Average Chicken per Households
1-4	53,208	55	125,735	2
5-9	22,734	23	147,040	6
10 -19	15,273	16	193,532	13
20-29	3,681	4	86,977	24
30-39	858	1	27,688	32
40-49	258	0	11,117	43
50-99	720	1	45,999	64
100+	253	0	72,045	285
Total	**96,984**	**100**	**710,132**	**7**

MAP 3.48 MTWARA
Chicken Population by District as of 1st Octobers 2003

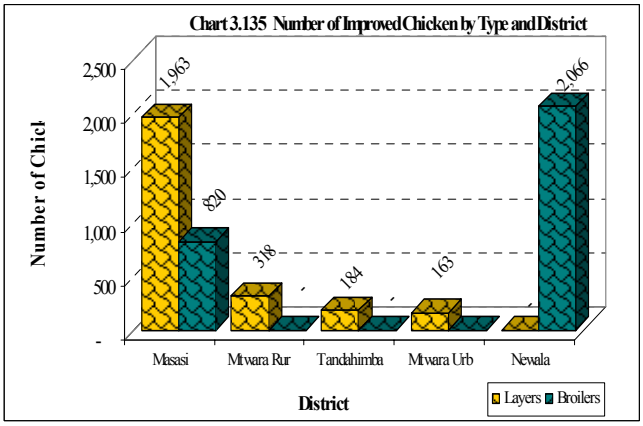


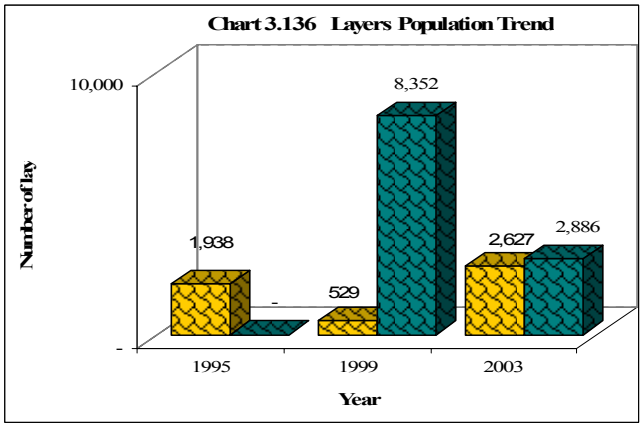
MAP 3.49 MTWARA
Chicken Density by District as of 1st October 2003



3.4.5.4 Improved Chickens (layers and broilers)

The overall averageannual growth rate for layers during the eight-year period from 1995 to 2003 was 3.4 percent during which the population grew from 1,938 to 2,627. During four-year period from 1995 to 1999 layers chicken population decreased at an average annual rate of growth of -27.7 percent from 1,938 layers in 1995 to 529 layers in 1999. The rate increased to 49.3 percent per annum over the following four years in which the number of layers increased from 529 in 1999 to 2,627 in 2003. The number of improved chicken was most significant in Masasi district followed by Mtwara rural district (Chart 3.135).





The overall average annual growth rate for broilers during the eight-year period from 1995 to 2003 was 170.7 percent during which the population grew from 0 to 2,886. The annual growth rate was highest (855.9%) during the four-year period with the population increasing from 0 in 1995 to 8,352 in 1999. The broiler population exhibited a decreasing trend at the rate of -23.3 percent per annum over the next four-year period resulting in a decrease from 8,352 in 1999 to 2,886 in 2003 (Chart 3.136).

3.4.6. Other Livestock

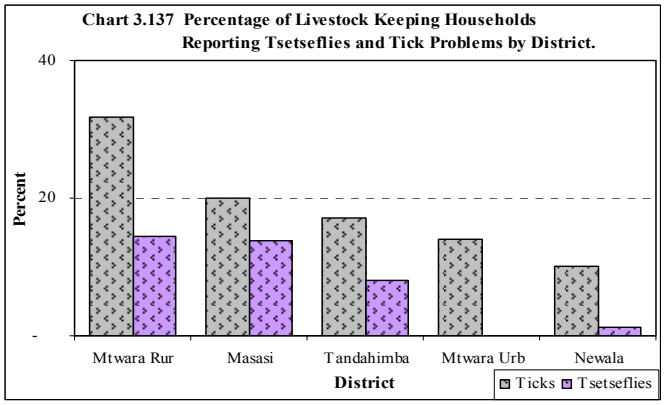
There were 8,885 ducks, 20,607 turkeys and 589 rabbits raised by rural agricultural households in Mtwara region. Table 3.16 indicates the number of other livestock kept in each district. The biggest number of ducks in the region was found in Masasi District (54% of all ducks in the region), followed by Newala (35%) and Mtwara rural (8%). Tandahimba district had the least number of ducks estimated at 2 percent of total ducks in the region. Turkeys were reported in Masasi district only (Table 3.16).

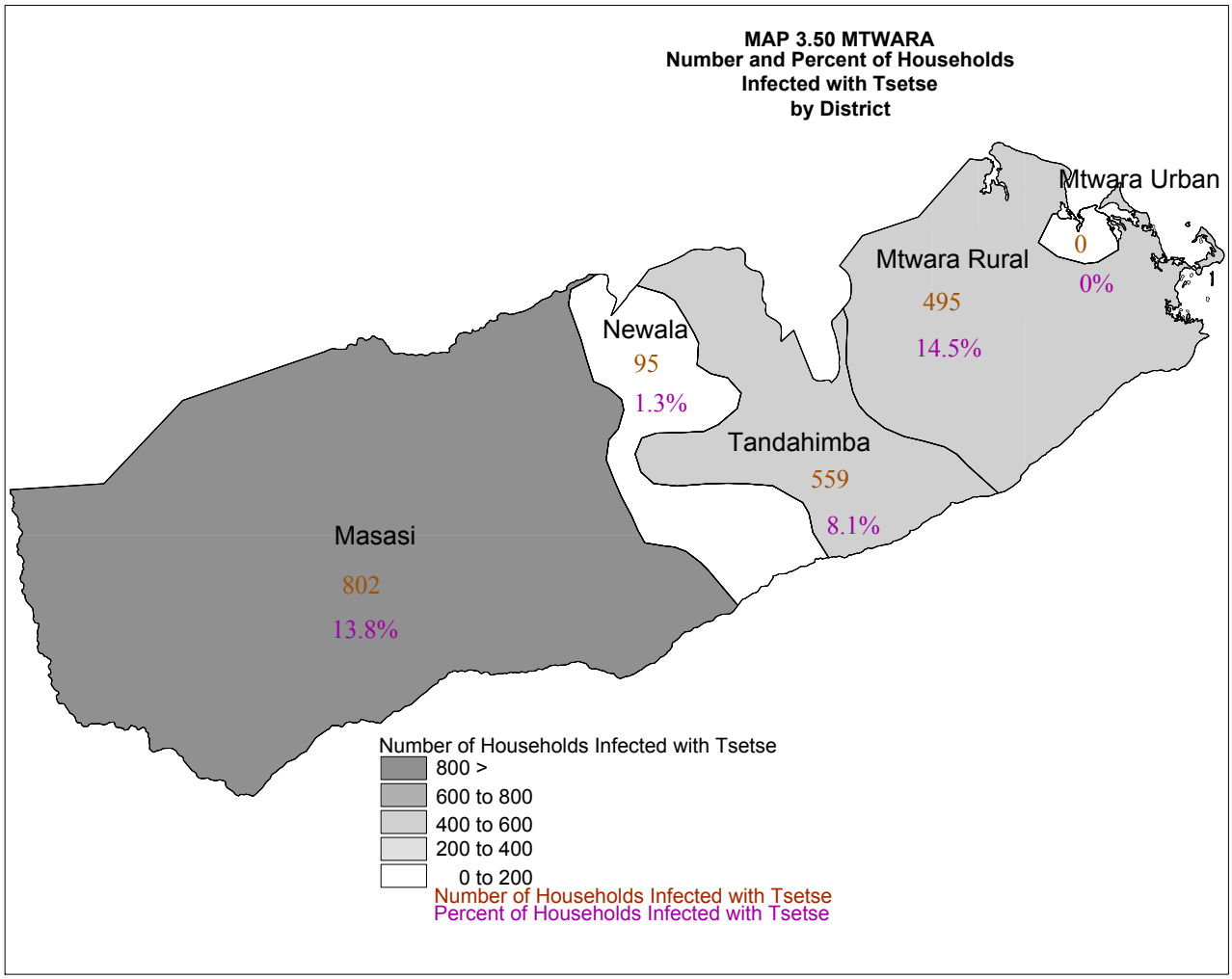
Table 3.16 Number of Other Livestock byType of Livestock and District

District	Type of Livestock			
	Ducks	Turkeys	Rabbits	Other
Mtwara Rural	719	0	0	0
Newala	3,143	0	589	838
Masasi	4,839	20,607	0	0
Tandahimba	184	0	0	0
Total	**8,885**	**20,607**	**589**	**838**

3.4.7 Pest and Parasite Incidence and Control

The results indicate that 16 percent and 8 percent of the total livestock-keeping households reported to have encountered ticks and tsetse fly problems respectively. Chart 3.137 shows that there were a predominance of tick related diseases over tsetseflies related diseases. Incidences of both problems were highest in Mtwara rural district but lowest in Newala district (Map 3.50).




MAP 3.50 MTWARA
Number and Percent of Households
Infected with Tsetse
by District
Mtwara Urban
0
0%
Mtwara Rural
495
14.5%
Newala
95
1.3%
Tandahimba
559
8.1%
Masasi
802
13.8%
Number of Households Infected with Tsetse
800 >
600 to 800
400 to 600
200 to 400
0 to 200
Number of Households Infected with Tsetse
Percent of Households Infected with Tsetse

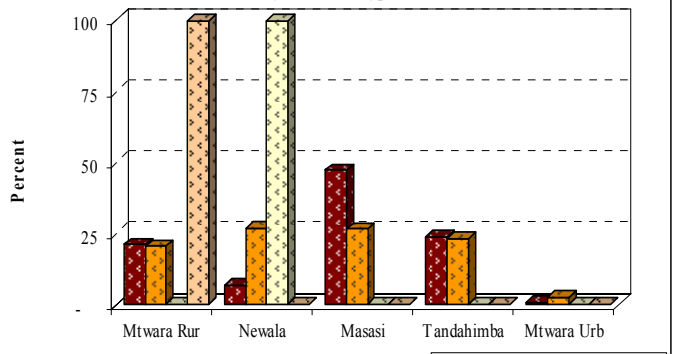
The most practiced method of tick controll was spraying with 18 percent of all livestock-rearing households in the region using the method. Other methods used were dipping (4%) and other traditional methods like hand picking (28%). However, 50 percent of livestock-keeping households did not use any method.

The most common method used to control tsetse flies was spraying which was practiced by 22 percent of livestock-rearing households. However, 78 percent of the livestock rearing households did not use any of the three aforementioned methods.

3.4.7.1 Deworming

Livestock rearing households that dewormed their animals were 4,736 (19% of the total livestock rearing households in the region). The percentage of the households that dewormed cattle was 77 percent, goats (7%), sheep (3%) and pigs (3%) (Chart 3.138).

Chart 3.138 Percent of Livestock Rearing Households that Dewormed Livestock by Livestock Type and District



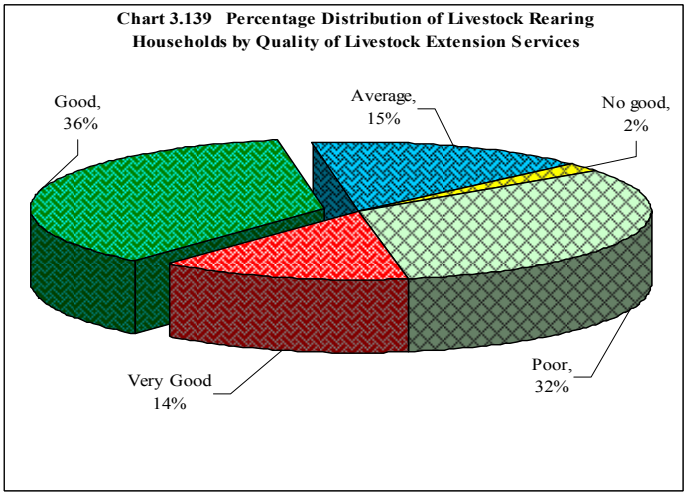
3.4.8. Access to Livestock Services

3.4.8.1 Access to Livestock Extension Services

The toal number of households that received livestock advice was 10,211, representing 41 percent of the total livestock-rearing households and 4.5 percent of the agricultural households in the region. The main livestock extension agent was the government which provided service to about 94 percent of all households receiving livestock extension services. The rest were other.

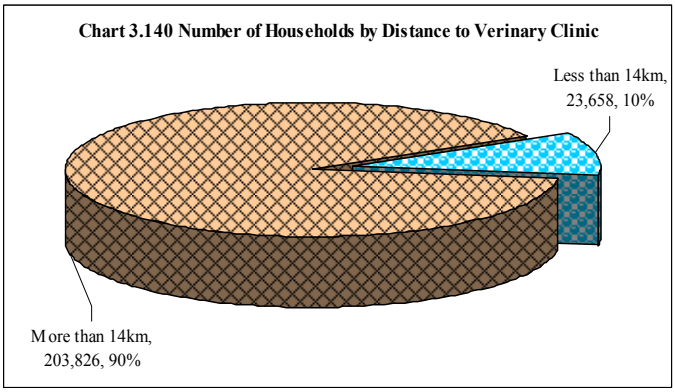
About 36 percent of livestock rearing households described the general quality of livestock extension services as being good, 15 percent said they were average and 14 percent said they were very good. However, 2 percent of the livestock rearing households said the quality was not good whilst 32 percent described them as poor (Chart 3.139).

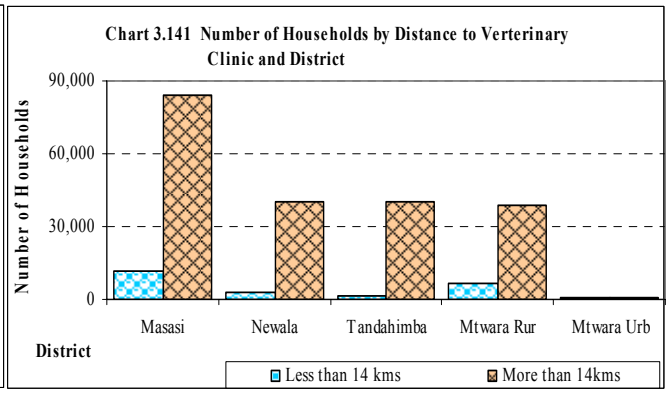
Chart 3.139 Percentage Distribution of Livestock Rearing Households by Quality of Livestock Extension Services



3.4.8.2 Access to Veterinary Clinic

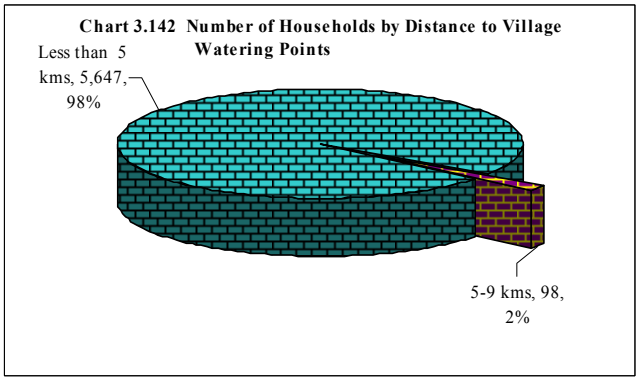
Many veterinary clinics were located very far from livestock rearing households. About 69 percent of the livestock rearing households accessed the services, at a distance of more than 14 kms. Only 31 percent of the households accessed the services within 14 kms from their dwellings (Chart 3.140). The most affected district was Tandahimba district with almost all livestock rearing households accessing the services at a distance of more than 14 kms. Mtwara Urban District was the least affected because about 63 percent of the households could access the service within a distance of 14 kilometres. (Chart 3.141).



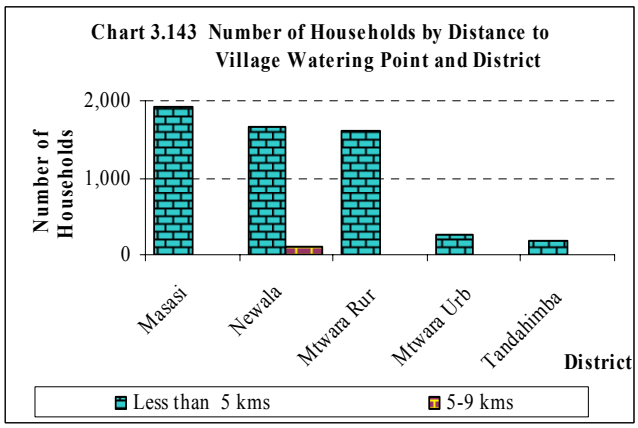


3.4.8.3 Access to Village Watering Points/dam

The number of livestock rearing households residing less than 5 kms from the nearest watering point was 5,647 (98% of livestock rearing households that accessed the village watering point in Mtwara region) whilst 98 households (2%) resided between 5 and 9 kms. (Chart 3.142).



Masasi district had the best livestock water supply with the majority of livestock rearing households residing within 5 kms from the nearest watering point. This is followed by Newala, and Mtwara rural districts. In Newala district about 6 percent of the livestock rearing households had to travel a distance of more than five kilometers to the nearest watering point (Chart 3.143).

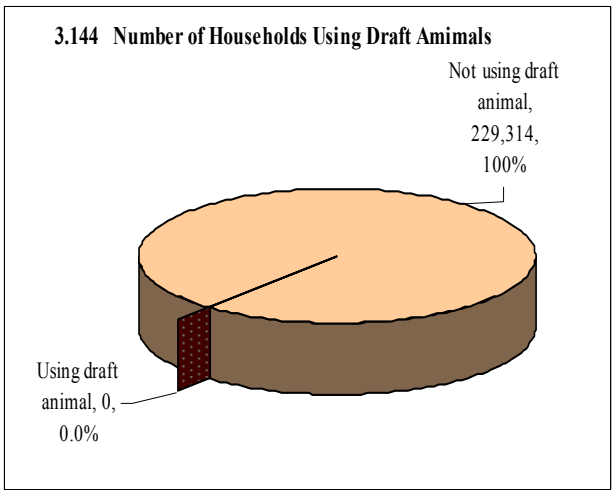


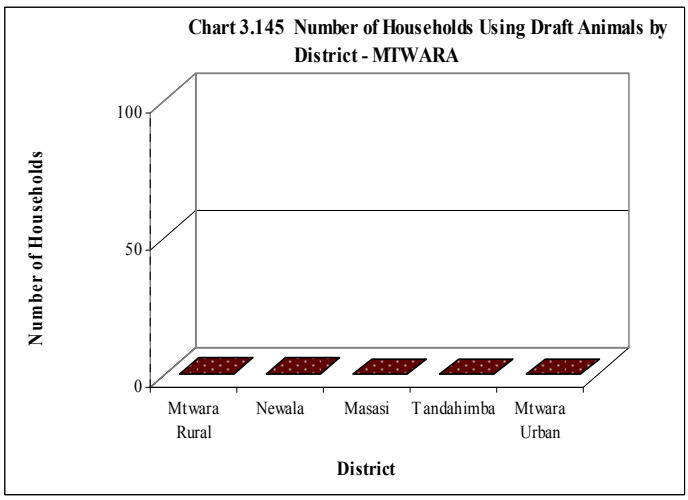
3.4.9. Animal Contribution to Crop Production

3.4.9.1 Use of Draft Power

There is no agriculture household in Mtwara region that used draft animals to cultivate land (Chart 3.144).

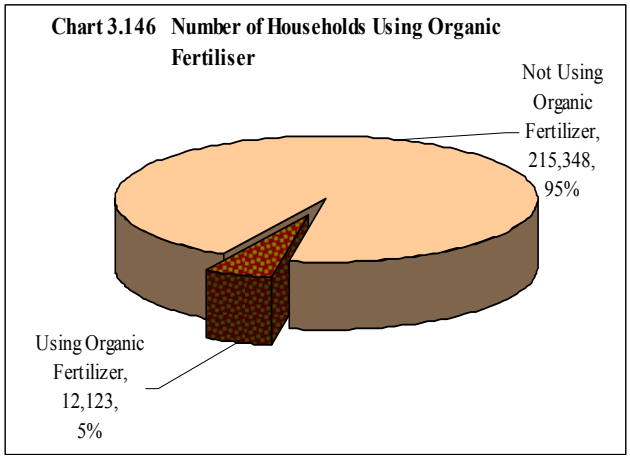
There were no households that used draft animals to cultivate all districts of Mtwara region. (Chart 3.145).

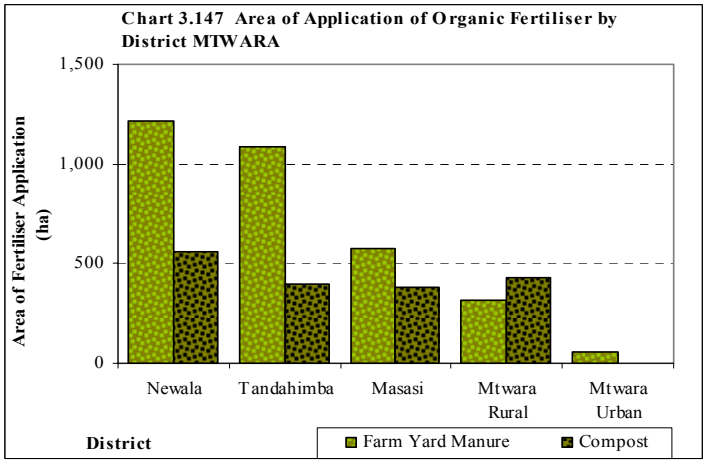




3.4.9.2 Use of Farm Yard Manure

The number of Households using organic fertilizers in Mtwara region was 12,123 (5% of total crop growing households in the region) (Chart 3.146). The total area applied with organic fertilisers was 12,400 hectares of which 3,252 hectares (65% of the total area applied with organic fertilizers or 3.1% of the area planted with annual crops and vegetables in Mtwara region during the long rainy season) was applied with farm yard manure.





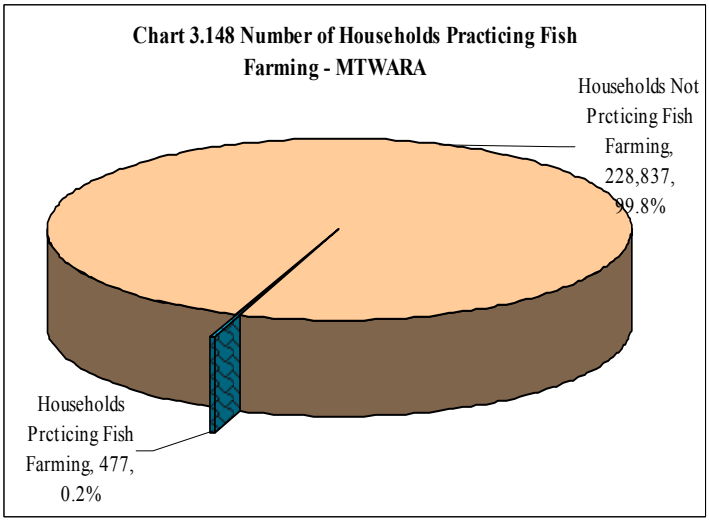
3.12.9.3 Use of Compost

Only 4.369 ha (35% of the area of organic fertilizer application) was applied with compost. The largest area applied with farm yard manure was found in Newala district with 1,216 hectares (37% of the total area applied with farm yard manure) followed by Tandahimba (1,088 ha, 33%), Masasi (572 ha, 18%), Mtwara rural (316 ha, 10%) and Mtwara urban (59 ha, 3%) (Chart 3.147 and Map 3.51).

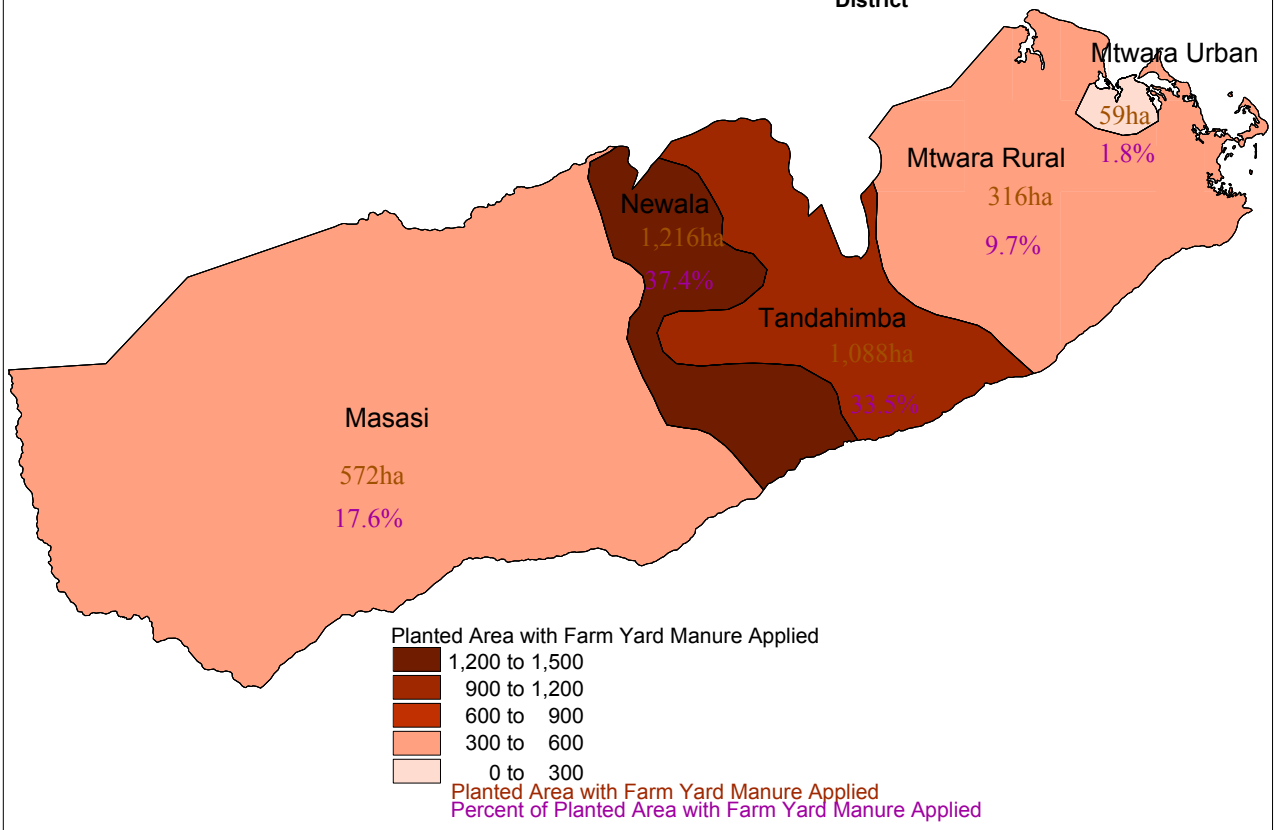
3.5 Fish Farming

The number of households involved in fish farming in Mtwara region was 477, representing 0.2 percent of the total agricultural households in the region (Chart 3.148 and Map 3.52).

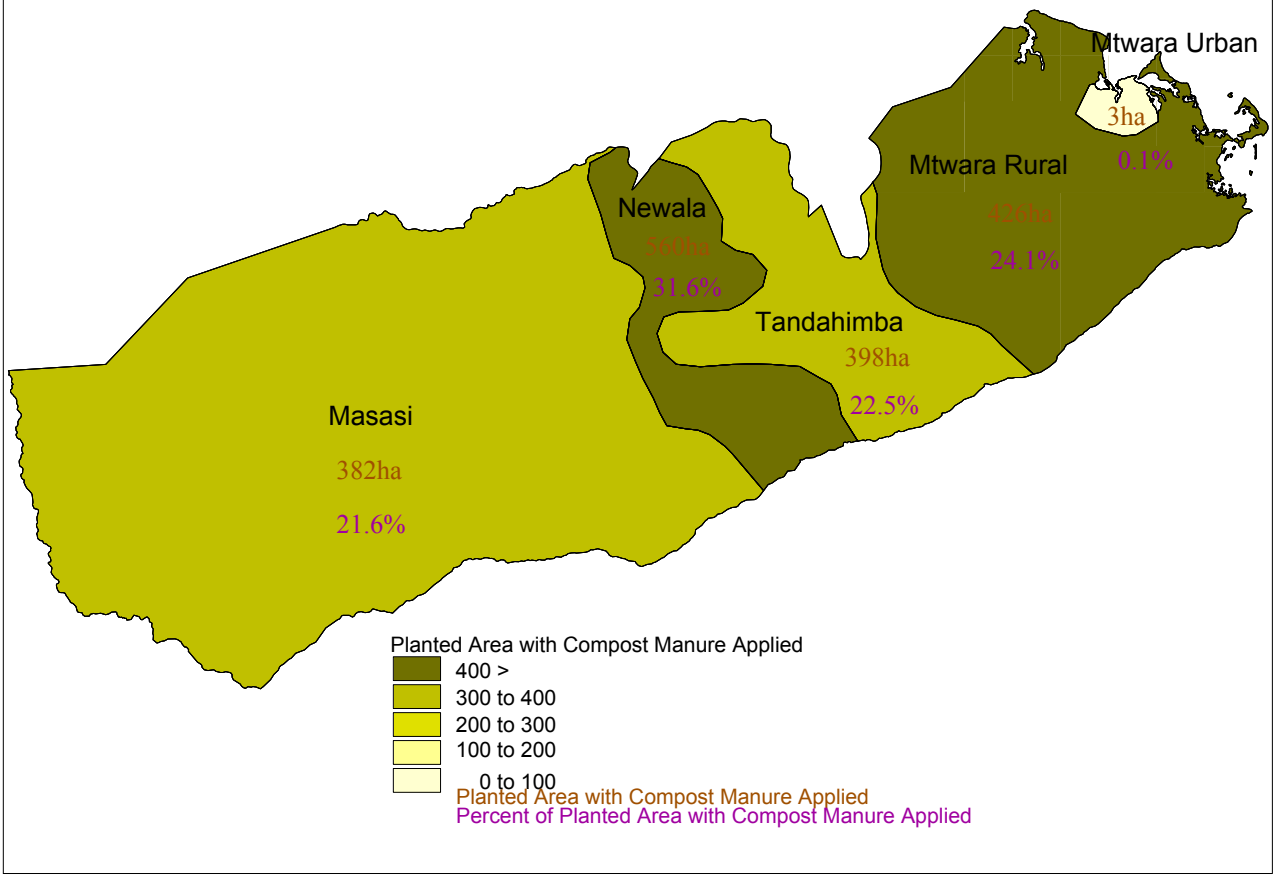
Masasi was the only district in Mtwara region with all 477 households (0.5% of agricultural households) involved in fish farming. (Chart 3.149).



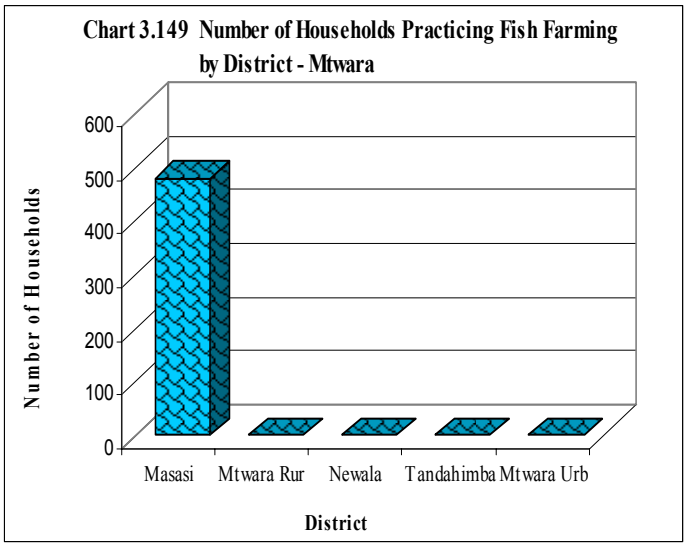
MAP 3.51 MTWARA
Planted Area and Percent of Planted Area with FarmYard Manure Application by District

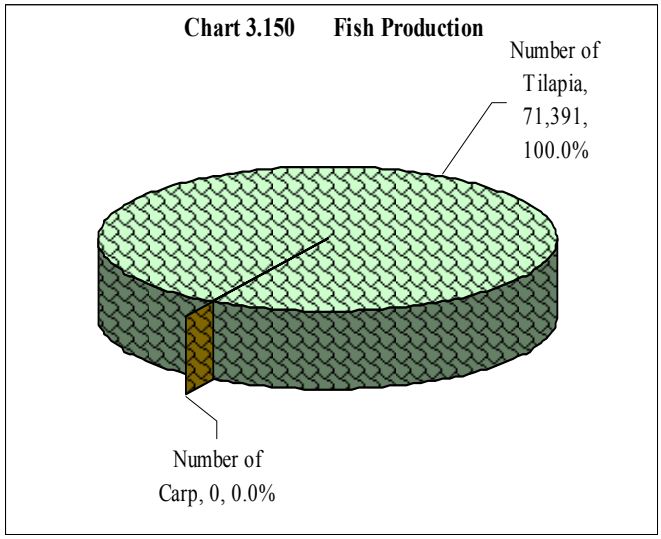


MAP 3.52 MTWARA
Planted Area and Percent of Planted Area with Compost Application by District



The main source of fingerings was the non governmental organizations and/or projects which provided fingering to all fish farming households that bought fingerings.





All fish farming households in the region used the dug-out-pond system and the main fish specie planted was Tilapia. The number of fish harvested in Mtwara region was 71,391 all of which were tilapia (Chart 3.150). About None of the fish farming households sold their fish.

3.6. POVERTY INDICATORS

The agricultural census collected data on poverty for the purpose of providing a base for tracking progress in poverty reduction strategies undertaken by the government.

3.6.1 Access to Infrastructure and Other Services

The results indicate that among the evaluated services, the tarmac road was a service located very far from most of the household's dwellings than any other service. It was located at an average distance of 49 kilometers from the agricultural household's dwellings. Other services and their respective average distances in kilometers from the dwellings were district capital (38), hospital (37), tertiary market (35), secondary school (16), secondary market (16), health clinic (5), primary markets (5), all weather roads (3), primary school (1) and feeder road (1), (Table 3.15).

Table 3.17: Mean Distances from Household Dwellings to Infrastructures and Services by District

District	Mean Distance to										
	Secondary Schools	Primary Schools	All weather roads	Feeder Roads	Hospitals	Health Clinics	District Capital	Primary Markets	Secondary Market	Tertiary Market	Tarmac Roads
Mtwara Rur	25.9	2.0	4.6	0.6	48.3	4.5	48.1	6.3	16.2	40.7	35.3
Newala	10.7	1.5	4.0	1.1	24.8	4.6	27.5	1.9	2.8	20.9	53.1
Masasi	14.7	1.1	3.5	0.8	36.4	6.1	43.9	2.8	10.7	38.6	36.9
Tandahimba	14.7	0.6	1.7	0.3	42.5	5.5	23.9	10.0	41.6	35.5	90.4
Mtwara Urb	5.6	1.3	0.8	0.3	10.1	1.9	10.3	2.0	6.3	10.8	4.3
Total	16.0	1.2	3.4	0.8	37.4	5.4	37.6	4.6	15.9	34.8	49.0

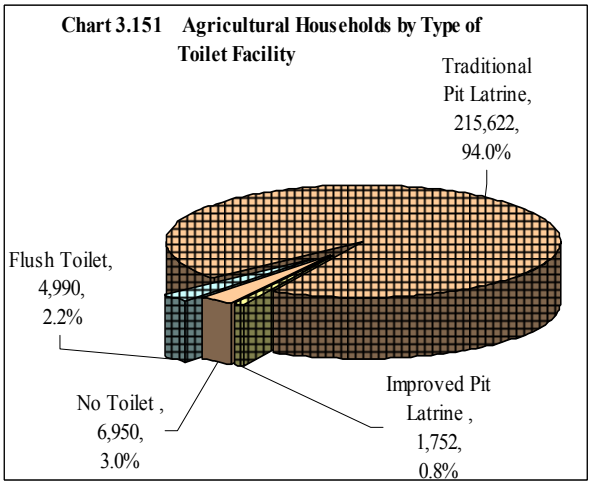
Only 3 percent of the agricultural households reported the available infrastructures and services as 'very good' whereas 52 percent reported them to be poor. Twenty percent of the agricultural households said the infrastructure and services were average, 14 percent said 'good' and 11 percent said they were 'no good'.

3.6.2 Type of Toilets

A large number of rural agricultural households use traditional pit latrines (215,622 households, 94.0% of all rural agricultural households), 4,990 households (2.2%) use flush toilets and 1,752 households (0.8%) use improved pit latrine. However, 6,950 household (3.0%) in the region had no toilet facilities (Chart 3.151).

The distribution of the households without toilets within the region indicates that 68.3 percent of them were found in Mtwara rural District and 15.5 percent were from Newala. The percentages of households without toilets in other districts were as follows Masasi (9.4%), Tandahimba (5.4%), and Mtwara urban (1.4%) Map 3.53).

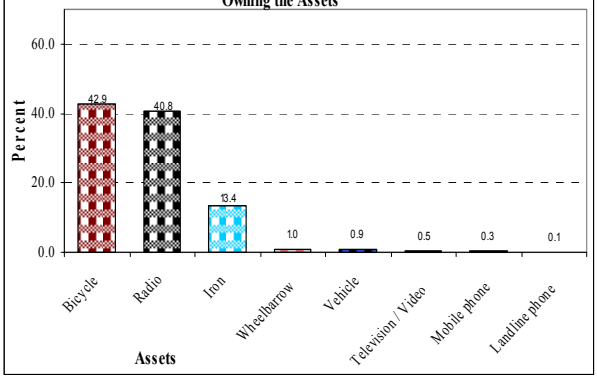
Chart 3.151 Agricultural Households by Type of Toilet Facility



3.6.3 Household's Assets

Bicycles are owned by most rural agricultural households in Mtwara region with 102,726 households (42.9% of the agriculture households in the region) owning the asset. followed by redio (97,775 households, 40.8%), iron (32,058 households, 13.4%), wheelbarrow (2,482 households, 1.0%), vehicle (2,266 households, 0.9%), television/video (1,203 households, 0.5%), mobile phone (633 households, 0.3%), and landline phone (256 households, 0.1%) (Chart 3.152).

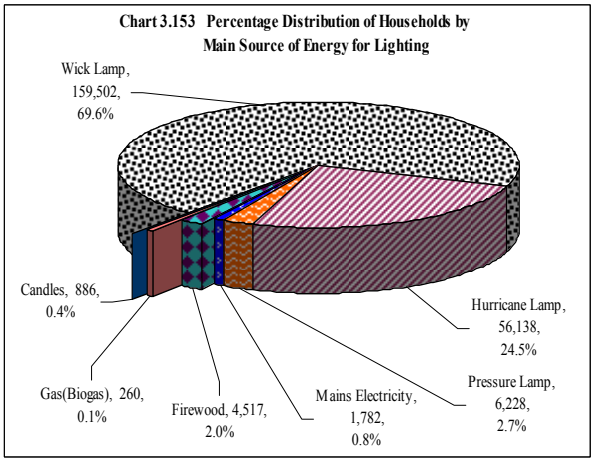
Chart 3.152 Percentage Distribution of Households Owning the Assets



3.6.4 Sources of Lighting Energy

Wick lamp was the most common source of lighting energy in the region. with 69.6 percent of the total rural agricultural households using this source followed by hurricane lamp (24.5%), pressure lamp (2.7%), firewood (2.0%), mains electricity (0.8%), candle (0.4%) and gas or biogas (0.1%) (Chart 3.153).

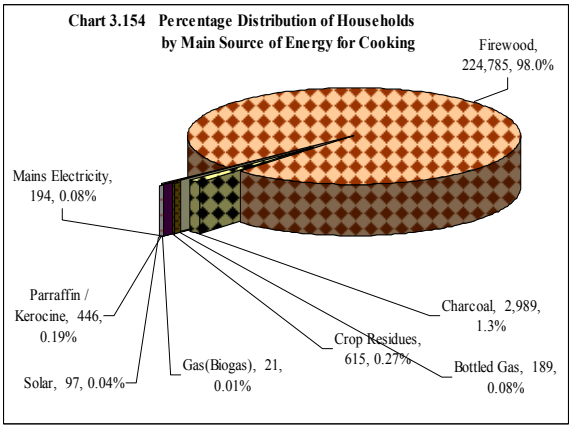
Chart 3.153 Percentage Distribution of Households by Main Source of Energy for Lighting



3.6.5 Sources of Energy for Cooking

The most prevalent source of energy for cooking was firewood, which was used by 98.0 percent of all rural agricultural households in Mtwara region. This was followed by charcoal (1.3%). The rest of energy sources accounted for 0.67 percent. These were crop residues (0.27%), parrafin/kerosene (0.19%), mains electricity (0.08%), bottled gas (0.08%) and solar (0.04%) and gas/biogas (0.01%) (Chart 3.154)

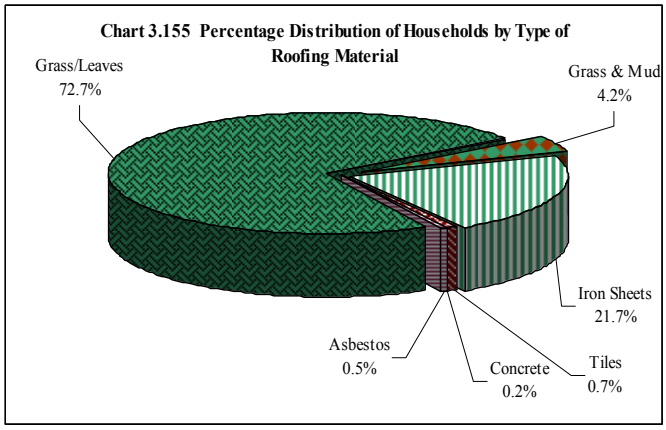
Chart 3.154 Percentage Distribution of Households by Main Source of Energy for Cooking

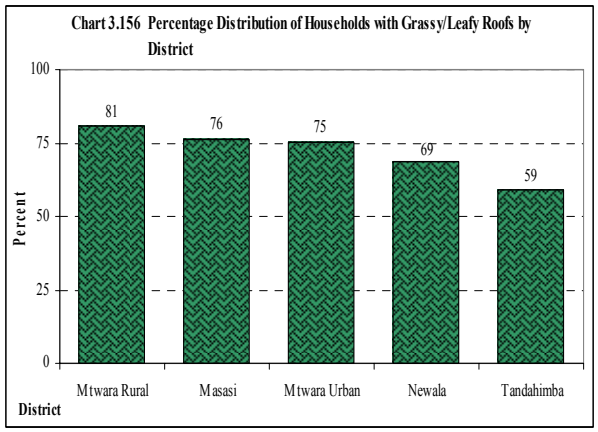


3.6.6 Roofing Materials

The most common material used for roofing of the main dwelling was grass and/or leaves and it was used by 72.7 percent of the rural agricultural households. This was closely followed by iron sheets (21.7%), grass/mud (4.2%), tiles (0.7%), asbestos (0.5%) and concrete (0.2%) (Chart 3.155).

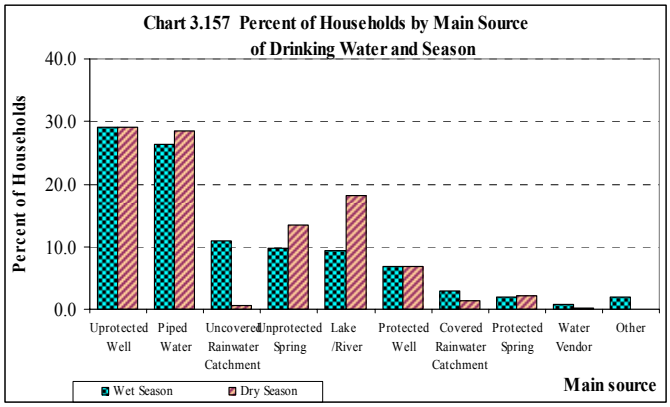
Mtwara Rural district had the highest percentage of households with grass/leaves roofing (81%) followed by Masasi district (76%), Mtwara Urban (75%), Newala (69%) and Tandahimba (59%) (Chart 3.156 and Map 3.54).



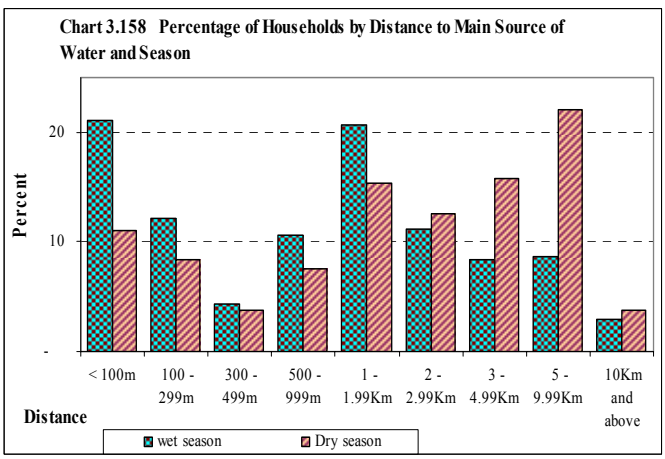


3.6.7 Access to Drinking Water

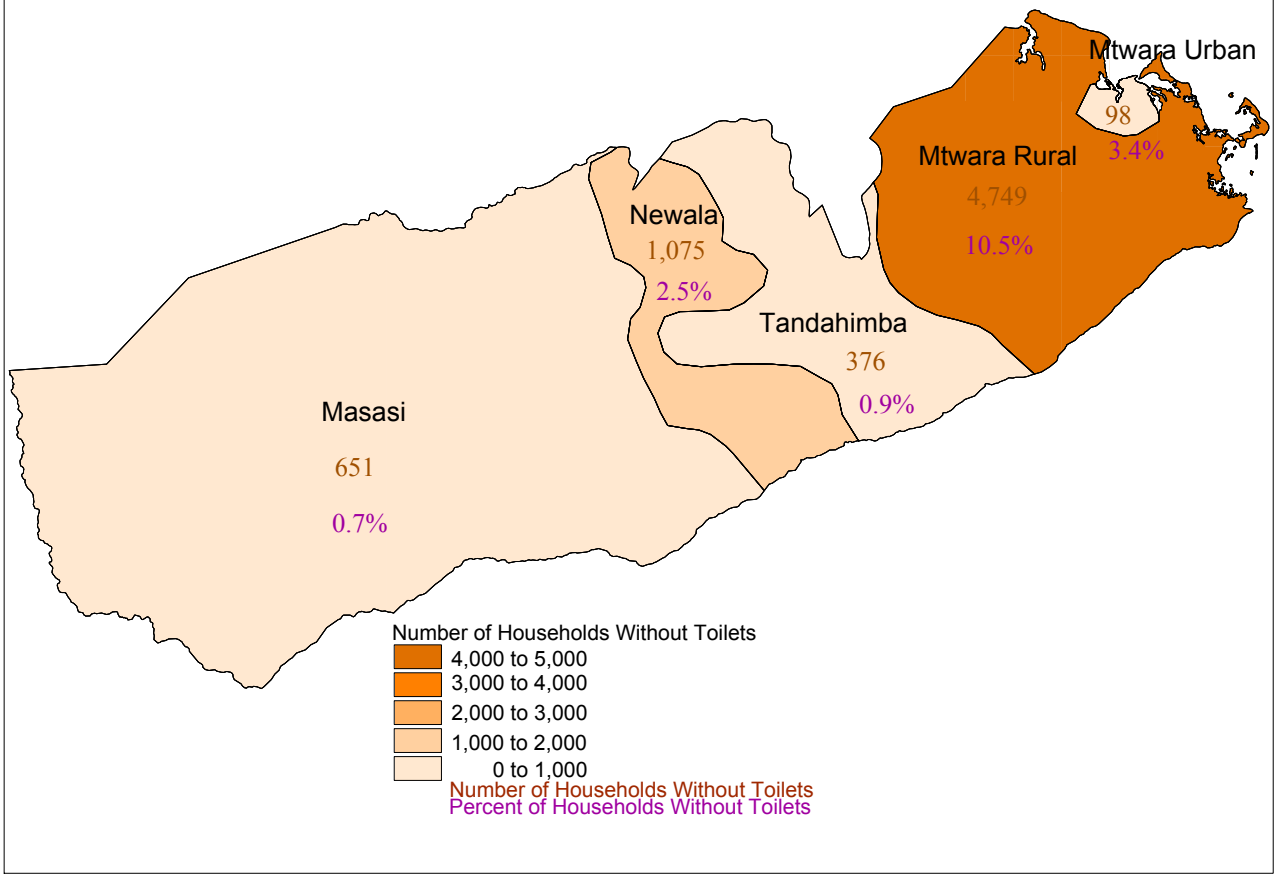
The main source of drinking water for rural agricultural households in Mtwara region was the unprotected well (29 percent of households used the unprotected well during both the wet and dry seasons. This was followed by piped water (26% of households during the wet season and 28% in the dry season), uncovered rainwater catchment (11% of households for wet season and 0.6% for dry season), unprotected spring (10% of households during the wet season and 13% in the dry season), surface water (9% of households in the wet season and 18% during the dry season) and protected spring with 2 percent of households using this source in both seasons. Covered rain water catchment was used as a main source by 3 percent of the households in the wet season and by 1 percent in the dry season Chart 3.157)



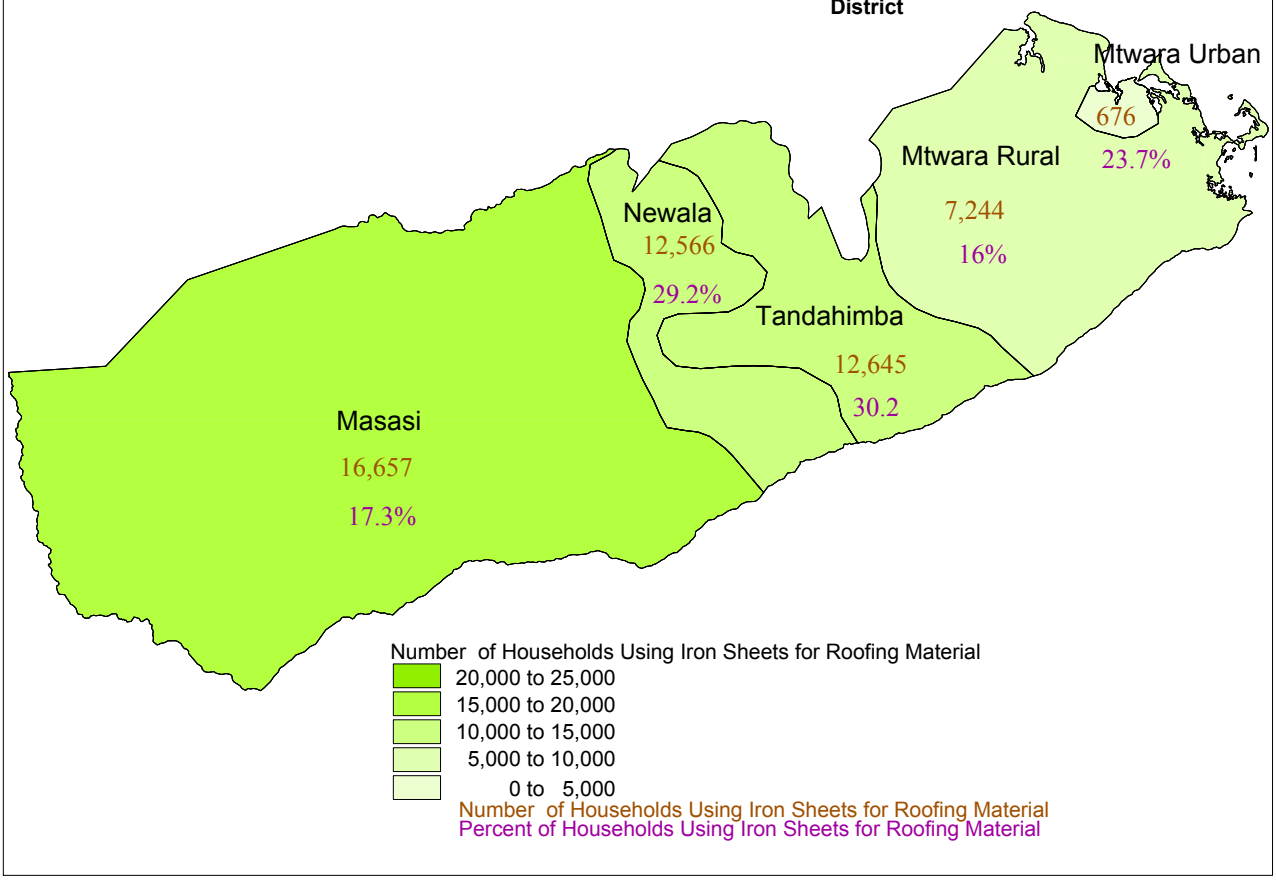
About 48 percent of the rural agricultural households in Mtwara region obtained drinking water within a distance of less than one kilometer during wet season compared to 31 percent of the households during the dry season. However, 52 percent of the agricultural households obtained drinking water from a distance of one or more kilometers during wet compared to 69 percent of households in the dry season. The most common distance from the source of drinking water was between 1 and 2 km (Chart 3.158).



