



**THE UNITED REPUBLIC OF TANZANIA**



**NATIONAL SAMPLE CENSUS OF  
AGRICULTURE 2019/20**

**NATIONAL REPORT**

**August 2021**









**The United Republic of Tanzania**

# **National Sample Census of Agriculture 2019/20**

## **National Report**

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## Table of Contents

List of Tables.....	vii
List of Figures.....	xii
List of Maps.....	xxiv
General Notes.....	xxvi
List of Abbreviations.....	xxvii
Definition of Key Terms.....	xxviii
FOREWORD.....	xxxix
PREFACE.....	xxxix
EXECUTIVE SUMMARY.....	xxxix
CHAPTER ONE.....	1
BACKGROUND INFORMATION.....	1
1.0 Introduction.....	1
1.1 Background Information.....	2
1.2 Census Objectives.....	2
1.3 Census Scope and Coverage.....	2
1.4 Census Methodology.....	4
1.4.1 Sample Design.....	4
1.4.2 Sample Size.....	4
1.5 Census Organization.....	5
CHAPTER TWO.....	6
DEMOGRAPHICS.....	6
2.0 Agricultural Households.....	6
2.1 Types of Agricultural Activities of the Households.....	6
2.2 Agricultural Household Characteristics.....	7
2.3 Number and Size of Agricultural Households.....	8
2.4 Literacy and Education of Agricultural Population.....	9
2.5 Education Status.....	10
2.6 Main Household Activity.....	12
2.7 Land Use.....	13
2.7.1 Area of Land Utilized.....	13
2.7.2 Land Use Sufficiency.....	14
2.7.3 Land Use Patterns.....	15
CHAPTER THREE.....	18
CROPS RESULTS.....	18
3.0 Introduction.....	18
3.1 Crop Production.....	18
3.1.1 Cereals Crop Production.....	18
3.1.1.1 Maize.....	21
3.1.1.2 Paddy.....	25
3.1.1.3 Sorghum.....	29
3.1.1.4 Other Cereals.....	32



3.1.2	Roots and Tuber Crops Production.....	33
3.1.2.1	Cassava .....	35
3.1.2.2	Sweet Potatoes .....	37
3.1.2.3	Irish Potatoes .....	41
3.1.2.4	Other Roots and Tuber Crops.....	43
3.1.3	Pulses.....	44
3.1.3.1	Beans .....	44
3.1.3.2	Cowpeas .....	46
3.1.3.3	Green gram .....	49
3.1.3.4	Pigeon Peas.....	51
3.1.3.5	Other Pulses .....	53
3.1.4	Oil Seeds and Nuts Crops.....	54
3.1.4.1	Groundnuts .....	54
3.1.4.2	Sunflower.....	57
3.1.4.3	Sesame.....	60
3.1.4.4	Oil Palm.....	61
3.1.5	Fruits and Vegetables.....	63
3.1.5.1	Tomato.....	63
3.1.5.2	Onions .....	65
3.1.5.3	Cabbage .....	67
3.1.5.4	Watermelon.....	68
3.1.5.5	Okra .....	70
3.1.5.6	Banana .....	72
3.1.5.7	Mango.....	75
3.1.5.8	Orange .....	77
3.1.5.9	Pineapple .....	79
3.1.6	Cash Crops.....	81
3.1.6.1	Cotton .....	81
3.1.6.2	Tobacco .....	82
3.1.6.3	Coffee.....	83
3.1.6.4	Sugarcane.....	84
3.1.6.5	Cashewnuts.....	85
3.1.6.6	Coconut.....	86
3.1.6.7	Sisal .....	87
3.1.6.8	Tea .....	88
3.1.6.9	Clove .....	89
3.2	Agro-Processing.....	90
3.2.1	Households Involved in Agro-processing.....	90
3.2.2	Quantity of Major Crop Products .....	92
3.2.3	Major Outlets for Selling Agro-processed Products.....	92
3.2.3.1	Flour/Meal .....	92
3.2.1.2	Grain.....	92

3.2.1.3	Oil .....	93
3.2.1.4	Fiber .....	93
3.2.3	Main Type of Packaging Material .....	93
3.2.3.1	Flour/Meal .....	93
3.2.3.2	Grain.....	94
3.2.3.3	Oil .....	94
3.3	Irrigation .....	94
3.3.1	Area Planted under Irrigation .....	94
3.3.2	Main Crops Irrigated.....	95
3.3.2.1	Cereals.....	96
3.3.2.2	Root and Tuber Crops .....	96
3.3.2.3	Pulses.....	97
3.3.2.4	Fruits and Vegetables.....	98
3.4	Input Use .....	99
3.4.1	Use of Improved Seeds .....	99
3.4.2	Fertilizer Use .....	101
3.4.3	Use of Pesticides.....	103
3.4.3.1	Herbicides.....	103
3.4.3.2	Fungicides.....	104
3.4.3.3	Insecticides .....	104
3.5	Access to Farm Inputs .....	105
3.5.1	Compost Manure.....	106
3.5.2	Farmyard Manure.....	107
3.5.3	Inorganic Fertilizer.....	109
3.5.4	Improved seeds .....	111
3.5.5	Insecticide/ Fungicides.....	113
3.5.6	Herbicide .....	115
3.6	Crop Extension Services.....	117
3.6.1	Access to Crop Extension Services.....	117
3.6.2	Source of Extension Services .....	118
3.6.3	Extension Message Practices.....	119
3.7	Agriculture Mechanization .....	120
3.7.1	On Farm Investments .....	120
3.7.2	Use of Tractors and Draft Animals.....	123
3.8	Crop Marketing .....	124
3.8.1	Crop commercialization .....	124
3.8.2	Main Marketing Challenges .....	126
CHAPTER FOUR .....		127
LIVESTOCK, FISH FARMING AND BEEKEEPING RESULTS .....		127
4.0	Introduction.....	127
4.1	Livestock Population.....	127
4.1.1	Cattle Population.....	128

4.1.1.1	Types of Cattle.....	130
4.1.1.2	Indigenous Cattle Population.....	130
4.1.1.3	Improved Cattle Population.....	131
4.1.2	Goat Population.....	132
4.1.2.1	Indigenous Goats.....	134
4.1.2.2	Improved Goats.....	135
4.1.3	Sheep Population.....	136
4.1.4	Pig Population.....	137
4.1.5	Chicken Population.....	139
4.1.5.1	Indigenous Chicken Population.....	143
4.1.5.2	Improved Chicken Population.....	145
4.1.6	Other Poultry.....	148
4.1.7	Other Livestock Population.....	150
4.2	Method of Cattle Identification.....	152
4.3	Livestock and Poultry Products.....	153
4.3.1	Milk Production.....	153
4.3.2	Chicken Eggs Production.....	157
4.3.3	Hides and Skins.....	159
4.4	Outlet for Sales of Livestock and Livestock Product.....	160
4.4.1	Cattle Outlets.....	160
4.4.2	Goats Outlets.....	161
4.4.3	Chicken Outlets.....	161
4.4.4	Milk Outlets.....	162
4.5	Livestock Pests and Parasites Control.....	163
4.5.1	Common Livestock Diseases.....	163
4.5.1.1	Cattle Diseases.....	163
4.5.1.2	Goat diseases.....	170
4.5.1.3	Sheep Diseases.....	176
4.5.1.4	Pig Diseases.....	181
4.5.1.5	Poultry Diseases.....	185
4.5.2	Livestock Vaccination.....	186
4.5.2.1	Vaccine Against Various Livestock Diseases.....	186
4.5.2.2	Source of Vaccines.....	191
4.5.3	Livestock Pest and Parasites control methods.....	191
4.5.3.1	Tick Control Methods.....	192
4.5.3.2	Tsetse Fly Control Methods.....	192
4.5.3.3	The Control Methods of Newcastle Disease (NCD).....	193
4.5.4	Deworming Practices.....	193
4.6	Livestock Extension Services.....	195
4.6.1	Extension Service Received by Households.....	196
4.6.2	Advice Practiced.....	200
4.7	Fish Farming.....	203



4.7.1	Fish Farming Households.....	203
4.7.2	Fish Production.....	204
4.7.3	Source of Fingerlings.....	205
4.7.4	Frequencies of Fish Stocking.....	206
4.7.5	Outlets for Selling Fish.....	207
4.7.6	Fish Feeds.....	208
4.8	Bee Keeping.....	209
4.8.1	Honey Production.....	209
4.8.2	Sales and Market of Harvested Honey.....	211
CHAPTER FIVE.....		214
AGRICULTURAL CREDIT.....		214
5.0	Introduction.....	214
5.1	Agricultural Households Reported to Borrow Money.....	214
5.2	Agricultural Household Members Received Credit by Sex.....	215
5.2.1	Source of Credits.....	217
5.2.2	Uses of Credits.....	219
5.2.3	Value of Credits.....	220
5.2.4	Main Reason for Not Borrowing Credit.....	222
5.3	Agricultural Constraints.....	224
CHAPTER SIX.....		226
POVERTY INDICATORS.....		226
6.0	Introduction.....	226
6.1	Roofing Materials.....	226
6.2	Floor Materials.....	228
6.3	Wall Materials.....	230
6.4	Toilet Facilities.....	232
6.5	Source of Energy for Cooking.....	234
6.6	Source of Energy for Lighting.....	237
6.7	Access to Drinking Water.....	239
6.7.1	Wet Season.....	239
6.7.2	Dry Season.....	241
6.8	Distance to Source of Drinking Water.....	243
6.9	Time Spent to Main Source of Drinking Water.....	244
6.10	Ownership of Assets.....	245
6.11	Food Consumption Pattern.....	246
6.11.1	Number of Meals per Day.....	246
6.11.2	Meat Consumption.....	247
6.11.3	Fish Consumption.....	249
6.11.4	Status of Food Satisfaction.....	250
6.11.5	Main Source of Household Income.....	251
CHAPTER SEVEN.....		254
CONCLUSION AND RECOMMENDATION.....		254

7.0	Introduction.....	254
7.1	Conclusion .....	254
7.1.1	Status of the Agriculture in Tanzania.....	254
7.1.2	Status of Crop Sub-sector in Tanzania.....	257
7.1.3	Status of the Livestock Sub-sector in Tanzania.....	260
7.1.4	Status of Fish Farming in Tanzania .....	260
7.2	Recommendations .....	262
7.2.1	Crop Sub sector.....	262
7.3.2	Livestock Sub sector .....	263
7.2.3	Fish Farming.....	264
	LIST OF APPENDICES .....	265

## List of Tables

Table 1.1:	Census Sample Size During 2019/20 Agricultural Year, Tanzania.....	4
Table 2.1:	Number of Agricultural Household Members by Sex and Age Group, 2019/20 Agricultural Year, Tanzania .....	8
Table 2.2:	Number and Percentage of Agricultural Population by Main Activity During 2019/20 Agricultural Year, Tanzania.....	12
Table 3.1:	Total Planted Area, Harvested Area, Quantity Harvested and Yield of the Cereal Crops Produced by Smallholder Farmers During 2019/20 Agricultural Year, Tanzania .....	20
Table 3.2:	Planted Area, Harvested Area, Quantity harvested, Yield and Percentage of Roots and Tubers During 2019/20 Agricultural Year, Tanzania.....	34
Table 3.3:	Planted and Harvested Area, Quantity Harvested and Yield of Groundnuts by Region During 2019/20 Agricultural Year, Tanzania.....	56
Table 3.4:	Planted and Harvested Area, Quantity Harvested and Yield of Sunflower by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	59
Table 3.5:	Planted and Harvested Area, Quantity Harvested and Yield of Sesame by Region During 2019/20 Agricultural Year, Tanzania.....	61
Table 3.6:	Planted and Harvested Area, Quantity Harvested and Yield of Oil Palm by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	62
Table 3.7:	Number of Household, Planted Area, Quantity Harvested and Yield of Cabbage by Region During 2019/20 Agricultural Year, Tanzania.....	68
Table 3.8:	Planted and Harvested Area, Quantity and Yield of Okra by Region During 2019/20 Agricultural Year, Tanzania.....	72
Table 3.9:	Number of Households, Planted and Harvested Area, Quantity Harvested of Banana by Region During 2019/20 Agricultural Year, Tanzania .....	74
Table 3.10:	Number of Households, Planted and Harvested Area, Quantity Harvested of Mango by Region During 2019/20 Agricultural Year, Tanzania .....	76
Table 3.11:	Number of Households, Planted and Harvested Area, Quantity Harvested of Oranges by Region During 2019/20 Agricultural Year, Tanzania .....	78
Table 3.12:	Agricultural Households, Planted and Harvested Area, Quantity Harvested of Pineapple by Region During 2019/20 Agricultural Year, Tanzania.....	80
Table 3.13:	Number of Households, Area Planted, Area Harvested, Production and Yield of Coffee from Smallholder Farmers by Region, 2019/20 Agricultural Year, Tanzania .....	83
Table 3.14:	Number of Households, Area Planted and Harvested and Production of Cashewnuts by Region, 2019/20 Agricultural Year, Tanzania .....	86



Table 3.15: Number of Households, Area Planted and Harvested and Production of Sisal by Region, 2019/20 Agricultural Year, Tanzania.....	88
Table 3.16: Number of Households, Area Planted and Harvested, Production and Yield of Tea by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	89
Table 3.17: Number of Households, Planted and Harvested Area, Quantity Harvested of Cloves by Region During 2019/20 Agricultural Year, Tanzania .....	90
Table 3.18: Quantity of Major Crops Products During 2019/20 Agricultural Year, Tanzania .....	92
Table 3.19: Area under Irrigation During Short and Long Rainy Seasons During 2019/20 Agricultural Year, Tanzania .....	95
Table 3.20: Percentage of Area planted with Fruits and Vegetables Under Irrigation by Seasons During 2019/20 Agricultural Year, Tanzania .....	99
Table 3.21: Number of Households and Area Planted by Type of Seed Used During 2019/20 Agricultural Year, Tanzania .....	100
Table 3.22: Area Planted with Fertilizer and Type of Fertilizers During 2019/20 Agricultural Year, Tanzania.....	101
Table 3.23: Area Applied with Pesticides by Type of Pesticides and Planting Season, Tanzania .....	105
Table 3.24: Number and Percentage of Agricultural Households Reporting the Use of Farm Inputs During 2019/20 Agricultural Year, Tanzania .....	106
Table 3.25: Number and Percentage of Agricultural Households Reported to Use Farm Implements/Assets by Region During 2019/20 Agricultural Year, Tanzania.....	122
Table 3.26: Crop Commercialization Index by Crop Type and Region During 2019/20 Agricultural Year, Tanzania .....	125
Table 4.1: Number of Households and Livestock/Chicken by Type for Smallholder Farmers and Large Scale Farms as of 1 <sup>st</sup> August 2020, Tanzania.....	128
Table 4.2: Number of Agricultural Households Rearing Goats and Heads of Goats by Herd Size as of 1 <sup>st</sup> August 2020, Mainland Tanzania and Tanzania Zanzibar .....	134
Table 4.3: Number of Agricultural Households Rearing Chicken and Number of Chicken by Flock Size as of 1 <sup>st</sup> August 2020, Tanzania.....	142
Table 4.4: Number of Households and Chicken by Type of Chicken for the 2002/03, 2007/08 and 2019/20 Agriculture Censuses, Tanzania.....	143
Table 4.5: Number of Households, Total Number of Chicken and Percentage by Type of Chicken as of 1 <sup>st</sup> August 2020, Tanzania.....	143
Table 4.6: Number and Percentage of Households Rearing Indigenous Chicken by Flock Size and Average Number of Chicken per Household as of 1 <sup>st</sup> August 2020, Tanzania .....	144

Table 4.7:	Number of Households and Chicken, Percentage of Households and Average Number of Improved Chicken per Household by Flock Size, Tanzania .....	148
Table 4.8:	Number and Percentage of Other Poultry by Region as of 1 <sup>st</sup> August 2020, Tanzania .....	150
Table 4.9:	Number of Other Livestock by Type and Region, Tanzania.....	151
Table 4.10:	Cow and Goat Milk Production for Large Scale Farms and Smallholder Farmers During 2019/20 Agricultural Year, Tanzania.....	153
Table 4.11:	Average Milk Production per Cow per Day by Type of Cattle and Season During 2019/20 Agricultural Year, Tanzania.....	154
Table 4.12:	Average Milk Production per Goat per Day by Season During 2019/20 Agricultural Year, Tanzania .....	156
Table 4.13:	Number of Reported Cases of Cattle Diseases Occurrence by Type and Region During 2019/20 Agricultural Year.....	166
Table 4.14:	Number of Reported Cases of Goat Disease Occurrences by Type and Region During 2019/20 Agricultural Year, Tanzania.....	171
Table 4.15:	Number of Reported Cases of Sheep Diseases Occurrences by Type and Region During 2019/20 Agricultural Year, Mainland Tanzania .....	177
Table 4.16:	Number of Reported Cases of Pig Diseases Occurrences by Type and Region During 2019/20 Agricultural Year, Tanzania.....	182
Table 4.17:	Number of Households Reported Occurrence of Diseases and Number of Poultry Infected by Type of Disease During 2019/20 Agricultural Year, Tanzania.....	186
Table 4.18:	Number and Percentage of Households Reported to Deworm Livestock During 2019/20 Agriculture Year, Tanzania.....	194
Table 4.19:	Number and Percentage of Households Received Extension Services on Livestock by Type of Extension Advice for Livestock During 2019/20 Agricultural Year, Tanzania .....	197
Table 4.20:	Number of Stocked and Harvested Fish, Weights of Harvested and Sold Fish, During 2019/20 Agriculture Year, Tanzania.....	204
Table 4.21:	Number of Households and Quantity of Feeds Used by Main Source of Fish Feeds During 2019/20 Agricultural Year, Tanzania.....	209
Table 5.1:	Number and Percentage of Agricultural Household Members Reported to Borrow Money for Agricultural Activities During 2019/20 Agricultural Year, Tanzania .....	214
Table 5.2:	Number of Agricultural Household Members Received Second Credit by Sex During 2019/20 Agricultural Year, Tanzania.....	217

Table 5.3	Percentage of Agricultural Household Members Reported the Use of Credit by Region During 2019/20 Agricultural Year, Tanzania.....	220
Table 5.4:	Value and Percentage of Credits and Repayments by Region During 2019/20 Agricultural Year, Tanzania .....	222
Table 5.5:	Number and Percentage of Agricultural Households Reported Major Constraints During 2019/20 Agricultural Year, Tanzania.....	225
Table 6.1:	Number and Percentage of Households by Type of Roofing Material During 2019/20 Agricultural Year, Tanzania.....	226
Table 6.2:	Percentage of Households reported Materials Used for Roof Construction by Region During 2019/20 Agricultural Year, Tanzania.....	228
Table 6.3:	Number and Percentage of Households by Type of Floor Material During 2019/20 Agricultural Year, Tanzania.....	229
Table 6.4:	Percentage of Households Reported Materials Used for Floor Construction by Region During 2019/20 Agricultural Year, Tanzania.....	230
Table 6.5:	Number and Percentage of Households by Type of Wall Material During 2019/20 Agricultural Year, Tanzania.....	231
Table 6.6:	Percentage of Agricultural Households Reported Materials Used for Wall Construction by Region During 2019/20 Agricultural Year, Tanzania .....	232
Table 6.7:	Number and Percentage of Agricultural Households by Type of Toilet Facility During 2019/20 Agricultural Year, Tanzania.....	233
Table 6.8:	Percentage of Agricultural Households by Type of Toilet Facility and Region During 2019/20 Agricultural Year, Tanzania.....	234
Table 6.9:	Number and Percentage of Agricultural Households Reported Main Source of Energy for Cooking During 2019/20 Agricultural Year, Tanzania.....	235
Table 6.10:	Percentage of Agricultural Households Reported Main Source of Energy for Cooking by Region During 2019/20 Agricultural Year, Tanzania.....	236
Table 6.11:	Number and Percentage of Agricultural Households Reported Main Source of Energy for Cooking during 2019/20 Agricultural Year, Tanzania.....	237
Table 6.12:	Percentage of Agricultural Households Reported Main Source of Energy for Lighting by Region During 2019/20 Agricultural Year, Tanzania.....	238
Table 6.13:	Number and Percentage of Agricultural Households Reported Main Source of Drinking Water in Wet Season During 2019/20 Agricultural Year, Tanzania .....	239
Table 6.14:	Percentage Distribution of Agricultural Households Reported Main Source of Drinking Water in Wet Season by Region During 2019/20 Agricultural Year, Tanzania .....	240
Table 6.15:	Number and Percentage of Agricultural Households Reported Main Source of Drinking Water in Dry Season During 2019/20 Agricultural Year, Tanzania.....	241



Table 6.16: Percentage Distribution of Agricultural Households Reported Main Source of Drinking Water in Dry Season by Region During 2019/20 Agricultural Year, Tanzania .....	242
Table 6.17: Number and Percentage of Agricultural Households Reported Distance to Source of Drinking Water in Wet Season by Region during 2019/20 Agricultural Year .....	243
Table 6.18: Number and Percentage of Agricultural Households Reported Distance to Source of Drinking Water in Dry Season by Region during 2019/20 Agricultural Year, Tanzania .....	243
Table 6.19: Number and Percentage of Agricultural Households Reported Time Spent to and from Source of Drinking Water in Wet Season during 2018/19 Agricultural Year, Tanzania .....	244
Table 6.20: Number and Percentage of Agricultural Households Reported Time Spent to and from Source of Drinking Water in Dry Season during 2018/19 Agricultural Year, Tanzania .....	245
Table 6.21: Percentage of Agricultural Households Reported Ownership of Assets During 2019/20 Agricultural Year, Tanzania .....	246
Table 6.22: Number and Percentage of Households Reported to Consume Meat in Last 7 days in 2007/08 and 2019/20 Agriculture Censuses, Tanzania .....	248
Table 6.23: Number and Percentage of Households Reported Status of Food Satisfaction in the Last Twelve Months During 2007/08 and 2019/20 Agricultural Year, Tanzania .....	251
Table 6.24: Percentage of Agricultural Households Reported Main Source of Household Income During 2007/08 and 2019/20 Agriculture Censuses, Tanzania .....	253

## List of Figures

Figure 2.1: Agriculture Household by Type of Activity During 2019/20 Agricultural Year, Tanzania .....	6
Figure 2.2: Agriculture Household by Type of Activity, Mainland Tanzania .....	7
Figure 2.3: Agriculture Household by Type of Activity, Tanzania Zanzibar .....	7
Figure 2.4: Percentage Population of Agricultural Household Members by Sex in 2007/08 and 2019/20 Agricultural Censuses, Tanzania .....	7
Figure 2.5: Average Household Size of Agricultural Households during 2019/20 Agricultural Year, Tanzania .....	9
Figure 2.6: Agriculture Household Members by Literacy Rate During 2019/20 Agricultural Year, Tanzania .....	9
Figure 2.7: Percentage of Literacy Level of Household Members by Region During 2019/20 Agricultural Year, Tanzania.....	10
Figure 2.8: Percentage of Agriculture Household Members 5 years and Above by Education Status During 2019/20 Agricultural Year, Tanzania.....	10
Figure 2.9: Percentage of Household Members by Education Status and Region During 2019/20 Agricultural Year, Tanzania.....	11
Figure 2.10: Percentage of Household Members aged 5 years and above by the Level of Involvement in Farming Activities During 2019/20 Agricultural Year, Tanzania .....	13
Figure 2.11: Trend of Utilised Land per Household in 2002/03, 2007/08 and 2019/20 Agriculture Censuses .....	13
Figure 2.12: Percentage of Agriculture Households by Whether All Land Available to the Household Was Used During 2019/20 Agricultural Year, Mainland Tanzania.....	14
Figure 2.13: Percentage of Agricultural Households Responding to Sufficiency of Land During 2019/20 Agricultural Year, Tanzania Zanzibar .....	14
Figure 2.14: Percentage of Households with Sufficient Land for Agriculture Activities, 2019/20 Agricultural Year, Mainland Tanzania.....	15
Figure 2.15: Percentage of Households with Sufficient Land for Agriculture Activities, 2019/20 Agricultural Year, Tanzania Zanzibar.....	15
Figure 2.16: Land Area by Type of Land Use During 2019/20 Agricultural Year, Tanzania.....	16
Figure 2.17: Distribution of Land Utilization by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	16
Figure 2.18: Distribution of Land Utilization by Region During 2019/20 Agricultural Year, Tanzania Zanzibar.....	17

Figure 3.1: Planted and Harvested Area with Maize by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania .....	21
Figure 3.2: Planted and Harvested Area with Maize by Smallholder Farmers by Region During 2019/20 Agricultural Year, Tanzania Zanzibar .....	22
Figure 3.3: Production and Yield of Maize During 2019/20 Agricultural Year, Mainland Tanzania .....	22
Figure 3.4: Production and Yield of Maize During 2019/20 Agricultural Year, Tanzania Zanzibar .....	23
Figure 3.5: Trend of Maize Production by Smallholder Farmers by Three Consecutive Censuses in Tanzania .....	24
Figure 3.6: Planted and Harvested Area with Paddy by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania .....	25
Figure 3.7: Planted and Harvested Area with Paddy by Smallholder Farmers by Region During 2019/20 Agricultural Year, Tanzania Zanzibar .....	26
Figure 3.8: Production and Yield of Paddy by Smallholder Farmers During 2019/20 Agricultural Year, Mainland Tanzania.....	28
Figure 3.9: Production and Yield of Paddy by Smallholder Farmers During 2019/20 Agricultural Year, Tanzania Zanzibar.....	28
Figure 3.10: Trend of Paddy Production by Smallholder Farmers in Three Consecutive Censuses, Tanzania .....	29
Figure 3.11: Planted and Harvested Area with Sorghum by Smallholder Farmers by Region During Agricultural Year, Mainland Tanzania.....	30
Figure 3.12: Production and Yield of Sorghum by Smallholder Farmers During 2019/20 Agricultural Year, Mainland Tanzania.....	31
Figure 3.13: Trend of Sorghum Production by Smallholder Farmers in Three Consecutive Censuses, Tanzania .....	32
Figure 3.14: Planted and Harvested Area with Cassava by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania .....	35
Figure 3.15: Planted and Harvested Area with Cassava produced by Smallholder Farmers by Region During 2019/20 Agricultural Year, Tanzania Zanzibar .....	36
Figure 3.16: Production and Yield of Cassava During 2019/20 Agricultural Year, Mainland Tanzania .....	37
Figure 3.17: Production and Yield of Cassava During 2019/20 Agricultural Year, Tanzania Zanzibar.....	37
Figure 3.18: Planted and Harvested Area with Sweet Potatoes by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	38

Figure 3.19: Planted and Harvested Area with Sweet Potatoes by Smallholder Farmers by Region During 2019/20 Agricultural Year, Tanzania Zanzibar .....	39
Figure 3.20: Production and Yield of Sweet Potatoes During 2019/20 Agricultural Year, Mainland Tanzania.....	41
Figure 3.21: Production and Yield of Sweet Potatoes During 2019/20 Agricultural Year, Tanzania Zanzibar.....	41
Figure 3.22: Planted and Harvested Area with Irish Potatoes by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	42
Figure 3.23: Production and Yield of Irish potatoes During 2019/20 Agricultural Year, Mainland Tanzania.....	43
Figure 3.24: Planted and Harvested Area with Beans by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania .....	45
Figure 3.25: Quantity Harvested and Yield of Beans by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	46
Figure 3.26: Planted and Harvested Area with Cowpeas by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania .....	47
Figure 3.27: Planted and Harvested Area with Cowpeas by Smallholder Farmers by Region During 2019/20 Agricultural Year, Tanzania Zanzibar .....	47
Figure 3.28: Quantity Harvested and Yield of Cowpeas by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	48
Figure 3.29: Production of Cowpeas by Region During 2019/2 Agricultural Year, Tanzania Zanzibar.....	48
Figure 3.30: Production of Greengram by Region During 2019/2 Agricultural Year, Mainland Tanzania.....	49
Figure 3.31: Production of Greengram by Region During 2019/2 Agricultural Year, Tanzania Zanzibar.....	50
Figure 3.32: Green gram Production by Region during 2019/20 Agricultural Year, Mainland Tanzania.....	50
Figure 3.33: Green gram Production and Yield by Region During 2019/20 Agricultural Year, Tanzania Zanzibar .....	50
Figure 3.34: Planted and Harvested Area with Pigeon Peas by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	52
Figure 3.35: Planted and Harvested Area with Pigeon Peas by Smallholder Farmers by Region During 2019/20 Agricultural Year, Tanzania Zanzibar .....	52
Figure 3.36: Production and Yield of Pigeon Peas by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania .....	53

Figure 3.37: Production and Yield of Pigeon Peas by Smallholder Farmers by Region During 2019/20 Agricultural Year, Tanzania Zanzibar .....	53
Figure 3.38: Quantity Harvested and Yield of Tomato by Region during 2019/20 Agricultural Year, Mainland Tanzania.....	65
Figure 3.39: Quantity Harvested and Yield of Tomato by Region during 2019/20 Agricultural Year, Tanzania Zanzibar.....	65
Figure 3.40: Quantity Harvested and Yield of Onions by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	66
Figure 3.41: Quantity Harvested and Yield of Watermelon by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	70
Figure 3.42: Quantity Harvested and Yield of Watermelon by Region During 2019/20 Agricultural Year, Tanzania Zanzibar.....	70
Figure 3.43: Productivity of Cotton by Major Producing Region During 2019/20 Agricultural Year, Mainland Tanzania.....	81
Figure 3.44: Productivity of Tobacco by Major Producing Regions During 2019/20 Agricultural Year, Mainland Tanzania.....	82
Figure 3.45: Average Planted Area with Sugarcane per Household by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	84
Figure 3.46: Average Planted Area with Sugarcane per Household by Region During 2019/20 Agricultural Year, Tanzania Zanzibar.....	84
Figure 3.47: Production of Coconut by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	86
Figure 3.48: Production of Coconut by Region During 2019/20 Agricultural Year, Tanzania Zanzibar.....	87
Figure 3.49: Percentage of Agricultural Households Reported to Process Different Crops by Region During 2019/20 Agricultural Year, Mainland Tanzania .....	91
Figure 3.50: Percentage of Agricultural Households Reported to Process Different Crops by Region During 2019/20 Agricultural Year, Tanzania Zanzibar .....	91
Figure 3.51: Percentage of Households Reported to Sell Major Crop Products During 2019/20 Agricultural Year, Tanzania.....	93
Figure 3.52: Percentage of Planted Area under Irrigation by Main Crop During 2019/20 Agricultural Year, Tanzania .....	95
Figure 3.53: Percent of Irrigated Area Planted with Cereals by Planting Season During 2019/20 Agricultural Year, Mainland Tanzania.....	96
Figure 3.54: Percent of Irrigated Area Planted with Cereals by Planting Season During 2019/20 Agricultural Year, Tanzania Zanzibar.....	96

