



THE ZANZIBAR AGRICULTURE COST OF PRODUCTION SURVEY

REPORT FOR THE AGRICULTURAL YEAR, 2015/2016

SMALL HOLDER AGRICULTURE

Final Report July, 2017

**Executed jointly by Office of the Chief Government Statistician and Ministry of Agriculture,
Natural Resources, Livestock and Fisheries Zanzibar.**



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April, 2017

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ABBREVIATIONS

CSPro	Census and Survey Program
GDP	Gross Domestic Product
HBS	Household Budget Survey
IC	Intermediate Consumption
ILFS	Integrated Labour Force Survey
KG	Kilogram
MANLF	Ministry of Agriculture, Natural Resources, Livestock and Fisheries
NSS	National Statistical System
OCGS	Office of the Chief Government Statistician
PPS	Proportion to Population Size
PS	Purposive Sample
SNA	System of National Account
SUT	Supply Use Table
TSMP	Tanzania Statistics Master Plan
TZS	Tanzania Shillings

PREFACE

In the year 2017, Office of the Chief Government Statistician, (OCGS) in collaboration with Ministry of Agriculture and Natural Resources; Livestock and Fisheries conducted the Agriculture cost of Production Study for major crops and livestock with reference period of 2015/2016 agricultural year. This is the first study to be conducted in Zanzibar of this nature; The main objective was to examine the intermediate cost of production for agricultural crops and the cost for keeping and raising livestock. This is a usefully information in which shall be used in rebasing of National Accounts exercise in the compilation of the gross domestic product (GDP) of the country.

The study collected detailed information on the cost of production for food crops, cash crops, fruits and vegetables, root and tubers as well as cost of keeping and raising livestock. Additional information includes planted and harvested area, quantity harvested, quantity marketed and total value of the produce. The study was a large in its coverage and scope and the results provide room for future studies and comparisons of the similar study. The study covered smallholders in rural areas and excludes Mjini district.

This report presents un weighted national data, the analysis was based on the most important smallholder variables. The rest of the variables are attached as an annex.

On behalf of the Revolutionary Government of Zanzibar, I wish to express my appreciation for the financial support provided by the all development partners through TSMP basket who contributed through the pool fund mechanism.

Finally, my appreciation goes to all those who in one-way or the other, have contributed to the success of the study. In particular, I would also like to mention the enormous efforts made by the Technical team composed of members from the Agricultural and Environmental Statistics Section, National Account Section of the OCGS and Ministry of Agriculture and Natural Resources, Livestock and Fisheries.

I would like to extend my sincere gratitude to all Regional and District Supervisors and field enumerators for their commendable work. Certainly, without their dedication, the study would not have been such a success.

.....
Mayasa M. Mwinyi,
Chief Government Statistician,
Zanzibar.

EXECUTIVE SUMMARY

The cost of paddy cultivation was TZS 228, 276 and TZS 182,059 per acre during short and long rainy seasons respectively. The highest cost in short rainy season was associated with land preparation which is TZS 69,963 per acre (36 percent of the total cost) and the cost of weeding at TZS 36,181 (16 percent).

The cost of yams cultivation was TZS 492,759 and TZS 786,110 per acre for short and long rainy seasons respectively. The highest cost for cultivation during long rainy season was associated with purchase of the seeds TZS 227,500 per acre, equivalent to 29 percent of the total cost followed by the cost associated with land preparation at TZS 150,000 (19 percent). The lowest cost of yams cultivation during long rainy season was associated with herbicides (TZS 2,500) representing less than one percent.

Cassava cultivation cost was TZS 227,962 and TZS 196,768 per acre during short and long rainy seasons respectively. The highest cost of cassava cultivation in short rainy season was associated with land preparation which cost (TZS 83,824 per acre) representing 37 percent of the total cost for the crop. This followed by weeding (TZS 46,960 per acre) representing 21 percent, the lowest cost for cassava cultivation associated with buying packet/sack (two percent).

The cost of green gram cultivation was TZS 203,950 and TZS 196,667 per acre during short and long rainy seasons respectively. The highest cost of green gram cultivation during short rainy season was associated with land preparation (TZS 70,252 per acre), representing 34 percent of the total cost for the crop, followed by weeding which costs TZS 43,962 per acre, equivalent to 22 percent. The lowest cost for green gram cultivation in this season was associated with fertilizing (TZS 1,673 per acre) representing only one percent.

The cost of cultivation for ground nuts was TZS 270,585 and TZS 219,662 per acre during short and long rainy seasons respectively. The highest cost of ground nuts cultivation in short rainy season was associated with land preparation TZS 79,625 per acre represents 29.4 percent of the total cost for the crop, followed by the cost associated with the purchase of seeds TZS 71,944 per acre, represents 26.6 percent. The lowest cost for ground nuts

cultivation during short rainy season was associated with irrigation TZS 937 per acre, representing less than one percent of the total cost for the crop cultivation.

The cost for banana cultivation was TZS 332,231 and TZS 248,067 per acre during short rainy and long rainy seasons respectively. The highest cost for banana cultivation during short rainy season was associated with the land preparation which cost TZS 99,145 per acre equivalent to 29.8 percent of the total cost for the crop cultivation, followed by the cost of weeding which is TZS 57,688 per acre, representing 17.4 percent. The lowest cost of production for banana cultivation was incurred during the irrigation (TZS 3,773 per acre), representing one percent. The production cost of watermelon was TZS 832,487 and TZS 969,442 per acre during short and long rainy seasons respectively. The highest cost for watermelon cultivation in long rainy season was associated with cost for purchasing fertilizer i.e. TZS 181,046 per acre, presenting 18.7 percent of the total cost for the crop production, this is closely followed by the cost seeds (TZS 172,673 per acre), represents 17.8 percent. The lowest cost for watermelon cultivation was associated with herbicide (TZS 515 per acre), representing less than one percent of the total cost for the crop production in long rainy season.

Tomato production cost was TZS 771,391 and TZS 515,911 per acre during short and long rainy seasons respectively. The highest cost for tomato cultivation in short rainy season was incurred during the irrigation (TZS 148,517 per acre), representing 19 percent of the total cost for the crop. Followed by the cost associated with land preparations (TZS 106,830 per acre), representing 14 percent. The lowest cost for tomato cultivation was associated with packet/sack materials (TZS 19,136), representing only 2 percent of the total cost.

The cost for keeping and raising improved cattle was TZS 376,092 per head per year. The highest cost for improved cattle was associated with cost of animal feed/fodder (TZS 324,908), represents 86.4 percent of the total cost of raising one improved cattle.

The cost for keeping and raising indigenous cattle was TZS 19,580 per head per year. The highest cost for keeping the indigenous cattle was associated with cost of animal feed/fodder (TZS 9,081) representing 46.4 percent of the total cost of raising one indigenous cattle. The cost for keeping and raising improved goats was TZS 30,012 per head per year. The highest cost for keeping and raising improved goats was associated with cost of animal feed/fodder i.e. (TZS 21,430), representing 71.4 percent of the total cost of keeping this animal. This is

followed by the cost associated with medicine/dips/spray/vaccines which is TZS 3,992 representing 13.3 percent.

The cost of keeping and raising indigenous goat was TZS 5,444 per head per year. The highest cost was associated with medicine/dips/spray/vaccines (TZS 1,607 per head per year) representing 29.5 percent of the annual costs needed for keeping each.

CHAPTER ONE

BACKGROUND AND METHODOLOGY

1.0. Background

The cost of production for agricultural crops is classified into two broad categories i.e. prices paid to farmers known as producers/farm gate prices and prices paid by farmers for land preparation, planting, weeding, fertilizing, extension services, etc. depending on the level of development of the farmer. Prices paid by farmers constitute of an intermediate consumption..

The cost of production helps not only to achieve the precise estimation of the Gross Domestic Products (GDP) but also used by other agencies and policy makers to track the performance of government policies and interventions to evaluate the costs of inputs used in agriculture compared with other sectors of the economy.

Although Office of the Chief Government Statistician (OCGS) conducted a number of surveys such as Annual Agriculture Survey, Household Budget Survey (HBS) and Integrated Labour Force Survey (ILFS), it was observed that there are gaps in input-output ratios and prices. Hence, the need for collecting additional information was noticed for the generation of input-output ratio and cost of production for agricultural products.

This report tends to provide essential statistics that can be used to fulfil the GDP rebasing exercise and ensure that the country is in line with the obligation of other AFRITAC Regional Countries standards. The results will also be useful for updating the existing crops and livestock's models used in compiling the quarterly and annual (GDP) estimates.