MAP 3.53 MTWARA
Number and Percent of Households Without Toilets by District



MAP 3.54 MTWARA
Number and Percent of Households Using Iron Sheets for Roofing Material by District

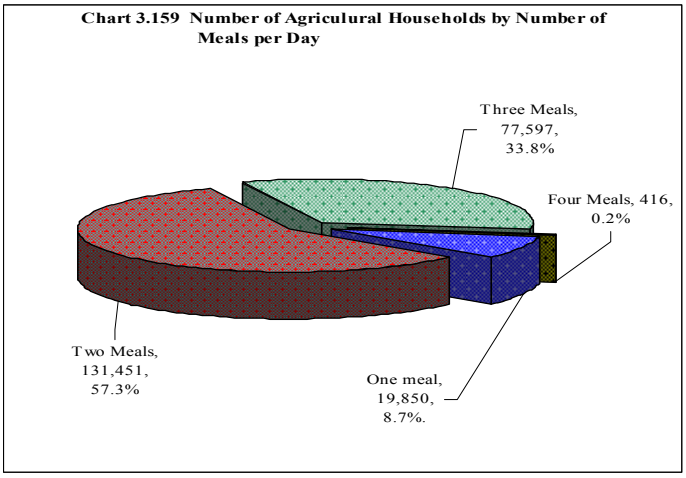


3.6.8 Food Consumption Pattern

3.13.8.1 Number of Meals per Day

The majority of households in Mtwara region normally had 2 meals per day (57.3 percent of the households in the region). This was followed by 3 meals per day (33.8 percent) and 1 meal per day (8.7 percent). Only 0.2 percent of the households had 4 meals per day (Chart 3.159).

Chart 3.159 Number of Agricultural Households by Number of Meals per Day



Mtwara rural and Masasi districts had the largest percent of households eating one meal per day whilst Tandahimba had the highest percent of households eating 3 meals per day. (Table 3.16 and Map 3.55).

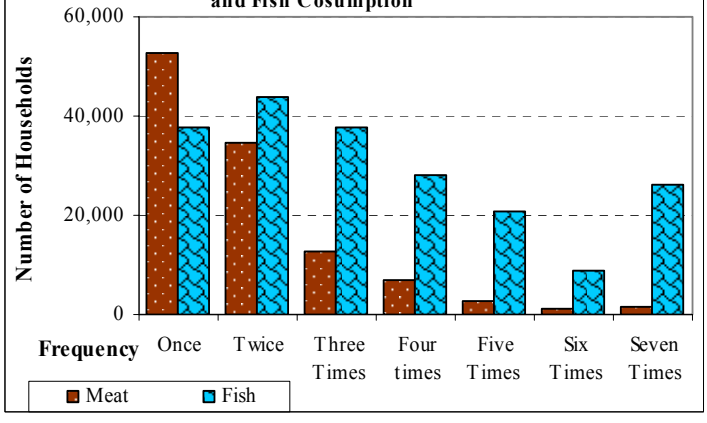
Chart 3.17: Number of Households by Number of meals the household normally has per day and District

District	Number of meals per day								
	One Meal	%	Two Meals	%	Three Meals	%	Four Meals	%	Total
Mtwara Rural	5585	12.4	24228	53.7	15341	34.0	0	0.0	45154
Newala	683	1.6	25399	59.0	16982	39.4	0	0.0	43065
Masasi	11971	12.4	59028	61.2	25098	26.0	324	0.3	96421
Tandahimba	1457	3.5	21255	50.8	19020	45.5	92	0.2	41823
Mtwara Urban	155	5.4	1541	54.0	1155	40.5	0	0.0	2850
Total	**19,850**	**8.7**	**131,451**	**57.3**	**77,597**	**33.8**	**416**	**0.2**	**229,314**

3.13.8.2 Meat Consumption Frequency

The number of agricultural households that consumed meat during the week preceding the census was 112,209 (48.9% of the agricultural households in Mtwara region) with 52,588 households (46.9 % of those who consumed meat) consuming meat only once during the respective week. This was followed by those who had meat twice during the week (30.9%). Very few households had meat three or more times during the respective week. About 51.1 percent of the agricultural households in Mtwara region did not eat meat during the week preceding the census (Chart 3.160 and Map 3.56).

Chart 3.160 Number of Households by Frequency of Meat and Fish Cosumption



3.6.8.3 Fish Consumption Frequencies

The number of agricultural households that consumed fish during the week preceding the census was 203,012 (88.5% of the total agricultural households in Mtwara region) with 43,818 households (21.6 % of those who consumed fish) consuming fish twice during the respective week. This was followed by those who had fish once (18.6%). The number of households that consumed fish twice or more during the week in Mtwara region was 165,226 (72.0% of the agricultural households that ate fish in the region during the respective period). About 12 percent of the agricultural households in Mtwara region did not eat fish during the week preceding the census (Chart 3.160 and Map 3.57)

3.6.9 Food Security

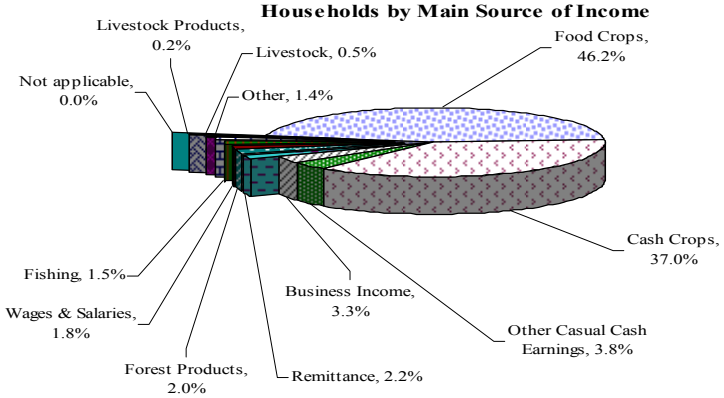
In Mtwara region, 75,463 households (33% of the total agricultural households in the region) said they rarely experienced problems in satisfying the household food requirements. However 26,093 (11%) said they often experience problems, 8 percent sometimes experienced problems and 6 percent always had problems in satisfying the household food requirements. About 41 percent of the agricultural households said they did not experience any food sufficiency problems (Map 3.58).

3.6.10 Main Sources of Cash Income

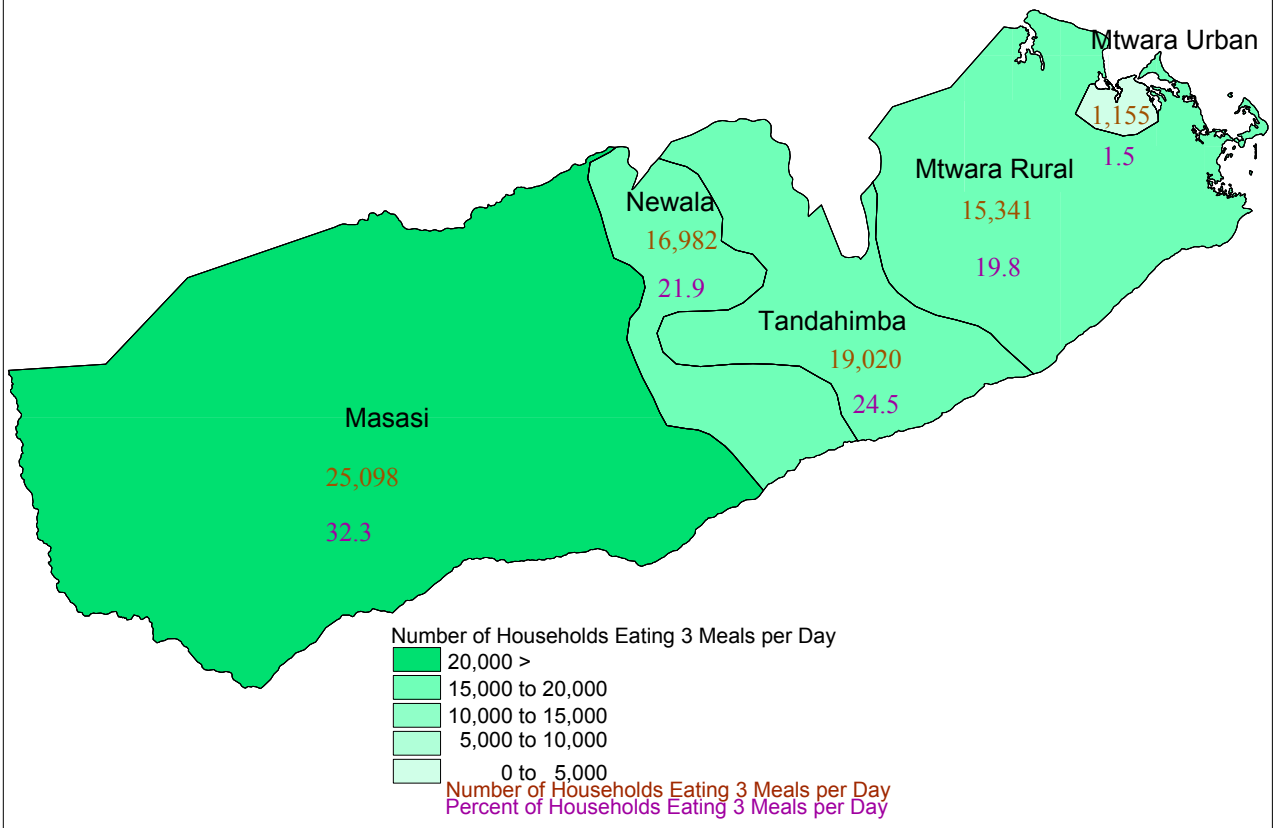
The main cash income of the households in Mtwara region was from selling food crops (46.2 percent of smallholder households), followed by cash crops (37.0%), other casual cash earnings (3.8), businesses (3.3), remittance (2.2%), forest products (2.0), wages and salaries (1.8) and fishing (1.5).

Only 0.5% of smallholder households reported the sale of livestock as their main source of cash income, followed by livestock products (0.2). (Chart 3.161).

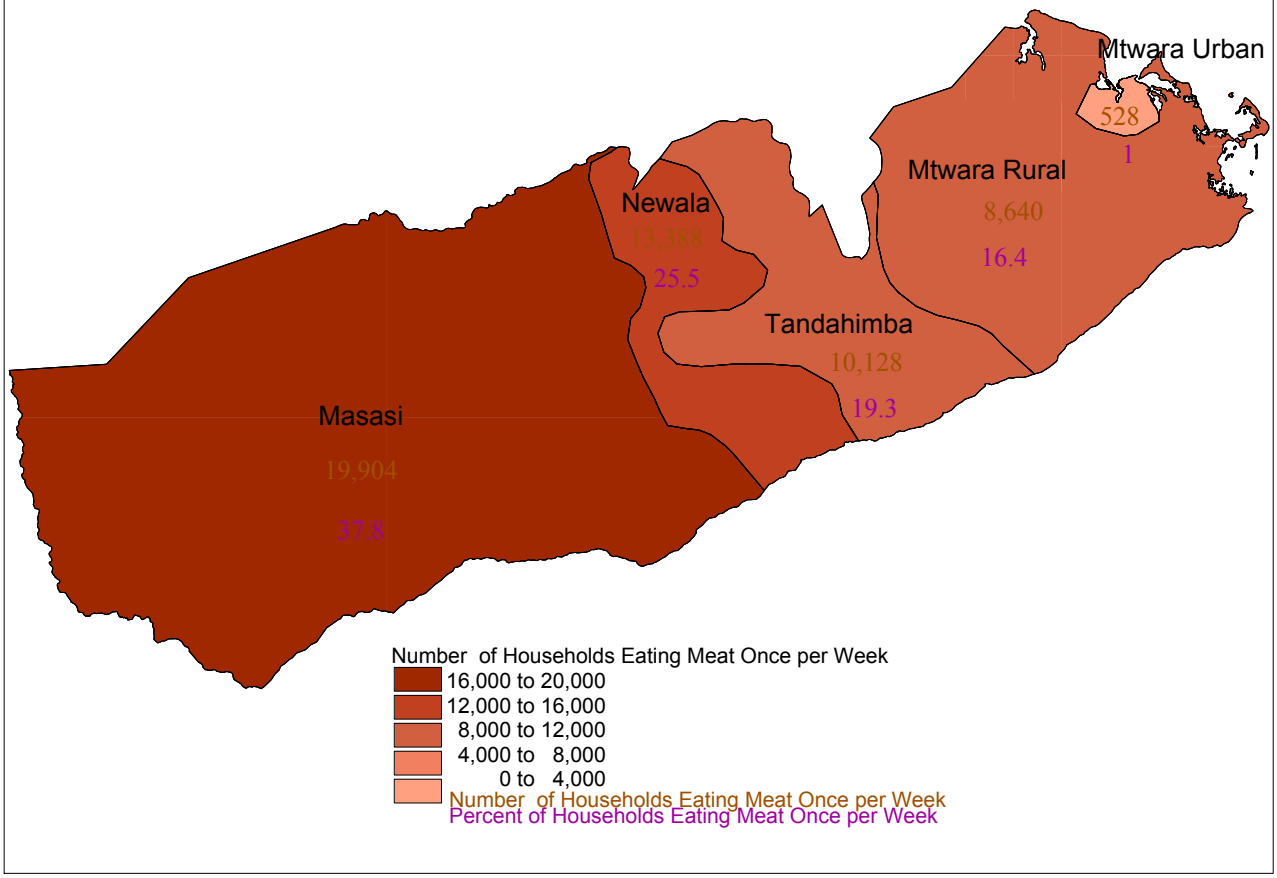
Chart 3.161: Percentage Distribution of the Number of Households by Main Source of Income



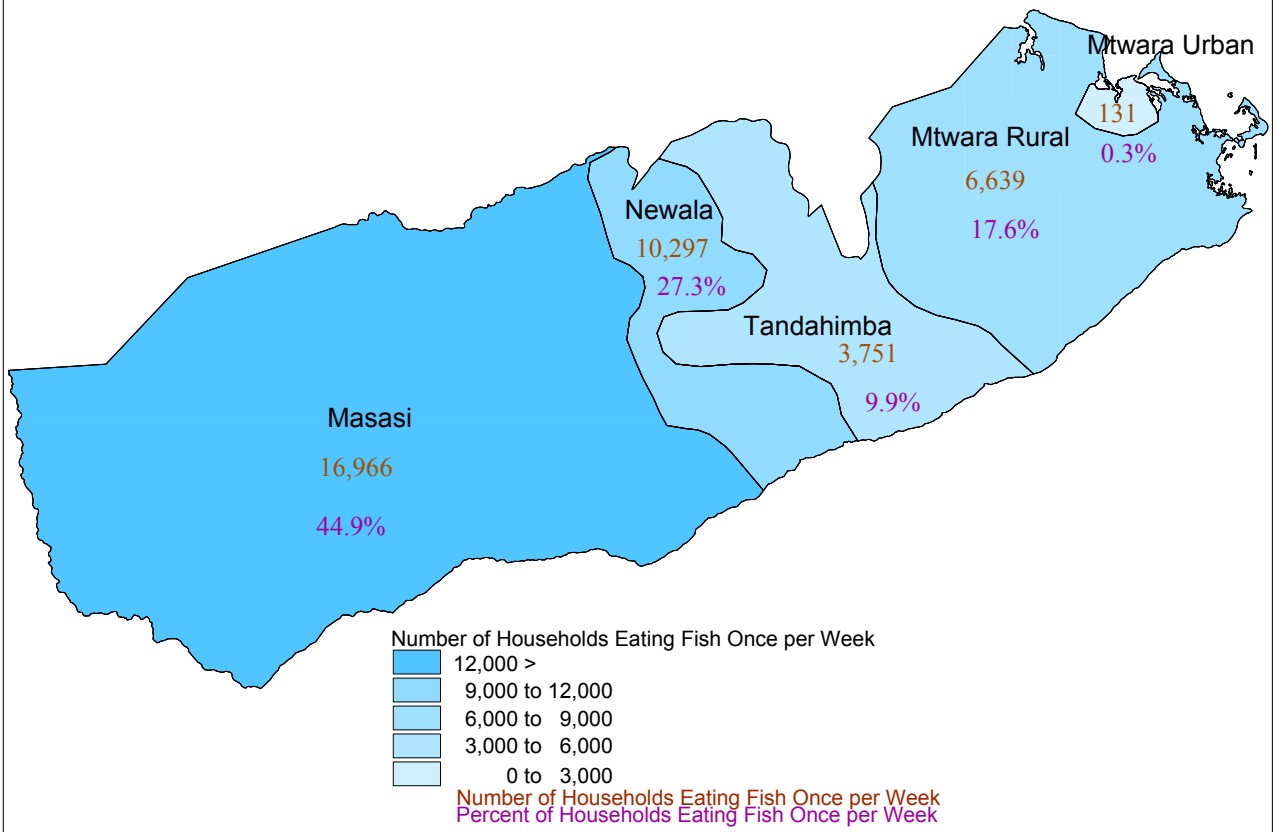
MAP 3.55 MTWARA
Number and Percent of Households
Eating 3 Meals per Day
by District



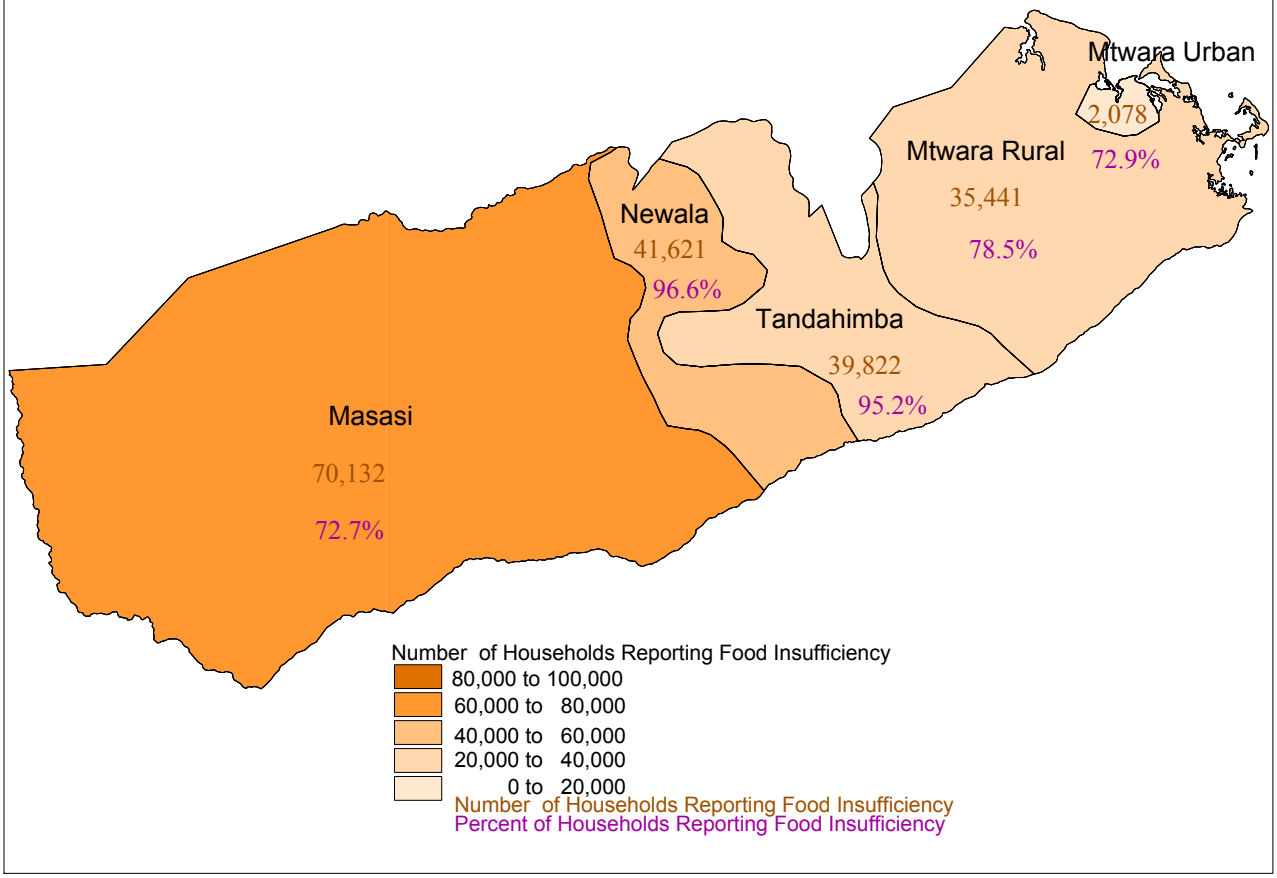
MAP 3.56 MTWARA
Number and Percent of Households
Eating Meat Once per Week
by District



MAP 3.57 MTWARA
Number and Percent of Households
Eating Fish Once per Week
by District



MAP 3.58 MTWARA
Number and percent of Households
Reporting Food Insufficiency
by District



4 MTWARA PROFILES

This section presents the status of crops and livestock production, access to natural resources and services, demography and poverty for both the region as a whole and for each district.

4.1 Mtwara Region Profile

The region profile describes the status of the agriculture sector in the region and compares it with other regions in the country.

Mtwara has around 460,000 hectares for crop production and the number of crop farming households is moderate compared to other regions, however, due to the small land area, the region has one of the largest number of crop growing households per square kilometer in the country and this is reflected in the high percent of available land that is utilized. The region is characterized by having the highest percent of its total planted area under permanent crops, most of which are monocrop stands. The region gets long rains season only.

Cassava is one of the most important crops in Mtwara and it has the third highest planted area in the country. In terms of planted area, the region is not important for cereal production and the yield for maize was one of the lowest in the country during the census year. Comparatively moderate quantities of sorghum and paddy were grown. Moderate quantities of groundnuts are grown and relatively small amounts of beans. Vegetables were not important in the region and traditional annual cash crops were virtually absent. The main crop in Mtwara was cashewnuts for which the region accounted for 55 percent of the total planted area with cashewnuts in the country. Some mangoes and coconuts are also grown.

Mtwara has virtually no irrigation. Soil preparation was mainly done by hand and apart from Lindi it had the least pesticide application in the country. It had one of the smallest storage of maize in the country and this was mostly stored in locally made traditional cribs. A moderate number of households sold crops. Most of the crop processing was done on farm by hand and a comparative moderate number of households sold processed crops and most of these is to neighbours. Extension services were provided to a very small number of smallholder households in Mtwara.

Tree planting was carried out by a very small number of smallholders in Mtwara and the number of households with erosion control/water harvesting facilities was also very small.

This region had extremely low numbers of livestock compared to other regions. Cattle numbers were very small but more goats were kept. The region produced small amounts of milk and the farm gate price was much higher than in other regions indicating a high demand over supply. Sheep and pig production were extremely low but chicken production was more important.

Very few households used organic fertilizers and no draft animals were used for cultivation. Very little fish farming took place in this region.

Mtwara Region has a moderate to low agriculture population in Tanzania, 928,521 persons, of which 448,168 were males and 480,352 females representing one of the highest gender imbalances in the country. It had a moderate to high number of households involved in agriculture compared to other regions (229,313), with 97 percent of the rural households and 78

percent of the total households (including urban) in the region classified as agriculture households. The region had the lowest average household size of 4.0 persons per household and it had a high percent of female headed households (23%). Crop production was the dominant agriculture activity with virtually no livestock farmers.

Ownership of land was mostly by customary law (81% of total land area under agriculture), however although small, it had a comparatively high percent of land under official certificate of ownership compared to most regions. Access to fields was low compared to other regions with only 6 percent of the households having their nearest field less than 100 m from the homestead.

Mtwara had a comparatively low literate rural agriculture population compared to most other regions (62%) and the difference between the literacy rate of males and females was also moderate with 9 percent more literate males than females. It had a moderate to high percent of the rural agriculture population that had completed school and a high percent of household heads with no education compared to other regions.

The most important livelihood activity was crop farming followed by livestock keeping and tree/forest resources. Off farm income is the least important livelihood activity. The percent of the rural agriculture population working full time in farming was the seventh highest in the country and the region had a moderate number of households using food crops as their main sources of cash income (about 50%of households). It was one of the regions with the highest percent of households that use cash crops as their main source of cash income. And other sources were of minor importance. A very small amount of credit was accessed in the region, mostly from cooperatives and family friends and relatives.

A low percent of households (28%) had the roof of the main dwelling made of modern material (mainly iron sheets), the rest were with grass/leaves/mud and only 3 percent of the households had no toilet facility. Energy for lighting was a predominantly from wick lamps and a very small proportion from hurricane lamps. The main sources of drinking water in Mtwara region was from piped water and unprotected wells. It also had the highest percent of households obtaining water from protected springs and lakes, rivers and streams.

About 46 percent of the rural agriculture households in Mtwara region used 26 percent or more of their livelihood activities for non – subsistence purposes, however a small proportion of the rural agriculture smallholders in Mtwara lived a subsistence existence (14%). Most of the rural agriculture households in Mtwara region took two or three meals per day and though small, the region had the highest proportion of households taking one meal per day. More than 70 percent of the rural households in the region ate animal protein at least twice a week and it had a relatively low percent of households that did not eat animal protein in a week. The region had a high percent of households that never faced food shortages (75%), however it was also among the regions that had a high percent of households that often or always faced shortages. Access to services and infrastructure was moderate. About 31.6 percent of the households in the region reported insufficiency of land which was the third lowest percent in the country.

4.2 District Profile

The following district profiles highlight the characteristics of each district and compares them in relation to population, main crops and livestock, production and productivity, access to services and resources and levels of poverty.

4.2.1 Masasi

Masasi district had the largest number of households in the region and it had one of the highest percent of households involved in smallholder agriculture in the region. Most smallholders were involved in crop farming only, followed by crop and livestock farming. It had no household involved in livestock only and pastoralists households were not found in the district.

The most important livelihood activity for smallholder households in Masasi district was annual crop farming, followed by tree/forest resources and permanent crop farming. However, the district had the lowest percent of households with one household member involved inoff-farm activities and the highest percent of households with more than one member with off-farm income. Compared to other districts in the region, Masasi had a relatively low percent of female headed households (22.9%) and the lowest average age of the household head. Its average household size of 4.0 members per household it was average for the region. Masasi had a comparatively low literacy rate among smallholder household members and this was reflected in the concomitant relatively low level of school attendance in the region. The literacy rate for the heads of household was lowers than most of districts in the region.

It had the largest utilized land area per household (2.0ha) and the allocated area was almost fully utilised indicating a high level of land pressure. The total planted area was greater than in other districts in the region due to the presence of good wet and dry seasons, however it had the first planted area per household (1.2ha) attributed to the high number of smallholders in the district.

The district was moderately important for maize production in the region with a planted area of over 41,000ha and the planted area per household was the highest in the region. Sorghum production was not important with a planted area of only 7,000 hectares and the production of paddy was 6,000 hectares. Masasi was the only district in the region that produced bulrush millet (32ha). Cassava production was moderate accounting for 27 percent of the quantity harvested in the region. The district had no planted area of Irish potatoes. The production of beans in Masasi was the second highest in the region with a planted area of 186ha. Oilseed crops were important in Masasi but no groundnuts were grown in the district. Vegetable production was important in the district. It had the largest planted area for ginger and tomatoes (35 ha and 33 ha respectively) and in ginger it accounted for 100 percent of the production but 0.4 percent of the tomatoes production in the region. Traditional cash crops (e.g. tobacco and cotton) were grown in very small quantities.

Compared to other districts in the region, Masasi had a moderate planted area with permanent crops, which were dominated by cashewnuts (53,000 ha) and pigeon peas (18,000 ha). Other permanent crops were either not grown or were grown in very small quantities.

As with other districts in the region, most land clearing and preparation were done by hand, however very slightly more land preparation was done by tractor compared to most other districts.

The use of inputs in the region was very small, however district differences existed. Masasi had the second largest area planted with improved seed in Mtwara region and this was due to the higher planted area for vegetables. The district had the largest planted area applied with fertilizers (farm yard manure, compost and inorganic fertiliser), however most of these were inorganic fertilisers. Compared to other districts in the region, Masasi district had a moderate level of insecticide use. The use of fungicides, although small, was moderate to high compared to other districts, except Tandahimba. Virtually no herbicides were used. The area under irrigation was 431 ha. The most common source of water for irrigation was the well. Bucket and watering can were the most common means of irrigation water application and no other method of field application was used.

The most common method of crop storage was in locally made traditional cribs; however the proportion of households not storing crops in the district was lower than other districts in the region. The district had the largest number of households selling crops, however for those that did not sell, the main reason for not selling was insufficient production. The highest percent of households processing crops in Mtwara region was found in Masasi district and almost all the processing was done by neighbours' machine. The district also had a higher percent of households selling processed crops to neighbours stores than other districts and no sales were made to secondary markets, cooperatives and large scale farms. The access to credit for women was very small and the main sources were cooperatives, family/friends and relatives, credit and bank..

A comparatively larger number of households received extension services in Masasi and all of these were from the government. The quality of extension services was rated between very good and good by the majority of the households.

Tree farming was important in Masasi (with 16,986 planted trees) and most of the trees were senna spp with some moringa spp and gravellis. The highest proportion of households with erosion control and water harvesting structures were found in Masasi district and these were mostly erosion control bunds, however it also had the highest number of water harvesting bunds.

The district had the largest number of cattle in the region and all were indigenous. Goat production was moderate compared to other districts, however it had the second highest number of sheep in the region. It had the largest number of pigs as well as chickens in the region. The district had the highest number of layers, ducks and turkeys in the region. The largest number of households reporting Tsetse and tick problems was in Masasi district and it had the largest number of households de-worming livestock. Draft animals were not used in the district. It is the only district which practiced fish farming in the region.

It was amongst the districts with the best access to secondary schools, primary schools, all weather roads, primary and secondary markets. However, the district was the one with the worst access to health clinics and regional capital.

Masasi district had the third highest percent of households with no toilet facilities and it had the lowest percent of households owning mobile phone, vehicles, tv/video and wheelbarrow. It had the largest number of households used mains electricity in the region. The most common source of energy for lighting was the wick lamp and practically all households used firewood for cooking. The district had the second largest percent of households roofed their houses using grass/leaves and had the second lowest percent of households having iron sheets. The most common source of drinking water is from unprotected wells. It had the highest percent of households having two or one meal per day compared to other districts and the lowest percent with 3 meals per day. The district had the highest percent of households that did not

eat meat and third highest percent of households without eating fish during the week prior to enumeration, however most households seldom had problems with food satisfaction.

4.2.2 Mtwara rural

Mtwara rural district had the second largest number of households in the region and it had a high percentage of households involved in smallholder agriculture. Most smallholders were involved in crop farming only, followed by crop and livestock farming. It had no livestock only households or pastoralists were found in the district.

The most important livelihood activity for smallholder households in Mtwara rural district was Annual crop farming, followed by tree/forest resources. The district had the third highest percent of households with no off-farm activities although it had the fourth highest percent of households with more than one member with off-farm income. Compared to other districts in the region, Mtwara rural had a low percent of female headed households (20%) but it had one of the highest average age for the household heads in the region. Its average household size of 4 members per household was average for the region. Mtwara rural had a comparatively low literacy rate among smallholder households and this was reflected in the district having the lowest level of school attendance in the region.

It had a moderate utilized land area per household (1.7ha) and 84 percent of the allocated area was currently being utilised. The district had the fourth largest planted area in the region and the firth largest planted area per household (0.7ha in the dry season and 0.4ha in the wet season).

The district was moderately important for maize production in the region with a planted area of over 5,617 ha, and the planted area per maize growing household was also moderate for the region. The district had the second largest planted area of paddy in the region with 4,264 hectares. Sorghum was grown in the district with 4,741 hectares. Cassava production was moderate to low, accounting for 23 percent of the quantity harvested in the region. The district did not plant Irish potatoes. The production of beans in Mtwara rural district was moderate to low with a planted area of 65ha. Mtwara rural district had the fourth largest groundnut planted area in Mtwara region with a planted area per groundnut growing household of 0.31 ha. Vegetable production was very important in the district. It had the largest planted area for tomatoes (295ha), but cabbage and chilies were not grown in the district. Traditional cash crops (e.g. tobacco and cotton) were not grown in the district.

Compared to other districts in the region, Mtwara rural district had the third largest planted area with permanent crops which were dominated by cashew nuts (45,633 ha), coconuts (5,339 ha), Orange (264 ha) and Cloves (212 ha). Pawpaw, pigeon pea, sour soup and mango were also grown but in smaller quantities.

As with other districts in the region, most land clearing was done by hand slashing, however there was a substantial area where there was no land clearing indicating. Practically all Land preparation was done by hand, however a very small amount of land preparation done using tractors.

Mtwara rural district had the largest area planted improved seed in the region as well as the highest proportion of households using improved seeds. The district had the fourth largest area planted with fertilizers (farm yard manure, compost and inorganic fertiliser), and most of these were farm yard manure. Compared to other districts in the region, Mtwara rural district had a moderate level of insecticides use. The use of fungicides and herbicides was low. It had the

third largest area under irrigation. The most common source of water for irrigation was the dams using hand bucket methods. Buckets/watering cans were the most common means of irrigation water application in the district.

The most common method of crop storage in Mtwara rural district was in locally made traditional cribs, however the proportion of households not stored crops was average for the region. Mtwara rural district had moderate number of households sold crops, the main reason for not selling was insufficient production. Mtwara rural was among the districts with highest percent of households processed crops in Mtwara region and mostly was done by hand on farm. The district also had the second highest percent of households sold processed crops to cooperatives than other districts and no sales were made to traders at farm and large scale farms. The access to credit was not reported in the district.

A comparatively larger number of households received extension services in Mtwara rural district and the highest percent of the services was provided by the government. The quality of extension services was rated between very good and good by the majority of the households.

Tree farming was not important in Mtwara rural district. Erosion control and water harvesting structures were not found in Mtwara rural district.

The district had the second largest number of cattle in the region and most of them were indigenous. Goat production was moderate compared to other districts and had the third largest number of sheep in the region. Pigs were not reported whilst there were a moderate number of chickens. Small numbers of ducks were found. A number of households reported tsetseflies and tick problems and it had the largest number of households de-wormed livestock. The use of draft animals was not reported whilst fish farming was not practiced in the district.

Mtwara rural district was amongst the best access to health clinics but had fourth percent of households accessed to primary and secondary markets compared to other districts. Also, it was among the district with worst access to secondary schools, primary schools and regional capital.

The percentage of households without toilet facility in Mtwara rural district was comparatively high. It was amongst the districts with the lowest percent of households owned wheel barrows, highest percent of households owned tv/video, moderate percent of households owned vehicles, bicycles and mobile phones. It had the second largest number of households used mains electricity in the region. The most common source of energy for lighting was the wick lamp and practically all households used firewood for cooking. The roofing materials for most of the households in the district were grass/leaves (81%). Also, the district had the lowest percent of households with iron sheet roofing (15%). The most common source of drinking water was from unprotected well. It was one of the districts with the lowest percent of households having three meals per day. The district had one of the highest percent of households that did not eat meat or fish during the week prior to enumeration and most households seldom had problems with food satisfaction.

4.2.3 Newala

Newala district had the fourth largest number of households in the region and it had a high percentage of households involved in smallholder agriculture. Most smallholders were involved in crop farming only, followed by crop and livestock farming. It had no agricultural household involved in livestock only and pastoralist were not found in the district.

The most important livelihood activity for smallholder households in Newala district was annual crop farming, followed by tree/forest resources. The district had the fourth highest percent of households with no off-farm activities although it had the second highest percent of households with more than one member with off-farm income. Compared to other districts in the region, Newala had a low percent of female headed households (18%) and it has one of the lowest average age of the household head in the region. With a household size of 4 members per household it is average for the region. Newala has a comparatively high literacy rate among smallholder households and this is reflected by the district having the highest level of school attendance in the region.

It has a moderate utilized land area per household (1.7ha) and 91 percent of the allocated area is currently being utilised. The district has the second largest planted area in the region and the second largest planted area per household (2.0ha in the dry season and 0.4ha in the wet season).

The district is moderately important for maize production in the region with a planted area of over 15,000 ha and the planted area per household is 0.4 ha which average for the region is. Paddy production is not important with a planted area of only 1,385 hectares; however it is the second lowest in the region. Sorghum and Irish potatoes are produced, but wheat is not grown in the district. The district has the lowest planted area of cassava accounting for 19 percent of the cassava planted area in the region. The production of beans in Newala is much lower than in other districts in the region with a planted area of 10ha. Oilseed crops are important in Newala with 20 percent of the groundnuts grown in the district. Vegetable production is not important and very small quantities of tobacco are grown in the district.

Permanent crops are not very important in Newala district (14% of the total permanent crop planted area in Mtwara region) and are fourth important than any other district in the region. The most prominent permanent crops in the district include cashew nuts (32,957 ha), pigeon pea (600 ha), bananas (419 ha) and coconuts (152 ha). Black pepper is not grown in the district and it has the lowest area with oranges in the region (31 ha). Other permanent crops are either not grown or are grown in very small quantities.

As with other districts in the region, most land clearing is done by hand slashing, however it has no area cleared by other methods before planting. Practically all Land preparation is done by hand, however a very small amount of land preparation is done by oxen and tractor.

The use of inputs in the region is very small, however district differences exist. Newala has the smallest planted area with improved seed in Mtwara region and this is due to the dominance of permanent crops which do not need frequent planting. The district also has a large planted area with fertilizers (Farm yard manure, compost and inorganic fertiliser), and practically large area is with inorganic fertilizer. Compared to other districts in the region, Newala district has the smallest area of insecticide and fungicide use and the use of herbicides is relatively small. It has the last largest area with irrigation in the region with 11 ha of irrigated land. The most common source of water for irrigation is from piped water and almost all water application is by using water hose.

The most common method of crop storage is in Newala is locally made traditional cribs, and the proportion of households not storing crops in the district is moderate to low for the region. The district has the highest percent of households selling crops, however for those who did not sell, the main reason for not selling is insufficient production. Newala district has a high percent of households processing crops in the region and is almost all done by hand; however, the district has the

highest percent of households processing crops by neighbour machine. Small quantities of processed crops are sold and many households have access to credit.

A few numbers of households receive extension services in Newala district and almost all of this is from the government. The quality of extension services was rated between good and very good by the majority of the households.

Tree farming is important in Newala district (with 38 planted trees) and is mostly Senna Spp with some Melicia excelsa. There is no proportion of households with water harvesting bunds is found in Newala district and it also has the highest number of drainage ditches.

The district has a moderate number of cattle in the region and they are almost all indigenous. Goat production is high compared to other districts, but it is a second highest in sheep production. It has the second largest number of pigs in the region as well as the second largest number of chickens, all of which are broiler. Virtually no improved chicken are found in the district. The district has the largest number of ducks and rabbits and no turkeys are found in the district. A small number of households reported tsetse and tick problems in Newala district. A small amount of de-worming of livestock is practiced in the district. No draft animals are used and fish farming is not practiced by households in the district.

It has amongst the moderate access to secondary schools, health clinics, primary markets, tertiary markets and regional capital compared to other districts. However, it has one of the worst accesses to feeder roads and primary schools.

The percentage of households without toilet facility in Newala district is average for the region; however it has the second highest percent of households with no toilet facilities. It has the lowest percent of households owning land line phones, but highest percent of households owning vehicles and TV/video. It has the third lowest number of households using mains electricity in the region and the most common source of energy for lighting is the wick lamp and practically all households use firewood for cooking. The district has a high percent of households with grass roofs (69%) and only 29 percent of households have iron sheet roofing. The most common source of drinking water is from piped water. Two percent of the households in the district reported having one meal per day, fifty nine percent reported having two meals per day, thirty nine percent reported having three meals per day and virtually no household reported having more than three meals per day. The district had a moderate percent of households that did not eat meat or fish during the week prior to enumeration and most households never had problems with food satisfaction.

4.2.4 Tandahimba

Tandahimba district has an average number of households for the region and it has the smallest percent of households involved in smallholder agriculture in the region. Most smallholders are involved in crop farming only, followed by crop and livestock farming. It has a very moderate number of livestock only households and pastoralists were found in the district.

The most important livelihood activity for smallholder households in Tandahimba district is Annual crop farming followed by Permanent crop farming. It has the highest percent of households with no off-farm activities and the lowest percent of households with more than one member with off-farm income. Compared to other districts in the region, Tandahimba district has a relatively high percent of female headed households (22%) and it has one of the highest average ages of the household head. With an average household size of 4.3 members per household it is average for the region. Tandahimba

district has a comparatively low literacy rate among smallholder households and this is reflected by the concomitant relatively low level of school attendance in the region.

It has the largest utilized land area per household (2.0 ha) and only 88 percent of the allocated land area is utilised. The total planted area is the third in the region however it has the second largest planted area per household (0.46ha in the long rainy season and 1.62ha in the wet season.

Tandahimba district is third important for maize production in the region with a planted area of 8,427 ha, and the planted area per household is among the highest in the region. Paddy production is also important with a planted area of 2,419hectares and the production of sorghum is small.

Cassava production in Tandahimba district was high and beans, Irish potato and wheat is not grown. Vegetables is important in the district compared to oilseed crops, whist the district has the second planted areas with tomatoes also it is the second in terms of tomato planted area per household. Traditional cash crops (e.g. tobacco and cotton) are grown in the district.

Compared to other districts in the region, Tandahimba district has the smallest planted area with permanent crops (24.4% of total permanent crop planted area) which is dominated by cashew nuts (57,201 ha), mango (2,906 ha), A small area of coconut is grown and no other permanent crop.

As with other districts in the region, most land clearing and preparation is done by hand, however the smallest land preparation done by oxen is found in the district.

As with other districts in the region, land clearing by hand slashing is predominant and practically all land preparation is by hand.

The use of inputs in the region is very small, however district differences exist. Tandahimba district has the smallest planted area with improved seed; however it has the highest planted area per household in the region. The district also has the second percent of planted area with fertilizers (Farm yard manure, compost and inorganic fertiliser), and most of this is with farm yard manure. Compared to other districts in the region, Tandahimba district has the lowest area planted with insecticide but has the second highest percent of the total planted area in the region. The percent of planted area with fungicides is amongst the highest in the region and is the highest for herbicides. It has one of the smallest areas of irrigation 1,247 ha. The most common source of water for irrigation is from rivers using gravity. Floods are the most common means of irrigation water application with some few using bucket/watering cans.

The most common method of crop storage is in locally made traditional cribs; however the proportion of households not storing crops in Tanga district is the highest in the region. The number of households selling crops in the district is among the highest in the region, however for those who did not sell, the main reason for not selling is insufficient production. The third percent of households processing crops in the region is found in Tandahimba district and processing is mostly done by on farm by hand. The district has the smallest number of households processing crops on farm by machine. It also has the largest number of households processing crops on farm by hand. Most households that sell crops sell to neighbors and no sales are to traders on neither farm nor large scale farms. Access to credit in the district is very small.

A very big number of households receive extension services in Tandahimba district and almost all of this is from the government. The quality of extension services was rated between very good and good by the majority of the households.

Tree farming is not important in Tandahimba district (with no household planting trees). The largest proportion of households in Tandahimba district doesn't use any of the erosion control method.

Tandahimba district has the fourth smallest number of cattle in the region and all of them are indigenous. It is one of the districts with the second largest number of goats in the region, however the district has the highest density (87 head per km^2). Tandahimba is also one of the districts with the largest number of sheep, no pigs and small number of chicken; also it has the second smallest number of improved chickens (layers) in the region. Small numbers of ducks but no rabbits, turkeys and donkeys are also found in the district. A largest number of households reported tick and Tsetse problems in Tandahimba district and it had one of the largest numbers of households de-worming livestock. There are no household use draft animals in the district as well as fishing farming practice.

It is amongst the districts with the best access to feeder roads and primary schools compared to other districts. However, it has the moderate access to all weather roads, secondary schools, health clinics, regional capital and primary schools but worst access to tarmac roads, secondary markets, hospitals and tertiary markets.

Tandahimba district has a small number of households with no toilet facilities. The district has the highest percent of households owning bicycles, wheelbarrows and mobile phones but it has the second highest percent of households with television/video. It has no households using mains electricity in the region. The most common source of energy for lighting is the wick lamp and practically all households use firewood for cooking. The district has the fourth largest percent of households with grass roofs with only 25 percent of households having iron sheets. The most common source of drinking water is surface water and it has the fifth highest percent of households having two or one meal per day compared to other districts and the first highest percent with 3 meals per day. The district had the smallest percent of households that did not eat meat and fish during the week prior to enumeration. Most households never had problems with food satisfaction.

4.2.5 Mtwara Urban

Mtwara Urban district has the smallest number of households in the region and it has the last lowest percent of households involved in smallholder agriculture in the region. Most smallholders are involved in crop farming only, followed by crop and livestock farming. It has a very small number of livestock only households and no pastoralists were found in the district.

The most important livelihood activity for smallholder households in Mtwara Urban district is tree/forest resources followed by Annual Crop Farming, off farm income and permanent crop farming. The district has the last lowest percent of households with no off-farm activities and the third largest percent of households with more than one member with off-farm income. Compared to other districts in the region, Mtwara Urban has a lowest percent of female headed households (21%) and it has one of the highest average ages of the household head. With an average household size of 4.4 members per household it is slightly higher than the regional average. Mtwara Urban has the second lowest literacy rate among smallholder households in the region and this is reflected by the concomitant relatively high level of school attendance. The rate of "Never Attended" is among the moderate in the region.

It has one of the smallest utilized land area per household (1.6 ha) which is slightly lower than the regional average of 1.9 ha per household. The district has smallest planted area in the region, however it has the second largest planted area per household (1.6 ha) in the long rainy season.

The district is not important for maize production with a planted area of 505 ha, however the planted area per household is second smallest compared to other districts in the region. Paddy production is also not important with a planted area of only 36 hectares and the production of sorghum is very small. Wheat and finger millet are not grown in the district. The district has among the lowest percent of cassava planted area in the region and it has virtually no Irish or sweet potatoes. There is no production of beans in Mtwara Urban district and oil crops are not important in the district. Vegetable is not grown at all in the district. Traditional cash crops (e.g. tobacco and cotton) are also not grown in the district.

Compared to other districts in the region, Mtwara Urban has a small planted area with permanent crops (680 ha) which is dominated by cashew nuts (494 ha) and coconuts (158 ha). Other permanent crops are either not grown or are grown in very small quantities.

As with other districts in the region, most land clearing is done by hand slashing, however “no land clearing” is relatively high indicating bare land before cultivation. Practically all Land preparation is done by hand, however no land preparation is done by tractor.

The use of inputs in the region is very small, however district differences exist. Mtwara Urban has one of the smallest planted areas with improved seed in Mtwara region however it has the second highest percent of planted area using improved seed. The district has the smallest planted area with fertilizers and most of this is with farm yard manure and compost with no inorganic fertiliser. Compared to other districts in the region, Mtwara Urban district has the second highest percent of its planted area with insecticides in the region. The use of fungicides was the one of the lowest in the region and virtually no herbicide was used. There was no planted area with irrigation in Mtwara Urban district.
The most common method of crop storage is in locally made traditional cribs; however the proportion of households not storing crops in the district is the second highest in the region. The district has the smallest number of households selling crops and the main reason for not selling is insufficient production. Mtwara Urban district has the highest percent of households processing crops on farm by hand and a highest percent of households selling processed crops mainly to neighbours. No sales were made to local markets/trade stores, secondary market, market cooperatives, farmers associations, traders at farm or large scale farms. Access to credit is extremely small.
A comparatively small number of households receive extension services in Mtwara Urban district and the highest percentage of this is from the government. The quality of extension services was rated good/well by all households in the district.

Tree farming is not important in Mtwara Urban district (with only 56 planted trees) and is mostly with Senna Spp with some Azadritachta Spp, Terminalia Catapa and Jakaranda Spp. The smallest number of erosion control and water harvesting structures is found in Mtwara Urban district.

The district has the smallest number of cattle in the region and they are mostly all indigenous and diary. Goat and sheep production is smallest in the district and no pigs are found in the district. It has a comparatively smallest number of

chickens. Ducks and donkeys are not found in the district. A moderate number of households reported tick problems in Mtwara Urban district and has the smallest number of households de-worming livestock. No households reported about Tsetse problem in the district. The use of draft animals in the district is non existent and no fish farming is practiced in the district.

It is amongst the districts with the best access to Secondary schools, feeder roads, health clinics, all weather roads, hospitals, health clinics, regional capital, tertiary markets and tarmac roads; however it has the moderate accesses to secondary Markets, primary Schools and primary Markets.

Mtwara Urban district has a low percent of households with no toilet facilities. The district has the largest percent of households owning bicycles and radios and no ownership of mobile phones, vehicles and television/video were reported. Very small number of households reported ownership of iron, landline phones and wheel barrows,The most common source of energy for lighting is the wick lamp and practically all households use firewood for cooking. The district has the largest percent of households with grass roofs and only 1.4 percent of households having iron sheets. The most common source of drinking water is from piped water, protected wells and protected/covered spring. It has a moderate percent of households having two or one meal per day compared to other districts and is among the districts with a high percent of households with 3 meals per day. The district had the second highest percent of households that did not eat meat during the week prior to enumeration; however it is among the districts with low percent of households that did not eat fish during the week. Most households in the district seldom had problems with food satisfaction.