Figure 3.55: Percentage of Area planted with Roots and Tubers under Irrigation During 2019/20 Agricultural Year, Mainland Tanzania.....	97
Figure 3.56: Percentage of Area planted with Roots and Tubers under Irrigation During 2019/20 Agricultural Year, Tanzania Zanzibar.....	97
Figure 3.57: Percent of Planted Area with Pulses under Irrigation During 2019/20 Agricultural Year, Mainland Tanzania.....	98
Figure 3.58: Percent of Planted Area with Pulses under Irrigation During 2019/20 Agricultural Year, Tanzania Zanzibar.....	98
Figure 3.59: Percentage of Planted Area with Improved Seeds by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	100
Figure 3.60: Percentage of Planted Area with Improved Seeds by Region During 2019/20 Agricultural Year, Tanzania Zanzibar.....	101
Figure 3.61: Percentage of Area Applied with Fertilizer by Type of Fertilizer and Region During 2019/20 Agricultural Year, Mainland Tanzania.....	102
Figure 3.62: Percentage of Area Applied with Fertilizer by Type of Fertilizer and Region During 2019/20 Agricultural Year, Tanzania Zanzibar.....	103
Figure 3.63: Percentage Distribution of Area Applied with Pesticides During 2019/20 Agricultural Year, Tanzania.....	103
Figure 3.64: Percentage of Households by Source of Compost Manure During 2019/20 Agricultural Year, Mainland Tanzania.....	106
Figure 3.65: Percentage of Households by Source of Compost Manure During 2019/20 Agricultural Year, Tanzania Zanzibar.....	107
Figure 3.66: Percentage Distribution of Households by Source of Compost Manure, Tanzania.....	107
Figure 3.67: Percentage of Households Reporting Source of Farmyard Manure During 2019/20 Agricultural Year, Mainland Tanzania.....	108
Figure 3.68: Percentage of Households Reporting Source of Farmyard Manure During 2019/20 Agricultural Year, Tanzania Zanzibar.....	108
Figure 3.69: Percentage Distribution of Households by Source of Farmyard Manure During 2019/20 Agricultural Year, Tanzania.....	108
Figure 3.70: Percentage of Households Reporting Source of Inorganic Fertilizer During 2019/20 Agricultural Year, Mainland Tanzania.....	109
Figure 3.71: Percentage of Households Reporting Source of Chemical Fertilizer During 2019/20 Agricultural Year, Tanzania Zanzibar.....	110
Figure 3.72: Percentage Distribution of Households by Source of Inorganic Fertilizer During Agricultural Year 2019/20, Tanzania.....	110

Figure 3.73: Percentage of Agricultural Households Reporting Distance to Chemical Fertilizer During 2019/20 Agricultural Year, Tanzania.....	111
Figure 3.74: Percentage of Households Reporting Source of Improved Seeds During 2019/20 Agricultural Year, Mainland Tanzania.....	112
Figure 3.75: Percentage of Households Reporting Source of Improved Seeds During 2019/20 Agricultural Year, Tanzania Zanzibar.....	112
Figure 3.76: Percentage Distribution of Households by Source of Improved Seeds During 2019/20 Agricultural Year, Tanzania.....	113
Figure 3.77: Percentage of Agricultural Households Reporting Distance to Improved Seeds During 2019/20 Agricultural Year, Tanzania.....	113
Figure 3.78: Percentage of Households Reporting Source of Improved Seeds During 2019/20 Agricultural Year, Mainland Tanzania.....	114
Figure 3.79: Percentage of Households Reporting Source of Improved Seeds During 2019/20 Agricultural Year, Tanzania Zanzibar.....	114
Figure 3.80: Percentage Distribution of Households by Source of Insecticide/ Fungicides During 2019/20 Agricultural Year, Tanzania.....	114
Figure 3.81: Percentage Distribution of Agricultural Households Reporting Distance to Insecticides/ Fungicides During 2019/20 Agricultural Year, Tanzania.....	115
Figure 3.82: Percentage Distribution of Households Reporting Source of herbicide During 2019/20 Agricultural Year, Mainland Tanzania.....	116
Figure 3.83: Percentage of Households Reporting Source of Herbicide During 2019/20 Agricultural Year, Tanzania Zanzibar.....	116
Figure 3.84: Percentage Distribution of Households by Source of Herbicides During 2019/20 Agricultural Year, Tanzania.....	116
Figure 3.85: Percentage Distribution of Agricultural Households Receiving Crop Extension Advices During 2019/20 Agricultural Year, Tanzania.....	117
Figure 3.86: Percentage Distribution of Agricultural Households Reported to Receive Crop Extension Services by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	117
Figure 3.87: Percentage Distribution of Agricultural Households Receiving Crop Extension Advices by Region During 2019/20 Agricultural Year, Tanzania Zanzibar.....	118
Figure 3.88: Percentage of Agricultural Households Receiving Extension by Type of Extension Service Provider During 2019/20 Agricultural Year, Tanzania.....	119
Figure 3.89: Percentage of Agricultural Households Received Extension Message by Type of Extension Advices Practiced During 2019/20 Agricultural Year, Tanzania.....	120
Figure 3.90: Percentage of Agricultural Households that Reported Using Farm Implements/Assets During 2019/20 Agricultural Year, Tanzania.....	121

Figure 3.91: Percentage of Agricultural Households Reported Using Farm Tractors/Draft Animals by Region During 2019/20 Agricultural Year, Mainland Tanzania .....	123
Figure 3.92: Percentage of Agricultural Households that Reported Using Tractors/Draft Animals by Region during 2019/20 Agricultural Year, Tanzania Zanzibar .....	124
Figure 3.93: Percentage of Households Reported Marketing Challenges by Type of Challenge During 2019/20 Agricultural Year, Short Rainy Season, Tanzania .....	126
Figure 3.94: Percentage of Households Reported Marketing Challenges by Type of Challenge During 2019/20 Agricultural Year, Long Rainy Season, Tanzania .....	126
Figure 4.1: Percentage of Households Rearing Livestock by Type During 2019/20 Agricultural Year, Tanzania .....	128
Figure 4.2: Percentage of Livestock Population by Type During 2019/20 Agricultural Year, Tanzania .....	128
Figure 4.3: Cattle Population Growth in 2003, 2008 and 2020 Agriculture Censuses, Tanzania .....	129
Figure 4.4: Percentage of Cattle by Type During 2019/20 Agricultural Year, Tanzania .....	130
Figure 4.5: Indigenous Cattle Population and Average Number of Cattle per Household by Region as of 1 <sup>st</sup> August 2020, Mainland Tanzania .....	130
Figure 4.6: Indigenous Cattle Population and Average Number of Cattle per Household by Region as of 1 <sup>st</sup> August 2020, Tanzania Zanzibar .....	131
Figure 4.7: Number of Improved Cattle by Type and Region as of 1 <sup>st</sup> August 2020, Mainland Tanzania .....	132
Figure 4.8: Number of Improved Cattle and Average Number per Household by Region During 2019/20 Agricultural Year, Zanzibar .....	132
Figure 4.9: Number of Indigenous Goats and Average Number of Goats per Household by Region as of 1 <sup>st</sup> August 2020, Mainland Tanzania .....	134
Figure 4.10: Number of Indigenous Goats and Average Number per Household by Region as of 1 <sup>st</sup> August 2020, Tanzania Zanzibar .....	135
Figure 4.11: Percentage and Types of Improved Goats as of 1 <sup>st</sup> August 2020, Tanzania .....	135
Figure 4.12: Sheep Population and Average Number per Household by Region as of 1 <sup>st</sup> August 2020, Mainland Tanzania .....	136
Figure 4.13: Percentage of Sheep Population by Region as of 1 <sup>st</sup> August 2020, Tanzania Zanzibar .....	136
Figure 4.14: Number of Households Rearing Pigs and Number of Pigs by Herd Size During 2019/20 Agricultural Year, Tanzania .....	138
Figure 4.15: Number of Agricultural Households Rearing Pigs by Herd size During the 2019/20 Agricultural Year in Mainland Tanzania .....	139



Figure 4.16: Percentage Distribution of Households Raising Chicken by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	140
Figure 4.17: Percentage Distribution of Households Raising Chicken by Region During 2019/20 Agricultural Year, Tanzania Zanzibar.....	140
Figure 4.18: Percentage Distribution of Chicken from Smallholder Farmers and Large Scale Farms as of 1st August 2019/20, Tanzania .....	140
Figure 4.19: Percentage Distribution of Chicken by Type as of 1st August 2020, Mainland Tanzania .....	141
Figure 4.20: Percentage Distribution of Chicken by Type as of 1st August 2020, Tanzania Zanzibar.....	141
Figure 4.21: Percentage Distribution of Improved Chicken as of 1st August 2020, Mainland Tanzania .....	145
Figure 4.22: Percentage Distribution of Improved Chicken as of 1st August 2020, Tanzania Zanzibar.....	145
Figure 4.23: Improved Chicken Population Trend for the 2002/03, 2007/08 and 2019/20 Agricultural Censuses, Tanzania .....	148
Figure 4.24: Percentage Distribution of Other Poultry Population as of 1 <sup>st</sup> August 2020, Mainland Tanzania.....	149
Figure 4.25: Percentage Distribution of Other Poultry Population as of 1 <sup>st</sup> August 2020, Tanzania Zanzibar.....	149
Figure 4.26: Percentage of Households and Type of Method of Cattle Identification Used During 2019/20 Agricultural Year, Mainland Tanzania .....	152
Figure 4.27: Percentage of Households Using Colour as a Method of Cattle Identification by Region During 2019/20 Agricultural Year, Tanzania Zanzibar .....	152
Figure 4.28: Average Price of Cow Milk by Region and Season During 2019/20 Agricultural Year, Mainland Tanzania.....	155
Figure 4.29: Average Price of Cow Milk by Region and Season During 2019/20 Agricultural Year, Tanzania Zanzibar.....	155
Figure 4.30: Eggs Production by Region During 2019/20 Agricultural Year, Mainland Tanzania .....	158
Figure 4.31: Average Price of an Egg by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	158
Figure 4.32: Eggs Production by Region During 2019/20 Agricultural Year, Tanzania Zanzibar.....	159
Figure 4.33: Average Price of an Egg by Region During 2019/20 Agricultural Year, Tanzania Zanzibar.....	159

Figure 4.34: Percentage Distribution of Households Reported Outlet for Sale of Cattle During 2019/20 Agricultural Year, Mainland Tanzania .....	160
Figure 4.35: Percentage Distribution of Households Reported Outlet for Sale of Cattle During 2019/20 Agricultural Year, Tanzania Zanzibar .....	160
Figure 4.36: Percentage Distribution of Households Reported Outlet for Sale of Goats During 2019/20 Agricultural Year, Mainland Tanzania .....	161
Figure 4.37: Percentage Distribution of Households Reported Outlet for Sale of Goats During 2019/20 Agricultural Year, Tanzania Zanzibar .....	161
Figure 4.38: Percentage Distribution of Households Reported Outlet for Sale of Chicken During 2019/20 Agricultural Year, Mainland Tanzania .....	162
Figure 4.39: Percentage Distribution of Households Reported Outlet for Sale of Chicken During 2019/20 Agricultural Year, Tanzania Zanzibar .....	162
Figure 4.40: Percentage Distribution of Households Reported Outlet for Sale of Milk During 2019/20 Agricultural Year, Mainland Tanzania .....	163
Figure 4.41: Percentage Distribution of Households Reported Outlet for Sale of Milk During 2019/20 Agricultural Year, Mainland Tanzania .....	163
Figure 4.42: Number and Percent of Households Reported to Vaccinate Livestock Against FMD by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	186
Figure 4.43: Number and Percent of Households Reported to Vaccinate Livestock Against FMD by Region During 2019/20 Agricultural Year, Tanzania Zanzibar.....	187
Figure 4.44: Number and Percent of Households Reported to Vaccinate Livestock Against Rabies by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	187
Figure 4.45: Number and Percent of Households Reported to Vaccinate Livestock Against Rabies by Region During 2019/20 Agricultural Year, Tanzania Zanzibar.....	188
Figure 4.46: Number and Percent of Households Reported to Vaccinate Livestock Against Black Quarter by Region During 2019/20 Agricultural Year, Mainland Tanzania .....	188
Figure 4.47: Number and Percent of Households Reported to Vaccinate Livestock Against Black Quarter by Region During 2019/20 Agricultural Year, Tanzania Zanzibar.....	189
Figure 4.48: Number and Percent of Households Reported to Vaccinate Livestock Against Anthrax by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	189
Figure 4.49: Number and Percent of Households Reported to Vaccinate Livestock Against Anthrax by Region During 2019/20 Agricultural Year, Tanzania Zanzibar.....	190
Figure 4.50: Number and Percent of Households Reported to Vaccinate Livestock Against CBPP Disease by Region During 2019/20Agricultural Year, Mainland Tanzania .....	190

Figure 4.51: Percentage of Cattle Rearing Households Reported Sources of Vaccine by Type Disease During 2019/20 Agricultural Year, Tanzania.....	191
Figure 4.52: Percentage Distribution of Households Reported Tick Control Methods During 2019/20 Agricultural Year, Tanzania.....	192
Figure 4.53: Percent of Households Reported Tsetse Flies Control Methods During 2019/20 Agricultural Year, Tanzania .....	192
Figure 4.54: Percent of Households Reported NCD Control Methods During 2019/20 Agricultural Year, Tanzania .....	193
Figure 4.55: Percentage of Households Reported to Deworm Livestock During 2019/20 Agriculture Year, Mainland Tanzania.....	194
Figure 4.56: Percentage of Households Reported to Deworm Livestock During 2019/20 Agricultural Year, Tanzania Zanzibar.....	195
Figure 4.57: Percentage of Households Received Extension Service Advice for Livestock During 2019/20 Agricultural Year, Tanzania.....	195
Figure 4.58: Number of Households Received Extension Advices for Livestock by Region During 2019/20 Agricultural Year, Mainland Tanzania .....	196
Figure 4.59: Number of Households Received Extension Service Advices for Livestock by Region During 2019/20 Agricultural Year, Tanzania Zanzibar .....	196
Figure 4.60: Number and Percentage of Households Received Extension Advice on Disease Control for Livestock by Region During 2019/20 Agricultural Year, Mainland Tanzania .....	198
Figure 4.61: Number and Percentage of Households Received Extension Advice on Feed and Proper Feeding for Livestock by Region During 2019/20 Agriculture Year, Mainland Tanzania.....	199
Figure 4.62: Number and Percentage of Households Received Extension Advice on Disease Control for Livestock by Region During 2019/20 Agricultural Year, Tanzania Zanzibar.....	199
Figure 4.63: Number of Households Received Extension Advice Feed and Proper Feeding for Livestock by Region During 2019/20 Agricultural Year, Tanzania Zanzibar .....	200
Figure 4.64: Percentage of Households Reported to Practice Livestock Extension Services During 2019/20 Agricultural Year, Tanzania.....	200
Figure 4.65: Percentage Households Reported to Practice Livestock Extension Services During 2019/20 Agricultural Year, Mainland Tanzania .....	201
Figure 4.66: Percentage Households Reported to Practice Livestock Extension Services During 2019/20 Agricultural Year, Tanzania Zanzibar .....	201
Figure 4.67: Percentage Households Reported to Practice Livestock Extension Services During 2019/20 Agricultural Year, Mainland Tanzania .....	202

Figure 4.68: Percentage Households Reported to Practice Livestock Extension Services by Region During 2019/20 Agricultural Year, Tanzania Zanzibar .....	202
Figure 4.69: Number of Agricultural Households Practicing Fish Farming by Region During 2019/20 Agricultural Year, Mainland Tanzania .....	203
Figure 4.70: Weight of Fish Harvested by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania.....	205
Figure 4.71: Percentage Distribution of Main Sources of Fish Fingerlings Reported by Households During 2019/20 Agricultural Year, Mainland Tanzania .....	206
Figure 4.72: Percentage Distribution of Main Sources of Fish Fingerlings Reported by Households During 2019/20 Agricultural Year, Tanzania Zanzibar .....	206
Figures 4.73: Percentage of Frequency of Stocking Fingerling During 2019/20 Agricultural Year, Tanzania.....	206
Figure 4.74: Percentage Distribution of Frequency of Stocking Fingerlings During 2019/20 Agricultural Year, Mainland Tanzania.....	207
Figure 4.75: Percentage Distribution of Frequency of Stocking Fingerlings During 2019/20 Agricultural Year, Tanzania Zanzibar.....	207
Figure 4.76: Percentage Distribution of Households Reported Outlets for Selling Fish During 2019/20 Agricultural Year, Tanzania.....	207
Figure 4.77: Percentage Distribution of Households Reported Outlet for Selling Fish During 2019/20 Agricultural Year, Mainland Tanzania .....	208
Figure 4.78: Percentage Distribution of Households by Category of Bee Kept During 2019/20 Agricultural Year, Tanzania.....	209
Figure 4.79: Quantity of Honey Produced from Stingless and Sting Bees by Region During 2019/20 Agriculture Year, Mainland Tanzania.....	210
Figure 4.80: Quantity of Honey Produced from Sting and Stingless Bees by Region During 2019/20 Agricultural Year, Tanzania Zanzibar.....	210
Figure 4.81: The Average Price of Honey per Litre from Stingless and Sting During 2019/20 Agricultural Year, Mainland Tanzania.....	211
Figure 4.82: The Average Price of Honey per Litre from Stingless and Sting Bees During 2019/20 Agricultural Year, Tanzania.....	212
Figure 4.83: Percentage of Households Reported the Main Markets of Honey During 2019/20 Agricultural Year, Mainland Tanzania.....	212
Figure 4.84: Number of Households Reported Neighbours as the Main Market for Honey Sales by Region During 2019/20 Agricultural Year, Mainland Tanzania .....	213
Figure 4.85: Percentage of Households Reported the Main Markets of Honey During 2019/20 Agricultural Year, Tanzania Zanzibar.....	213

Figure 5.1: Percentage of Agricultural Households Reported to Borrow Money for Agricultural Activities During 2019/20 Agricultural Year, Mainland Tanzania .....	215
Figure 5.2: Percentage of Agricultural Households Reported to Borrow Money for Agricultural Activities During 2019/20 Agricultural Year, Tanzania Zanzibar.....	215
Figure 5.3: Number of Agricultural Household Members Received First Credit by Sex and Region During 2019/20 Agricultural Year, Mainland Tanzania .....	216
Figure 5.4: Number of Agricultural Household Members Received First Credit by Sex and Region During 2019/20 agricultural year, Tanzania Zanzibar .....	216
Figure 5.5: Percentage of Agricultural Household Members Received First Credit by Source During 2019/20 Agricultural Year, Tanzania .....	218
Figure 5.6: Percentage of Agricultural Household Members Received Second Credit by Source During 2019/20 Agricultural Year, Tanzania .....	219
Figure 5.7: Percentage of Agricultural Households Reported Main Reason for Not Borrowing Credit During the 2019/20 Agricultural Year, Tanzania.....	223
Figure 6.1: Percentage of Agricultural Households Reported Number of Meals Normally Taken per Day During 2019/20 Agricultural Year, Tanzania.....	247
Figure 6.2: Percentage of Agricultural Households Reported Number of Days the Household Consumed Fish in the Last Seven Days During 2019/20 Agricultural Year, Tanzania .....	249
Figure 6.3: Percentage of Agricultural Households Reported the Status of Food Satisfaction in the Last Twelve Months During 2019/20 Agricultural Year, Tanzania .....	250
Figure 6.4: Percentage of Households by Main Source of Cash Income in 2007/8 and 2019/20 Agricultural Years, Tanzania .....	252

## List of Maps

Map 3.1:	Production of Maize by Region During 2019/20 Agricultural Year, Tanzania .....	24
Map 3.2:	Production of Paddy by Region During 2019/20 Agricultural Year, Tanzania .....	27
Map 3.3:	Production of Sorghum (tons) by Region During 2019/20 Agricultural Year, Tanzania .....	31
Map 3.4:	Production of Sweet potatoes by Region During 2019/20 Agricultural Year, Tanzania .....	40
Map 3.5:	Sunflower Production by Region During 2019/20 Agricultural Year, Tanzania .....	58
Map 3.6:	Tomato Production by Region During 2019/20 Agricultural Year, Tanzania .....	64
Map 4.1:	Cattle Population Reported by Smallholder Farmers by Region in Tanzania as of 1 <sup>st</sup> August 2020 .....	129
Map 4.2:	Goat Population Reported by Smallholders by Region as of 1st August 2020, Tanzania .....	133
Map 4.3:	Tanzania Sheep Population Reported by Smallholders by Region as of 1 <sup>st</sup> August 2020, Tanzania.....	137
Map 4.4:	Tanzania Pig Population Reported by Smallholder by Region as of 1 <sup>st</sup> August 2020, Tanzania.....	138
Map 4.5:	Chicken Population Reported by Smallholders by Region as of 1 <sup>st</sup> August 2020, Tanzania.....	142
Map 4.6:	Indigenous Chicken Population Reported by Smallholders by Region as of 1st August 2020, Tanzania.....	144
Map 4.7:	Layers Population Reported by Smallholders by Region as of 1st August 2020, Tanzania .....	146
Map 4.8:	Broilers Population Reported by Smallholders by Region as of 1st August 2020, Tanzania.....	147
Map 4.9:	Cow Milk Production Reported by Smallholders by Region During 2019/20 Agricultural Year, Tanzania .....	154
Map 4.10:	Goat Milk Production Reported by Smallholders by Region During 2019/20 Agricultural Year, Tanzania .....	157
Map 4.11:	Number of Households Reported Tick Borne Diseases Infections During 2019/20 Agricultural Year, Tanzania.....	164
Map 4.12:	Number of Households Reported CBPP Disease Infections During 2019/20 Agricultural Year, Tanzania .....	165
Map 4.13:	Number of Households Reported FMD Infections During 2019/20 Agricultural Year, Tanzania .....	169

Map 4.14:	Number of Households Reported Brucellosis Disease Infections During 2019/20 Agricultural Year, Tanzania.....	170
Map 4.15:	Number of Households Reported CCPP Disease Infections During 2019/20 Agricultural Year, Tanzania .....	174
Map 4.16:	Number of Households Reported Brucellosis Disease Infections During 2019/20 Agricultural Year, Tanzania.....	175
Map 4.17:	Number of Households Reported FMD Infections During 2019/20 Agricultural Year, Tanzania .....	176
Map 4.18:	Number of Households Reported CCPP Disease Infections During 2019/20 Agricultural Year, Tanzania .....	179
Map 4.19:	Number of Households Reported FMD Infections During 2019/20 Agricultural Year, Tanzania.....	180
Map 4.20:	Number of Households Reported Brucellosis Disease Infections During 2019/20 Agricultural Year, Tanzania.....	181
Map 4.21:	Number of Households Reported Helminthiosis Disease Infections During 2019/20 Agricultural Year, Tanzania.....	185

## **General Notes**

1. The highest production of various crops observed in Dar es Salaam region resulted from the fact that, many agricultural households based in the region were reported to practice their agricultural activities in other regions.
2. Where necessary, numbers have been rounded off and for this reason there may be, in some tables and figures an apparent discrepancy between the sum of the constituent items and the total shown.



## List of Abbreviations

AI	Artificial Insemination
ASDP II	Agricultural Sector Development Programme Phase II
ASLMs	Agricultural Sector Lead Ministries
ASF	African Swan Fever
CAADP	Comprehensive Africa Agriculture Development Programme
CAPI	Computer Assisted Personal Interview
CBPP	Contagious Bovine Pleura Pneumonia
CCPP	Contagious Caprine Pleuropneumonia
CSPro	Census and Survey Processing System
EA	Enumeration Area
FAO	Food and Agriculture Organization
FMD	Foot and Mouth Disease
GDP	Gross Domestic Product
NBS	National Bureau of Statistics
NCD	Newcastle Disease
NGOs	Non-Governmental Organizations
NSCA	National Sample Census of Agriculture
OCGS	Office of the Chief Government Statistician
PSU	Primary Sampling Unit
SDGs	Sustainable Development Goals
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
ToE	Training of Enumerators
ToT	Training of Trainers
TVLA	Tanzania Veterinary Laboratory Agency
TZS	Tanzanian Shillings
USAID	United States Agency for International Development
USDA	United States Department of Agriculture

## **Definition of Key Terms**

### **Reference Period**

The Agriculture Sample Census covered the agricultural year 2019/20. The agricultural year is a twelve - month cycle in which production of crops takes place. In Tanzania, agricultural year commences on **1<sup>st</sup> October** and ends **30<sup>th</sup> September** of the following year.

### **Household**

Is defined as person or a group of persons with a common arrangement for providing themselves with food regardless of source of income. A household may be either a one-person household or a multi-person household.

### **Agricultural Holding**

Is any economic unit of agricultural production (like a garden of temporary and/or permanent crops or cattle rearing/plantation) under single management, without regard to title, legal form or size. Management may be exercised by an individual member of the household or by the entire household. For the purpose of 2019/20 Agriculture Sample Census, agriculture holdings were restricted to those that met one or more of the following conditions:

- Having or operating at least 25 square meters of arable land
- Own or keep at least one head of cattle or five goats/sheep/pigs or fifty chicken/ducks/turkeys during the agriculture year 2019/20.

### **Crop Garden**

Is a piece of land used wholly or partly for crop production purposes under one form of tenure. It may consist of one or more fields adjacent to each other. A crop garden may also be termed a parcel. It may comprise one agricultural holding or just part of an agricultural holding. Tenure refers to the arrangements or right under which the holder holds or uses land.

### **Short Rainy Season**

The short rainy season in Tanzania begins in October up to January of the following year.

### **Long Rainy Season**

The long rainy season in Tanzania begins in March up to May of the same year.

### **Temporary crops**

This refers to crops that mature within one or more rain seasons e.g. beans and maize, but are destroyed after harvesting.

### **Permanent Crops**

This refers to crops which are sown or planted once, and then, they occupy the land for some years and need not to be replanted after each annual harvest.

### **Crop only**

A household is referred to be crop only, if it has cultivated a piece of land equal or exceeding 25 square meters. This context also applies to all households owning or have kept livestock whose number does not qualify such household to be an agricultural holding (No cattle or less than 5 goats/sheep/pigs or less than 50 chickens/ turkeys/ ducks/ rabbits).

### **Livestock only**

A household is referred to be a livestock only if it has owned or kept at least 1 cattle and/or 5 goats/sheep/pigs or more and/or 50 chickens/ turkeys/ ducks/ rabbits or more during the reference agricultural year. This also applies to all holders owning or having cultivated land less than 25 square meters.

### **Pastoralists**

This refers to the households involved in livestock keeping with behavior of seasonal movement in search of water and pasture for their livestock.

### **Crops and Livestock**

A household is referred to be both crops and livestock if it has cultivated a piece of land equal or exceeding 25square meters and has owned or kept at least 1 cattle and/or 5 goats/sheep/pigs or more and/or 50chickens/ turkeys/ ducks/ rabbits or more during the reference agricultural year.

### **Fish Farming**

A household is referred to be fish farming if it involves itself in raising fish. This do not include households that fish in the naturally occurring water bodies such as river, lakes, seas, etc.

### **Small Scale Farms**

These are farms, with at least 25 square meters of planted land and/or one cattle, five goats/sheep/pigs, 50 chickens/turkeys/ducks/guinea fowls/rabbits.

### **Large Scale Farm**

These are farms with at least 20 hectares of cultivated land or 50 herds of cattle or 100 goats/sheep/pigs or 1,000 chickens. In addition to this, they should fulfill all of the four listed conditions:

- i). Greater part of the produce should go to the market;
- ii). Operation of farm should be continuous;
- iii). There should be an application of machinery/implements on the farm; and
- iv). Should have at least one permanent employee.

### **Agro Processing**

Is the transformation of basic agricultural produces into value added products for the purpose of meeting market needs.

## FOREWORD

The National Sample Census of Agriculture 2019/20 is the fifth Census of Agriculture conducted in Tanzania. The first Census was conducted in 1971/72, the second in 1993/94 to 1994/95 in which data on household characteristics and livestock count were collected in 1993/94 while data on crop area and production were collected in 1994/95. The third Census was conducted in 2002/03 and the fourth in 2007/08.



**Hon. Professor Adolf Faustine Mkenda (MP)**  
Minister for Agriculture

The NSCA 2019/20 was jointly implemented by the National Bureau of Statistics (NBS) and Office of the Chief Government Statistician, Zanzibar (OCGS), in collaboration with Agricultural Sector Lead Ministries (ASLMs). The Government of Tanzania, the European Union (EU) and the United States Agency for International Development (USAID) provided financial support while the United States Department of Agriculture (USDA) and Food and Agriculture Organization of the United Nations (FAO) provided technical assistance.

The main objective of the National Sample Census of Agriculture 2019/20 was to provide baseline data on Agricultural Statistics. The results will be used for national agricultural planning, implementation and policy intervention, for the purpose of improving agricultural sector through increased productivity and promoting agro-processing for industrial development and improving farmer's livelihood. Moreover, the results will facilitate monitoring and evaluation of the Sustainable Development Goals (SDGs), African Agenda 2063, MALABO declaration, third Five Year Development Plan (2021/22–2025/26) and Agricultural Sector Development Programme Phase II (ASDP II).

On behalf of the Government of United Republic of Tanzania, I would like to thank the Development Partners (DPs) for the financial and technical support provided in particular the European Union (EU), Food and Agriculture Organization of the United Nations (FAO), the United States Agency for International Development (USAID), the United States Department of Agriculture (USDA) and other stakeholders.

It is my hope this report will provide important data and information on agricultural sector to the Government, policy makers, planners, and other stakeholders to support the development of agriculture sector in the country.

**Hon. Professor Adolf Faustine Mkenda (MP)**  
**Minister for Agriculture**

## **PREFACE**

The National Bureau of Statistics (NBS) in collaboration with the Ministry of Agriculture; Ministry of Livestock and Fisheries; President's Office, Regional Administration and Local Governments; Ministry of Industry and Trade; Ministry of Agriculture, Irrigation, Natural Resources and Livestock, Zanzibar; and Office of the Chief Government Statistician, Zanzibar conducted the National Sample Census of Agriculture at the end of the 2019/20 agricultural year.



**Dr. Albina Chuwa**  
Statistician General

The National Sample Census of Agriculture 2019/20 collected detailed data on rural and urban agricultural households, land ownership, land use, crops production, agro processing, irrigation, use of inputs, crop extension services and agricultural mechanization. Other data collected were access to credit, market information, agricultural constraints, poverty indicators, livestock population and production of livestock products, livestock extension services, fish farming and beekeeping. The census covered smallholders farming at household level and commercial large scale farms.

This report provide data disaggregated at National and Regional level. The report provides detailed statistics of different indicators that serves as planning tool for the Government planners, researchers, policy makers and other stakeholders involved in agriculture and rural development. In addition, the report provides comprehensive data that serve as a monitoring and evaluation tool for rural development interventions.

I therefore express my sincere appreciation to the Census Technical Committee comprised of senior staff from the NBS, OCGS and ASLMs for their commendable work. My appreciation as well extends to all the professionals, Regional and District supervisors and field enumerators for their dedicated work. Certainly, without their commitment, the census would not have been successful.

**Dr. Albina Chuwa**

**Statistician General**

**National Bureau of Statistics**

## EXECUTIVE SUMMARY

At the end of 2019/20 Agricultural year, the Government of Tanzania carried out the National Sample Census of Agriculture. The Census covered both smallholder farmers and large scale farms. From a total of 12,007,839 households in Tanzania (11,659,589 in Mainland Tanzania and 348,250 in Tanzania Zanzibar), 7,837,405 households (65.3 percent) were involved in agricultural activities. Of the total Agriculture households, 5,088,135 (64.9 percent) were involved in crops only, 2,589,156 (33.0 percent) households engaged in crops and livestock, 154,290 (2.0 percent) were involved in livestock only, whilst the least number of households were involved in fish farming (1,358) and pastoralism (1,465), jointly having less than one percent. There were 1,093 large scale farms, from which 554 were dealing with crop production only, 277 were dealing with livestock only, crops and livestock were 202 and 60 farms were dealing with fish farming.