1.1 Introduction

The demand for reliable and up to date statistics for tracking implementation and monitoring of countries programs and projects has increased substantially. The demands are crucial not only to the National Statistical System (NSS) of the country, but also to other agencies and institutions responsible for provision of statistics within the country and international arena.

Office of the Chief Government Statistician (OCGS) has the responsibility of producing the official statistics and co-ordinating all statistical activities in line Ministries, independent Departments and Agencies (MDAs). The main objective is to produce quality-timely data that can be used to measure the performance of different projects and programs in the country.

In 2017 OCGS established a special program targeting to strengthen the economic statistics through adopting the 2008 System of National Account (SNA). The program, among others aims at rebasing National Accounts estimates. Thus, the estimates of the SNA would shift the base year used in the compilation of the Gross Domestic Product (GDP) from 2007 to 2015. The exercise was planned to comply with other AFRITAC Regional Countries which had agreed to complete the rebasing exercise by December 2017 so as to provide good estimates of the national account using Supply and Use Table (SUT).

The aim of rebasing exercise is to update input data to be used in strengthening GDP estimates. This has raised a need for conducting The 2017 Zanzibar Agricultural Cost of Production Survey (2017 ZACPS) that covered agricultural crops and cost of raising and keeping livestock. The study aimed to examine the intermediate consumption (IC) associated with the production of crops and livestock's and used to estimate value addition both at current and constant prices.

1.2 Objectives

The main objective of 2017 ZACPS was to collect information on cost of production for major crops and raising and keeping livestock for use in rebasing the national accounts estimates.

1.3 Specific objectives of the study

- To provide benchmark information of intermediate cost in agricultural production (for GDP estimation).
- To assess value added/output ratios of agricultural produce for use in other facet of national account work (construction of SUT and I/O table).
- To establish and recommend agricultural data inputs to be collected routinely by the ministry responsible for agricultural and livestock keeping activities.
- To review methodologies in collection and compilation of agricultural statistics.

1.4 Scope and Coverage

The survey was conducted on households engaged in small scale agriculture in 9 districts of Zanzibar excluding Mjini district. A sample of 720 households (1.6 percent) was selected from the total of 43,844 households engaged in crops production and in raising and keeping livestock as reported from National Sample Census of Agriculture Report 2009. The technique of PPS was used to obtain the number of sampled households in each district. A purposive sampling (PS) was applied to select households to conduct the interviewed within the district. The distribution of selected households is illustrated in table 1 below.

Table 1: Distribution of the Study Population by District

District	Crops & Livestock		Number of Sampled Households
	Number of households	Percentage	
Kaskazini 'A'	2,457	6	40
Kaskazini 'B'	3,843	9	63
Kati	5,411	12	89
Kusini	1,657	4	27
Magharibi	4,930	11	81
Wete	6,585	15	108
Micheweni	7,475	17	123
Chakechake	5,015	11	82
Mkoani	6,471	15	106
Total	43,844	100	720

1.5 Training of Enumerators

The training of the study was prepared and carried out on 28th November to 1st December 2016 for Unguja and 19th to 22nd December 2016 in Pemba. The training was focused on impart knowledge and skills of filling in the questionnaires and conducting the interviews. The underline concept for providing training was to have uniformity on the modality of filling the questionnaires within and between districts.

A total of 18 competent enumerators were recruited and trained. During the training emphasis was placed on training enumerators and supervisors on consistency checks. A team of quality controllers was developed and used as national mobile response which was responsible for quality assurance of the survey work. The quality control team comprised of staff from OCGS and Ministry Agriculture, Natural resources, Livestock and Fisheries (MANLF).

1.6 Data Collection

Data collection started from December, 2016 and lasted for 14 days in all districts. However, the data collection in some districts was extended for up to 20 days due to call backs. The technique applied was to interview head of households about the cost of production in all fields under household operations. The reference period for data collection was 2015/2016 agricultural year (1st October 2015 to 30th September 2016).

1.7 Data Entry

The Census and Survey Processing System (CSPro) was used for manual data entry, data capturing and cleaning. Interactive validation program was incorporated to the software to control the quality of the entered data. This exercise was also meant to assess the correctness of the identifications in each questionnaire and other inconsistencies. Manual data cleaning was performed before the actual data entry.

1.8 Tabulation

Statistical Package for Social Science (SPSS) was used to produce the survey tabulations and Microsoft Excel was used to organize the tables and compute the additional indicators.

1.9 Data Quality

Throughout the implementation of the survey, emphasis was placed on data quality from planning, questionnaire designing, training, supervision, data entry and cleaning. As a result, the report is highly accurate and representative as it was experienced at the field level during the study year.

1.10 Funding Arrangements

The survey was financially supported by the Revolutionary Government of Zanzibar and its development partners through Tanzania Statistics Capacity Building Project (STATCAP).

CHAPTER TWO

FINDINGS ON COSTS OF PRODUCTION

2.0 Results

The results presented in this section reflect on the findings for the cost of crops production in both short and long rainy seasons and the cost of keeping and raising livestock. The analysis of crops is presented by crop type; these are Cereals, Edible roots and tubers, Pulses, Oil seeds and oleaginous fruits, Fruits and Nuts and Vegetables. The analysis of livestock is presented by livestock type.

2.1 Cereals

Results on Cereals production during the short and long rainy seasons shows that maize, Sorghum and Paddy were harvested in agricultural year 2015/16.

The total harvested area for these cereals was 537.3 acres and 202.6 tones were produced (Table 2.1). The harvested area for paddy was 463.7 acres, representing 86 percent of the total area harvested with cereal crops 75.8 acres harvested in short rainy and 387.9 acres in long rainy seasons. The production of paddy was 155.6 tones, representing 77 percent of the total cereals production, whereas 33.2 tons were produced in short rainy and 122.4 tones in long rainy seasons.

The harvested area for maize was 64.8 acres, represents 12 percent of the total area harvested with cereal crops of which 37.1 acres harvested in short rainy and 27.8 acre in long rainy seasons. The production for maize was 44.4 tones, representing 22 percent of the total cereals production 26.42 tones produced in short rainy and 18.02 tones in long rainy seasons.

The table further shows that 24,905 kgs of maize, worth TZS 13,080,000 were sold at TZS 525 per kg in short rainy season; while, a total of 8,828 kgs of paddy was sold, worth TZS 2,772,550 at TZS 314 per kg (Table 2.1).

The cost for paddy cultivation was TZS 182,059 and TZS 228,276 per acre for long and short rainy seasons respectively. The highest cost for paddy cultivation in short rainy season was associated with land preparation TZS 69,963 per acre, representing 31 percent of the total production cost of paddy in this season. The second notch was cost associated with weeding (TZS 36,181 per acre), representing 16 percent of the total production cost for paddy. The lowest cost for paddy cultivation was associated with irrigation and cost of purchasing insecticide which jointly accounted for less than two percent.

Table 2.1 Area and Quantity Harvested by Type of Cereal Crops Season and, during 2015/16 Agricultural Year

Crop	Rainy Season	Harvested Area (Acre)	Quantity harvest (KG)	Total Quantity sold (Kg)	Total Value Sold (TZS)	Price/Kg	Cost of Production/Acre
Maize	Short Season	37.1	26,425	24,905	13,080,000	525	313,857.0
	Long Season	27.75	18,014.5	13,492	6,866,000	509	211,848.0
Paddy	Short Season	75.8	33,210	8,828	2,772,500	314	228,276.0
	Long Season	387.9	122,422	10,012	9,897,500	989	182,059.0
Sorghum	Short Season	-	-	-	-	-	-
	Long Season	8.9	2,535	195	295,500	1,515	148,116
Total	Short Season	112.9	59,635				
	Long Season	424.55	142,972				

2.2 Edible roots and tubers

The total harvested area for edible root and tubers was 1,031 acres produced 1,207.6 tons of edible roots and tubers in which 769.4 tons produced in short rainy and 438.2 tones in long rainy season. The harvested area for cassava was 862.3 acres represents 83.6 percent of the total area harvested with edible root and tubers crops whereas 570.9 acres harvested in short rainy and 291.4 acres in long rainy seasons. The production of cassava was 1,061.9 tones, representing 88 percent of the total edible root and tubers production (712.9 tons produced in short rainy and 349 tones in long rainy seasons).

Cassava cultivation costs TZS 227,962 per acre and TZS 196,768 per acre for short and long rainy seasons respectively. The highest cost incurred during short rainy season was associated with land preparation TZS 83,824 per acre per, representing 37 percent of the total cost for the crop production during this season. This followed by weeding TZS 46,960 per acre, representing 21 percent. The lowest cost for cassava cultivation during short rainy season was associated with packet/sack TZS 5,616 per acre; represent only two percent of the total cost for the crop.