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TYPE OF AGRICULTURE HOULSEHOLDS

2.1 TYPE OF AGRICULTURE HOUSEHOLD: Number of Agricultural Households by type of household and District during 2002/03 Agriculture Year

Agriculture, Non Agriculture and Urban Households									
District	Rural households involved in Agriculture	% of Total rural households	Rural households NOT involved in Agriculture	% of Total Rural households	Total Rural Households	% of Total households	Urban Households	% of Total households	Total Number of Households (from 2002 Pop. Census)
	Number	%	Number	%	Number	%	Number	%	Number
Mtwara Rurural	45,154	94	2,776	6	47,930	23	156,227	77	204,157
Newala	43,065	97	1,336	3	44,402	24	138,942	76	183,344
Masasi	96,421	98	1,974	2	98,395	22	342,592	78	440,987
Tandahimba	41,823	96	1,753	4	43,576	21	160,261	79	203,837
Mtwara Urban	2,850	88	371	12	3,221	3	88,935	97	92,156
Total	229,314	94	15,869	6	245,183	22	879,298	78	1,124,481

2. 2 TYPE OF AGRICULTURE HOULSEHOLDS: Number of Agriculture Households by type of Holding by District during 2002/03 Agriculture year

District	Crops Only		Livestock Only		Crops & Livestock		Total Number of Agriculture Households	%	Total Number of Households Growing Crops	Total Number of Households Rearing Livestock
	Number of households	%	Number of households	%	Number of households	%				
Mtwara Rural	40,908	91	0	0	4,246	9	45,154	100	45,154	4,246
Newala	35,560	83	0	0	7,505	17	43,065	100	43,065	7,505
Masasi	90,441	94	0	0	5,980	6	96,421	100	96,421	5,980
Tandahimba	34,886	83	81	0	6,857	16	41,823	100	41,743	6,937
Mtwara Urban	2,446	86	31	1	373	13	2,850	100	2,819	404
Total	204,241	89.1	112	0.05	24,961	10.9	229,314	100	229,202	25,073

AGRICULTURE HOUSEHOLDS

3.0 HOUSEHOLDS DEMOGRAPHS: Number of Agricultural Households and Average Household Size By Sex of the Head of Household and District, 2002/03 Agricultural Year

District	Male			Female			Total		Average HH Size
	Number	%	Average HH Size	Number	%	Average HH Size	Number	%	
Mtwara Rural	34,507	80	4.5	10,647	20	3.50	45,154	100	4.2
Newala	33,153	82	3.9	9,912	18	2.98	43,065	100	3.7
Masasi	74,391	82	4.2	22,029	18	3.17	96,421	100	4.0
Tandahimba	31,288	78	4.5	10,535	22	3.84	41,823	100	4.3
Mtwara Urban	2,240	80	4.5	611	20	4.01	2,850	100	4.4
Total	175,579	81	4.3	53,735	19	3.34	229,314	100	4.0

Table 3.1 The Livelihood Activities/Source of Income of the Households Ranked in Order of Importance by District during 2002/03 Agriculture Year

District	Livelihod Activity						
	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Off Farm Income	Remittances	Fishing / Hunting & Gathering	Tree / Forest Resources
Mtwara Rural	1	4	5	3	6	7	2
Newala	1	3	4	5	6	7	2
Masasi	1	3	5	4	6	7	2
Tandahimba	1	2	3	4	5	7	6
Mtwara Urban	2	4	5	3	6	7	1
Total	1	2	5	4	6	7	3

RANK OF IMPORTANCE OF LIVELIHOOD ACTIVITIES

3.1a RANK OF IMPORTANCE OF LIVELIHOOD ACTIVITIES: First Most Importance

District	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Off Farm Income	Remittances	Fishing / Hunting & Gathering	Tree / Forest Resources
Mtwara Rural	25,683	9,282	172	5,044	605	2,598	1,118
Newala	32,083	8,325	197	2,079	381	-	99
Masasi	64,245	26,167	303	4,523	1,301	-	325
Tandahimba	16,811	23,421	170	760	381	-	94
Mtwara Urbun	795	842	-	934	148	-	99
Total	139,618	68,038	842	13,339	2,815	2,598	1,734

3.1b RANK OF IMPORTANCE OF LIVELIHOOD ACTIVITIES: Second Most Importance

District	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Off Farm Income	Remittances	Fishing / Hunting & Gathering	Tree / Forest Resources
Mtwara Rural	15,173	14,346	792	9,104	2,086	738	3,337
Newala	9,638	14,912	2,498	7,333	2,185	191	6,301
Masasi	29,271	27,032	5,089	15,591	3,024	163	14,475
Tandahimba	22,963	8,998	3,036	2,802	1,025	190	183
Mtwara Urban	1,635	602	58	327	-	-	228
Total	78,679	65,890	11,473	35,157	8,321	1,282	24,524

3.1c RANK OF IMPORTANCE OF LIVELIHOOD ACTIVITIES: Third Most Importance

District	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Off Farm Income	Remittances	Fishing / Hunting & Gathering	Tree / Forest Resources
Mtwara Rural	3,096	4,820	3,406	13,081	2,272	1,246	14,600
Newala	955	2,967	9,575	8,125	4,288	572	12,943
Masasi	1,771	4,017	18,126	11,407	2,882	1,111	32,733
Tandahimba	1,225	1,780	12,814	7,271	2,391	447	986
Mtwara Urban	270	389	230	584	93	-	1,317
Total	7,317	13,973	44,152	40,468	11,926	3,375	62,579

3.1d RANK OF IMPORTANCE OF LIVELIHOOD ACTIVITIES: Fourth Most Importance

District	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Off Farm Income	Remittances	Fishing / Hunting & Gathering	Tree / Forest Resources
Mtwara Rural	572	3,376	3,976	5,607	1,458	468	15,704
Newala	94	2,025	8,771	3,518	2,302	474	15,892
Masasi	811	2,587	10,316	5,440	2,089	641	17,482
Tandahimba	186	184	4,952	2,045	1,210	284	541
Mtwara Urban	59	150	426	373	166	-	922
Total	1,723	8,323	28,441	16,983	7,225	1,867	50,541

3.1e RANK OF IMPORTANCE OF LIVELIHOOD ACTIVITIES: Fifth Most Importance

District	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Off Farm Income	Remittances	Fishing / Hunting & Gathering	Tree / Forest Resources
Mtwara Rural	-	853	4,193	1,355	485	89	4,063
Newala	98	574	4,133	1,637	869	384	6,869
Masasi	159	649	2,577	1,122	159	2,903	6,712
Tandahimba	-	189	97	376	287	374	363
Mtwara Urban	33	33	261	58	-	-	169
Total	289	2,298	11,261	4,548	1,800	3,750	18,177

3.1f RANK OF IMPORTANCE OF LIVELIHOOD ACTIVITIES: Sixth Most Importance

District	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Off Farm Income	Remittances	Fishing / Hunting & Gathering	Tree / Forest Resources
Mtwara Rural	-	-	106	275	-	93	466
Newala	98	98	583	96	288	-	478
Masasi	-	159	976	-	-	-	304
Tandahimba	-	92	-	-	188	94	-
Mtwara Urban	-	-	-	-	-	-	-
Total	98	349	1,665	372	476	187	1,247

3.1g RANK OF IMPORTANCE OF LIVELIHOOD ACTIVITIES: Seventh

District	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Off Farm Income	Remittances	Fishing / Hunting & Gathering	Tree / Forest Resources
Mtwara Rural	-	-	-	107	-	-	-
Newala	-	95	-	98	96	96	-
Masasi	-	-	-	318	-	-	-
Mtwara Urban	-	-	-	-	-	-	-
Tandahimba	-	187	-	95	-	95	95
Total	-	282	-	618	96	191	95

HOUSEHOLDS DEMOGRAPHS

3.2 HOUSEHOLDS DEMOGRAPHS: Number of Agricultural Household Members By Sex and Age Group, 2002/03 Agricultural Year (row %)

Age Group	Sex					
	Male		Female		Total	
	Number	%	Number	%	Number	%
Less than 4	56,710	50	56,169	50	112,880	100
05 - 09	65,699	51	63,991	49	129,690	100
10 - 14	64,574	55	53,797	45	118,371	100
15 - 19	41,722	51	40,819	49	82,542	100
20 - 24	31,041	40	45,872	60	76,913	100
25 - 29	30,465	40	46,478	60	76,943	100
30 - 34	29,098	44	37,108	56	66,206	100
35 - 39	23,203	44	29,556	56	52,759	100
40 - 44	21,242	45	25,670	55	46,912	100
45 - 49	15,460	50	15,424	50	30,884	100
50 - 54	16,136	48	17,660	52	33,796	100
55 - 59	12,892	57	9,534	43	22,426	100
60 - 64	13,635	49	14,083	51	27,718	100
65 - 69	9,017	49	9,371	51	18,388	100
70 - 74	8,075	57	6,162	43	14,237	100
75 - 79	3,783	47	4,194	53	7,977	100
80 - 84	3,759	65	1,989	35	5,748	100
Above 85	1,655	40	2,476	60	4,131	100
Total	448,169	48	480,353	52	928,521	100

3.3 HOUSEHOLDS DEMOGRAPHS: Number of Agricultural Household Members By Sex and Age Group, 2002/03 Agricultural Year (col %)

Age Group	Sex					
	Male		Female		Total	
	Number	%	Number	%	Number	%
Less than 4	56,710	13	56,169	12	112,880	12
05 - 09	65,699	15	63,991	13	129,690	14
10 - 14	64,574	14	53,797	11	118,371	13
15 - 19	41,722	9	40,819	8	82,542	9
20 - 24	31,041	7	45,872	10	76,913	8
25 - 29	30,465	7	46,478	10	76,943	8
30 - 34	29,098	6	37,108	8	66,206	7
35 - 39	23,203	5	29,556	6	52,759	6
40 - 44	21,242	5	25,670	5	46,912	5
45 - 49	15,460	3	15,424	3	30,884	3
50 - 54	16,136	4	17,660	4	33,796	4
55 - 59	12,892	3	9,534	2	22,426	2
60 - 64	13,635	3	14,083	3	27,718	3
65 - 69	9,017	2	9,371	2	18,388	2
70 - 74	8,075	2	6,162	1	14,237	2
75 - 79	3,783	1	4,194	1	7,977	1
80 - 84	3,759	1	1,989	0	5,748	1
Above 85	1,655	0	2,476	1	4,131	0
Total	448,169	100	480,353	100	928,521	100

3.4 HOUSEHOLDS DEMOGRAPHS: Number of Agricultural Household Members By Sex and District, 2002/03 Agricultural Year

District	Sex					
	Male		Female		Total	
	Number	%	Number	%	Number	%
Mtwara Rural	92,275	48	98,541	52	190,816	100
Newala	75,262	47	84,909	53	160,171	100
Masasi	187,360	49	196,768	51	384,128	100
Tandahimba	86,823	48	94,051	52	180,874	100
Mtwara Urban	6,449	51	6,083	49	12,532	100
Total	448,169	48	480,353	52	928,521	100

3.5 HOUSEHOLDS DEMOGRAPHS: Number of Agriculture Household Members 5 years and above Who Can Read and Write Languages By Type of Language and District, 2002/03 Agricultural Year

District	Read & Write									
	Swahili		Swahili & English		Any Other Language		Don't Read / Write		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
Mtwara Rural	85,654	51	3,971	2	1,378	0.8	75,852	45	166,854	100
Newala	91,305	65	3,794	3	0	0.0	46,447	33	141,545	100
Masasi	211,525	63	12,238	4	326	0.1	114,320	34	338,409	100
Tandahimba	87,491	55	2,755	2	186	0.1	67,774	43	158,206	100
Mtwara Urban	6,009	57	206	2	0	0.0	4,413	42	10,628	100
Total	481,984	59	22,962	3	1,890	0.2	308,805	38	815,642	100

3.6 HOUSEHOLDS DEMOGRAPHS: Number of Agricultural Household Members 5 years and above By School Attendancy and District , 2002/03 Agricultural Year

District	School Attendancy							
	Attending School		Completed		Never Attended to School		Total	
	Number	%	Number	%	Number	%	Number	%
Mtwara Rural	38,537	23	56,358	34	71,960	43	166,854	100
Newala	37,687	27	64,455	46	39,403	28	141,545	100
Masasi	86,791	26	157,705	47	93,913	28	338,409	100
Tandahimba	34,202	22	61,452	39	62,553	40	158,206	100
Mtwara Urban	2,630	25	4,036	38	3,962	37	10,628	100
Total	199,846	25	344,005	42	271,791	33	815,642	100

3.7 HOUSEHOLDS DEMOGRAPHS: Number of Agricultural Household Members By Main Activity and District

District	Main Activity											
	Crop/Seaweed Farming		Livestock Keeping / Herding		Livestock Pastoralist		Fishing		Government / Parastatal		Private - NGO / Mission / etc	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Mtwara Rural	95,296	57	89	0	-	-	5,330	3	902	1	951	1
Newala	88,286	62	290	0	-	-	96	0	854	1	283	0
Masasi	212,373	63	639	0	-	-	-	-	1,620	0	642	0
Tandahimba	100,491	64	184	0	161	0	-	-	378	0	283	0
Mtwara Urban	5,443	51	-	-	-	-	-	-	185	2	35	0
Total	501,889	62	1,202	0	161	0	5,426	1	3,939	0	2,195	0

cont…

HOUSEHOLDS DEMOGRAPHS: Number of Agricultural Household Members By Main Activity and District,

District	Self Employed (Non Farmimg) with Employees		Self Employed (Non Farmimg) without Employees		Unpaid Family Helper (Non Agriculture)		Not Working & Available		Not Working & Unavailable		Housemaker / Housewife	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Mtwara Rural	1,096	1	1,112	1	1,373	1	513	0	1,700	1	688	0
Newala	1,135	1	369	0	785	1	278	0	-	-	1,030	1
Masasi	1,899	1	632	0	765	0	638	0	325	0	793	0
Tandahimba	289	0	1,506	1	1,502	1	727	0	1,573	1	274	0
Mtwara Urban	128	1	458	4	-	-	312	3	98	1	58	1
Total	4,546	1	4,078	0	4,425	1	2,467	0	3,696	0	2,844	0

cont…

HOUSEHOLDS DEMOGRAPHS: Number of Agricultural Household Members By Main Activity and District,

District	Student		Unable to Work / Too Old / Retired / Sick / Disabled		Other		Total	
	Number	%	Number	%	Number	%	Number	%
Mtwara Rural	36,332	22	17,802	11	3,670	2	166,854	100
Newala	36,050	25	9,221	7	2,868	2	141,545	100
Masasi	80,979	24	18,400	5	18,704	6	338,409	100
Tandahimba	32,244	20	15,719	10	2,877	2	158,206	100
Mtwara Urban	2,526	24	998	9	385	4	10,628	100
Total	188,130	23	62,140	8	28,503	3	815,642	100

3.8 HOUSEHOLDS DEMOGRAPHS: Number of Agricultural Household Members By Level of involvement in Farming Activivty and District, 2002/03 Agricultural Year

District	Involvement in Farming									
	Works Full-time on Farm		Works Part-time on Farm		Rarely Works on Farm		Never Works on Farm		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
Mtwara Rural	52,233	31	30,570	18	45,612	27	38,440	23	166,854	100
Newala	54,436	38	11,891	8	48,512	34	26,706	19	141,545	100
Masasi	130,525	39	36,812	11	78,720	23	92,353	27	338,409	100
Tandahimba	81,232	51	14,531	9	17,816	11	44,628	28	158,206	100
Mtwara Urban	1,569	15	844	8	4,451	42	3,763	35	10,628	100
Total	319,994	39	94,647	12	195,111	24	205,889	25	815,642	100

3.9 HOUSEHOLDS DEMOGRAPHS: Number of Agricultural Household Members By Level of Formal Education Completion and District, 2002/03 Agricultural Year

District	Education Level													
	Under Standard One		Standard One		Standard Two		Standard Three		Standard Four		Standard Five		Standard Six	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Mtwara Rural	1952	3	561	1	2006	4	1913	3	5971	11	2072	4	1755	3
Newala	386	1	0	0	1131	2	1063	2	8131	13	960	1	1149	2
Masasi	805	1	328	0	3865	2	5175	3	23849	15	3411	2	5635	4
Tandahimba	563	1	96	0	1213	2	1036	2	4367	7	1212	2	1208	2
Mtwara Urban	35	1	0	0	155	4	0	0	549	14	147	4	26	1
Total	3741	1	985	0	8370	2	9188	3	42867	12	7,801	2	9,772	3

cont… HOUSEHOLDS DEMOGRAPHS: Number of Agricultural Household Members By Level of Formal Education Completion and District, 2002/03 Agricultural

District	Standard Seven		Standard Eight		Training After Primary Education		Pre Form One		Form One	
	Number	%	Number	%	Number	%	Number	%	Number	%
Mtwara Rural										
Newala	35,730	63	301	1	603	1	89	0	93	0
Masasi	48,770	76	676	1	375	1	197	0	94	0
Tandahimba	108,980	69	2,105	1	145	0	162	0	0	0
Mtwara Urban	47,213	77	731	1	97	0	88	0	0	0
Total	2,660	66	58	1	64	2	0	0	0	0

cont… HOUSEHOLDS DEMOGRAPHS: Number of Agricultural Household Members By Level of Formal Education Completion and District, 2002/03 Agricultural Year

District	Form Two		Form Three		Form Four		Form Six		Training After Secondary Education	
	Number	%	Number	%	Number	%	Number	%	Number	%
Mtwara Rural	515	1	87	0	675	1	0	0	0	0
Newala	278	0	0	0	573	1	0	0	293	0
Masasi	327	0	328	0	2,100	1	162	0	162	0
Tandahimba	177	0	81	0	1,285	2	0	0	189	0
Mtwara Urban	34	1	0	0	121	3	0	0	0	0
Total	1,332	0	496	0	4,755	1	162	0	645	0

cont… HOUSEHOLDS DEMOGRAPHS: Number of Agricultural Household Members By Level of Formal Education Completion and District, 2002/03 Agricultural Year

District	Adult Education		Total	
	Number	%	Number	%
Mtwara Rural	2,034	4	56,358	100
Newala	377	1	64,455	100
Masasi	164	0	157,705	100
Tandahimba	1,898	3	61,452	100
Mtwara Urban	187	5	4,036	100
Total	4,660	1	344,005	100

3.10 HOUSEHOLD DEMOGRAPHS: Number of Agricultural Households and Average Household Size by Sex of the Head of Household and District, 2002/03 Agricultural Year

District	Male Head			Female Head			Total		
	Number	%	Average Household Size	Number	%	Average Household Size	Number	%	Average Household Size
Mtwara Rural	34,507	80	4	10,647	20	3	190,816	45,154	4
Newala	33,153	82	4	9,912	18	3	160,171	43,065	4
Masasi	74,391	82	4	22,029	18	3	384,128	96,421	4
Tandahimba	31,288	78	4	10,535	22	4	180,874	41,823	4
Mtwara Urban	2,240	80	5	611	20	4	12,532	2,850	4
Total	175,579	81	4	53,735	19	3	928,521	229,314	4

3.11 HOUSEHOLD DEMOGRAPHS: Number of Agricultural Households Involved in Off Farm Income Generating Activity By Number of Off Farm Income Activities and District, 2002/03 Agricultural Year

District	Off farm income							
	One		Two		More than Two		Total	
	Number	%	Number	%	Number	%	Number	%
Mtwara Rural	25,798	71	6,478	18	3,825	11	36,100	100
Newala	21,875	60	9,536	26	4,796	13	36,207	100
Masasi	30,416	47	22,685	35	11,781	18	64,881	100
Tandahimba	13,559	80	2,616	15	832	5	17,007	100
Mtwara Urban	1,567	63	664	27	252	10	2,483	100
Total	93,214	59	41,978	27	21,486	14	156,678	100

3.12 HOUSEHOLDS DEMOGRAPHS: Number of Heads of Agricultural Households By Maximum Education Level Attained and District, 2002/03 Agricultural Year

District	Maximum Education Level Attained							
	No Education	Primary Education	Post Primary Education	Secondary Education	Post Secondary Education	University & Equivalent Education	Adult Education	Total
Mtwara Rural	20,411	21,608	496	990	0	0	1,648	45,154
Newala	14,400	27,531	280	566	97	0	190	43,065
Masasi	24,797	69,186	0	2,112	162	0	163	96,421
Tandahimba	18,929	20,622	97	721	189	0	1,266	41,823
Mtwara Urban	1,029	1,548	64	90	0	0	121	2,850
Total	79,566	140,495	937	4,479	448	0	3,389	229,314

3.13 HOUSEHOLDS DEMOGRAPHS: Mean, Meadian, Mode of Age of Head of Agricultural Household and District

District	Male			Female			Total		
	Mean	Median	Mode	Mean	Median	Mode	Mean	Median	Mode
Mtwara Rural	46	44	40	50	50	60	47	45	40
Newala	43	40	40	53	53	65	45	42	50
Masasi	44	40	32	47	43	70	44	41	32
Tandahimba	44	41	40	52	52	60	46	44	40
Mtwara Urban	45	43	30	51	45	45	47	45	45
Total	44	41	40	50	49	60	45	43	40

3.14 Time Series of Male and Female Headed Households

Type of Holding	NSCA 1994/95	EAS 1995/96	EAS 1996/97	IAS 1997/98	DIAS 1998/99	NSCA 2002/03
Male Headed (Number in Thousands)	148	143	158	169	144	749
FemaleHeaded (Number in Thousands	44	43	41	48	51	179
Total	**192**	**186**	**199**	**217**	**195**	**928**
Male Headed (Percentage)	77	77	79	78	74	81
Female Headed (Percentage)	23	23	21	22	26	19
Total	**100**	**100**	**100**	**100**	**100**	**100**

3.15 Literacy Rate of Heads of Households By District

District	**Literacy**								
	Know			Don;t know			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Mtwara Rural	11,997	22,510	34,507	7,242	3,405	10,647	19,239	25,915	45,154
Newala	8,009	25,143	33,153	6,400	3,513	9,912	14,409	28,656	43,065
Masasi	16,620	57,771	74,391	9,158	12,871	22,029	25,778	70,643	96,421
Tandahimba	10,526	20,762	31,288	7,945	2,591	10,535	18,471	23,352	41,823
Mtwara Urban	574	1,665	2,240	489	121	611	1,064	1,787	2,850
Total	47,727	127,852	175,579	31,233	22,501	53,735	78,960	150,354	229,314

LAND ACCESS/OWNERSHIP

4.1 LAND ACCESS/OWNERSHIP: Number of Farming Households By Type of Land Ownership/Tenure and District, 2002/03 Agricultural Year

District	Land Access														Total Number of Households
	Leased/Certificate of Ownership		Owned Under Customary Law		Bought		Rented		Borrowed		Households with Area Shared Croped		Households with Area under Other Forms of Tenure		
	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	
Mtwara Rural	2,103	4	38,628	70	8,069	15	100	0	4,571	8	80	0	1,442	3	54,993
Newala	1,738	3	37,345	69	7,023	13	2,183	4	4,021	7	1,039	2	845	2	54,195
Masasi	12,848	11	70,955	61	18,676	16	1,911	2	6,286	5	646	1	5,192	4	116,515
Tandahimba	465	1	37,397	77	6,422	13	381	1	3,153	6	284	1	563	1	48,666
Mtwara Urban	119	4	1,384	42	1,071	33	33	1	439	13	26	1	193	6	3,265
Total	17,273	6	185,710	67	41,262	15	4,607	2	18,472	7	2,075	1	8,236	3	277,634

4.2 LAND ACCESS/OWNERSHIP: Area of Land by type of Ownership/Tenure (Hectare) and District, 2002/03 Agricultural Year

District	Area Leased/Certificate of Ownership	Area Owned Under Customary Law	Area Bought	Area Rented From Others	Area Borrowed	Area Shared Croped	Area under Other Forms of Tenure	Total
Mtwara Rural	4,272	73,368	14,020	121	2,436	49	2,291	96,556
Newala	2,085	62,831	8,779	2,484	3,629	1,308	493	81,609
Masasi	22,918	122,627	36,800	1,092	4,811	1,043	7,335	196,626
Tandahimba	734	79,298	12,215	212	1,732	770	1,212	96,173
Mtwara Urban	122	2,193	1,931	66	299	5	314	4,930
Total	30,132	340,316	73,745	3,976	12,908	3,174	11,645	475,895
%	6	72	15	1	3	1	2	100

Table 4.3: Number of Agricultural Households by Whether All Land Available to the Household Was Used and District, 2002/03 Agricultural Year

District	Was all Land Available to the Hh Used During 2002/03?				
	Yes		No		Total
	Number	%	Number	%	Number
Mtwara Rural	29,979	66	15,175	34	45,154
Newala	30,586	71	12,479	29	43,065
Masasi	78,782	82	17,639	18	96,421
Tandahimba	30,877	74	10,865	26	41,743
Mtwara Urban	1,571	56	1,249	44	2,819
Total	171,795	75	57,407	25	229,202

Table 4.4: Number of Agricultural Households by Whether they Consider themselves to have Sufficient Land for the Household and District, 2002/03 Agricultural Year

District	Do you Consider that you have sufficient land for the Hh?				
	Yes		No		Total
	Number	%	Number	%	Number
Mtwara Rural	30,671	68	14,483	32	45,154
Newala	28,634	66	14,431	34	43,065
Masasi	70,508	73	25,912	27	96,421
Tandahimba	25,652	61	16,091	39	41,743
Mtwara Urban	1,321	47	1,498	53	2,819
Total	156,787	68	72,415	32	229,202

Table 4.5: Number of Agricultural Households by whether Female Members of the Household Own or Have Customary Right to Land and District, 2002/03 Agricultural Year

District	Customary right to land				
	Yes		No		Total
	Number	%	Number	%	Number
Mtwara Rural	11,369	25	33,785	75	45,154
Newala	20,280	47	22,785	53	43,065
Masasi	25,642	27	70,779	73	96,421
Tandahimba	11,716	28	30,027	72	41,743
Mtwara Urban	695	25	2,124	75	2,819
Total	69,703	30	159,499	70	229,202

LAND USE

5.1 LAND USE: Area of Land by type of Land Use and District during 2002/03 Agricultural Year

District	Type of Land Use												
	Area under Temporary Mono Crops	Area under Temporary Mixed Crops	Area under Permanent Mono Crops	Area under Permanent Mixed Crops	Area under Permanent / Annual Mix	Area under Pasture	Area under Fallow	Area under Natural Bush	Area under Planted Trees	Area Rented to Others	Area Unusable	Area of Uncultivated Usable Land	Total
Mtwara Rural	19,755	16,016	24,908	4,809	9,268	537	2,830	3,721	20	711	3,150	10,831	96,556
Newala	10,354	26,781	10,369	1,848	17,327	58	6,649	2,322	205	402	268	4,935	81,517
Masasi	21,527	77,427	39,996	3,507	44,047	394	949	33	179	988	999	6,976	197,020
Tandahimba	11,389	15,688	29,666	1,232	26,229	39	511	273	.	77	59	11,010	96,173
Mtwara Urban	651	755	538	467	1,338	.	597	7	.	102	68	408	4,930
Total	63,675	136,667	105,477	11,863	98,209	1,027	11,536	6,356	403	2,280	4,543	34,159	476,196

5.2 LAND USE: Number of Agricultural Households By Type of Land Use and District, 2002/03 Agricultural Year

District	Land Use											
	Households with Area under Temporary Mono Crops	Households with Area under Temporary Mixed Crops	Households with Area under Permanent Mono Crops	Households with Area under Permanent Mixed Crops	Households with Area under Permanent / Annual Mix	Households with Area under Pasture	Households with Area under Fallow	Households with Area under Natural Bush	Households with Area under Planted Trees	Households with Area Rented to Others	Households with Area Unusable	Households with Area of Uncultivated Usable Land
Mtwara Rural	26,675	19,341	22,709	4,240	8,069	195	1,936	1,348	100	404	1,626	9,442
Newala	12,950	29,635	12,695	2,692	13,486	188	6,593	1,424	194	581	283	4,220
Masasi	32,927	67,331	32,266	2,588	23,032	162	1,610	164	803	804	799	8,318
Tandahimba	15,678	17,377	21,774	1,098	15,665	95	945	386	0	95	97	8,850
Mtwara Urban	1,220	1,203	671	418	934	0	591	33	0	93	66	372
Total	89,449	134,887	90,115	11,036	61,186	641	11,674	3,354	1,097	1,978	2,871	31,202

ANNUAL CROP AND VEGETABLE PRODUCTION

7.1 & 7.2a: ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area (ha) by season and District

District	Dry Season		Wet Season		Total Area Planted (hectare)	% Area planted in Dry season
	Number of Households	Planted Area	Number of Households	Planted Area		
Mtwara Rural	200	141	92,494	40,149	40,290	0.35
Newala	94	191	137,357	50,614	50,805	0.38
Masasi	0	0	242,471	117,031	117,031	0.00
Tandahimba	92	149	98,071	45,251	45,400	0.33
Mtwara Urb	0	0	5,979	2,878	2,878	0.00
Total	386	481	576,372	255,923	256,405	1.05

7.1 & 7.2b ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households Planting Crops By Season and District

District	Dry Season		Wet Season		Total Number of Crop Growing Households
	Households Growing Crops	Households NOT Growing Crops	Number of Households Growing Crops	Number of Households NOT Growing Crops	
Mtwara Rural	200		92494		86,435
Newala	94		137357		45,700
Masasi	0		242471		48,815
Tandahimba	92		98071		8,555
Mtwara Urb	0		5979		7,076
Total	386	11682	576372	1068	47,631

Table 7.1 & 7.2c: TOTAL ANNUAL CROP AND VEGETABLE PRODUCTION: Area Planted (ha) and Quantity Harvested by Season and Crop for the 2002/03 Agricultural Year, Mtwara Region

Crop	Dry Season			Wet Season			Total		
	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)
CEREALS	**272**	**94**		**106,563**	**39,635**		**106,835**	**39,730**	
Maize	272	94	347	71,743	29,512	411	72,015	29,607	411
Paddy	0	0	0	14,018	4,932	352	14,018	4,932	352
Sorghum	0	0	0	20,569	5,048	245	20,569	5,048	245
Bulrush Millet	0	0	0	32	71	2,223	32	71	2223
Finger Millet	0	0	0	201	73	361	201	73	361
Wheat	0	0	0	0	0	0	0	0	0
Barley	0	0	0	0	0	0	0	0	0
ROOTS & TUBERS	**61**	**50**		**114,248**	**72,224**		**114,309**	**72,274**	
Cassava	61	50	823	114,097	72,037	631	114,157	72,087	631
Sweet Potatoes	0	0	0	38	77	2,043	38	77	2043
Irish Potatoes	0	0	0	10	2	198	10	2	198
Yams	0	0	0	75	78	1,046	75	78	1046
Cocoyam	0	0	0	29	29	1,001	29	29	1001
PULSES	**0**	**0**		**14,171**	**4,253**		**14,171**	**4,253**	
Mung Beans	0	0	0	21	105	4,940	21	105	4940
Beans	0	0	0	260	177	681	260	177	681
Cowpeas	0	0	0	5,333	1,229	230	5,333	1,229	230
Green Gram	0	0	0	1,040	279	269	1,040	279	269
Pigeon Peas	0	0	0	131	97	741	131	97	741
Chich Peas	0	0	0	40	0	0	40	0	0
Bambaranuts	0	0	0	7,346	2,366	322	7,346	2,366	322
Field Peas	0	0	0	0	0	0	0	0	0
OIL SEEDS & OIL NUTS	**0**	**0**		**19,849**	**6,124**		**19,849**	**6,124**	
Sunflower	0	0	0	0	0	0	0	0	0
Simsim	0	0	0	3,512	979	279	3,512	979	279
Groundnuts	0	0	0	16,330	5,137	315	16,330	5,137	315
Soya Beans	0	0	0	0	0	0	0	0	0
Castor Seed	0	0	0	8	8	988	8	8	988
FRUITS & VEGETABLES	**0**	**0**		**949**	**2,123**		**949**	**2,123**	
Okra	0	0	0	68	278	4,117	68	278	4117
Radish	0	0	0	0	0	0	0	0	0
Turmeric	0	0	0	0	0	0	0	0	0
Bitter Aubergine	0	0	0	0	0	0	0	0	0
Garlic	0	0	0	0	0	0	0	0	0
Onions	0	0	0	75	71	937	75	71	937
Ginger	0	0	0	35	0	0	35	0	0
Cabbage	0	0	0	0	0	0	0	0	0
Tomatoes	0	0	0	521	1,326	2,543	521	1,326	2543
Spinnach	0	0	0	0	0	0	0	0	0
Carrot	0	0	0	0	0	0	0	0	0
Chillies	0	0	0	0	0	0	0	0	0
Amaranths	0	0	0	20	0	25	20	0	25
Pumpkins	0	0	0	128	299	2,337	128	299	2337
Cucumber	0	0	0	12	2	206	12	2	206
Egg Plant	0	0	0	68	94	1,370	68	94	1370
Water Mellon	0	0	0	22	53	2,422	22	53	2422
Cauliflower	0	0	0	0	0	0	0	0	0
CASH CROPS	**149**	**61**		**142**	**32**		**291**	**94**	**0**
Seaweed	0	0	0	0	0	0	0	0	0
Cotton	0	0	0	0	0	0	0	0	0
Tobacco	149	61	412	142	32	226	291	94	639
Pyrethrum	0	0	0	0	0	0	0	0	0
Jute	0	0	0	0	0	0	0	0	0
Total	**481**			**255,923**			**256,405**		

Table 7.1 & 7.2d : TOTAL CROP AND VEGETABLE PRODUCTION: Number of Agricultural Households by Area Planted (ha) and Crop for Agricultural Year 2002/03 - Dry anf Wet Seasons, Mtwara region.

Crop	Dry Season		Wet Season		Total Area Planted Dry & Wet Seasons	% Area Planted in Dry season
	Number of Households	Area Planted (ha)	Number of Households	Area Planted (ha)		
CEREALS	61	12	**331,599**	**280,644**	**280,656**	**0.004**
Maize	61	12	271,618	253,874	253,874	0.005
Paddy	0	0	8,760	4,666	4,666	0.000
Sorghum	0	0	5,741	2,555	2,555	0.000
Finger Millet	0	0	9,956	3,326	3,326	0.000
Wheat	0	0	35,524	16,223	16,223	0.000
ROOTS & TUBERS	0	0	**61,538**	**23,839**	**23,839**	**0.000**
Cassava	0	0	11,204	4,737	4,737	0.000
Sweet Potatoes	0	0	4,534	649	649	0.000
Irish Potatoes	0	0	44,849	18,178	18,178	0.000
Yams	0	0	706	227	227	0.000
Cocoyam	0	0	246	48	48	0.000
PULSES	62	13	**199,901**	**70,483**	**70,496**	**0.02**
Mung Beans	0	0	12	4	4	0.00
Beans	0	0	165,191	59,661	59,661	0.00
Cowpeas	0	0	13,800	4,112	4,112	0.00
Green Gram	0	0	260	89	89	0.00
Chich Peas	0	0	0	0	0	0.00
Bambaranuts	0	0	1,682	848	848	0.00
Field Peas	62	13	18,955	5,769	5,769	0.23
OIL SEEDS & OIL NUTS			**53,071**	**24,570**	**24,570**	**0.0**
Sunflower	0	0	37,496	15,674	15,674	0.0
Simsim	0	0	1,575	1,245	1,245	0.0
Groundnuts	0	0	14,001	7,650	7,650	0.0
Castor Seed	0	0	0	0	0	0.0
FRUITS & VEGETABLES	0	0	**25,855**	**5,625**	**5,625**	**0.0**
Okra	0	0	96	21	21	0.0
Radish	0	0	0	0	0	0.0
Bitter Aubergine	0	0	0	0	0	0.0
Onions	0	0	1,970	386	386	0.0
Ginger	0	0	59	12	12	0.0
Cabbage	0	0	7,478	1,380	1,380	0.0
Tomatoes	0	0	11,796	3,274	3,274	0.0
Spinnach	0	0	2,006	154	154	0.0
Carrot	0	0	60	3	3	0.0
Chillies	0	0	251	196	196	0.0
Amaranths	0	0	974	86	86	0.0
Pumpkins	0	0	1,090	111	111	0.0
Cucumber	0	0	0	0	0	0.0
Egg Plant	0	0	12	1	1	0.0
Water Mellon	0	0	62	2	2	0.0
CASH CROPS	0	0	**734**	**396**	**396**	**0.0**
Pyrethrum	0	0	618	336	336	0.0
Cotton	0	0	0	0	0	0.0
Tobacco	0	0	116	60	60	0.0
Jute	0	0	0	0	0	0.0
Total				**405,556**	**405,581**	0.0

7.1 & 7.2e TOTAL ANNUAL CROP AND VEGETABLE PRODUCTION: Total number of agriculture Households and Planted Area (ha) By Means of Soil Preparation and District - Wet & Dry Seasons- Mtwara Region.

District	Soil Preparation							
	Mostly Tractor Ploughing		Mostly Oxen Ploughing		Mostly Hand Cultivation		Total	
	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area
Mtwara Rural	92	9	2,071	2,092	42,373	37,927	44,536	40,029
Newala	293	187	1,899	3,621	40,390	46,836	42,583	50,644
Masasi	3,549	3,410	1,460	1,533	90,761	111,325	95,770	116,268
Tandahimba	180	128	2,858	2,550	38,332	42,722	41,370	45,400
Mtwara Urban	89	74	0	0	2,562	2,613	2,651	2,686
Total	**4,204**	**3,808**	**8,287**	**9,796**	**214,418**	**241,423**	**226,910**	**255,027**

7.1 & 7.2f TOTAL ANNUAL CROP AND VEGETABLE PRODUCTION: Total number of agriculture Households and Planted Area (ha) By Fertiliser Use and District for 2002/03 agricultural year Wet & Dry season - Mtwara Region.

District	Fertilisers Use								
	Mostly Farm Yard Manure		Mostly Compost		Mostly Inorganic Fertilizer		No Fertilizer Applied		
	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area	Total Planted Area
Mtwara rural	590	482	515	375	0	0	43,640	39,433	40,290
Newala	1,637	3,014	778	919	1,899	2,267	38,268	44,604	50,805
Masasi	486	669	0	0	317	1,358	94,967	115,004	117,031
Tandahimba	2,156	4,617	194	69	0	0	39,021	40,714	45,400
Mtwara urban	93	80	68	69	0	0	2,626	2,729	2,878
Total	**4,961**	**8,862**	**1,555**	**1,432**	**2,216**	**3,626**	**218,522**	**242,485**	**256,405**

7.1 & 7.2g TOTAL ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Agricultural Households and Planted Area By Irrigation Use and District for the 2002/03 Agricultural - Wet and Dry seasons - Mtwara region.

District	Irrigation Use						% of Area planted under irrigation
	Households Using Irrigation		Households Not Using Irrigation		Total		
	Number of Household	Planted Area	Number of Household	Planted Area	Number of Household	Planted Area	
Mtwara Rural	637	623	44,517	39,808	45,154	40,432	1.5
Newala	94	11	42,971	50,984	43,065	50,996	0.0
Masasi	1,110	193	95,311	116,838	96,421	117,031	0.2
Tandahimba	2,185	1,247	39,638	44,302	41,823	45,549	2.7
Mtwara Urban	-	-	2,850	2,878	2,850	2,878	0.0
Total	**4,027**	**2,075**	**225,287**	**254,811**	**229,314**	**256,886**	0.8
%	2	1	98	99	100.0	100.0	1

Note: Number of households is over estimated due to double counting of households growing crops in both wet and dry seasons. To compare previous surveys use Number of wet season planters only.

7.1 & 7.2i TOTAL ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Agriculture Households and Planted Area By Herbicide Use and District for the 2002/03 agricultural year - Wet & Dry Seasons- Mtwara region.

District	Herbicide Use						% of Planted Area using Herbicide
	Households Using Herbicide		Households Not Using Herbicide		Total		
	Number of Household Using	Planted Area	Number of Household	Planted Area	Number of Household	Planted Area	
Mtwara Rural	206	206	44,639	40,226	44,845	40,432	0.51
Newala	681	2,264	41,996	48,732	42,677	50,996	4.44
Masasi	319	452	95,451	116,579	95,770	117,031	0.39
Tandahimba	188	227	41,274	45,322	41,462	45,549	0.50
Mtwara Urban	0	0	2,786	2,878	2,786	2,878	0.00
Total	**1,395**	**3,149**	**226,145**	**253,737**	**227,540**	**256,886**	1.23
%	6	1	896	99	902	100	

7.1 & 7.2j TOTAL ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Agriculture Households and Planted Area By Fungicide Use and District for the 2002/03 agricultural year - Wet & Dry Seasons- Mtwara region.

District	Fungicide Use						% of Planted Area using Insecticide
	Fungicide		Fungicide		Total		
	Number of Household	Planted Area	Number of Household	Planted Area	Number of Household	Planted Area	
Mtwara Rural	515	348	44,230	39,942	44,745	40,290	0.86
Newala	1,534	1,970	41,048	48,835	42,583	50,805	3.88
Masasi	622	682	95,148	116,350	95,770	117,031	0.58
Tandahimba	1,285	1,623	40,085	43,777	41,370	45,400	3.57
Mtwara Urban	101	184	2,685	2,694	2,786	2,878	6.40
Total	**4,057**	**4,806**	**223,198**	**251,598**	**227,254**	**256,405**	1.87

7.1 & 7.2k TOTAL ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Agriculture Households and Planted Area By Improved seed Use and District for the 2002/03 agricultural year - Wet & Dry Seasons- Mtwara region.

District	Improved Seed Use						% of Planted Area using Insecticide
	Households Using		Households Not Using		Total		
	Number of Household	Planted Area	Number of Household	Planted Area	Number of Household	Planted Area	
Mtwara Rural	3,753	3,090	40,783	36,938	44,536	40,029	7.72
Newala	861	872	41,722	49,773	42,583	50,644	1.72
Masasi	1,754	2,698	94,016	113,570	95,770	116,268	2.32
Tandahimba	566	625	40,804	44,775	41,370	45,400	1.38
Mtwara Urban	58	99	2,593	2,587	2,651	2,686	3.70
Total	**6,991**	**7,384**	**219,919**	**247,644**	**226,910**	**255,027**	2.90
%	**3**	**3**	**97**	**97**	**100**	**100**	

7.1a ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area (ha) By Means Used for Soil Preparation and District During 2002/03 Crop Year-DRY SEASON, Mtwara Region.

District	Soil Preparation							
	Mostly Tractor Ploughing		Mostly Oxen Ploughing		Mostly Hand Cultivation		Total	
	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area
Mtwara Rural	-	-	-	-	100	141	100	141
Newala	-	-	-	-	94	191	94	191
Masasi	-	-	-	-	-	-	-	-
Tandahimba	-	-	-	-	92	149	92	149
Mtwara Urban	-	-	-	-	-	-	-	-
Total	-	-	-	-	286	481	286	481
%	0	0	0	0	100	100	100	100

7.1b: ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area By Fertilizer Use and District During 2002/03 Crop Year-DRY SEASON - Mtwara Region

District	Fertilizer Use			
	No Fertilizer Applied		Total	
	Number of Households	Planted Area	Number of Households	Planted Area
Mtwara Rural	100	141	100	141
Newala	94	191	94	191
Tandahimba	92	149	92	149
Total	286	481	286	481

7.1c: ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area By Irrigation Use and District During 2002/03 Crop Year DRY SEASON - Mtwara Region

District	Irrigation Use			
	Households Not Using		Total	
	Number of Household	Planted Area	Number of Household	Planted Area
Mtwara Rural	100	141	100	141
Newala	94	191	94	191
Tandahimba	92	149	92	149
Total	286	481	286	481

72a: ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Households and Planted Area (ha) By Means Used for Soil Preparation and District During 2002/03 Crop Year- WET SEASON - Mtwara Region

District	Soil Preparation							
	Mostly Tractor Ploughing		Mostly Oxen Ploughing		Mostly Hand Cultivation		Total	
	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area
Mtwara Rural	92	9	2,071	2,092	42,274	37,786	44,436	39,887
Newala	293	187	1,899	3,621	40,296	46,645	42,488	50,453
Masasi	3,549	3,410	1,460	1,533	90,761	111,325	95,770	116,268
Tandahimba	180	128	2,858	2,550	38,240	42,573	41,278	45,251
Mtwara Urban	89	74	0	.	2,562	2,613	2,651	2,686
Total	4,204	3,808	8,287	9,796	214,132	240,942	226,624	254,546
%	2	1	4	4	94	95	100	100

7.2b: ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area By Fertilizer Use and District During 2002/03 Crop Year-WET SEASON - Mtwara Region

District	Fertilizer Use									
	Mostly Farm Yard Manure		Mostly Compost		Mostly Inorganic Fertilizer		No Fertilizer Applied		Total	
	No. of H/holds	Planted Area	No. of H/holds	Planted Area	No. of H/holds	Planted Area	No. of H/holds	Planted Area	No. of H/holds	Planted Area
Mtwara Rural	590	482	515	375	0	.	43,540	39,291	44,645	40,149
Newala	1,637	3,014	778	919	1,899	2,267	38,174	44,413	42,488	50,614
Masasi	486	669	0	.	317	1,358	94,967	115,004	95,770	117,031
Tandahimba	2,156	4,617	194	69	0	.	38,929	40,566	41,278	45,251
Mtwara Urban	93	80	68	69	0	.	2,626	2,729	2,786	2,878
Total	4,961	8,862	1,555	1,432	2,216	3,626	218,236	242,003	226,968	255,923

7.2c: ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area By Irrigation Use and District During 2002/03 Crop Year LONG RAINY SEASON - Mtwara Region

District	Irrigation Use					
	Households Using Irrigation		Households Not Using Irrigation		Total	
	No. of H/holds	Planted Area	No. of H/holds	Planted Area	No. of H/holds	Planted Area
Mtwara Rural	530	784	44,116	39,365	44,645	40,149
Newala	288	214	42,201	50,400	42,488	50,614
Masasi	793	1,257	94,977	115,774	95,770	117,031
Tandahimba	1,458	1,237	39,820	44,015	41,278	45,251
Mtwara Urban	65	158	2,721	2,720	2,786	2,878
Total	3,135	3,650	223,834	252,274	226,968	255,923

7.1: Number of Crop Growing Households, Planted Area (ha) and Maize Harevsted (tons) by season and District 2002/03 Agricultural Year - Mtwara Region

District	Maize										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	100	81	0	0.00	18,609	5,537	2,038	0.37	5,617	2,038	0.36
Newala	94	191	94	0.49	40,113	15,352	7,704	0.50	15,543	7,799	0.50
Masasi	0	0	0	0.00	80,053	41,922	17,352	0.41	41,922	17,352	0.41
Tandahimba	0	0	0	0.00	23,125	8,427	2,321	0.28	8,427	2,321	0.28
Mtwara Urb	0	0	0	0.00	1,674	505	98	0.19	505	98	0.19
Total	194	272	94		163,573	71,743	29,512		72,015	29,607	0.41

7.2.2: Number of Crop Growing Households, Planted Area (ha) and Paddy Harevsted (tons) by season and District 2002/03 Agricultural Year - Mtwara Region

District	Paddy										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	10,541	4,264	1,469	0.34	4,264	1,469	0.34
Newala	0	0	0	0.00	4,475	1,385	579	0.42	1,385	579	0.42
Masasi	0	0	0	0.00	16,655	5,914	1,722	0.29	5,914	1,722	0.29
Tandahimba	0	0	0	0.00	4,945	2,419	1,157	0.48	2,419	1,157	0.48
Mtwara Urb	0	0	0	0.00	163	36	5	0.13	36	5	0.13
Total	0	0	0		36,779	14,018	4,932	0.35	14,018	4,932	0.35

7.2.3: Number of Crop Growing Households, Planted Area (ha) and Sorghum Harevsted (tons) by season and District 2002/03 Agricultural Year - Mtwara Region

District	Sorghum										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	15,878	4,741	1,444	0.30	4,741	1,444	0.30
Newala	0	0	0	0.00	17,955	4570	1300	0	4570	1,300	0.28
Masasi	0	0	0	0.00	15,965	6,524	1,789	0.27	6,524	1,789	0.27
Tandahimba	0	0	0	0.00	16,087	4,457	472	0.11	4,457	472	0.11
Mtwara Urb	0	0	0	0.00	1,033	276	43	0.15	276	43	0.15
Total	0	0	0		66,919	20,569	5,048		20,569	5,048	

7.2.4: Number of Crop Growing Households, Planted Area (ha) and Finger Millet Harevsted (tons) by season and District 2002/03 Agricultural Year - Mtwara Region

District	Finger Millet										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Newala	0	0	0	0.00	195	43	12	0.3	43	12	0.3
Masasi	0	0	0	0.00	483	90	50	0.6	90	50	0.6
Tandahimba	0	0	0	0.00	384	68	11	0.2	68	11	0.2
Mtwara Urb	0	0	0	0.00	0	0	0	0.0	0	0	0.0
Total	0	0	0		1062	201	73		201	73	

7.2.5: Number of Crop Growing Households, Planted Area (ha) and Bulrush Millet Harevsted (tons) by season and District 2002/03 Agricultural Year - Mtwara Region

District	Bulrush Millet										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Newala	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Masasi	0	0	0	0.00	158	32	71	2.22	32	71	2.22
Tandahimba	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Mtwara Urb	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Total	0	0	0		158	32	71		32	71	

7.2.6: Number of Crop Growing Households, Planted Area (ha) and Cassava Harevsted (tons) by season and District 2002/03 Agricultural Year - Mtwara Region

District	Cassava										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	100	61	50	0.82	37,442	23,065	16,505	7.00	23,126	16,555	0.72
Newala	0	0	0	0.00	40,423	21,752	17,169	0.79	21,752	17,169	0.79
Masasi	0	0	0	0.00	72,292	41,873	19,510	0.47	41,873	19,510	0.47
Tandahimba	0	0	0	0.00	35,885	25,434	18,293	0.72	25,434	18,293	0.72
Mtwara Urb	0	0	0	0.00	2,603	1,972	560	0.28	1,972	560	0.28
Total	100	61	50		188,644	114,097	72,037		114,097	72,037	

7.2.7: Number of Crop Growing Households, Planted Area (ha) and Sweet Potatoes Harevsted (tons) by season and District 2002/03 Agricultural Year - Mtwara Region

District	Sweet Potatoes										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0	0	0	0	0.00	0	0	0.00
Newala	0	0	0	0	0	0	0	0.00	0	0	0.00
Masasi	0	0	0	0	0	0	0	0.00	0	0	0.00
Tandahimba	0	0	0	0	283	38	77	2.04	38	77	2.04
Mtwara Urb	0	0	0	0	0	0	0	0.00	0	0	0.00
Total	0	0	0	0	283	38	77		38	77	

7.2.8: Number of Crop Growing Households, Planted Area (ha) and Irish Potatoes Harevsted (tons) by season and District 2002/03 Agricultural Year - Mtwara Region

District	Irish Potatoes										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0	0	0	0	0.00	0	0	0.00
Newala	0	0	0	0	95	10	2	0.20	10	2	0.20
Masasi	0	0	0	0	0	0	0	0.00	0	0	0.00
Tandahimba	0	0	0	0	0	0	0	0.00	0	0	0.00
Mtwara Urb	0	0	0	0	0	0	0	0.00	0	0	0.00
Total	0	0	0	0	95	10	2		10	2	

7.2.9: Number of Crop Growing Households, Planted Area (ha) and Yams Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Yams										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Newala	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Masasi	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Tandahimba	0	0	0	0.00	283	71	68	0.96	71	68	0.96
Mtwara Urb	0	0	0	0.00	33	3	10	2.96	3	10	2.96
Total	0	0	0		315	75	78		75	78	

7.2.10: Number of Crop Growing Households, Planted Area (ha) and Cocoyams Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Cocoyams										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Newala	0	0	0	0.00	94.051	6	15	2.47	6	15	2.47
Masasi	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Tandahimba	0	0	0	0.00	96	23	14	0.62	23	14	0.62
Mtwara Urb	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Total	0	0	0		190	29	29		29	29	

7.2.11: Number of Crop Growing Households, Planted Area (ha) and Mug beans Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Mug beans										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	105	21	105	4.94	21	105	4.94
Newala	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Masasi	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Tandahimba	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Mtwara Urb	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Total	0	0	0		105	21.2	105		21.2	105	

7.2.12: Number of Crop Growing Households, Planted Area (ha) and Beans Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Beans										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	107	65	91	1.40	65	91	1.40
Newala	0	0	0	0.00	94	10	2	0.20	10	2	0.20
Masasi	0	0	0	0.00	490	186	85	0.46	186	85	0.46
Tandahimba	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Mtwara Urb	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Total	0	0	0		691	260	177		260	177	

7.2.13: Number of Crop Growing Households, Planted Area (ha) and Beans Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Cowpeas										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0	1,968	320	68	0.21	320	68	0.21
Newala	0	0	0	0	7,134	1,431	259	0.18	1,431	259	0.18
Masasi	0	0	0	0	9,762	2,953	842	0.28	2,953	842	0.28
Tandahimba	0	0	0	0	3,090	583	57	0.10	583	57	0.10
Mtwara Urb	0	0	0	0	247	45	4	0.08	45	4	0.08
Total	0	0	0		22,200	5,333	1,229		5,333	1,229	

7.2.14: Number of Crop Growing Households, Planted Area (ha) and Green gram Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Green gram										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0	92.14613	18.65306	5.5287675	0.30	18.653	5.5287675	0.30
Newala	0	0	0	0	0	0	0	0.00	0	0	0.00
Masasi	0	0	0	0	4044	1022	274	0.27	1022	274	0.27
Tandahimba	0	0	0	0	0	0	0	0.00	0	0	0.00
Mtwara Urb	0	0	0	0	0	0	0	0.00	0	0	0.00
Total	0	0	0	0	4136	1040	279		1040	279	

7.2.15: Number of Crop Growing Households, Planted Area (ha) and Bambaranuts Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Bambaranuts										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0	2,338	412	185	0.45	412	185	0.45
Newala	0	0	0	0	12,759	2,902	1,202	0.41	2,902	1,202	0.41
Masasi	0	0	0	0	7,956	2,102	545	0.26	2,102	545	0.26
Tandahimba	0	0	0	0	6,118	1,926	434	0.23	1,926	434	0.23
Mtwara Urb	0	0	0	0	33	4	0	0.04	4	0	0.04
Total	0	0	0	0	29,205	7,346	2,366		7,346	2,366	

7.2.17: Number of Crop Growing Households, Planted Area (ha) and Okra Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Okra										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	106	44	265	6.05	44	265	6.05
Newala	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Masasi	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Tandahimba	0	0	0	0.00	251	24	13	0.54	24	13	0.54
Mtwara Urb	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Total	0	0	0		357	68	278		68	278	

7.2.18: Number of Crop Growing Households, Planted Area (ha) and SimsimHarevsted (tons) by season and District 2002/03 Agricultural Year.