The total land area available to smallholder farmers either through formal titles or customary rights was 20,774,267 ha (an average of 2.7 ha per household), though households used only an average of 2.3 ha for agriculture activities during 2019/20 agricultural year. Nationally, the total utilized land was 16,717,289 ha, of which 16,547,420 were located in the Mainland Tanzania and 169,869 ha in Tanzania Zanzibar.

Most of the land (66.4 percent) was planted with annual crops (including fallow), while permanent or perennial crops occupied 16 percent and about 7 percent was planted with a mixture of annual and permanent crops and 7 percent was area of uncultivated usable land. The rest of the land was either planted with trees, rented to others or under pastures/natural bush. Land sufficiency shows that, only 33 percent of agricultural households reported that, they had sufficient land for their agricultural activities.

Generally, cereals were the main type of crops grown by smallholder farmers across the country occupying 7,406,207 ha of the total land under annual crops, followed by oil seed and nut crops (1,518,585 ha); pulses (beans, pigeon peas, cowpeas and green grams) planted on 1,426,783 ha and roots and tubers that were planted on 1,113,006 ha. A large proportion of these crops were planted during long rainy season. Nationwide, maize was the most widely planted crop by smallholder farmers (7,392,112 households) with a total of 4,931,111 ha were planted, followed by paddy (1,688,241 ha), beans (823,484 ha), cassava (740,706 ha), groundnuts (527,142 ha) and sunflower (524,050 ha).

The total planted area under irrigation was 289,381 ha, representing 2.5 percent of the total planted area. Area under irrigation in Mainland Tanzania was 272,897 ha equivalent to 2.3 percent of the total planted area, while in Tanzania Zanzibar, the area under irrigation was 16,484 ha equivalent to 13.1 percent of the total planted area. Both in Mainland Tanzania and Tanzania Zanzibar, irrigated crop production was carried out mostly during short rainy season. Cereals (48.7 percent) occupied large area under irrigation during short rainy season, followed by fruits and vegetables (34.7 percent), and pulses (14.7 percent). Similar pattern was observed during long rainy season were cereals occupied large area under irrigation (49.6 percent), followed by fruits and vegetables (38.6 percent), and pulses (7.0 percent). The least area irrigated during both short and long rainy seasons was occupied by oil seeds and nuts, and roots and tubers (both had less than 1 percent and 3 percent in short and long rainy seasons respectively).

The total planted area with improved seeds was 2,593,526 ha, accounting for 22.0 percent of the total cultivated area. On the other hand, planted area with local seeds was 8,906,314 ha, representing 75.7 percent of the total cultivated area, while the area planted with local and improved seeds was 250,884 ha, which is equivalent to 2.1 percent of the total planted area.

Usage of fertilizers show that, 2.5 million hectares, equivalent to 21.4 percent of total planted area, were applied with fertilizers, out which 2.4 million hectares were in Mainland Tanzania and 31,612 hectares in Tanzania Zanzibar. Out of the total planted area, 13.3 percent was applied with organic fertilizers and 8.0 percent with inorganic fertilizers.

Majority of the households in Tanzania (7,477,152; 95.4 percent), reported to use hand hoe and sword (6,982,450; 89.1 percent) for their farming activities. Other farming implements reported to be used by smallholder farmers, were oxen (27.8 percent), ox plough (26.5 percent), hand sprayer (17.9 percent) and tractors (10.2 percent).

Out of 7,677,291 crop growing households in Tanzania, 538,656 households (7.0 percent) received crop extension advice during 2019/20 agricultural year. Moreover, from 7,499,219 crops growing households in Mainland Tanzania, 520,757 (6.8 percent) households received extension service. For the case of Tanzania Zanzibar, out of 178,072 households; 17,899 households equivalent to 10.1 percent reported to receive extension service.

The number of household members who received credits from different sources for agricultural activities during 2019/20 agricultural year in Tanzania was 294,618, of which 217,403 members (73.8 percent) were males and 77,201 (26.2 percent) were females. The sources of credits received were categorized as family, friends or relative; bank, cooperative; saving and credit societies; trade/trade



store; private individual; NGO/project; and others sources. It was also observed that, 76,214 members (63,059 males; 13,155 females) equivalent to 25.9 percent obtained first credit from family, friends or relatives. This was followed by cooperatives source, obtained by 65,601 members (53,543 males and 12,058 females), equivalent to 22.3 percent and private individual 49,765 (males 39,461 and females 10,304) equivalent to 16.9 percent. However, trade/trade store as another source of credit, recorded 7,982 members (7,320 males and 662 females) equivalent to 2.7 percent, as the lowest number to give the foremost credit to agricultural household members.

The total number of households involved in rearing livestock, was 2,747,910 (2,683,454 were in Mainland Tanzania and 64,456 in Tanzania Zanzibar) equivalents to 35 percent of all agricultural households, out of which 1,971,550 households (39.3 percent) raised cattle, followed by goats (1,815,220; 36.2 percent), sheep (677,273; 13.5 percent) and pigs (546,753; 10.9 percent). It was also revealed that, out of 7,837,405 agricultural households, a total of 4,338,882 (55.4 percent) households raised chicken during 2019/20 agricultural year. Of the total households raised chicken, 4,238,344 were from Mainland Tanzania and 100,538 from Tanzania Zanzibar.

There were 33.9 million cattle, of which smallholder farmers raised 33.8 million and large scale farms raised 142,968 cattle. From the total cattle population, 33.7 million heads were from Mainland Tanzania and 270,998 in Tanzania Zanzibar. The number of goats reported was 24.5 million for smallholder farmers and 33,847 from large scale farms. Out of the total goat population, 24.5 million heads were from Mainland Tanzania and 111,623 in Tanzania Zanzibar.

The number of sheep for smallholder farmers was 8.5 million and 24,075 for large scale farms, whereby 8,516,056 heads were from Mainland Tanzania and 934 in Tanzania Zanzibar. Furthermore, number of pigs was 3.2 million for smallholder farmers and 5,123 for large scale farms, of which 3,206,286 were from Mainland Tanzania and 2,209 in Tanzania Zanzibar. The total number of chicken reported was 87.7 million, of which 75.1 million were recorded from smallholder farmers and 12.5 million from large scale farms, with 83,895,396 chicken from Mainland Tanzania and 3,764,184 million in Tanzania Zanzibar.

Production of cow milk during the 2019/20 agricultural year was 3.13 billion litres, of which 3.11 billion litres were from smallholder farmers and 17.8 million litres from large scale farms. In terms of Goat milk production, a total of 25.7 million litres were produced, whereby 25.7 million litres were produced from smallholder farmers and 12,515 litres from large scale farms. The total eggs production was 4.38 billion, of which 4.28 billion (97.8 percent) were from smallholder farmers and 95.27 million (2.2 percent) from large scale farms. Out of the total eggs produced by the smallholder

farmers, 4,151,578,104 eggs were produced in Mainland Tanzania and 224,310,476 in Tanzania Zanzibar.

Despite the large number of livestock in Tanzania, the prevalence of diseases has remained a challenge in improving livestock productivity. Tick Born Diseases (TBD), Foot and Mouth Disease (FMD), Contagious Bovine Pleura Pneumonia (CBPP), trypanosomiasis and helminthiasis, were the common diseases in large and small ruminants, while Newcastle Disease (NCD) was the most problematic disease in chicken. There were 4,359,545 cattle infected with TBD; 4,297,145 infected with FMD; 3,872,491 infected with Helminthiasis and 3,516,887 infected with CBPP. As for chicken, more incidences of New Castle Disease (NCD), was amongst the most prevalent disease infecting poultry during 2019/20 Agricultural year.

In controlling ticks, spraying method was practiced by 67.6 percent of the households, while dipping and trapping were practiced by 15.6 and 0.4 percent, respectively. Whilst in controlling Tsetse fly, spraying was the most common method practiced by 72.4 percent of the households. There were 53.6 percent of the households used Newcastle vaccine and 33.1 percent used local herbs to control outbreaks of the Newcastle disease. Likewise, worm control was practiced by 664,918 households (56.9 percent) of the livestock keeping households practiced pest and parasite control.

The census results reveal that, less than a quantile of the total households rearing livestock, received extension services for their livestock during the reference period. A total of 250,768 households (9.1 percent) reported to receive livestock extension services, whereby 244,619 were in Mainland Tanzania and 6,149 in Tanzania Zanzibar.

# CHAPTER ONE

## BACKGROUND INFORMATION

### 1.0 Introduction

Agriculture is an important economic sector that play great role to the National economy in Tanzania. In the year 2020, the sector contributed 26.9 percent of the National GDP (Economic Survey Report, 2020). The contribution of crop sub-sector to the GDP was 15.4 percent, Livestock 7.1 percent, Fisheries 1.7 percent and Forest 2.7 percent. The sector is the main source of employment, food production, raw materials for industries, as well as foreign earning in the country. The livestock sub-sector provides best source of animal protein, food security, a source of cash income, manure for the crop fields, draught animal power, and other socio-economic functions while fisheries provide among others, a source of high-quality protein. Most of Tanzanians engaged in agriculture are smallholder farmers who grow a wide variety of annual and perennial crops such as paddy, maize, sorghum, beans, cowpeas, green gram, groundnuts, sunflower etc. In addition to that, farmers also grow wide varieties of fruits and vegetables such as tomatoes, onion, cabbage, amaranth, orange, mango, banana, pawpaw, watermelon etc. Cash crops including cotton, tobacco, sisal, cashew nuts, coffee and tea are mainly grown by smallholders and commercial large scale farms for export. For the livestock sub-sector, the majority are smallholders engaged in rearing of indigenous cattle, sheep, goats and chicken while fishing and fish farming is practiced at small scale.

This report focuses on the data related to agricultural households, land ownership, land use, crop production, agro processing, irrigation use, use of inputs, crop extension services and agriculture mechanization. Others are access to credit, market information, agriculture constraints, poverty indicators in agricultural households, livestock rearing and production of livestock products, livestock diseases, cattle identification, fish farming and beekeeping.

The report describes the agricultural activities at National and Regional level that take place in both sides of the United Republic of Tanzania. This report is divided into seven chapters that are Background Information, Demographics, Crops Results, Livestock Results, Agricultural Credits, Poverty Indicators and Conclusion and Recommendation.

## **1.1 Background Information**

In order to facilitate various activities of the Poverty Monitoring Master Plan, the Government has planned a series of censuses and surveys to assist in policy and planning and to track changes in the wellbeing of the population of Tanzania. Therefore, the 2019/20 National Sample Census of Agriculture results aim at providing useful information that will contribute in filling the data gaps, thus, support in planning and policy formulation geared to promote agricultural sector which the majority of the rural population depends on livelihood and it is their main source of income. In addition, the collected information provides benchmark data for monitoring and evaluating effectiveness of rural development initiatives.

## **1.2 Census Objectives**

The 2019/20 National Sample Census of Agriculture 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, NGOs, farmer's organizations. The dataset is both extensive in its sample and detailed in its scope to meet the user demand.

The key objectives of the Census were three-fold:

- i). To identify structural changes if any, in the size of farm household holdings, crop and livestock production, farm inputs and farm implement use. It also seeks to determine if there are any improvement in rural infrastructures and the level of agriculture household living conditions;
- ii). Provision of benchmark data on productivity, production and agricultural practices in relation to policies and interventions promoted by the Agricultural Sector Lead Ministries (ASLMs) and other stakeholders; and;
- iii). Establishment of baseline data for the measurement of the impact of high-level objectives of the Agriculture Sector Development Programme Phase II (ASDP II).

## **1.3 Census Scope and Coverage**

The 2019/20 National Sample Census of Agriculture was conducted for both large scale farms and smallholder farmers. This report covers information of smallholder farmers in details with some summary data from large scale farms in order to provide complete national estimates for some variables such as total livestock population, crop production etc. The data was collected from a sample of 33,808 smallholder farmers, of which 32,008 were from Mainland Tanzania and 1,800 from Tanzania Zanzibar. Data was also collected from 1,093 large scale farms (1,018 were from Mainland Tanzania and 75 in Tanzania Zanzibar) on a complete enumeration basis.

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

- i). Smallholder farmers questionnaire
- ii). Large scale farms questionnaire
- iii). Community level questionnaire

The smallholder farmers questionnaire was the main census instrument and main topics covered were

- a) Household information
- b) Land access/ownership/tenure
- c) Land use
- d) Conservational farming
- e) Access and use of resources
- f) Annual and permanent crops production
- g) Main use of crop residuals
- h) Agroprocessing
- i) Crop storage
- j) On farm investments
- k) Access and use of credit for agricultural purposes
- l) Crop extension services
- m) Livestock production and products
- n) Outlet for sales of livestock
- o) Livestock structures/accessories
- p) Livestock pest & parasite control
- q) Livestock extension
- r) Livestock extension service providers
- s) Government regulatory challenges
- t) Fish farming
- u) Bee keeping
- v) Labour use
- w) Subsistence vs non-subsistence
- x) Access to infrastructure and other services
- y) Agricultural constraints
- z) Market information
- aa) Poverty indicators at household level

The large-scale farm questionnaire was administered to large farms which were either privately or corporately managed. Some data from the large scale farms' questionnaire are incorporated in this report, however an in-depth analysis of large scale farms is presented in a separate report. The community level questionnaire was designed to collect village level data such as access and use of common resources, community tree plantations and seasonal farm gate prices.

## 1.4 Census Methodology

### 1.4.1 Sample Design

The National Master Sample developed by National Bureau of Statistics (NBS) and Office of the Chief Government Statistician (OCGS) to serve as national framework for conducting household-based survey in the country was used to design the 2019/20 National Sample Census of Agriculture (NSCA). The 2019/20 sample was designed to provide estimates disaggregated at regional and district levels for both Mainland Tanzania and Tanzania Zanzibar.

The 2019/20 NSCA adopted a two-stage design with census enumeration areas as Primary Sampling Units (PSUs) and households as second-stage units. The stage one sampling frame comprises of selection of urban and rural EAs from the 2012 Population and Housing Census frame. The EAs were explicitly sorted by Region and District before employing a Probability Proportionate to Size (PPS). The second stage was the selection of agricultural farming households from the selected EAs for data collection.

### 1.4.2 Sample Size

A total of 2,820 PSUs were selected from the 2012 Population and Housing Census (PHC) frame of which 2,670 PSUs were from Mainland Tanzania and 150 from Tanzania Zanzibar. Out of these, 2,560 PSUs were from rural and 260 from urban areas. The number of

**Table 1.1: Census Sample Size During 2019/20 Agricultural Year, Tanzania**

Level	Tanzania	Tanzania Mainland	Tanzania Zanzibar
Region	31	26	5
District	196	185	11
EAs	2,820	2,670	150
Households	33,808	32,008	1,800

households differed from one PSU to another, it ranged from 5 to 30 households, making a total number of 33,808 households (32,008 households from Mainland Tanzania and 1,800 from Tanzania Zanzibar). The probability of selecting a household depended on the total number of households in the PSU. The sample was higher for rural EAs than urban EAs. The technic was designed to give estimates of different parameters with the error margin of 5 percent at 95 percent confidence level.

## **1.5 Census Organization**

The 2019/20 NSCA was administered by National Bureau of Statistics and Office of the Chief Government Statistician, Zanzibar in collaboration with Agriculture Sector Lead Ministries (ASLMs). For smooth implementation of the Census, Steering Committee, Committee of Directors and Technical Committee were formed. The committee members were from the President's Office, Regional Administration and Local Governments; Prime Ministers' Office; Ministry of Agriculture; Ministry of Livestock and Fisheries; Ministry of Industry and Trade; Ministry of Agriculture, Irrigation, Natural resources and Livestock, Zanzibar; the National Bureau of Statistics and Office of the Chief Government Statistician, Zanzibar. The Steering Committee was responsible for making pertinent decision with regards to census implementation, whereas the Committee of Directors provides advice to the Steering Committee. On the other hand, the Technical Committee was responsible for the overall planning and execution of the project. More specifically the team was responsible to

- i) Develop tabulation plans;
- ii) Develop sample design;
- iii) Questionnaire design and other census instruments;
- iv) Field pre-testing of the census instruments;
- v) Execution training of trainers;
- vi) Information, education and communication campaign; and
- vii) Field supervision and consistency checks.

## CHAPTER TWO

### DEMOGRAPHIC CHARACTERISTICS

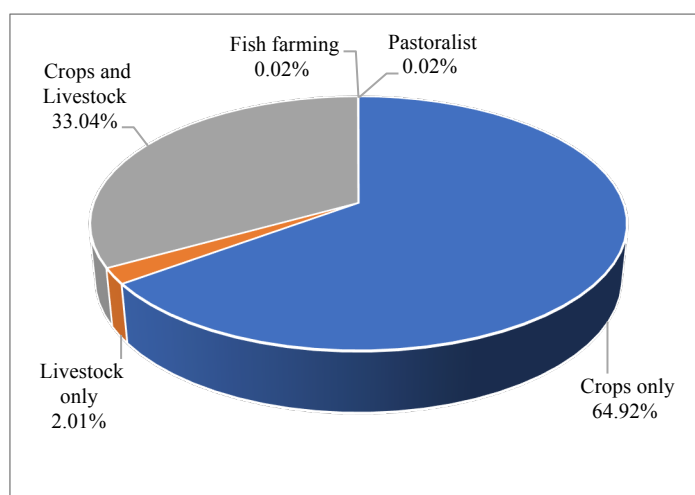
#### 2.0 Agricultural Households

The results presented in this section discuss agricultural activity of the households during the 2019/20 agricultural year. A total of 7,837,405 households were engaged in agricultural activities, out of which 7,657,184 were in Mainland Tanzania and 180,220 in Tanzania Zanzibar. In terms of locality, 6,325,362 households (80.7 percent) were in rural areas and 1,512,043 (19.3 percent) in urban areas. The number of agricultural households has increased from 5,838,523 in 2007/08 to 7,837,405 in 2019/20 NSCA.

#### 2.1 Types of Agricultural Activities of the Households

Crop production was the most common agricultural activity at the national level, accounting for 64.9 percent (5,088,135 households), followed by 2,589,156 households (33.0 percent) engaged in crop and livestock, 157,290 households (2.0 percent) engaged in livestock only, whilst 1,358 and 1,465 households engaged in fish farming and pastoralism, respectively (Figure 2.1).

Figure 2.1: Agriculture Household by Type of Activity During 2019/20 Agricultural Year, Tanzania

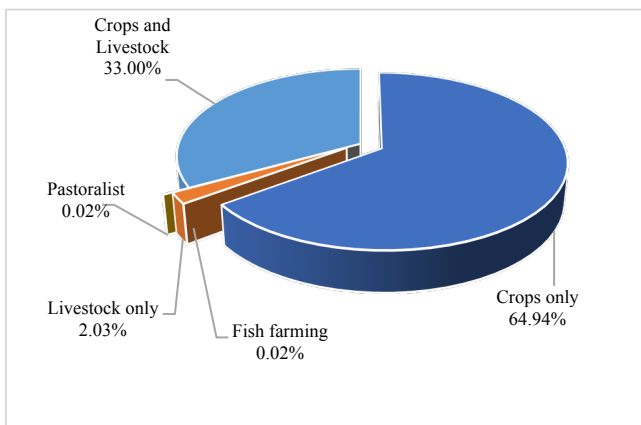


For Mainland Tanzania, a total of 7,657,185 households (65.7 percent) were involved in agricultural activities. Out of the total agriculture households, 4,972,373 (64.9 percent) were involved in crops only, followed by 2,526,846 households (33.0 percent) engaged in crops and livestock, 2.0 percent in livestock only, whilst the least number of households were involved in fish farming and pastoralism jointly having less than one percent (Figures 2.2).

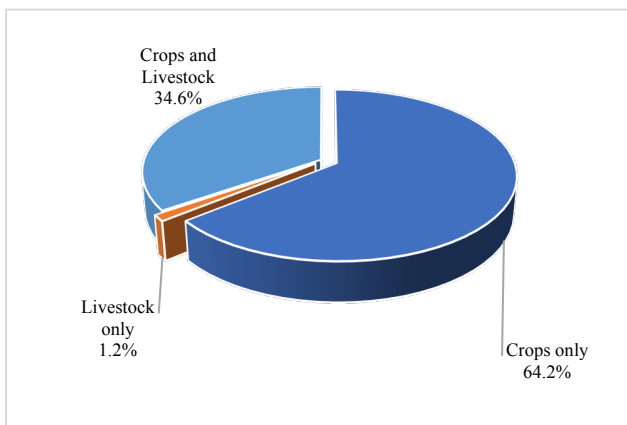
In Tanzania Zanzibar, 180,220 (51.8 percent) were involved in agriculture activities. Out of the total agriculture households, 115,762 (64.2 percent) were involved in crops only, followed by 62,310 households (34.6 percent) engaged in crops and livestock whilst 2,149 (1.2 percent) were involved in livestock only (Figure 2.3).



**Figure 2.2: Agriculture Household by Type of Activity, Mainland Tanzania**



**Figure 2.3: Agriculture Household by Type of Activity, Tanzania Zanzibar**

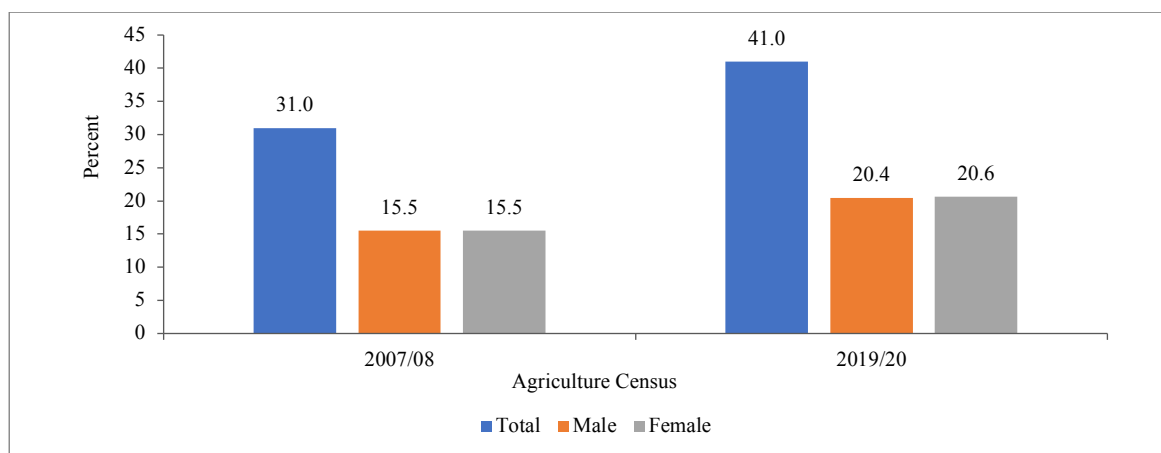


## 2.2 Agricultural Household Characteristics

The 2019/20 National Sample Census of Agriculture covered rural and urban agricultural households. This section describes the general characteristics of the sampled population, including composition by age and sex, residence, household size, literacy and education level of rural and urban agricultural population, livelihood activities, off-farm income, main activity of agricultural household members and types of land tenure.

The population of agricultural household members in Tanzania was 40,992,748 (39,902,860 in Mainland Tanzania and 1,089,888 in Tanzania Zanzibar), of which, 20,417,003 were males (19,874,879 Mainland Tanzania and 542,124 Tanzania Zanzibar) and 20,575,740 were females (20,027,976 in Mainland Tanzania and 547,764 in Tanzania Zanzibar). The population of agricultural household's members has increased from 31 million in 2007/08 to 41 million in 2019/20 agricultural year (Figure 2.4).

**Figure 2.4: Percentage Population of Agricultural Household Members by Sex in 2007/08 and 2019/20 Agricultural Censuses, Tanzania**



The results show that, about 44.0 percent of the agriculture population (18,040,013) was below 15 years of age. The 15 - 64 years age group which participates most in production accounted for 50.8 percent of the agricultural population (20,831,219) and 5.2 percent of the population (2,121,515) was above 65 years. The age dependency ratio was 96.8 percent which is very high.

**Table 2.1: Number of Agricultural Household Members by Sex and Age Group, 2019/20 Agricultural Year, Tanzania**

Age group	Sex					
	Total		Male		Female	
	Number	Percent	Number	Percent	Number	Percent
0 - 4	5,586,237	13.6	2,779,623	13.6	2,806,614	13.6
5 - 9	6,238,759	15.2	3,146,906	15.4	3,091,853	15.0
10 - 14	6,215,017	15.2	3,160,177	15.5	3,054,840	14.8
15 - 19	4,505,705	11.0	2,425,091	11.9	2,080,614	10.1
20 - 24	3,034,570	7.4	1,500,480	7.3	1,534,090	7.5
25 - 29	2,319,622	5.7	1,060,342	5.2	1,259,280	6.1
30 - 34	2,104,253	5.1	951,657	4.7	1,152,596	5.6
35 - 39	1,974,045	4.8	902,659	4.4	1,071,386	5.2
40 - 44	1,832,281	4.5	889,014	4.4	943,267	4.6
45 - 49	1,716,975	4.2	856,758	4.2	860,217	4.2
50 - 54	1,343,943	3.3	675,654	3.3	668,289	3.2
55 - 59	1,027,890	2.5	530,268	2.6	497,622	2.4
60 - 64	971,935	2.4	503,957	2.5	467,978	2.3
65 - 69	687,922	1.7	344,246	1.7	343,676	1.7
70 - 74	534,937	1.3	265,685	1.3	269,252	1.3
75 - 79	340,140	0.8	175,843	0.9	164,297	0.8
80 - 84	263,444	0.6	120,137	0.6	143,307	0.7
Above 85	295,072	0.7	128,508	0.6	166,564	0.8
<b>Total</b>	<b>40,992,747</b>	<b>100.0</b>	<b>20,417,005</b>	<b>100.0</b>	<b>20,575,742</b>	<b>100.0</b>

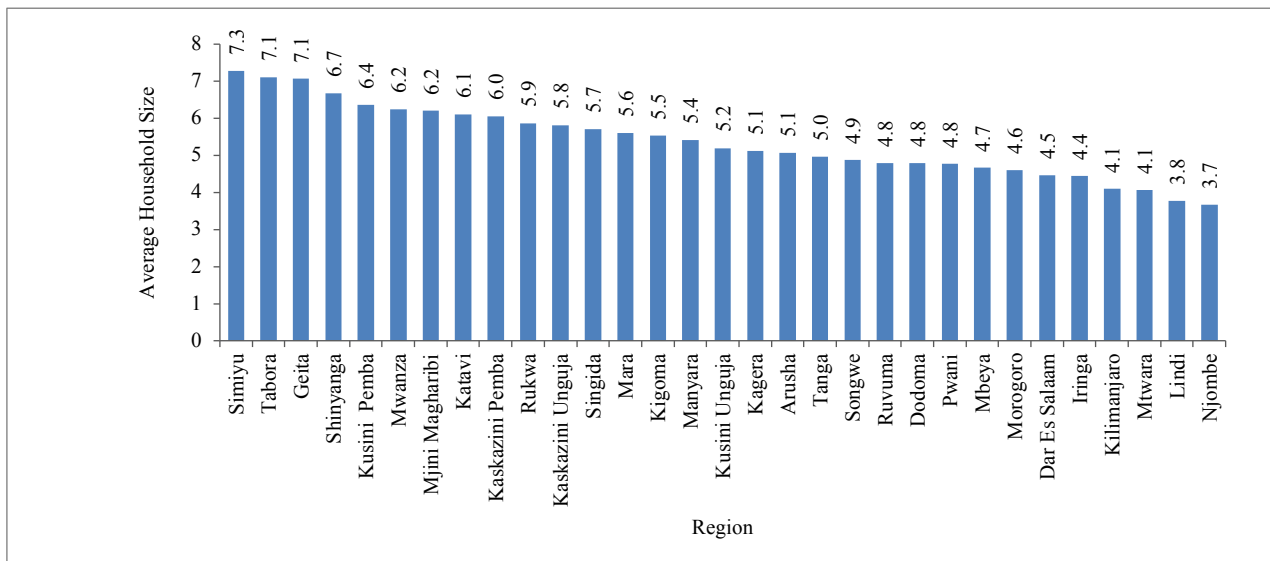
### 2.3 Number and Size of Agricultural Households

The 2019/20 National Sample Census of Agriculture results reveal that Tanzania has 7,837,405 agricultural households compared to 5,838,523 in 2007/08 Agricultural Census, with 7,657,185 in the Mainland Tanzania and 180,220 in Tanzania Zanzibar. There were 6,028,810 male headed households and 1,808,595 female headed households during 2019/20 agricultural year. Furthermore, female-headed households account for 23.1 percent of all households in Tanzania.

In Tanzania, the average household size for agricultural households was 5.2 persons in 2019/20, down from 5.3 in 2007/08. Simiyu region reported to have the largest average household size (7.3 persons),

followed by Tabora and Mwanza regions (7.1 persons). The smallest household size was in Njombe region (3.7 persons) (Figure 2.5).

**Figure 2.5: Average Household Size of Agricultural Households during 2019/20 Agricultural Year, Tanzania**

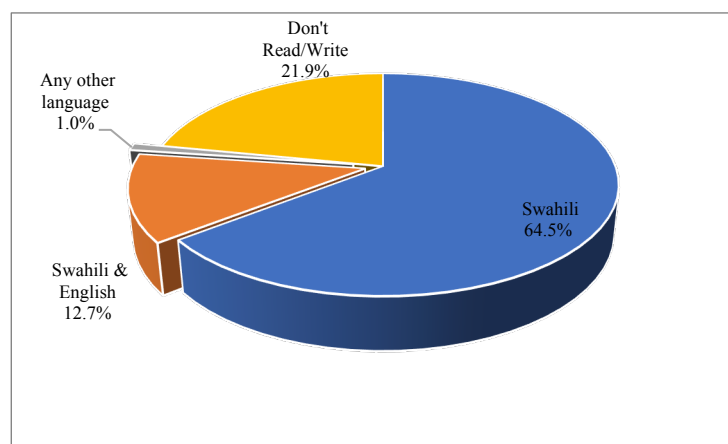


## 2.4 Literacy and Education of Agricultural Population

Literacy in Tanzania is defined as the ability to read and write a simple sentence in Kiswahili only, English only, both English and Swahili or in any other language. Information on literacy and education attainment was obtained from all persons aged five years and above.