The harvested area for Sweet Potatoes was 125.7 acres equivalent to 12.2 percent of the total area harvested with edible root and tuber crops, 26.1 acres harvested in short rainy and 99.6 acres in long rainy season. The production for Sweet Potatoes was 111.2 tones, representing 9.2 percent of the total edible root and tubers production whereas 27.4 tons produced in short rainy and 83.8 tones in long rainy season.

Data further revealed that during short rainy season the total quantity of edible roots and tubers sold was 492,581 kg valued at TZS 233,205,120 with cassava having the largest quantity of 462,123 kg sold, worth TZS 200,895,600 followed by yams with 18,053 kg sold worth TZS 20,385,520. The least quantity of crops sold in this season was sweet potatoes where by 11,325 kgs out of 27,445 kgs were sold worth TZS 10,829,000 (Table 2.2)

Table 2.2: Harvested Area and Quantity Harvested by Season and Type of Edible Roots and Tubers Crops during 2015/16 Agricultural Year

Crop Name	Rainy Season	Harvested Area (Acre)	Quantity harvest (KG)	Total Quantity sold (Kg)	Total Value Sold (TZS)	Price/Kg	Cost of Production/Acre
Cassava	Short Season	570.9	712,863	462,123	200,895,600	435	227,962
	Long Season	291.4	348,987	208,053	54,708,480	263	196,768
Sweet Potatoes	Short Season	26.1	27,445	11,325	10,829,000	956	263,312.
	Long Season	99.6	83,805	56,100	31,830,000	567	237,016
Yams	Short Season	33.2	27,384	18,053	20,385,520	1,129	492,759.0
	Long Season	4.8	5,415	2,468	2,110,000	855	786,110
Coco Yams	Short Season	5.0	1,710	1,080	1,095,000	1,014	180,000.0
	Long Season	-	-	-	-	-	-
Total	Short Season	635	769,402	492,581	233,205,120		
	Long Season	396	438,207	266,621	88,648,480		

The cost for yams cultivation was TZS 492,759 and TZS 786,110 per acre for short and long rainy seasons respectively. The highest cost during long rainy season was associated with purchasing of seeds (TZS 227,500 per acre), represents 29 percent of the total production cost of yams. Followed by the cost associated with land preparation i.e. TZS 150,000 representing 19 percent of the total cost of the crop. The lowest cost for yams cultivation during long rainy season was associated with herbicide TZS 2, 500 representing less than one percent.

2.3 Pulses

Results of pulses production in table 3.3 below, show that the total harvested area was 80 acres (87 percent was harvested area in short rainy season and 13 percent during the long rainy season). The total quantity produced was 16.6 tons (15.3 tons produced in

short rainy and 1.3 tones in long rainy season). The harvested area for cow peas was 55.3 acres, representing 69.1 percent of the total area harvested with pulses; 45.8 acres (83 percent) was harvested in short rainy season and 9.5 acres (17 percent was harvested in long rainy season). A total of 12.9 tons of cow peas were produced representing 78 percent of the total pulses production (11.8 tones produced in short rainy season and 1.1 tons produced in long rainy season).

The harvested area for green gram was 13.3 acres, representing 16.6 percent of the total area harvested with pulse whereby 12.9 acres (97 percent of total harvested area of green gram harvested in short rainy season) and 0.4 acre (3 percent) was harvested during the long rainy season. A total of 1.3 tones of green gram were produced representing 8 percent of the total pulses production (1.2 tones produced in short rainy season and 65 kgs produced in long rainy season).

The data further reveal that 2.64 tones, valued at TZS 4,666,373 were sold. Cowpeas were the pulse that sold the most (74 percent of the total pulse sold). The second notch was occupied with pigeon peas which accounted for 16 percent of the total pulses sold.

Table 2.3 Harvested Area and Quantity Harvested by Season and Type of Pulses Crops during 2015/16 Agricultural Year,

Crop Name	Rainy Season	Harvested Area (Acre)	Quantityharvest (KG)	Total Quantity sold (Kg)	Total Value Sold (TZS)	Price/Kg	Cost of Production/Acre
Green Gram	Short Season	12.9	1,236	273	355,000	1,300	203,950.
	Long Season	0.4	65	-	-	-	196,667
Pigeon Peas	Short Season	10.8	2,255	411	395,000	961	198,358
	Long Season	0.5	90	15	40,000	2,667	172,000
Cow peas	Short Season	45.8	11,817	1,589	3,306,350	2,081	90,867.0
	Long Season	9.5	1,090	350	570,023	1,629	101,878
Total	Short Season	69.5	15,308	2,273.0	4,056,350.0		
	Long Season	10.4	1245	365	610,023		

The cost for green gram cultivation was TZS 203,950 and TZS 196,667 per acre for short and long rainy seasons respectively. The highest cost for green gram cultivation during short rainy season was associated with land preparation (TZS 70,252 per acre), representing 34 percent of the total cost for the crops in this season. This followed by the cost associated with weeding TZS 43,962 per acre, represent 22 percent. The lowest cost for green gram cultivation during short rainy season was associated with fertilizer TZS 2,642 per acre, representing one percent of the total cost for the crop in this season.

2.4 Oil Seeds and Nuts

A total of 108 acres were used for harvest oil seeds and nuts (42 acres harvested in short rainy season and 66 acres in long rainy season). A total of 54.8 tons of oil seeds and nuts were produced whereby 24.2 tons were recorded during the short rainy season and 30.6 tons in long rainy season (See table 3.4 below).

The harvested area for ground nuts was 39.8 acres, represents 37.1 percent of the total area harvested with oil seeds and nuts; 15.5 acres (38.9 percent) was harvested in short rainy season and 24.3 acres (61.1 percent) was harvested in long rainy season. A total of 16.13 tones of ground nuts was produced presents 29.5 percent of the total oil seeds and Nuts production (9.7 tones produced in short rainy season and 6.43 tones produced in long rainy season). The harvested area of coconuts was 45.8 acres, accounting for 42.4 percent of the total area harvested with oil seeds and nuts whereby 26 acres 56.8 percent of coconuts were harvested in short rainy season and 19.8 acres (43.2 percent) in long rainy season. A total of 17.5 tones of coconuts was produced, representing 32 percent of the total Oil Seeds and Nuts production (14.5 tones produced in short rainy season and 3 tones produced in long rainy season). The total quantity sold for coconuts during short rainy season was 13.1 tones worth TZS 9,476,000 and that of ground nuts was 8.9 tons valued at TZS 10,435,000.

Table 2.4 Harvested Area and Quantity Harvested by Season and Type of Oil Seeds and Nuts

Crop Name	Rainy Season	Harvested Area (Acre)	Quantityharvest (KG)	Quantity Sold (Kg)	Total Value (TZS)	Price/Kg	Cost of Production/Acre
Ground Nuts	Short Season	15.5	9,734	8,895	10,435,000	1,173	270,585.00
	Long Season	24.3	6433	5,929	15,509,500	2,616	219,662.00
Coconuts	Short Season	26	14,477	13,093	9,476,000	724	105,503.00
	Long Season	19.8	3,058	2,560	1,999,600	781	70,463.00
Total	Short Season	42	24,211	21,988	19,911,000		
	Long Season	66	30,644	27,917	35,420,500		

The cost for ground nuts cultivation was TZS 270,585 and TZS 219,662 per acre in short and long rainy seasons respectively. The highest cost for ground nuts cultivation during short rainy season was associated with land preparation (TZS 79,625per acre), representing 29.4 percent of the total cost for the crop production in this season. This followed by the cost associated with seeds (TZS 71,994 per acre), representing 26.6 percent. The lowest cost for ground nuts cultivation during short rainy season was associated with irrigation i.e. TZS 937 per acre, representing less than one percent of the total cost for the crop production in this season.

2.5 Fruits and Oleaginous Fruits Production

The table 3.5 shows that a total of 616.6 acres were used to harvest fruits and oleaginous fruits crops whereby 396.6 acres were harvested in short rainy season and 220 acres in long rainy season. A total of 1,081 tones were produced whereas 857.5 tones (79.3 percent) recorded in short rainy season and 223.6 tones (20.7 percent) in long rainy season.

The harvested area for banana was 429.1 acres, representing 69.6 percent of the total area harvested with fruits and oleaginous fruits; 274.7 acres (64.0 percent) were harvested in short rainy season and 154.4 acres (36.0 percent) was harvested in long

rainy season. A total of 521 tons of banana were produced, representing 48.2 percent of the total fruits and oleaginous fruits crops production (377 tons produced in short rainy season and 144 tons produced in long rainy season).