District	Simsim										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0	1127	372	45	0	372	45	0
Newala	0	0	0	0	376	67	8	0	67	8	0
Masasi	0	0	0	0	8991	3021	923	0	3021	923	0
Tandahimba	0	0	0	0	386	52	3	0.06	52	3	0.06
Mtwara Urb	0	0	0	0	0	0	0	0.00	0	0	0.00
Total	0	0	0	0	10,880	3,512	979		3,512	979	

7.2.20: Number of Crop Growing Households, Planted Area (ha) and Castor Seed Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Castor Seed										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	0	0	0	0	0	0	0.00
Newala	0	0	0	0.00	98	8	8	1	8	8	0.99
Masasi	0	0	0	0.00	0	0	0	0	0	0	0.00
Tandahimba	0	0	0	0.00	0	0	0	0	0	0	0.00
Mtwara Urb	0	0	0	0.00	0	0	0	0	0	0	0.00
Total	0	0	0		98	8	8		8	8	

7.2.21: Number of Crop Growing Households, Planted Area (ha) and Onion Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Onion										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Newala	0	0	0	0.00	279	54	42	0.77	54	42	0.77
Masasi	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Tandahimba	0	0	0	0.00	161	21	29	1.37	21	29	1.37
Mtwara Urb	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Total	0	0	0		440	75	71		75	71	

7.2.22: Number of Crop Growing Households, Planted Area (ha) and Ginger Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Ginger										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0	0	0	0	0	0	0	0
Newala	0	0	0	0	0	0	0	0	0	0	0
Masasi	0	0	0	0	144.9123	35	0	0	35	0	0
Tandahimba	0	0	0	0	0	0	0	0.00	0	0	0.00
Mtwara Urb	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0		145	35	0		35	0	

7.2.23: Number of Crop Growing Households, Planted Area (ha) and Cucumber Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Cucumber										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Newala	0	0	0	0.00	98	12	2	0.21	12	2	0.21
Masasi	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Tandahimba	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Mtwara Urb	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Total	0	0	0		98	12	2		12	2	

7.2.24: Number of Crop Growing Households, Planted Area (ha) and Tomatoes Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Tomatoes										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	743	295	1,058	3.59	295	1,058	3.59
Newala	0	0	0	0.00	89	18	18	0.99	18	18	0.99
Masasi	0	0	0	0.00	163	33	10	0.30	33	10	0.30
Tandahimba	0	0	0	0.00	860	175	240	1.37	175	240	1.37
Mtwara Urb	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Total	0	0	0		1,856	521	1,326		521	1,326	

7.2.25: Number of Crop Growing Households, Planted Area (ha) and Spinach Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Spinach										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Newala	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Masasi	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Tandahimba	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Mtwara Urb	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Total	0	0	0		0	0	0		0	0	

7.2.26: Number of Crop Growing Households, Planted Area (ha) and Carrot Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Carrot										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Newala	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Masasi	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Tandahimba	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Mtwara Urb	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Total	0	0	0		0	0	0		0	0	

7.2.27 Number of Crop Growing Households, Planted Area (ha) and Chillies Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Chillies										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Newala	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Masasi	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Tandahimba	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Mtwara Urb	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Total	0	0	0		0	0	0		0	0	

7.2.28: Number of Crop Growing Households, Planted Area (ha) and Amaraths Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Amaranths										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Newala	0	0	0	0.00	99	20	0	0.00	20	0	0.00
Masasi	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Tandahimba	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Mtwara Urb	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Total	0	0	0		0	0	0		0	0	

7.2.29: Number of Crop Growing Households, Planted Area (ha) and Pumpkin Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Pumpkin										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	411.475	88.6695	279.277925	3.15	88.6695	279.277925	3.15
Newala	0	0	0	0.00	98.228	15.9074	3.53620958	0.22	15.9074	3.53620958	0.22
Masasi	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Tandahimba	0	0	0	0.00	287	23	16	0.68	23	16	0.68
Mtwara Urb	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Total	0	0	0		796	128	299		128	299	

7.2.30: Number of Crop Growing Households, Planted Area (ha) and Egg plant Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Egg Plant										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	106	22	64	2.91	22	64	2.91
Newala	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Masasi	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Tandahimba	0	0	0	0.00	591	46	30	0.64	46	30	0.64
Mtwara Urb	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Total	0	0	0		697	68	94		68	94	

7.2.31: Number of Crop Growing Households, Planted Area (ha) and Water MellonHarevsted (tons) by season and District 2002/03 Agricultural Year.

District	Water Mellon										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	106	22	53	2.42	22	53	2.42
Newala	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Masasi	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Tandahimba	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Mtwara Urb	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Total	0	0	0		106	22	53		22	53	

7.2.32: Number of Crop Growing Households, Planted Area (ha) and Tobacco Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Tobacco										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Newala	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Masasi	0	0	0	0.00	159	13	5	0.37	13	5	0.37
Tandahimba	92	149	61	0.41	183	129	27	0.21	129	27	0.21
Mtwara Urb	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Total	92	149	61		342	142	32		142	32	

7.2.32: Number of Crop Growing Households, Planted Area (ha) and Pyrthrum Harevsted (tons) by season and District 2002/03 Agricultural Year.

District	Pyrethrum										
	Dry Season				Wet Season				Total		
	No.of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Mtwara Rur	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Newala	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Masasi	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Tandahimba	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Mtwara Urb	0	0	0	0.00	0	0	0	0.00	0	0	0.00
Total	0	0	0		0	0	0		0	0	

PERMANENT CROPS

7.3: Production of Permanent Crops by Crop Type and Region -Mtwara

		Area Planted (ha)	Area Harvested (ha)	Quantity Harvested (tons)	Yield (Kgs/ha)
Mtwara Rural	Sour Soup	86	86	11	124
	Pigeon Pea	141	47	10	209
	Star Fruit	.	-	35	-
	Coconut	5,339	1,642	1,576	960
	Cashewnut	45,633	23,982	5,344	223
	Cloves	212	42	16	371
	Banana	.	21	64	2,988
	Mango	71	18	141	7,768
	Pawpaw	208	208	9	43
	Orange	264	94	486	5,149
	Total	**51,953**	**26,142**	**7,691**	**294**
Newala	Pigeon Pea	600	204	50	245
	Coconut	152	40	29	737
	Cashewnut	32,957	14,870	8,349	561
	Sugarcane	45	7	18	2,470
	Mpesheni	40	-		-
	Banana	419	429	100	233
	Pawpaw	81	24	13	550
	Pineapple	22	4	7	1,828
	Orange	30	10	39	3,965
	Mandarine/Tanger	12	-	.	-
	Guava	20	10	.	-
	Total	**34,377**	**15,597**	**8,606**	**552**
Masasi	Pigeon Pea	7,084	18,258	1,774	97
	Coconut	197	99	38	384
	Cashewnut	91,794	53,351	11,235	211
	Banana	7	7	16	2,470
	Mango	817	13	57	4,323
	Pawpaw	.	.	1	-
	Orange	74	66	328	4,963
	Guava	.	.	20	-
	Total	**99,972**	**71,793**	**13,471**	**188**
Tandahimba	Coconut	100	37	.	-
	Cashewnut	57,200	34,045	13,212	388
	Mango	2,906	4	2	494
	Total	**60,206**	**34,086**	**13,214**	**388**
Mtwara Urbai	Pigeon Pea	16	10	3	294
	Coconut	158	80	287	3,581
	Cashewnut	494	412	155	376
	Banana	.	.	31	-
	Mango	11	11	113	10,519
	Pawpaw	.	.	.	-
	Pineapple	.	.	1	-
	Orange	.	.	15	-
	Guava	.	.	1	-
	Total	**679**	**513**	**606**	**1,182**

cont...Production of Permanent Crops by Crop Type and Region - Mtwara

Total	Sour Soup	86	86	11	124
	Pigeon Pea	7,841	18,518	1,836	99
	Star Fruit	.	.	35	-
	Coconut	5,947	1,898	1,931	1,017
	Cashewnut	228,078	126,660	38,295	302
	Sugarcane	45	7	18	2,470
	Cloves	212	42	16	371
	Mpesheni	40	-	.	-
	Banana	426	457	212	464
	Mango	3,804	46	313	6,803
	Pawpaw	289	232	23	98
	Pineapple	22	4	7	2,054
	Orange	369	170	868	5,093
	Mandarine/Tangerine	12	-	.	-
	Guava	20	10	21	2,149
	Total	**247,188**	**148,131**	**43,587**	**294**

Cont…..Production of Permanet by Type and Region.

Crop	Area planted	%
Cashewnut	228078	92.3
Pigeon Pea	7841	3.2
Coconut	5947	2.4
Mango	3804	1.5
Banana	426	0.2
Orange	369	0.1
Pawpaw	289	0.1
Cloves	212	0.1
Sour Soup	86	0.0
Sugarcane	45	0.0
Mpesheni	40	0.0
Pineapple	22	0.0
Guava	20	0.0
Mandarine/Tangerine	12	0.0
Total	247188	100.0

cont……Area Planted and area per household by region -Mtwara Region

Cashewnut					
District	Area Planted with cashewnut	Total area planted (ha)	% of total area planted (ha)	hh with Cashewnuts	Average planted area per household
Mtwara Rural	45,633	92,244	20.01	49,145	1.87
Newala	32,957	85,182	14.45	31,255	1.83
Masasi	91,794	217,004	40.25	26,153	1.74
Tandahimba	57,200	105,606	25.08	23,722	1.39
Mtwara Urban	494	3,558	0.22	726	0.68
Total	228,078	503,593	100.00	131,000	1.74

Pegion pea					
District	Area planted(Ha)	Total area planted (ha)	% of total area planted	hh with Pegion pea	Average planted area per household
Mtwara Rural	141	92,244	1.8	30,188	0.00
Newala	600	85,182	7.7	26,692	0.02
Masasi	7,084	217,004	90.3	74,652	0.09
Tandahimba	0	105,606	0.0	31,631	0.00
Mtwara Urban	16	3,558	0.2	1,209	0.01
Total	7,841	503,593	100.0	164,371	0.05

Coconut					
District	Area planted with Coconut(Ha)	Total Area planted (ha)	% of Total Area Planted	hh with coconut	Average Planted Area per Household
Mtwara Rural	5,339	92,244	89.78	3,167	1.69
Newala	152	85,182	2.56	393	0.39
Masasi	197	217,004	3.32	162	1.21
Tandahimba	100	105,606	1.68	184	0.54
Mtwara Urban	158	3,558	2.66	348	0.45
Total	5,947	503,593	100.00	4,255	4.28

Mango					
District	Area planted with mangos(Ha)	Total Area planted (ha)	% of Total Area Planted	hh with mangoes	Average Planted Area per Household
Mtwara rural	71	51,953	1.86	179	0.39
Newala	0	34,377	0.00	0	0.00
Masasi	817	99,972	21.47	164	4.98
Tandahimba	2,906	60,206	76.39	192	15.12
Mtwara urban	11	679	0.28	70	0.15
Total	3,804	247,188	100.00	605	6.29

cont…Planted Area with Fertiliser by Fertiliser Type and region- Mtwara Regior

Crop	Fertiliser Use				
	Mostly Farm Yard Manure	Mostly Compost	Mostly Inorganic Fertiliser	No Fertiliser Applied	Total
`	4,607	1,280	5,367	60,489	71,743
Paddy	95	140	50	13,733	14,018
Sorghum	874	114	195	19,385	20,569
Bulrush Millet	0	0	0	32	32
Finger Millet	0	0	12	189	201
Cassava	4,047	1,107	1,058	107,885	114,097
Irish Potatoes	0	0	0	10	10
Sweet Potatoes	0	0	0	38	38
Yams	3	0	0	71	75
Cocoyam	0	0	0	29	29
Mung Beans	0	0	0	21	21
Beans	0	0	0	260	260
Cowpeas	83	7	0	5,243	5,333
Green Gram	0	0	0	1,040	1,040
Chich Peas	0	0	0	40	40
Pigeon Peas	0	0	0	131	131
Bambaranuts	115	21	48	7,163	7,346
Simsim	0	0	0	3,512	3,512
Groundnuts	232	14	62	16,021	16,330
Castor Seed	0	0	0	8	8
Okra	0	0	0	68	68
Tomatoes	53	0	0	469	521
Pumpkins	0	0	0	128	128
Egg Plant	0	0	0	68	68
Water Mellon	0	0	0	22	22
Onions	0	0	0	75	75
Amaranths	0	0	0	20	20
Cucumber	0	0	0	12	12
Ginger	0	0	0	35	35
Tobacco	0	0	0	142	142
Total	10,110	2,683	6,792	236,338	255,923

cont…Planted Area with Fertiliser by Fertiliser Type and region- Mtwara Region

Crop	Mostly Farm Yard Manure	Total	%
Maize	4,607	71,743	6.4
Paddy	95	14,018	0.7
Sorghum	874	20,569	4.3
Bulrush Millet	0	32	0.0
Finger Millet	0	201	0.0
Cassava	4,047	114,097	3.5
Irish Potatoes	0	10	0.0
Sweet Potatoes	0	38	0.0
Yams	3	75	4.4
Cocoyam	0	29	0.0
Mung Beans	0	21	0.0
Beans	0	260	0.0
Cowpeas	83	5,333	1.6
Green Gram	0	1,040	0.0
Chich Peas	0	40	0.0
Pigeon Peas	0	131	0.0
Bambaranuts	115	7,346	1.6
Simsim	0	3,512	0.0
Groundnuts	232	16,330	1.4
Castor Seed	0	8	0.0
Okra	0	68	0.0
Tomatoes	53	521	10.1
Pumpkins	0	128	0.0
Egg Plant	0	68	0.0
Water Mellon	0	22	0.0
Onions	0	75	0.0
Amaranths	0	20	0.0
Cucumber	0	12	0.0
Ginger	0	35	0.0
Tobacco	0	142	0.0
Total	10,110	255,923	4.0

cont…Planted Area with Fertiliser by Fertiliser Type and region- Mtwara Region

Crop	Mostly Inorganic Fertiliser	Total	%
Maize	5,367	71,743	7.48
Paddy	50	14,018	0.36
Sorghum	195	20,569	0.95
Bulrush Millet	0	32	0.00
Finger Millet	12	201	5.93
Cassava	1,058	114,097	0.93
Irish Potatoes	0	10	0.00
Sweet Potatoes	0	38	0.00
Yams	0	75	0.00
Cocoyam	0	29	0.00
Mung Beans	0	21	0.00
Beans	0	260	0.00
Cowpeas	0	5,333	0.00
Green Gram	0	1,040	0.00
Chich Peas	0	40	0.00
Pigeon Peas	0	131	0.00
Bambaranuts	48	7,346	0.66
Simsim	0	3,512	0.00
Groundnuts	62	16,330	0.38
Castor Seed	0	8	0.00
Okra	0	68	0.00
Tomatoes	0	521	0.00
Pumpkins	0	128	0.00
Egg Plant	0	68	0.00
Water Mellon	0	22	0.00
Onions	0	75	0.00
Amaranths	0	20	0.00
Cucumber	0	12	0.00
Ginger	0	35	0.00
Tobacco	0	142	0.00
Total	6,792	255,923	2.65

cont…Planted Area with Fertiliser by Fertiliser Type and region- Mtwara Region

	Mostly Compost	Total	%
Maize	1,280	71,743	1.78
Paddy	140	14,018	1.00
Sorghum	114	20,569	0.56
Bulrush Millet	0	32	0.00
Finger Millet	0	201	0.00
Cassava	1,107	114,097	0.97
Irish Potatoes	0	10	0.00
Sweet Potatoes	0	38	0.00
Yams	0	75	0.00
Cocoyam	0	29	0.00
Mung Beans	0	21	0.00
Beans	0	260	0.00
Cowpeas	7	5,333	0.12
Green Gram	0	1,040	0.00
Chich Peas	0	40	0.00
Pigeon Peas	0	131	0.00
Bambaranuts	21	7,346	0.28
Simsim	0	3,512	0.00
Groundnuts	14	16,330	0.09
Castor Seed	0	8	0.00
Okra	0	68	0.00
Tomatoes	0	521	0.00
Pumpkins	0	128	0.00
Egg Plant	0	68	0.00
Water Mellon	0	22	0.00
Onions	0	75	0.00
Amaranths	0	20	0.00
Cucumber	0	12	0.00
Ginger	0	35	0.00
Tobacco	0	142	0.00
Total	2,683	255,923	1.05

AGROPROCESSING

8.0a: Number of Crops Growing Households reported to have Processed Farm Products by District , 2002/03 Agricultural Year

District	Households That Processed Product		Households That Did Not Process Product		Total	
	Number	%	Number	%	Number	%
Mtwara Rural	40,190	89	4,964	11	45,154	100
Newala	39,907	93	3,159	7	43,065	100
Masasi	90,189	94	6,232	6	96,421	100
Tandahimba	38,106	91	3,717	9	41,823	100
Mtwara Urban	2,369	83	482	17	2,850	100
Total	210,760	92	18,554	8	229,314	100

8.0b: Number of Crop Growing Households By Method of Processing and District; Agricultural Year

District	Method of Processing							
	On Farm by Hand	On Farm by Machine	By Neighbour Machine	By Co-operative Union	By Trader	Other	By Factory	Total
Mtwara Rural	31,732	0	5,572	0	104	2,689	93	40,190
Newala	21,361	383	15,912	95	94	1,670	391	39,907
Masasi	28,137	164	60,601	485	163	639	0	90,189
Tandahimba	30,966	193	3,999	0	1,933	1,015	0	38,106
Mtwara Urban	1,774	26	397	0	0	0	171	2,369
Total	113,971	765	86,481	580	2,294	6,014	655	210,760
%	54.08	0.36	41.03	0.28	1.09	2.85	0.31	100.00

8.1.1 AGROPROCESSING: Number of Crop Growing Households Processing Crops During 2002/03 Agricultural Year By Location and Crop, Mtwara Region.

	Method of Processing							
Crop	On Farm by Hand	On Farm by Machine	By Neighbour Machine	By Co-operative Union	By Trader	Other	By Factory	Total
Maize	19,627	1,734	111,137	744	3,162	597	404	137,405
Paddy	17,715	409	3,542	0	0	1,642	66	23,375
Sorghum	31,723	287	10,589	0	290	1,596	66	44,550
Bulrush Millet	0	0	158	0	0	0	0	158
Finger Millet	291	0	0	0	0	0	0	291
Cassava	135,463	438	22,808	481	193	5,250	455	165,088
Beans	107	0	0	0	0	0	0	107
Cowpeas	10,379	316	259	0	0	0	35	10,989
Green Gram	1,605	0	0	0	0	0	0	1,605
Pigeon Peas	23,883	0	325	0	0	0	0	24,208
Bambaranuts	13,689	0	260	0	0	0	0	13,950
Simsim	3,496	0	0	0	0	0	0	3,496
Groundnuts	24,075	164	259	0	0	0	0	24,498
Coconut	929	0	0	0	0	98	0	1,027
Cashewnut	622	0	0	0	0	0	94	716

8.1.1b: AGROPROCESSING: Number of Crop Growing Households Reporting

	Product Use					
Crop	Household / Human Consumption	Fuel for Cooking	Sale Only	Animal Consumption	Did Not Use	Total
Maize	136,131	-	259	708	306	137,405
Paddy	22,495	163	89	-	627	23,375
Sorghum	44,338	-	-	-	212	44,550
Bulrush Millet	158	-	-	-	-	158
Finger Millet	291	-	-	-	-	291
Cassava	163,848	158	130	-	951	165,088
Beans	107	-	-	-	-	107
Cowpeas	10,465	-	420	-	105	10,989
Green Gram	1,448	-	157	-	-	1,605
Pigeon Peas	23,070	162	975	-	-	24,208
Bambaranut	13,500	-	255	-	194	13,950
Simsim	788	-	2,090	-	151	3,496
Groundnut	18,406	489	4,913	105	585	24,498
Coconut	1,027	-	-	-	-	1,027
Cashewnut	622	-	-	-	94	716
Total	**436,694**	**973**	**9,289**	**813**	**3,226**	**451,461**

8.1.1c: AGROPROCESSING: Number of Crop Growing Households Reporting Processing of Farm Products Produced During 2002/03 Agricultural Year By Location of Sale of Product and Crop, Mtwara Region.

Crop	Where Sold									Total
	Neighbours	Local Market / Trade Store	Secondary Market	Marketing Co-operative	Farmers Association	Large Scale Farm	Trader at Farm	Other	Did not Sell	
Maize	4,558	189	0	391	484	94	791	829	130,068	137,405
Paddy	859	0	0	0	263	0	106	104	22,042	23,375
Sorghum	1,144	253	103	0	163	0	0	247	42,640	44,550
Bulrush Millet	0	0	0	0	0	0	0	0	158	158
Finger Millet	0	0	0	0	0	0	0	0	291	291
Cassava	6,241	494	97	659	326	0	1,083	917	155,272	165,088
Beans	0	0	0	0	0	0	0	0	107	107
Cowpeas	574	164	0	0	98	0	0	0	10,153	10,989
Green Gram	157	0	0	0	0	0	0	0	1,448	1,605
Pigeon Peas	1,462	0	0	0	0	0	328	0	22,417	24,208
Bambaranut	417	91	159	0	162	0	0	0	13,121	13,950
Simsim	159	2,391	162	0	159	0	0	0	625	3,496
Groundnut	3,609	581	159	0	260	0	2,187	318	17,384	24,498
Coconut	0	0	0	0	0	0	103	0	924	1,027
Cashewnut	0	0	0	0	94	0	140	0	482	716
Total	19,179	4,163	680	1,050	2,010	94	4,738	2,416	417,131	451,461

8.1.1d: AGRO PROCESSING: Number of Crop Growing Households By Main Product During 2002/03 Agriculture Year, Mtwara Region

District	Main Product					
	Flour / Meal	Grain	Oil	Fiber	Other	Total
Mtwara Rural	33,218	6,471	395	106	0	40,190
Newala	38,243	1,565	99	0	0	39,907
Masasi	83,958	5,915	316	0	0	90,189
Tandahimba	36,160	1,473	95	282	96	38,106
Mtwara Urban	2,343	0	26	0	0	2,369
Total	**193,922**	**15,423**	**931**	**388**	**96**	**210,760**

8.1.1e: AGRO PROCESSING: Number of Crop Growing Households By Main Product During 2002/03 Agriculture Year, Mtwara Region

District	**Product Use**				
	Household / Human Consumption	Sale Only	Animal Consumption	Did Not Use	Total
Mtwara Rural	39,793	0	0	397	40,190
Newala	39,515	99	196	96	39,907
Masasi	88,897	646	0	646	90,189
Tandahimba	38,010	97	0	0	38,106
Mtwara Urban	2,338	31	0	0	2,369
Total	**208,552**	**873**	**196**	**1,139**	**210,760**

8.I.1f: AGRO PROCESSING: Number of Crop Growing Households By Where Product Sold During 2002/03 Agricultural Year, Mtwara Region

District	Where Sold									
	Neighbours	Local Market / Trade Store	Secondary Market	Marketing Co-operative	Farmers Association	Large Scale Farm	Trader at Farm	Other	Did not Sell	Total
Mtwara Rural	1,510	211	97	107	100	0	0	525	37,641	40,190
Newala	875	189	0	0	0	94	99	470	38,180	39,907
Masasi	4,524	157	0	0	484	0	791	0	84,232	90,189
Tandahimba	942	0	0	188	0	0	0	95	36,881	38,106
Mtwara Urban	83	0	0	0	0	0	0	35	2,251	2,369
Total	7,933	557	97	295	584	94	890	1,125	199,185	210,760

8.1.1g: AGRO PROCESSING: Number of Crop Growing Households By By-Product During 2002/03 Agriculture Year and District During 2002/03 Agricultural Year, Mtwara Region.

District	By Product										
	Bran	Cake	Husk	Juice	Fiber	Pulp	Oil	Shell	No by-product	Other	Total
Mtwara Rural	13,708	0	2,598	0	290	209	100	4,372	18,913	0	40,190
Newala	8,060	98	764	99	98	0	0	767	30,020	0	39,907
Masasi	12,800	0	7,971	462	0	325	164	10,773	57,694	0	90,189
Tandahimba	9,095	188	1,082	0	92	0	89	284	27,185	91	38,106
Mtwara Urban	423	0	0	0	33	0	0	379	1,534	0	2,369
Total	44,086	286	12,415	561	513	534	354	16,575	135,346	91	210,760

MARKETING

10.1: Number of Crop Producing Households Reporting Selling Agricultural Products During 2003/04 By District, Mtwara Region

District	Number of Households that Sold		Number of Households that Did not Sell		Total
	Number	%	Number	%	Number
Mtwara Rural	29,648	65.7	15,506	34.3	45,154
Newala	30,353	70.5	12,713	29.5	43,065
Masasi	58,866	61.1	37,555	38.9	96,421
Tandahimba	28,990	69.3	12,833	30.7	41,823
Mtwara Urban	1,307	45.8	1,544	54.2	2,850
Total	149,163	65.0	80,151	35.0	229,314

10.2: Number of Crop Producing Households Reporting Not Selling Agricultural Products During 2002/03 Agricultural Year, Mtwara Region.

District	Main Reasons for Not Selling Crops									
	Price Too Low	Production Insufficient to Sell	Market Too Far	Farmers Association Problems	Co-operative Problems	Trade Union Problems	Government Regulatory Board Problems	Other	Not applicable	Total
Mtwara Rural	638	13,409	0	0	92	107	0	1,384	29,039	44,669
Newala	1,763	12,448	93	99	94	389	95	1,357	25,848	42,185
Masasi	1,114	54,610	0	483	491	1,465	328	2,400	31,261	92,152
Tandahimba	0	12,712	0	0	92	0	0	1,890	26,762	41,456
Mtwara Urban	0	995	65	0	0	0	0	686	1,006	2,753
Total	3,515	94,174	158	582	769	1,961	422	7,717	113,916	223,215

10.3: Proportion of Households who Reported Not Selling their crops by district during 2002/03 Agricultural Year, Mtwara Region.

District	Price Too Low	Insufficient to Sell	Market Too Far	Association Problems	operative Problems	Union Problems	t Regulatory	Other	Not applicable	Total
Mtwara Rural	1.43	30.02	0.00	0.00	0.21	0.24	0.00	3.10	65.01	100.00
Newala	3.95	27.87	0.21	0.22	0.21	0.87	0.21	3.04	57.87	94.44
Masasi	2.49	122.26	0.00	1.08	1.10	3.28	0.73	5.37	69.98	206.30
Tandahimba	0.00	28.46	0.00	0.00	0.21	0.00	0.00	4.23	59.91	92.81
Mtwara Urban	0.00	2.23	0.15	0.00	0.00	0.00	0.00	1.54	2.25	6.16
Total	7.87	210.83	0.35	1.30	1.72	4.39	0.95	17.27	255.02	499.71

IRRIGATION

Table 11.1: Number and Percent of Households Reporting use of Irrigation During 2002/03 Agricultural Year By District

District	Households Practicing Irrigation		Households not Practicing Irrigation		Total
	Number of Household	%	Number of Household	%	Number of Household
Mtwara Rural	637	1.4	44,517	98.6	45,154
Newala	94	0.2	42,971	99.8	43,065
Masasi	1,110	1.2	95,311	98.8	96,421
Tandahimba	2,185	5.2	39,638	94.8	41,823
Mtwara Urban	0	0.0	2,850	100.0	2,850
Total	4,027	1.8	225,287	98.2	229,314

11.2: IRRIGATION: Area of Irrigated and Non Irrigatable (ha) Land By District during 2002/03 agricultural year

District	Irrigated Area	Area Irrigated Land this Year	%
Mtwara Rural	666	623	94
Newala	11	11	100
Masasi	431	193	45
Tandahimba	1,247	1,247	100
Mtwara Urban	0	0	0
Total	2,356	2,075	88

11.3: IRRIGATION: Number of Households Using Irrigation By Source of Irrigation Water During 2003/04 Agricultural Year By District

District	Source of Irrigation Water					
	River	Dam	Well	Canal	Pipe water	Total
Mtwara Rural	0	637	0	0	0	637
Newala	0	0	0	0	94	94
Masasi	319	0	791	0	0	1,110
Tandahimba	2,104	0	0	81	0	2,185
Total	2,424	637	791	81	94	4,027
%	60	16	20	2	2	100

11.4: IRRIGATION: Number of Households Using Irrigation By Method of Irrigation of Obtaining Water By District

District	Method of Obtaining Water			
	Gravity	Hand Bucket	Other	Total
Mtwara Rural	0	637	0	637
Newala	0	0	94	94
Masasi	0	1,110	0	1,110
Tandahimba	2,104	81	0	2,185
Total	2,104	1,828	94	4,027
%	52	45	2	100

11.5: IRRIGATION: Number of Agricultural Households By Method of Field Application of Irrigation Water and District for the 2002/03 agricultural year

District	Method of Application			
	Flood	Water Hose	Bucket / Watering Can	Total
Mtwara Rural	0	0	637	637
Newala	0	94	0	94
Masasi	0	0	1,110	1,110
Tandahimba	2,104	0	81	2,185
Total	2,104	94	1,828	4026.70707
%	52	2	45	100

11.6: IRRIGATION: Number of Households With Erosion Control/Water Harvesting Facilities on their Land By District

District	Presence of Erosion control/Water Harvesting Facilities				
	Have facility		Does Not Have Facility		Total
	Number	%	Number	%	Number
Mtwara Rural	0	0	45,154	100	45,154
Newala	95	0	42,970	100	43,065
Masasi	1,282	1	95,139	99	96,421
Tandahimba	0	0	41,823	100	41,823
Mtwara Urban	98	3	2,753	97	2,850
Total	1,474	1	227,840	99	229,314

11.7: EROSION CONTROL: Number of Erosion Control Harvesting Structures By Type and District

District	Type of Erosion Control			
	Erosion Control Bunds	Water Harvesting Bunds	Drainage Ditches	Total Number of Structures
Newala	0	0	95	95
Masasi	39,391	151	0	39,542
Mtwara Urban	841	0	0	841
Total	40,232	151	95	40,478

ACCESS TO INPUTS

Table 12.1.1: ACCESS TO INPUTS: Number of Agricultural Households Using Chemical Fertilizer by District, 2002/03 Agricultural Year

	Using Chemical Fertilizer		NOT Using Chemical Fertilizer		Total Number of Crop growing households
District	No of households	%	No of households	%	
Mtwara Rur	100	0	45,054	100	45,154
Newala	5,912	14	37,153	86	43,065
Masasi	970	1	95,451	99	96,421
Tandahimba	286	1	41,538	99	41,823
Mtwara Urb	65	2	2,785	98	2,850
Total	7,333	3	221,981	97	229,314

Table 12.1.2 ACCESS TO INPUTS: Number of Agricultural Households Using Farm Yard Manure by District, 2002/03 Agricultural Year

	Using Farm Yard Manure		Not Using Farm Yard Manure		Total Number of Crop growing households
District	No of households	%	No of households	%	
Mtwara Rur	587	1	44,567	99	45,154
Newala	4,035	9	39,030	91	43,065
Masasi	1,615	2	94,806	98	96,421
Tandahimba	4,879	12	36,945	88	41,823
Mtwara Urb	218	8	2,633	92	2,850
Total	11,334	5	217,980	95	229,314

Table 12.1.3 ACCESS TO INPUTS: Number of Agricultural Households Using COMPOST Manure by District, 2002/03 Agricultural Year

	Using Compost		Not Using Compost		Total Number of Crop growing households
District	No of households	%	No of households	%	
Mtwara Rur	1,652	4	43,502	96	45,154
Newala	1,453	3	41,612	97	43,065
Masasi	794	1	95,627	99	96,421
Tandahimba	1,040	2	40,783	98	41,823
Mtwara Urb	99	3	2,751	97	2,850
Total	5,038	2	224,276	98	229,314

Table 12.1.4 ACCESS TO INPUTS: Number of Agricultural Households Using Pesticides/Fungicides by District, 2002/03 Agricultural Year

District	Using Pesticides/Fungicide		Not Using Pesticides/Fungi		Total Number of Crop growing households
	No of households	%	No of households	%	
Mtwara Rur	10,495	23	34,659	77	45,154
Newala	11,259	26	31,807	74	43,065
Masasi	13,040	14	83,380	86	96,421
Tandahimba	17,706	42	24,117	58	41,823
Mtwara Urb	461	16	2,389	84	2,850
Total	52,961	23	176,353	77	229,314

Table 12.1.5 ACCESS TO INPUTS: Number of Agricultural Households Using Herbicides by District, 2002/03 Agricultural Year

District	Using Herbicides		Not Using Herbicides		Total Number of Crop growing households
	No of households	%	No of households	%	
Mtwara Rur	93	0	45,061	100	45,154
Newala	96	0	42,969	100	43,065
Masasi	0	0	96,421	100	96,421
Tandahimba	0	0	41,823	100	41,823
Mtwara Urb	0	0	2,850	100	2,850
Total	189	0	229,125	100	229,314

Table 12.1.6 ACCESS TO INPUTS: Number of Agricultural Households using Improved Seeds by District, 2002/03 Agricultural Year

District	Using Improved Seeds		Not Using Improved Seeds		Total Number of Crop growing households
	No of households	%	No of households	%	
Mtwara Rur	4,459	10	40,695	90	45,154
Newala	489	1	42,576	99	43,065
Masasi	2,081	2	94,340	98	96,421
Tandahimba	1,241	3	40,582	97	41,823
Mtwara Urb	261	9	2,589	91	2,850
Total	8,531	4	220,783	96	229,314

Table 12.1.7 ACCESS TO INPUTS: Number of Agricultural Households and Source of Chemical Fertilizer by District, 2002/03 Agricultural Year

	Co-operative		Local Farmers Group		Local Market / Trade Store		Crop Buyers		Locally Produced by Household		Neighbour		Other		Not applicable		Total
District	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Mtwara Rur	0	0	0	0	100	0	0	0	0	0	0	0	0	0	45,054	100	45,154
Newala	95	0	189	0	5,055	12	94	0	96	0	94	0	288	1	37,153	86	43,065
Masasi	159	0	0	0	811	1	0	0	0	0	0	0	0	0	95,451	99	96,421
Tandahimba	0	0	0	0	286	1	0	0	0	0	0	0	0	0	41,538	99	41,823
Mtwara Urb	0	0	0	0	65	2	0	0	0	0	0	0	0	0	2,785	98	2,850
Total	254	0	189	0	6,317	3	94	0	96	0	94	0	288	0	221,981	97	229,314

Table 12.1.8 ACCESS TO INPUTS: Number of Agricultural Households and Source of Farm Yard Manure by District, 2002/03 Agricultural Year

	Co-operative		Local Farmers Group		Local Market / Trade Store		Large Scale Farm		Locally Produced by Household		Neighbour		Other		Not applicable		Total
District	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Mtwara Rur	0	0	0	0	0	0	87	0	106	0	394	1	0	0	44,461	99	45,048
Newala	0	0	98	0	98	0	96	0	1,802	4	1,745	4	195	0	39,126	91	43,161
Masasi	0	0	0	0	0	0	0	0	164	0	1,294	1	157	0	94,806	98	96,421
Tandahimba	96	0	0	0	285	1	0	0	2,148	5	2,349	6	0	0	36,945	88	41,823
Mtwara Urb	0	0	0	0	0	0	0	0	69	2	149	5	0	0	2,633	92	2,850
Total	96	0	98	0	383	0	183	0	4,289	2	5,931	3	353	0	217,970	95	229,304

Table 12.1.9 ACCESS TO INPUTS: Number of Agricultural Households and Source of COMPOST Manure by District, 2002/03 Agricultural Year

	Co-operative		Local Farmers Group		Local Market / Trade Store		Large Scale Farm		Locally Produced by Household		Neighbour		Other		Not applicable		Total
District	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Mtwara Rur	515	1	618	1	309	1	103	0	106	0	0	0	0	0	43,608	96	45,260
Newala	0	0	0	0	0	0	0	0	1,355	3	98	0	0	0	41,612	97	43,065
Masasi	157	0	0	0	0	0	0	0	478	0	158	0	0	0	95,627	99	96,421
Tandahimba	0	0	0	0	0	0	0	0	387	1	556	1	97	0	40,783	98	41,823
Mtwara Urb	0	0	0	0	0	0	0	0	99	3	0	0	0	0	2,751	97	2,850

Table 12.1.10 ACCESS TO INPUTS: Number of Agricultural Households and Source of Pesticides/Fungicides by District, 2002/03 Agricultural Year

	Co-operative		Local Farmers Group		Local Market / Trade Store		Secondary Market		Developme nt Project		Crop Buyers		Large Scale Farm		Locally Produced by Household		Neighbour		Other		Not applicable	
District	Number	%	Number	%	Number	%	Numb	%	Number	%	Numbe	%	Number	%	Number	%	Number	%	Number	%	Number	Total
Mtwara Rur	2015.28	4.5	657.6161	1.456	7,037	16	0	0	0	0	80	0	0	0	0	0	705	2	0	0	34,659	45154.1
Newala	947	2	183	0	9,154	21	0	0	98	0	0	0	98	0	96	0	293	1	389	1	31,807	43065.2
Masasi	5,622	6	307	0	6,949	7	162	0	0	0	0	0	0	0	0	0	0	0	0	0	83,380	96420.8
Tandahimba	8,490	20	631	2	7,004	17	0	0	181	0	92	0	0	0	89	0	1,128	3	91	0	24,117	41823.3
Mtwara Urb	0	0	0	0	394	14	0	0	0	0	0	0	0	0	0	0	67	2	0	0	2,389	2850.44
Total	17,075	7	1,778	1	30,539	13	162	0	280	0	172	0	98	0	185	0	2,192	1	480	0	176,353	229314

Table 12.1.11 ACCESS TO INPUTS: Number of Agricultural Households and Source of Herbicides by District, 2002/03 Agricultural Year

	Neighbour		Not applicable		Total
District	Number	%	Number	%	
Mtwara Rur	93	0	45,061	100	45,154
Newala	96	0	42,873	100	42,969
Masasi	0	0	96,421	100	96,421
Tandahimba	0	0	41,823	100	41,823
Mtwara Urb	0	0	2,850	100	2,850
Total	189	0	229,029	100	229,218

Table 12.1.12 ACCESS TO INPUTS: Number of Agricultural Households Source of Improved Seeds by District, 2002/03 Agricultural Year

	Co-operative		Local Farmers Group		Local Market / Trade Store		Developm ent Project		Large Scale Farm		Locally Produced by Household		Neighbour		Other		Not applicable		Total
District	Number	%	Number	%	Number	%	Numb	%	Number	%	Numbe	%	Number	%	Number	%	Number	%	Number
Mtwara Rur	0	0	0	0	2,631	6	180	0	0	0	100	0	928	2	621	1	40,695	90	45,154
Newala	0	0	0	0	390	1	0	0	0	0	0	0	99	0	0	0	42,576	99	43,065
Masasi	0	0	321	0	487	1	159	0	159	0	159	0	798	1	0	0	94,340	98	96,421
Tandahimba	95	0	0	0	574	1	0	0	94	0	0	0	478	1	0	0	40,582	97	41,823
Mtwara Urb	33	1	0	0	130	5	0	0	0	0	0	0	63	2	35	1	2,589	91	2,850
Total	128	0	321	0	4,212	2	338	0	253	0	258	0	2,365	1	656	0	220,783	96	229,314

Table 12.1.13 ACCESS TO INPUTS: Number of Agricultural Households and Distance to Source of Chemical Fertilizer by District, 2002/03 Agricultural Year

	Less than 1 km		Between 1 and 3 km		Between 3 and 10 km		Between 10 and 20 km		20 km and Above		Total
District	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Mtwara Rur	100	100	0	0	0	0	0	0	0	0	100
Newala	951	16	283	5	1,809	31	1,413	24	1,457	25	5,912
Masasi	159	16	0	0	0	0	321	33	490	51	970
Tandahimba	0	0	95	33	94	33	0	0	96	34	286
Mtwara Urb	0	0	0	0	65	100	0	0	0	0	65
Total	1,209	16	378	5	1,968	27	1,733	24	2,044	28	7,333

Table 12.1.14 ACCESS TO INPUTS: Number of Agricultural Households and Distance to Source of Farm Yard Manure by District, 2002/03 Agricultural Year

	Less than 1 km		Between 1 and 3 km		Between 3 and 10 km		Between 10 and 20 km		20 km and Above		Total
District	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Mtwara Rur	587	100	0	0	0	0	0	0	0	0	587
Newala	3,747	93	95	2	0	0	0	0	193	5	4,035
Masasi	1,294	80	0	0	159	10	162	10	0	0	1,615
Tandahimba	4,879	100	0	0	0	0	0	0	0	0	4,879
Mtwara Urb	218	100	0	0	0	0	0	0	0	0	218
Total	10,725	95	95	1	159	1	162	1	193	2	11,334

Table 12.1.15 ACCESS TO INPUTS: Number of Agricultural Households and Distance to Source of COMPOST Manure by District, 2002/03 Agricultural Year

	Less than 1 km		km		10 km		Total
District	Number	%	Number	%	Number	%	Number
Mtwara Rur	1549	94	103	6	0	0	1652
Newala	1256	86	98	7	98	7	1453
Masasi	630	79	163	21	0	0	794
Tandahimba	1040	100	0	0	0	0	1040
Mtwara Urb	99	100	0	0	0	0	99
Total	4575	91	365	7	98	2	5038

Table 12.1.18 ACCESS TO INPUTS: Number of Agricultural Households and Distance to Source of Improved Seeds by District, 2002/03 Agricultural Year

	Less than 1 km		Between 1 and 3 k		Between 3 and 10		Between 10 and 2		20 km and Above		Total
District	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Mtwara Rur	3,222	72	213	5	107	2	200	4	718	16	4,459
Newala	0	0	0	0	0	0	98	20	391	80	489
Masasi	1,436	69	0	0	323	16	0	0	322	15	2,081
Tandahimba	383	31	95	8	286	23	190	15	287	23	1,241
Mtwara Urb	32	12	0	0	194	74	0	0	35	13	261
Total	5,072	59	308	4	910	11	489	6	1,753	21	8,531

Table 12.1.16 ACCESS TO INPUTS: Number of Agricultural Households and Distance to Source of Pesticides/Fungicides by District, 2002/03 Agricultural Year

	Less than 1 km		Between 1 and 3 km		Between 3 and 10 km		Between 10 and 20 km		20 km and Above		Total	
District	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Mtwara Rur	3,699	35	194	2	1,755	17	1,151	11	3,697	35	10,495	100
Newala	2,209	20	652	6	1,257	11	2,583	23	4,558	40	11,259	100
Masasi	5,304	41	790	6	2,103	16	2,614	20	2,230	17	13,040	100
Tandahimba	11,868	67	1,488	8	2,614	15	1,365	8	372	2	17,706	100
Mtwara Urb	32	7	0	0	226	49	169	37	35	8	461	100
Total	23,112	44	3,123	6	7,955	15	7,880	15	10,891	21	52,961	100

Table 12.1.25 ACCESS TO INPUTS: Number of Agricultural Households and Reason for NOT using Chemical Fertilizer by District, 2002/03 Agricultural Year

	Not Available		Price Too High		No Money to Buy		Too Much Labour Required		Do not Know How to Use		Input is of No Use		Locally Produced by Household		Other		Total
District	Number	%	Number	%	Number	%	Number	%	Number	%	Numbe	%	Number	%	Number		Number
Mtwara Rur	10,349	23	29,311	65	831	2	0	0	1,967	4	2,315	5	0	0	281	0.623	45,054
Newala	6,797	18	24,830	67	852	2	96	0	284	1	292	1	0	0	4,002	10.77	37,153
Masasi	15,545	16	72,633	76	803	1	466	0	2,579	3	2,613	3	0	0	812	0.85	95,451
Tandahimba	14,560	35	23,585	57	179	0	0	0	1,465	4	1,567	4	182	0	0	0	41,538
Mtwara Urb	66	2	2,276	82	33	1	0	0	262	9	63	2	0	0	85	3.051	2,785
Total	47,317	21	152,636	69	2,699	1	562	0	6,556	3	6,851	3	182	0	5,179	2.333	221,981

Table 12.1.26 ACCESS TO INPUTS: Number of Agricultural Households and Reason for NOT using Farm Yard Manure by District, 2002/03 Agricultural Year

	Not Available		Price Too High		No Money to Buy		Too Much Labour Required		Do not Know How to Use		Input is of No Use		Other		Total
District	Number	%	Number	%	Number	%	Number	%	Number	%	Numbe	%	Number	%	Number
Mtwara Rur	13,399	30	6,433	14	12,688	29	879	2	9,069	20	1,304	3	689	2	44,461
Newala	13,067	33	4,585	12	15,281	39	1,268	3	1,522	4	292	1	3,111	8	39,126
Masasi	25,920	27	14,590	15	34,626	37	3,056	3	12,547	13	3,420	4	646	1	94,806
Tandahimba	16,693	45	2,871	8	13,206	36	1,467	4	1,684	5	934	3	91	0	36,945
Mtwara Urb	814	31	600	23	299	11	292	11	481	18	95	4	51	2	2,633
Total	69,894	32	29,079	13	76,099	35	6,962	3	25,303	12	6,045	3	4,589	2	217,970

Table 12.1.27 ACCESS TO INPUTS: Number of Agricultural Households and Reason for NOT using COMPOST Manure by District, 2002/03 Agricultural Year

	Not Available		Price Too High		No Money to Buy		Too Much Labour Required		Do not Know How to Use		Input is of No Use		Other		Total
District	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Mtwara Rur	2,253	5	5,730	13	16,022	37	773	2	17,329	40	892	2	610	1	43,608
Newala	2,565	6	4,380	11	15,850	38	5,985	14	8,842	21	98	0	3,893	9	41,612
Masasi	14,711	15	11,842	12	34,134	36	4,817	5	26,214	27	3,420	4	489	1	95,627
Tandahimba	5,508	14	2,600	6	17,680	43	2,822	7	11,152	27	647	2	376	1	40,783
Mtwara Urb	129	5	533	19	533	19	556	20	827	30	96	3	77	3	2,751
Total	25,165	11	25,084	11	84,218	38	14,953	7	64,364	29	5,153	2	5,445	2	224,382

Table 12.1.28 ACCESS TO INPUTS: Number of Agricultural Households and Reason for NOT using Pesticides/Fungicides by District, 2002/03 Agricultural Year

	Not Available		Price Too High		No Money to Buy		Too Much Labour Required		Do not Know How to Use		Input is of No Use		Other		Total
District	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Mtwara Rur	2,524	7	24,042	69	2,270	7	0	0	1,342	4	4,093	12	390	1	34,659
Newala	5,364	17	20,945	66	762	2	94	0	773	2	941	3	2,928	9	31,807
Masasi	8,703	10	67,563	81	971	1	321	0	1,781	2	2,591	3	1,451	2	83,380
Tandahimba	4,182	17	18,085	75	0	0	0	0	1,007	4	657	3	186	1	24,117
Mtwara Urb	66	3	1,911	80	0	0	0	0	266	11	63	3	83	3	2,389
Total	20,838	12	132,545	75	4,003	2	415	0	5,168	3	8,345	5	5,038	3	176,353

Table 12.1.29 ACCESS TO INPUTS: Number of Agricultural Households and Reason for NOT using Herbicides by District, 2002/03 Agricultural Year

	Not Available		Price Too High		No Money to Buy		Too Much Labour Required		Do not Know How to Use		Input is of No Use		Other		Total
District	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Mtwara Rur	9,103	20	22,780	51	2,161	5	212	0	5,759	13	4,858	11	189	0	45,061
Newala	13,327	31	19,660	46	1,302	3	197	0	4,592	11	379	1	3,414	8	42,873
Masasi	15,917	17	67,602	70	811	1	321	0	5,918	6	5,037	5	815	1	96,421
Tandahimba	19,727	47	14,645	35	188	0	0	0	5,517	13	1,655	4	91	0	41,823
Mtwara Urb	31	1	1,974	69	0	0	0	0	730	26	63	2	51	2	2,850
Total	58,105	25	126,661	55	4,463	2	730	0	22,517	10	11,992	5	4,561	2	229,029

Table 12.1.30 ACCESS TO INPUTS: Number of Agricultural Households and Reason for NOT using Improved Seeds by District, 2002/03 Agricultural Year

	Not Available		Price Too High		No Money to Buy		Too Much Labou		Do not Know Ho		Input is of No Use		Locally Produc		Other		Total
District	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Mtwara Rur	19,400	48	18,968	47	1,219	3	0	0	816	2	197	0	0	0	96	0	40,695
Newala	13,732	32	21,624	51	1,030	2	0	0	477	1	1,541	4	99	0	4,074	10	42,576
Masasi	29,354	31	60,916	65	490	1	162	0	1,145	1	972	1	0	0	1,301	1	94,340
Tandahimba	20,077	49	19,860	49	181	0	0	0	190	0	183	0	0	0	91	0	40,582
Mtwara Urb	100	4	2,045	79	0	0	64	2	199	8	98	4	0	0	84	3	2,589
Total	82,662	37	123,412	56	2,920	1	226	0	2,827	1	2,991	1	99	0	5,646	2.557	220,783

AGRICULTURE CREDIT

13.2 AGRICULTURE CREDIT: Number of Households Receiving Credit By Sex of Household head and District during the 2002/03 Agricultural Year

District	Male		Female		Total
	Number	%	Number	%	Number
Newala	291	75	99	25	390
Masasi	964	100	0	0	964
Tandahimba	96	100	0	0	96
Mtwara Urba	58	100	0	0	58
Total	1,410	93	99	7	1,509

13.2 AGRICULTURE CREDIT: Number of Households Receiving Credit By Source of Credit By District

District	Source of Credit					
	Family, Friend and Relative	Commercial Bank	Co-operative	Saving & Credit Society	Religious Organisation / NGO / Project	Total
Newala	97	0	293	0	0	390
Masasi	317	159	326	162	0	964
Tandahimba	0	0	96	0	0	96
Mtwara Urba	33	0	0	0	26	58
Total	446	159	716	162	26	1,509

13.1a AGRICULTURE CREDIT: Number of Households Reporting the Main reasons for Not Using Credit by District During the 2002/03 Agriculture Year

District	Did not know how to get credit	Don't know about credit	Not available	Did not want to go into debt	Difficult bureaucracy procedure	Not needed	Interest rate/cost too high	Credit granted too late	Other	Total
Mtwara Rural	22,970	9,176	6,869	2,515	1,185	1,229	819	292	100	45,154
Newala	16,723	9,199	11,141	3,098	950	1,076	192	198	99	42,675
Masasi	38,017	26,958	20,493	4,202	2,272	2,234	486	631	163	95,457
Tandahimba	19,475	8,384	7,593	3,324	1,663	813	475	0	0	41,727
Mtwara Urban	1,696	415	0	318	230	34	67	0	33	2,792
Total	98,881	54,133	46,096	13,458	6,300	5,384	2,039	1,121	393	227,805

13.1b AGRICULTURE CREDIT: Number of Credits Received by Main Purpose of Credit and District During the 2002/03 Agriculture Year

District	Labour	Tools / Equipment	Agro-chemicals	Livestock	Total Credits
Newala	0	0	390	0	390
Masasi	162	159	805	0	1,126
Tandahimba	0	0	96	0	96
Mtwara Urban	0	0	33	26	58
Total Credits	162	159	1,324	26	1,671

TREE FARMING AND AGROFORESTRY

14 ON FARM TREE PLANTING: Number of Planted Trees By Species and District during the Year 2002/03 Agricultural Year, Mtwara region.