Kiswahili language had the highest literacy rate with 64.5 percent of the agricultural population, followed by both Kiswahili and

**Figure 2.6: Agriculture Household Members by Literacy Rate During 2019/20 Agricultural Year, Tanzania**

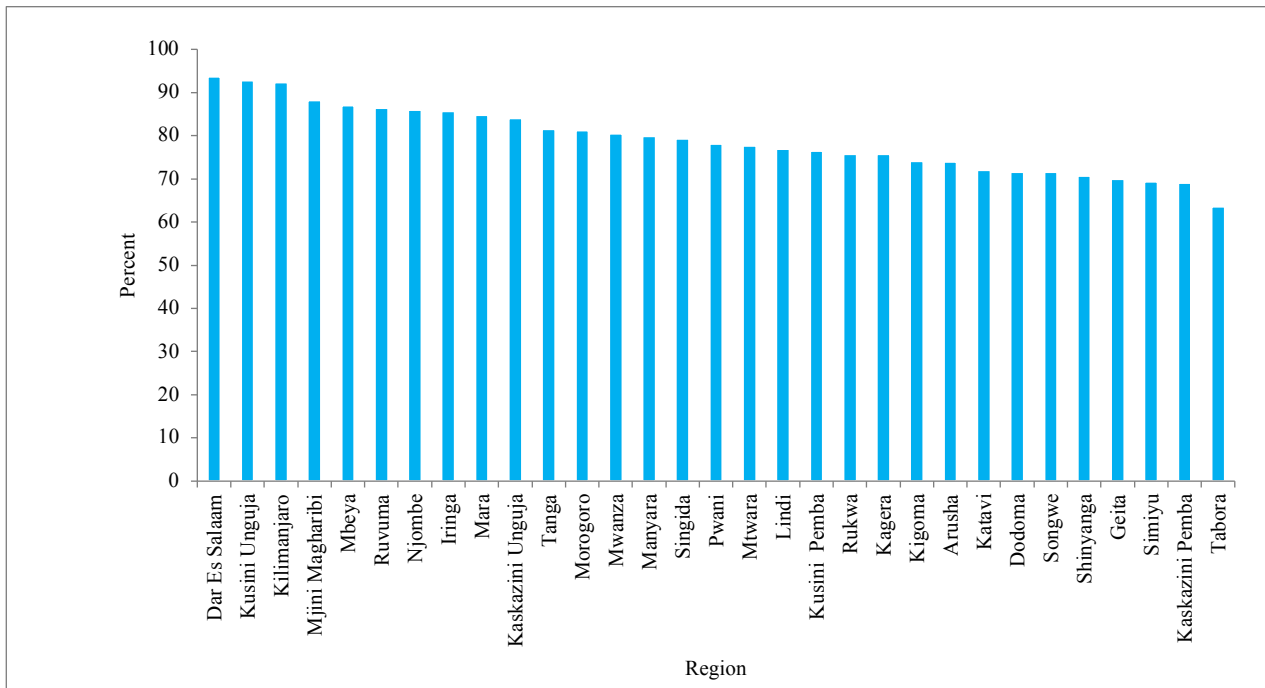


English languages (12.7 percent) and 1.0 percent for any other language. However, 21.9 percent of the population reported they couldn't read/write in any language. Literacy rate in Kiswahili language has slightly declined by 1.4 percent, from 65.9 percent in 2007/08 to 64.5 percent in 2019/20. However, the number of people who can read and write both Kiswahili and English languages have scaled up from 7.3 percent in 2007/08 to 12.7 percent in 2019/20 (Figure 2.6).

The number of people who can not read or write has decreased from 26.7 percent in 2007/08 to 21.9 percent in 2019/20, this indicates that literacy has improved. Tanzania's agricultural population has a

literacy rate of 78.1 percent in 2019/20, compared to 73.3 percent in 2007/08. Regional disparities do exist, in Mainland Tanzania, Dar es Salaam region had the highest literacy rate of 93.7 percent, followed by Kilimanjaro (92.4 percent), while the region with the lowest literacy rates was Tabora (63.5 percent). In Tanzania Zanzibar, Kusini Unguja region had the highest literacy rate (92.8 percent), whilst the lowest was Kaskazini Pemba (69.0 percent) (Figure 2.7).

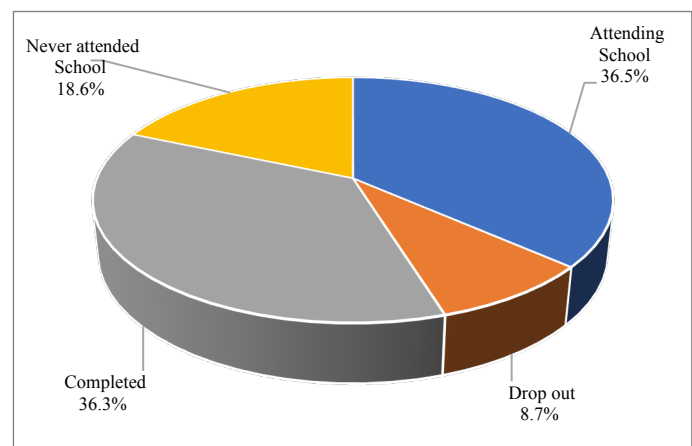
**Figure 2.7: Percentage of Literacy Level of Household Members by Region During 2019/20 Agricultural Year, Tanzania**



## 2.5 Education Status

The percentage of agricultural population aged 5 years and above who have completed a specific level of education has decreased from 40.9 percent in 2007/08 to 36.3 percent in 2019/20, while those still in school has climbed up to 36.5 percent from 35.4 percent in 2007/08. The percentage of agricultural household members who have never attended school has decreased from 23.7 percent in 2007/08 to 18.6 percent in 2019/20, this

**Figure 2.8: Percentage of Agriculture Household Members 5 years and Above by Education Status During 2019/20 Agricultural Year, Tanzania**

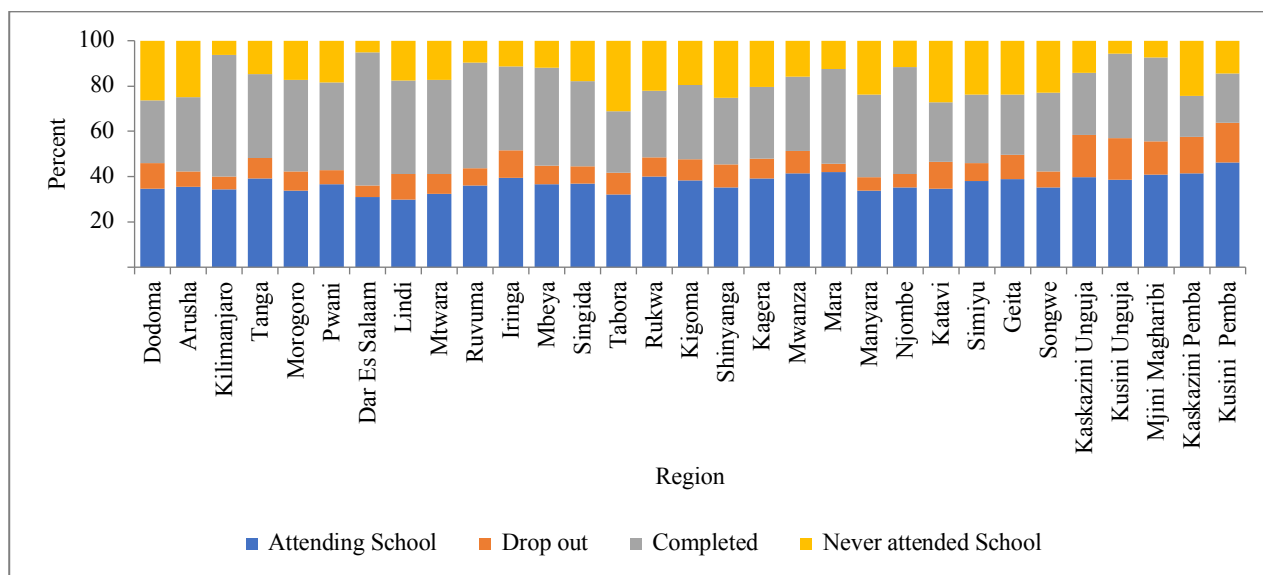


indicates that education has improved between the two censuses. The findings also suggest that 8.7

percent of the members of the agricultural households did not complete a specific level of education, which could be linked to their involvement in agricultural activities (Figure 2.8).

In Mainland Tanzania, the agricultural population in Dar es salaam region had the highest percentage of people aged 5 years and above who had completed a particular level of education (58.6 percent) and 30.9 percent were attending school, making up 89.5 percent of the literacy agricultural population in this region. Kilimanjaro region was the second in term of number of household members who attended school (ranked the second in terms of the percentage of the agricultural household members with a high level of education (88.1 percent). Mara region had the largest number of people who never went to school (42.0 percent). In Tanzania Zanzibar, 68.8 percent of the overall agricultural population had completed some certain level of education, 42.4 percent was attending school, and 14.5 percent has never attended school. Kusini Pemba region had the largest percentage of agricultural population who had never attended school (46.3 percent), followed by Kaskazini Pemba (41.6 percent) (Figure 2.9).

**Figure 2.9: Percentage of Household Members by Education Status and Region During 2019/20 Agricultural Year, Tanzania**



## 2.6 Main Activity

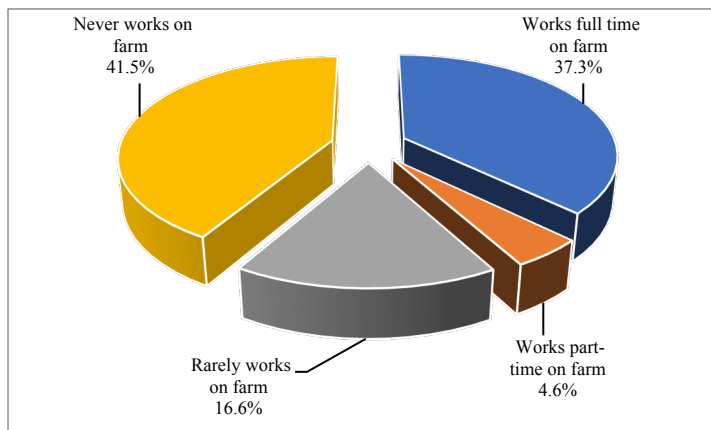
The main household activity is the activity that occupies the majority of people's time in the farming community. About 54.2 percent of the agricultural population are students who spent most of their time at school, followed by crop farming (33.1 percent). With 2.8 percent of agricultural population, the self-employed without an employee came in third. Beekeeping was the least popular activity, with only 0.003 percent of agricultural population engaging in it (Table 2.2).

**Table 2.2: Number and Percentage of Agricultural Population by Main Activity During 2019/20 Agricultural Year, Tanzania**

Main Activity	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Number	Percent	Number	Percent	Number	Percent
Student	19,182,665	54.2	18,641,632	54.1	541,033	57.3
Crop farming	11,710,813	33.1	11,557,156	33.5	153,657	16.3
Self employed without employees	1,008,014	2.8	945,172	2.7	62,842	6.7
Unable to work/too old/retired/sick/disabled	882,962	2.5	866,026	2.5	16,936	1.8
Housemaker/housewife	673,049	1.9	599,236	1.7	73,813	7.8
Self employed with employees	531,282	1.5	521,698	1.5	9,584	1.0
Livestock keeping/herding	414,635	1.2	409,325	1.2	5,310	0.6
Private/NGO/mission/etc	233,824	0.7	218,454	0.6	15,370	1.6
Government/parastatal	232,211	0.7	211,779	0.6	20,432	2.2
Not working and available	180,624	0.5	167,196	0.5	13,428	1.4
Other	159,591	0.5	156,610	0.5	2,981	0.3
Fishing	117,683	0.3	93,255	0.3	24,428	2.6
Unpaid family helper (non-agriculture)	45,492	0.1	44,009	0.1	1,483	0.2
Not working and unavailable	18,230	0.1	17,174	0.0	1,056	0.1
Agro processing	4,539	0.013	4,539	0.013	-	-
Fish farming	4,149	0.012	4,149	0.012	-	-
Livestock/pastoralism	3,507	0.010	3,507	0.010	-	-
Seaweed farming	2,116	0.006	-	-	2,116	0.224
Beekeeping	1,131	0.003	1,131	0.003	-	-
<b>Total</b>	<b>35,406,517</b>	<b>100.0</b>	<b>34,462,048</b>	<b>100.0</b>	<b>944,469</b>	<b>100.0</b>

The agricultural households' members aged 5 years and above involved in farming, on which one might expect them to rely, portrays a different image. Only 37.3 percent of the household's members work full-time on a farm. Other options include never work on a farm (41.5 percent), rarely working on a farm (16.6 percent), and working part-time on a farm (4.6 percent) (Figure 2.10).

**Figure 2.10: Percentage of Household Members aged 5 years and above by the Level of Involvement in Farming Activities During 2019/20 Agricultural Year, Tanzania**



Over the last two decades, the number of household members who work full time on farm has decreased, from 68 percent in 2002/03 to 48 percent in 2007/08 and 37 percent in 2019/20. The emergence of other sectors such as mining, industrial, and telecommunications, among others, may have contributed to this decline. The percentage of household members who never work on a farm has increased from 29 percent in 2007/08 to 41.5 percent in 2019/20, indicating that the agricultural population is shifting away from agriculture and toward other pursuits.

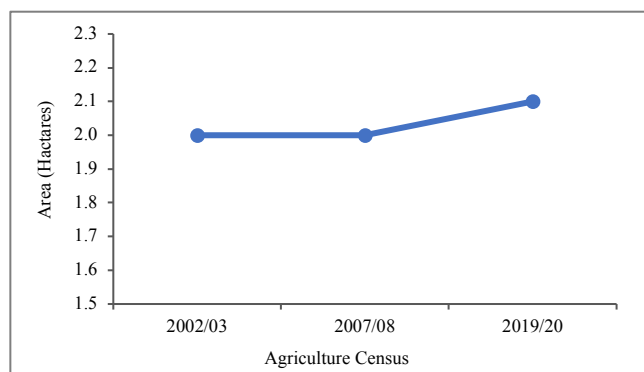
## 2.7 Land Use

The human use of land is called land use. It entails the management and transformation of natural areas, such as fields, pastures, and villages, into constructed environments. It's also been defined as "the arrangements, activities, and inputs people use to produce, change, or sustain a particular land cover type" (FAO/UNEP, 1999). In this census, this variable shows how much of the land available to households is used for agricultural purposes.

### 2.7.1 Area of Land Utilized

The total usable land available to smallholder farmers was 20,774,267 ha (20,588,027 ha in Mainland Tanzania and 186,240 ha in Tanzania Zanzibar) equivalent to 2.7 ha of available land per household. The total area of land utilized was 16,717,287 ha which is 80.5 percent of the total usable land available. This is equivalent

**Figure 2.11: Trend of Utilised Land per Household in 2002/03, 2007/08 and 2019/20 Agriculture Censuses**

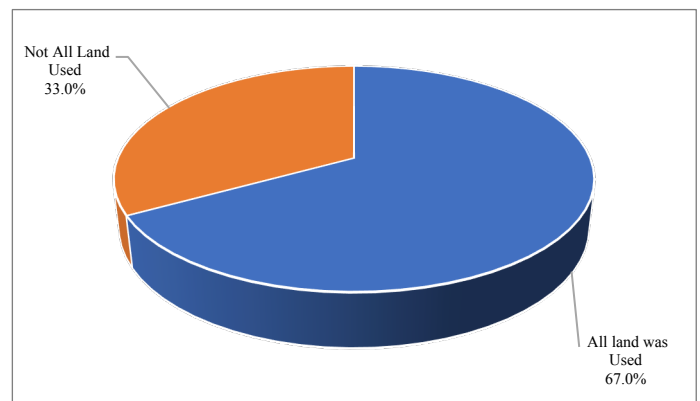


to 2.1 hectares of utilized land per household. This implies that 0.6 hectares of usable land per household was not cultivated during the 2019/20 agricultural year. The total area used for agriculture has increased notably during the last ten years (Figure 2.11).

### 2.7.2 Land Use Sufficiency

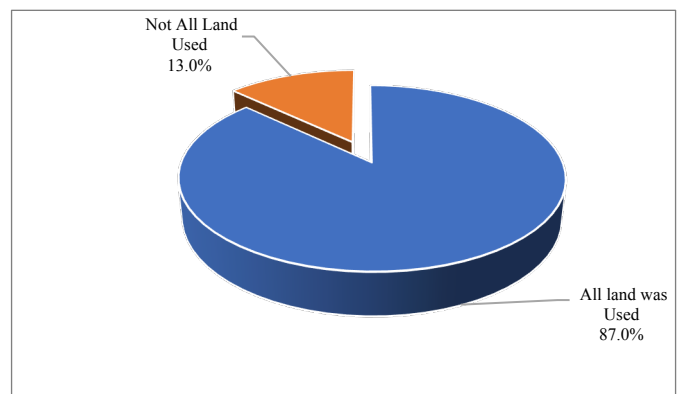
The results from Mainland Tanzania show that, 67.0 percent of agricultural households utilized all of their available land during the 2019/20 agricultural year, while the remaining 33.0 percent was not utilized. Mwanza, Mara, Singida, Manyara, Kilimanjaro, Mtwara and Singida regions reported using over 70 percent of the available land. On the other hand, Njombe, Tabora, Iringa and Pwani regions utilized less than 60 percent of the available land (Figure 2.12).

**Figure 2.12: Percentage of Agriculture Households by Whether All Land Available to the Household Was Used During 2019/20 Agricultural Year, Mainland Tanzania**



In Tanzania Zanzibar, 87.0 percent of the households reported to use all of their available land, while the remaining 13.0 percent did not. Kaskazini Unguja and Kaskazini Pemba regions reported using over 90 percent of the available land. On the other hand, Kusini Unguja, Mjini Magharibi and Kusini Pemba regions utilized with average of 85.7 percent of the available land (Figure 2.13).

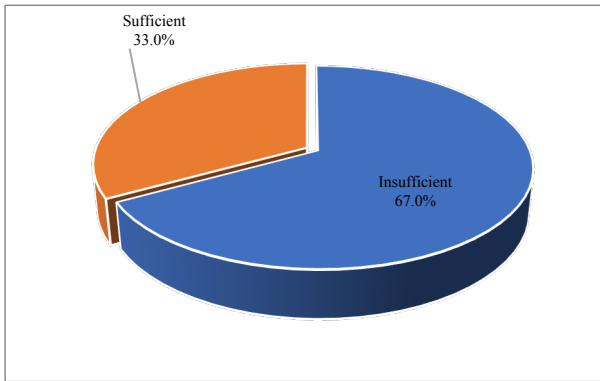
**Figure 2.13: Percentage of Agricultural Households Responding to Sufficiency of Land During 2019/20 Agricultural Year, Tanzania Zanzibar**



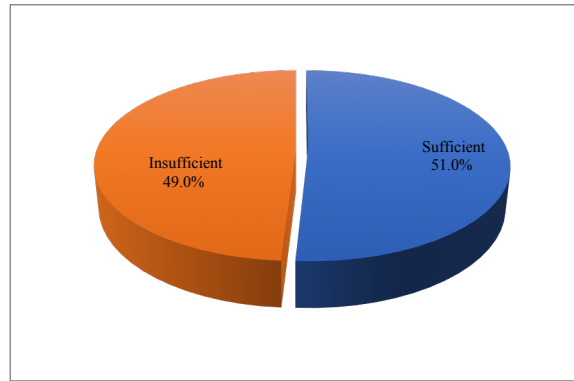
The findings also revealed that in Mainland Tanzania 33.0 percent of households reported to have sufficient land for agricultural activities, while the remaining 67.0 percent reported the land to be insufficient. Whereas in Tanzania Zanzibar, the majority of agricultural households (51.0 percent) reported to have sufficient land (Figure 2.14 & 2.15).



**Figure 2.14: Percentage of Households with Sufficient Land for Agriculture Activities, 2019/20 Agricultural Year, Mainland Tanzania**



**Figure 2.15: Percentage of Households with Sufficient Land for Agriculture Activities, 2019/20 Agricultural Year, Tanzania Zanzibar**

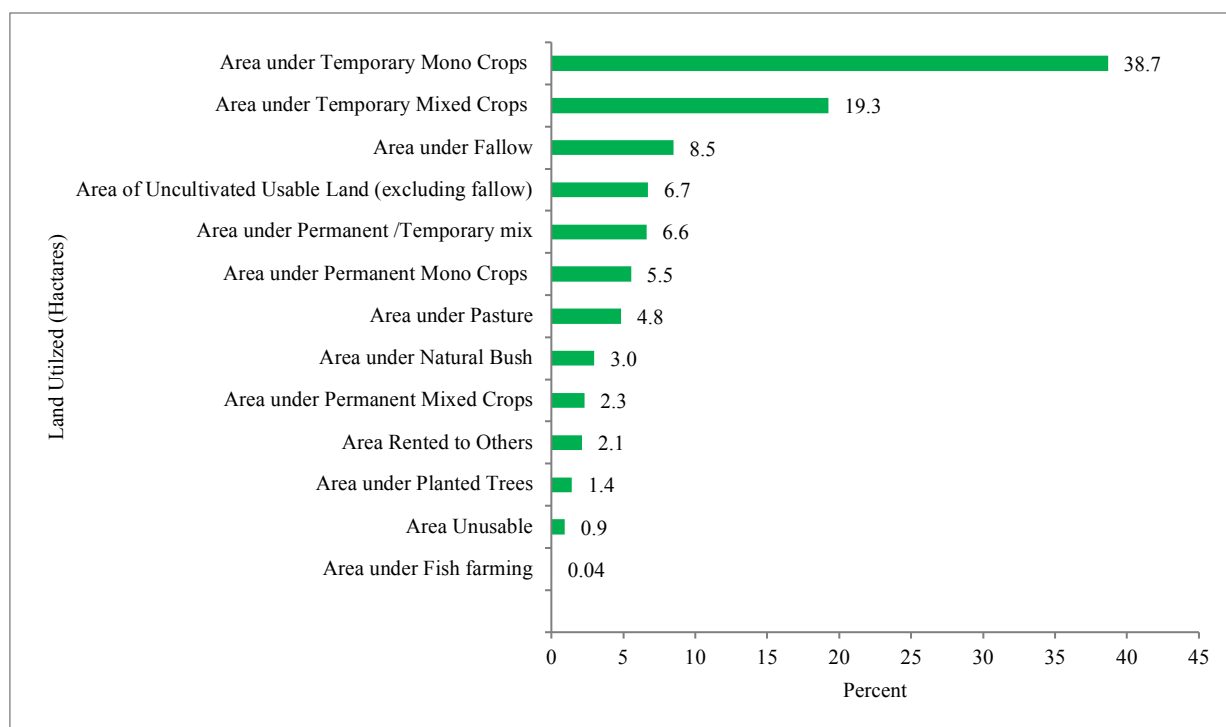


### 2.7.3 Land Use Patterns

The area with annual crops only (including fallow) accounts for 66.4 percent (12,025,818 ha) of the total land area with crops, whereas the area with permanent crops only (including planted trees) accounts for 16 percent (2,878,035 ha) of the total land area with crops.

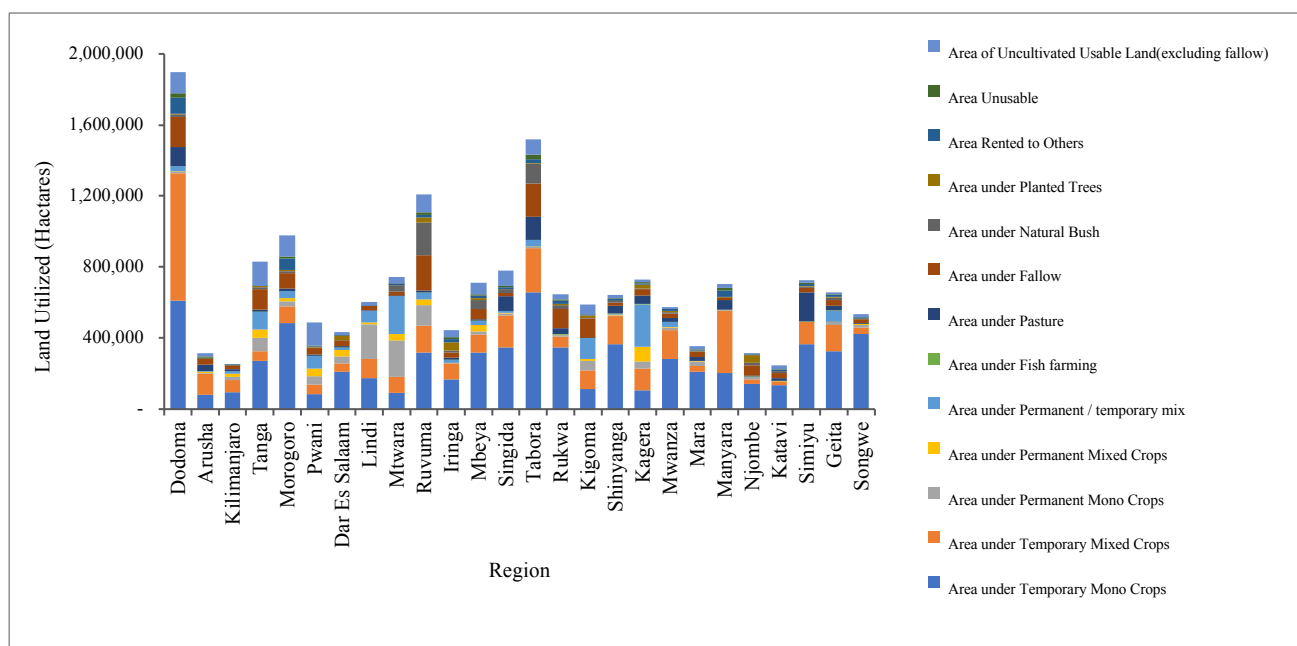
The area of land under temporary/annual crops was the most common type of agriculture land use in Tanzania, constituting 7,001,607 hectares (38.7 percent) of the land available to smallholder farmers. This was followed by area under temporary mixed crops 3,486,683 ha (19.3 percent) whilst the area under fish farming was the least common type of land use (0.04 percent) and only 1.4 percent of usable land available to smallholders was not used (Figure 2.16). On the other hand, area under permanent crops is in three categories; area under permanent/temporary mixed crops (1,198,335 ha; 6.6 percent), area under permanent mono crops (1,001,752 ha; 5.5 percent) and area under permanent mixed crops (417,773 ha; 2.3 percent).

**Figure 2.16: Land Area by Type of Land Use During 2019/20 Agricultural Year, Tanzania**



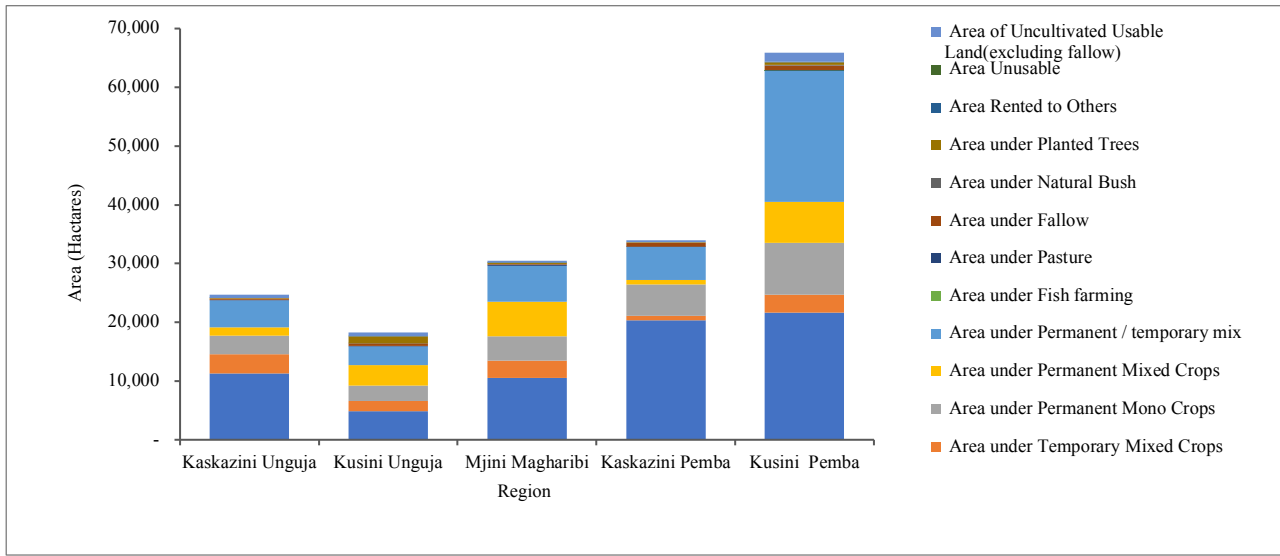
In Mainland Tanzania, Dodoma region had the largest area of land which was utilized for agricultural activities (1,898,275 ha; 10.0 percent), followed by Tabora (1,517,591 ha; 8.5 percent) and Ruvuma (1,208,782 ha; 6.7 percent). The regions with the least utilized land for production of annual crops were Kilimanjaro and Katavi which both have 163,548 ha (1.4 percent) (Figure 2.17).

**Figure 2.17: Distribution of Land Utilization by Region During 2019/20 Agricultural Year, Mainland Tanzania**



In Tanzania Zanzibar, Kusini Pemba region had the largest area of land which was utilized used for agricultural activities (65,903 ha; 38.0 percent), followed by kaskazini Pemba (33,963 ha; 19.6 percent). The regions with the least utilized land for production of annual crops were Kusini Unguja (18,275 ha; 10.5 percent). But this does not necessarily mean that, regions with the highest or least area, are the most or least crop producing regions in the country (Figure 2.18).

**Figure 2.18: Distribution of Land Utilization by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



## CHAPTER THREE

### CROPS RESULTS

#### 3.0 Introduction

This chapter presents in-depth census results on households engaged in various crop productions both annual crops (during short and long rainy seasons) and permanent or perennial crops. The crop sub-sector plays an important role in the economy of Tanzania. During 2020 the sub-sector recorded a growth of 5.0 percent and accounted for 15.4 percent share to the National GDP (Economic Survey 2020). The crop production covers types of crops produced, area planted and harvested, quantity harvested and yield. Apart from crop production the chapter also provides the results on agro-processing, irrigation, inputs use, crop marketing, access to farm inputs, crop extension services and agricultural mechanization.

#### 3.1 Crop Production

Annual crop production is practiced either in one or two seasons per year, depending on the rainfall pattern. Areas with a unimodal rain pattern receive only the main rainy season (Masika), while areas with a bimodal rain pattern receive rains in two seasons, one being the short rainy season (Vuli) and the other being the long or main rainy season (Masika). Findings on annual crop production are presented by considering different crop groups namely cereals, roots and tubers, pulses, oil seeds and nuts, fruits and vegetables in both Mainland Tanzania and Tanzania Zanzibar.

##### 3.1.1 Cereals Crop Production

Cereal crops are annual crops grown to produce grains which are mainly used as food, and animal feeds. The major cereal crops produced in Tanzania are maize, paddy, sorghum, finger millet, bulrush millet, wheat and barley.

The 2019/20 NSCA results show that, a total of 7,448,402 ha were planted with cereal crops in Tanzania during 2019/20 agricultural year out of which 7,406,207 ha (99.4 percent) occupied by smallholder farmers and 42,195 ha (0.6 percent) occupied by large scale farms. Out of the total planted area by smallholder farmers, 7,369,459 ha were in Mainland Tanzania and 36,748 ha in Tanzania Zanzibar. Maize occupied the largest planted area of 4,931,111 ha (66.6 percent), followed by paddy (1,688,241 ha; 22.8 percent) and sorghum (512,888 ha; 6.9 percent) while other cereal crops (bulrush millet, finger millet, wheat and barley) jointly occupied the smallest planted area of 273,967 ha (3.7 percent) (Table 3.1).

Likewise, the total harvested area with cereal crops by smallholder farmers in Tanzania was 6,518,577 ha of which 6,491,761 ha were reported in Mainland Tanzania and 26,817 ha in Tanzania Zanzibar. The total harvested area with cereal crops was 88.0 percent of the total area planted with cereal crops by smallholder farmers during 2019/20 agricultural year (Table 3.1).

The total production of cereal crops reported in Tanzania was 10,914,682 tons of which 10,761,559 tons (98.6 percent) were produced by smallholder farmers and 153,123 tons (1.4 percent) by large scale farms. From the total quantity produced by smallholder farmers, 10,706,957 tons were in Mainland Tanzania and 54,602 tons in Tanzania Zanzibar. Maize recorded the highest production (6,504,725 tons; 60.4 percent) compared to other cereal crops during 2019/20 agricultural year (Table 3.1).