The harvested area for watermelon was 81.3 acres, representing 13.2 percent of the total area harvested with fruits and oleaginous fruits, of which 60 acres (73.8 percent) was harvested in short rainy season and 21.3 acres (26.2 percent) in long rainy season. A total of 440 tons of watermelon were produced, representing 40.7 percent of the total Fruits and Oleaginous Fruits crops production (382 tons produced in short rainy season and 58 tons produced in long rainy season).

The harvested area of Mango was 53.3 acres, representing 8.6 percent of the total area harvested with fruits and oleaginous fruits whereby 23.5 acres (44.1 percent) were harvested in short rainy season and 29.8 acres (55.9 percent) in long rainy season. A total of 13.7 tons of mangoes were produced, representing one percent of the total fruits and oleaginous fruits crops production (54.5 tons produced in short rainy season and 45.5 tons produced in long rainy season).

The data further reveals that both lemon and citrus lemon occupied the smallest harvested area which jointly accounted for 1.9 acres, representing less than one percent of the total area harvested with fruits and oleaginous.

Moreover, results show that out of the total quantity of fruits harvested 625.4 tons (57.8 percent) were sold, whereas the largest quantity of fruits and oleaginous sold was banana with 342 tons valued at TZS 244, 300,350 followed by watermelon whereby 223 tones were sold valued at TZS 212,003,965.

Table 2.5 Harvested Area and Quantity Harvested by Season and Type of Fruits and Oleaginous Fruits

Crop Name	Rainy Season	Harvested Area (Acre)	Quantityhar vest (KG)	Quantity Sold (Kg)	Total Value (TZS)	Price/ Kg	Cost of Production/A cre
Citrus lime	Short Season	0.5	135	45	50,000	1,111	225,000
	Long Season	0.4	720	720	170,000	236	402,299
Lemon	Short Season	0.5	420	420	283,000	674	230,000
	Long Season	0.5	180	60	30,000	500	123,000
Sugar Cane	Short Season	1.0	675	675	500,000	741	307,500
	Long Season	3.8	7,830	7,830	1,963,000	251	282,500.
Banana	Short Season	274.7	377,267	242,667	174,818,700	720	332,231
	Long Season	154.4	143,913	99,647	69,481,650	697	248,067
Mango	Short Season	23.5	7,462	5,790	7,525,000	1,300	107,234.
	Long Season	29.8	6,226	4,620	3,605,000	780	35,909
Paw paw	Short Season	4.0	21,100	11,200	6,700,000	598	730,870.
	Long Season	2.3	2,265	1,685	495,000	294	130,652.
Pineapple	Short Season	25.8	64,155	23,098	24,754,000	1,072	607,836
	Long Season	5	2,373	1,647	1,060,800	644	295,063
Orange	Short Season	6.6	4,510	1,530	2,680,000	1,752	58,688.
	Long Season	2.5	1,680	700	1,660,000	2,371	106,462
Watermelon	Short Season	60.0	381,801	168,588	169,963,950	1,008	832,487
	Long Season	21.3	58,396	54,468	42,040,015	772	969,442.0
Total	Short Season	396.6	857,525.	454,013.	387,274,650		
	Long Season	220	223,583	171,377	120,505,465		

Total cost for banana cultivation was TZS 332,231 and TZS 248,067 per acre in short and long rainy seasons respectively. The highest cultivation cost for banana during short rainy season was associated with land preparation (TZS 99,145 per acre), representing 29.8 percent of the total cost for the crop cultivation in this season followed by the cost associated with weeding i.e. TZS 57,688 per acre, and representing 17.4 percent. The lowest cost for banana cultivation during short rainy season was associated with pesticide application (TZS 212 acres), representing less than one percent of the total cost for crops cultivation in this season.

Watermelon production cost was TZS 832,487 and TZS 969,442 per acre for short and long rainy seasons respectively. The highest cost for cultivation during long rainy season was associated with the purchase of fertilizer i.e. TZS 181,046 per acres, representing 18.7 percent of the total cost for the crop in this season followed by the cost associated with purchase of seeds (TZS 172,673 per acre), representing 17.8 percent. The lowest cost for this crop production during long rainy season was associated with herbicide application with TZS 515, representing less than one percent of the total cost for the crop in this season.

2.6 Vegetables

A total of 193 acres of vegetable crops were harvested in the study area (116 acres in short and 77 acres in long rainy season). Similarly 296 tons of vegetables were produced, 201 tons (68 percent) recorded in short and 95 tons (32 percent) in long rainy season (Table 2.6).

The cost for tomato cultivation was TZS 771,391 and TZS 515,911 per acre in short and long rainy seasons respectively. The highest cost for tomato cultivation during short rainy season was associated with irrigation (TZS 148,517 per acre), representing 19.3 percent of the total cost for this crop cultivation in this season, followed by the cost associated with land preparation (TZS 106,830 per acre), representing 13.8 percent of the total cost for this crop cultivation in short rainy season. The lowest cost for tomato cultivation during short rainy season was associated with packet/sack materials (TZS

19,136), representing only 2.5 percent of the total cost for the crop cultivation in this season.

The harvested area for tomatoes was 82.4 acres, representing 42.7 percent of the total area harvested with vegetables; 42.1 acres (51.0 percent) were harvested in short and 40.3 acres (49.0 percent) in long rainy season. A total of 117 tones of tomatoes were produced representing 39.5 percent of the total vegetables production (74 tons produced in short and 43 tons produced in long rainy season).

Okra was harvested in 31.3 acres, representing 16.2 percent of the total area harvested with vegetables; 17.5 acres (55.9percent) were harvested in short and 13.8 acres (44.1 percent) in long rainy season. A total of 41tones of Okra were produced represents 13.9 percent of the total vegetables production (25 tons produced in short and 16 tons produced in long rainy seasons).

The harvested area for egg plants was 26.5 acres, representing 13.7 percent of the total harvested area with vegetables, 17 acres (64.2 percent) were harvested in short and 9.5 acres (35.8 percent) in long rainy seasons. A total of 54 tones of egg plants were produced represents 18.4 percent of the total vegetables production (45 tons produced in short and 10 tons in long rainy seasons).

Pumpkins production occupied the smallest harvested area (5.4 acres), representing only 3.7 percent of the total area harvested with vegetables.

Table 2.6 shows the amount of vegetables sold, out of the total quantity of vegetables harvested, 273 tons (92.2 percent) were sold. Whereas the largest quantity sold was tomatoes 117 tons (42.8 percent of the total vegetables sold) valued at TZS 87,153,500, followed by 42 tones of Okra (15.2 percent of the total vegetables sold) valued at TZS 31,346,200.

Table 2.6 Harvested Area and Quantity Harvested by Season and Type of Vegetables

Crop Name	Rainy Season	Harvested Area (Acre)	Quantityharvest (KG)	Quantity Sold (Kg)	Total Value (TZS)	Price/Kg	Cost of Production/Acre
Okra	Short Season	17.5	25,403	26,301	21,254,700	808	622,298
	Long Season	13.8	15,800	15,300	10,091,500	655	392,214
Tomato	Short Season	42.1	73,634	71,766	56,373,100	786	515,911
	Long Season	40.3	43,340	45,207	30,780,400	681	515,911
Bitter aubergine	Short Season	11.1	5,321	5,140	4,458,000	867	438,357
	Long Season	1.8	7,680	7,505	5,537,500	738	715,583
Sweet piper	Short Season	9.2	23,020	23,189	34,806,000	1,501	1,193,547
	Long Season	4.3	7,727	7,360	8,514,000	1,157	1,006,300
Pumpkins	Short Season	3.4	8,789	6,599	3,200,000	485	513,158
	Long Season	2	2,199	1,647	2,127,500	1,292	282,308
Cucumber	Short Season	15.9	20,245	22,157	10,465,000	472	598,5690
	Long Season	5.3	8,405	8,105	2,785,000	344	397,462.
Egg Plant	Short Season	17.0	44,850	21,027	12,041,000	573	585,206
	Long Season	9.5	9,562	11,492	7,802,600	679	388,078
Total	Short Season	116	201,262	176,179	142,597,800		
	Long Season	77	94,713	96,616	67,638,500		

CHAPTER THREE

COSTS IN RAISING AND KEEPING LIVESTOCK

3.0 Livestock

Results on livestock population discussed in this chapter include indigenous and improved cattle, indigenous and improved goats, sheep's and pigs. The results revealed that there was a total of 3,072 livestock heads in the study areas as of 1st October 2016. The number of indigenous cattle (1,661) was higher compared with other livestock followed by indigenous goats (936) and improved cattle (304). The results further showed that pigs were the least livestock kept (23 heads).