District	Senna Spp	Gravellis	Acacia Spp	Melicia excelsa	Terminalia Catapa	Azadritachta Spp	Jakaranda Spp	Moringa Spp
Newala	38	.	.	5	.	.	.	.
Masasi	70	10	13	.	.	.	.	12
Mtwara Urban	29	.	.	2	9	12	6	.
Total	137	10	13	7	9	12	6	12

14.2 TREE FARMING: Number of Households with Planted Trees on their Land and and Number of Trees by Planting Location and District during the 2002/03 Agricultural year - Mtwara Region

District	Mostly on Field / Plot Boundaries		Mostly Scattered in Field		Total	
	Number of Households	Number of Trees	Number of Households	Number of Trees	Number of Households	Number of Trees
Newala	6	43	0	.	6	43
Masasi	2	14	6	91	8	105
Mtwara Urban	5	41	2	17	7	58
Total	13	98	8	108	21	206

14.3 TREE FARMING: Number of Agricultural Households Classified by Distance to Community Planted Forest (Km) By District during the 2002/03 Agricultural Year, Mtwara Region

District	Distance to Community Planted Forest (km)					
	1-9	1-19	20-29	30-39	60+	Total
Newala	393	0	0	0	98	491
Masasi	163	488	488	163	163	1,463
Tandahimba	1,040	1,248	531	0	0	2,820
Total	**1,595**	**1,736**	**1,019**	**163**	**261**	**4,773**

14 TREE FARMING: Number of Responses by main use of planted tree and District for the 2002/03 agricultural year, Mtwara region

District	Planks / Timber	Poles	Fuel for Wood	Shade	Other	Total
Newala	2	2	1	1	1	7
Masasi	0	0	2	4	2	8
Mtwara Urban	1	8	0	2	0	11
Total	3	10	3	7	3	26

14 TREE FARMING: Second Use of Trees By District

District	Second Use					
	Poles	Fuel for Wood	Shade	Medicinal	Other	Total
Newala	2	0	4	0	1	7
Masasi	1	4	2	1	0	8
Mtwara Urban	0	5	2	0	2	9
Total	3	9	8	1	3	24

CROP EXTENSION

15.1 CROP EXTENSION" Number of Households Receiving Extension Messages By District

District	Households Receiving Extension Advice		Households Not Receiving Extension Advice		Total umber of Households
	Number	%	Number	%	Number
Mtwara Rural	9,100	20	36,054	80	45,154
Newala	3,344	8	39,722	92	43,065
Masasi	17,435	18	78,986	82	96,421
Tandahimba	10,236	24	31,588	76	41,823
Mtwara Urban	342	12	2,508	88	2,850
Total	40,456	18	188,858	82	229,314

15.1 CROP EXTENSION: Number of Households By Quality of Extension Services By District

District	Very Good		Good		Average		Poor		No Good		Total Number of Households
	Number	%	Number	%	Number	%	Number	%	Number	%	
Mtwara Rural	503	5.5	8,252	90.7	265	2.9	0	0.0	80	0.9	9,100
Newala	757	22.6	2,106	63.0	383	11.5	0	0.0	98	2.9	3,344
Masasi	4,585	26.3	10,908	62.6	1,454	8.3	488	2.8	0	0.0	17,435
Tandahimba	2,270	22.4	5,904	58.2	1,967	19.4	0	0.0	0	0.0	10,141
Mtwara Urban	0	0.0	342	100.0	0	0.0	0	0.0	0	0.0	342
Total	8,115	20.1	27,511	68.2	4,069	10.1	488	1.2	178	0.4	40,361

15.2 EXTENSION MESSAGES: Number of Households By Source of Extension Messages By District

District	Government		NGO /		Cooperative		Large Scale		Total
	Number	%	Number	%	Number	%	Number	%	Number
Mtwara Rural	8,727	95.9	213	2.3	80	0.9	80	0.9	9,100
Newala	3,058	94.2	0	0.0	0	0.0	187	5.8	3,245
Masasi	17,273	99.1	161	0.9	0	0.0	0	0.0	17,435
Tandahimba	9,858	97.2	0	0.0	90	0.9	193	1.9	10,141
Mtwara Urban	311	90.7	0	0.0	0	0.0	32	9.3	342
Total	39,227	97.4	374	0.9	170	0.4	492	1.2	40,263

15.4: EXTENSION MESSAGES: Number of Households By Receivingf Advice on Plant Spacing By Source and District during the 2002/03 Agricultural Year, Mtwara Region

District	Spacing						
	Government	NGO / Development Project	Cooperative	Large Scale Farm	Total	Total number of households	% of total number of households
Mtwara Rural	8,320	213	80	80	8,693	30,940	28
Newala	3,058	0	0	187	3,245	16,907	19
Masasi	16,327	161	0	0	16,488	82,572	20
Tandahimba	9,858	0	0	0	9,858	70,339	14
Mtwara Urban	279	0	0	32	311	1,343	23
Total	37,842	374	80	299	38,595	202,102	19

15.5: EXTENSION MESSAGES: Number of Households By Receivingf Advice on Use of Agrochemical By Source and District during the 2002/03 Agricultural Year, Mtwara Region

District	Use of Agrochemicals							
	Government	NGO / Development Project	Cooperative	Large Scale Farm	Not applicable	Total	Total number of households	% of total number of households
Mtwara Rural	2,304	94	93	80	199	2,770	30,940	9
Newala	2,015	0	0	98	0	2,113	16,907	12
Masasi	8,514	161	151	0	801	9,628	82,572	12
Tandahimba	8,913	190	90	193	0	9,387	70,339	13
Mtwara Urban	95	0	0	32	0	127	1,343	9
Total	21,842	445	334	403	1,001	24,025	202,102	**12**

15.6: EXTENSION MESSAGES: Number of Households By Receivingf Advice on Erosion Control By Source and District during the 2002/03 Agricultural Year, Mtwara Region

District	Erosion Control					
	Government	NGO / Development Project	Not applicable	Total	Total number of households	% of total number of households
Mtwara Rural	697	0	107	804	30,940	3
Newala	293	0	0	293	16,907	2
Masasi	1,126	0	803	1,929	82,572	2
Tandahimba	4,296	194	374	4,864	70,339	7
Mtwara Urban	97	0	0	97	1,343	7
Total	6,509	194	1,284	7,987	202,102	4

15.7: EXTENSION MESSAGES: Number of Households By Receivingf Advice on Organic Fertiliser Use By Source and District during the 2002/03 Agricultural Year, Mtwara Region

District	Organic Fertilizer Use						
	Government	NGO / Development Project	Large Scale Farm	Not applicable	Total	Total number of households	% of total number of households
Mtwara Rural	1,917	465	93	303	2,778	30,940	9
Newala	2,569	0	0	0	2,569	16,907	15
Masasi	8,597	161	0	325	9,082	82,572	11
Tandahimba	7,900	94	0	194	8,188	70,339	12
Mtwara Urban	154	0	32	0	186	1,343	14
Total	21,137	721	125	821	22,804	202,102	11

15.8: EXTENSION MESSAGES: Number of Households By Receivingf Advice on Plant Spacing By Source and District during the 2002/03 Agricultural Year, Mtwara Region

District	Inorganic Fertilizer Use							
	Government	NGO / Development Project	Cooperative	Other	Not applicable	Total	Total number of households	% of total number of households
Mtwara Rural	2,296	280	0	0	211	2,786	30,940	9
Newala	2,198	0	0	0	0	2,198	16,907	13
Masasi	6,686	0	0	0	636	7,322	82,572	9
Tandahimba	5,831	378	95	96	287	6,688	70,339	10
Mtwara Urban	115	0	0	0	0	115	1,343	9
Total	17,126	658	95	96	1,134	19,110	202,102	9

15.9: EXTENSION MESSAGES: Number of Households By Receivingf Advice on Use of Improved Seed By Source and District during the 2002/03 Agricultural Year, Mtwara Region

District	Use of Improved Seed						
	Government	NGO / Development Project	Cooperative	Not applicable	Total	Total number of households	% of total number of households
Mtwara Rural	4,140	666	80	199	5,085	30,940	16
Newala	2,482	0	0	0	2,482	16,907	15
Masasi	8,607	161	0	477	9,246	82,572	11
Tandahimba	7,346	190	95	188	7,820	70,339	11
Mtwara Urban	243	0	0	0	243	1,343	18
Total	22,818	1,017	175	865	24,875	202,102	12
%	92	4	1	3	100		

15.10: EXTENSION MESSAGES: Number of Households Receiving Advice on Mechanisation/LST By Source and District during the 2002/03 Agricultural Year, Mtwara Region

District	Mechanisation / LST					
	Government	Other	Not applicable	Total	Total number of households	% of total number of households
Mtwara Rural	398	0	105	503	30,940	2
Newala	186	99	0	285	16,907	2
Masasi	4,088	0	803	4,891	82,572	6
Tandahimba	2,958	0	97	3,055	70,339	4
Mtwara Urban	0	0	0	0	1,343	0
Total	7,630	99	1,005	8,734	202,102	4

15.11 EXTENSION MESSAGES: Number of Households Receiving Advice on Irrigation Technology By Source and District during the 2002/03 Agricultural Year, Mtwara Region

District	Irrigation Technology					
	Government	Other	Not applicable	Total	Total number of households	% of total number of households
Mtwara Rural	500	0	0	500	30,940	2
Newala	0	0	0	0	16,907	0
Masasi	1,278	162	641	2,081	82,572	3
Tandahimba	2,086	0	0	2,086	70,339	3
Mtwara Urban	0	0	0	0	1,343	0
Total	3,863	162	641	4,666	202,102	2

15.12 EXTENSION MESSAGES: Number of Households Receiving Advice on Crop storage By Source and District during the 2002/03 Agricultural Year, Mtwara Region

District	Crop Storage								
	Government	NGO / Developme nt Project	Cooperative	Large Scale Farm	Other	Not applicable	Total	Total number of households	% of total number of households
Mtwara Rural	2,046	0	0	0	0	0	2,046	30,940	6.6
Newala	1,997	0	0	0	0	97	2,094	16,907	12.4
Masasi	6,867	161	0	151	0	315	7,495	82,572	9.1
Tandahimba	6,870	0	95	96	193	0	7,255	70,339	10.3
Mtwara Urban	59	0	0	0	0	0	59	1,343	4.4
Total	17,840	161	95	248	193	412	18,949	202,102	9

15.13 EXTENSION MESSAGES: Number of Households By Receivingf Advice on Vermin Control By Source and District during the 2002/03 Agricultural Year, Mtwara Region

District	Vermin Control						
	Government	Large Scale Farm	Other	Not applicable	Total	Total number of households	% of total number of households
Mtwara Rural	2,374	105	105	105	2,688	30,940	9
Newala	197	0	0	0	197	16,907	1
Masasi	1,932	0	0	807	2,739	82,572	3
Tandahimba	6,786	0	0	0	6,786	70,339	10
Mtwara Urban	31	0	0	0	31	1,343	2
Total	11,321	105	105	911	12,441	202,102	6
%	91.0	0.8	0.8	7.3	100.0		

15.14 EXTENSION MESSAGES: Number of Households By Receivingf Advice on Agro - Processing By Source and District during the 2002/03 Agricultural Year, Mtwara Region

District	Agro-progressing						
	Government	NGO / Developme nt Project	Large Scale Farm	Not applicable	Total	Total number of households	% of total number of households
Mtwara Rural	792	0	0	0	792	30,940	3
Newala	656	0	0	0	656	16,907	4
Masasi	1,118	162	0	969	2,250	82,572	3
Tandahimba	2,368	0	97	189	2,654	70,339	4
Mtwara Urban	91	0	0	0	91	1,343	7
Total	5,025	162	97	1,159	6,443	202,102	3

15.15 EXTENSION MESSAGES: Number of Households By Receivingf Advice on Agro-Forestry By Source and District during the 2002/03 Agricultural Year, Mtwara Region

District	**Agro-forestry**					
	Government	NGO / Developme nt Project	Not applicable	Total	Total number of households	% of total number of households
Mtwara Rural	600	0	0	600	30,940	2
Newala	576	0	0	576	16,907	3
Masasi	4,241	324	807	5,372	82,572	7
Tandahimba	652	0	0	652	70,339	1
Mtwara Urban	26	0	32	58	1,343	4
Total	6,095	324	839	7,257	202,102	4
%	84.0	4.5	11.6	100.0		

15.16 EXTENSION MESSAGES: Number of Households By Receivingf Advice on Beekeeping By Source and District during the 2002/03 Agricultural Year, Mtwara Region

District	Beekeeping					
	Government	Other	Not applicable	Total	Total number of households	% of total number of households
Mtwara Rural	292	0	0	292	30,940	1
Newala	0	99	0	99	16,907	1
Masasi	1,474	0	805	2,279	82,572	3
Tandahimba	288	0	0	288	70,339	0
Mtwara Urban	0	0	0	0	1,343	0
Total	2,054	99	805	2,958	202,102	1

15.17: EXTENSION MESSAGES: Number of Households By Receiving Advice on Fish Farming By Source and District during the 2002/03 Agricultural Year, Mtwara Region

District	Fish Farming						
	Government	NGO / Development Project	Other	Not applicable	Total	Total number of households	% of total number of households
Mtwara Rural	292	0	0	0	292	30,940	1
Newala	0	0	99	0	99	16,907	1
Masasi	164	159	0	969	1,292	82,572	2
Tandahimba	289	0	0	0	289	70,339	0
Mtwara Urban	0	0	0	0	0	1,343	0
Total	745	159	99	969	1,972	202,102	1

15.18: EXTENSION MESSAGES: Number of Households By Receiving and Adopting Extension Messages By Type of Message and District for the 2002/03 agricultural year Mtwara region

District	Spacing		%	Use of Agrochemicals		%	Erosion Control		%
	Received Advice	Adopted Message		Received Advice	Adopted Message		Received Advice	Adopted Message	
Mtwara Rural	8,693	7,585	87	2,567	1,501	58	609	206	34
Newala	3,245	3,147	97	2,113	972	46	293	195	66
Masasi	16,644	16,159	97	8,506	5,737	67	803	965	120
Tandahimba	9,858	8,818	89	9,579	6,055	63	4,296	569	13
Mtwara Urban	311	245	79	127	95	75	97	32	33
Total	38,751	35,954	93	22,892	14,360	63	6,098	1,967	32

15.19: EXTENSION MESSAGES: Number of Households By Receiving and Adopting Extension Messages By Type of Message and District for the 2002/03 agricultural year Mtwara region

District	Organic Fertilizer Use		%	Inorganic Fertilizer Use		%	Use of Improved Seed		%
	Received Advice	Adopted Message		Received Advice	Adopted Message		Received Advice	Adopted Message	
Mtwara Rural	2,677	799	30	2,580	507	20	5,289	2,908	55
Newala	2,471	489	20	2,198	483	22	2,482	390	16
Masasi	7,949	1,602	20	6,204	1,282	21	8,440	2,227	26
Tandahimba	8,188	2,760	34	6,499	572	9	7,820	1,237	16
Mtwara Urban	186	121	65	115	0	0	243	146	60
Total	21,471	5,771	27	17,596	2,845	16	24,274	6,909	28

15.20: EXTENSION MESSAGES: Number of Households By Receiving and Adopting Extension Messages By Type of Message and District for the 2002/03 agricultural year Mtwara region

District	Mechanisation / LST		%	Irrigation Technology		%	Crop Storage		%
	Received Advice	Adopted Message		Received Advice	Adopted Message		Received Advice	Adopted Message	
Mtwara Rural	398	0	0	398	101	25	1,840	1,135	62
Newala	186	0	0	0	0	0	2,094	1,511	72
Masasi	3,929	968	25	640	1,117	175	6,690	4,560	68
Tandahimba	2,681	191	7	1,799	91	5	7,160	3,534	49
Mtwara Urban	0	0	0	0	0	0	59	26	43
Total	7,194	1,159	16	2,837	1,310	46	17,843	10,766	60

15.21: EXTENSION MESSAGES: Number of Households By Receiving and Adopting Extension Messages By Type of Message and District for the 2002/03 agricultural year Mtwara region

District	Vermin Control		%	Agro-progressing		%	Agro-forestry		%
	Received Advice	Adopted Message		Received Advice	Adopted Message		Received Advice	Adopted Message	
Mtwara Rural	2,784	1,216	44	691	691	100	498	100	20
Newala	197	197	100	656	656	100	576	291	51
Masasi	1,286	2,095	163	310	1,118	361	4,577	804	18
Tandahimba	6,691	4,032	60	2,471	1,235	50	652	187	29
Mtwara Urban	31	31	100	91	57	63	58	26	45
Total	10,989	7,571	69	4,219	3,757	89	6,360	1,407	22

15.22: EXTENSION MESSAGES: Number of Households By Receiving and Adopting Extension Messages By Type of Message and District for the 2002/03 agricultural year Mtwara region

District	Beekeeping		%	Fish Farming		%	Other		%
	Received Advice	Adopted Message		Received Advice	Adopted Message		Received Advice	Adopted Message	
Mtwara Rural	292	0	0	292	0	0	107	107	100
Newala	0	0	0	0	0	0	0	0	0
Masasi	984	490	50	159	487	307	328	164	50
Tandahimba	193	0	0	289	0	0	280	280	100
Mtwara Urban	0	0	0	0	0	0	26	26	100
Total	1,469	490	33	740	487	66	740	576	78

ANIMAL CONTRIBUTION TO CROP PRODUCTION

17.1: ANIMAL CONTRIBUTION TO CROP PRODUCTION: Number of Households Using Draft Animal to Cultivate Land By District during 2002/03 agricultural year, Mtwara Region.

District	Not Using Draft Animals		Total households
	No of households	%	
Mtwara Rural	45,154	100	45,154
Newala	43,065	100	43,065
Masasi	96,421	100	96,421
Tandahimba	41,823	100	41,823
Mtwara Urban	2,850	100	2,850
Total	229313.9552	100	229313.9552

17.2 ANIMAL CONTRIBUTION TO CROPS: Number of Crop Growing Households Using Organic Fertilizer By District During 2002/03 Agriculture Year, Mtwara Region

District	Did you apply organic fertilizer during 2002/03? Using Organic Fertilizer		Not Using Organic Fertilizer		Total Number of Crop growing households
	Number	%	Number	%	
Mtwara Rural	1,517.4	13	42,820.1	20	44,338
Newala	3,945.3	33	39,023.9	18	42,969
Masasi	1,923.9	16	93,690.8	44	95,615
Tandahimba	4,486.7	37	37,244.9	17	41,732
Mtwara Urban	249.7	2	2,568.1	1	2,818
Total	12123.07578	100	215347.7862	100	227470.862

17.3 ANIMAL CONTRIBUTION TO CROPS: Area of Farm Yard Manure and Compost Application By District During 2002/03 Agriculture Year

District	Farm Yard Manure Area Applied		Compost Area Applied		Total Area applied with Organic fertiliser	
	Area (%)	%	Area (%)	%	Area (%)	%
Mtwara Rural	316	10	426	24	742	15
Newala	1,216	37	560	32	1,776	35
Masasi	572	18	382	22	955	19
Tandahimba	1,088	33	398	22	1,486	30
Mtwara Urban	59	2	3	0	62	1
Total	3,252	100	1,769	100	5,020	100

CATTLE PRODUCTION

18.2 CATTLE PRODUCTION: Number of Cattle By Type and District as of 1st October, 2003

District	Indigenous		Improved Beef		Improved Dairy		Total Cattle	
	Number of Households	Number of Cattle	Number of Households	Number of Cattle	Number of Households	Number of Cattle	Number of Households	Number of Cattle
Mtwara Rural	384	4,031	0	.	93	743.2589582	477	4,775
Newala	749	1,891	0	.	0	.	749	1,891
Masasi	1,947	9,346	0	.	0	.	1,947	9,346
Tandahimba	364	1,083	0	.	0	.	364	1,083
Mtwara Urban	31	31	0	.	31	31.36338112	31	63
Total	3474.422301	16383.44	0	.	124.2707509	774.6223394	3567.329671	17158.063

18.3: Number of Households Rearing Cattle, Head of Cattle and Average Head per Household by Herd Size; on 1st October 2003

Herd Size	Number of Household	%	Number of Cattle	%	Average Number Per Household
1-5	2,806	79	7,475	44	3
6-10	418	12	3,178	19	8
11-15	96	3	1,057	6	11
16-20	159	4	2,856	17	18
21-30	89	3	2,592	15	29
Total	3,567	100	17,158	100	5

18.4. CATTLE PRODUCTION: Number of Cattle by Category and Type of Cattle as of 1st October 2003

Type	Number of Indigenous	Number of Improved Beef	Number of Improved Dairy	Total Cattle
Bulls	2,482	0	93	2,575
Cows	6,482	0	496	6,978
Steers	0	0	0	0
Heifers	2,810	0	186	2,996
Male Calves	1,865	0	0	1,865
Female Calves	2,744	0	0	2,744
Total	16383	0	774.6	17158.06253

18.5 CATTLE PRODUCTION: Number of Indigenous Cattle By Category and as of 1st October, 2003

District	Category - Indigenous						
	Bulls	Cows	Steers	Heifers	Male Calves	Female Calves	Total
Mtwara Rural	635	1,290	0	454	742	911	4,031
Newala	288	936	0	281	194	193	1,891
Masasi	1,292	3,717	0	2,076	806	1456	9,346
Tandahimba	268	539	0	0	92	184	1,083
Mtwara Urban	0	0	0	0	31	0	31
Total	2482	6482	.	2810	1865	2744	16383

18.6 CATTLE PRODUCTION: Number of Indigenous Cattle By Category and as of 1st October, 2003

District	Category - Improved Beef Cattle						
	Bulls	Cows	Steers	Heifers	Male Calves	Female Calves	Total
Mtwara Rural	.	.	.	.	.	.	.
Newala	.	.	.	.	.	.	.
Masasi	.	.	.	.	.	.	.
Tandahimba	.	.	.	.	.	.	.
Mtwara Urban	.	.	.	.	.	.	.
Total	.	.	.	.	.	.	.

18.7 CATTLE PRODUCTION: Number of Indigenous Cattle By Category and as of 1st October, 2003

District	Category - Improved Dairy Cattle						
	Bulls	Cows	Steers	Heifers	Male Calves	Female Calves	Total
Mtwara Rural	93	465	.	186	.	.	743
Newala	.	.	.	.	.	.	.
Masasi	.	.	.	.	.	.	.
Tandahimba	.	.	.	.	.	.	.
Mtwara Urban	.	31	.	.	.	.	31
Total	93	496	.	186	.	.	775

18.8 CATTLE PRODUCTION: Number of Indigenous Cattle By Category and as of 1st October, 2003

District	Category - Total Cattle						
	Bulls	Cows	Steers	Heifers	Male Calves	Female Calves	Total
Mtwara Rural	728	1,755	.	639	742	911	4,775
Newala	288	936	.	281	194	193	1,891
Masasi	1,292	3,717	.	2,076	806	1,456	9,346
Tandahimba	268	539	.	.	92	184	1,083
Mtwara Urban	.	31	.	.	31	.	63
Total	2,575	6,978	.	2,996	1,865	2,744	17,158

18.13 CATTLE OFFTAKE: Number of Died Cattle and Total Offtake by Category of Cattle and District during 2002/03 Agriculture Year

District	Bulls		Cows		Steers		Heifers		Male Calves		Female Calves		Total Cattle Offtake
	Number Died	Total Cattle Offtake	Number Died	Total Cattle Offtake	Number Died	Total Cattle Offtake	Number Died	Total Cattle Offtake	Number Died	Total Cattle Offtake	Number Died	Total Cattle Offtake	
Mtwara Rural	92	281	92	185	.	.	.	.	.	.	192	192	658
Newala	.	.	94	186	.	.	5,500	5,500	.	.	.	.	5,685
Masasi	328	1,296	492	1,134	.	.	.	.	.	484	162	321	3,234
Tandahimba	.	176	.	176	.	.	.	.	.	.	.	.	351
Mtwara Urban	.	.	.	.	.	.	.	.	.	.	.	.	.
Total	420	1,753	678	1,681	.	.	5,500	5,500	.	484	354	513	9,929

GOAT PRODUCTION

19.1 GOAT PRODUCTION: Total Number of Goats by Type and District as of 1st October, 2003

	Indigenous			Improved for Meat			Improved Dairy			Total Goat	
District	Number of Households	Number of Goat	%	Number of Households	Number of Goat	%	Number of Households	Number of Goat	%	Number of Households	Number of Goat
Mtwara Rural	6,561	34,233	95	177	673	2	290	1,219	3	6,561	36,126
Newala	10,894	58,520	93	389	2,035	3	392	2,039	3	10,894	62,594
Masasi	6,779	32,899	93	162	1,621	5	162	972	3	6,779	35,493
Tandahimba	8,460	60,366	100	0	0	0	89	268	0	8,460	60,634
Mtwara Urban	256	1,828	100	0	0	0	0	0	0	256	1,828
Total	32,950	187,847	96	727	4,329	2	934	4,499	2	32,950	196,675

19.2: Number of Households Rearing Goats and Herds of Goats and Average Head per Household by Herd Size as on 1st October, 2003

Herd Size	Number of Household	%	Number of Goat	%	Average Number Per Household
1-4	15796	48	39486	20	2
5-9	11906	36	78027	40	7
10-14	3126	9	35196	18	11
15-19	1108	3	18481	9	17
20-24	646	2	13467	7	21
25-29	188	1	4791	2	26
40+	181	1	7227	4	40
Total	32950	100	196675	100	6

19.3: Total Number of Goats by Category and Type of Goat as on 1st October, 2003

Category of Goats	Indigenous Goats		Improved Meat Goat		Improved Dairy Goat		Total Goat	
	Number	%	Number	%	Number	%	Number	%
Billy Goat	27,288		998		1,707		29,993	
Castrated Goat	760	61	297	24	198	16	1,255	
She Goat	106,708	97	1,968	2	1,166	1	109,842	
Male Kid	19,981	100	0	0	89	0	20,071	
She Kid	33,110	93	1,066	3	1,340	4	35,515	
Total	187,847	96	4,329	2	4,499	2	196,675	

19.4 Total Number of Indigenous Goat by Category and District as on 1st October, 2003

District	Type					
	Billy Goat	Castrated Goat	She Goat	Male Kid	She Kid	Total
Mtwara Rural	5,341	.	20,531	2,707	5,654	34,233
Newala	8,337	486	34,134	5,669	9,893	58,520
Masasi	4,705	.	19,393	4,001	4,800	32,899
Tandahimba	8,631	274	31,892	7,272	12,297	60,366
Mtwara Urban	273	.	757	332	467	1,828
Total	27,288	760	106,708	19,981	33,110	187,847

19.5: Total Number of Indigenous Goat by Category and District as on 1st October, 2003

District	Number of Improved for Meat					
	Billy Goat	Castrated Goat	She Goat	Male Kid	She Kid	Total
Mtwara Rural	673	.	.	.	.	673
Newala	.	297	1,158	.	580	2,035
Masasi	324	.	810	.	486	1,621
Tandahimba	.	.	.	.	.	.
Mtwara Urban	.	.	.	.	.	.
Total	998	297	1,968	.	1,066	4,329

19.6: Total Number of Improved Dairy Goat by Category and District as on 1st October, 2003

District	Improved Dairy Goats					
	Billy Goat	Castrated Goat	She Goat	Male Kid	She Kid	Total
Mtwara Rural	635.34	.	.	.	584	1,219
Newala	98.88	197.76	1,166	.	576.80	2,039
Masasi	972	.	.	.	.	972
Tandahimba	.	.	.	89	179	268
Mtwara Urban	.	.	.	.	.	.
Total	1,707	198	1,166	89	1,340	4,499

19.7: Total Number of Total Goat by Category and District as on 1st October, 2003

District	Total Goat					
	Billy Goat	Castrated Goat	She Goat	Male Kid	She Kid	Total
Mtwara Rural	6,650	.	20,531	2,707	6,238	36,126
Newala	8,436	981	36,458	5,669	11,050	62,594
Masasi	6,002	.	20,203	4,001	5,286	35,493
Tandahimba	8,631	274	31,892	7,361	12,475	60,634
Mtwara Urban	273	.	757	332	467	1,828
Total	29,993	1,255	109,842	20,071	35,515	196,675

SHEEP PRODUCTION

20.1: Total Number of Sheep by Type as on 1st October, 2003

Breed	Number of Indigenous		Number of Improved for Mutton		Total Sheep	
	Number	%	Number	%	Number	%
Ram	3,900	100	0	0	3,900	15
Castrated Sheep	0	0	0	0	0	0
She Sheep	13,090	100	0	0	13,090	52
Male Lamb	3,525	100	0	0	3,525	14
She Lamb	4,762	100	0	0	4,762	19
Total	25,275	100	0	0	25,275	100

20.2: Number of Households Rearing or Managing Sheep by District as on 1st October, 2003.

	Households Raising Sheep		Households Not Raising Sheep		Total	
	Number	%	Number	%	Number	%
Mtwara Rural	482	1	44,672	99	45,154	100
Newala	554	1	42,511	99	43,065	100
Masasi	484	1	95,937	99	96,421	100
Tandahimba	1,935	5	39,888	95	41,823	100
Mtwara Urban	31	1	2,819	99	2,850	100
Total	3,487	2	225,827	98	229,314	100

20.3: Number of Sheep by Type of Sheep and District as of 1st October, 2002/03

District	Number of Indigenous		Number of Improved for Mutton		Total Sheep	
	Number	%	Number	%	Number	%
Mtwara Rural	4,567	100	0	0	4,567	18
Newala	5,428	100	0	0	5,428	21
Masasi	3,361	100	0	0	3,361	13
Tandahimba	11,731	100	0	0	11,731	46
Mtwara Urban	188	100	0	0	188	1
Total	25,275	100	0	0	25,275	100

20.3.5: Number of Households and Herds of Sheep by Herd Size as on 1st October, 2002/03

Herd Size	Number of Household	%	Number of Sheep	%	Average Number Per Household
1-4	1,462	42	3,654	14	3
5-9	827	24	5,324	21	6
10-14	915	26	10,717	42	12
15-19	188	5	3,388	13	18
20-24	95	3	2,192	9	23
Total	3,487	100	25,275	100	7

20.6: Total Number of Indigenous Sheep by Type and District as of 1st October, 2002/03

District	Number of Indigenous					
	Ram	Castrated Sheep	She Sheep	Male Lamb	She Lamb	
Mtwara Rural	557	0	1,899	571	1,540	4,567
Newala	750	0	2,984	751	944	5,428
Masasi	973	0	1,443	630	315	3,361
Tandahimba	1,588	0	6,607	1,573	1,963	11,731
Mtwara Urban	31	0	157	0	0	188
Total	3,900	0	13,090	3,525	4,762	25,275

20.7: Total Number of Improved Sheep by Type and District as of 1st October.

District	Number of Improved for Mutton					
	Ram	Castrated Sheep	She Sheep	Male Lamb	She Lamb	Total
Mtwara Rural	.	.	.	.	.	.
Newala	.	.	.	.	.	.
Masasi	.	.	.	.	.	.
Tandahimba	.	.	.	.	.	.
Mtwara Urban	.	.	.	.	.	.
Total	.	.	.	.	.	.

20.8: Total Number of Sheep by Type of Sheep and District as of 1st October, 2002/03

District	Total Sheep					Total Sheep
	Ram	Castrated Sheep	She Sheep	Male Lamb	She Lamb	
Mtwara Rural	557	.	1,899	571	1,540	4,567
Newala	750	.	2,984	751	944	5,428
Masasi	973	.	1,443	630	315	3,361
Tandahimba	1,588	.	6,607	1,573	1,963	11,731
Mtwara Urban	31	.	157	.	.	188
Total	3,900	.	13,090	3,525	4,762	25,275

PIGS HUSBANDRY

21.1: Number of Households and Pigs, by Herd Size as on 1st October, 2003

Herd Size	Number of Household	%	Number of Pig	%	Average Number Per Household
1-4	3,031	90	4,675	74	2
5-9	324	10	1,618	26	5
Total	3,355	100	6,293	100	2

21.1: Number of Households and Pigs by District during 2002/03.

District	Number of Household	Number of Pig	Average Number Per Household
Newala	280	467	2
Masasi	3,075	5,826	2
Total	3,355	6,293	2

21.8: Total Number of Pigs by Type and District as on1st October, 2003

	Pig Type					
District	Boar	Castrated Male	Sow / Gilt	Male Piglet	She Piglet	Total
Newala	186	0	93	94	94	467
Masasi	809	484	2,758	489	1,288	5,826
Total	994	484	2,851	583	1,382	6,293

PESTS AND PARASITE

22.1: PESTS AND PARASITE: Number of Livestock Rearing households that dewormed Livestock by Type and District during 2002/03 Agriculture Year.

District	Deworming Livestock		Not deworming Livestock		Total
	No of	%	No of	%	
Mtwara Rur	1,076	30	2,485	70	3,561
Newala	752	10	6,754	90	7,505
Masasi	1,611	27	4,369	73	5,980
Tandahimba	1,213	17	5,725	83	6,937
Mtwara Urb	85	21	319	79	404
Total	4,736	19	19,651	81	24,388

22.2: PESTS AND PARASITE: Number of Livestock Rearing households deworming Livestock by District during 2002/03 Agriculture Year.

District	Cattle		Goats		Sheep		Pigs	
	No of	%	No of	%	No of	%	No of	%
Mtwara Rur	581	21	495	21	0	0	92	100
Newala	191	7	653	27	89	100	0	0
Masasi	1,296	47	640	27	0	0	0	0
Tandahimba	651	24	561	23	0	0	0	0
Mtwara Urb	26	1	59	2	0	0	0	0
Total	2,745	100	2,408	100	89	100	92	100

22.5 LIVESTOCK PESTS AND PARASITE CONTROL: Number and Percent of agricultural households reporting to have encountered tsetse flies problems during 2002/03 Agriculture Year by District, 2002/03 Agricultural Year

District	Tsetse flies		No Tsetse flies		Total
	Number	%	Number	%	Number
Mtwara Rur	495	14	2,922	86	3,417
Newala	95	1	7,410	99	7,505
Masasi	802	14	5,019	86	5,821
Tandahimba	559	8	6,378	92	6,937
Mtwara Urb	0	0	404	100	404
Total	1,951	8	22,134	92	24,085

22.6 LIVESTOCK PESTS AND PARASITE CONTROL: Number and Percent of agricultural households by Method of Tsetse flies Control use during 2002/03 Agriculture Year and District, 2002/03 Agricultural Year

District	Method of Tsetse Flies Control				
	None		Spray		Total
	Number	% age	Number	% age	Number
Mtwara Rur	388	78	107	22	495
Newala	95	100	0	0	95
Masasi	485	60	317	40	802
Tandahimba	559	100	0	0	559
Total	1,528	78	424	22	1,951

OTHER LIVESTOCK

23a OTHER LIVESTOCK: Total Number of Other Livestock by Type as of 1st October 2003

	Chicken		Others	
	Number	%	Type	Number
Indigenous Chicken	1,751,278	98	Ducks	117,486
Layer	29,630	2	Turkeys	503
Broiler	7,859	0	Rabbits	16,611
		0	Donkeys	17,502
Total	1,788,767	100		152,103

23b OTHER LIVESTOCK: Number of households with chicken and Category of Chicken by District

	Chicken Type			
District	Indigenous Chicken	Layer	Broiler	Total
Mtwara Rur	114,887	318	.	115,205
Newala	126,056	.	2,066	128,122
Masasi	295,463	1,963	820	298,246
Tandahimba	157,855	184	.	158,038
Mtwara Urb	10,358	163	.	10,521
Total	704,619	2,627	2,886	710,132

23c. OTHER LIVESTOCK: Number of Households Rearing and number of Other Livestock by Type and District

	Type of Livestock			
District	Ducks	Turkeys	Rabbits	Other
Mtwara Rur	719	0	0	.
Newala	3,143	0	589	838
Masasi	4,839	20,607	0	.
Tandahimba	184	.	0	.
Total	8,885	20,607	589	838

23d: OTHER LIVESTOCK: Total Number of households and chicken raised by flock size as of 1 st October 2003.

Flock Size	Number of Households	%	Number of Chicken	Average Chicken per Households
1-4	53,208	54.9	125,735	2
5-9	22,734	23.4	147,040	6
19-Oct	15,273	15.7	193,532	13
20-29	3,681	3.8	86,977	24
30-39	858	0.9	27,688	32
40-49	258	0.3	11,117	43
50-99	720	0.7	45,999	64
100+	253	0.3	72,045	285
Total	**96,984**	**100**	**710,132**	**7**

FISH FARMING

28.1 FISH FARMING: Number of Agricultural Households involved in Fish Farming and District, 2002/03 Agricultural Year

District	Was Fish farming carried out by this household during 2002/03				
	Yes	%	NO	%	Number
Masasi	477	0.5	95,943	99.5	96,421
Mtwara Rur	0	0.0	45,154	100.0	45,154
Newala	0	0.0	43,065	100.0	43,065
Tandahimba	0	0.0	41,823	100.0	41,823
Mtwara Urb	0	0.0	2,850	100.0	2,850
Total	477	0.2	228,837	99.8	229,314

28.2a FISH FARMING: Number of Agricultural Households By System of Farming and District, 2002/03 Agricultural Year

	system of fish farming				
District	Natural Pond	Dug out Pond	Natural Lake	Water Resevoir	Other
Masasi	0	317	0	0	0
Total	0	317	0	0	0

28.2b FISH FARMING: Number of Agricultural Households By Source of Fingerings and District, 2002/03 Agricultural Year

	Source of fingerlings
District	NGOs / Project
Masasi	317
Total	317.2923749

28.2c FISH FARMING: Number of Agricultural Households By Location of Selling Fish and District, 2002/03 Agricultural Year

	where sold					
District	Neighbour	Local Market	Large Scale Farm	Trader at Farm	Did not Sell	Other
Masasi	0	0	0	0	317	0
Total	0	0	0	0	317	0

28.5 FISH FARMING: Total Number of Fish Harvested by Type and District, 2002/03 Agricultural Year

District	Number of Tilapia	Number of Carp	Number of Others
Masasi	71,391	0	0
Total	71391	0	0

LIVESTOCK EXTENSION

29.1a LIVESTOCK EXTENSION: Number of Agricultural Households Receiving Extension Advice By District during the 2002/03 Agricultural Year

District	Received livestock advice		Did Not receive livestock advice		Total	Total Number of households raising livestock	%
	No of households	%	No of households	%			
Mtwara Rur	2,623	6	42,531	94	45,154	4,246	62
Newala	1,694	4	41,371	96	43,065	7,505	23
Masasi	3,517	4	92,904	96	96,421	5,980	59
Tandahimba	2,253	5	39,570	95	41,823	6,937	32
Mtwara Urb	124	4	2,726	96	2,850	404	31
Total	10,211	4	219,103	96	229,314	14,886	69

29.1 LIVESTOCK EXTENSION: Number of Agricultural Households Receiving Extension Advice on Feeds and Proper Feeding By Source and District, 2002/03 Agricultural Year

District	Source of Advice	
	Government	Total
Mtwara Rur	1,404	1,404
Newala	855	855
Masasi	971	971
Tandahimba	1,596	1,596
Mtwara Urb	65	65
Total	4,891	4,891

29.1e LIVESTOCK EXTENSION: Number of Agricultural Households Receiving Extension Advice on Proper Milking By Source and District, 2002/03 Agricultural Year

District	Source of Advice			
	Government	Total	Total number of households raising livestock	% of receiving advice out of total
Mtwara Rur	697	697	4,246	37
Tandahimba	189	189	6,937	60
Mtwara Urb	31	31	404	3
Total	917	917	11,588	100
%	100	100		

29.1f LIVESTOCK EXTENSION: Number of Households Receiving Advice on Milk Hygene By Source and District, 2002/03 Agricultural Year

District	Source of Advice		Total number of households raising livestock	% of receiving advice out of total
	Government	Total		
Mtwara Rur	505	505	4,246	40
Masasi	162	162	5,980	56
Mtwara Urb	31	31	404	4
Total	698	698	10,630	100
%	100	100		

29.1g LIVESTOCK EXTENSION: Number of Households Receiving Advice on Disease Control By Source and District, 2002/03 Agricultural Year

District	Source of Advice			Total Number of households raising livestock	% of receiving advice out of total
	Government	NGO / Development Project	Total		
Mtwara Rur	1,254	0	1,254	4,246	30
Newala	480	0	480	7,505	6
Masasi	1,428	151	1,579	5,980	26
Tandahimba	1,022	0	1,022	6,937	15
Mtwara Urb	124	0	124	404	31
Total	4,307	151	4,459	14,886	30
%	96.6	3.4	100.0		

29.6 LIVESTOCK EXTENSION: Number of Agricultural Households Receiving Extension Advice on Herd /Flock Size and Selection By Source and District, 2002/03 Agricultural Year

District	Source of Advice			Total Number of households raising livestock	% of receiving advice out of total
	Government	Other	Total		
Mtwara Rur	107	92	199	4,246	5
Newala	99	0	99	7,505	1
Masasi	326	0	326	5,980	5
Tandahimba	287	0	287	6,937	4
Mtwara Urb	31	0	31	404	8
Total	850	92	942	14,886	6
%	90.2	9.8	100.0		

29.1i LIVESTOCK EXTENSION: Number of Agricultural Households Receiving Advice Pasture Establishment By Source and District, 2002/03 Agricultural Year

District	Source of Advice		Number of households raising livestock	% of receiving advice out of total
	Government	Total		
Mtwara Rur	107	107	4,246	3
Newala	186	186	7,505	2
Masasi	164	164	5,980	3
Tandahimba	191	191	6,937	3
Mtwara Urb	31	31	404	8
Total	679	679	14,886	5
%	100	100		

29.1j LIVESTOCK EXTENSION: Number of Households Receiving Advice Group Formation By Source and District, 2002/03 Agricultural Year

District	Source of Advice				Number of households raising livestock	% of receiving advice out of total
	Government	NGO / Development Project	Co-operative	Total		
Mtwara Rur	318	0	0	318	4246	7
Masasi	320	461	0	781	5980	5
Tandahimba	0	0	281	281	6937	1
Mtwara Urb	31	0	26	57	404	355
Total	669	461	307	1,437	14886	1
%	46.5	32.1	21.4	100.0		

29.1k LIVESTOCK EXTENSION: Number of Households Receiving Advice on Calf rearing By Source and District, 2002/03 Agricultural Year

District	Source of Advice		Number of households raising livestock	% of receiving advice out of total
	Government	Total		
Mtwara Rur	730	730	4,246	17
Newala	285	285	7,505	4
Masasi	326	326	5,980	5
Mtwara Urb	31	31	404	339
Total	1,372	1,372	14,886	1
%	100	100		

29.1l LIVESTOCK EXTENSION: Number of Households Receiving Advice on Use of Improved Bulls By Source and District, 2002/03 Agricultural Year

District	Source of Advice			
	Government	Total	Total Number of households raising livestock	% of receiving advice out of total
Mtwara Rur	292	292	4246	7
Newala	186	186	7505	2
Masasi	326	326	5980	5
Tandahimba	287	287	6937	4
Mtwara Urb	31	31	404	8
Total	1121	1121	14886	8
%	100	100		

29.11 LIVESTOCK EXTENSION: Number of Agricultural Households By Quality of Extension Services and District, 2002/03 Agricultural Year

District	Quality of Service										Total
	Very Good		Good		Average		Poor		No Good		
	Number	%	Number	%	Number	%	Number	%	Number	%	
Mtwara Rur	482	16	2,337	77	213	7	0	0	0	0	3,032
Newala	193	14	559	40	574	41	89	6	0	0	1,415
Masasi	1,144	12	2,369	24	1,296	13	5,016	51	0	0	9,825
Tandahimba	650	19	1,132	32	654	19	665	19	387	11	3,489
Mtwara Urb	31	12	124	48	26	10	26	10	51	20	258
Total	2,501	14	6521	36	2763	15	5796	32	439	2	18019

29.1 LIVESTOCK EXTENSION: Number of Households Receiving Advice on Other Extension Messages by Source and District, 2002/03

	Extension Provider							
District	Government	NGO / Development Project	Co-operative	Large Scale Farmer	Other	Total	Total Number of households raising livestock	% of receiving advice out of total
Mtwara Rur	2,623	2,623	2,623	2,623	2,623	13,114	4,246	309
Newala	1,694	1,601	1,601	1,601	1,601	8,097	7,505	108
Masasi	3,517	3,517	3,517	3,517	3,517	17,583	5,980	294
Tandahimba	2,253	2,253	2,253	2,253	2,253	11,266	6,937	162
Mtwara Urb	124	124	124	124	124	621	404	154
Total	10,211	10,118	10,118	10,118	10,118	50,681	14,886	340
%	20	20	20	20	20	100		

Table 3.16: Mean distances from holders dwellings to infrustructures and services by districts

	Mean Distance to										
District	Secondary Schools	Primary Schools	All weather roads	Feeder roads	Hospitals	Health Clinics	Regional Capital	Primary Markets	Secondary Market	Tertiary Market	Tarmac roads
Mtwara Rur	25.9	2.0	4.6	0.6	48.3	4.5	48.1	6.3	16.2	40.7	35.3
Newala	10.7	1.5	4.0	1.1	24.8	4.6	27.5	1.9	2.8	20.9	53.1
Masasi	14.7	1.1	3.5	0.8	36.4	6.1	43.9	2.8	10.7	38.6	36.9
Tandahimba	14.7	0.6	1.7	0.3	42.5	5.5	23.9	10.0	41.6	35.5	90.4
Mtwara Urb	5.6	1.3	0.8	0.3	10.1	1.9	10.3	2.0	6.3	10.8	4.3
Total	**16.0**	**1.2**	**3.4**	**0.8**	**37.4**	**5.4**	**37.6**	**4.6**	**15.9**	**34.8**	**49.0**

Regional Capital	Tertiary Market	Hospitals	Tarmac Roads	Secondary Market	Primary Market	Health Clinics	All Weather Roads	Feeder Roads
131.09	34.76	37.38	48.96	15.86	4.64	5.35	37.56	0.76

ACCESS TO INTRASTRUCTURE & OTHER SERVICES

Table 33.01b: Number of Households By Distance to Secondary School by District for 2002/03 agriculture year

	Distance to Secondary School											
	Less than 1 km		1-2.9 km		3.0-9.9		10.0-19.9		Above 20 km			
District	No of households	%	No of households	%	No of households	%	No of households	%	No of households	%	Total	Mean
Mtwara Rur	2,015	4.5	703	1.6	10,980	24.3	7,538	16.7	23,918	53.0	45,154	25.9
Newala	1,119	2.6	1,233	2.9	16,449	38.2	21,139	49.1	3,125	7.3	43,065	10.7
Masasi	2,091	2.2	2,572	2.7	33,602	34.8	34,087	35.4	24,068	25.0	96,421	14.7
Tandahimba	1,700	4.1	376	0.9	16,463	39.4	8,394	20.1	14,891	35.6	41,823	14.7
Mtwara Urb	672	23.6	544	19.1	1,076	37.7	559	19.6	0	0.0	2,850	5.6
Total	7,597	3.3	5,427	2.4	78,571	34.3	71,718	31.3	66,002	28.8	229,314	16.0

Table 33.01c: Number of Households By Distance to All Weather Road by Distcrict for 2002/03 agriculture year