**Table 3.1: Total Planted Area, Harvested Area, Quantity Harvested and Yield of the Cereal Crops Produced by Smallholder Farmers During 2019/20 Agricultural Year, Tanzania**

Crop	Tanzania				Mainland Tanzania				Tanzania Zanzibar			
	Planted Area (ha)	Harvested Area (ha)	Quantity harvested (tons)	Yield (tons/ha)	Planted Area (ha)	Harvested Area (ha)	Quantity harvested (tons)	Yield (tons/ha)	Planted Area (ha)	Harvested Area (ha)	Quantity harvested (tons)	Yield (tons/ha)
Maize	4,931,111	4,345,266	6,504,725	1.5	4,927,748	4,343,159	6,500,773	1.5	3,363	2,106	3,951	1.9
Paddy	1,688,241	1,485,125	3,380,715	2.3	1,655,087	1,460,571	3,330,293	2.3	33,155	24,554	50,421	2.1
Sorghum	512,888	447,567	601,470	1.3	512,767	447,474	601,390	1.3	121	92	80	0.9
Bulrush Millet	150,532	134,314	148,162	1.1	150,423	134,250	148,011	1.1	110	64	150	2.4
Finger Millet	31,468	27,767	32,950	1.2	31,468	27,767	32,950	1.2	-	-	-	-
Wheat	91,659	78,274	93,184	1.2	91,659	78,274	93,184	1.2	-	-	-	-
Barley	308	265	355	1.3	308	265	355	1.3	-	-	-	-
<b>Cereals</b>	<b>7,406,207</b>	<b>6,518,577</b>	<b>10,761,559</b>		<b>7,369,459</b>	<b>6,491,761</b>	<b>10,706,957</b>		<b>36,748</b>	<b>26,817</b>	<b>54,602</b>	

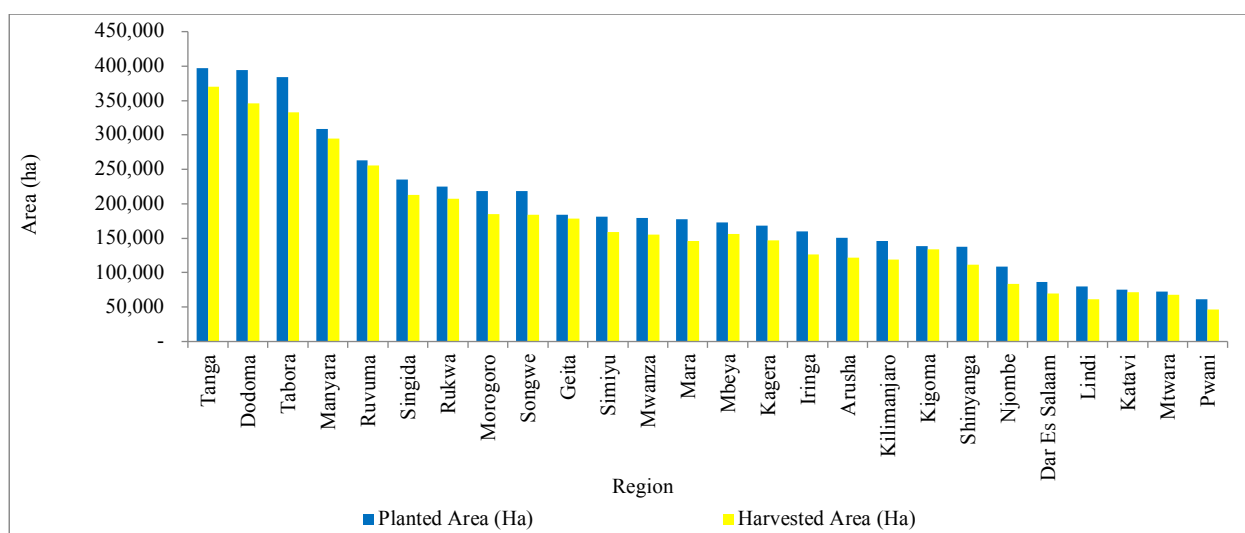
### 3.1.1.1 Maize

Across Tanzania, maize was the most widely planted cereal crop by smallholder farmers. The 2019/20 NSCA results show that, the number of agricultural households engaged in growing maize during short rainy season were 2,612,913 households (2,604,063 in Mainland Tanzania and 8,850 households in Tanzania Zanzibar) and 4,779,199 households during long rainy season (4,772,012 households in Mainland Tanzania and 7,187 households in Tanzania Zanzibar).

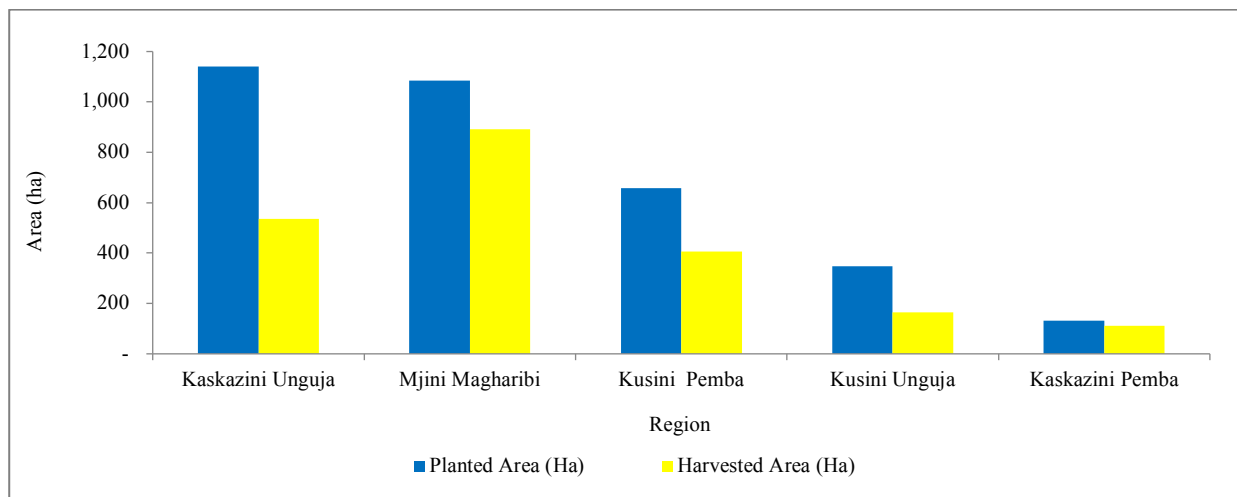
The total planted area with maize in Tanzania during the 2019/20 agricultural year was 4,946,799 ha of which 4,931,111 ha were occupied by smallholder farmers and 15,688 ha by large scale farms. Out of the total planted area occupied by smallholder farmers, 4,927,748 ha were in Mainland Tanzania and 3,363 ha were in Tanzania Zanzibar. In Mainland Tanzania, Tanga region had the largest planted area with maize (397,028 ha; 8.1 percent), followed by Dodoma (393,822 ha; 8.0 percent) and Tabora (383,633 ha; 7.8 percent), while Pwani region had the smallest planted area (69,915 ha; 1.4 percent). For the case of Tanzania Zanzibar, Kaskazini Unguja (1,141 ha; 33.9 percent) had the largest area planted with maize, followed by Mjini Magharibi (1,085 ha; 32.3 percent), while Kaskazini Pemba had the least planted area (132 ha; 3.9 percent) (Figure 3.1).

Moreover, the total harvested area of maize in Tanzania occupied by smallholder farmers was 4,345,266 ha, of which 4,343,159 ha were in Mainland Tanzania and 2,106 ha in Tanzania Zanzibar. This implies that, the total harvested area was about 88.1 percent of the total planted area with maize by smallholder farmers.

**Figure 3.1: Planted and Harvested Area with Maize by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania**

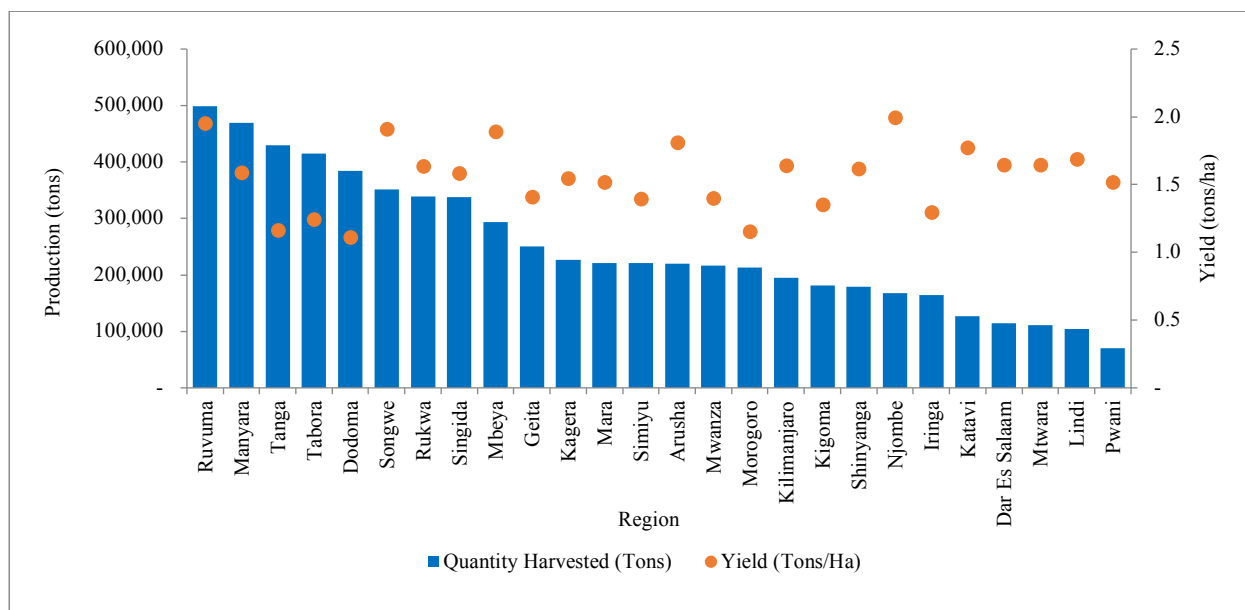


**Figure 3.2: Planted and Harvested Area with Maize by Smallholder Farmers by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



The total production of maize in Tanzania was 6,536,322 tons, of which 6,504,725 tons (99.5 percent) were from smallholder farmers and 31,597 tons (0.5 percent) from large scale farms. Out of the total quantity produced by smallholder farmers, 6,500,774 tons were in Mainland Tanzania and 3,951 tons were in Tanzania Zanzibar. In Mainland Tanzania, Ruvuma region had the highest maize production (498,685 tons; 7.7 percent), followed by Manyara (469,037 tons; 7.2 percent) and Tanga (429,788 tons; 6.6 percent). On the other hand, the lowest maize production was reported in Pwani region (69,914 tons; 1.1 percent), followed by Lindi (104,268 tons; 1.6 percent) and Mtwara (111,287 tons; 1.7 percent) (Figure 3.3).

**Figure 3.3: Production and Yield of Maize During 2019/20 Agricultural Year, Mainland Tanzania**



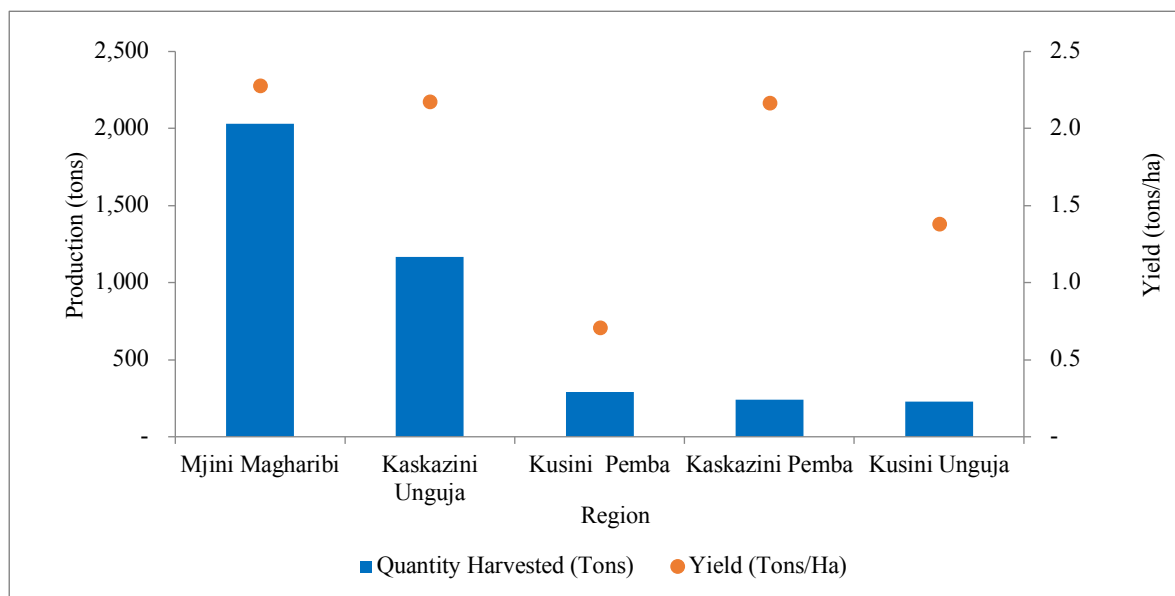


In Tanzania Zanzibar, Mjini Magharibi region had the highest production of maize (2,031 tons; 51.4 percent), followed by Kaskazini Unguja (1,166 tons; 29.5 percent) and Kusini Pemba (289 tons; 7.3 percent) while Kusini Unguja reported the lowest maize production (226 tons; 5.7 percent) (Figure 3.4).

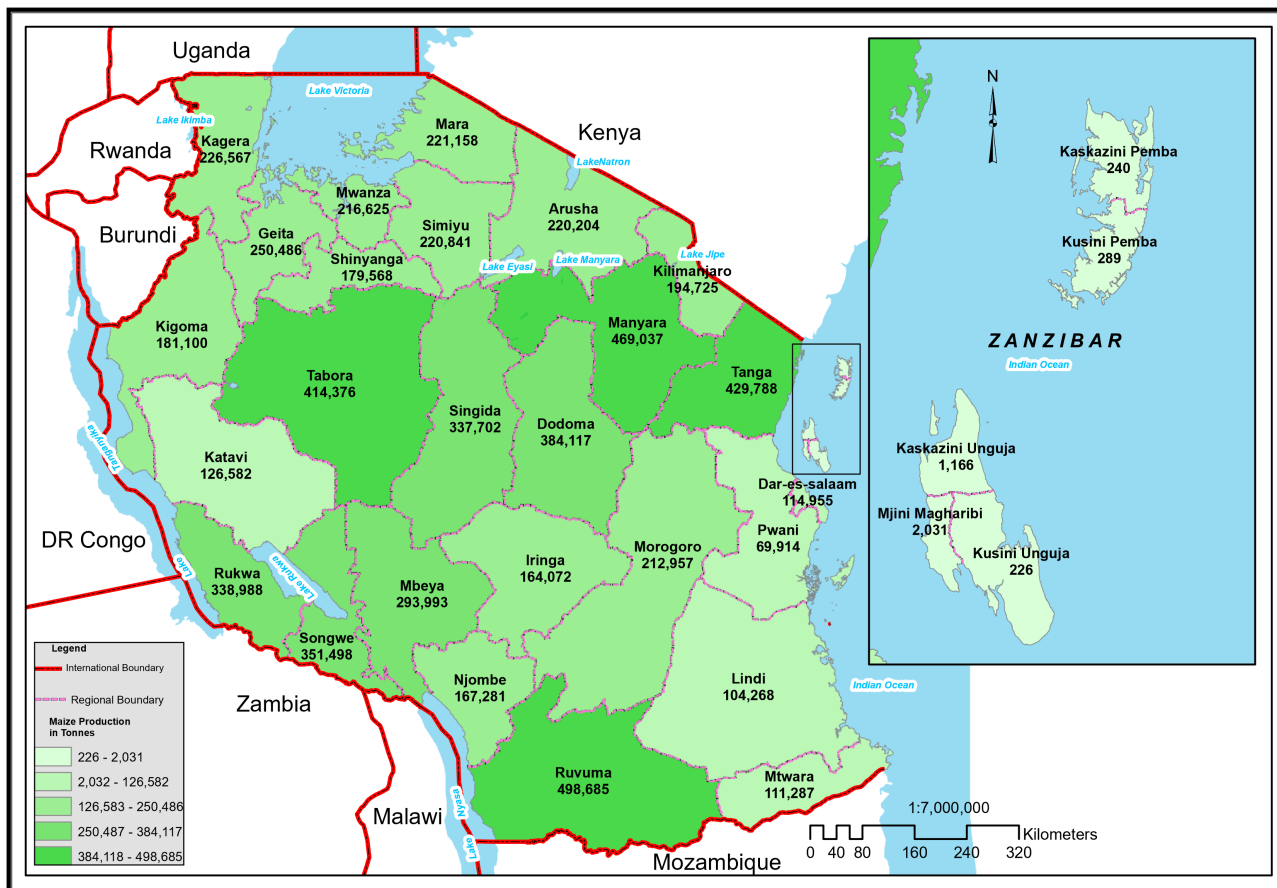
Moreover, the results also reveal that, the average productivity of maize reported at national level was 1.5 tons/ha whereby 1.5 tons/ha was reported in Mainland Tanzania and 1.9 tons/ha in Tanzania Zanzibar. In Mainland Tanzania, the highest productivity (yield) of 2.0 tons/ha were reported in Ruvuma and Njombe regions each, followed by Songwe (1.9 tons/ha). On the other hand, the lowest productivity of 1.1 tons/ha were observed in Dodoma region (Figure 3.3 & Map 3.1).

In Tanzania Zanzibar, Mjini Magharibi region reported the highest yield of 2.3 tons/ha, followed by Kaskazini Unguja and Kaskazini Pemba each with a yield of 2.0 tons/ha, while the lowest yield of 0.7 tons/ha was reported in Kusini Pemba region (Figure 3.4 & Map 3.1).

**Figure 3.4: Production and Yield of Maize During 2019/20 Agricultural Year, Tanzania Zanzibar**

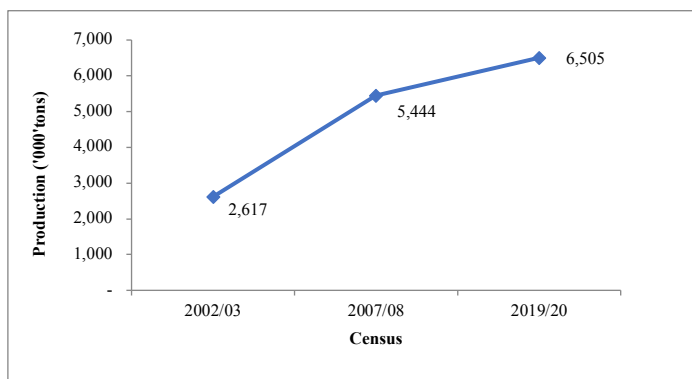


**Map 3.1: Production of Maize by Region During 2019/20 Agricultural Year, Tanzania**



Comparatively, the trend shows that, the production of maize has increased from 5,444,178 tons in 2007/08 to 6,504,725 tons in 2019/20 agricultural year by 19.5 percent (Figure 3.5).

**Figure 3.5: Trend of Maize Production by Smallholder Farmers by Three Consecutive Censuses in Tanzania**



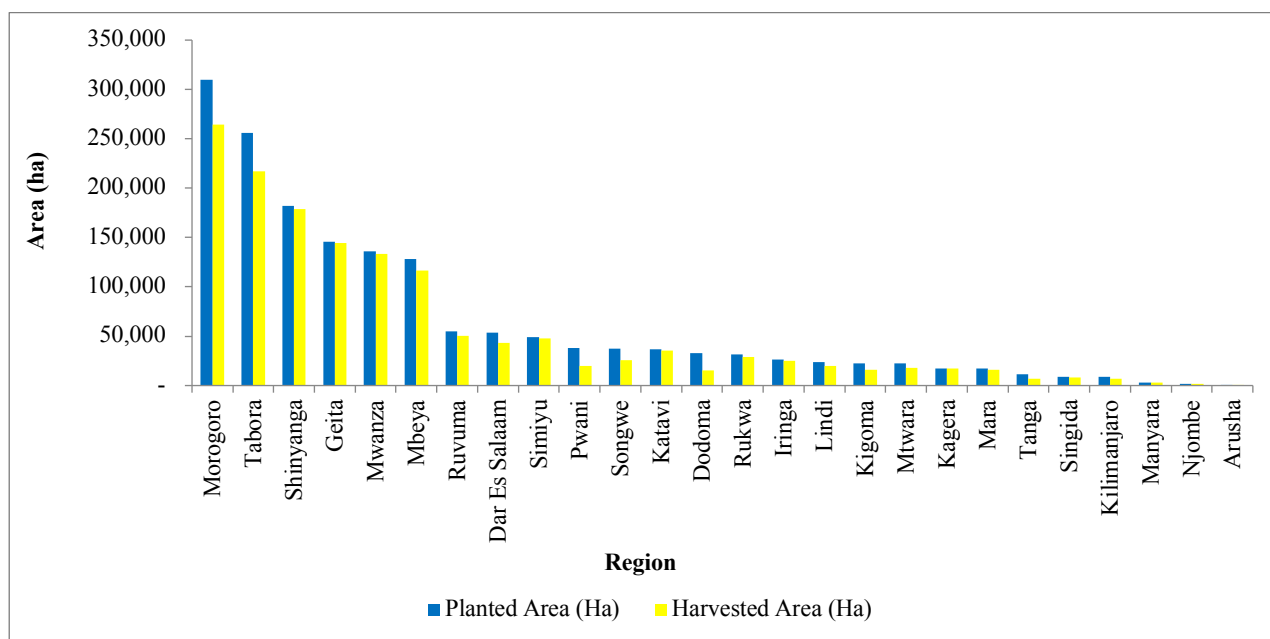
### 3.1.1.2 Paddy

The 2019/20 NSCA results show that, a total of 609,331 households were engaged in growing paddy in Tanzania during short rainy season (579,682 households were in Mainland Tanzania and 29,649 households in Tanzania Zanzibar). During long rainy season, 1,348,037 households were engaged in paddy production, of which 1,270,429 households were in Mainland Tanzania and 77,608 households in Tanzania Zanzibar.

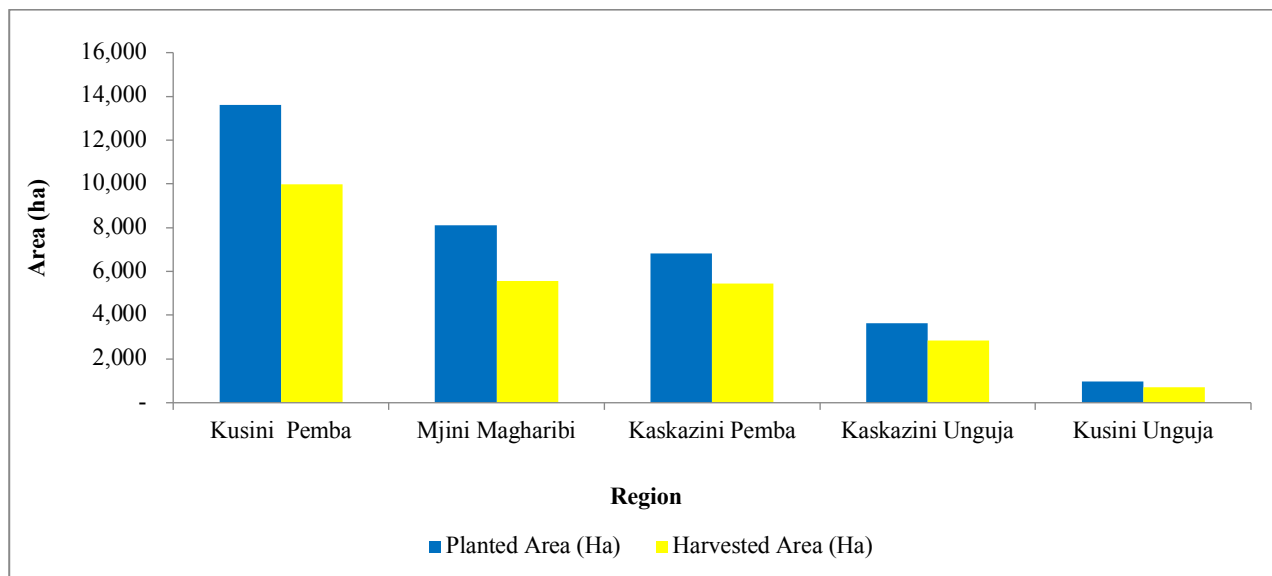
A total area of 1,700,701 ha was planted with paddy in Tanzania, out of which 1,688,241 ha were occupied by smallholder farmers and 12,460 ha occupied by large scale farms. Out of the total planted area occupied by smallholder farmers, 1,655,087 ha were in Mainland Tanzania and 33,155 ha were in Tanzania Zanzibar. In Mainland Tanzania, Morogoro region had the largest planted area of 309,624 ha (18.7 percent), followed by Tabora (255,910 ha; 15.5 percent) and Shinyanga (182,173 ha; 11.0 percent). In Tanzania Zanzibar, the largest planted area with paddy (13,620 ha; 41.1 percent) was observed in Kusini Pemba region, followed by Mjini Magharibi (8,124 ha; 24.5 percent) and Kaskazini Pemba (6,818 ha; 20.6 percent) (Figure 3.6 & 3.7).

The census results also show that, the total harvested area with paddy in Tanzania by smallholder farmers was 1,485,125 ha, out of which 1,460,571 ha were in Mainland Tanzania and 24,554 ha in Tanzania Zanzibar. This implies that 88.0 percent of the total planted area was harvested with paddy by smallholder farmers.

**Figure 3.6: Planted and Harvested Area with Paddy by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania**



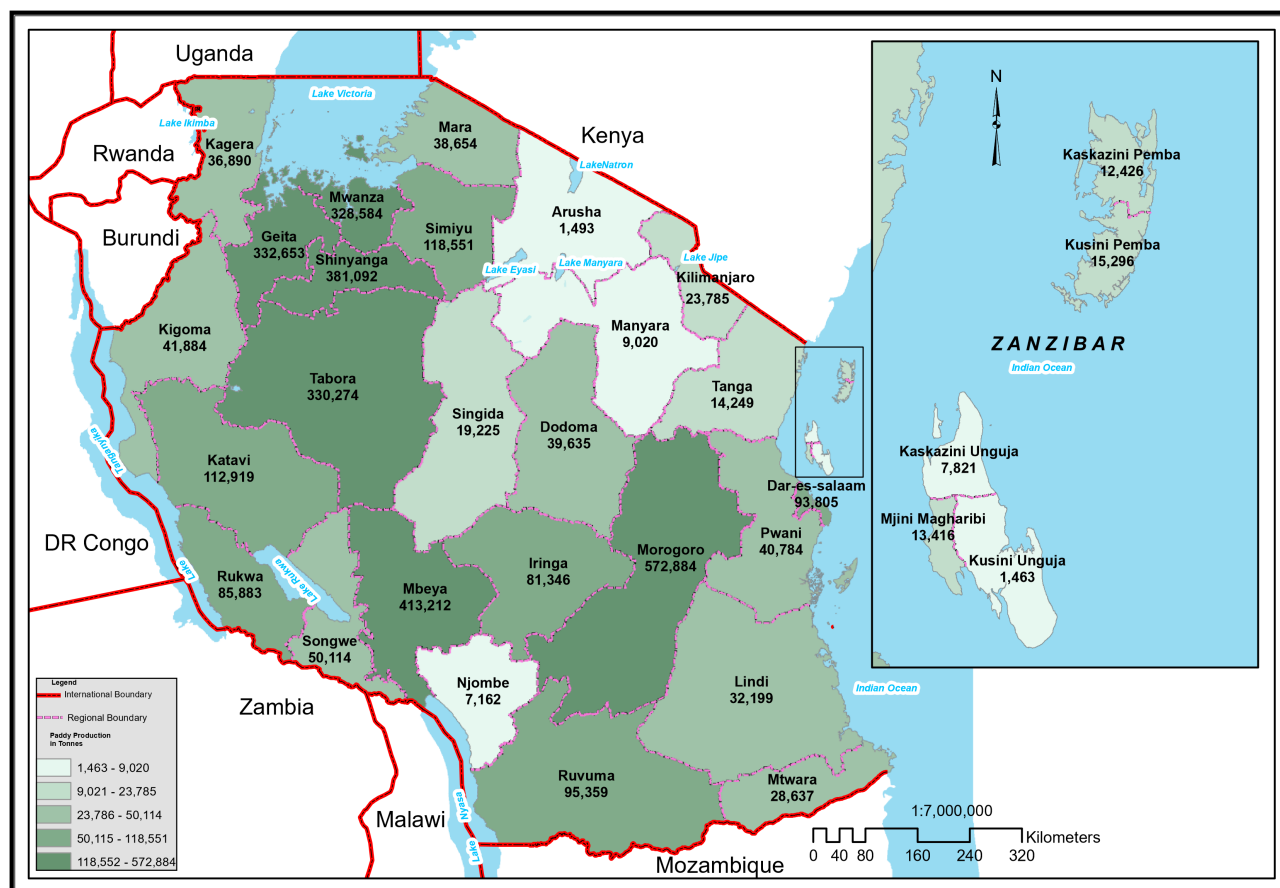
**Figure 3.7: Planted and Harvested Area with Paddy by Smallholder Farmers by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



Furthermore, the total production of paddy in Tanzania was 3,443,606 tons, of which 3,380,715 tons (98.2 percent) were from smallholder farmers and 62,891 tons (1.8 percent) from large scale farms. Out of the total quantity produced by smallholder farmers, 3,330,293 tons were in Mainland Tanzania and 50,421 tons were in Tanzania Zanzibar. In Mainland Tanzania, Morogoro region had the highest production of paddy (572,884 tons; 17.2 percent), followed by Mbeya (413,212 tons; 12.4 percent) and Shinyanga (381,092 tons; 11.4 percent). The lowest paddy production was reported in Arusha region (1,493 tons; 0.04 percent), followed by Njombe (7,162 tons; 0.2 percent) and Manyara (9,020 tons; 0.3 percent) (Figure 3.8 & Map 3.2).

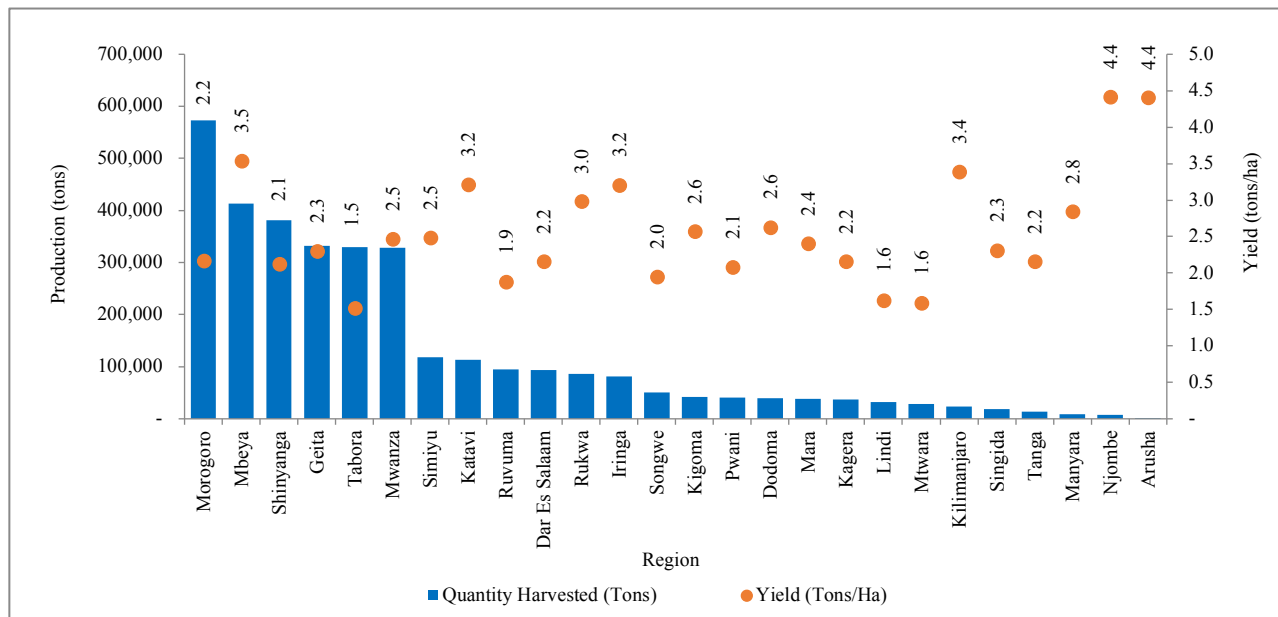
In Tanzania Zanzibar, Kusini Pemba region reported the highest production of paddy (15,296 tons; 30.3 percent), followed by Mjini Magharibi (13,416 tons; 26.6 percent) and Kaskazini Pemba (12,426 tons; 24.6 percent), while Kusini Unguja had the lowest paddy production (1,463 tons; 2.9 percent) (Figure 3.9 & Map 3.2).