Table 3.1 Number of Livestock Population as of 1st October, 2016

S/n	Livestock Type	Number of Heads	Percentage
1	Improved Cattle	304	10
2	Indigenous Cattle	1,661	54
3	Improved goats	128	4
4	Indigenous goats	936	30
5	Sheep	20	1
6	Pigs	23	1
	Total	3,072	100

The data from Table 3.2 show that, the total population of the intake is 1,520 livestock. Indigenous cattle had a total of 713 heads whereby 87 were obtained/received as gifts, 160 were purchased and 466 were newly born, followed by indigenous goats having 573 heads (48 were obtained/received as gifts 77 purchased, and 448 new born). Sheep was the least intake reported whereas there were only two sheep purchased and three were newly born.

Table 3.2 Number of Livestock Intake by Type and Intake during 2015/16 Agricultural Year.

<i>s/n</i>	<i>Livestock Type</i>	<i>Number Purchased</i>	<i>Number obtained/Received as gifts</i>	<i>Number born</i>	<i>Total Number of intake</i>
1	Improved Cattle	26	22	111	159
2	Indigenous Cattle	160	87	466	713
3	Improved goats	3	12	39	54
4	Indigenous goats	77	48	448	573
5	Sheep	2	0	3	5
6	Pigs	0	9	7	16
	Total				1520

The total number of off take was 577 livestock with indigenous cattle 174 cattle traded/sold, 40 consumed by the household, 43 given away/stolen and 215 died, followed by indigenous goats with 150 goats traded/sold, 52 consumed by the household, 36 given away/stolen and 213 died. The least number of off take was recorded for sheep (3) whereas one of them was consumed by the household and two died (Table 3.3).

Table 3.3 Number of Livestock Population Off take during 2015/ 2016 Agricultural year

<i>s/n</i>	<i>Livestock Type</i>	<i>Number sold/traded</i>	<i>Number consumed by household</i>	<i>Number given away/stolen</i>	<i>Number died</i>	<i>Total Off Take</i>
1	Improved Cattle	24	3	3	29	30
2	Indigenous Cattle	174	40	43	215	257
3	Improved goats	28	4	9	21	41
4	Indigenous goats	150	52	36	213	238
5	Sheep	2	1	0	2	3
6	Pigs	4	4	0	2	8
	Total					577

3.1 Cost of Raising Livestock

The results reveal that, the total of TZS 160,325,900 was used for keeping and raising 3,072 livestock of different types during 2015/16 agricultural year. Improved Cattle accounted for TZS 114,332,000 (71.3 percent), indigenous cattle accounted TZS 32,522,800 (20.3 percent). The smallest cost was recorded for keeping and raising sheep TZS 120,000, presents less than one percent of the total cost used for raising and keeping all livestock (Table 3.5).

Table 3.5 Total cost Used for Raising and Keeping Livestock by Type of Livestock with Cost Factors, during 2015/16 Agricultural Year (Value Tsh. ‘000’)

s/n	Livestock Type	Number of Livestock	Cost of Animal feed/fodder (TZS)	Cost of medicine, dips, spray, vaccines (TZS)	Cost of Artificial insemination (TZS)	Cost of Fuel/Lubricants/ Electricity (TZS)	Cost of Repair & maintenance (TZS)	Cost of Veterinary service (TZS)	Total Cost (TZS)
1	Improved Cattle	304	98,772	7,083	1,685	296	2,202	4,295	114,332
2	Indigenous Cattle	1,661	15,083	10,008	287	-	896	6,249	32,523
3	Improved goats	128	2,743	511	-	-	383	205	3,842
4	Indigenous goats	936	1,203	1,504	-	-	1,007	1,382	5,096
5	Sheep	20	-	100	-	-	20	-	120
6	Pigs	23	4,320	64	-	-	30	-	4,414
	Total	3,072							160,326

The results in table 3.6 further showed that, there are substantially unequal proportions of the total cost used for keeping and raising different types of livestock. The cost for keeping and raising improved cattle was TZS 376,092 per head per year, The highest cost for raising improved cattle was associated with cost of animal feed/fodder TZS 324,908 which is equivalent to 86.4 percent, followed by the cost associated with

medicine/dips/spray/vaccines TZS 23,299 (6.2 percent) and cost associated with Veterinary service TZS 14,127 (3.8 percent) per head per year. The lowest cost reported was the cost associated with fuel/lubricants/electricity TZS 972 per head per year, representing less than one percent.

The cost for keeping and raising indigenous cattle was TZS 19,580 per head per year. The highest cost for indigenous cattle was associated with cost of animal feed/fodder TZS 9,081, representing 46.4 percent of the total cost for this animal; followed by the cost associated with medicine/dips/spray/vaccines TZS 6,025 (30.8 percent) and cost associated with Veterinary service TZS 3,762 (19.2 percent) per head per year. The lowest cost reported was associated with repair and maintenance of livestock sheds (TZS 539 per head per year), representing less than three percent (2.8 percent).

The cost for keeping and raising improved goats was TZS 30,012 per head per year. The highest cost for keeping and raising improved goat was associated with cost of animal feed/fodder TZS 21,430, representing 71.4 percent of the total cost for this animal, followed by the cost associated with medicine/dips/spray/vaccines i.e. TZS 3,992, representing 13.3 percent of the total cost. The results further reveal that the lowest cost for keeping and raising improved goat was associated with Veterinary service (TZS 1,602 per head per year), equivalent to 5.3 percent.

The results also show that the cost of keeping and raising indigenous goat was TZS 5,444 per head per year. The highest cost was associated with medicine/dips/spray/vaccines TZS 1,607 head per year, representing 29.5 percent of the annual cost, followed by the cost associated with Veterinary service (TZS 1,476, per head per year) representing 27.1 percent of the annual cost. The lowest cost was associated with the repair and maintenance of livestock sheds (TZS 1,076 per head per year), representing 19.8 percent of the total annual cost (Table 3.6).

Table 3.6 Average Cost Used for Raising and Keeping Livestock per Head by Type of Livestock, during 2015/16 Agricultural Year

s/n	Livestock Type	Cost of Animal feed/fodder (TZS)	Cost of medicine, dips, spray, vaccines (TZS)	Cost of Artificial insemination (TZS)	Cost of Fuel/Lubricants/Electricity (TZS)	Cost of Repair & maintenance (TZS)	Cost of Veterinary service (TZS)	Total Cost (TZS)
1	Improved Cattle	324,908	23,299	5,543	972	7243	14,127	376,092
2	Indigenous Cattle	9,081	6,025	173	-	539	3,762	19,580
3	Improved goats	21,430	3,992	-	-	2988	1,602	30,012
4	Indigenous goats	1,285	1,607	-	-	1076	1,476	5,444
5	Sheep	-	5,000	-	-	1,000	-	6,000
6	Pigs	187,826	2,783	-	-	1,304	-	191,913

3.2 Milk Production

The data from table 3.7 show that milk production for indigenous cattle in rainy season is higher than in dry season. There were 3,545 litres of milk produced (milked from 225 cattle a day) by indigenous cattle in rainy season and 3,279 litres of milk produced by the same cattle (milked from 247 cattle a day) in dry season. On the contrary, the production of milk for improved cattle is higher in dry season compared with rainy season.

Improved cattle produced 2,069 litres of milk during the dry season and 1,201 litres during the rainy season. Even though milk production is higher during the dry season its price is also higher compared with the rainy season. The difference in price of milk for both types of cattle is small but for improved cattle the average price during the dry season is higher (TZS1, 367.2 per litre).

Table 3.7 Cow Milk Production (litres) during 2015/16 Agricultural Year

s/n	Category of Cow		Number of cattle milked/day	Total milk per day(litres)	Average Price/litre (TZS)
1	Improved Cattle	Dry Season	126	2,069	1,367.20
		Rainy Season	113	1,201	1,138.90
2	Indigenous Cattle	Dry Season	247	3,279	1,115.50
		Rainy Season	225	3,545	1,168.10

CHAPTER FOUR

CONCLUSION AND RECOMMENDATION

4.1 CONCLUSIONS

The agriculture cost of Production Study for major crops and livestock intended to examine the intermediate cost of production for agricultural crops and the cost for keeping and raising livestock. This is a usefully information to be used by the system of the national accounts in the compilation of the gross domestic product (GDP) of the country. The chapter has three sections. The first describes the cost for crops production; the second discusses the Cost for raising and keeping livestock and third is a recommendation.