	Distance to All Weather Road											
	Less than 1 km		1-2.9 km		3.0-9.9		10.0-19.9		Above 20 km			
District	No of households	%	No of households	%	No of households	%	No of households	%	No of households	%	Total	Mean
Mtwara Rur	24,245	53.7	5,348	11.8	10,417	23.1	3,363	7.4	1,780	3.9	45,154	4.55
Newala	24,523	56.9	9,501	22.1	8,168	19.0	94	0.2	780	1.8	43,065	3.99
Masasi	45,336	47.0	18,796	19.5	20,861	21.6	10,937	11.3	491	0.5	96,421	3.52
Tandahimba	31,484	75.3	4,023	9.6	4,678	11.2	1,453	3.5	187	0.4	41,823	1.71
Mtwara Urb	1,926	67.6	718	25.2	206	7.2	0	0.0	0	0.0	2,850	0.76
Total	127,514	55.6	38,385	16.7	44,329	19.3	15,846	6.9	3,239	1.4	229,314	3.45

33.7 ACCESS TO SERVICES: Number of Agricultural Households by Distance to Feeder Road and District, 2002/03 Agricultural Year

	Distance to Feeder Road									
	Less than 1 km		1-2.9 km		3.0-9.9		Above 20 km			
District	No of households	%	No of households	%	No of households	%	No of households	%	Total	Mean
Mtwara Rur	38,753	85.8	4,561	10.1	1,628	3.6	212	0.5	45,154	0.6
Newala	31,617	73.4	10,470	24.3	786	1.8	192	0.4	43,065	1.1
Masasi	83,584	86.7	5,823	6.0	6,033	6.3	980	1.0	96,421	0.8
Tandahimba	38,023	90.9	2,343	5.6	1,458	3.5	0	0.0	41,823	0.3
Mtwara Urb	2,480	87.0	336	11.8	35	1.2	0	0.0	2,850	0.3
Total	194,457	84.8	23,532	10.3	9,941	4.3	1,384	0.6	229,314	0.8

Table 33.01e: Number of Households By Distance to Hospital by District for 2002/03 agriculture year

	Distance to hospital											
	Less than 1 km		1-2.9 km		3.0-9.9		10.0-19.9		Above 20 km			
District	No of households	%	No of households	%	No of households	%	No of households	%	No of households	%	Total	Mean
Mtwara Rur	92	0.2	0	0.0	3,907	8.7	3,266	7.2	37,889	83.9	45,154	48.3
Newala	381	0.9	0	0.0	6,829	15.9	9,908	23.0	25,947	60.3	43,065	24.8
Masasi	653	0.7	161	0.2	11,991	12.4	25,061	26.0	58,555	60.7	96,421	36.4
Tandahimba	97	0.2	0	0.0	187	0.4	3,133	7.5	38,406	91.8	41,823	42.5
Mtwara Urb	0	0.0	0	0.0	1,588	55.7	1,262	44.3	0	0.0	2,850	10.1
Total	1,223	0.5	161	0.1	24,502	10.7	42,631	18.6	160,797	70.1	229,314	37.4

Table 33.01f: Number of Households by Distance to Health Clinic by District for 2002/03 agricultural year

	Distance to Health Clinic											
	Less than 1 km		1-2.9 km		3.0-9.9		10.0-19.9		Above 20 km			
District	No of households	%	No of households	%	No of households	%	No of households	%	No of households	%	Total	Mean
Mtwara Rur	12,113	26.8	8,775	19.4	19,637	43.5	4,009	8.9	620	1.4	45,154	4.5
Newala	12,804	29.7	10,233	23.8	13,375	31.1	4,874	11.3	1,779	4.1	43,065	4.6
Masasi	18,634	19.3	10,659	11.1	52,730	54.7	12,636	13.1	1,762	1.8	96,421	6.1
Tandahimba	12,085	28.9	4,489	10.7	22,416	53.6	2,556	6.1	278	0.7	41,823	5.5
Mtwara Urb	682	23.9	1,302	45.7	866	30.4	0	0.0	0	0.0	2,850	1.9
Total	56,318	24.6	35,458	15.5	109,024	47.5	24,075	10.5	4,439	1.9	229,314	5.4

Table 33.01g: Number of Households by distance to Primary School for 2002/03 agriculture year

	Distance to Primary Schools										
	Less than 1 km		1-2.9 km		3.0-9.9		10.0-19.9		Above 20 km		
District	No of households	%	No of households	%	No of households	%	No of households	%	No of households	%	Total
Mtwara Rur	21,022	46.6	14,119	31.3	9,800	21.7	0	0.0	213	0.5	45,154
Newala	23,829	55.3	15,858	36.8	2,897	6.7	99	0.2	383	0.9	43,065
Masasi	52,578	54.5	35,181	36.5	7,367	7.6	1,144	1.2	151	0.2	96,421
Tandahimba	32,939	78.8	8,040	19.2	844	2.0	0	0.0	0	0.0	41,823
Mtwara Urb	1,284	45.1	1,122	39.4	444	15.6	0	0.0	0	0.0	2,850
Total	131,652	57.4	74,319	32.4	21,352	9.3	1,242	0.5	748	0.3	229,314

33.01h: Number of Households by Distance to Feeder Road and District, 2002/03 Agricultural Year

District	Less than 1 km	1-2.9 km	3.0-9.9	10.0-19.9	Above 20 km	Total	Mean Distance
Mtwara Rur	38,753	4,561	1,628	212	45,154	90,308	0.6
Newala	31,617	10,470	786	192	43,065	86,130	1.1
Masasi	83,584	5,823	6,033	980	96,421	192,842	0.8
Tandahimba	38,023	2,343	1,458	0	41,823	83,647	0.3
Mtwara Urb	2,480	336	35	0	2,850	5,701	0.3
Total	194,457	23,532	9,941	1,384	229,314	458,628	0.8

33.01i: Number of Households by Distance to Regional Capital and District, 2002/03 Agricultural

	Less than 1	1 - 2.9	3 - 9 9	10 - 19.9	Above 20	Total	Mean Distance
Mtwara Rur	412	0	1,539	2,964	40,239	45,154	48
Newala	0	0	6,727	8,769	27,570	43,065	27
Masasi	0	161	7,378	20,566	68,317	96,421	44
Tandahimba	185	0	2,965	9,268	29,406	41,823	24
Mtwara Urb	32	0	1,555	1,264	0	2,850	10
Total	629	161	20,163	42,830	165,531	229,314	38

Table 33.01: Number of Households By Distance toTarmac Road and Distric for the 2002/03 Agricultural Year

District	Less than 1 km	1-2.9 km	3.0-9.9km	10.0-19.9km	Above 20 km	Total	Mean Distance
Mtwara Rur	1,948	0	6,769	7,119	29,318	45,154	35.3
Newala	4,561	0	295	4,310	33,899	43,065	53.1
Masasi	9,568	5,151	7,872	16,794	57,035	96,421	36.9
Tandahimba	2,266	0	194	1,259	38,105	41,823	90.4
Mtwara Urb	405	713	1,627	105	0	2,850	4.3
Total	18,749	5,864	16,756	29,587	158,357	229,314	49.0

33.10 ACCESS TO SERVICES: Number of Agricultural Households by Distance to Primary Market and District, 2002/03 Agricultural Year

District	Less than 1 km	1-2.9 km	3.0-9.9km	10.0-19.9km	Above 20 km	Total	Mean Distance
Mtwara Rur	25,505	7,278	5,102	1,527	5,742	45,154	6.3
Newala	24,188	14,604	3,696	0	577	43,065	1.9
Masasi	61,979	7,510	17,487	7,351	2,094	96,421	2.8
Tandahimba	35,217	2,827	939	0	2,841	41,823	10.0
Mtwara Urb	1,458	195	1,197	0	0	2,850	2.0
Total	148,347	32,413	28,421	8,879	11,254	229,314	4.6

Table 33.01: Number of Households By Distance to Tertiary Market Market and Distric for the 2002/03 Agricultural Year

	Less than 1 km	1-2.9 km	3.0-9.9km	10.0-19.9km	Above 20 km	Total	Mean Distance
Mtwara Rur	1,042.8	0.0	6,299.1	1,831.6	35,980.7	45,154.1	40.7
Newala	3,318.9	5,100.6	10,030.1	7,484.6	17,131.1	43,065.2	20.9
Masasi	10,694.2	1,447.4	9,191.7	17,617.3	57,470.4	96,420.8	38.6
Tandahimba	12,985.0	288.9	5,149.8	5,434.7	17,964.9	41,823.3	35.5
Mtwara Urb	57.1	0.0	1,366.2	1,327.3	99.9	2,850.4	10.8
Total	28,097.9	6,836.9	32,036.8	33,695.4	128,647.0	229,314.0	34.8

Table 33.01: Number of Households By Distance to Secondary Market Market and Distric for the 2002/03 Agricultural Year

	Less than 1 km	1-2.9 km	3.0-9.9km	10.0-19.9km	Above 20 km	Total	Mean Distance
Mtwara Rur	20,808.6	513.1	3,716.5	4,691.7	15,424.3	45,154.1	16.2
Newala	25,606.8	12,896.1	3,887.9	191.2	483.2	43,065.2	2.8
Masasi	46,796.3	1,927.2	3,471.0	37,266.6	6,959.8	96,420.8	10.7
Tandahimba	20,653.6	1,237.9	1,126.4	2,648.8	16,156.6	41,823.3	41.6
Mtwara Urb	1,292.8	0.0	716.2	841.4	0.0	2,850.4	6.3
Total	115,158.1	16,574.3	12,917.9	45,639.7	39,023.9	229,314.0	15.9

33.19a TYPE OF SERVICE: Number of Agricultural Households by Satisfaction of Using Veterinary Clinic and District, 2002/03 Agricultural Year

District	Satisfaction of Using Veterinary Clinic										
	Very Good		Good		Average		Poor		No good		
	No of Households	%	No of Households	%	No of Households	%	No of Households	%	No of Households	%	Total Number of households
Mtwara Rur	1,118	0.4	3,285	1.2	1,409	0.5	12,361	4.6	213	0.1	270,925
Newala	279	0.1	384	0.1	4,876	1.9	5,152	2.0	15,109	5.8	258,391
Masasi	1,622	0.3	10,789	1.9	21,333	3.7	65,731	11.4	2,749	0.5	578,525
Tandahimba	2,583	1.0	7,159	2.9	7,221	2.9	4,972	2.0	95	0.0	250,940
Mtwara Urb	0	0.0	725	4.2	299	1.8	128	0.7	63	0.4	17,103
Total	5,602	0.4	22,341	1.6	35,140	2.6	88,342	6.4	18,229	1.3	1,375,884

33.19b TYPE OF SERVICE: Number of Agricultural Households by Satisfaction of Extension Centre and District, 2002/03 Agricultural Year

District	Extension Centre										
	Very Good		Good		Average		Poor		No good		
	No of Households	%	No of Households	%	No of Households	%	No of Households	%	No of Households	%	Total Number of households
Mtwara Rur	515	8.9	2,046	35.2	412	7.1	2,730	47.0	107	1.8	5,809
Newala	99	1.9	96	1.8	1,662	31.5	750	14.2	2,672	50.6	5,280
Masasi	323	1.4	8,853	37.7	6,132	26.1	7,538	32.1	644	2.7	23,490
Tandahimba	637	6.9	5,194	56.1	3,042	32.9	378	4.1	0	0.0	9,251
Mtwara Urb	0	0.0	133	58.4	31	13.7	64	27.8	0	0.0	228
Total	1,574	3.6	16,323	37.0	11,279	25.6	11,459	26.0	3,423	7.8	44,058

33.19c TYPE OF SERVICE: Number of Agricultural Households by Satisfaction of Using Research Station and District, 2002/03 Agricultural Year

District	Research Station										
	Very Good		Good		Average		Poor		No good		
	No of Households	%	No of Households	%	No of Households	%	No of Households	%	No of Households	%	Total Number of households
Mtwara Rur	199	4.0	716	4.0	0	4.0	2,833	84.0	107	4.0	3,854
Newala	0	50.0	0	50.0	1,378	0.0	942	0.0	2,669	0.0	4,989
Masasi	161	0.0	164	35.6	2,291	16.7	11,897	14.9	328	32.8	14,841
Tandahimba	1,117	0.0	280	12.0	360	79.4	741	8.6	0	0.0	2,498
Mtwara Urb	0	0.0	172	0.0	69	0.0	0	100.0	0	0.0	240
Total	1,477	4.5	1,332	13.9	4,098	20.7	16,413	50.1	3,103	10.8	26,423

33.19d TYPE OF SERVICE: Number of Agricultural Households by Satisfaction of Using Plant Protection Lab. and District, 2002/03 Agricultural Year

	Plant Protection Lab										
	Very Good		Good		Average		Poor		No good		Total
District	No of Households	%	No of Households	%	No of Households	%	No of Households	%	No of Households	%	Number of households
Mtwara Rur	0	0.0	209	7.7	301	11.0	2,215	81.3	0	0.0	2,726
Newala	0	0.0	0	0.0	1,279	26.7	750	15.6	2,771	57.7	4,800
Masasi	162	1.1	0	0.0	2,291	16.0	11,577	80.6	328	2.3	14,358
Tandahimba	90	5.4	285	16.9	462	27.4	845	50.3	0	0.0	1,682
Mtwara Urb	0	0.0	140	58.9	66	27.9	0	0.0	31	13.2	238
Total	252	1.1	634	2.7	4,399	18.5	15,388	64.6	3,130	13.2	23,804

33.19e TYPE OF SERVICE: Number of Agricultural Households by Satisfaction of Using Land Registration Office and District, 2002/03 Agricultural Year

	Land Registration Office										
	Very Good		Good		Average		Poor		No good		Total
District	No of Households	%	No of Households	%	No of Households	%	No of Households	%	No of Households	%	Number of households
Mtwara Rur	313	9.8	0	0.0	199	6.2	2673	83.9	0	0.0	3184
Newala	180	4.9	287	7.8	277	7.5	932	25.2	2028	54.8	3704
Masasi	163	0.9	326	1.9	2290	13.2	14290	82.1	328	1.9	17397
Tandahimba	269	5.9	1125	24.5	2439	53.2	660	14.4	95	2.1	4588
Mtwara Urb	0	0.0	105	39.0	101	37.7	31	11.7	31	11.7	269
Total	925	3.2	1844	6.3	5306	18.2	18586	63.8	2483	8.5	29143

33.19f TYPE OF SERVICE: Number of Agricultural Households by Satisfaction of Using Livestock development Centre and District, 2002/03 Agricultural Year

	Livestock Development Centre										
	Very Good		Good		Average		Poor		No good		Total
District	No of Households	%	No of Households	%	No of Households	%	No of Households	%	No of Households	%	Number of households
Mtwara Rur	0	0.0	105	9.6	301	27.6	684	62.8	0	0.0	1,090
Newala	0	0.0	0	0.0	95	2.7	934	26.6	2,486	70.7	3,515
Masasi	324	1.9	960	5.6	3,438	20.1	11,899	69.5	492	2.9	17,113
Tandahimba	186	9.1	180	8.8	462	22.6	1,218	59.5	0	0.0	2,045
Total	510	2.1	1,244	5.2	4,296	18.1	14,734	62.0	2,978	12.5	23,762

33.19g TYPE OF SERVICE: Number of Agricultural Households by Level of Satisfaction of the Service and District for 2002/03 Agricultural year

	LEVEL OF SATISFACTION OF THE SERVICE									
TYPE OF SERVI	Very Good		Good		Average		Poor		No good	
	No of Households	%	No of Households	%	No of Households	%	No of Households	%	No of Households	%
Veterinary Clinic	5,602	0	22,341	2	35,140	3	88,342	6	18,229	1
Centre	1,574	4	16,323	37	11,279	26	11,459	26	3,423	8
Station	1,477	5	1,332	14	4,098	21	16,413	50	3,103	11
Lab	252	1	634	3	4,399	18	15,388	65	3,130	13
Registration	925	3	1,844	6	5,306	18	18,586	64	2,483	9
Development Centre	510	2	1,244	5	4,296	18	14,734	62	2,978	13
OVERALL %	10339	3	43717	14	64518	20	164923	52	33345	11

HOUSEHOLD FACILITIES

34-1:Number of Households by Type of Toilet and District, during the 2002/03 Agricultural Year

	Type of toilet				
District	No Toilet	Flush Toilet	Traditional Pit Latrine	Improved Pit Latrine	Total number of households
Mtwara Rur	4,749	3,002	36,450	953	45,154
Newala	1,075	98	41,703	189	43,065
Masasi	651	1,613	93,840	317	96,421
Tandahimba	376	278	40,908	261	41,823
Mtwara Urb	98	0	2,721	32	2,850
Total	6,950	4,990	215,622	1,752	229,314

34.2: Number of hoseholds reporting average number of rooms and type of Roofing Materials by District, 2002/03 Agricultural Year

District	Number of rooms and Type of roof construction material	Iron Sheets	Tiles	Concrete	Asbestos	Grass / Leaves	Grass & Mud	Total
Mtwara Rur	3	7,244	392	0	672	36,447	399	45,154
Newala	3	12,566	468	0	97	29,544	391	43,065
Masasi	2	16,657	443	164	0	73,760	5,397	96,421
Tandahimba	3	12,645	372	276	287	24,736	3,507	41,823
Mtwara Urb	2	676	0	0	0	2,142	32	2,850
Total	2	49,788	1,675	440	1,056	166,629	9,726	229,314

34.3: Number of hoseholds type of Owned Asset and District, 2002/03 Agricultural Year

	Mtwara Rur		Newala		Masasi		Tandahimba		Mtwara Urb		Total	
	Number of households	%	Number of households	%	Number of households	%	Number of households	%	Number of households	%	Number of households	%
Radio	14,846	15	20,486	21	43,692	45	17,037	17	1,714	2	97,775	41
Landline phone	103	40	89	35	0	0	0	0	64	25	256	0
Mobile phone	103	16	0	0	162	26	367	58	0	0	633	0
Iron	2,710	8	8,148	25	15,130	47	5,372	17	698	2	32,058	13
Wheelbarrow	207	8	379	15	1,123	45	739	30	34	1	2,482	1
Bicycle	17,293	17	20,972	20	39,981	39	22,712	22	1,768	2	102,726	43
Vehicle	508	22	763	34	628	28	367	16	0	0	2,266	1
Television/Video	314	26	289	24	327	27	274	23	0	0	1,203	1
Total Number of Households	36084	15	51126	21	101044	42	46869	20	4277	2	239399	100

34.4: Number of Agricultural Households Source of Energy for Lighting and District, 2002/03 Agricultural Year

Type of Owned Asset	Mtwara Rur		Newala		Masasi		Tandahimba		Mtwara Urb		Total	
	Number of households	%	Number of households	%	Number of households	%	Number of households	%	Number of households	%	Number of households	%
Main Electricity	608	34	463	26	646	36	0	0	64	4	1782	1
Gas(Biogas)	0	0	0	0	164	63	96	37	0	0	260	0
Hurrican Lamp	7390	13	15851	28	18178	32	14075	25	644	1	56138	24
Prussure Lamp	1,501	24	1,816	29	1,777	29	1,134	18	0	0	6,228	3
Wick Lamp	34,598	22	23,976	15	72,741	46	26,046	16	2,142	1	159,502	70
Candles	212	24	189	21	485	55	0	0	0	0	886	0
Firewood	845	19	770	17	2,430	54	473	10	0	0	4,517	2
Total	45,154	20	43,065	19	96,421	42	41,823	18	2,850	1	229,314	100

34.5: Number of Agricultural Households Source of Energy for Cooking and District, 2002/03 Agricultural Year

Type of Owned Asset	Mtwara Rur		Newala		Masasi		Tandahimba		Mtwara Urb		Total	
	Number of households	%	Number of households	%	Number of households	%	Number of households	%	Number of households	%	Number of households	%
Main Electricity	0	0	194	100	0	0	0	0	0	0	194	0
Solar	96.749985	100	0	0	0	0	0	0	0	0	97	0
Gas(Biogas)	103	55	86	45	0	0	0	0	0	0	189	0
Parraffin / Kerocine	0	0	0	0	324	73	96	22	26	6	446	0
Charcoal	614	21	98	3	1,623	54	565	19	89	3	2,989	1
Firewood	44,341	20	42,492	19	94,149	42	41,068	18	2,735	1	224,785	98
Crop Residues	0	0	196	32	325	53	94	15	0	0	615	0
Total	45,154	20	43,065	19	96,421	42	41,823	18	2,850	1	229,314	100

34.6: Number of Agricultural Households by Main Source of Drinking Water (Wet & Dry) and District during 2002/03 Agricultural

Source	Season	District					
		Mtwara Rur	Newala	Masasi	Tandahimba	Mtwara Urb	Total
Pipe water	Wet	9,270	28,612	15,766	5,355	1,476	60,480
	Dry	11,236	30,345	15,305	6,801	1,451	65,138
Protected Well	Wet	4,489	1,259	7,663	1,537	843	15,791
	Dry	5,745	1,363	6,850	556	948	15,462
Protected/Covered Spring	Wet	813	869	2,440	191	197	4,510
	Dry	789	1,053	2,440	384	199	4,865
Unprotected Well	Wet	10,156	2,199	50,660	3,501	99	66,615
	Dry	9,037	837	54,213	2,283	125	66,495
Surface Water(Lake/Dam/River/Stream	Wet	3,776	1,811	9,497	6,197	102	21,384
	Dry	8,127	1,908	9,661	21,703	-	41,399
Covered Rainy Water Catchment	Wet	735	1,268	164	4,634	-	6,801
	Dry	735	974	328	1,098	31	3,166
Uncovered Rain Water Catchment	Wet	8,602	1,172	2,641	12,495	70	24,980
	Dry	522	-	-	931	-	1,453
Water Vendor	Wet	-	-	-	1,928	-	1,928
	Dry	87	92	-	365	-	543
Unprotected Spring	Wet	7,314	5,776	7,427	1,741	63	22,320
	Dry	8,876	6,493	7,623	7,607	96	30,697
Other	Wet	-	99	163	4,244	-	4,506
	Dry	-	-	-	96	-	96
Total Agricultural Households per District		90,308	86,130	192,842	83,647	5,701	458,628

34.6: Proportion Number of Agricultural Households by Main Source of Drinking Water (Wet & Dry) and District during 2002/03 Agricultural

Source	Season	District					
		Mtwara Rur	Newala	Masasi	Tandahimba	Mtwara Urb	Total
Pipe water	Wet	10	33	8	6	26	13
	Dry	12	35	8	8	25	14
Protected Well	Wet	5	1	4	2	15	3
	Dry	6	2	4	1	17	3
Protected/Covered Spring	Wet	1	1	1	0	3	1
	Dry	1	1	1	0	3	1
Unprotected Well	Wet	11	3	26	4	2	15
	Dry	10	1	28	3	2	14
Surface Water(Lake/Dam/River/Stream	Wet	4	2	5	7	2	5
	Dry	9	2	5	26	-	9
Covered Rainy Water Catchment	Wet	1	1	0	6	-	1
	Dry	1	1	0	1	1	1
Uncovered Rain Water Catchment	Wet	10	1	1	15	1	5
	Dry	1	-	-	1	-	0
Water Vendor	Wet	-	-	-	2	-	0
	Dry	0	0	-	0	-	0
Unprotected Spring	Wet	8	7	4	2	1	5
	Dry	10	8	4	9	2	7
Other	Wet	-	0	0	5	-	1
	Dry	-	-	-	0	-	0
Total Agricultural Households per District		100	100	100	100	100	100

34.8: Number of Agricultural Households Reporting Distance to Main Source of Drinking Water by Season (Wet & Dry) and District during 2002/03 agricultural year

Distance to Main Source of Drinking Water	Season	District				
		Mtwara Rur	Newala	Masasi	Tandahimba	Mtwara Urb
Less than 100m	Wet	11,702	3,664	10,308	22,193	591
	Dry	7,602	3,573	8,392	5,138	522
100 - 299 m	Wet	6,082	4,856	10,949	5,394	533
	Dry	3,263	4,858	9,868	572	502
300 - 499 m	Wet	1,720	1,062	5,416	1,615	180
	Dry	1,423	1,062	4,933	954	154
500 - 999 m	Wet	6,343	2,683	10,367	4,397	449
	Dry	4,469	2,585	8,292	1,629	413
1 - 1.99 m	Wet	12,786	4,221	26,042	3,516	689
	Dry	7,174	4,123	21,491	1,586	722
2 - 2.99 m	Wet	4,919	7,045	11,181	2,451	137
	Dry	4,929	7,333	11,936	4,566	67
3 - 4.99 m	Wet	1,499	1,881	14,354	1,248	240
	Dry	9,562	1,790	18,073	6,248	379
5 - 9.99 m	Wet	104	11,060	7,640	1,010	32
	Dry	6,306	11,154	13,115	19,872	91
10 Km and above	Wet	-	6,593	164	-	-
	Dry	426	6,587	320	1,259	-
Total		90,308	86,130	192,842	83,647	5,701

34.9: Proportion Number of Agricultural Households Reporting Distance to Main Source of Drinking Water by Season (Wet & Dry) and District during 2002/03 agricultural year

Distance to Main Source of Drinking Water	Season	District				
		Mtwara Rur	Newala	Masasi	Tandahimba	Mtwara Urb
Less than 100m	Wet	13	4	5	27	10
	Dry	8	4	4	6	9
100 - 299 m	Wet	7	6	6	6	9
	Dry	4	6	5	1	9
300 - 499 m	Wet	2	1	3	2	3
	Dry	2	1	3	1	3
500 - 999 m	Wet	7	3	5	5	8
	Dry	5	3	4	2	7
1 - 1.99 m	Wet	14	5	14	4	12
	Dry	8	5	11	2	13
2 - 2.99 m	Wet	5	8	6	3	2
	Dry	5	9	6	5	1
3 - 4.99 m	Wet	2	2	7	1	4
	Dry	11	2	9	7	7
5 - 9.99 m	Wet	0	13	4	1	1
	Dry	7	13	7	24	2
10 Km and above	Wet	-	8	0	-	-
	Dry	0	8	0	2	-

34.10: Number of Agricultural Households Reporting Time Spent to and from Main Source of Drinking Water by Season (Wet & Dry) and District during 2002/03 agricultural year

Time Spent to and from Main Source of drinking Water	Season	District				
		Mtwara Rur	Newala	Masasi	Tandahimba	Mtwara Urb
Less than 10 minute	Wet	2,603	2,402	1,123	8,748	459
	Dry	1,671	2,332	978	1,279	450
10 - 19 Minutes	Wet	12,552	3,566	7,912	10,985	822
	Dry	8,300	3,649	6,613	3,543	712
20 - 29 Minutes	Wet	4,399	2,952	6,124	4,949	318
	Dry	2,119	2,947	5,191	1,512	388
30 - 39 Minutes	Wet	9,097	4,281	25,847	5,407	486
	Dry	4,327	4,470	18,444	1,610	396
40 - 49 Minutes	Wet	3,451	1,172	7,428	1,755	125
	Dry	1,491	1,170	6,145	739	190
50 - 59 Minutes	Wet	4,268	1,583	3,540	4,127	348
	Dry	1,652	1,390	4,977	665	289
Above one hour	Wet	8,783	27,110	44,447	5,853	294
	Dry	25,594	27,107	54,074	32,475	426
Total		90,308	86,130	192,842	83,647	5,701

34.11: Proportion Number of Agricultural Households Reporting Time Spent to and from Main Source of Drinking Water by Season (Wet & Dry) and District during 2002/03 agricultural year

Distance to Main Source of Drinking Water	Season	District				
		Mtwara Rur	Newala	Masasi	Tandahimba	Mtwara Urb
Less than 10 minute	Wet	3	3	1	10	8
	Dry	2	3	1	2	8
10 - 19 Minutes	Wet	14	4	4	13	14
	Dry	9	4	3	4	12
20 - 29 Minutes	Wet	5	3	3	6	6
	Dry	2	3	3	2	7
30 - 39 Minutes	Wet	10	5	13	6	9
	Dry	5	5	10	2	7
40 - 49 Minutes	Wet	4	1	4	2	2
	Dry	2	1	3	1	3
50 - 59 Minutes	Wet	5	2	2	5	6
	Dry	2	2	3	1	5
Above one hour	Wet	10	31	23	7	5
	Dry	28	31	28	39	7

34.12: Number of Households by Number of Meals the household Normally Took per Day by District

Number of Meals per Day	District										Total	
	Mtwara Rur		Newala		Masasi		Tandahimba		Mtwara Urb			
	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%
One	5,585	28	683	3	11,971	60	1,457	7	155	1	19,850.19	8.7
Two	24,228	18	25,399	19	59,028	45	21,255	16	1,541	1	131,450.97	57.3
Three	15,341	20	16,982	22	25,098	32	19,020	25	1,155	1	77,597.12	33.8
Four	0	0	0	0	324	78	92	22	0	0	415.67	0.2
Total	45,154	20	43,065	19	96,421	42	41,823	18	2,850	1	229,313.96	100.0

34.13: Number of Households by Number of Days the household Consumed Meat during the Preceding Week by District

Number of Meals per Day	District										Total	
	Mtwara Rur		Newala		Masasi		Tandahimba		Mtwara Urb			
	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%
Not Eaten	26,435	23	15,290	13	58,973	50	14,686	13	1,720	1	117,105	51
One	8,640	16	13,388	25	19,904	38	10,128	19	528	1	52,588	23
Two	6,307	18	8,206	24	10,324	30	9,392	27	406	1	34,634	15
Three	1,811	14	3,750	30	2,866	23	4,011	32	131	1	12,569	5
Four	925	13	1,260	18	2,259	33	2,403	35	65	1	6,912	3
Five	828	30	585	21	652	24	657	24	-	-	2,721	1
Six	103	9	191	17	646	57	192	17	-	-	1,132	0
Seven	107	6	396	24	796	48	354	21	-	-	1,653	1
Total	45,154	20	43,065	19	96,421	42	41,823	18	2,850	1	229,314	100

34.14: Number of Households by Number of Days the household Consumed Fish during the Preceding Week by District

Number of Meals per Day	District										Total	
	Mtwara Rur		Newala		Masasi		Tandahimba		Mtwara Urb			
	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%
Not Eaten	4,122	16	2,720	10	16,744	64	2,534	10	183	1	26,303	11
One	6,639	18	10,297	27	16,966	45	3,751	10	131	0	37,785	16
Two	7,064	16	10,737	25	17,406	40	8,329	19	281	1	43,818	19
Three	4,219	11	11,485	31	12,562	33	8,801	23	528	1	37,595	16
Four	7,108	25	4,051	14	10,507	37	6,205	22	394	1	28,265	12
Five	5,216	25	1,628	8	8,029	39	5,312	26	558	3	20,743	9
Six	1,124	13	880	10	3,690	43	2,669	31	295	3	8,657	4
Seven	9,662	37	1,267	5	10,516	40	4,223	16	481	2	26,148	11
Total	45,154	20	43,065	19	96,421	42	41,823	18	2,850	1	229,314	100

34.15: Number of Households Reportying the status of food satisfaction of the households during the Preceding Year by District

Number of Meals per Day	District										Total	
	Mtwara Rur		Newala		Masasi		Tandahimba		Mtwara Urb			
	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%
Never	11,513	12	29,677	31	27,351	29	25,888	27	477	1	94,907	41
Seldom	18,512	25	8,743	12	36,043	48	11,151	15	1,015	1	75,463	33
Sometimes	5,415	29	3,201	17	6,738	36	2,784	15	586	3	18,724	8
Often	6,065	23	1,152	4	16,579	64	1,811	7	486	2	26,093	11
Always	3,648	26	291	2	9,711	69	190	1	287	2	14,127	6
Total	45,154	20	43,065	19	96,421	42	41,823	18	2,850	1	229,314	100

34-16: Number of Households Reporting Main Source of Income by District, 2002/03 Agricultural Year

Number of Meals per Day	District											
	District										Total	
	Mtwara Rur		Newala		Masasi		Tandahimba		Mtwara Urb			
	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%
Sales of Food Crops	17,812	17	30,549	29	46,104	43	10,967	10	570	1	106,002	46
Sales of Livestock	379	35	99	9	324	30	273	25	-	-	1,075	0
Sales of Livestock Products	105	23	98	21	164	35	96	21	-	-	463	0
Sales of Cash Crops	10,881	13	9,189	11	37,042	44	26,793	32	875	1	84,781	37
Sales of Forest Products	2,281	49	-	-	1,937	42	278	6	132	3	4,628	2
Business Income	3,832	51	1,041	14	1,458	19	938	12	294	4	7,564	3
Wages & salaries in Cash	1,414	33	853	20	1,619	38	193	5	153	4	4,232	2
Other Casual Cash Earnings	2,573	29	484	6	4,034	46	1,057	12	644	7	8,792	4
Cash Remittances	1,818	37	379	8	1,943	39	657	13	148	3	4,945	2
Fishing	2,913	83	-	-	323	9	284	8	-	-	3,521	2
Other	1,146	36	372	12	1,471	46	191	6	35	1	3,215	1
Not applicable	-	-	-	-	-	-	96	100	-	-	96	0
Total	45,154	20	43,065	19	96,421	42	41,823	18	2,850	1	229,314	100

34.18: HOUSEHOLD FACILITIES: Number of hoseholds reporting average number of rooms and type of Roofing Materials by District, 2002/03 Agricultural Year

Roofing Materials	District										Total	
	Mtwara Rur		Newala		Masasi		Tandahimba		Mtwara Urb			
	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%
Number of Rooms	3	84	3	88	2	76	3	92	2	79	3	0
Iron Sheets	7,244	15	12,566	25	16,657	33	12,645	25	676	1	49,788	22
Tiles	392	23	468	28	443	26	372	22	-	-	1,675	1
Concreate	-	-	-	-	164	37	276	63	-	-	440	0
Asbestos	672	64	97	9	-	-	287	27	-	-	1,056	0
Grass & Mud	36,447	22	29,544	18	73,760	44	24,736	15	2,142	1	166,629	73
Grass/Leaves	399	4	391	4	5,397	55	3,507	36	32	0	9,726	4
Total	45,157	20	43,068	19	96,423	42	41,826	18	2,853	1	229,327	100

APPENDIX III QUESTIONNAIRES

UNITED REPUBLIC OF TANZANIA

Confidential

Page Number ……..

Agriculture Sample Census 2002/03

ACLF 1: Sub-village leader listing form

Region _____ Code ☐☐	Ward _____ Code ☐☐☐
District _____ Code ☐☐	Village _____Code ☐☐

Name of Village Chairman:……..

Sub-village leader number	Name of sub-village leader	Number of households		Comments
		From office register	After enumeration	
(1)	(2)	(3)	(4)	(5)
☐☐		☐☐☐☐	☐☐☐☐	
☐☐		☐☐☐☐	☐☐☐☐	
☐☐		☐☐☐☐	☐☐☐☐	
☐☐		☐☐☐☐	☐☐☐☐	
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	Total	☐☐☐☐	☐☐☐☐	

Name of enumerator…… Signature ……. Date…….

Name of supervisor…… Signature ……. Date…….

UNITED REPUBLIC OF TANZANIA

Confidential

Interval ☐☐
Starting point ☐☐

Page Number……..

Agriculture Sample Census 2002/03

ACLF: 2 Household listing form - form for listing household heads and their agriculture activities

Region	_____	Code ☐☐	Name of Sub-village Leaader _____
District	_____	Code ☐	Subvillage leader code ☐☐
Ward	_____	Code ☐☐☐	
Village	_____	Code ☐☐	Name of Sub-village _____

Household Number	Household head name	Number of										✓ if the respodent qualifies to be a farmer *	Farmer Serial Numbers
			Cattle										
		✦ Fields	Total Number	Adult male cattle	Adult female cattle	Calves	Goats	Sheep	Pigs	poultry/ducks	Rabbit		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
☐☐☐☐													
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	Totals												

* **NOTE:** (Column 13) Place a "✓" if the household has at least 1 field over 25m^2 and/or keeps at least 1 Cow, 5 Goats/Sheep/Pigs or 50 Chicken/poultry or ducks

✦(Column 3) A field must be at least 25 m^2

Name of enumerator…….. Signature ……. Date……..….

Name of supervisor……. Signature ……. Date……..…….

UNITED REPUBLIC OF TANZANIA

Confidential

National Agriculture Sample Census 2002/03

ACLF: 3 Household listing of 15 selected farmers

Region _____ Code ☐☐

District _____ Code ☐☐

Ward _____ Code ☐☐☐

Village _____ Code ☐☐

S/N	Sub village leader number	Name of sub-village leader	Agriculture hh serial number	Name of selected head of household	Number of						
					Fields	Cattle	Goat	Sheep	Pig	Poultry /ducks	Rabbits
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(12)
01			☐☐☐								
02			☐☐☐								
03			☐☐☐								
04			☐☐☐								
05			☐☐☐								
06			☐☐☐								
07			☐☐☐								
08			☐☐☐								
09			☐☐☐								
10			☐☐☐								
11			☐☐☐								
12			☐☐☐								
13			☐☐☐								
14			☐☐☐								
15			☐☐☐								

Name of Enumerator:_____Signature_____Date_____

Name of Supervisor_____Signature_____Date_____

Ministry of Agriculture and Food Security, Ministry of Water and Livestock Development, Ministry of Cooperatives and Marketing and the National Bureau of Statistics

United Republic of Tanzania

ACQ 1 **CONFIDENTIAL**

Small holder/Small Scale Farmer Questionnaire

Agriculture Sample Census

2002/2003

Enumerator Name ..... Signature .....

Date Enumerated ☐☐ / ☐☐ / ☐☐ (d d / m m / y y)

	Hour	Minutes
Start time	☐☐	☐☐
End time	☐☐	☐☐

Field level checking by:

District Supervisor:	Name	signature	Date / /	*To be completed by the supervisor **ONLY** after field/farm level checking of the enumeration process. This should be countersigned by the enumerator.*
Regional Supervisor:	Name	signature	Date / /	
National Supervisor:	Name	signature	Date / /	

District checking in Office:

District Supervisor	Name	signature	Date / /	*All questionnaires must be checked at the district office.*

For Use at National Level only:

Data Entered by	Name	signature	Date / /	*See back page for details of query*
Queried	Name	signature	Date / /	

Executed by the Ministry of Agriculture and Food Security, Ministry of Water and Livestock Development,
Ministry of Cooperatives and Marketing
and
National Bureau of Statistics

1.0 IDENTIFICATION DETAILS

1.1 Location

S/N	Location Name	Codes
1.1.1	Region ……	
1.1.2	District ……	
1.1.3	Ward ……	
1.1.4	Village ……	

1.2 Details of the **respondent** and **household head**

S/N		Codes
1.2.1	Name & number of **local leader** ……..	
1.2.2	Name & number of **household head** ……..	
1.2.3	**Sex** of household head (Male = 1, Female = 2)	
1.2.4	Name of **respondent** ……..	
1.2.5	**Relationship of Respondent** to Household Head	

Relationship to household head codes (Q 1.2.5)

Head of Household……1 Son/Daughter ……...3 Grandson/Granddaughter ……5 Other (friend, employee, etc)…8
Spouse ……..….2 Father/Mother ……..4 Other relative……...6

2.0 ACTIVITIES OF THE HOUSEHOLD

2.1 **Type** of Agriculture Household

Agriculture household codes(Q2.1)

Crops only……..1 Livestock only ……..2 Pastoralist……..3 Crops and Livestock ……..4

2.2 **Rank the following livelihood activities/source of income** of the household in order of importance

S/N	Livelihood/source of income activity.	Rank in order of importance 1=most 7=least	How important are each of these activities expressed in percentage.
	(1)	*(2)*	*(3)*
2.2.1	**Annual Crop** farming		%
2.2.2	**Permanent** crop farming		%
2.2.3	**Livestock** keeping/herding		%
2.2.4	**Off Farm Income**		%
2.2.5	**Remittances**		%
2.2.6	**Fishing/hunting** and gathering		%
2.2.7	**Tree/forest** resources (eg honey, firewood, timber,etc)		%
			1 0 0 %

Definition and working page for page 1

General Definitions

Small holder hh/small scale farm:
Should have between 25sq metres and 20 Hectares under production, and/or between 1 and 50 head of Cattle, and/or between 5 and 100 head of Sheep/Goats/Pigs, and/or between 50 and 1000 chickens/turkeys/ducks/rabbits.

Household: A group of people who occupy the whole or part of one or more housing units and makes joint provisions for food and/or other essentials for living.

Household Head: A person who is acknowledged by all other members of the household either by virtue of his age or standing in the household as the head. He/she should be a permanent resident of the house and he/she is the main person responsible for making decissions.

Agricultural Holding: This is an economic unit of agricultural production under single management. It consists of all livestock kept and all land used for agricultural production without regard to title. For the purpose of this survey, the agricultural holdings are restricted to those which meet one of the following conditions:

- Having or operated at least 25 sq meter of arable land
- Own or keep at least one head of cattle or five goats/sheep/pigs or fifty chicken/ducks/turkeys during the agricultural year 2002/03 (October 2002 to September 2003) .

Question Specific Definitions:

Type of Agriculture Holdings Codes (Q2.1):

- Crops only: A holding is referred to be a crops only holding if it has cultivated a piece of land equal or exceeding 25 sq Meter. This also applies to all households owning or have kept livestock whose number does not qualify such household to be an agricultural holding (No cattle, less than 5 goats/sheep/pigs, less than 50 chickens/turkeys/ducks/rabbits)

- Livestock only: A holding is referred to be a Livestock only holding if it has exercised Livestock husbandry only during the agricultural year. The livestock can be herded in search for areas of pasture, but the core household unit always remains in the same place and the herder is rarely away from this place for long periods at a time.

- Livestock pastoralism: This refers to a household which practices livestock production as its major income generating activity and a means of subsistence, but moves from one place to another searching for water and pasture for the livestock. This movement usually involves long distances and in many cases the whole household unit moves with the livestock and they have no permanent place of residence.

For both livestock only and pastoralism , the number of livestock has to be at least 1 head of cattle, 5 goats/sheep/pigs or 50 chickens/turkeys/ ducks/rabbits. This also applies to all households owning or have cultivated a piece of land less than 25 sq meter, which does not qualify such household be an agricultural holding.

- Both crops and livestock: A holding is referred to be a both crops and livestock if it has cultivated a piece of land equal or exceeding 25 sq meter and if such households is owning or have kept livestock whose number qualify such household be an agricultural holding.

Important livelihood activities/source of income (Q 2.2):

- Crop farming: This refers to a household where crop production is its major means of subsistence and income generation.

- Livestock farming/herding/pastoralism: This refers to a household where livestock farming/herding is its major means of subsistence & income generation.

- Off Farm Income This refers to cash generated from activities other than from the households holding. This can be from permanent employment (eg government/other), temporary employment/labouring and includes cash generated from working on other farmers farms.

-**Remittances:** Assistance from family members who are not currently part of the household, or from a relative or family friend. This assistance is usually in the form of cash but it can also be in-kind (eg food, clothes, building material, farm tools, etc). The money is a gift and is not paid back.

-Fishing/hunting and gathering The use of non farmed resources for food eg fishing, hunting wildlife and gathering mushrooms, berries, wild honey roots from uncultivated land.

Procedures for Questions:

Q 2.1 Type of agriculture household/holding

1. Using the options under the question classify the type of agriculture hh/holding

Note: If the hh had 1 acre of crops and raised 40 chickens during 2002/03 it is classified as **'Crops only'** as the number of chickens do not qualify the hh as keeping livestock.

Q 2.2 Important hh livelihood activities /source of income

1. Read the list in column 1 to the respondent and ask him to rank them in order of importance during the reference year.

2. In column 2 Indicate the importance of each activity by placing **'1'** against the most important, **'2'** against the second most important, etc until you reach **'7'** the least important activity/source of income.

Note: You must attempt to fill in all boxes. Most households will carry out these activities to a greater or lesser degree. You will normally have to probe to get remittances.

If the hh did not undertake an activity during the 2002/2003 agriculture year then mark the appropriate box in column 2 with an 'X'.

3. For each activity/source of income assign a percentage. The enumerator should assist the respondent in assigning the percentage based on the information provided by the farmer.

4. After completing column 3 make sure the percentages add up to 100.

Note: It is not essential to be 100% accurate. This question is just to give the relative importance of the different items in general terms

3.0 HOUSEHOLD INFORMATION

3.1 Give details of personal **particulars** of all household members beginning with the head of the household

S/N	Names of household members	Relation-ship to head	Sex M=1 F=2	Age (if age is above 99 years then write 99)	Survival of Parents		Not applicable for children under 5 years of age					
					Mother	Father	Read & Write	Education Status	Education Level reached	Involvement in farming	Main activity (for aged 5 & above)	Off-farm Income Yes=1 No=2
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*
3.1.1	.....	1										
3.1.2	.....											
3.1.3	.....											
3.1.4	.....											
3.1.5	.....											
3.1.6	.....											
3.1.7	.....											
3.1.8	.....											
3.1.9	.....											
3.1.10	.....											
3.1.11	.....											
3.1.12	.....											
3.1.13	.....											
3.1.14	.....											
3.1.15	.....											
3.1.16	.....											

Relation to head (Col 2)
Head of household 1
Spouse 2
Son/daughter 3
Father/Mother 4
Grandson/granddaughter .5
Other Relative 6
Others 8

Survival of Parents (Col 5 & 6)
Yes 1
No 2
Don't know 3

Read & Write (Col 7)
Swahili 1
English 2
Swahili & English 3
Any other language 4
Don't Read/ Write 5

Education Status (Col 8)
Attending School 1
Completed 2
Never attended School 3

Education Level Reached (Col 9)

Primary Education
Not of school age .....NA
Under Standard One 00
Standard One 01
Standard Two 02
Standard Three 03
Standard Four 04
Standard Five 05
Standard Six 06
Standard Seven 07
Standard Eight 08
Training after Primary Education 09
Pre Form One 10

Secondary Education
Form one 11
Form two 12
Form three 13
Form four 14
Form five 15
Form six 16
Training after Secondary Education 17
University & other tertiary Education 18
Adult Education 19
Not applicable 99

Involvement in farming activities (Col 10)
Works full time on farm ...1
Works part-time on farm 2
Rarely works on farm 3
Never works on farm.....4

Main activity (Col 11)
Crop Farming 01
Livestock Keeping/Herding..02
Livestock Pastoralism.....03
Fishing 04
Paid employment:
- Government/parastatal 05
- Private- NGO/mission/etc .06
Self employed (non farming)
- with employees 07
- without employees 08
Unpaid family helper (non agriculture) 09
Not working & available.....10
Not working & unavailable...11
Housemaker/housewife 12
Student 13
Unable to work /too old/ Retired/sick/disabled).....14
Other 98

Definition and working page for page 2

Question Specific Definitions:

Relation to head (Col 2):

- Household Head: A person who is acknowledged by all other members of the household either by virtue of their age or standing as the household head.

Read and Write (Col 7):

- Any other language: Must be a written language.

For someone who can read and write in Swahili and any other language apart from English, the correct code is 1. For one who can read and write in English and any other language apart from Swahili the correct code is 2. Code 4 should only be used for another language but not English or Swahili

Education Level Reached (Col 9):

Indicate the highest level only. For those still attending school fill in the last year reached before the survey period. For example if a hh member is currently in standard 7 this year his highest grade reached is standard 6

Main Activity (Col 11):

- Crop farming: The persons main activity is crop production. This can be annual crops, vegetables, permanent crops or tree farming.

- Livestock farming/herding: The persons main activity is livestock farming/herding. The livestock can be herded in search for areas of pasture, but the core household unit always remains in the same place and the herder is rarely away from this place for long periods at a time. This category also includes fish farming but not fishing.

- Livestock pastoralism: The persons main activity is in moving livestock from one place to another searching for water and pasture for the livestock. This movement usually involves long distances and in many cases the whole household unit moves with the livestock and they may have no permanent place of residence.

-Paid employment - In full time employment earning a cash income

- Government/Parastatal - In full time employment for a government Ministry, Department or Board that is controlled by the Government
- Private/NGO/Mission/etc - employed by Non public/government organisation

-Self employee - works for own business for cash income

- With employees - Works for own business for cash and employs other workers
- Without employees - Works for own business for cash but does not employ other workers

- Not working but available to work - No productive activity but would like to have one.

- Not working & nor available for work - No productive activity and does not want to have one.

- Unable to work too old, too young, retired, disabled, etc

Off-farm Income (Col 12) - Income made from activities NOT on the HH's farming activities. This can be any off farm income generation activity and includes working for cash on other peoples farms.

Indicate whether each member was involved in an off farm income generating activity during 2002/03

Overview to section 3.0

Section 3.0 - Preliminary note

1. Make sure that you define the hh properly to ensure that all the members of the hh are included. Make sure you stress that the hh is not just the hh heads direct family and that it includes other people living and eating together with the family.

2. If you notice that his house is large or you see many people around his house and he has only given you small number of hh members enquire further until you are sure that you have captured all the hh members.

Procedures for questions

Section 3.0 - Household Information

1. For each household member complete columns 1, 2 & 3.

2. After completing columns 1, 2 & 3 for each household member go back to the first household member and complete the remaining columns for that member.

3. Repeat step 2 for the rest of the household members

IMPORTANT NOTE:
Cross check responses in columns 11 and 12 with section 2 especially in relation to:

off-farm income - if a hh member was involved in off farm income then there should be a response in question 2.2.4 and vice versa.

4.0 LAND ACCESS/OWNERSHIP/TENURE

4.1 Details of **area "owned" by the household** in the 2002/03 agricultural year. Give area reported by the respondent in **"acres".**

		Area in Acres
4.1.1	Area **Leased/Certificate of ownership**	
4.1.2	Area owned under **Customary Law**	
4.1.3	Area **Bought** from others	
4.1.4	Area **Rented** from others	
4.1.5	Area **Borrowed** from others	
4.1.6	Area **Share -cropped** from others	
4.1.7	Area under **Other** forms of tenure ……	
	Total area	

4.2 Was all land available to the hh used during 2002/03 (Yes=1, No=2) ☐

4.3 Do you consider that you have sufficient land for the hh (Yes=1, No=2) ☐

4.4 Do any female members of the hh own or have customary right to land (Yes=1, No=2) ☐

5.0 LAND USE

5.1 Area operated by household under **different forms of land use** during 2002/03 agriculture year. Give area reported by the respondent in **"acres"**.