**Map 3.2: Production of Paddy by Region During 2019/20 Agricultural Year, Tanzania**

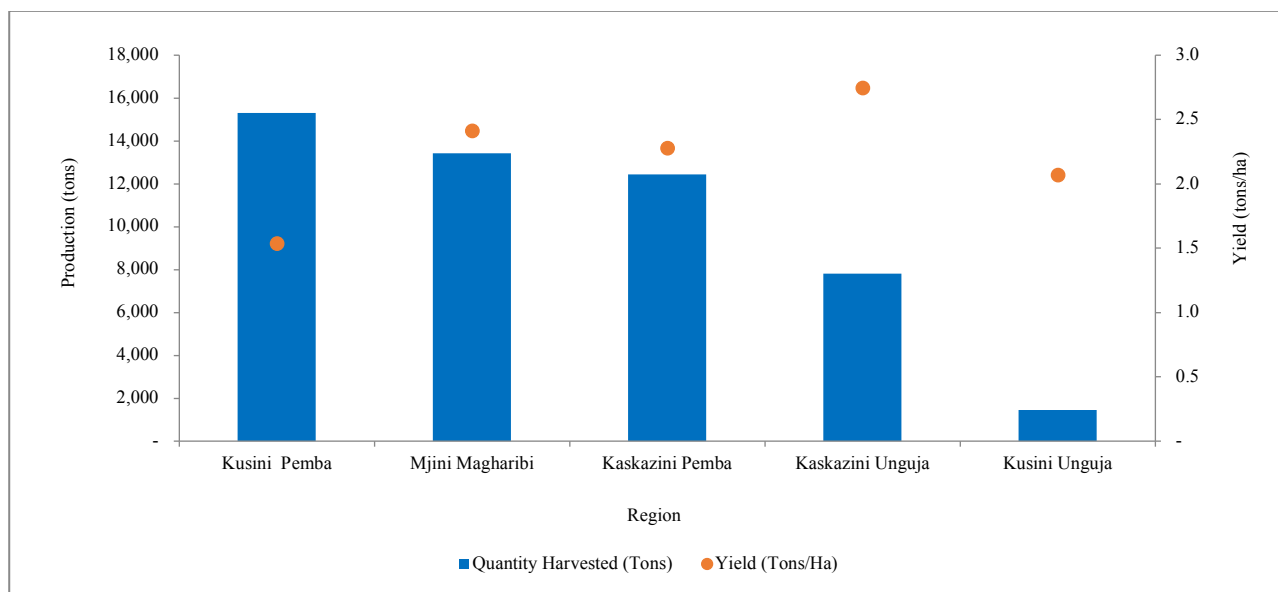


Furthermore, results show that, the average productivity of paddy reported in Tanzania was 2.3 tons/ha whereby 2.3 tons/ha was reported in Mainland Tanzania and 2.1 tons/ha in Tanzania Zanzibar. In Mainland Tanzania, Arusha and Njombe regions had the highest productivity of 4.4 tons/ha each, followed by Mbeya (3.5 tons/ha), while the lowest productivity (1.5 tons/ha) was reported in Tabora region. In Tanzania Zanzibar, Kaskazini Unguja region reported the highest yield of 2.7 tons/ha, followed by Mjini Magharibi (2.4 tons/ha) and Kaskazini Pemba (2.3 tons/ha). The lowest yield (1.5 tons/ha) was reported in Kusini Pemba (Figure 3.8 & 3.9).

**Figure 3.8: Production and Yield of Paddy by Smallholder Farmers During 2019/20 Agricultural Year, Mainland Tanzania**

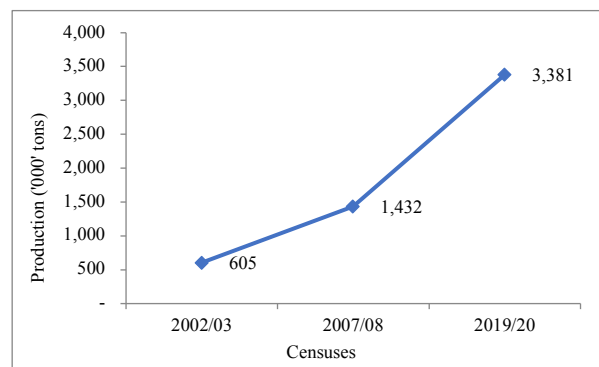


**Figure 3.9: Production and Yield of Paddy by Smallholder Farmers During 2019/20 Agricultural Year, Tanzania Zanzibar**



The 2019/20 NSCA results shows an increase in paddy production by more than 100 percent as compared to 2007/08 NSCA, from 1,431,946 tons reported in 2007/08 to 3,380,715 tons in 2019/20 (Figure 3.10).

**Figure 3.10: Trend of Paddy Production by Smallholder Farmers in Three Consecutive Censuses, Tanzania**



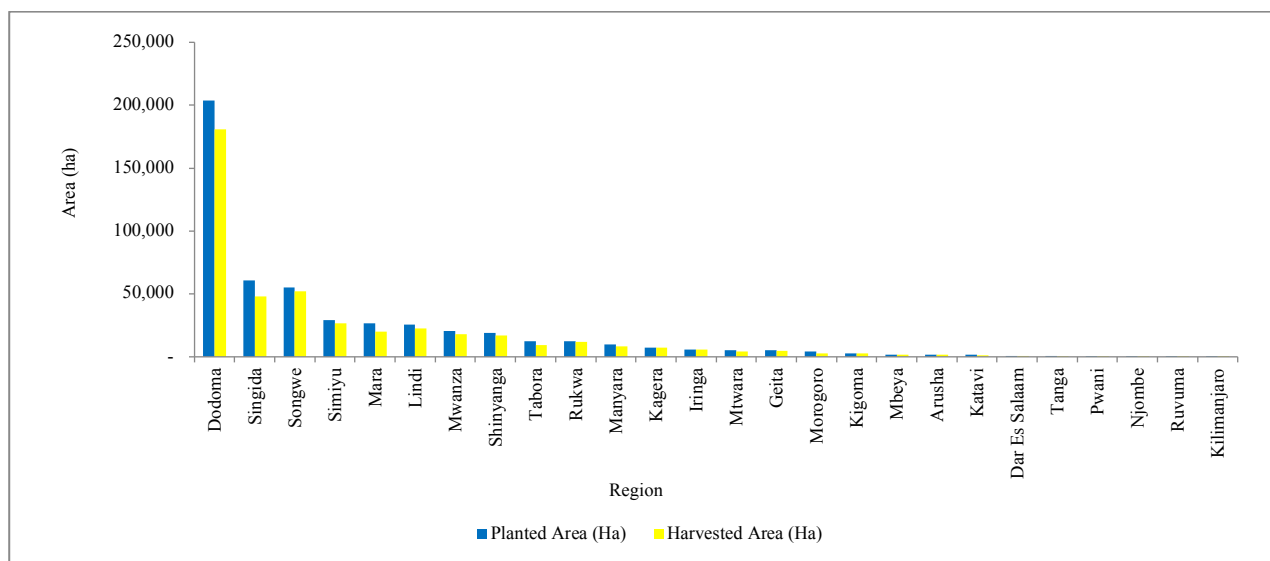
### 3.1.1.3 Sorghum

Sorghum is among the cereal crops produced in Tanzania by smallholder farmers especially in Mainland Tanzania. The 2019/20 NSCA results show that, sorghum was grown by 122,780 households in Tanzania during short rainy season (122,695 in Mainland Tanzania and 85 in Tanzania Zanzibar) and 552,250 households during long rainy season (551,817 households in Mainland Tanzania and 433 households in Tanzania Zanzibar).

Sorghum was grown in a total area of 514,435 ha in Tanzania, of which 512,888 ha were occupied by smallholder farmers and 1,547 ha occupied by large scale farms. Out of the total planted area occupied by smallholder farmers, 512,767 ha were in Mainland Tanzania and 121 ha were in Tanzania Zanzibar. Looking on the planted area with sorghum in Mainland Tanzania, the largest area was observed in Dodoma region (203,783 ha; 39.7 percent), followed by Singida (60,548 ha; 11.8 percent) and Songwe (54,914 ha; 10.7 percent) (Figure 3.11). In Tanzania Zanzibar, sorghum was grown only in Kaskazini Unguja region (20 ha) and Kaskazini Pemba (101 ha).

Likewise, the total harvested area of sorghum in Tanzania by smallholder farmers was 447,567 ha, of which 447,475 ha was in Mainland Tanzania and 92 ha in Tanzania Zanzibar. The Census results also show that, the total harvested area was 87.3 percent of the total planted area with sorghum by smallholder farmers.

**Figure 3.11: Planted and Harvested Area with Sorghum by Smallholder Farmers by Region During Agricultural Year, Mainland Tanzania**

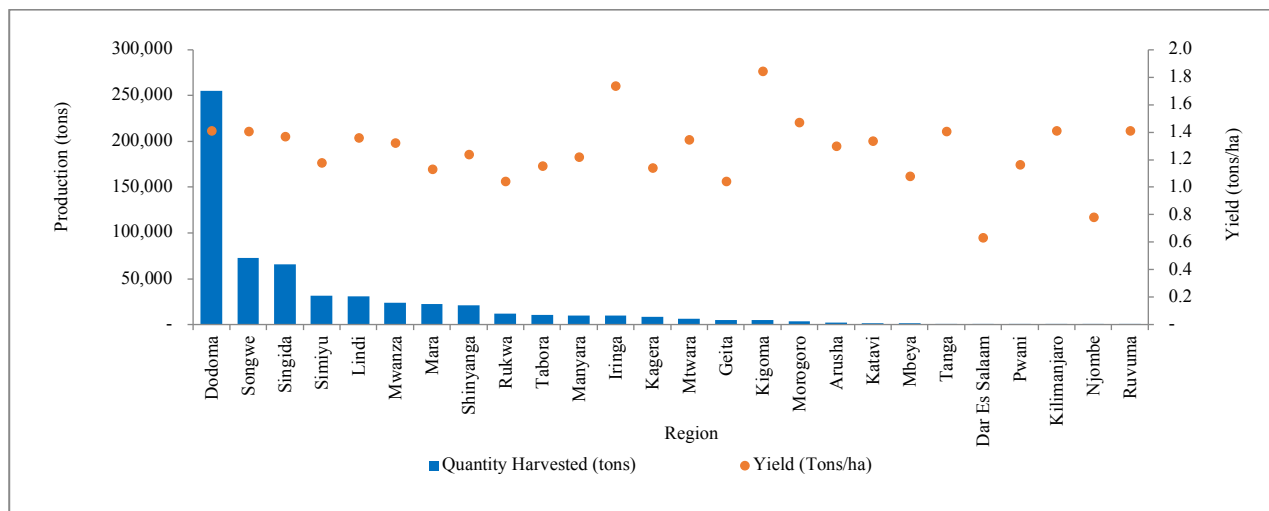


The total quantity of sorghum produced in Tanzania was 650,499 tons, out of which 601,470 tons were produced by smallholder farmers and 49,029 tons from large scale farms. Moreover, out of the production of sorghum by smallholder farmers, 601,390 tons were in Mainland Tanzania and 80 tons were in Tanzania Zanzibar. Among the regions growing sorghum in Mainland Tanzania, Dodoma had the highest production (255,262 tons; 42.4 percent), followed by Songwe (72,960 tons; 12.1 percent) and Singida (65,646 tons; 10.9 percent), while the lowest production was reported in Ruvuma region (74 tons; 0.01 percent). In Tanzania Zanzibar, Kaskazini Pemba was the only region which produced sorghum with 80 tons.

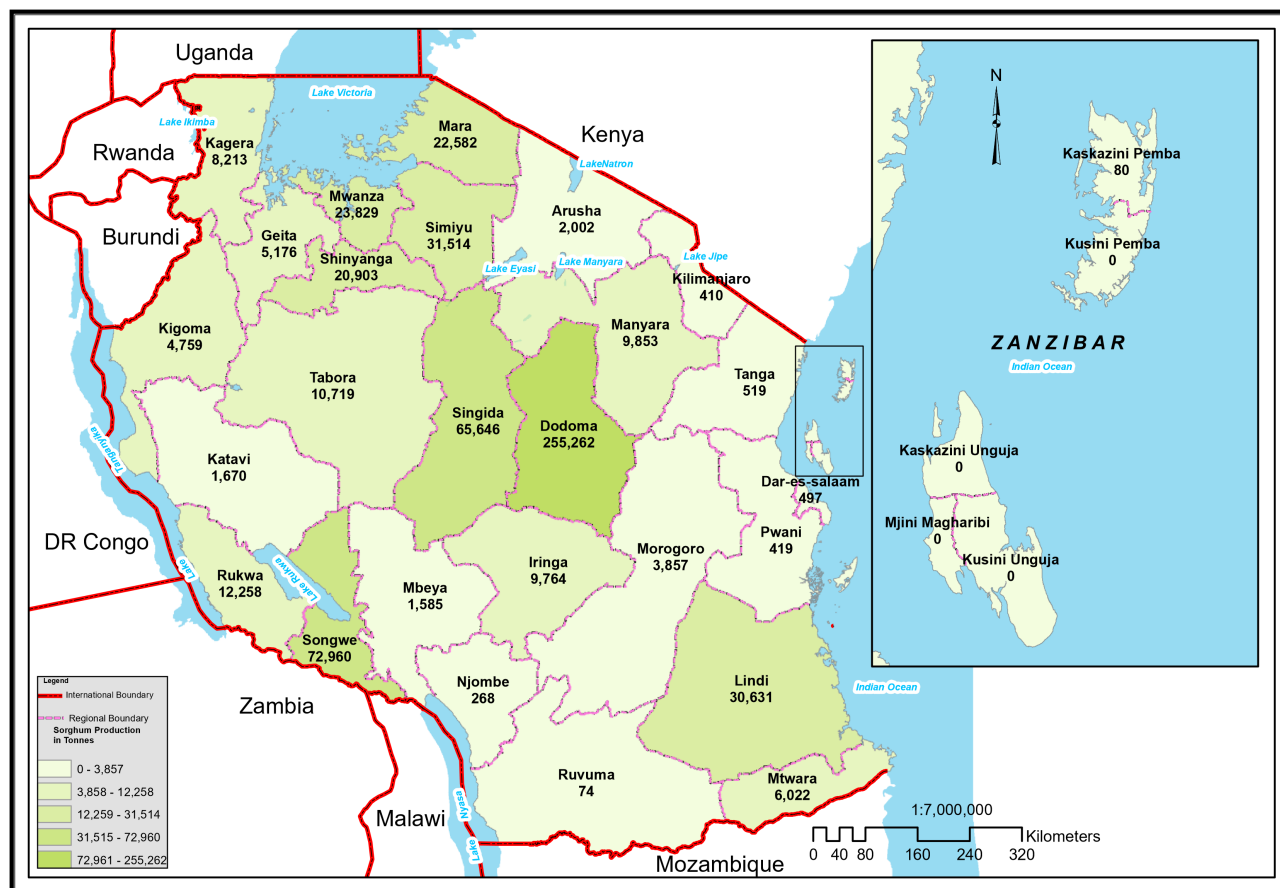
Furthermore, the results indicate that, the average productivity of sorghum reported at the national level was 1.3 tons/ha. While sorghum productivity for Mainland Tanzania was 1.3 tons/ha, that of Tanzania Zanzibar was 0.9 tons/ha. In Mainland, the highest productivity was reported in Kigoma with 1.8 tons/ha, followed by Iringa (1.7 tons/ha) and Morogoro (1.5 tons/ha). The lowest yield of 0.6 tons/ha was reported in Dar es Salaam region, followed by Njombe (0.8 tons/ha). Although Dodoma, Songwe and Singida regions were top three in sorghum production each with a yield of 1.4 tons/ha, but the highest yield was observed in Kigoma region with 1.8 tons/ha (Figure 3.12). In Tanzania Zanzibar, sorghum was harvested only in Kaskazini Pemba with an average yield of 0.9 tons/ha.



**Figure 3.12: Production and Yield of Sorghum by Smallholder Farmers During 2019/20 Agricultural Year, Mainland Tanzania**

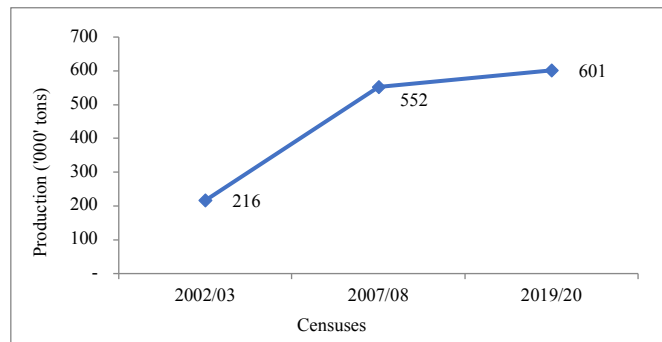


**Map 3.3: Production of Sorghum (tons) by Region During 2019/20 Agricultural Year, Tanzania**



In general, the trend shows that, the production of sorghum has increased by 8.9 percent from 552,353 tons in 2007/08 to 601, 470 tons in 2019/20 (Figure 3.13).

**Figure 3.13: Trend of Sorghum Production by Smallholder Farmers in Three Consecutive Censuses, Tanzania**



### 3.1.1.4 Other Cereals

The 2019/20 NSCA also looked at other cereals which were produced in small quantities but important in some regions. These cereal crops include bulrush millet, finger millet, wheat and barley. The results show that, a total of 150,533 ha was planted with bulrush millet in Tanzania out of which, 150,423 ha were in Mainland and 110 ha were in Zanzibar. The harvested area with bulrush millet was 134,314 ha of which 134,250 ha were in Mainland Tanzania and 64 ha in Tanzania Zanzibar. Furthermore, the total production of bulrush millet at national level was 148,162 tons, of which 148,011 tons were in Mainland Tanzania and 150 tons in Tanzania Zanzibar. The average yield of bulrush millet at the national level was 1.1 tons/ha whereby 1.1 tons/ha was in Mainland Tanzania and 2.4 tons/ha in Tanzania Zanzibar.

On the other hand, finger millet was grown almost in all regions of Mainland Tanzania except in Tanga, Morogoro, Pwani, Dar es Salaam and Lindi regions. The total planted area with finger millet was 31,468 ha while the total harvested area was 27,767 ha. The total production of finger millet was 32,950 tons, of which Rukwa region had the highest production of 8,853 tons, followed by Dodoma (5,420 tons) and Singida (4,423 tons), while the lowest production of 14 tons was reported in Katavi region. Regarding productivity, Mwanza region recorded the highest yield of 1.8 tons/ha and the lowest yield was in Kigoma (0.7 tons/ha).

The 2019/20 NSCA results further show that, wheat was grown in 14 regions of Mainland Tanzania, and occupied a total planted area of 91,659 ha with harvested area of 78,274 ha. The total production of wheat was 93,184 tons with an average yield of 1.2 tons/ha. Barley was grown in Mbeya and Rukwa regions only with the total planted area of 308 ha (251 ha and 57 ha respectively). The total quantity produced with barley was 355 tons, of which 341 tons were in Rukwa and 14 tons in Mbeya with average yield of 1.4 tons/ha and 1.0 tons/ha respectively.

### **3.1.2 Roots and Tuber Crops Production**

Root and tuber crops grown in Tanzania are cassava, sweet potatoes, irish potatoes, yams and coco yams. These crops were produced during both short and long rainy seasons in Mainland Tanzania and Tanzania Zanzibar. The 2019/20 NSCA results revealed that, a total area of 1,113,006 ha was planted with root and tuber crops in Tanzania, out of which 1,112,398 ha (99.97 percent) was occupied by smallholder farmers and 608 ha (0.03 percent) occupied by large scale farms. Out of the total planted area by smallholder farmers, 1,039,270 ha was in Mainland Tanzania and 73,127 ha in Tanzania Zanzibar. Out of the total planted area with roots and tubers by smallholder farmers, Cassava occupied a large area of 740,706 ha (66.6 percent), followed by sweet potatoes (289,917 ha; 26.1 percent) and irish potatoes (64,428 ha; 5.8 percent).

Total harvested area with root and tuber crops under smallholder farmers in Tanzania was 522,348 ha out of which 481,630 ha was in Mainland Tanzania and 40,718 ha in Tanzania Zanzibar. The results also show that, a total harvested area with root and tuber crops was 47 percent of the total planted area by smallholder farmers during 2019/20 agricultural year (Table 3.2).

Furthermore, a total quantity of 2,611,233 tons of root and tuber crops was produced in Tanzania whereby 2,609,305 tons (92.6 percent) was produced by smallholder farmers and 1,927 tons (7.4 percent) by large scale farms. Of the total quantity produced by smallholder farmers, 2,383,658 tons was in Mainland Tanzania and 225,648 tons was in Tanzania Zanzibar. Among the root and tuber crops, cassava had the highest production of 1,770,608 tons (67.9 percent), of which 1,586,358 tons were from Mainland Tanzania and 184,250 tons in Tanzania Zanzibar, followed by sweet potatoes (504,302 tons; 19.3 percent) of which 466,122 tons were harvested in Mainland Tanzania and 38,180 tons in Tanzania Zanzibar. Irish potatoes was the third mostly produced tuber crop with a total production of 319,314 tons (12.2 percent), produced only in Mainland Tanzania, followed by cocoyams with 8,810 tons (0.3 percent) of which 7,400 tons were harvested in Mainland Tanzania and 1,409 tons in Tanzania Zanzibar. The lowest root and tuber crop in production was yams with 6,272 tons (0.2 percent) of which 4,463 tons were harvested in Mainland Tanzania and 1,809 tons in Tanzania Zanzibar (Table 3.2).

**Table 3.2: Planted Area, Harvested Area, Quantity harvested, Yield and Percentage of Roots and Tubers During 2019/20 Agricultural Year, Tanzania**

Crop	Tanzania				Mainland Tanzania				Tanzania Zanzibar			
	Planted Area (ha)	Harvested Area (ha)	Quantity harvested (tons)	Yield (tons/ha)	Planted Area (ha)	Harvested Area (ha)	Quantity harvested (tons)	Yield (tons/ha)	Planted Area (ha)	Harvested Area (ha)	Quantity harvested (tons)	Yield (tons/ha)
Cassava	740,705	225,005	1,770,608	7.9	677,911	189,309	1,586,636	8.4	62,794	35,696	183,971	5.2
Sweet Potatoes	289,917	234,664	504,302	2.1	282,773	231,209	466,122	2.0	7,144	3,455	38,180	11.0
Irish Potatoes	64,429	53,115	319,314	6.0	64,418	53,115	319,314	6.0	11	-	-	-
Yams	6,715	4,125	6,272	1.5	4,801	3,217	4,463	1.4	1,913	908	1,809	2.0
Cocoyams	10,634	5,437	8,810	1.6	9,368	4,778	7,400	1.5	1,266	659	1,409	2.1
<b>Roots and Tubers</b>	<b>1,112,399</b>	<b>522,347</b>	<b>2,609,306</b>		<b>1,039,270</b>	<b>481,628</b>	<b>2,383,936</b>		<b>73,129</b>	<b>40,718</b>	<b>225,370</b>	

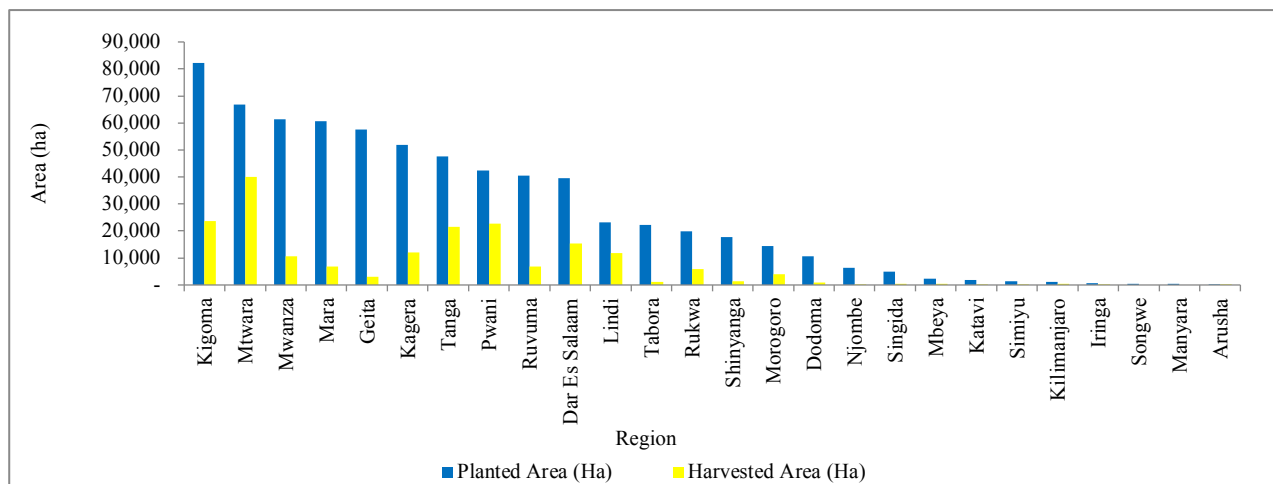
### 3.1.2.1 Cassava

Cassava is an important subsistence food crop in Tanzania, especially in the semi-arid areas and sometimes considered as a famine reserve when cereals fail due to its drought tolerance. The 2019/20 NSCA results revealed that, a total of 727,322 households were engaged in growing cassava in Tanzania during short rainy season (579,708 households were in Mainland Tanzania and 147,614 households in Tanzania Zanzibar) and 727,976 households during long rainy season (628,246 households were in Mainland Tanzania and 99,730 households in Tanzania Zanzibar). Furthermore, 649,357 households were engaged in growing cassava as a permanent crop.

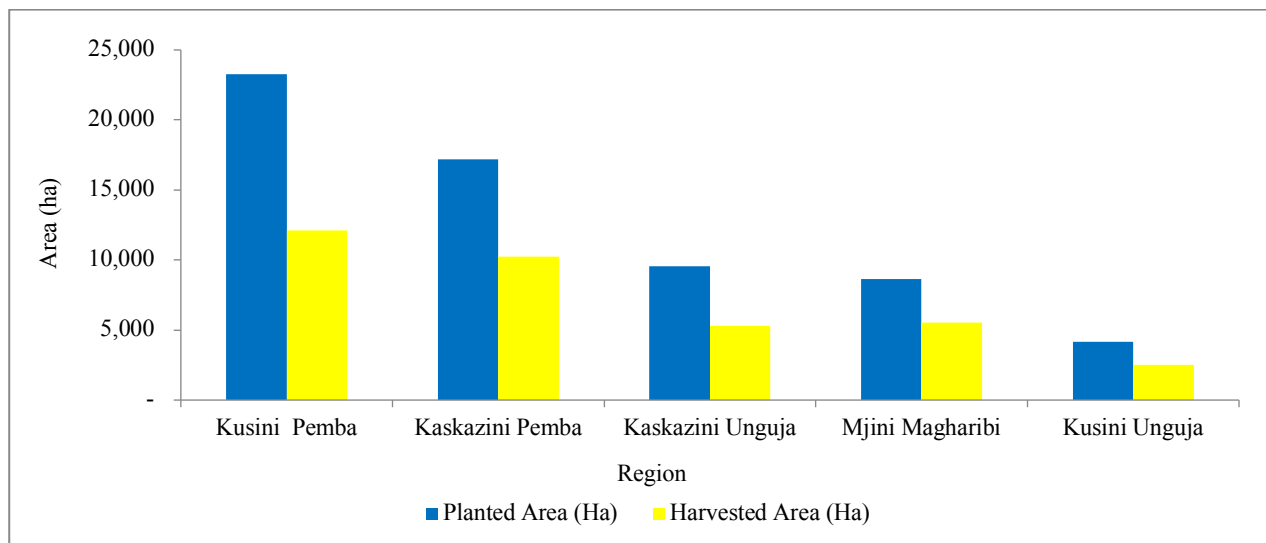
The total area planted with cassava in Tanzania during the 2019/20 agricultural year was 741,059 ha, of which 740,706 ha occupied by smallholder farmers and 353 ha occupied by large scale farms. Out of the total planted area by smallholder farmers, 677,913 ha was in Mainland Tanzania and 62,794 ha in Tanzania Zanzibar. Among regions that grew cassava in Mainland Tanzania, Kigoma region with 82,115 ha (12.1 percent) reported the largest planted area, followed by Mtwara (66,762 ha; 9.8 percent) and Mwanza (61,323 ha; 9.0 percent). In Tanzania Zanzibar, Kusini Pemba region had largest planted area with cassava of 23,288 ha (37.1 percent), followed by Kaskazini Pemba (17,173 ha; 27.3 percent) and Kaskazini Unguja region (9,563 ha; 15.2 percent) (Figure 3.14 & 3.15).

The total harvested area with cassava was 255,005 ha out of which 189,309 ha was in Mainland Tanzania and 35,696 ha in Tanzania Zanzibar. In Mainland Tanzania, Mtwara region reported the largest harvested area (39,929 ha; 21.1 percent), followed by Kigoma (23,656 ha; 12.5 percent), and Pwani (22,820 ha; 12.1 percent) (Figure 3.14). In Tanzania Zanzibar, the largest harvested area with cassava was reported in Kusini Pemba region with 12,112 ha (33.9 percent), followed by Kaskazini Pemba (10,219 ha; 28.6 percent) and Mjini Magharibi (5,546 ha; 15.5 percent) (Figure 3.15).