4.1.1 Cost for Crop Production

The study described that, during 2015/2016 agricultural year, the highest cost for cereal production was recorded from paddy cultivation. The cost was TZS 182,059 and TZS 228,276 per acre for long and short rainy seasons respectively. The highest cost for paddy cultivation in short rain season was associated with land preparation TZS 69,963 per acre, representing 31 percent of the total production costs of paddy in this season.

The highest cost for cultivation edible roots and tubers was recorded for cassava cultivation of which one acre cost TZS 227,962 and TZS 196,768 during short and long rainy seasons. The highest cost during short rainy season was associated with land preparation TZS 83,824 per acre per, represent 37 percent of the total cost for the crop production during this season.

The cost for green gram cultivation was TZS 203,950 and TZS 196,667 per acre for short and long rainy seasons respectively. The highest cost for green gram cultivation during short rainy season was associated with land preparation (TZS 70,252 per acre), representing 34 percent of the total cost for the crops in this season.

The cost for ground nuts cultivation was TZS 270,585 and TZS 219,662 per acre in short and long rainy seasons respectively. The highest cost for ground nuts cultivation during short rainy season was associated with land preparation TZS (79,625 per acre), representing 29.4 percent of the total cost for the crop production in this season. This followed by the cost associated with seeds (TZS 71,994 per acre), representing 26.6 percent

The cost for banana cultivation was TZS 332,231 and TZS 248,067 per acre in short and long rainy seasons respectively. The highest cost during short rainy season was associated with land preparation (TZS 99,145 per acre), representing 29.8 percent of the total cost for this crop cultivation in this season. Watermelon production cost was TZS 832,487 and TZS 969,442 per acre for short and long rainy seasons respectively. The highest cost for cultivation during long rain season was associated with purchase of fertilizer. TZS 181,046 per acres, representing 18.7 percent of the total cost for the crop in this season.

The cost for tomato cultivation was TZS 771,391 and TZS 515,911 per acre in short and long rainy seasons respectively. The highest cost for tomato cultivation during short rainy season was associated with irrigation (TZS 148,517 per acre), representing 19.3 percent of the total cost for this crop cultivation in this season

4.1.2 Cost for Keeping and Raising Livestock

. The cost for keeping and raising improved cattle was TZS 376,092 per head per year, The highest cost for raising improved cattle was associated with cost of animal feed/fodder TZS 324,908 which is equivalent to 86.4 percent. Whilst, the cost for indigenous cattle was TZS 19,580 per head per year. The highest was associated with cost of animal feed/fodder TZS 9,081, representing 46.4 percent of the total cost for this animal.

The cost for keeping and raising improved goats was TZS 30,012 per head per year. The highest cost was associated with cost of animal feed/fodder TZS 21,430, representing

71.4 percent of the total cost for this animal. While for indigenous goat was TZS 5,444 per head per year. The highest cost was associated with medicine/dips/spray/vaccines TZS 1,607 head per year, representing 29.5 percent of the annual cost.

4.2. Recommendations

This study was aim to examine the intermediate cost of production for agriculture food crops and the cost for keeping and raising livestock for Tanzania Zanzibar. This is a usefully information for the system of National Accounts to monitor the country economy. The limiting factor of this study is that, cash crops were not covered. Clove and seaweed cultivation in Zanzibar are the main source of foreign earning, therefore, there is a need in the future to plan and to conduct a comprehensive study to examine the cost of production for these crops.

Appendix I: Survey Results Statistical Tables

2.1: Agricultural Cost of Production per Acre during Short Rainy Season, 2015/16 Agricultural Year

S/N	Crop Name	Cost for Land Preparation (TZS)	Planting cost (TZS)	Seeds cost (TZS)	Cost of Irrigation (TZS)	Cost of Fertilizer (TZS)	Cost of Fertilizing (TZS)	Cost of Weeding (TZS)	Cost of Herbicide (TZS)	Cost of Insect cide (TZS)	Cost of Applying Pesticide (TZS)	Cost of Harvesting (TZS)	Cost of Packet/Sack (TZS)	Transport cost (TZS)	Total Cost (TZS)/Acre
1	Maize	89,684	29,510	19,693	26,906	32,695	15,316	47,843	1,187	13,824	8,388	16,264	4,236	8,312	313,857
2	Paddy	69,963	28,624	18,165	1,173	14,778	5,685	36,181	10,037	1,264	4,939	28,187	3,808	5,472	228,276
3	Sorghum	80,000	28,000	8,000	120,000	80,000	10,000	60,000	-	40,000	20,000	-	-	-	446,000
4	Cassava	83,824	26,050	23,212	419	6,367	3,107	46,960	190	23	15	20,844	5,616	11,336	227,962
5	Sweet Potatoes	91,335	31,869	38,082	-	14,388	4,209	43,916	-	-	-	23,728	4,298	11,486	263,312
6	Yams	118,481	40,630	134,288	-	47,395	23,868	68,876	-	218	55	30,142	9,013	19,794	492,759
7	Coco yams	53,535	26,869	25,455	-	-	-	41,414	-	-	-	18,182	7,071	7,475	180,000
8	Cowpeas	32,047	13,839	7,041	28	1,673	1,412	15,095	810	5,137	2,716	7,716	1,310	2,043	90,867
9	Green gram	70,252	31,006	10,616	-	2,642	1,572	43,962	2,642	7,893	6,730	20,975	2,138	3,522	203,950
10	Peas	81,053	28,728	7,011	-	-	-	53,420	479	479	684	20,280	3,659	2,565	198,358
11	Ground nuts	79,625	41,452	71,944	937	7,963	2,436	33,724	-	-	-	22,717	3,597	6,192	270,585
12	Coconuts	22,593	9,379	9,655	2,759	-	-	30,055	-	-	-	20,924	2,028	8,110	105,503
13	Citrus	55,515	20,588	68,750	3,493	6,434	3,676	56,618	-	-	-	7,721	1,287	919	225,000
14	Citrus Limon	-	-	-	-	-	-	64,000	-	-	-	124,000	21,000	21,000	230,000

S/N	Crop Name	Cost for Land Preparation (TZS)	Planting cost (TZS)	Seeds cost (TZS)	Cost of Irrigation (TZS)	Cost of Fertilizer (TZS)	Cost of Fertilizing (TZS)	Cost of Weeding (TZS)	Cost of Herbicide (TZS)	Cost of Insect cide (TZS)	Cost of Applying Pesticide (TZS)	Cost of Harvesting (TZS)	Cost of Packet/Sack (TZS)	Transport cost (TZS)	Total Cost (TZS)/Acre
15	Sugar cane	100,000	40,000	30,000	-	-	-	50,000	-	-	-	25,000	-	62,500	307,500
16	Banana	99,145	38,579	55,964	3,774	26,134	11,539	57,688	121	1,028	212	19,372	2,234	16,442	332,231
17	Mango	19,595	9,612	16,459	5,666	2,108	675	31,703	-	-	-	11,636	3,575	6,206	107,234
18	Papaya	114,957	13,043	56,696	48,000	42,609	10,435	40,522	-	12,261	7,478	72,174	179,130	133,565	730,870
19	Pine apples	102,787	80,557	105,836	-	127,705	15,410	119,836	-	115	98	19,902	1,820	33,770	607,836
20	Orange	8,085	3,759	2,553	567	4,716	2,624	17,979	-	-	-	11,489	2,589	4,326	58,688
21	Okra	101,084	37,263	39,702	105,691	60,136	22,981	62,141	-	38,976	25,827	56,477	23,084	48,938	622,298
23	Tomatoes	106,830	57,161	47,791	148,517	101,201	24,034	58,485	192	69,424	28,474	50,843	19,136	59,304	771,391
24	Bitter amberguine	83,040	39,279	26,274	66,960	51,670	15,114	61,511	-	19,859	9,490	48,330	4,350	12,478	438,357
25	Sweet piper	107,726	43,036	118,716	286,942	153,863	34,929	102,503	272	#####	54,026	77,149	21,948	60,011	1,193,547
26	Pumpkin	80,549	23,570	30,549	1,373	33,638	13,959	60,984	-	81,693	35,927	69,794	9,268	71,854	513,158
27	Cucumber	85,566	23,425	18,869	132,538	87,401	24,648	66,300	2,171	59,572	30,031	35,719	9,425	22,905	598,569
28	Egg plants	80,890	33,031	22,241	139,264	70,140	26,194	55,382	-	40,527	24,437	38,221	12,842	42,037	585,206
29	Water melon	106,185	29,446	164,916	155,805	128,112	28,257	46,635	482	62,016	30,787	37,847	3,124	38,876	832,487