		Area in Acres	Calculation area
5.1.1	Area under **Temporary Mono-crops**		
5.1.2	Area under **Temporary Mixed** crops (eg Maize & beans)		
5.1.3	Area under **Permanent Mono-crops**		
5.1.4	Area under **Permanent Mixed** crops (eg bananas, coffee & trees)		
5.1.5	Area under **Permanent/temporary mix** (eg bananas & maize)		
5.1.6	Area under **Pasture**		
5.1.7	Area under **Fallow**		
5.1.8	Area under **Natural Bush**		
5.1.9	Area under **Planted Trees**		
5.1.10	Area **Rented** to others		
5.1.11	Area **Unusable**		
5.1.12	Area of **Uncultivated Usable** land (excluding fallow)		
	Total area		

6.0 ACCESS AND USE OF RESOURCES

6.1 In the following table indicate the distance to the different fields used by the household

S/N	Field Number	Distance (in kilometres) from field to: Homestead	Nearest road	Nearest Market
6.1.1	1			
6.1.2	2			
6.1.3	3			

Distance codes

less than 100m ……1 between 2 and 3km ….6
between 100 and 300m .2 between 3 and 5km …..7
between 300 and 500m .3 between 5 and 10 km ..8
between 500 and 1km....4 Over 10 km ……....9
between 1 and 2km ……5

6.2 In the following table indicate the distance and use of the following communal resources

S/N	Communal Resource	Distance to resource (km) dry season	wet season	Main hh use
	(1)	*(2)*	*(3)*	*(4)*
6.2.1	Water for **humans**			
6.2.2	Water for **livestock**			
6.2.3	Communal **Grazing**			
6.2.4	Communal **Firewood**			
6.2.5	Wood for **Charcoal**			
6.2.6	**Building** poles			
6.2.7	Forest for **bees (honey)**			
6.2.8	**Hunting(animal products)**			
6.2.9	**Fishing (Fish)**			

Instructions for distance to resource (Col 2 and 3):
If under 1km, write 0
If above 1km round to whole numbers
eg 1.5km= 2km, 1.25km= 1km

Main hh use (Col 4)

Home or farm Consumption/utilisation…..1
Sold to Neighbours……2
Sold to trader on the farm……3
Sold to village market ……4
Sold to local wholesale market……5
Sold to major wholesale market ……6
Not used by household.……7
Not available ……8

Definition and working page for page 3

Question Specific Definitions

Section 4.1 - Land Access/Ownership

Lease/Certificate of Ownership Area under lease/certificate of ownership refers to the area for which the household possesses a government issued leasehold title or certificate of ownership. The land will normally be officially surveyed and boundaries marked. This includes leased land bought from others where the lease/certificate of ownership has been transferred.

Customary Law: This refers to the land which the hh does not have an official government title to but its right of use is granted by the traditional leaders. This user-right agreement does not have to be granted directly by the village leaders as right of access may be passed on through heredity.

Bought: This refers to the area of customary land that has been bought from others. This land does not have an official title and therefore is not leasehold.

Rented from others: Land rented from others for Cash or for a fixed amount in crop produce (eg fixed number of bags at harvest).

Borrowed: Use granted by land owner free of charge. Land owner can either be a lease holder or has right of access through customary law.

Share Cropping: where the hh is permitted to use land which is then paid for from a percentage of the harvested crop.

Section 5.0 Land Use

- Temporary crops: are sown and harvested during the same agricultural year

- **Permanent crops:** are sown or planted once and then , they occupy the land for some years and need not to be replanted after each annual harvest. Permanent crops are mainly trees (e.g., apples) but also bushes and shrubs (e.g., berries), palms (e.g., dates), vines (e.g., grapes), herbaceous stems (e.g., bananas) and stemless plants (e.g., pineapples).

- **Mixed Crops:** This is a mixture of two or more crops planted together and mixed in the same plot/field. The two crops can either be randomly planted together or they can be planted in a particular patterm eg intercropping (1 row of maize and 1 row of beans). A field that has been divided into plots for different crops is not mixed. This is further subdivided into:

Permanent Mixed -two or more permanent crops grown together,
Permanent/Temporary Mix - permanent crop and annual crop together,
Temporary Mixed - two or more temporary, annual crops grown together.

- **Pasture Land:** This is an area of owned/allocated land which is set aside for livestock grazing. It can be improved pasture where the farmer has planted grass, applied fertilized or applied other production increasing technologies to improve the grazing. Or it can be rough pasture.

- **Fallow:** This is the area of land that is normally used for crop production, but is not used for crop production during a year or a number of years. This is normally to allow for self generation of fertility/soil structure and is often an integral part of the crop rotation system.

- **Natural Bush:** Land which is considered productive but is not under cultivation or used extensively for livestock production and has naturally growing shrubs and trees.

-**Planted trees:** Land which is used for planting trees for poles or timber

- **Unusable:** Land that is known to be non-productive for agriculture purposes

Uncultivated Usable: This is land that was not used for reasons other than fallow. The reasons could be lack of inputs/money/rainfall/etc

Distance to fields (Q6.1):

-fields A field is a contiguous piece of land holding which the farmer considers as a single entity. The field may be divided into plots for growing different crops. A holding may consist of one or more fields in different localities.

Use of Communal Resources (Q6.2):

-Communal resources - refers to the place on which all individual households can have access to. It is not individually owned or controlled by one hh.

NOTE: The listed resources refers to communal resources and not those individually owned or part shared. The resource has to be freely accessible to the whole village

Overview to section 4

Section 4.0 - Preliminary note

Land Access/ Ownership

Access/Ownership refers to the area utilized by the members of the household. This does not include communal land where the resources are shared between households. It does include official communal land that the hh has sole access to eg a plot for crop farming in the communal area.

Procedures for Questions

Section 4.0 - Land Ownership

1. Ask the respondent if he knows the total area of land the household has sole access to. If he knows make a note in the calculation space

2. Ask the respondent the area of the different land ownership categories the household has sole access to (Q4.1.1 to 4.1.7) and record in the appropriate spaces.

3. Add up the area of the different categories of land and compare it with the total area obtained in step 1 (if the respondent provided the information).

4. If the total area is different find out which one is correct and make amendments where appropriate.

Section 5.0 - Land Use

1. Ask the respondent the area of the different landuse categories the household has sole access to (Q5.1.1 to 5.1.12) and record in the appropriate spaces.

2. Add up the area of the different categories of land and compare it with the total area obtained in section 4.0. The total area should be the same.

3. If the total area is different find out which one is correct and make amendments where appropriate.

Section 6.2 Communal resources

Note: the code "Not available" means that the resource does not exist. The code "Not Used" means that the resource does exist but is not used by the hh.

7.0 ANNUAL CROP AND VEGETABLE PRODUCTION - SHORT RAINY SEASON

7.1.1 Did the hh **plant** any crops during the **Short Rainy** season? (Yes = 1, No=2) ☐ *If the response is **'NO'** give main reason* ☐ *Then go to section 7.2*

Main Reason (Above) *No rains.....1 Rains came too late .....2 Does not plant annual crops .....3 No money 4 Don't get Vuli season ..5 Illness/social problems .....6 Has irrigation & does not follow season (give annual production in Masika) 7*

7.1.2 For each crop planted during 2002/03 **Short Rainy** season provide the following information

				Planting		Inputs						Harvesting & Storage						Marketing	
Crop Name	**Crop Code**	**Land Clea -ring**	**Soil prep -arat -ion**	**Planned area (acres)**	**Actual Planted area (acres)**	**% impr -oved seed**	**Irrig -at -ion use**	**Fer -til -iser use**	**Her -bic -ide use**	**Fun -gic -ide use**	**Pest -tic -ide use**	**How harv ested**	**How thres hed**	**Area Harvested (acres)**	**main prod -uct code**	**Quantity harvested (Kgs)**	**Quantity Stored (kgs)**	**Quantity sold (kgs)**	**Mostly sold to**
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*	*(13)*	*(14)*	*(15)*	*(16)*	*(17)*	*(18)*	*(19)*	*(20)*
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
Total Planned/Planted												**Total area harvested**							

7.1.3 Main reason for difference between **Area Planned** and **Area Planted** ☐

7.1.4 Main reason for difference between **Area Planted** and **Area Harvested** ☐

Land Clearing (Col 3)
Mostly bush clearance ...1
Mostly hand slashing 2
Mostly tractor slashing ...3
Mostly burning 4
No land clearing.....5

Soil preparation Method (Col 4)
Mostly tractor ploughing .1
Mostly Oxen ploughing ..2
Mostly Hand cultivation ..3

Improved seed Use (Col 7)
all Improved 1
approx 3/4 improved.....2
approx 1/2 improved.....3
approx 1/4 improved.....4
less than 1/4 improved ..5
No improved seed used.6

Irrigation Use (Col 8)
Used on all crop 1
Used on 3/4 of crop 2
Used on 1/2 of crop.....3
Used on 1/4 of crop 4
Used on less than 1/4....5
Not used 6

Fertiliser codes (Col 9)
Mostly Farm Yard Manure 1
Mostly Compost 2
Mostly Inorganic fertiliser ..3
No fertiliser applied 4

Agrochemical use codes (Col 10,11 &12)
Used on all crop 1
Used on 3/4 of crop 2
Used on 1/2 of crop.....3
Used on 1/4 of crop 4
Used on less than 1/4 5
Not used 6

Threshed/harvested (Col13 & 14)
By hand 1
By draft animal 2
By human powered tool.....3
By engine driven machine...4
Not applicable 9

Main product (Col 16)
Dry Grain.....1
Green cob/green pod.....2
Green leaves & Stem.....3
Straw, dry stems etc 4
Root, tuber, etc 5
Flower eg pyrethrum 6
Fruit/bunch 7
Other.....8
Not harvested yet 9

Mostly sold to (Col 20)
Neighbour.....01
Local market/trade store 02
Secondary Market..03
Tertiary Market 04
Marketing Coop 05
Farmer Association06
Largescale farm 07
Trader at Farm 08
Contract Partner ...09
Did not sell 10
Other 98

Reason for difference between area planned and planted (Q7.1.3)
Drought 1
Floods 2
Access to land preparation tools (Draft animal/tractors).3
Credit 4
Access to seeds/planting material.....5
Access to other inputs 6
Other 8
Not applicable 9

Reason for difference between area planted and harvested (Q7.1.4)
Drought 1
Rain/flood damage 2
Fire damage 3
Pest damage 4
Animal damage 5
Theft 6
Illness/social problems 7
Other 8
Not applicable 9

Definitions and working page for page 4

Working table for the calculation of area occupied by annual crop in a mixture

Crop mixture 1	Crop Name	Total area of mix (acre)	Ground area/plant (ACRE)	Total no. of plants	Total ground area of plants (ACRES)
(a)	*(b)*	*(c)*	*(d)*	*(e)*	*(f)*
Permanent crop 1			0.00		0 .
Permanent crop 2			0.00		0 .
Permanent crop 3			0.00		0 .
Permanent crop 4			0.00		0 .
Total Area of permanent crops in mix					0 .
REMAINING AREA UNDER TEMPORARY CROPS					.
				crop%	crop area
Temporary/permanent crop name 1					.
Temporary/permanent crop name 2					.
Temporary/permanent crop name 3					.
Total area check	.			Crop total check	.

Crop mixture 2	Crop Name	Total area of mix (acre)	Ground area/plant (ACRE)	Total no. of plants	Total ground area of plants (ACRES)
(a)	*(b)*	*(c)*	*(d)*	*(e)*	*(f)*
Permanent crop 1			0.00		0 .
Permanent crop 2			0.00		0 .
Permanent crop 3			0.00		0 .
Permanent crop 4			0.00		0 .
Total Area of permanent crops in mix					0 .
REMAINING AREA UNDER TEMPORARY CROPS					.
				crop%	crop area
Temporary/permanent crop name 1					.
Temporary/permanent crop name 2					.
Temporary/permanent crop name 3					.
Total area check	.			Crop total check	.

Land Clearing: Refers to removing trees/bush/grass prior to ploughing
Soil Preparation: Refers to the seedbed preparation (ploughing, harrowing, etc)
Planned Area: Area in **Acres** the household planned to plant before the season started
Actual Planted Area: The area in **Acres** the household was able to plant.
Area Harvested: The area in **Acres** that produced a harvest. This is the same as the area planted minus the area that was destroyed by major flood/pest/ animal/etc damage.

Temporary/Annual Crop:
Crops which are planted and harvested within a period of 12 months after which time the plants die. Most annual crops are planted and harvested on a seasonal basis.

Cash Crop Codes:

Code	Crop
50	Cotton
51	Tobacco
53	Pyrethrum
62	Jute
19	Seaweed

Crop Codes (Cereals /tubers/roots):

Code	Crop
11	Maize
12	Paddy
13	Sorghum
14	Bulrush Millet
15	Finger Millet
16	Wheat
17	Barley
22	Sweet Potatos
23	Irish potatos
24	Yams
25	Cocoyams
26	Onions
27	Ginger

Vegetable Codes:

Co -de	Crop
86	Cabbage
87	Tomatoes
88	Spinach
89	Carrot
90	Chillies
91	Amaranths
92	Pumpkins
93	Cucumber
94	Egg Plant
95	Water Mellon
96	Cauliflower

Crop Codes Legumes Oil & fruit:

Code	Crop
31	Beans
32	Cowpeas
33	Green gram
35	Chick peas
36	Bambara nuts
37	Field peas
41	Sunflower
42	Simsim
43	Groundnut
47	Soyabeans
48	Caster seed

Instructions for calculating the area of mixed crops in a mixture.

A. If the mixed crop is mixed annual only enter the total area of the field in the REMAINING AREA UNDER TEMPORARY CROPS. and goto step 1 of these instructions.

B. If the mixed crop is mixed permanent and annual try to get the % occupied by the different crops and calculate the area of annual crops outlined in step 1. Otherwise use the number of trees method to calculate the area of annual crops in the mix, Step C

C. Number of trees method to calculate annual crop areas in a peranent-annual crop mix/

(i) list each of the permanent crops in column b and enter the ground area per acre for each permanent crop (from instructions for page 6) in column 'd'.

(ii) obtain the number of permanent trees in the mix from the respondent and enter the number in column 'e'.

(iii) calculate the area occupied by each crop by multiplying column 'd' with column 'e' and sum these to obtain the total area of permanent crops in the mix.

(iv) subtract the total area of permanent crops in the mix from the total area of mix and enter the result in the total area under temporary crops.

(v) proceed to step 1 to calculate the area under each temporary crop.

1. Enter the name of each annual crop in the mix & estimate the percentage of each crop.
2. Using the percentages for each crop calculate the area of each crop from the REMAINING AREA UNDER TEMPORARY CROPS.
3. After completing this exercise for all fields, sum the area of each crop in the mix plus any monocrops and enter totals in section 7.1 col 6.
4. Obtain an estimate of the planned area for each crop and enter it in column 5
5. If the area harvested is different to the area planted estimate the harvest area
6. Once the quantity harvested is obtained calculate the Yield (Metric tonnes/acre) & compare the figure with the norms given in the crop codes box. If it is excessively different check the area and the amount harvested.

7.2 ANNUAL CROP AND VEGETABLE PRODUCTION - LONG RAINY SEASON

7.2.1 Did the hh **plant** any crops during the **LONG RAINY** season? (Yes=1 No=2) ☐ *If the response is **'NO'** give main reason* ☐ *Then go to section 7.3*

Main Reason (Above) *No rains.....1 Rains came too late .....2 Does not plant annual crops .....3 No money 4 Illness/social problems ..5*

7.2.2 For each crop planted during 2002/03 **Long Rainy** season provide the following information

				Planting		Inputs							Harvesting & Storage					Marketing	
Crop Name	Crop Code	Land Clea -ring	Soil prep -arat -ion	Planned area (acres)	Actual Planted area (acres)	% impr -oved seed	Irrig -at -ion use	Fer -til -iser use	Her -bic -ide use	Fun -gic -ide use	Pest -tic -ide use	How harv ested	How thres hed	Area Harvested (acres)	main prod -uct code	Quantity harvested (Kgs)	Quantity Stored (Kgs)	Quantity sold (kgs)	mostly sold to
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
Total Planned/Planted												**Total area harvested**							

7.2.3 Main reason for difference between **Area Planned** and **Area Planted** ☐

7.2.4 Main reason for difference between **Area Planted** and **Area Harvested** ☐

Land Clearing (Col 3)
Mostly bush clearance ...1
Mostly hand slashing 2
Mostly tractor slashing ...3
Mostly burning 4
No land clearing 5

Soil preparation Method (Col 4)
Mostly tractor ploughing .1
Mostly Oxen ploughing ..2
Mostly Hand cultivation ..3

Improved seed Use (Col 7)
all Improved 1
approx 3/4 improved.....2
approx 1/2 improved.....3
approx 1/4 improved.....4
less than 1/4 improved ..5
No improved seed used.6

Irrigation Use (Col 8)
Used on all crop 1
Used on 3/4 crop 2
Used on 1/2 crop 3
Used on 1/4 of crop.....4
Used on less than 1/4 ...5
Not used 6

Fertiliser codes (Col 9)
Mostly Farm Yard Manure 1
Mostly Compost 2
Mostly Inorganic fertiliser ..3
No fertiliser applied 4

Agrochemical use codes (Col 10,11 &12)
Used on all crop 1
Used on 3/4 of crop 2
Used on half of crop.....3
Used on 1/4 of crop 4
Used on less than 1/4 5
Not used 6

Threshed/harvested (Col13 & 14)
By hand 1
By draft animal 2
By human powered tool.....3
By engine driven machine...4
Not applicable 9

Main product (Col 16)
Dry Grain.....1
Green cob/green pod.....2
Green leaves & Stem.....3
Straw, dry stems etc 4
Root, tuber, etc 5
Flower eg pyrethrum 6
Fruit/bunch.....7
Others 8
Not harvested yet 9

Mostly sold to (Col 20)
Neighbour.....01
Local market/trade store 02
Secondary Market..03
Tertiary Market 04
Marketing Coop 05
Farmer Association06
Largescale farm 07
Trader at Farm 08
Contract Partner ...09
Did not sell 10
Other 98

Reason for difference between area planned and planted (Q7.2.3)
Drought 1
Floods 2
Access to land preparation tools (Draft animal/tractors).3
Credit 4
Access to seeds/planting material.....5
Access to other inputs 6
Other 8
Not applicable 9

Reason for difference between area planted and harvested (Q7.2.4)
Drought 1
Rain/flood damage 2
Fire damage 3
Pest damage 4
Animal damage 5
Theft 6
Illness/social problems 7
Other 8
Not applicable.....9

Definitions and working page for page 5

Working table for the calculation of area occupied by annual crop in a mixture

Crop mixture 1	Crop Name	Total area of mix (acre)	Ground area/plant (ACRE)	Total no. of plants	Total ground area of plants (ACRES)
(a)	*(b)*	*(c)*	*(d)*	*(e)*	*(f)*
Permanent crop 1			0.00		0.
Permanent crop 2			0.00		0.
Permanent crop 3			0.00		0.
Permanent crop 4			0.00		0.
Total Area of permanent crops in mix					0.
REMAINING AREA UNDER TEMPORARY CROPS					.
				Temp crop%	Temp crop area
Permanent/Temporary crop name 1					.
Permanent/Temporary crop name 2					.
Permanent/Temporary crop name 3					.
Total area check	.		Temoporary crop total check		.

Crop mixture 2	Crop Name	Total area of mix (acre)	Ground area/plant (ACRE)	Total no. of plants	Total ground area of plants (ACRES)
(a)	*(b)*	*(c)*	*(d)*	*(e)*	*(f)*
Permanent crop 1			0.00		0.
Permanent crop 2			0.00		0.
Permanent crop 3			0.00		0.
Permanent crop 4			0.00		0.
Total Area of permanent crops in mix					0.
REMAINING AREA UNDER TEMPORARY CROPS					.
				Temp crop%	Temp crop area
Temporary/permanent crop name 1					.
Temporary/permanent crop name 2					.
Temporary/permanent crop name 3					.
Total area check	.		Temoporary crop total check		.

Land Clearing: Refers to removing trees/bush/grass prior to ploughing
Soil Preparation: Refers to the seedbed preparation (ploughing, harrowing, etc)
Planned Area: Area in **Acres** the household planned to plant before the season started
Actual Planted Area: The area in **Acres** the household was able to plant.
Area Harvested: The area in **Acres** that the household got most of its production from. This is the same as the area planted minus the area that was destroyed by major flood/pest/ animal/etc damage

Temporary/Annual Crop: Crops which are planted and harvested within a period of 12 months after which time the plants die. Most annual crops are planted and harvested on a seasonal basis.

Cash Crop Codes:

Code	Crop
50	Cotton
51	Tobacco
53	Pyrethrum
62	Jute
19	Seaweed

Crop Codes (Cereals /tubers/roots):

Code	Crop
11	Maize
12	Paddy
13	Sorghum
14	Bulrush Millet
15	Finger Millet
16	Wheat
17	Barley
22	Sweet Potatos
23	Irish potatos
24	Yams
25	Cocoyams
26	Onions
27	Ginger

Vegetable Codes:

Code	Crop
27	Ginger
86	Cabbage
87	Tomatoes
88	Spinach
89	Carrot
90	Chillies
91	Amaranths
92	Pumpkins
93	Cucumber
94	Egg Plant
95	Water Mellon
96	Cauliflower
20	Garlic

Crop Codes Legumes Oil & fruit:

Code	Crop
31	Beans
32	Cowpeas
33	Green gram
35	Chick peas
36	Bambara nuts
37	Field peas
41	Sunflower
42	Simsim
43	Groundnut
47	Soyabeans
48	Caster seed

Instructions for calculating the area of mixed crops in a mixture.

A. If the mixed crop is mixed annual only enter the total area of the field in the REMAINING AREA UNDER TEMPORARY CROPS. and goto step 1 of these instructions.

B. If the mixed crop is mixed permanent and annual try to get the % occupied by the different crops and calculate the area of annual crops outlined in step 1. Otherwise use the number of trees method to calculate the area of annual crops in the mix (Step C).

C. Number of trees method to calculate annual crop areas in a peranent-annual crop mix
- (i) list each of the permanent crops in column b and enter the ground area per acre for each permanent crop (from instructions for page 6) in column 'd'.
- (ii) obtain the number of permanent trees in the mix from the respondent and enter the number in column 'e'.
- (iii) calculate the area occupied by each crop by multiplying column 'd' with column 'e' and sum these to obtain the total area of permanent crops in the mix.
- (iv) subtract the total area of permanent crops in the mix from the total area of mix and enter the result in the total area under temporary crops.
- (v) proceed to step 1 to calculate the area under each temporary crop.

1. Enter the name of each annual crop in the mix & estimate the percentage of each crop.
2. Using the percentages for each crop calculate the area of each crop from the REMAINING AREA UNDER TEMPORARY CROPS.
3. After completing this exercise for all fields, sum the area of each crop in the mix plus any monocrops and enter totals in section 7.1 col 6.
4. Obtain an estimate of the planned area for each crop and enter it in column 5
5. If the area harvested is different to the area planted estimate the harvest area
6. Once the quantity harvested is obtained calculate the Yield (Metric tonnes/acre) & compare the figure with the norms given in the crop codes box. If it is excessively different check the area and the amount harvested.

7.3 PERMANENT/PERENNIAL CROPS AND FRUIT TREE PRODUCTION

7.3.1 Does your household have any **permanent/perennial crops or fruit trees** (Yes=1, No=2) [1]

7.3.2 For each of the **permanent crops and fruit trees** owned by the household provide the following informatior

		Size of production unit			Inputs					Harvesting & Storage						Marketing	
		MONOCROP	MIXED CROP														
Perm-anent Crop Name	Perman-ent crop/ fruit tree crop Code	Area of Plants/ trees/Bushes in MONO CROP (acres)	Area covered by Permanent Crop in a MIXED CROP (acre)	Number of permanent Plants/trees in a MIXED CROP	Irrig-at-ion use	Fert-ilis-er use	Herb-ic-ide use	Fun-gic-ide use	Pest-ici-de use	Area Harvested (acres)	Number of mature plants	main prod-uct code	Quantity harvested (kgs)	If no harvest give re-ason	Quantity Stored (Kgs)	Quantity sold (kgs)	mostly sold to
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
……																	
……																	
……																	
……																	
……																	
……																	
……																	
……																	
……																	

Irrigation Use (Col 6)
Used on all crop ……..1
Used on most crop ……..2
Used on half crop ……..3
Used on small amount of crop..4
Not used on crop ……..5

Fertiliser codes (Col 7)
Mostly Farm Yard Manure……1
Mostly Compost ……..2
Mostly Inorganic fertiliser …….3
No fertiliser applied ……..4

Agrochemical use codes (Col 8, 9 & 10)
Used on all crop ……1
Used on 3/4 of crop ……..2
Used on 1/2..of crop……..3
Used on 1/4 of crop ……..4
less than 1/4 of crop …….5
Not used ……..6

Main product (Col 13)
Dry Grain……..1
Green cob/green pod..2
Green leaves & Stem..3
Straw, dry stems etc ...4
Root, tuber, etc ……..5
Flower ……..6
Fruit/bunch……7
Other ……..8
Not harvested yet …..9

Main Reason for no harvest(Col 15)
Crop not harvested yet ……..1
Drought ……..2
Rain/flood damage ……..3
Fire damage ……..4
Pest damage ……..5
Animal damage ……..6
Theft ……..7
Other ……..8
Not applicable ……..9

Mostly sold to (Col 18)
Neighbour……..01
Local market/trade store…..02
Secondary Market ……..03
Tertiary Market ……..04
Marketing Coop ……05
Farmer Association ……..06
Largescale farm ……..07
Trader at farm ……08
Contract Partner ……..09
Did not sell ……..10
Other ……..98

Definitions and working page for page 6

Permanent Crop:
Permanent crops: are sown or planted once and then , they occupy the land for some years and neec not to be replanted after each annual harvest. Permanent crops are mainly trees (e.g., apples) but also bushes and shrubs (e.g., berries), palms (e.g., dates), vines (e.g., grapes), herbaceous stems (e.g., bananas) and stemless plants (e.g., pineapples).

Total number of plants:
This includes both mature harvestable plants and immature non harvestable plants.

Number of mature plants: This is the number of plants which bared harvest.

Instructions for Permanent crop mono stands and mixtures

A. For fields that are **monocrop permanent, ONLY** enter the **area of plants in column 3.**

B. For fields that are **mixed permanent** calculate the area of each crop based on the **% occupied by each crop method** (NOT using the number of trees method) and **ONLY** enter the area in **column 4**

C. For fields that are **mixed permanent/annual** either:
- **ONLY** enter the **area** in **column 4** if the area of the permanent crop was based on the **% occupied by each crop method**

OR

- **ONLY** enter the **number** of trees in **column 5** if the number of permanent crop plants was provided

Permanent crops (oils):

Code	Crop	Ground area/plant
44	Palm Oil	0.00049
45	Coconut	0.00037
46	Cashewnut	0.00062

Permanent (Cash crops)

Code	Crop	Ground area/plant
53	Sisal	0.00012
54	Coffee	0.00049
55	Tea	0.00037
56	Cocoa	0.00049
57	Rubber	0.00099
58	Wattle	0.00099
59	Kapok	0.00124
60	Sugar Cane	0.00012
61	Cardamom	0.00049
63	Tamarin	0.00099
64	Cinamon	0.00124
65	Nutmeg	0.00099
66	Clove	0.00074
18	Black Pepper	0.00037
34	Pigeon pea	0.00025
21	Cassava	0.00019
75	Pineapple	0.00006

Permanent Crops:

Code	Crop	Ground area/plant
70	Passion Fruit	0.00074
71	Banana	0.00037
72	Avocado	0.00099
73	Mango	0.00099
74	Papaw	0.00037
76	Orange	0.00074
77	Grapefruit	0.00074
78	Grapes	0.00012
79	Mandarin	0.00074
80	Guava	0.00074
81	Plums	0.00074
82	Apples	0.00074
83	Pears	0.00074
84	Peaches	0.00074
85	Lime/lemon	0.00074
68	Pomelo	0.00099
69	Jack fruit	0.00074
97	Durian	0.00074
98	Bilimbi	0.00074
99	Rambutan	0.00074
67	Bread fruit	0.00099
38	Malay apple	0.00074
39	Star fruit	0.00074

Working Area/calculation space

7.4 Main use of **Secondary Products**

7.5 Did you use **Secondary Products** from any of your crops during the 2002/03 year. (Yes=1, No=2) ☐

*If the response is **'NO'** go to section 8.0*

7.6 List the **main crops** with **secondary products** and provide the following details:

S/N	Crop name	Crop Code	Secondary product	Prod code	Used for	Unit	Total no of Units	No of units sold	Total value of sold units (Tsh.)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
7.6.1	……	☐☐	……	☐	☐	☐	☐☐☐☐	☐☐☐☐	☐☐☐☐☐
7.6.2	……	☐☐	……	☐	☐	☐	☐☐☐☐	☐☐☐☐	☐☐☐☐☐
7.6.3	……	☐☐	……	☐	☐	☐	☐☐☐☐	☐☐☐☐	☐☐☐☐☐
7.6.4	……	☐☐	……	☐	☐	☐	☐☐☐☐	☐☐☐☐	☐☐☐☐☐
7.6.5	……	☐☐	……	☐	☐	☐	☐☐☐☐	☐☐☐☐	☐☐☐☐☐
7.6.6	……	☐☐	……	☐	☐	☐	☐☐☐☐	☐☐☐☐	☐☐☐☐☐

Main product (Col 4)
Green leaves & Stem..1 Flower …4
Straw, dry stems etc …2 Fruit ……5
Root, tuber, etc ……..3 Other …..8

Mainly used for (Col 5)
Feeding to livestock ..1 Consumed by hh ……4
Building material ……2 Sold ……5
Fuel for cooking ….. 3 Did not use……6

Unit (Col 6)
Loose Bundle/bunch ……1 kg ……5
Compressed bunch/Bail….2 Stems ……6
Tin …….. 3 Sack ……7
Bucket ……4 Other ……8

8.0 AGROPROCESSING AND BY-PRODUCTS

8.1 Did the household **process** any of the products harvested on the farm during 2002/03 (Yes=1, No=2) ☐

*If the response is **'NO'** go to section 9.0*

8.2 List the **main crops processed** and provide the following details:

S/N	Crop name	Crop Code	Proc-ess-ed	Main Prod-uct code	Used for	Unit	Quantity of main product	Quantity Sold	Whe-re sold	By-Prod-uct code	Used for	Unit	Quantity of by-product	Quan-tity Sold
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
8.2.1	…….	☐☐	☐	☐	☐	☐	☐☐☐☐	☐☐☐☐	☐	☐	☐	☐	☐☐☐☐	☐☐☐
8.2.2	…….	☐☐	☐	☐	☐	☐	☐☐☐☐	☐☐☐☐	☐	☐	☐	☐	☐☐☐☐	☐☐☐
8.2.3	…….	☐☐	☐	☐	☐	☐	☐☐☐☐	☐☐☐☐	☐	☐	☐	☐	☐☐☐☐	☐☐☐
8.2.4	…….	☐☐	☐	☐	☐	☐	☐☐☐☐	☐☐☐☐	☐	☐	☐	☐	☐☐☐☐	☐☐☐
8.2.5	…….	☐☐	☐	☐	☐	☐	☐☐☐☐	☐☐☐☐	☐	☐	☐	☐	☐☐☐☐	☐☐☐
8.2.6	…….	☐☐	☐	☐	☐	☐	☐☐☐☐	☐☐☐☐	☐	☐	☐	☐	☐☐☐☐	☐☐☐

Processed (Col 3)
On farm by hand…..……1
On farm by machine…….2
By neighbours machine...3
By farmers association …4
By Cooperative union …..5
By trader ……...6
On Large scale farm ……7
By factory ……..……9
Other 8

Main product code (Col 4)
Flour/meal……..1
Grain……2
Oil .. ……3
Juice……4
Fiber……..5
Pulp ……6
Sheet ……..……7
Other ……8

Used for (Col 5 & 11)
Household/human consumption ..1
Fuel for cooking ……..2
Sale ……..……..3
Animal consumption……..4
Did not use ……5
Other ……..……..8

Unit (Col 6 & 12)
Loose bundle/bunch ……1
Compressed bunch/bail….2
Tin ……..……..3
Bucket ……..4
kg ……..……..5
litre ……..6
Other ……..8

Where sold (Col 9)
Neighbour……..…1
Local market/trade store ……..2
Secondary Market …..3
Marketing Coop ……..4
Farmer Association …..5
Largescale farm ……6
Trader at farm ……..7
Did not sell ……..9
Other ……..……..8

By-product code (Col 10)
Bran ……...01
Cake ……...02
Husk ……...03
Juice ……...04
Fiber ……...05
Pulp ……...06
Oil ……...07
Shell ……...08
Other ……..……98

Definition and working page for page 7

Temporary/annual crop codes for section 7.4 col 2

Crop Code	Crop Name	Secondary Product Question 7.4	Agroprocessing & bi-products Main Products (Section 8.0)	Bi-product (Sect 8.0) 1	2
11	Maize	Stems/straw	Flour	Bran	
12	Paddy	Stems/straw	polished rice grain	husk	
13	Sorghum	Stems/straw	flour		
14	Bulrush Millet	Stems/straw	flour		
15	Finger Millet	Stems/straw	flour		
16	Wheat	Stems/straw	flour	Bran	
17	Barley	Stems/straw	flour	Bran	
21	Cassava	Leaves/stems	flour		
22	Sweet Potatoes	Leaves			
23	Irish potatoes				
24	Yams				
25	Cocoyams				
26	Onions				
27	Ginger				
31	Beans	straw/stems			
32	Cowpeas	straw			
33	Green gram	straw			
34	Pigeon peas	stems			
35	Chick peas	straw			
36	Bambara nuts	straw/stems	oil	cake	
41	Sunflower	Stems	oil	Cake	
42	Simsim	straw	oil	Cake	
43	Groundnut	straw	oil	Cake	
47	Soya beans	straw	oil	Cake	
48	Caster seed	straw	oil	Cake	
75	Pineapple		Juice		
50	Cotton	straw	fibre/seed	oil	cake
51	Tobacco				
53	Pyrethrum	straw	insecticide		
62	Jute		fibre		
86	Cabbage				
87	Tomatoes				
88	Spinach				
89	Carrot				
90	Chillies		dried powder		
91	Amaranths				
92	Pumpkins	leaves			
93	Cucumber				
94	Egg Plant				
95	Water Mellon				
96	Cauliflower				
44	Oil Palm	leaves	oil outer	oil inner	cake
45	Coconut	leaves/husk	milk		
46	Cashewnut	Fruit	fruit juice	shell liquid	
52	Sisal	stems	fibre	oil	
54	Coffee	stems	beans	husks	
55	Tea	stems			
56	Cocoa	stems	cocoa	cocoa butter	
57	Rubber	stems			
58	Wattle	stems			
59	Kapok	stems			
60	Sugar Cane		sugar/juice	molasses	ethanol
61	Cardamom				
71	Banana	leaves/stems	juice		
72	Avocado	stems			
73	Mango	stems	Juice		
74	Paw paw		Juice		
76	Orange	stems	Juice		
77	Grape fruit	stems	Juice		
78	Grapes	stems	Juice		
79	Mandarin	stems	Juice		
80	Guava	stems			
81	Plums	stems			
82	Apples	stems			
83	Pears	stems			
84	Pitches	stems			
85	Lime/Lemon	stems	juice		

General Definition for Section 7.4

Secondary Products: Second most important product from a crop. Eg a household may consider the grain from maize as the primary product and the stems/straw as the secondary product.

Note: Secondary products are NOT the same as bi-products. By-products are the result of a processing activity and are dealt with in section 8.0.

Procedures for Questions

Q 7.6 Details of Secondary Products:

1. From the list of crops in Q 7.1.2, 7.2.2 & 7.3.2, ask the respondent if the hh used any secondary products. List the crop names and codes in column 1 and 2 for those crops that the hh used secondary products.
2. For the listed crops give details of the secondary products used.
3. If no units were sold, enter "0" in columns 8 & 9.

Q 8.0 Agroprocessing & bi-products:

1. From the list of crops in Q 7.1.2, 7.2.2 & 7.3.2, ask the respondant if the hh processed any of these crops during the 2002/03 agriculture year. List the crop names and codes in column 1 and 2 for those crops that were processed by the hh.
2. For the listed crops give details of the secondary crops used.
3. If no main product or bi-product was sold enter "0" in columns 8 & 14.
4. If no bi-product was produced enter "0" in columns 10, 11, 12, 13 &14.

Question Specific Definitions

Agroprocessing and bi-products (Q 8.2) (Note: Agroprocessing refers to the processing of crops for hh utilisation and for sale)

Main Product (Col 5):
Main Product after processing. Eg for Paddy it may be the polished grain. For Maize it may be flour.
Bi-Product code (Col 11): is the secondary residue after processing, eg for rice it may be the husk. for maize it may be the bran.

Mainly used for (Col 5 & 11):
- **Consumed by household** can mean eaten or utilised in another way (eg by animals) by the hh.

9.0 CROP STORAGE

9.1 Did the household **store** any crops during the 2002/03 agriculture year? (Yes =1, No=2) ☐

*If the response is **'NO'** go to section 10.0*

9.2 For **each** of the listed crops provide the following details on **storage**

S/N	Crop Name	Stored Y=1 No=2	Current Quantity Stored (kg)	Method of Storage	Normal duration of storage	Main purpose	Estimate Storage loss
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
9.2.1	Maize	☐	☐☐☐☐	☐	☐	☐	☐
9.2.2	Paddy	☐	☐☐☐☐	☐	☐	☐	☐
9.2.3	Sorghum/Millet	☐	☐☐☐☐	☐	☐	☐	☐
9.2.4	Beans, peas, etc	☐	☐☐☐☐	☐	☐	☐	☐
9.2.5	Wheat	☐	☐☐☐☐	☐	☐	☐	☐
9.2.6	Coffee	☐	☐☐☐☐	☐	☐	☐	☐
9.2.7	Cashewnut	☐	☐☐☐☐	☐	☐	☐	☐
9.2.8	Tobacco	☐	☐☐☐☐	☐	☐	☐	☐
9.2.9	Cotton	☐	☐☐☐☐	☐	☐	☐	☐
9.2.10	Groundnuts/bambara	☐	☐☐☐☐	☐	☐	☐	☐

Main method of Storage (Col 4)
In locally made traditional structure..1
In Improved locally made structure .2
In modern store ……..3
In Sacks/open drum……..4
In airtight drum ……5
Unprotected pile ……6
Other ……8

Duration of Storage (Col 5)
Less than 3 months ……1
Between 3 and 6 months ……2
Over 6 months ……3

Main purpose of storage (Col 6)
Food for the household ……1
To sell for higher price ……2
seed for planting……3
Other ……8

Storage loss (Col 67)
Little or no loss ……1
Up to 1/4 loss ……2
Between 1/4and 1/2 loss ..3
Over 1/2 loss ……4

10.0 MARKETING

10.1 Did the household **sell any crops** from the 2002/03 agriculture year? (Yes=1, No=2) ☐

(If the response is 'YES' or 'NO' go to section 10.2)

10.2 For **each of the following crops** what was the main **marketing problem** faced by the household during 02/03

	Crop	Main problem		Crop	Main problem
	(1)	*(2)*		*(1)*	*(2)*
10.2.1	Maize	☐☐	10.2.9	Vegetables	☐☐
10.2.2	Rice	☐☐	10.2.10	Tree Fruits	☐☐
10.2.3	Sorghum/millet	☐☐	10.2.11	Cashewnut	☐☐
10.2.4	Wheat	☐☐	10.2.12	Cotton	☐☐
10.2.5	Beans, peas etc	☐☐	10.2.13	Tobacco	☐☐
10.2.6	Cassava	☐☐	10.2.14	Groundnuts/bamabara	☐☐
10.2.7	Bananas	☐☐	10.2.15	Trees/timber/poles	☐☐
10.2.8	Coffee	☐☐	10.2.16	Fish	☐☐

10.3 From the list of marketing problems below, for all produce rank the five most important problems

	1	2
10.3.1	Biggest problem	☐☐
10.3.2	2nd problem	☐☐
10.3.3	3rd problem	☐☐
10.3.4	4th problem	☐☐
10.3.5	5th problem	☐☐

Market problems (Q10.2 & 10.3 (Col 2))
Open market price too low ……01 Market too far ……05 Government Regulatory board problems...09
No transport ……02 Farmer association problems ……06 Lack of market Information ……10
Transport cost too high ……03 Cooperative Problems ……07 Other (specify) ……98
No buyer ……04 Trade Union problems ……08 Not Applicable ……99

10.4 What was the main **reason for not selling** crops during 2002/03 year …… ☐

Reason for not selling crops (Q10.4)
Price too low ……1 Farmer association problems ……4 Government regulatory board problems ….7
Production insufficient to sell……2 Cooperative Problems……5 Other (specify) ……8
Market too far ……3 Trade Union problems ……6 Not Applicable ……9

Definition and working page for page 8

Question Specific definitions (Section 9.0)
Crop Storage, Section 9

Method of Storage (column 4)

- **Locally made structure:** The structures that have been inherited from their fore fathers

- **Improved locally made structure:** Traditional structures that have been improved using modern technology.

- **Normal duration of storage:** Often there are stored stocks from different seasons and different years. The normal duration refers to the number of months that the most of the crop is stored for.

Marketing problems Q 10.2 and 10.3 col 2:

- **Farmer Association:** A village or community based group of farmers who have formed an organisation to purchase inputs/sell/store their products in order to achieve a better price for their products.

- **Cooperative Union:** Large inter-village /community organisation set up on a district/regional or national basis for providing inputs, marketing and storing farmers products.

- **Government Regulatory board:** Government control body for setting prices and controlling quality of certain agriculture commodities.

Procedures for Questions

Q 9.2 Details of Crop Storage:

1. For the crops listed indicate if the household stored any during 2002/03 in column 2.

2. Check that the crops correspond to the crop lists in Q 7.1.2, 7.2.2 & 7.3.2. If there is a difference inquire on the reason why. It is possible that a crop was missed during the enumeration of these questions and if so make necessary amendments

3. For the listed crops give details of storage.

Q 10.2 Details on Crop Marketing:

1. For each of the crops listed indicate the main problems in marketing during 2002/03 in column 2.

2. Check if the crops correspond to the crop lists list in Q 7.1.2, 7.2.2 & 7.3.2. If there is a difference inquire on the reason why. It is possible that a crop was missed during the enumeration of these questions and if so make necessary amendments

Q 10.3 Ranking of market problems:

Rank in order of importance the 5 most important marketing problems from the codes in the Market Problems code box.

Working Area/calculation space

11.0 ON-FARM INVESTMENT

11.1 Does the household practice **irrigation** (Yes=1, No=2) ☐

If the response is 'NO' go to section 11.3

S/N	Source of Irrigation water	Method of obtaining water	Method of applic -ation	Irrigatable area (acres)	Area of irrig ated land this year (acres)
	(1)	(2)	(3)	(4)	(5)
11.1.1	☐	☐	☐	☐☐☐.☐	☐☐☐.☐

Source of irrigation water (Col 1)
River .....1 Borehole 5
Lake .....2 Canal 6
Dam .....3 Tap Water 7
Well 4

Method of obtaining water (Col 2)
Gravity .....1 motor pump 4
Hand bucket .....2 Other 8
Hand pump 3

Method of application (Col 3)
Flood 1
Sprinkler 2
water hose.....3
Bucket/watering can 4

11.2 Does the household have any **erosion control/water harvesting facilities** on their land (Yes=1, No=2) ☐

*If the response is **'NO'** go to section 12.0*

S/N	Type of erosion control/ water harvesting structure	Number of structures	Year of con- struction	S/N	Type of erosion control/ water harvesting structure	Number of structures	Year of con- struction
	(1)	(2)	(3)		(1)	(2)	(3)
11.2.1	Terraces	☐☐	☐☐	11.2.5	Tree belts	☐☐	☐☐
11.2.2	Erosion control bunds	☐☐	☐☐	11.2.6	Water harvesting bunds	☐☐	☐☐
11.2.3	Gabions/Sandbags	☐☐	☐☐	11.2.7	Drainage ditches	☐☐	☐☐
11.2.4	Vetiver Grass	☐☐	☐☐	11.2.8	Dam	☐☐	☐☐

12.0 ACCESS TO FARM INPUTS AND IMPLEMENTS

12.1 Give details of **farm inputs** used during the 2002/03 agriculture year

S/N	Input name	Used Yes=1 No=2	Source	Distance to Source	Source of Fin -ance	Reason for not using	Quality of Input	Plan to use next year Yes =1,No=2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
12.1.1	Chemical Fertiliser	☐	☐☐	☐	☐	☐	☐	☐
12.1.2	Farm Yard Manure	☐	☐☐	☐	☐	☐	☐	☐
12.1.3	Compost	☐	☐☐	☐	☐	☐	☐	☐
12.1.4	Pesticide/fungicide	☐	☐☐	☐	☐	☐	☐	☐
12.1.5	Herbicide	☐	☐☐	☐	☐	☐	☐	☐
12.1.6	Improved Seeds	☐	☐☐	☐	☐	☐	☐	☐
12.1.7	Other	☐	☐☐	☐	☐	☐	☐	☐

Source (Col 3)
Cooperative 01
Local farmers group 02
Local market/Trade Store ...03
Secondary Market 04
Development project 05
Crop buyers 06
Large scale farm 07
Locally produced by hh 08
Neighbour 09
Other (specify) 98
Not applicable 99

Distance to source (Col 4)
Less than 1 Km 1
Between 1 and 3km 2
between 3 and 10 km.. ...3
Between 10 and 20 km ...4
20km and above 5
not applicable 9

Source of finance (Col 5)
Sale of farm products .1
Other income generating activities 2
Remittances 3
Bank Loan/Credit.....4
produced on farm 5
Other 8
Not applicable 9

Reason for not using (Col 6)
Not available 1
Price too high 2
No money to buy 3
Too much labour required..4
Do not know how to use.....5
Input is of no use 6
Locally produced by hh 7
Other 8
Not applicable 9

Quality of input (Col 7)
Excellent 1
Good 2
Average 3
Poor 4
Does not work .5
not applicable...9

Definition and working page for page 9

Overview of Investment activities (Section 11.0)

Investment activities:

Investment activities refer to medium to long term farm development structures and projects. This can be Irrigation structures, erosion and water harvesting structures or other permanent or semi-permanent investment made on the land that the household owns.

Question Specific Definitions (Q 11.1)

Source of irrigation Water (Col 1): The main source of water from which water is obtained for irrigation.

Method of obtaining water (Col 2): The mechanism by which the water is extracted from the source,

Application Method (Col 3): How the water is applied on the field.
- Flood - is the application of water down the slope of the land by means of gravity
- Sprinkler - is the application of pressurised water through pipes. The water passes through a device which sprays the water onto the crop from above.

Irrigatable Area (Col 4): The area the irrigation system is designed to cover in acres.

Area of irrigated land this year (Col 5): Area of land under irrigation during the 2002/03 agric year. This is the physical area and NOT the cumulative area of 2 or more croppings.

Q 11.1 Irrigation

1. If the hh practices irrigation give details on the main source, main method of obtaining and applying water.

2. Cross check column 8, Q 7.1.2, 7.2.2 & 7.3.2 to check if irrigation was used on any crops.

Question Specific Definitions (Q 11.3)

Erosion control/water harvesting structure (Col 1)

Terraces: Are structures constructed on the side of a hill to provide a level ground to plant crops. They are often used to trap water for paddy/lowland rice production.

Erosion Control Bunds: These are banks of earth/stones built perpendicular to the slope to slow down water and prevent erosion. They are different to Terraces in that the soil behind the banks are not level.

Gabions: A gabion is a wire mesh box filled with rocks/stones and used to control or prevent gully erosion

Sandbags Used to prevent or control gully erosion

Tree belts/Wind breaks: A band of trees planted perpendicular to the prevailing wind whose main purpose is to slow down wind speed

Water Harvesting bunds: A bank of earth constructed horizontal to the slope of the land to trap water. They are usually banana shaped.

Dam: A bank of earth/material which traps river water to form a catchment of water behind it.

Q 11.3 erosion control/water harvesting

1. Number of structures refers to the number of working/maintained structures and does not include derelict or irreparable structures.

2. Year of construction refers to the year that the structures were first constructed. It is not the year that the structures were last maintained.

Farm Inputs (Q 12.1.1 to 12.1.7)

Farm yard Manure: An organic fertiliser made on farm composed of animal dung.

Compost: An organic fertiliser made on farm from decomposed plant material

Pesticide: Chemical used to either protect the plant from or kill insects, birds, molluscs, mites, etc attacking the plant

Fungicide: is a chemical that s used to protect the plant from or control a fungal disease.

Herbicide: A chemical used to control weeds.

Q 12.0 Farm Inputs

1. Indicate in column 1 whether each of the inputs are used or not.

2. Complete cols 3, 4, 6, and 7 for inputs that are used and place **'9'** in column 5 (for not applicable).

3. Complete cols 5 & 7 for inputs not used.

NOTE: Cross check column 6, 7, 8 & 9 , Q 7.1.2, 7.2.2 & 7.3.2 to check what inputs were used.

12.2 Give details of **farm implements and assets** used and owned by the household during 2002/03 agriculture year

S/N	Equipment/Asset Name	Number Owned	Number rent-ed	Used in 2002/03 Yes 1,No=2	Source of Equip-ment	Source of Fin-ance	Reason for not using	Plan to use next year Yes=1,No=2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
12.2.1	Hand Hoe							
12.2.2	Hand Powered Sprayer							
12.2.3	Oxen							
12.2.4	Ox Plough							
12.2.5	Ox Seed Planter							
12.2.6	Ox Cart							
12.2.7	Tractor							
12.2.8	Tractor Plough							
12.2.9	Tractor Harrow							
12.2.10	Shellers/threshers							

Source of equipment (Col 5)
Neighbour..... .....1 Development project 5
Cooperative .....2 Government 6
Local farmers association.....3 Large scale farm 7
market/Trade store .....4 Other (specify) 8

Source of finance (Col 6)
Sale of farm products 1
Other income generating activities .2
Remittances 3
Bank Loan 4
Credit 5
Other 8
Not applicable 9

Reason for not using (Col 7)
Not available 1
Price too high 2
No money to buy/rent.....3
Too much labour required....4
Equipment/Asset of no use ...5
Other 8
Not applicable 9

13.0 USE OF CREDIT FOR AGRICULTURE PURPOSES

13.1 During the year 2002/03 did any of the hh members **borrow money** for **agriculture** (Yes = 1, No = 2) ☐
(if the response is 'NO' go to section 13.3)

13.2 Give details of the **credit** obtained during the agricultural year **2002/03**
(if the credit was provided in kind , for example by the provision of inputs, then estimate the value in 13.2.9)

		Source "a"	Source "b"	Source "c"
	use codes to indicate source			
	Provided to Male = 1, Female 2			
		tick the boxes below to indicate the use of the credit	tick the boxes below to indicate the use of the credit	tick the boxes below to indicate the use of credit
13.2.1	Labour			
13.2.2	Seeds			
13.2.3	Fertilisers			
13.2.4	Agrochemicals			
13.2.5	Tools/equipment			
13.2.6	Irrigation structures			
13.2.7	Livestock			
13.2.8	Other …….			
13.2.9	**Value of Credit (Tsh.)**			
13.2.10	**Value of repayment (Tsh.)**			
13.2.11	**Period of repayment (months)**			

Source of credit (Q 13.2-a, b and c)) *Family, friend or relative....1 Commercial Bank.....2 Cooperative .....3 Savings & credit Soc 4*
Trader/trade store .....5 Private individual .....6 Religious Organisation/NGO/Project ...7 Other (Specify).....8

13.3 If the answer to question 13.1 above is 'NO' what is the reason for not using Credit? ☐

Reason for not using credit (Q13.3) *Not needed ...1 Not available ...2 Did not want to go into debt.....3 Interest rate/cost too high.....4*
Did not know how to get credit....5 Difficult bureaucratic procedure ...6 Credit granted too late ...7 Other (specify) ...8 Dont know about credit 9

Definition and working page for page 10

Question Specific Definitions (Q 12.2)

Farm Implements (Col 1):

Hand powered Sprayer: Knapsack or bicycle pump sprayer

Reason for not using (Col 6): Be careful about using "too much labour required" as this code generally refers to hand hoes only. The codes for this should **"NOT"** be read out to the farmer as a prompt.