**Figure 3.14: Planted and Harvested Area with Cassava by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania**



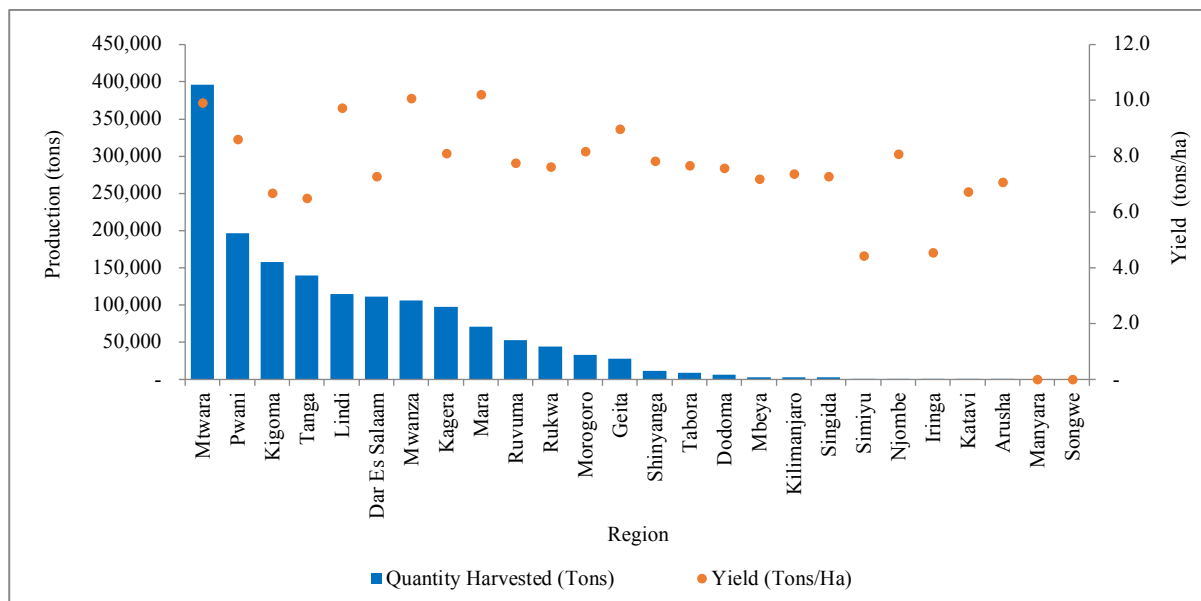
**Figure 3.15: Planted and Harvested Area with Cassava produced by Smallholder Farmers by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



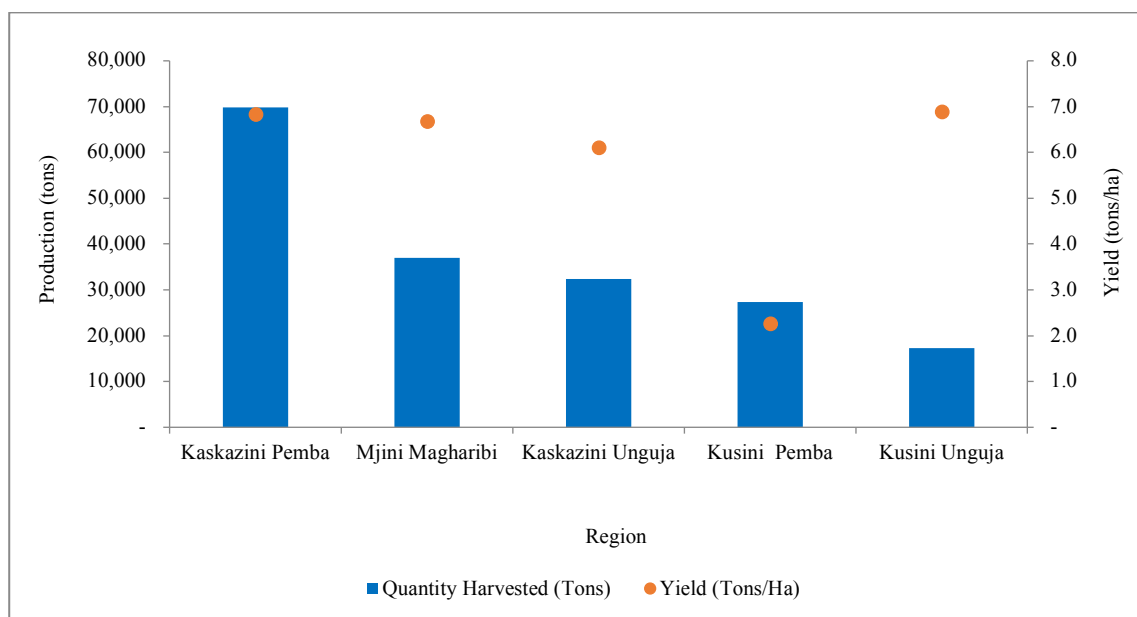
In terms of production, a total of 1,770,813 tons of cassava was produced, out of which 1,770,608 tons (99.99 percent) were from smallholder farmers and 205 tons (0.01 percent) from large scale farms. Out of the total production of cassava produced by smallholder farmers in Tanzania, 1,586,358 tons were in Mainland Tanzania and 184,250 tons in Tanzania Zanzibar. The highest production of cassava in Mainland Tanzania was reported in Mtwara region (396,128 tons; 25.0 percent), followed by Pwani (196,551 tons; 12.4 percent) and Kigoma (157,965 tons; 10.0 percent). On the other hand, Arusha region reported the lowest cassava production of 49 tons (0.003 percent) followed by Katavi (531 tons; 0.03 percent) and Iringa (592 tons; 0.04 percent) (Figure 3.16). In Tanzania Zanzibar, the highest cassava production was reported in Kaskazini Pemba (69,843 tons; 38.0 percent), followed by Mjini Magharibi (37,028 tons; 20.1 percent) and Kaskazini Unguja (32,389 tons; 17.6 percent), while the lowest cassava production was observed in Kusini Unguja with (17,342 tons; 9.4 percent) (Figure 3.17).

Furthermore, results show that, the average productivity of cassava in Tanzania was 7.9 tons/ha, whereby that of Mainland Tanzania was 8.4 tons/ha and Tanzania Zanzibar was 5.2 tons/ha. In Mainland, the highest productivity (yield) was reported in Mara region with 10.2 tons/ha, followed by Mwanza (10.1 tons/ha) and Mtwara (9.9 tons/ha). On the other hand, the lowest productivity of 4.4 tons/ha was reported in Simiyu region. In Zanzibar, the highest productivity (yield) was reported in Kusini Unguja region with 6.9 tons/ha, followed by Kaskazini Pemba (6.8 tons/ha) and Mjini Magharibi (6.7 tons/ha). The lowest productivity of 2.3 tons/ha was reported in Kusini Pemba region (Figure 3.16 & 3.17).

**Figure 3.16: Production and Yield of Cassava During 2019/20 Agricultural Year, Mainland Tanzania**



**Figure 3.17: Production and Yield of Cassava During 2019/20 Agricultural Year, Tanzania Zanzibar**



### 3.1.2.2 Sweet Potatoes

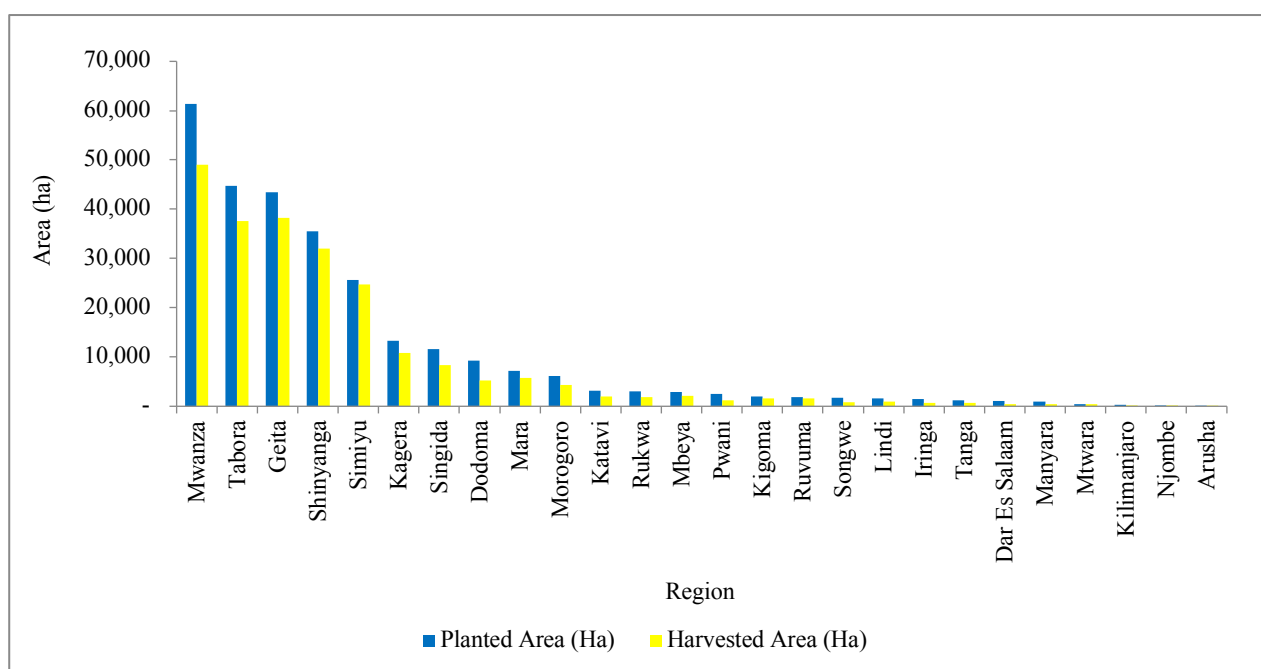
Sweet potato is an important food security crop in Tanzania, often crucial during famine periods because of its excellent drought tolerance and rapid production of storage roots. The 2019/20 NSCA results show that, sweet potatoes were grown by 368,664 households in Tanzania during short rainy season (354,382 in Mainland Tanzania and 14,282 in Tanzania Zanzibar) and 626,569 households during long rainy season (604,895 households in Mainland Tanzania and 21,674 households in Tanzania Zanzibar).

A total area of 289,940 ha was planted with sweet potatoes national wide, of which 289,917 ha was occupied by smallholder farmers and 23 ha by large scale farms. Among the total area occupied by smallholder farmers in Tanzania, 282,773 ha were in Mainland Tanzania and 7,144 ha in Tanzania Zanzibar. Looking on the planted area across the regions producing sweet potatoes in Mainland Tanzania; Mwanza reported the largest planted area (61,326 ha; 21.7 percent), followed by Tabora (44,745 ha; 15.8 percent) and Geita regions (43,454 ha; 15.4 percent) and the least planted area was in Arusha (85 ha; 0.03 percent). In Tanzania Zanzibar, Mjini Magharibi region with 2,136 ha (29.9 percent) had the largest area planted with sweet potatoes, followed by Kaskazini Unguja (2,049 ha; 28.7 percent) and Kaskazini Pemba (1,808 ha; 25.3 percent) and the least planted area was in Kusini Pemba (399 ha; 5.6 percent).

During 2019/20 Agricultural year, a total harvested area with sweet potatoes was 234,664 ha, out of which 231,209 ha were in Mainland Tanzania and 3,455 ha in Tanzania Zanzibar. In Mainland Tanzania, Mwanza region (48,973 ha; 21.2 percent) had the largest harvested area, followed by Geita (38,209 ha; 16.5 percent) and Tabora (37,575 ha; 16.3 percent).

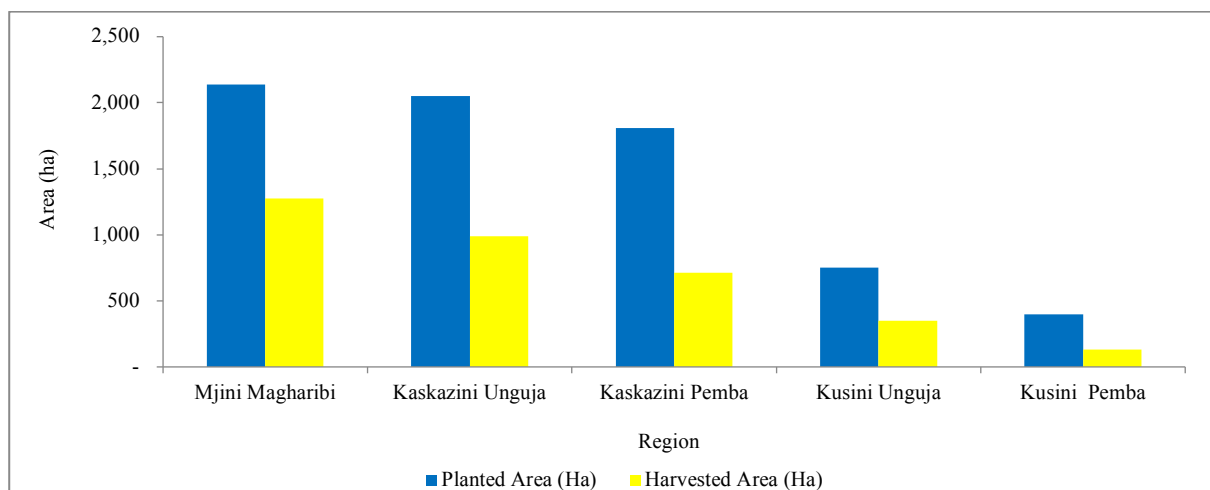
In Tanzania Zanzibar, Mjini Magharibi reported the largest harvested area with sweet potatoes of 1,276 ha (36.9 percent), followed by Kaskazini Unguja (988 ha; 28.6 percent) and Kaskazini Pemba (711 ha; 20.6 percent). The total harvested area reported in Tanzania by smallholder farmers was 80.9 percent of the total planted area with sweet potatoes during 2019/20 Agricultural year (Figure 3.18 & 3.19).

**Figure 3.18: Planted and Harvested Area with Sweet Potatoes by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania**



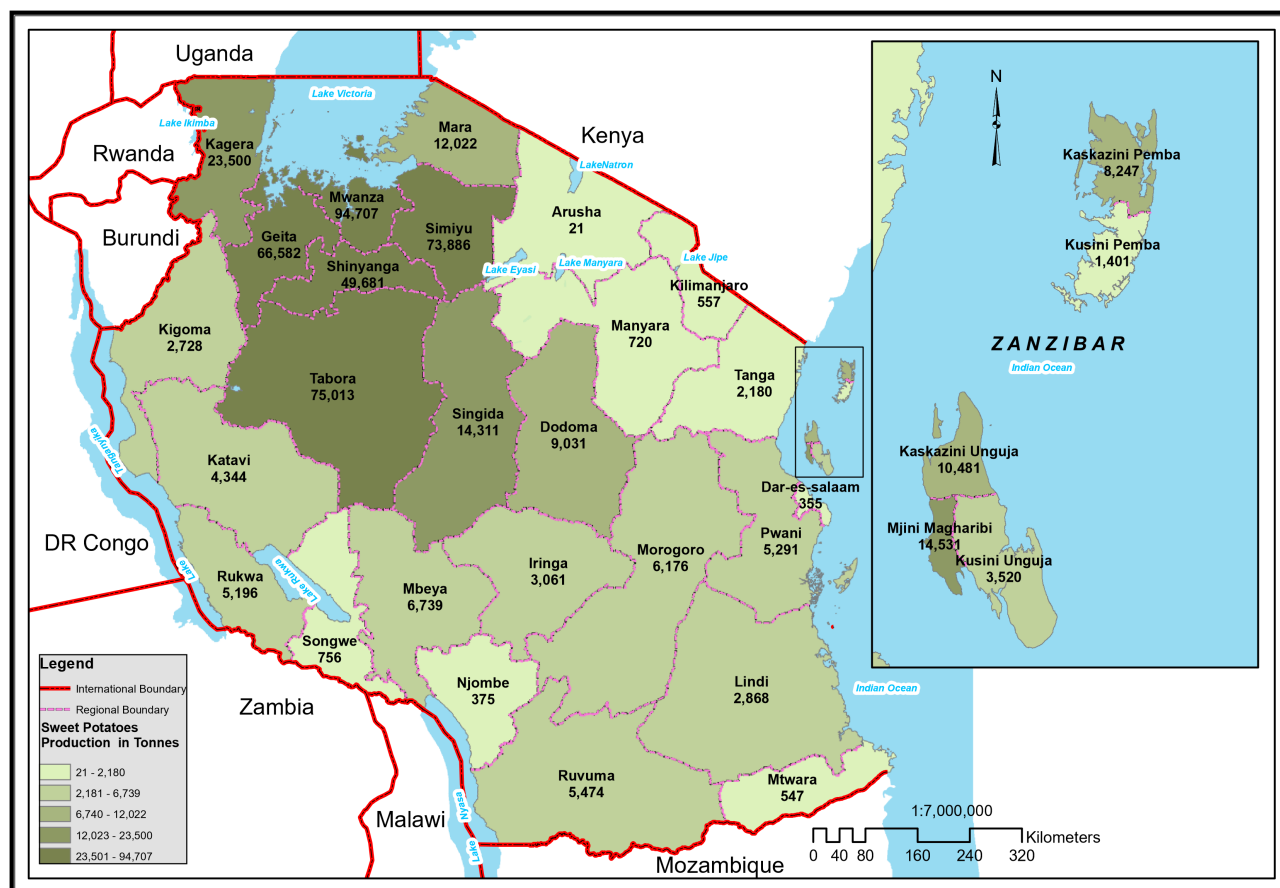


**Figure 3.19: Planted and Harvested Area with Sweet Potatoes by Smallholder Farmers by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



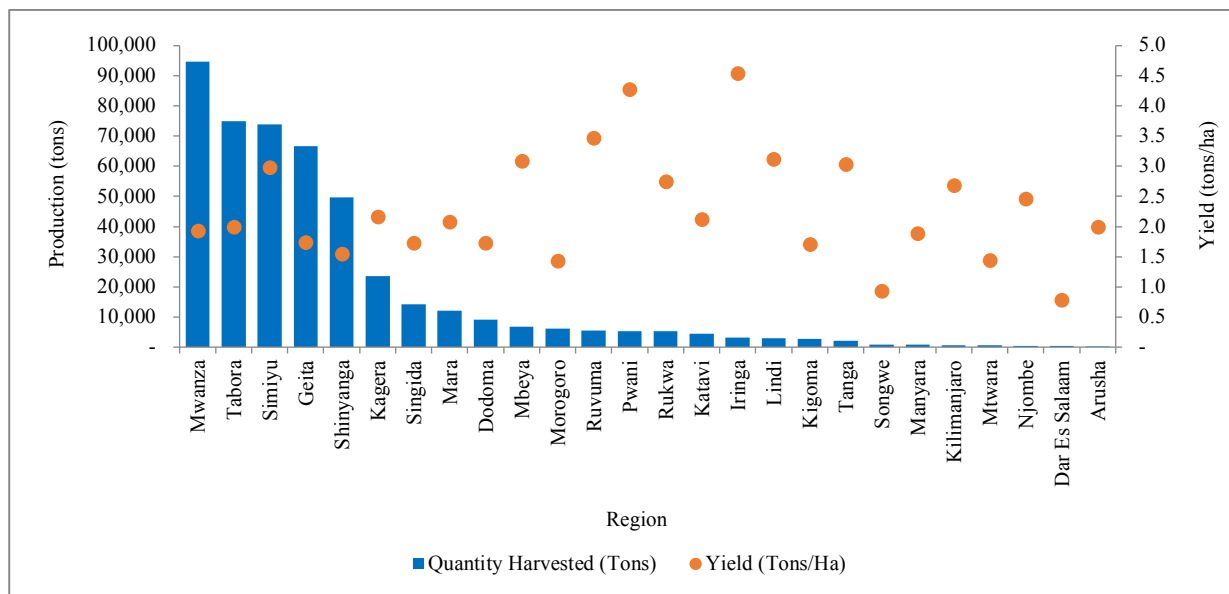
In terms of production, the results also show that, the total sweet potatoes’ production in Tanzania was 504,346 tons, out of which, 504,302 tons (99.99 percent) were from smallholder farmers and 44 tons (0.01 percent) from large scale farms. Out of the total sweet potatoes production, 466,122 tons were produced in Mainland Tanzania and 38,180 tons in Tanzania Zanzibar. The highest production of sweet potatoes in Mainland Tanzania was reported in Mwanza region (94,707 tons; 20.3 percent), followed by Tabora (75,013 tons; 16.1 percent) and Simiyu (73,886 tons; 15.9 percent). The lowest production of 21 tons (0.005 percent) was reported in Arusha region, followed by Dar es Salaam (355 tons; 0.1 percent) and Njombe (375 tons; 0.1 percent) (Figure 3.20). In Tanzania Zanzibar, the highest sweet potatoes production was reported in Mjini Magharibi region (14,531 tons; 38.1 percent), followed by Kaskazini Unguja (10,481 tons; 27.5 percent) and Kaskazini Pemba (8,247 tons; 21.6 percent). Kusini Pemba region reported the lowest sweet potatoes production of 1,401 tons (3.7 percent) (Figure 3.21 & Map 3.4).

**Map 3.4: Production of Sweet potatoes by Region During 2019/20 Agricultural Year, Tanzania**

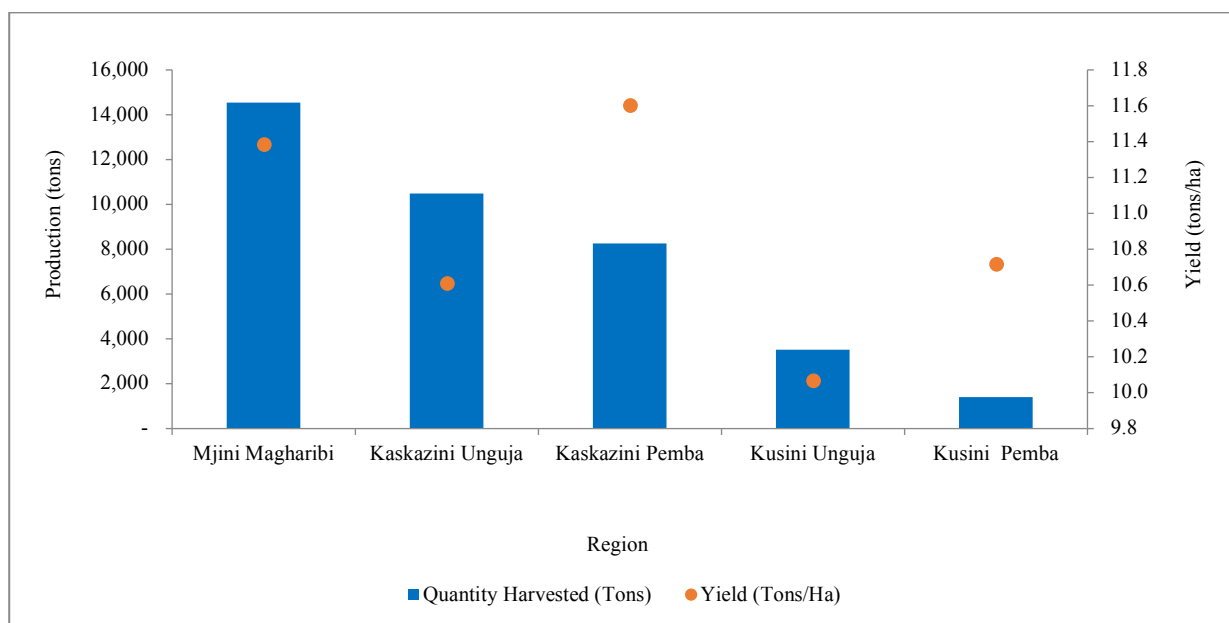


Moreover, results show that, the average productivity of sweet potatoes in Tanzania was 2.1 tons/ha, whereby 2.0 tons/ha was reported in Mainland Tanzania and 11.0 tons/ha in Tanzania Zanzibar. In Mainland Tanzania, the highest productivity (4.5 tons/ha) was reported in Iringa region, followed by Pwani (4.3 tons/ha) and Ruvuma (3.5 tons/ha). On the other hand, the lowest productivity of 0.9 tons/ha was reported in Songwe region. In Tanzania Zanzibar, the highest productivity (11.6 tons/ha) was reported in Kaskazini Pemba region, followed by Mjini Magharibi (11.4 tons/ha) and Kusini Pemba (10.7 tons/ha). The lowest productivity of 10.1 tons/ha was reported in Kusini Unguja region (Figure 3.20 & 3.21).

**Figure 3.20: Production and Yield of Sweet Potatoes During 2019/20 Agricultural Year, Mainland Tanzania**



**Figure 3.21: Production and Yield of Sweet Potatoes During 2019/20 Agricultural Year, Tanzania Zanzibar**



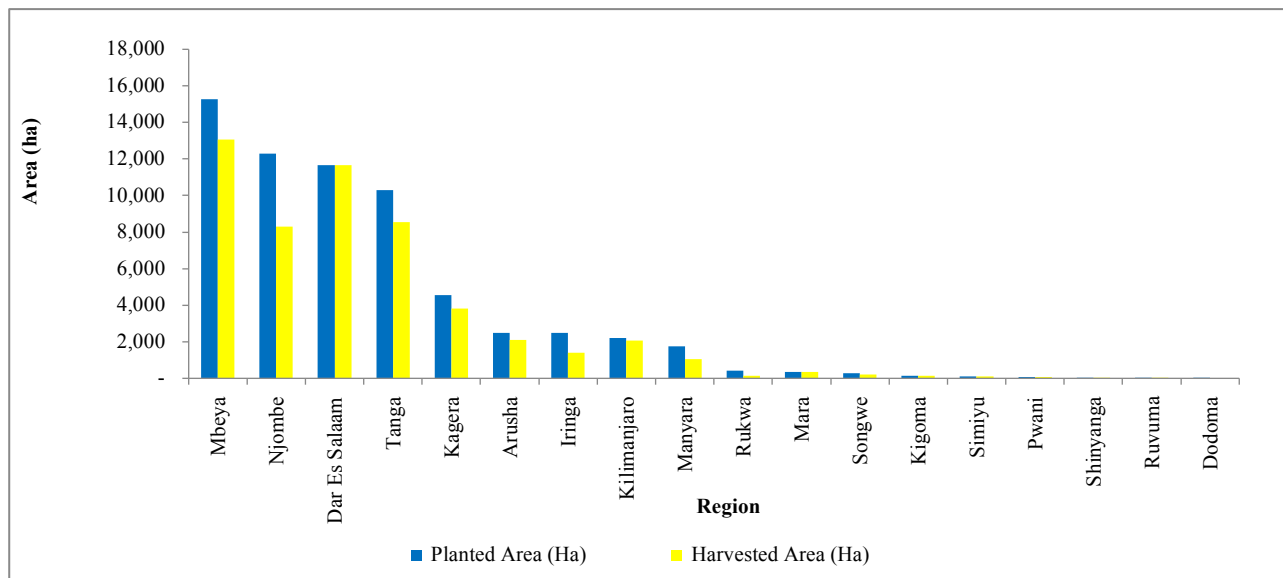
### 3.1.2.3 Irish Potatoes

Irish potatoes is one of mankind’s valuable food crops which is mostly produced by smallholder farmers in the Southern Highlands Zone where it is used as food and source of income. Irish potatoes is considered as potential crop as maize, rice and wheat in the region. The 2019/20 NSCA results indicate that, a total of 57,928 households were engaged in the production of irish potatoes in Mainland Tanzania during short rainy season and 99,748 households during long rainy season (99,693 households were in Mainland Tanzania and 55 households in Tanzania Zanzibar).

The total planted area with irish potatoes in Tanzania was 64,429 ha, of which 64,418 ha were in Mainland Tanzania and 11 ha in Tanzania Zanzibar. Among the regions growing irish potatoes in Mainland Tanzania, Mbeya region had the largest area planted with irish potatoes (15,267 ha; 23.7 percent), followed by Njombe (12,286 ha; 19.1 percent) and Dar es Salaam (11,648 ha; 18.1 percent) and the least area planted with irish potatoes was in Dodoma region (16 ha; 0.02 percent) (Figure 3.22). In Tanzania Zanzibar, irish potatoes was only planted in Kusini Unguja region with 11 ha.

Out of the area planted with irish potatoes, a total of 53,115 ha was harvested with irish potatoes only in Mainland Tanzania. The largest harvested area was in Mbeya region (13,077 ha; 24.6 percent), followed by Dar es Salaam (11,648 ha; 21.9 percent) and Tanga (8,562 ha; 16.1 percent).

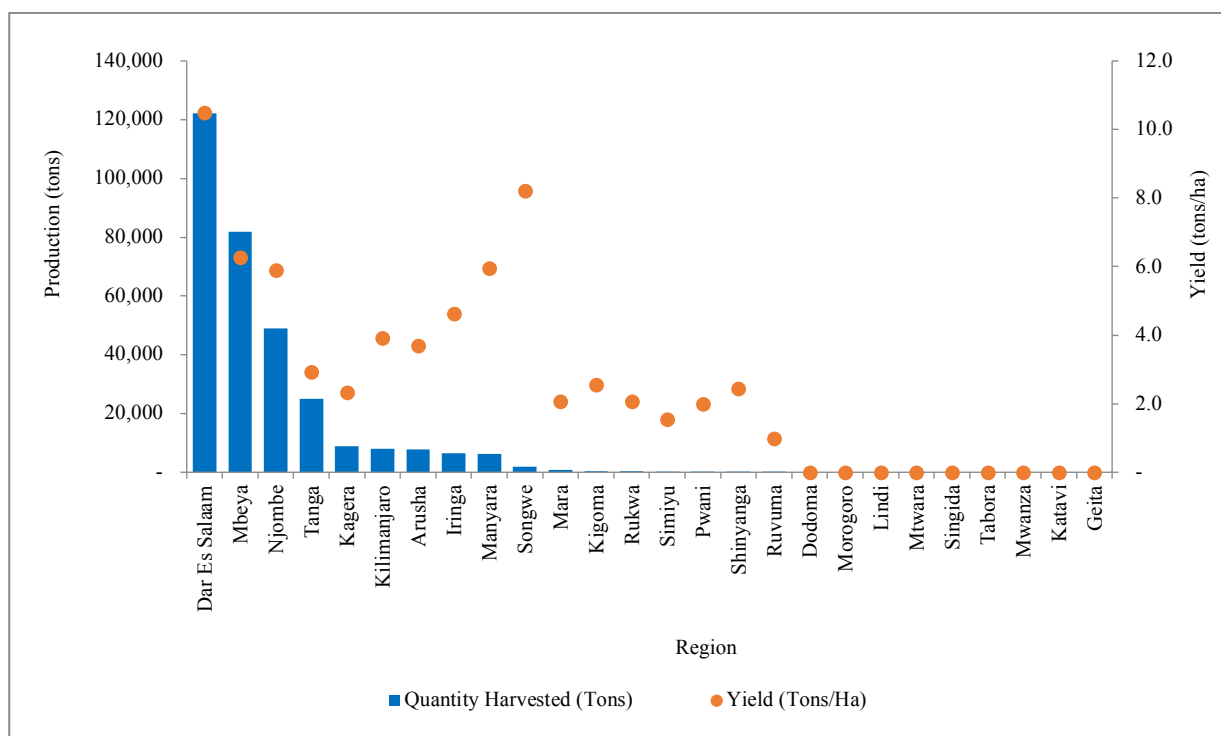
**Figure 3.22: Planted and Harvested Area with Irish Potatoes by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania**



On production, a total quantity of 319,314 tons was produced in Mainland Tanzania. Looking on regional production, Dar es Salaam region reported the highest production of irish potatoes (122,240 tons; 38.3 percent), followed by Mbeya (81,939 tons; 25.7 percent) and Njombe (48,987 tons; 15.3 percent) while the lowest production occurred in Ruvuma region (22 tons; 0.01 percent), followed by Shinyanga (51 tons; 0.02 percent) and Pwani (110 tons, 0.03) (Figure 3.23).

Further results show that, the average productivity of irish potatoes in Mainland Tanzania was 6.0 tons/ha. Dar es Salaam region had the highest productivity of 10.5 tons/ha, followed by Songwe (8.2 tons/ha) and Mbeya (6.3 tons/ha). On the other hand, Ruvuma region had the lowest productivity of 1.0 tons/ha (Figure 3.23).