2.2: Agricultural Crops Production during Short Rainy Season, 2015/16 Agricultural Year

s/n	Crop Name	Codes	Harvested Area (Acre)	Total harvest (KG)	Total sold (Kg)	Total Value (TZS)	Price/Kg
1	Maize	11	37.1	26,425	24,905	13,080,000	525
2	Paddy	12	75.8	33,210	8,828	7,768,640	880
3	Sorghum	13	-	-	-	-	-
4	Cassava	21	570.9	712,863	462,123	200,895,600	435
5	Sweet Potatoes	22	26.1	27,445	11,325	10,829,000	956
6	Yams	24	33.2	27,384	18,053	20,385,520	1,129
7	Coco yams	25	5	1,710	1,080	1,095,000	1,014
8	Cowpeas	32	45.8	11,817	1,589	3,306,350	2,081
9	Green gram	33	12.9	1,236	273	355,000	1,300
10	Peas	34	10.8	2,255	411	395,000	961
11	Ground nuts	43	15.5	9,734	8,895	10,435,000	1,173
12	Coconuts	45	26	14,477	13,093	9,476,000	724
13	Citrus	851	0.5	135	45	50,000	1,111
14	Citrus Limon	852	0.5	420	420	283,000	674
15	Sugar cane	60	1	675	675	500,000	741
16	Banana	71	274.7	377,267	242,667	174,818,700	720
17	Mango	73	23.5	7,462	5,790	7,525,000	1,300
18	Papaya	74	4	21,100	11,200	6,700,000	598
19	Pine apples	75	25.8	64,155	23,098	24,754,000	1,072
20	Orange	76	6.6	4,510	1,530	2,680,000	1,752
21	Okra	100	17.5	25,403	26,301	21,254,700	808
23	Tomatoes Bitter	87	42.1	73,634	71,766	56,373,100	786
24	amberguine	102	11.1	5,321	5,140	4,458,000	867
25	Sweet piper	90	9.2	23,020	23,189	34,806,000	1,501
26	Pumpkin	92	3.4	8,789	6,599	3,200,000	485
27	Cucumber	93	15.9	20,245	22,157	10,465,000	472
28	Egg plants	94	17	44,850	21,027	12,041,000	573
29	Water melon	95	60	381,801	168,588	169,963,950	1,008
TOTAL			1,371.50	1,927,343	1,180,767	807,893,560	684

2.3: Agricultural Cost of Production per Acre during Long Rainy Season, 2015/16 Agricultural Year

s/n	Crop Name	Cost for Land Preparation (TZS)	Planting cost (TZS)	Seeds cost (TZS)	Cost of Irrigation (TZS)	Cost of Fertilizer (TZS)	Cost of Fertilizing (TZS)	Cost of Weeding (TZS)	Cost of Herbicide (TZS)	Cost of Insecticide (TZS)	Cost of Applying Pesticide (TZS)	Cost of Harvesting (TZS)	Cost of Packet/Sack (TZS)	Transport cost (TZS)	Total Cost (TZS)	Total Percentage cost
1	Maize	71,590	24,699	14,822	8,193	12,084	5,193	41,349	289	5,627	4,265	15,325	2,557	5,855	211,848	2.3
2	Paddy	54,181	22,598	16,204	111	13,232	5,037	32,073	10,577	1,258	4,647	15,292	2,711	4,137	182,059	2
3	Sorghum	65,217	14,106	12,271	-	7,005	2,126	33,816	-	483	-	7,729	1,836	3,527	148,116	1.6
4	Cassava	74,174	22,701	22,420	-	4,525	2,779	39,981	118	47	35	17,306	4,639	8,042	196,768	2.2
5	Sweet Potatoes	77,350	22,527	39,921	-	19,851	3,262	29,506	-	-	-	25,282	8,621	10,695	237,016	2.6
6	Yams	150,000	38,000	227,500	-	128,550	27,830	105,050	2,500	-	-	57,800	32,580	16,300	786,110	8.7
7	Coco yams	86,667	73,333	40,000	-	-	-	40,000	-	-	-	-	-	-	240,000	2.7
8	Cowpeas	46,504	11,870	6,992	-	976	610	19,675	-	2,764	2,439	7,724	740	1,585	101,878	1.1
9	Green gram	74,667	38,667	22,000	-	-	-	52,000	-	-	-	5,333	3,333	667	196,667	2.2
10	Peas	40,000	15,000	3,000	-	-	-	79,000	-	-	-	30,000	2,000	3,000	172,000	1.9
11	Ground nuts	72,727	23,891	45,200	-	4,182	4,945	33,891	-	2,182	727	24,109	3,425	4,382	219,662	2.4
12	Coconuts	27,902	7,317	7,073	4,390	610	122	13,012	488	-	244	5,854	732	2,720	70,463	0.8
13	Citrus	137,931	45,977	34,483	57,471	-	-	91,954	-	-	-	22,989	5,747	5,747	402,299	4.4
14	Citrus Limon	-	-	-	-	-	-	60,000	-	-	-	50,000	5,000	8,000	123,000	1.4
15	Sugar cane	80,000	31,250	50,000	-	12,500	5,000	48,750	8,750	-	-	35,250	-	11,000	282,500	3.1
16	Banana	65,701	34,836	42,537	826	17,251	8,460	43,622	128	308	139	19,546	1,491	13,221	248,067	2.7
17	Mango	7,273	4,221	731	-	325	65	15,244	-	-	-	6,006	812	1,234	35,909	0.4
18	Papaya	8,696	6,522	1,739	-	8,696	4,348	62,174	-	-	-	20,435	8,913	9,130	130,652	1.4
19	Pine apples	37,468	32,203	62,835	-	78,127	16,557	63,089	-	-	-	2,228	886	1,671	295,063	3.3
20	Orange	9,231	4,615	1,538	12,308	6,154	923	52,308	-	-	-	12,000	3,077	4,308	106,462	1.2
21	Okra	65,789	26,281	22,547	65,088	30,877	19,825	41,088	1,088	8,421	5,474	56,281	16,298	33,158	392,214	4.3
23	Tomatoes	86,007	41,024	39,556	66,712	49,973	18,498	46,678	1,138	36,507	15,722	44,824	19,863	49,408	515,911	5.7
24	Bitter amberguine	77,826	37,391	20,783	139,043	144,435	30,870	89,130	-	46,017	23,652	83,478	8,304	14,652	715,583	7.9
25	Sweet piper	158,600	57,600	74,300	147,000	121,000	42,400	114,500	-	93,100	43,400	57,000	33,940	63,460	1,006,300	11.1
26	Pumpkin	69,231	22,154	12,000	49,231	15,385	6,154	49,231	-	12,923	12,308	18,462	3,538	11,692	282,308	3.1
27	Cucumber	84,154	13,923	7,231	65,077	48,308	20,077	63,231	-	45,462	20,000	15,692	3,923	10,385	397,462	4.4
28	Egg plants	78,471	26,258	18,159	68,813	46,781	20,523	49,748	-	18,763	11,368	25,453	8,310	15,433	388,078	4.3
29	Water melon	107,921	33,149	172,673	184,693	181,046	30,614	55,386	515	83,208	56,337	28,119	3,149	32,634	969,442	10.7
	TOTAL	1,915,278	732,112	1,018,515	868,957	951,870	276,216	1,465,486	25,591	357,070	200,757	709,516	186,426	346,042	9,053,835	100