Note: If remittance is given as the main source of finance check for a response to remittances in **question 2.2.5**

Question Specific Definitions (Q 13.0)

Section 13.0 Credit for Agriculture Purposes

Credit is defined as finance in the form of cash or in-kind contributions (eg direct provision of inputs, machinery, livestock or other material) for the purpose of crop and livestock production whereby the value of the credit must be paid back to the borrower. The value of repayment may either be with interest or interest free.

Credit may be paid back in the form of cash or agriculture produce.

Section 13.0 Credit for Agriculture Purposes

Value of credit: is the amount in cash received from the borrower. If the credit was paid in-kind, estimate the value of this.

Value of repayment: This is the amount to be repaid to the borrower and includes the principal amount (value of credit) plus any interest repayment. If the credit is paid back in agriculture produce, then the cash value of this must be estimated.

Period of repayment: This is the time **in months** the borrower has given for full repayment.

Procedures for questions

Q 12.0 Farm Inputs

1. Indicate in column 2 and 3 whether each of the implements were used or not.

2. Complete cols 4, 5, 6, and 8 for inputs that are used and place **'9'** in column 7 (for not applicable).

3. Complete cols 7 & 8 for inputs not used.

Section 13.2 Source of agriculture credit

If the farmer obtained credit from more than one source then use the columns "a" , "b" and "c" for the different sources of credit. Start with the main source of credit in column "a".

NOTE: Check for use of inputs in column 7, 8 & 9 of questions 7.1.2, 7.2.2 & 7.3.2.

Working Area/calculation space

14.0 TREE FARMING/AGROFORESTRY

14.1 Did your household have any **Planted Trees** on your land during 2002/03 agric year? (Yes =1, No=2) ☐

*If the response is **'NO'** go to section 14.3*

14.2 Give details of the **planted trees** you have **on your land**.

S/N	Tree Code	Number of trees	Where planted	Main Use	Second Use	Number of Plank trees Sold	Number of Pole trees Sold	hh utilised Number of Poles	hh utilised Number of Timber	Total Value (Tsh.)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
14.2.1	☐☐	☐☐☐☐	☐	☐	☐	☐☐☐	☐☐☐	☐☐	☐☐	☐☐☐☐☐☐
14.2.2	☐☐	☐☐☐☐	☐	☐	☐	☐☐☐	☐☐☐	☐☐	☐☐	☐☐☐☐☐☐
14.2.3	☐☐	☐☐☐☐	☐	☐	☐	☐☐☐	☐☐☐	☐☐	☐☐	☐☐☐☐☐☐
14.2.4	☐☐	☐☐☐☐	☐	☐	☐	☐☐☐	☐☐☐	☐☐	☐☐	☐☐☐☐☐☐

Where Planted (Col 3)
Mostly on field/plot boundaries.1
Mostly scattered in fields 2
Mostly in plantation/coppice ...3

Use (Col 4 & 5)
Planks/Timber.....1 *Shade 5*
Poles .....2 *Medicinal.....6*
Charcoal .....3 *Other 8*
Fuel wood 4

14.3 Does your village have a **Community tree planting scheme** (Yes=1, No=2) ☐

*If the response is **'NO'** go to section 15.0*

14.4 Household involvement in **community tree planting scheme**

S/N	Distance to community planted forest (Km)	hh Involvement	Main purpose	Main use during 2002/03
	(1)	(2)	(3)	(4)
	☐☐.☐	☐	☐	☐

HH involvement (Col 2)
Only planting 1
Only protection and thinning.....2
Only cutting 3
Most or all activities.....4

Main Purpose (Col 3)
Erosion control.....1 *Environment rehaiblitation ...4*
Production of poles .....2 *Restoration of wildlife 5*
production of firewood..3 *Other (specify) 8*

Main Use during 02/03(Col 4)
Poles .....1 *Not ready to use 5*
Timber logs .....2 *Not allowed to use ...6*
Charcoal ....3 *Other (specify) 8*
Firewood 4

15.0 CROP EXTENSION SERVICES

15.1 Did your household receive **extension advice** for **crop production** during 2002/03 (Yes=1,No=2) ☐

*If the response is **'NO'** go to section 16.0*

S/N	Extension Provider	Source of extension (Y=1,N=2)	If you pay for extension, what is the cost/yr	Contact farmer /group member (Yes=1,No=2)	No. of visits by extension agency per year	No. of message adopted in the last 3 years	Quality of Service
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
15.1.1	Government extension	☐	☐☐☐☐☐	☐	☐☐	☐☐	☐
15.1.2	NGO/development project	☐	☐☐☐☐☐	☐	☐☐	☐☐	☐
15.1.3	Cooperative	☐	☐☐☐☐☐	☐	☐☐	☐☐	☐
15.1.4	Large Scale farmer	☐	☐☐☐☐☐	☐	☐☐	☐☐	☐
15.1.5	Other.....	☐	☐☐☐☐☐	☐	☐☐	☐☐	☐

Quality of service (Col 7)
Very good .....1 good .....2 Average..... ...3 Poor.....4 No Good 5

Definition and working page for page 11

General Definitions for section 14.0

Tree Farming/Agroforestry

This section refers to trees **planted** for wood (firewood, poles, planks, carving, charcoal, medicinal, etc, but **NOT** fruit trees). It does **not** include naturally growing trees on the farm (unless special care has been given to promote their establishment) or trees growing naturally on the communal areas.

Tree farming is the planting of trees on an area of land for which the main purpose is the production and regeneration of trees for wood on that land.

Agroforestry: is the planting of trees on land for the purpose of complementing other farming activities like crop and animal production. For the purpose of this questionnaire Agroforestry trees are trees planted on boundaries and scattered throughout fields. The main productive unit in this case is Crops and Livestock.

Section 14.2 Details of planted trees

1. Enter the tree codes of the main species grown by the hh

2. If no planks or poles are sold enter a "0" in columns 8, & 9.

3. Total value includes both value of hh utilised trees and sold trees.

4. If no trees were utilised by the hh or sold enter "0" in column 10

Question Specific Definitions

Tree farming (Section 14.0)

Pole trees (Col 6): These are young trees which have a maximum diameter of 6 inches at the bottom and are often used for house construction. They are often the thinning harvest after 3 - 5 years.

Plank trees (Col 7): Trees for sawing into timber planks.

Animal shade: Trees grown for the purpose of providing shade to animals.

Community tree planting scheme (Section 14.3)

Community Forest: A forest planted on the communal land which is planted, replanted or spot planted by the members of the village.

Crop Extension Services (Section 15.1)

Contact Farmer: A farmer who is used by the extension agent as a focal point to demonstrate new interventions. The contact farmer then passes on the message to other farmers

Group member: Member of a group under which the contact farmer leads

Adoption: This is the uptake of an intervention for 2 or more years

Section 15.1 Crop Extension Services

1. For each of the extension providers ask if the hh received extension during 2002/2003 agriculture year and indicate in column 2.

2. For each of the providers complete the rest of the columns

Tree Name Guide Col 1

Code	Local Name	Botanical Name	English Name
01		Senna siamea	Cassod tree
02	Msongoma	Gravellia	Silver oak
03	Mbarika	Afzelia quanzensis	Pod mahogony
04	Mkeshia	Acacia spp	Umbrella thorn
05	Msindano	Pinus spp	Pine
06	Mkaratusi	Eucalyptus spp	Red River Gum
07		Cyprus spp	Cyprus tree
08	Mtondoo	Calophylum inophyllum	
09	Mvule	Melicia excelsa	Iroko
10	Mvinji	Casurina equisetfilia	Whistling oak
11	Msaji	Tectona grandis	Teak
12	Mkungu wa kienyeji	Terminalia catapa	Sea almond
13	Mkungu india	Terminilia ivorensis	Black afara
14	Muhumula	Maesopsis berchemoides	
15			

Code	Local Name	Botanical Name	English Name
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

15.2 Crop Extension Messages

S/N	Extension Message	Received Advice Yes=1 No=2	Adopted Yes=1 No=2	Source of Crop Extension
	(1)	(2)	(3)	(4)
15.2.1	Spacing			
15.2.2	Use of agrochemicals			
15.2.3	Erosion control			
15.2.4	Organic fertiliser use			
15.2.5	Inorganic fertiliser use			
15.2.6	Use of improved seed			
15.2.7	Mechanisation/LST			
15.2.8	Irrigation Technology			
15.2.9	Crop Storage			
15.2.10	Vermin control			
15.2.11	Agro-processing			
15.2.12	Agro-forestry			
15.2.13	Bee Keeping			
15.2.14	Fish Farming			
15.2.15	Other			

Source of extension (Col 4)

Government .....1 NGO/Dev project ..2 Cooperative ...3 Large scale farmer .....4 Other (Specify) ...8 Not applicable 9

16.0 LIVELIHOOD CONSTRAINTS

From the list of constraints on the right select:

16.1	the 5 most important problems		16.2	the 5 least important problems	
	Order of most importance	Constraint		Order of least importance	Constraint
	(1)	(2)		(1)	(2)
16.1.1	most important		16.2.1	Least important	
16.1.2	2nd most important		16.2.2	2nd least important	
16.1.3	3rd most important		16.2.3	3rd least important	
16.1.4	4th most important		16.2.4	4th least important	
16.1.5	5th most important		16.2.5	5th least important	

List of constraints

1. Access to Land
2. Ownership of Land
3. Poor farm Inputs
4. Soil Fertility
5. Access to improved seed
6. Irrigation facilities
7. Access to chemical Inputs
8. Cost of Inputs
9. Extension Services
10. Access to forest resources
11. Hunting and Gathering
12. Access to potable water
13. Access to credit
14. Harvesting
15. Threshing
16. Storage
17. Processing
18. Market Information
19. Transport costs
20. Distruction by animals
21. Stealing
22. Pests and Diseases
23. Local government taxation
24. Access to off Farm Income

17.0 ANIMAL CONTRIBUTION TO CROP PRODUCTION

17.1 Did you use Draft animals to cultivate your land during 02/03 (Yes=1, No=2) ☐

(If no, go to question 17.2)

S/N	Type of Draft	Number owned	Number used	Area cultivated (acres)
	(1)	(2)	(3)	(4)
17.1.1	Oxen			.
17.1.2	Bulls			.
17.1.3	Cows			
17.1.4	Donkeys			.

17.2 Did you apply organic fertiliser during 02/03 (Yes=1, No=2) ☐

(If no, go to question 18)

S/N	Type of organ Fertiliser	Area applied (acres)
	(1)	(2)
17.2.1	FYM	.
17.2.2	Compost	.

Definitions and working page for page 12

Question Specific Definitions

Crop Extension Advice (Section 15.2)

Mechanisation/LST: LST means Labour Saving Technology

Section 16.0 Livelihood constraints

16.1 List the five most important problems in order of most importance:

1. Read out the list of constraints to the respondent and ask him to select the ones that are a problem. Place a ✓ against the constraints that are a problem.

2. Read the selected constraints and ask the farmer to select 5 which create the largest problems

3. Ask the farmer to list these in order of importance and enter in column 2

16.2 List the five least important problems in order of least importance:

1. Read out the list of constraints to the respondent and ask him to select the ones that are **NOT** a problem. Place an ✗ against the constraints that are **NOT** a problem.

2. Read the selected constraints and ask the farmer to select 5 which create the least problems

3. Ask the farmer to list these in order of least importance and enter in column 2

18.0 CATTLE POPULATION, INTAKE AND OFFTAKE

18.1 Did the household own, raise or manage any **CATTLE** during 2002/03 agriculture year? (Yes =1 No =2) ☐

(If **no** go to section 19.0)

18.2 Cattle Population as of 1st October 2003

S/N	Cattle type	Number of Indigenous	Number of Improved Beef	Number of Improved Dairy	Total
	(1)	*(2)*	*(3)*	*(4)*	*(5)*
18.2.1	Bulls				
18.2.2	Cows				
18.2.3	Steers				
18.2.4	Heifers				
18.2.5	Male Calves				
18.2.6	Female Calves				
	Grand Total				

18.3 **Cattle Intake** during 2002/2003

S/N	Number Purchased	Number given /obtained	Number Born	Total Intake of Cattle	Average Value per head
	(6)	*(7)*	*(8)*	*(9)*	*(10)*
18.3.1			X X X		
18.3.2			X X X		
18.3.3			X X X		
18.3.4			X X X		
18.3.5					
18.3.6					
		Total Intake			

18.4 **Cattle Offtake** during 2002/2003

S/N	Cattle type	Number Sold/traded	Number consumed by hh	Number given away/stolen	Number died	Total Cattle Offtake	Average value per head
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
18.4.1	Bulls						
18.4.2	Cows						
18.4.3	Steers						
18.4.4	Heifers						
18.4.5	Male Calves						
18.4.6	Female Calves						
				Total Offtake			

18.5 **Cattle diseases**

S/N	Disease/ parasite	Number Infected	Number Treated	No. Rec-overed	Number Died	Last vaccinated	Main Source
	(1)	*(2)*	(3)	*(4)*	(5)	*(6)*	*(7)*
18.5.1	Tick Borne diseases						
18.5.2	CBPP						
18.5.3	Trypanosomiasis					X	X
18.5.4	Lumpy Skin Disease						
18.5.5	Helmenthioitis					X	X
18.5.6	FMD						

Last Vaccinated (Col 6)

2003 ……1 2000 ……..4
2002 ……..2 before 2000 …..5
2001 ……..3 Not Vaccinated...6

Main Source of vaccine (Col 7)

Private Vet Clinic ..1 Other ……..…..8
District Vet Clinic ..2 Not applicable ….9
NGO/Project…….3

18.6 **Milk Production**

S/N	Season	Litres of milk/day	No. of cattle milked/day	Value/litre	Sold to	Sold/day (Litres)
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
18.6.1	Wet Season					
18.6.2	Dry Season					

Sold to Q18.6 Col 5)

Neighbour……..1 Largescale farm ..5
Local Market……..2 Trader at Farm ...6
Secondary Market ...3 Did not sell 7
Processing industry .4 Other ……..8

Definitions and working page for page 13

General definitions for page 13

Cattle Intake during 2002/03: Cattle purchased, given or born which increases the number of cattle in the herd.

Cattle Offtake during 2002/03:
Cattle removed from the herd, either by selling, hh consumption, given away or stolen.

Question Specific Definitions (Section 18.0)

Cattle type (Q 18.2 & 18.4, Col 1)

Bull: Mature **Uncastrated** male cattle used for breeding

Cow: Mature female cattle that has given birth at least once

Steer: Castrated male cattle over 1 year

Heifer: Female cattle of 1 year up to the first calving

Calves: Young cattle under 1 year of age

Average Value per Head (Q 18.3, (Col 7 & 9) & 18.4 (Col 3, 5 & 7))

In these columns give the average value per head during 2002/03. For given, traded, consumed by the hh & given away/stolen estimate the value.

Cattle vaccination (18.5 col 1)

ECF: East Coast Fever

FMD: Foot and Mouth Disease

CBPP: Contagious Bovine Pleura Pneumonia

Section 18.0 Cattle Population, Intake & Offtake.

NOTE: Section 18.1 is for the current population (as of 1st October 2003);
Section 18.2 and 18.3 is for movement in and out of the herd during the 2002/03 agriculture year.
Section 18.4 is for diseases encountered during the agriculture year.

1. If the household has cows, you would normally expect them to have calves in column 8

2. If calves are reported in column 2, 3, or 4 (18.2.6, 18.2.5) then there must be at least that number repeated in column 8

Note: If the farmer reports sales of cattle the importance of this must be reflected in Q 2.2.3

Section 18.5 If cattle are reported to have died in Column 5 then at least that number should be reported in 18.4 col 4

Working area for page 13

19.0 GOAT POPULATION, INTAKE AND OFFTAKE

19.1 Did the household own, raise or manage any **GOATS** during the 2002/03 agriculture year? (Yes =1 No =2) ☐
(If no go to section 20.0)

19.2 Goat Population as of 1st October 2003

S/N	Goat type	Number of Indigenous	Number of Improved for meat	Number of Improved Dairy	Total
	(1)	(2)	(3)	(4)	(5)
19.2.1	Billy Goat				
19.2.2	Castrated Goat				
19.2.3	She Goat				
19.2.4	Male Kid				
19.2.5	She Kid				
	Grand Total				

19.3 **Goat Intake** during 2002/2003

S/N	Number Purchased	Number given /obtained	Number Born	Total Intake of Goats	Average Value per head
	(6)	(7)	(8)	(9)	(10)
19.3.1			X X X		
19.3.2			X X X		
19.3.3			X X X		
19.3.4					
19.3.5					
			Total Intake		

19.4 **Goat Offtake** during 2002/2003

S/N	Goat type	Number Sold/traded	Number consumed by hh	Number given away/stolen	Number died	Total Goat Offtake	Average value per head
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
19.4.1	Male goat						
19.4.2	Castrated Goat						
19.4.3	She Goat						
19.4.4	Male Kid						
19.4.5	She Kid						
	Total Offtake						

19.5 **Goat diseases**

S/N	Disease/ parasite	Number Infected	Number Treated	No. Rec-overed	Number Died	Last vaccinated	Main Source
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
19.5.1	Foot Rot					X	X
19.5.2	CC PP						
19.5.3	Helminthiosis					X	X
19.5.4	Tetanus						
19.5.5	Mange					X	X

19.6 **Milk Production**

S/N	Season	Litres of milk/day	No. of Goats milked/day	Value/litre	Sold to	Sold/day (Litres)
	(1)	(2)	(3)	(4)	(5)	(6)
19.6.1	Wet Season					
19.6.2	Dry Season					

Sold to Q19.6 Col 5)
Neighbour……..1 Largescale farm ..5
Local Market……..2 Trader at Farm ...6
Secondary Market ...3 Did not sell 7
Processing industry .4 Other ……..8

Last Vaccinated (Col 6)
2003 ……1 2000 ……..4
2002 ……..2 before 2000 …..5
2001 ……..3 Not Vaccinated...6

Main Source of vaccine (Col 7)
Private Vet Clinic ..1 Other ……..…..8
District Vet Clinic ..2 Not applicable ….9
NGO/Project…….3

Definitions and working page for page 14

Goat definitions for page 14

Goat Intake during 2002/03: Goat purchased, given or born which increases the number of goats in the herd.

Goat Offtake during 2002/03:
Goat removed from the herd, either by selling, hh consumption, given away or stolen.

Question Specific Definitions (Section 19.0)

Goat type (Q 19.2 & 19.4, Col 1)

Billy Goat (he-goat): Mature **Uncastrated** male goat used for breeding

Castrated goat: Male goat that has been castrated.

She Goat: Mature female goat over 9 months of age

Kid: Young goat under 9 months of age.

Average Value per Head (Q 19.3, (Col 7 & 9) & 19.4 (Col 3, 5 & 7))

In these columns give the average value per head during 2002/03. For given, traded, consumed by the hh & given away/stolen estimate the value.

Goat vaccination (19.5 col 1)

FMD: Foot and Mouth Disease

CCPP: Contagious Caprine Pleura Pneumonia

LSD: Lumpy Skin Disease

Section 19.0 Goat Population, Intake & Offtake.

NOTE: Section 19.1 is for the current population (as of 1st October 2003);
Section 19.2 and 18.3 is for movement in and out of the herd during the 2002/03 agriculture year.
Section 19.4 is for diseases encountered during the agriculture year.

1. If the household has she goats, you would normally expect them to have kids in column 8

2. If kids are reported in column 2, 3, or 4 (19.2.6, 19.2.5) then there must be at least that number repeated in column 8

Note: If the farmer reports sales of goats the importance of this must be reflected in Q 2.2.3

Section 19.5 If goats are reported to have died in Column 5 then at least that number should be reported in 19.4 col 4

Working area for page 14

20.0 SHEEP POPULATION, INTAKE AND OFFTAKE

20.1 Did the household own, raise or manage any **SHEEP** during the 2002/03 agriculture year? (Yes =1 No =2) ☐

(If no go to section 21.0)

20.2 **Sheep Population** as of 1st October 2003

S/N	Sheep type	Number of Indigenous	Number of Improved for Mutton	Number of Improved Dairy	Total
	(1)	*(2)*	*(3)*	*(4)*	*(5)*
20.2.1	Ram			X X X	
20.2.2	Castrated Sheep			X X X	
20.2.3	She Sheep			X X X	
20.2.4	Male lamb			X X X	
20.2.5	She lamb			X X X	
	Grand Total				

20.3 **Sheep Intake** during 2002/2003

S/N	Number Purchased	Number given /obtained	Number Born	Total Intake of Sheep	Average Value per head
	(6)	*(7)*	*(8)*	*(9)*	*(10)*
20.3.1			X X X		
20.3.2			X X X		
20.3.3			X X X		
20.3.4					
20.3.5					

20.4 **Sheep Offtake** during 2002/2003

S/N	Sheep type	Number Sold/traded	Number consumed by hh	Number given away/stolen	Number died	Total Sheep Offtake	Average value per head
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
20.4.1	Ram						
20.4.2	Castrated Sheep						
20.4.3	She Sheep						
20.4.4	Male lamb						
20.4.5	She lamb						
	Total Offtake						

20.5 **Sheep diseases**

S/N	Disease/ parasite	Number Infected	Number Treated	No. Rec-overed	Number Died	Last vaccinated	Main Source
	(1)	*(2)*	(3)	*(4)*	*(5)*	*(6)*	*(7)*
20.5.1	Foot Rot					X	X
20.5.2	CC PP						
20.5.3	Helminthiosis					X	X
20.5.4	Trypanosomiasis						
20.5.5	FMD						

Last Vaccinated (Col 6)

2003 ……1 2000 ……....4
2002 ……....2 before 2000 …...5
2001 ……....3 Not Vaccinated...6

Main Source of vaccine (Col 7)

Private Vet Clinic ..1 Other ……..…..8
District Vet Clinic ..2 Not applicable ….9
NGO/Project…....3

Definitions and working page for page 15

Sheep definitions for page 15

Sheep Intake during 2002/03: Sheep purchased, given or born which increases the number of Sheep in the herd.

Sheep Offtake during 2002/03:
Sheep removed from the herd, either by selling, hh consumption, given away or stolen.

Question Specific Definitions (Section 20.0)

Sheep type (Q 20.2 & 20.4, Col 1)

Ram: Mature **Uncastrated** male goat used for breeding

Castrated sheep: Male sheep that has been castrated.

Ewe: Mature female sheep over 9 months of age

Lamb: Young sheep under 9 months of age.

Average Value per Head (Q 20.3, (Col 7 & 9) & 20.4 (Col 3, 5 & 7))

In these columns give the average value per head during 2002/03. For given, traded, consumed by the hh & given away/stolen estimate the value.

Sheep vaccination (20.5 col 1)

FMD: Foot and Mouth Disease

CCPP: Contagious Caprine Pleura Pneumonia

Section 20.0 Sheep Population, Intake & Offtake.

NOTE: Section 20.1 is for the current population (as of 1st October 2003);
Section 20.2 and 20.3 is for movement in and out of the herd during the 2002/03 agriculture year.
Section 20.4 is for diseases encountered during the agriculture year.

1. If the household has ewes, you would normally expect them to have kids in column 8

2. If lambs are reported in column 2, 3, or 4 (20.2.6, 20.2.5) then there must be at least that number repeated in column 8

Note: If the farmer reports sales of Sheep the importance of this must be reflected in Q 2.2.3

Section 20.5 If Sheep are reported to have died in Column 5 then at least that number should be reported in 20.4 col 4

Working area for page 15

21.0 PIG POPULATION AND PRODUCTION

21.1 Did the household own, raise or manage any **PIGS** during the 2002/03 agriculture year (Yes =1 No =2) ☐
(If no go to section 22.0)

21.2 **PIG Population** as of 1 st October 2003

S/N	Pig type	Number
	(1)	*(2)*
21.2.1	Boar	
21.2.2	Castrated male	
21.2.3	Sow/Gilt	
21.2.4	Male piglet	
21.2.5	She piglet	
	Grand Total	

21.3 **Pig increase** during 2002/2003

S/N	Number Purchased	Number given /obtained	Number Born	Total Pig Increase	Average Value per head
	(3)	*(4)*	*(5)*	*(9)*	*(10)*
21.3.1			X X X		
21.3.2			X X X		
21.3.3			X X X		
21.3.4					
21.3.5					

21.4 **Pig decrease** during 2002/2003

S/N	Pig type	Number Sold/traded	Number con sumed by hh	Number given away/stolen	Number died	Total Pig Offtake	Average value per head
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
21.4.1	Boar						
21.4.2	Castrated male						
21.4.3	Sow/Gilt						
21.4.4	Male piglet						
21.4.5	She piglet						
	Total Offtake						

21.5 **Pig diseases/pests/conditions**

S/N	Disease/ parasite	Number Infected	Number Treated	No. Rec -overed	Number Died	Last vacci nated	Main Sou -rce
	(1)	*(2)*	(3)	*(4)*	*(5)*	*(6)*	*(7)*
21.5.1	Anthrax						
21.5.2	ASF						
21.5.3	Anemia					X	X
21.5.4	Helmenthiosis					X	X

22.0 LIVESTOCK PEST & PARASITE CONTROL

22.1 Did you **deworm** your animals during 2002/03 (Yes=1, No-2) ☐
(If the response is 'NO' go to section 22.3)

22.2 Which animals did you **deworm**? (Tick appropriate boxes)
Cattle ☐ Goats ☐ Sheep ☐ Pigs ☐

22.3 Do you normally encounter a **tick** problem (Yes=1,No-2) ☐
(If the response is 'NO' go to section 22.5)

22.4 Which methods of tick control did you use ☐
Control method (Q 22.4) *None..1 Spraying ..2 Dipping..3 Smearing ..4 Other.8*

22.5 Do you normally encounter a **tsetse fly** problem (Y=1,N=2) ☐
*(If the response is **'NO'** go to section 23.0)*

22.6 Which methods of control did you use ☐
Control method (Q22.6) *None .1 Spray .2 Dipping .3 Trapping .4 Other .8*

Last Vaccinated (Col 6)
2003 ..1 2000 ……..4
2002 ..2 before 2000 ….5
2001 ..3 Not Vaccinated.6

Main Source (Col 7)
Private Vet Clinic ..1
District Vet Clinic ..2
NGO/Project……..3
Other ……..……8
Not applicable ……9

Definitions and working page for page 16

Pigs definitions for page 16

Pig Intake during 2002/03: Pigs purchased, given or born which increases the number of Pigs in the production unit.

Pig Offtake during 2002/03:
Pigs removed from the production unit, either by selling, hh consumption, given away or stolen.

Question Specific Definitions (Section 21.0)

Pigs type (Q 21.2 & 21.4, Col 1)

Boar: Mature **Uncastrated** male pig used for breeding

Castrated Pig: Male pig that has been castrated.

Sow: Mature female pig that has given birth to at least one litter of pigs.

Gilt: Female pig of 9 months up to the first farrowing.

Piglet: Young pig under 3 months of age.

Average Value per Head (Q 21.3, (Col 7 & 9) & 21.4 (Col 3, 5 & 7))

In these columns give the average value per head during 2002/03. For given, traded, consumed by the hh & given away/stolen estimate the value.

Pig vaccination (21.5 col 1)

ASF: African Swine Fever

Section 21.0 Pig Population, Intake & Offtake.

NOTE: Section 21.1 is for the current population (as of 1st October 2003);
Section 21.2 and 21.3 is for movement in and out of the herd during the 2002/03 agriculture year.
Section 21.4 is for diseases encountered during the agriculture year.

1. If the household has sows, you would normally expect them to have piglets in column 8

2. If piglets are reported in column 2, 3, or 4 (20.2.6, 20.2.5) then there must be at least that number repeated in column 8

Note: If the farmer reports sales of Pigs the importance of this must be reflected in Q 2.2.3

Section 20.5 If Pigs are reported to have died in Column 5 then at least that number should be reported in 20.4 col 4

Working area for page 16

23.0 **Other Livestock** currently available and details of consumption and sales during the last 12 months

	Animal type	Current Number	Sold during 2002/03		Consumed during 2002/03	
			Number	Average Value/head	Number	Average Value/head
		(1)	(2)	(3)	(4)	(5)
23.1	Indigenous Chicken					
23.2	Layer					
23.3	Broiler					
23.4	Ducks					
23.5	Turkeys					
23.6	Rabbits					
23.7	Donkeys					
23.8	Horses				X X X	X X X X X
23.9	Other ……					

24.0	CHICKEN DISEASES	Number infected	Number Treated	Number Died	Number Recovered
24.1	Newcastle Disease				
24.2	Gumboro				
24.3	Coccidiosis				
24.4	Chorysa				
24.5	Fowl typhoid				

25.0	LIVESTOCK PRODUCTS	Sold during 2002/03		Consumed/utilised during 2002/03	
		Number	Average Value/unit	Number	Average Value/unit
25.1	Eggs		X		
25.2	Hides				
25.3	Skins				

26.0 List in order of importance the **outlets for the sale** of Livestock

S/N	Impo-rtance of outlet	Outlets for Cattle	Out-lets for Goat	Outlets for Sheep	Outl-ets for Pigs	Outlets for Chick-ens
	(1)	(2)	(3)	(4)	(5)	(6)
26.1	1st					
26.2	2nd					
26.3	3rd					
26.4	4th					
26.5	5th					

Outlet code (Col 2, 3, 4 & 5)

Trader at farm……1 *Abattoir/factory……5*
Local Market …….. ……2 *Another farmer ……6*
Secondary market/auction……3 *Other (Specify)……8*
Neighbour ……4

Source of structure (Q27.0 - Col 2)

Owns ……1 *NGO ……6*
Cooperative ……2 *Large scale farm ……7*
Local farmers association …… 3 *Other ……8*
Gov extension/veterinary ……4 *Not applicable ……9*
Development project …… ……5

27.0 Access to **functional Livestock structures /accessories**

S/N	Type of structure/accessory	Source of Structure	Distance to struct-ure (Km)
	(1)	(2)	(3)
27.1	Cattle Dip		.
27.2	Spray Race		.
27.3	Hand powered sprayer		.
27.4	Cattle crush		.
27.5	Primary Market		.
27.6	Secondary Market		.
27.7	Abattoir		.
27.8	Slaughter Slab		.
27.9	Hide/skin shed		.
27.10	Input supply		.
27.11	Veterinary Clinic		.
27.12	Village holding ground		.
27.13	village watering point/dam		.
27.14	Drencher		.

Definition and working page for page 17

Question Specific Definitions Section 26.0)

Question Specific Definitions Section 27.0)

Access to functional Livestock Structures/accessories (Section 27.0):

NOTE: The structures must be functional. If they are not working/derelict then they should not be included. The distance to the next nearest functional structure should be taken.

Spray Race: A fixed spray structure on an animal race for spraying acaricide

Cattle crush: Corridor structure for restraining cattle.

Abattoir: Large building designed for slaughtering a large amount of animals. It normally has complex structures to assist in the slaughter and storage and a high level of hygiene is maintained.

Slaughter Slab: Concrete slab designed fos slaughtering a small amount of animals

Hides: obtained from Cattle

Skins: Obtained from sheep and goats

Hide/Skin Shed: Shed for curing/tanning animal skins and hides

Village holding Pen: Enclosure for containing large amount of livestock which is owned communally.

Drencher: Device for orally administering medicine to livestock.
If no product was sold in 2002 enter "0" in columns 6, 7& 9.

Procedures for questions

Section 23.0 - Other Livestock:

1. The current number includes both adult and young animals. For example The number of chickens in col 1 would include adults and chicks.

Section 26.0 - Outlets for livestock:

Using the codes enter the outlets for the sale of different livestock in order of importance. If there are, for example, only 2 outlets mark the rest with a "X".

28.0 FISH FARMING

28.1 Was **Fish farming** carried out by this household during 2002/2003? (Yes =1, No=2) ☐ *(If the response is **'NO'** go to section 29.0)*

28.2 Specify details of **fish farming practices**

S/N	Production unit number	Fish farming system	Size of unit/pond (m2)	Source of fing-erling	frequency of stocking (No/year)	Number of stocked fish: Tilapia	Number of stocked fish: Carp	Number of stocked fish: Other	Number of fish harvested	weight of fish harvested	weight of fish sold	Mainly sold to
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
28.1.1	1											
28.1.2	2											
28.1.3	3											

Farming System (Col 2)
Natural Pond. ..1 Natural Lake…..3 Other …..8
Dug out pond...2 Water resevoir..4

Source of fingerlings (Col 4)
Own pond ……1 NGO/Project...3 P rivate trader ...5
Government Institution ..2 Neighbour …..4 Other……8

Mainly sold to (Col 12)
Neighbour…….1 Secondary Market.....3 Largescale farm .....5 Did not sell 7
Local Market…...2 Processing industry ....4 Trader at Farm .....6 Other 8

29.0 LIVESTOCK EXTENSION

29.1 Did you receive **livestock extension advice** during 02/03 (Yes=1,No=2) ☐ *(If the response is **'NO'** go to section 30.0)*

S/N	Livestock Extension Message	Received Advice Yes=1,No=2	Adopted Yes=1 No=2	Source of Livestock Extension
	(1)	(2)	(3)	(4)
29.1.1	Feed and Proper feeding			
29.1.2	Housing (Goat, Dairy, Poultry, Pigs)			
29.1.3	Proper Milking			
29.1.4	Milk Hygiene			
29.1.5	Disease control (dipping/spraying)			
29.1.6	Herd/Flock size and selection			
29.1.7	Pasture Establishment			
29.1.8	Group formation and strengthening			
29.1.9	Calf rearing			
29.1.10	Use of improved bulls			
29.1.11	Other livestock extension			

Source of livestock extension (Col 4)
Government .....1 NGO/Dev project ..2 Cooperative …3 Large scale farmer .....4 Other (Specify) 8

29.2 For the following **Livestock Extension Service Providers** give details

S/N	Extension Provider	If you pay for extension, what is the cost/yr	Contact far-mer/group member (Y=1,N=2)	No. of visits by extension agency/year	No. of mess-ages adopted in the last 3 yrs	Quality of Service
	(1)	(2)	(3)	(4)	(5)	(6)
29.2.1	Government					
29.2.2	NGO/dev project					
29.2.3	Cooperative					
29.2.4	Large Scale farmer					
29.2.5	Other……					

Quality of service (Col 6) *Very good ...1 good ....2 Average…3 Poor…4 No Good ...5*

30.0 GOVERNMENT REGULATORY PROBLEMS

31.1 Did you face problems with government regulations during 2002/03 (Y=1, N=2) ☐

(If the response is no go to section 31.0)

List in order of importance

		Problem code
30.1.1	1st	
30.1.2	2nd	
30.1.3	3rd	

Problem code
Land ownership by government 1
Restriction of sale between regions ..2
Import of food items ……3
Other (specify)……..8

Definitions and working page for page 18

General definitions for Section 28.0

Fish farming: Refers to the rearing/production of fish. It is different to fishing in that the fish have to be reared and fed in fish farming. Fishing traps or captures naturally occurring fish in rivers, lakes and the sea and should not be included in this section.

Question Specific Definitions (Section 28.2)

Production unit number (Col 1): A production unit is a pond river/lake which is treated as a separate entity for the production of fish eg it may be by virtue of manageable size, maturity of fish, type of fish etc. Eg a farmer may have 3 fish ponds. (each one is a separate production unit).

Frequency of stocking (Col 5): What is the number of times the farmer puts new fingerlings into the pond each year.

Fingerlings: These are young immature fish used for stocking ponds.

Sold: (Col 10 & 11)

If no fish were sold enter "0" in column 10 and 11)

Livestock Extension Services (Section 29.1)

Adopted (Col 3): This is the uptake of an intervention for 2 or more years

Livestock Extension Service providers (Section 29.2)

Contact Farmer: A farmer who is used by the extension services as a focal point to demonstrate new interventions to. The contact farmer then passes on the message to other farmers

Adopted (Col 5): This is the uptake of an intervention for 2 or more years

Working area for page 18

31.0	LABOUR USE		
31.1	Who is **mainly responsible** for undertaking the following tasks:		
S/N	**Activity**	**Tick if carried out by hh**	**Main respo-nsib-ility**
	(1)	*(2)*	*(3)*
31.1.1	Land **Clearing**		
31.1.2	Soil **preparation (by hand)**		
31.1.3	Soil **preparation (oxen/trac**		
31.1.4	**Planting**		
31.1.5	**Weeding**		
31.1.6	**Crop Protection**		
31.1.7	**Harvesting**		
31.1.8	Crop **processing**		
31.1.9	Crop **marketing**		
31.1.10	Cattle r**earing/husbandry**		
31.1.11	Cattle **herding**		
31.1.12	Cattle **marketing**		
31.1.13	Goat/sheep **rearing/husband**		
31.1.14	Goat and sheep **herding**		
31.1.15	Goat and sheep **marketing**		
31.1.16	**Milking**		
31.1.17	Pig **rearing/husbandry**		
31.1.18	Poultry **keeping**		
31.1.19	Collecting **Water**		
31.1.20	Collecting **Firewood**		
31.1.21	**Pole** cutting		
31.1.22	**Timber** wood cutting		
31.1.23	**Building/maintaining** house		
31.1.24	Making **Beer**		
31.1.25	**Bee** keeping		
31.1.26	**Fishing**		
31.1.27	**Fish farming**		
31.1.28	**Off-farm income** generation		

Responsibility (Col 3)

HH head alone ....1 Girls 6
Adult Males .....2 Boys & Girls 7
Adult Females.....3 All household members.....8
Adults..... 4 Hired labour 9
boys 5

Satisfied with service (Col 4)

Very good .....1 Average.....3 No good 5
Good .....2 Poor .....4 Not applicable 9

32.0	SUBSISTENCE vs NON-SUBSISTENCE				
32.1	Indicate if any members of the household was involved in the following activities and assess the **percentage used for subsistence/consumption** by the household:				
S/N	Activity	**Tick if hh was involved in activit**	**Estimate % used for subsistance**	**Estimate % used for no subsistence**	**Check Total**
	(1)	*(2)*	*(3)*	*(4)*	*(5)*
32.1.1	**Crop** production				1 0 0
32.1.2	**Livestock** production				1 0 0
32.1.3	**Vegetable** production				1 0 0
32.1.4	Tree cutting for **firewood**				1 0 0
32.1.5	Tree logging for **poles**				1 0 0
32.1.6	Tree logging for **timber**				1 0 0
32.1.7	Tree logging for **charcoal**				1 0 0
32.1.8	**fishing**				1 0 0
32.1.9	**bee** keeping				1 0 0
32.1.10	**employment/off farm**				1 0 0
32.1.11	**employment/off farm**				1 0 0
32.1.12	**Remittances**				1 0 0

33.0	ACCESS TO INFRASTRUCTURE & OTHER SERVICES			
S/N	Type of service	**Distance in Km**	S/N	Type of service	**Distance in Km**
	(1)	*(2)*		*(1)*	*(2)*
33.1	**Primary** School	.	32.7	**Feeder** Road	.
33.2	**Secondary** School	.	32.8	**All weather** roa	.
33.3	Health **Clinic**	.	32.9	**Tarmac** road	.
33.4	**Hospital**	.	32.10	**Primary** market	.
33.5	**District** Capital	.	32.11	**Secondary** mark	.
33.6	**Regional** Capital	.	32.12	**Tertiary** market	.

S/N	Type of service	**Distance in Km**	**No of visits/year**	**Satisfied with service**
	(1)	*(2)*	*(3)*	*(4)*
33.13	**Vet** Clinic	.		
33.14	**Extension** Centre	.		
33.15	**Research** Station	.		
33.16	**Plant protection** Lab	.		
33.17	**Land registration** offic	.		
33.18	**Livestock Dev** Centre	.		

Definition and working page for page 19

Question specific definitions (Section 31.1)

Activity (Col 1):

Land Clearing: Refers to removing trees/bush/grass prior to ploughing

Soil Preparation: Refers to the seedbed preparation (ploughing, harrowing, etc).

Cattle Rearing: Tending to cattle at home, eg assisting with births, castration,etc. Different livestock keeping activity to herding.

Cattle Herding: Moving livestock from place to place for grazing and water. If herding is carried out the respondent must also give a response to rearing/husbandry

Question Specific Definitions (Section 32.0.0)

Activity (Col 1):

Subsistence: For the family's survival, rather than for the generation of cash. This includes feeding the hh, provision of water and fuel for cooking. The source of these products are usually from the land resources available to the family. Remember that not all cash earnings are for non subsistence purposes/activities as cash can be used to purchase subsistence items eg food.

Non -subsistence: Cash used for items and activities which are not crucial for the survival of the family. This includes modern medication, non working clothes, refined beer, school fees, etc.

Procedures for (Section 31.1)

Section 31.1 ((Labour use)

1. For each listed activity in column 1, place a tick in column 2 if any member of the household was involved in that activity during the 2002/03 agriculture year.

2. After completing column 2 return to the first activity in row 27.1.1 and complete column 3.

3. Make sure you stress MAINLY responsible.

NOTE: If an activity has been mentioned previously in the questionnaire eg that the hh keeps chickens, make sure a response is obtained in the appropriate place ie poultry keeping.

If off-farm income generation is mentioned, check for responses to off farm income in other parts of the questionnaire

Section 32.0 - Subsistence vs Non-subsistence

1. For each listed activity in column 1, place a tick in column 2 if any member of the household was involved in that activity during the 2002/03 agriculture year.

2. After completing column 2 return to the first activity in row 32.1.1 and complete column 3 & 4. For each activity make an assessment of the percentage used for subsistence survival and the percent converted to cash for non subsistence goods and items.

3. Make sure you stress MAINLY responsible.

NOTE: Cross check the responses with previous sections in the questionnaire. eg if a response is given to remittances check for an entry in question 2.2.5

34.0 HOUSEHOLD FACILITIES

34.1 House Construction

For the **main dwelling**, what are the **main building materials used** in the construction of the following

34.1.1: Roof ☐ 34.1.2 Number of rooms ☐☐

Roof Material
Iron Sheets.....1
Tiles 2
Concrete 3
Asbestos 4
Grass/leaves.....5
Grass & mud.....6
Other (Specify) 8

34.2 Household **assets**

Does your household **own** the following?

	Asset	Y=1 N=2
34.2.1	Radio/cassette, music system)	☐
34.2.2	Telephone (landline)	☐
34.2.3	Telephone (mobile)	☐
34.2.4	Iron	☐
34.2.5	Wheelbarrow	☐
34.2.6	Bicycle	☐
34.2.7	Vehicle	☐
34.2.8	Television	☐

34.3 **Energy use** by the Household

Energy use and access by the household

Main Source of energy for

34.3.1 Lighting ☐☐ **34.3.2** Cooking ☐☐

Lighting energy
Mains electricity.....01
Solar 02
Gas (biogas) 03
Hurricane Lamp 04
Pressure Lamp 05
Wick Lamp 06
Candles 07
Firewood 08
Other (specify) 98

Cooking energy
Mains electricity.....01
Solar 02
Gas (hh biogas) 03
Bottled gas 04
Paraffin/kerocine.....05
Charcoal.....06
Firewood 07
Crop Residues 08
Livestock dung 09
Other (specify) 98

34.4 Access to **drinking water**

	Season	Main sou -rce of drinking water	Distance to source (in km)	Time to and from source (Hour : minute)
	(1)	*(2)*	*(3)*	*(4)*
34.4.1	Wet Season	☐☐	☐☐.☐	☐☐:☐☐
34.4.2	Dry Season	☐☐	☐☐.☐	☐☐:☐☐

Main Source of drinking water
Piped water 01
Protected well 02
Protected/covered spring ... .03
Unprotected Well 04
Unprotected spring 05
Surface water (lake/dam/river/stream)06
Covered rainwater catchment ...07
Uncovered rainwater catchment 08
Water Vendor 09
Tanker truck 10
Bottled water 11
Other (Specify) 98

34.5 Access to **toilet facilities**

34.5.1 What **type of toilet** does your hh use ☐

Type of toilet
No toilet/bush.....1
Flush toilet 2
Pit latrine - traditional ..3
Improved pit latrine - hh owned.....4
Other type (specify) 5

34.6 **Food consumption** patterns

34.6.1	**Number of meals** the hh normally has per day	☐
34.6.2	**Number of days** hh consumed **meat** last w	☐
34.6.3	How often did the hh have **problems in satisfying the food needs** of the hh last year?	☐

Problems satisfying hh food needs (row 34.6.3)
Never 1
Seldom 2
Sometimes 3
Often 4
Always 5

34.7 Source of Household **income**

34.7.1 What is the households **main source of cash income**? ☐☐

Source of Income codes
Sale of food crops 01
Sale of Livestock.....02
Sale of livestock products ...03
Sale of cash crops.....04
Sale of forest products 05
Business income.....06
Wages or salaries in cash 07
Other casual cash earnings ..08
Cash remittances 09
Fishing 10
Other 98
Not applicable 99

Definition and working page for page 20

Household facilities (Section 34):

Number of rooms used for sleeping in the household (Q 34.1)

Include sitting room, dining room, kitchen, etc if used for sleeping. It also includes rooms outside the main dwelling

A room is defined as a space which is separate from the rest of the building by a permanent wall or division. A building/house that is not divided into rooms is considered to have one room.

Household assets (Q 34.2): these assets must be functioning. Do not include if broken.

Access to drinking water (Q 34.4): If there is more than one source, use the one, which the hh uses most frequently.

Main source of hh cash income:

Activity that provides the hh with the most cash during 2002/03 agriculture year.

Average/maximum yields

Use this table to compare the yields calculated in sections 7.1, 7.2, and 7.3. They are STRICTLY to be used as guidelines only and the sole purpose is to assist in getting the correct area and harvest for each crop

	Crop Name	kg/ha		kg/acre	
		Average	Max	Average	Max
11	Maize	1200	6250	486	2530
12	Paddy	700	4000	283	1619
13	Sorghum	750	3500	304	1417
14	Bulrush Millet	350	3000	142	1215
15	Finger Millet	300	2500	121	1012
16	Wheat	1200	4500	486	1822
17	Barley	1400	2300	567	931
21	Cassava	3000	7000	1215	2834
22	Sweet Potato	600	8000	243	3239
23	Irish potatoes	750	8500	304	3441
24	Yams	4000	10000	1619	4049
25	Cocoyams	2500	5000	1012	2024
26	Onions			0	0
27	Ginger			0	0
31	Beans	400	1300	162	526
32	Cowpeas	300	1750	121	709
33	Green gram			0	0
34	Pigeon pea	600	2000	243	810
35	Chick peas	500	1500	202	607
36	Bambara nut	600	4000	243	1619
41	Sunflower	600	1700	243	688
42	Simsim	300	1000	121	405
43	Groundnut	600	4000	243	1619
47	Soyabeans	1300	2500	526	1012
48	Caster seed	300	750	121	304
75	Pineapple	25000	60000	10121	24291
50	Cotton	300	1500	121	607
51	Tobacco	500	2000	202	810
53	Pyrethrum			0	0
62	Jute	800	3500	324	1417
44	Palm Oil	1200	5000	486	2024
45	Coconut	2000	8000	810	3239
46	Cashewnut	9	60/tree	4	24

	Crop Name	kg/ha		kg/acre	
		Average	Max	Average	Max
86	Cabbage			0	0
87	Tomatoes			0	0
88	Spinach			0	0
89	Carrot			0	0
90	Chillies			0	0
91	Amaranths			0	0
92	Pumpkins			0	0
93	Cucumber			0	0
94	Egg Plant			0	0
95	Water Mellon			0	0
96	Cauliflower			0	0
52	Sisal	800	25000	324	10121
54	Coffee	500	100	202	40
55	Tea	2500	10000	1012	4049
56	Cacao	200	1000	81	405
57	Rubber	400	1400	162	567
58	Wattle			0	0
59	Kapok			0	0
60	Sugar Cane	60000	150000	24291	60729
61	Cardamom			0	0
71	Banana	10000	50000	4049	20243
72	Avocado			0	0
73	Mangoes	10000	25000	4049	10121
74	Papaw	50000	70000	20243	28340
76	Orange	20000	40000	8097	16194
77	Grape fruit	30000	50000	12146	20243
78	Grapes	5000	30000	2024	12146
79	Mandarin/tange	20000	40000	8097	16194
80	Guava	7000	35000	2834	14170
81	Plums			0	0
82	Apples			0	0
83	Pears			0	0
84	Pitches			0	0

Back Page Reference material

This page contains reference information that may be required to complete some of the questions in the questionnaire.

Weights and measures

1 hectare	= 10,000 sq metres	(100 x 100 metres)
1 kilometre	= 1000 metres	
1 acre	= 4840 square yards	(110 x 44 yards)

Conversions

1 hectare	= 2.47 acres
1 mile	= 1.61 Kilometres

Kg equivalents

The following standards may be used as a guide to obtain kg if the reported unit is different. Only use these conversions if the respondent is unable to provide weights in kgs.

	Crop Name	Number of Kgs Standard Bag	Standard Tin	Non-standard Name	Non-standard kgs
11	Maize	100	18	Rumbesi	140
12	Paddy	75	15		
13	Sorghum	100	18		
14	Bulrush Millet	100	18		
15	Finger Millet	120	20		
16	Wheat	75	15		
17	Barley	75	15		
21	Cassava	60	12		
22	Sweet Potatoe	80	16		
23	Irish potatoes	80	16		
24	Yams	80	16		
25	Cocoyams	80	16		
26	Onions	80	16		
27	Ginger	75	15		
31	Beans	100	20		
32	Cowpeas	100	20		
33	Green ram	100	20		
34	Pigeon pea	100	20		
35	Chick peas	100	20		
36	Bambara nut	100	20		
41	Sunflower	60	12		
42	Simsim	100	20		
43	Groundnut	50	10		
47	Soyabeans	100	20		
48	Caster seed	100	20		
75	Pineapple	90	18		
50	Cotton	50	10		
51	Tobacco	70	14		
53	Pyrethrum	60	12		
62	Jute	50	10		
44	Palm Oil	100			
45	Coconut	75			
46	Cashewnut	80			

	Crop Name	Number of Kgs Standard Bag	Standard Tin	Non-standard Name	Non-standard kgs
86	Cabbage	50			
87	Tomatoes	90			
88	Spinach	45			
89	Carrot	110			
90	Chillies	85			
91	Amaranths	50			
92	Pumpkins	60			
93	Cucumber	80			
94	Egg Plant	70			
95	Water Mellon	80			
96	Cauliflower	50			
52	Sisal	130			
54	Coffee	55			
55	Tea	60			
56	Cacao	60			
57	Rubber				
58	Wattle	90			
59	Kapok				
60	Sugar Cane	120			
61	Cardamom	100			
71	Banana	120			
72	Avocado	140			
73	Mangoes	130			
74	Papaw	100			
76	Orange	130			
77	Grape fruit	120			
78	Grapes	80			
79	Mandarin/tange	110			
80	Guava	110			
81	Plums	110			
82	Apples	110			
83	Pears	110			
84	Pitches	110			

For official use only:

If a question has a query, an indication will be made by the supervisor/data entry controller on the front page of the questionnaire. This space is to note what and where the problem is, the action required to be taken and the responsible person to take follow up action.

Nature of the problem:

_____

_____

_____

Action Required: National supervisor action ☐ Field supervisor action ☐

Overall Status: Does not affect overall integrity of the questionnaire. ☐ Discard and resample ☐

More data is required before it can be used ☐ Discard as missing data ☐