3.4: Agricultural Crops Production during Long Rainy Season, 2015/16 Agricultural Year

s/n	Crop Name	Harvested Area (Acre)	Total harvest (KG)	Total sold (Kg)	Total Value (TZS)	Price/Kg
1	Maize	27.8	18,015	13,492	6,866,000	509
2	Paddy	387.9	122,422	10,012	9,897,500	989
3	Sorghum	8.9	2,535	195	295,500	1,515
4	Cassava	291.4	348,987	208,053	54,708,480	263
5	Sweet Potatoes	99.6	83,805	56,100	31,830,000	567
6	Yams	4.8	5,415	2,468	2,110,000	855
7	Coco yams	-	-	-	-	-
8	Cow paeans	9.5	1,090	350	570,023	1,629
9	Green gram	0.4	65	-	-	-
10	Peas	0.5	90	15	40,000	2,667
11	Ground nuts	24.3	6,493	5,929	15,509,500	2,616
12	Coconuts	19.8	3,058	2,560	1,999,600	781
13	Citrus	0.4	720	720	170,000	236
14	Citrus Limon	0.5	180	60	30,000	500
15	Sugar cane	3.8	7,830	7,830	1,963,000	251
16	Banana	154.4	143,913	99,647	69,481,650	697
17	Mango	29.8	6,226	4,620	3,605,000	780
18	Papaya	2.3	2,265	1,685	495,000	294
19	Pine apples	5.0	2,373	1,647	1,060,800	644
20	Orange	2.5	1,680	700	1,660,000	2,371
21	Okra	13.8	15,800	15,300	10,019,500	655
23	Tomatoes	40.3	43,340	45,207	30,780,400	681
24	Bitter amberguine	10.8	7,680	7,505	5,537,500	738
25	Sweet piper	4.3	7,727	7,360	8,514,000	1,157
26	Pumpkin	2.0	2,199	1,647	2,127,500	1,292
27	Cucumber	5.3	8,405	8,105	2,785,000	344
28	Egg plants	9.5	9,562	11,492	7,802,600	679
29	Water melon	21.3	58,396	54,468	42,040,015	772
	TOTAL	1,180.3	910,269.5	567,167.0	311,898,568.0	550

Table 4.1 Livestock Population (as of 1 October, 2016)

S/N	Animal Names	codes	Number	Percentage
1	Improved Cattle	101	304	10
2	Indigenous Cattle	102	1,661	54
3	Improved goats	201	128	4
4	Indigenous goats	202	936	30
5	Sheep	300	20	1
6	Pigs	500	23	1
Total			3,072	100

Table 4.2 Livestock Population (Intake 2015/ 2016)

S/N	Animal Names	codes	Number		Number born	Total intake	Percentage
			Purchased	obtained			
1	Improved Cattle	101	26	22	111	159	10.5
2	Indigenous Cattle	102	160	87	466	713	46.9
3	Improved goats	201	3	12	39	54	3.6
4	Indigenous goats	202	77	48	448	573	37.7
5	Sheep	300	2	0	3	5	0.3
6	Pigs	500	0	9	7	16	1.1
Total						1,520	

Table 4.3 Livestock Population (Off take 2015/ 2016)

s/n	Animal Names	codes	Number		Number given away/stolen	Number died	Total Off Take	percentage
			Number sold/traded	consumed by household				
1	Improved Cattle	101	24	3	3	29	30	5.2
2	Indigenous Cattle	102	174	40	43	215	257	44.5
3	Improved goats	201	28	4	9	21	41	7.1
4	Indigenous goats	202	150	52	36	213	238	41.2
5	Sheep	300	2	1	0	2	3	0.5
6	Pigs	500	4	4	0	2	8	1.4
Total							577	100

Table 4.4 Cattle Milk Production (Lts) during 2015/16 Agricultural Year

s/n	Details	Number of cattle milked/day	Total milk (litres)	Average Price/litre (TZS)
1	Improved Diary Cattle - Dry Season	126	2,069	1,367.2
2	Improved Diary Cattle - Rain Season	113	1,201	1,138.9
3	Indigenous cattle - Dry season	247	3,279	1,115.5
4	Indigenous cattle - Rain season	225	3,545	1,168.1

Table 4.6 Average Cost of Raising Livestock during 2015/16 Agriculture Year

S/N	Names	Number of Livestock	Cost of Animal feed/fodder (TZS)	Cost of Medicines, dips, spray, vaccines (TZS)	Cost of Artificial insemination	Cost of Fuel/lubricants/Electricity	Cost of Repair & maintenance	Cost of Veterinary service (TZS)	Total cost (TZS)	Average Cost/Livestock
	Improved									
1	Diary Cattle	304	98,772,000	7,083,000	295,500	2,202,000	4,294,500	114,332,000	228,664,000	752,184
	Indigenous									
2	cattle	1661	15,083,000	10,007,600	-	896,000	6,249,200	32,522,800	65,045,600	39,161
	Improved									
3	Goats	128	2,743,000	511,000	-	382,500	205,000	3,841,500	7,683,000	60,023
	Indigenous									
4	Goats	936	1,202,500	1,504,400	-	1,006,900	1,381,800	5,095,600	10,191,200	10,888
5	Sheep	20	-	100,000	-	20,000	-	120,000	240,000	12,000
6	Pigs	23	4,320,000	64,000	-	30,000	-	4,414,000	8,828,000	383,826

Appendix II: Data Collection Questionnaire

CONFIDENTIAL



Office of the Chief Government Statistician

Cost of Production Survey for Crops and Rearing Livestock, 2015/16 Agricultural Year

THIS SURVEY IS CONDUCTED UNDER THE ZANZIBAR STATISTICAL ACT No. 9 of 2007

THE INFORMATION PROVIDED WILL BE CONFIDENTIAL AND USED FOR STATISTICAL PURPOSES ONLY

SECTION 1: IDENTIFICATION

	CODE	NAME
1. REGION:	
2. DISTRICT:	<input type="text"/> <input type="text"/>
3. WARD:	<input type="text"/> <input type="text"/> <input type="text"/>
4. VILLAGE/STREET	<input type="text"/> <input type="text"/> <input type="text"/>
5. ENUMERATION AREA	<input type="text"/> <input type="text"/> <input type="text"/>
6. NAME OF WARD LEARDER	

SECTION 4

4.1 Costs of Livestock rearing as per Agricultural year 2015/16

Types of Animals	Feeds (Tsh)	Cost Drugs,dipping, spraying,vaccine (Tsh)	Cost of AI (Artificial insemination) (Tsh)	Cost of fuel,Lubricants, Electricity (Tsh)	Cost of minor maintenance (Tsh)	Cost of veterinary services (Tsh)	Total cost (Tsh)
<i>Clm1</i>	<i>Clm 2</i>	<i>Clm3</i>	<i>Clm4</i>	<i>Clm5</i>	<i>Clm6</i>	<i>Clm7</i>	<i>Clm8</i>
Improved cattle							
Indigenous cattle							
Improved Goats							
Indigenous Goats							
Sheeps							
Pigs							
Layers							
Broilers							
Indigenous chickens							
Other poultries							

LIVESTOCK INTAKE AND OFF TAKE									
LIVESTOCK OWNERSHIP AS OF 2015/16 AGRICULTURAL YEAR									
4.1 Livestock Population as of 1st. October, 2016					4.2 LIVESTOCK INTAKE AS OF 2015/2016				
S/N	Type of Livestock	Number			Purchased Cattle	Received as gifts	Born	Total	
	<i>Col 1</i>	<i>Col 2</i>	S/N		<i>Col 1</i>	<i>Col 2</i>	<i>Col 3</i>	<i>Col 4</i>	
	1 Improved Cattle		1	Improved Cattle					
2	Indigenous Cattle		2	Indigenous Cattle					
3	Improved Goat		3	Improved Goat					
4	Indigenous Goat		4	Indigenous Goat					
5	Sheep		5	Sheep					
6	Pig		6	Pig					
4.3 Livestock Offtake as of 2015/2016									
		Sold	Slaughtered for own Consumption	Taken away as a gift	Dead	Total			
4.4.1	Improved Cattle								
4.4.2	Indigenous Cattle								
4.4.3	Improved Goat								
4.4.4	Indigenous Goat								
4.4.5	Sheep								
4.4.6	Pig								
Livestock Production									
4.4 Milk Production as of 2015/2016 Agricultural Year									
S/N		Season	Number of milked cow	Number of litres/day	Average price/litre				
		(1)	(2)						
4.4.1	Improved Cow	Dry Season							
		Rain Season							
4.4.2	Indigenous Cow	Dry Season							
		Rain Season							
4.5 Eggs Production 2015/16									
	Type	Number of eggs							
4.5.1	Improved Chicken								
4.5.2	Indigenous Chicken								

Section 7: Conclusion

This is the end of our interview. Thanks for your cooperation.

Name of Enumerator:

Date of completion:/...../.....

Comments (Enumerator)

.....
.....
.....
.....
.....

Name of Supervisor:

Date of Supervision:/...../.....

Name of Editor:

Date of Editing:/...../.....

Name of Data entrant:

Date of Data Entry:/...../.....

Appendix III:

List of Contributors of the Zanzibar Agriculture Cost of Production Survey

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Khadija Kh. Hamad	Director of Demographic and Social Statistics
Ali I. Shamte	Director of Statistical and Technical Support Service Section

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OFFICE OF THE CHIEF GOVERNMENT STATISTICIAN, ZANZIBAR

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Mission

The Mission of OCGS is “to coordinate production of official statistics, provide high quality statistical data and information and promote their use in planning, decision making, administration, governance, monitoring and evaluation”.

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