**Figure 3.23: Production and Yield of Irish potatoes During 2019/20 Agricultural Year, Mainland Tanzania**



### 3.1.2.4 Other Roots and Tuber Crops

Other root and tuber crops were produced in Tanzania in small quantities; however, they are important in some regions. These root and tuber crops were yams and cocoyams.

The results show that, yams were planted in an area of 6,715 ha, of which 4,801 ha were in Mainland Tanzania and 1,913 ha in Tanzania Zanzibar. The harvested area for yams was 4,125 ha, out of which 3,217 ha were in Mainland Tanzania and 908 ha in Tanzania Zanzibar. Total production of yams in Tanzania was 6,272 tons, out of which 4,463 tons were in Mainland Tanzania and 1,809 tons in Tanzania Zanzibar. The average yield of yams was 1.4 tons/ha in Mainland Tanzania and 2.0 tons/ha in Tanzania Zanzibar, the national average yield was 1.5 tons/ha.

Cocoyam was grown by half of the regions in Mainland Tanzania and all regions in Tanzania Zanzibar. The total area planted with cocoyams for Tanzania was 10,634 ha of which 9,368 ha were in Mainland Tanzania and 1,266 ha in Tanzania Zanzibar). The total harvested area for cocoyams in Tanzania was 5,437 ha of which 4,778 ha was in Mainland Tanzania and 659 ha in Tanzania Zanzibar. Total production of cocoyams in Tanzania was 8,810 tons, of which 7,400 tons was in Mainland Tanzania and 1,409 tons in Tanzania Zanzibar. The average yield of cocoyams was 1.5 tons/ha in Mainland Tanzania and 2.1 tons/ha in Tanzania Zanzibar making a national average yield of 1.6 tons/ha.

### **3.1.3 Pulses**

Pulses were produced during the short and long rainy season in Tanzania. This group comprises of beans, pigeon peas, cow peas and green gram. Others pulses were bambaranuts, chick peas and green peas. The total number of households growing pulses was 4,149,287, of which 4,127,726 households were in Mainland Tanzania and 21,561 in Tanzania Zanzibar.

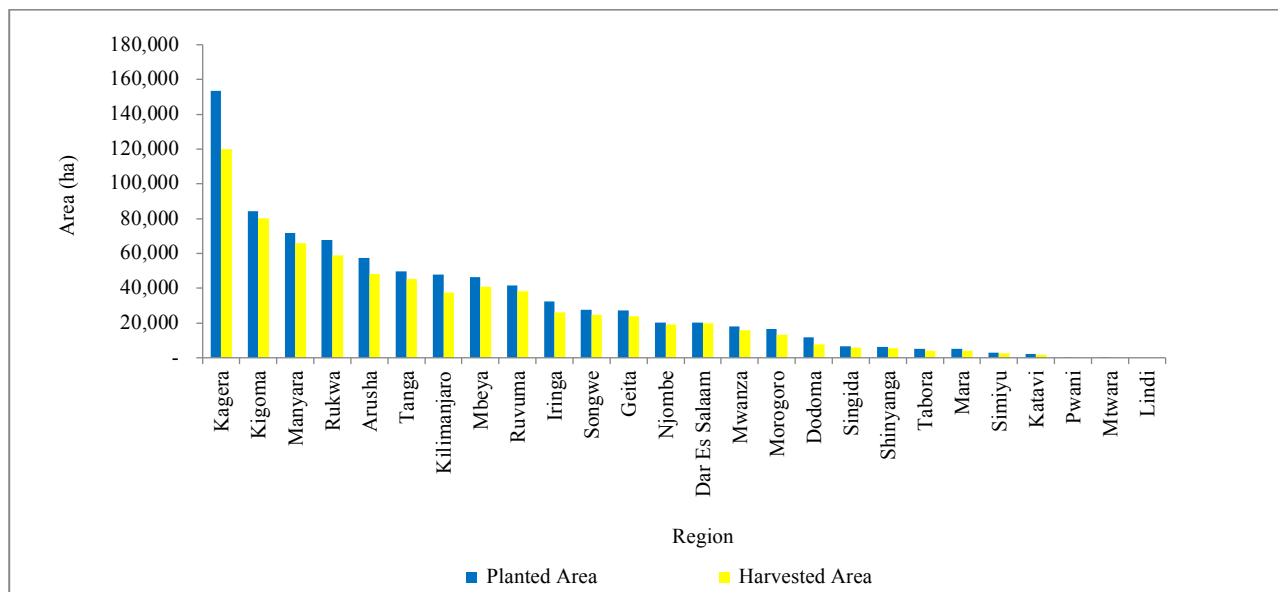
The total area planted with pulses was 1,426,783 ha, out of which 1,423,512 ha was in Mainland Tanzania and 3,272 ha in Tanzania Zanzibar. The total quantity harvested was 952,065 tons out of which 949,827 tons was produced by smallholder farmers and 2,238 tons by large scale farms.

#### **3.1.3.1 Beans**

Beans were the most common pulses produced in the country in both short and long rainy seasons. The 2019/20 NSCA results show that, the number of agricultural households engaged in growing beans during short rainy season were 1,044,895 households (1,044,698 in Mainland Tanzania and 197 households in Tanzania Zanzibar) and 1,525,870 households during long rainy season in Mainland Tanzania.

The total planted area with beans in Tanzania during the 2019/20 agricultural year was 826,685 ha, of which 823,485 ha were occupied by smallholder farmers and 3,200 ha by large scale farms. Out of the total planted area occupied by smallholder farmers, 823,427 ha were in Mainland Tanzania and 58 ha in Tanzania Zanzibar. In Mainland Tanzania, Kagera Region (153,344 ha; 18.6 percent), had the largest planted area with Beans, followed by Kigoma (84,213 ha; 10.2 percent) and Manyara (71,785 ha; 8.7 percent). On the other hand, Mtwara region had the least planted area (45 ha; 0.01 percent). In Tanzania Zanzibar, beans were produced only in Kaskazini Unguja and Kusini Pemba regions with planted area of 43 ha and 13 ha respectively (Figure 3.24).

**Figure 3.24: Planted and Harvested Area with Beans by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania**

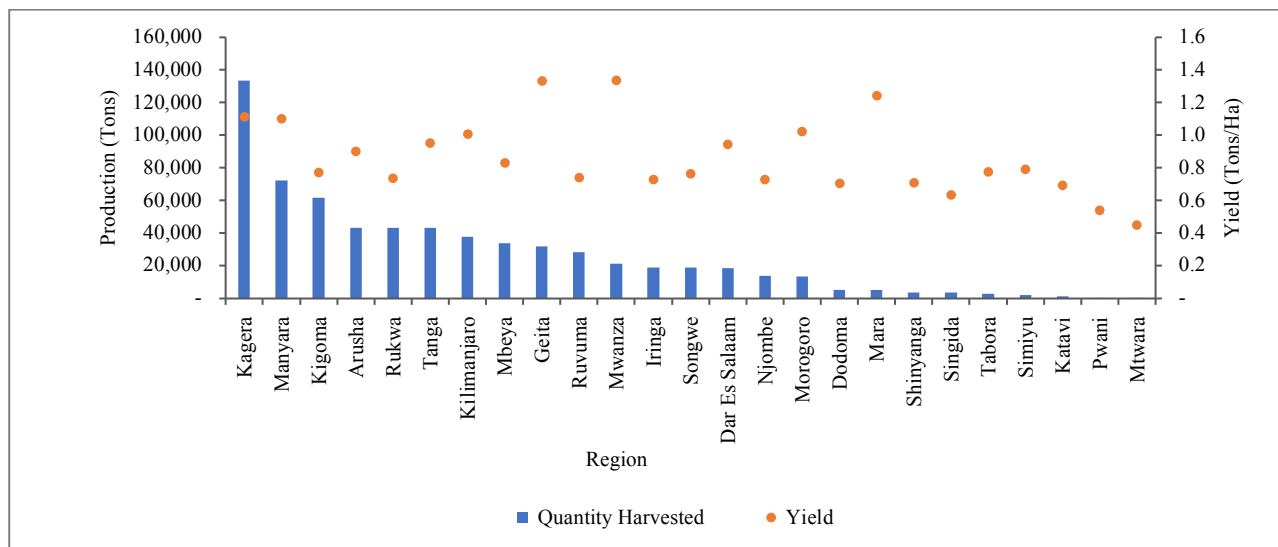


Moreover, the total harvested area of beans in Tanzania occupied by smallholder farmers was 709,108 ha, of which 709,093 ha were in Mainland Tanzania and 15 ha in Tanzania Zanzibar. This implies that, the total harvested area was about 86.1 percent of the total planted area with beans by smallholder farmers.

Production of Beans in Tanzania was 661,699 tons, out of which 659,497 tons were produced by smallholder farmers and 2,202 tons by large scale farms. From the production of smallholder farmers, 659,473 tons were in Mainland Tanzania and 24 tons in Tanzania Zanzibar. In Mainland Tanzania, Kagera Region had the highest production (133,592 tons; 20.3 percent), followed by Manyara (72,476 tons; 11.0 percent) and Kigoma (61,766 tons; 9.4 percent). On the other hand, Mtwara region had a least production (20 tons; 0.003 percent). In Tanzania Zanzibar, only Kaskazini Unguja region harvested a total of 24 tons equivalent to 100 percent (Figure 3.25).

Moreover, results show that, the average productivity of beans in Tanzania was 0.9 tons/ha, whereby 0.9 tons/ha was reported in Mainland Tanzania and 1.6 tons/ha in Tanzania Zanzibar. In Mainland Tanzania, the highest productivity (1.3 tons/ha) was reported in Mwanza and Geita regions, followed by Mara (1.2 tons/ha). On the other hand, the lowest productivity of 0.5 tons/ha was in Mtwara region. In Tanzania Zanzibar, Kaskazini Unguja region had productivity of 1.6 tons/ha (Figure 3.25).

**Figure 3.25: Quantity Harvested and Yield of Beans by Region During 2019/20 Agricultural Year, Mainland Tanzania**



### 3.1.3.2 Cowpeas

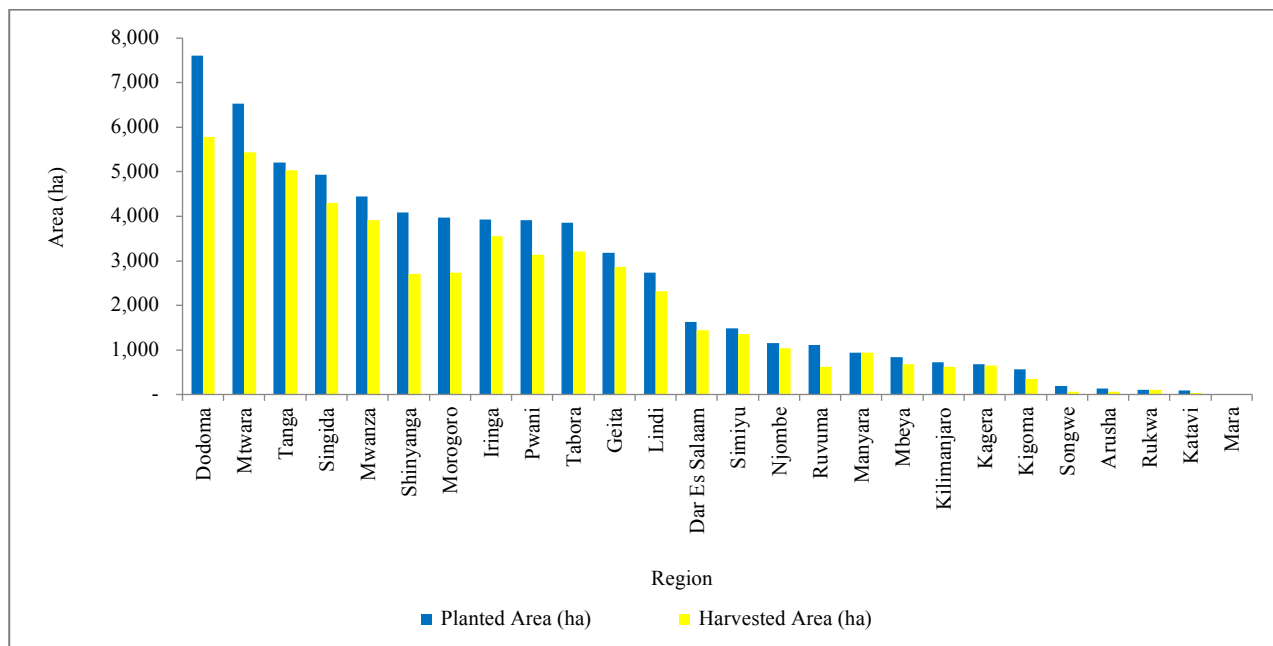
Cowpeas production in Tanzania involved 137,792 households during short rainy season (127,293 in Mainland Tanzania and 10,499 in Tanzania Zanzibar) and 185,383 households in the long rainy season (183,020 in Mainland Tanzania and 2,363 in Tanzania Zanzibar).

The total planted area with cowpeas in Tanzania during the 2019/20 agricultural year was 66,101 ha, of which 66,072 ha were occupied by smallholder farmers and 29 ha by large scale farms. Out of the total planted area occupied by smallholder farmers, 64,050 ha were in Mainland Tanzania and 2,022 ha in Tanzania Zanzibar. In Mainland Tanzania, Dodoma region (7,609 ha; 11.9 percent), had the largest area planted with Beans, followed by Mtwara (6,527 ha; 10.2 percent) and Tanga (5,210 ha; 8.1 percent). On the other hand, Katavi region had the least planted area (97 ha; 0.2 percent). In Tanzania Zanzibar, Kusini Pemba led with the planted area of 1,444 ha (71.4 percent), followed by Kaskazini Pemba (312 ha, 15.4 percent) while Mjini Magharibi had the lowest planted area of 3 ha (0.1 percent) (Figure 3.26 & 3.27).

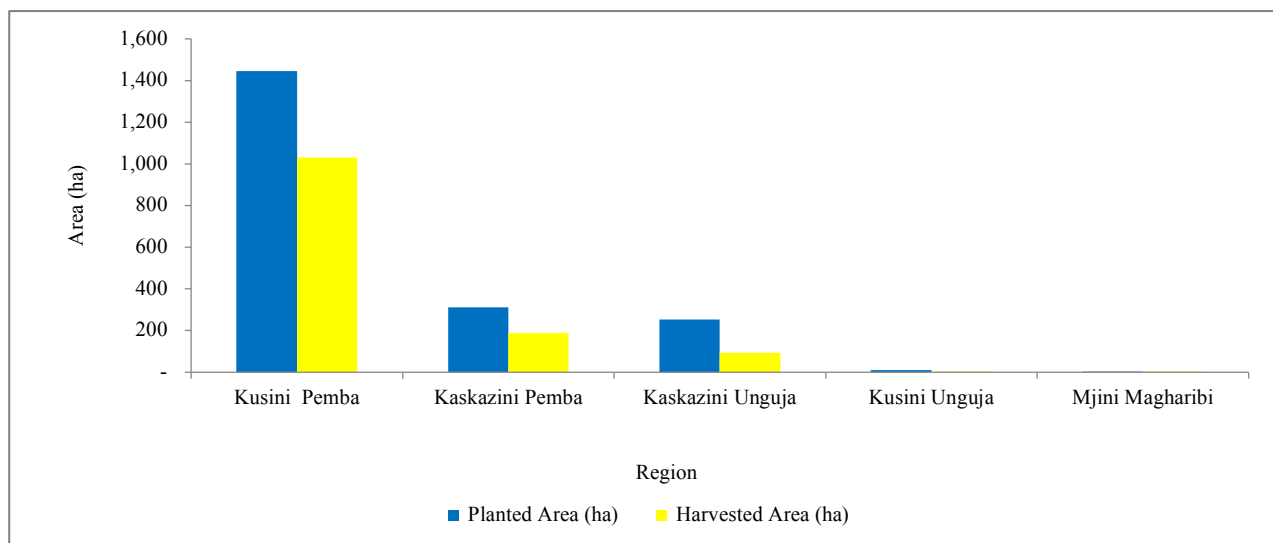
Furthermore, the total harvested area of cowpeas in Tanzania occupied by smallholder farmers was 54,276 ha, of which 52,960 ha were in Mainland Tanzania and 1,316 ha in Tanzania Zanzibar. This implies that, the total harvested area was 82.1 percent of the total planted area with cowpeas by smallholder farmers.



**Figure 3.26: Planted and Harvested Area with Cowpeas by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania**



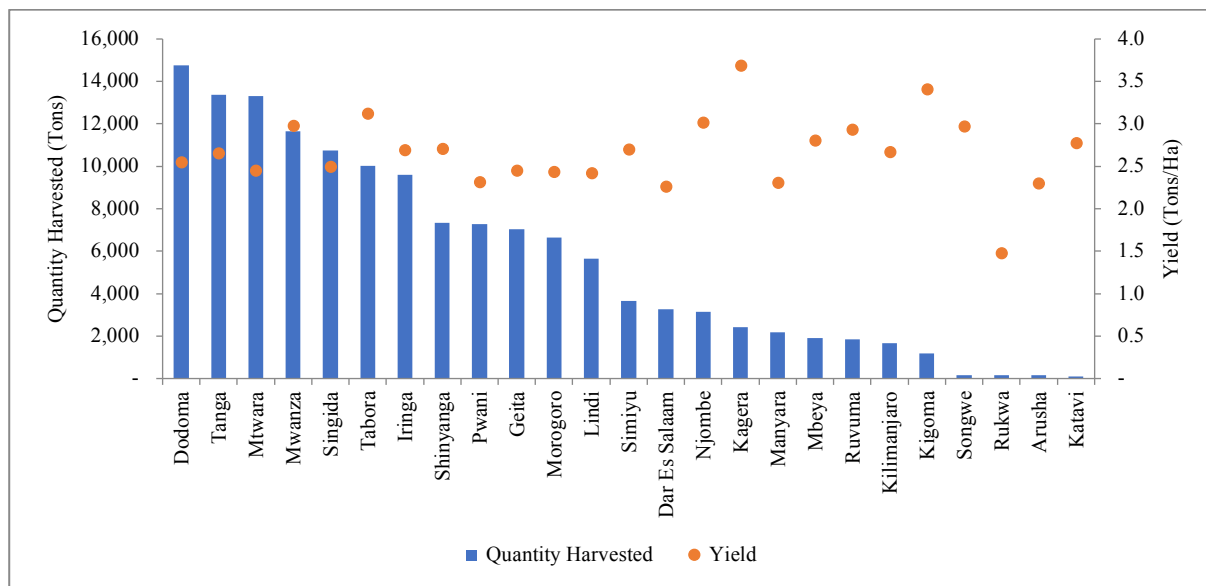
**Figure 3.27: Planted and Harvested Area with Cowpeas by Smallholder Farmers by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



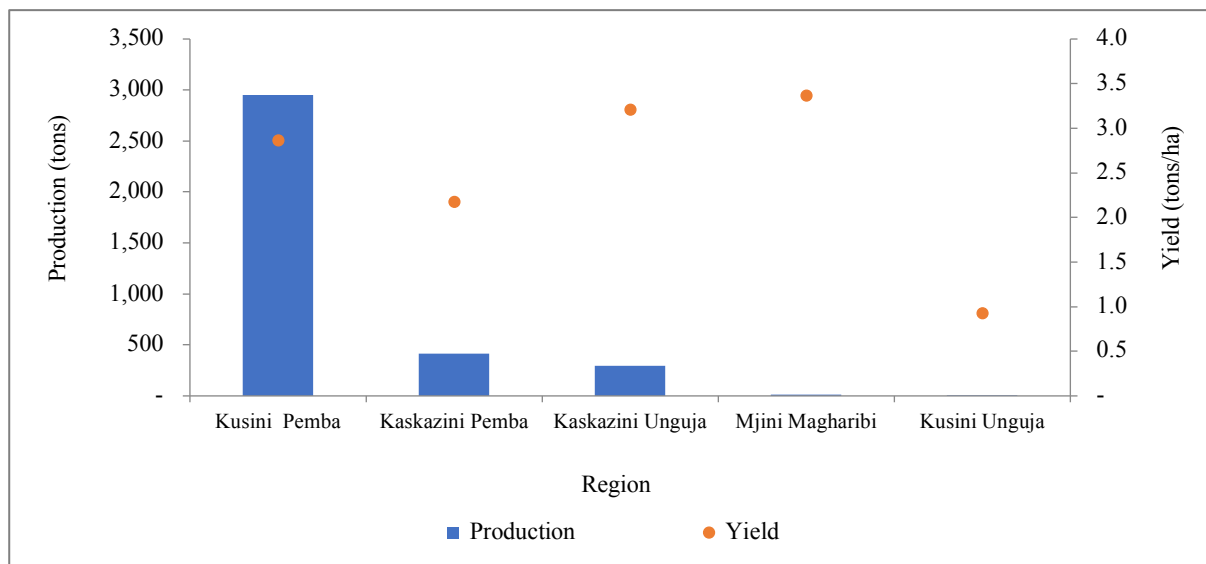
Production of cowpeas in Tanzania was 142,893 tons, out of which 142,882 tons were produced by smallholder farmers and 11 tons were produced by large scale farms. From the production of smallholder farmers, 139,207 tons were in Mainland Tanzania and 3,675 tons in Tanzania Zanzibar. In Mainland Tanzania, Dodoma region had the highest production (14,761 tons; 10.6 percent), followed by Tanga (13,381 tons; 9.6 percent) and Mtwara (13,315 tons; 9.6 percent) while Katavi had a least production (85 tons; 0.1 percent) (Figure 3.28). In Zanzibar, Kusini Pemba led with the production of 2,954 tons (80.4 percent), followed by Kaskazini Pemba (414 tons; 11.3 percent), while Kusini Unguja had the least production (1 ton, 0.03 percent) (Figure 3.29).

The results further show that, the average productivity of cowpeas in Tanzania was 2.6 tons/ha, whereby 2.6 tons/ha was in Mainland Tanzania and 2.8 tons/ha in Tanzania Zanzibar. In Mainland Tanzania, Kagera region had the highest productivity (3.7 tons/ha), followed by Kigoma (3.4 tons/ha). On the other hand, the lowest productivity of 1.5 tons/ha was in Rukwa region. In Tanzania Zanzibar, Mjini Magharibi region had the highest productivity of 3.4 tons/ha while the lowest productivity was in Kusini Unguja (0.9 tons/ha) (Figure 3.28 & 3.29).

**Figure 3.28: Quantity Harvested and Yield of Cowpeas by Region During 2019/20 Agricultural Year, Mainland Tanzania**



**Figure 3.29: Production of Cowpeas by Region During 2019/2 Agricultural Year, Tanzania Zanzibar**

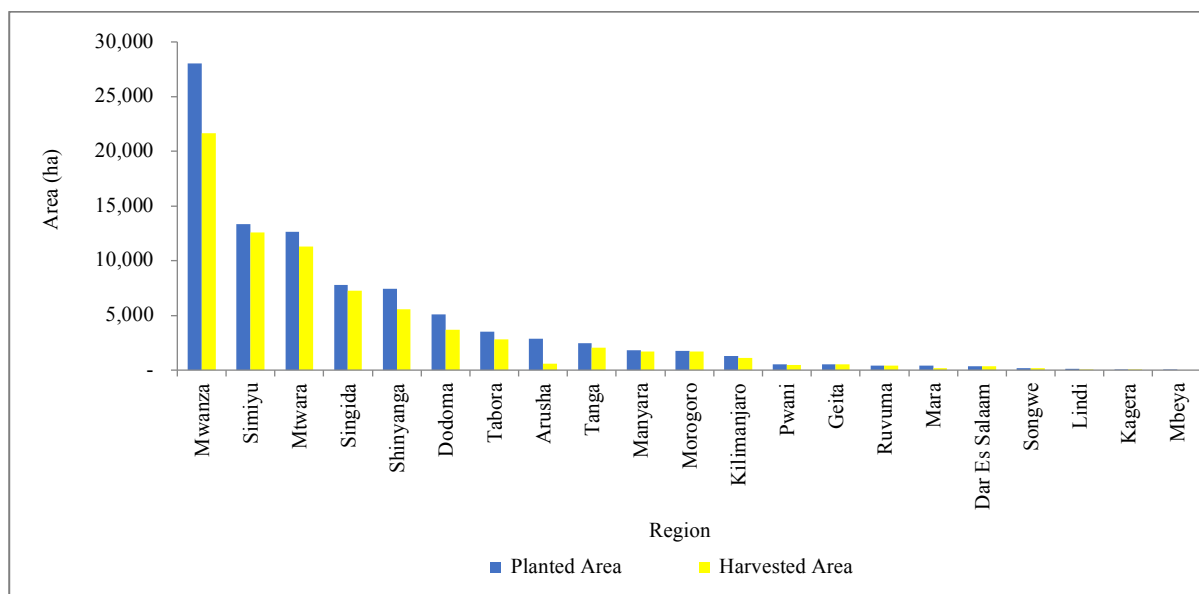


### 3.1.3.3 Green gram

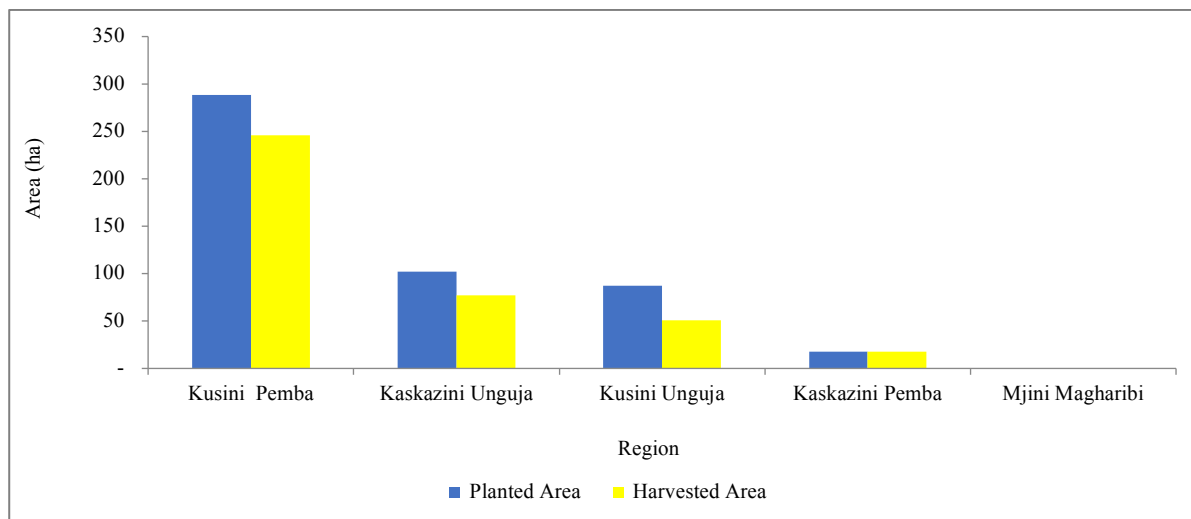
A total of 247,712 households were engaged in green gram production, out of which 244,156 were in Mainland Tanzania and 3,556 were in Tanzania Zanzibar. The total planted area with green gram in Tanzania during the 2019/20 agricultural year was 91,063 ha, of which 91,010 ha were occupied by smallholder farmers and 53 ha by large scale farms. Out of the total planted area occupied by smallholder farmers, 90,514 ha were in Mainland Tanzania and 496 ha in Tanzania Zanzibar. In Mainland Tanzania, Mwanza region had the largest area planted with green gram (28,042 ha; 30.9 percent), followed by Simiyu (13,367 ha; 14.8 percent) and Mtwara (12,643 ha; 14.0 percent). On the other hand, Mbeya region had the least planted area (11 ha; 0.01 percent). In Tanzania Zanzibar, Kusini Pemba region led with the planted area of 288 ha (58.1 percent), followed by Kaskazini Unguja (102 ha; 20.6 percent); while Kaskazini Pemba had the least area of 18 ha (3.6 percent) (Figure 3.30 & 3.31).

Furthermore, the total harvested area of green gram in Tanzania occupied by smallholder farmers was 74,587 ha, of which 74,195 ha were in Mainland Tanzania and 392 ha in Tanzania Zanzibar. This implies that, the total harvested area was 82.0 percent of the total planted area with green gram by smallholder farmers.

**Figure 3.30: Production of Greengram by Region During 2019/2 Agricultural Year, Mainland Tanzania**

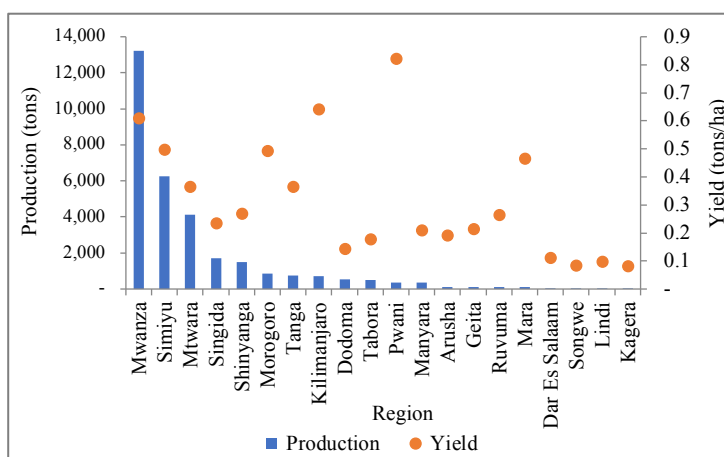


**Figure 3.31: Production of Greengram by Region During 2019/2 Agricultural Year, Tanzania Zanzibar**



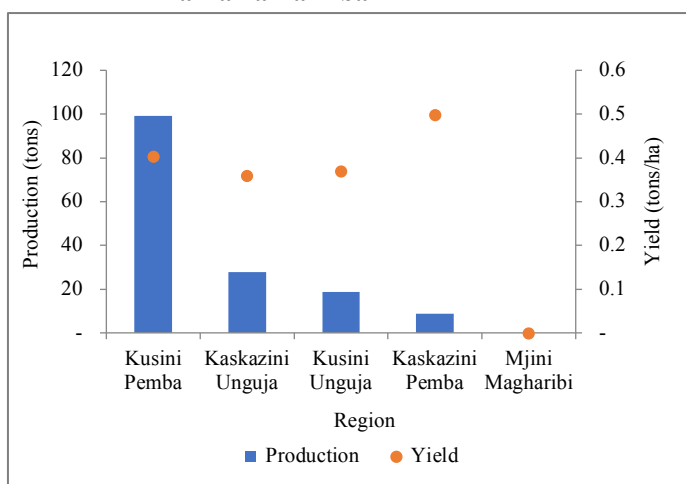
Production of green gram in Tanzania was 31,551 tons of which 31,526 tons produced by smallholder farmers and 25 tons produced by large scale farms. From the production of smallholder farmers, 31,372 tons were in Mainland Tanzania and 155 tons from Tanzania Zanzibar.

**Figure 3.32: Green gram Production by Region during 2019/20 Agricultural Year, Mainland Tanzania**



In Mainland Tanzania, Mwanza region had the highest production (13,226 tons; 42.2 percent), followed by Simiyu (6,254 tons; 19.9 percent) and Mtwara (4,130 tons; 13.2 percent). On the other hand, Kagera region had a least production (1 ton; 0.003 percent) (Figure 3.32).

**Figure 3.33: Green gram Production and Yield by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



In Tanzania Zanzibar, Kusini Pemba led with the production of 99 tons (64.1 percent), followed by Kaskazini Unguja (28 tons; 18.7 percent); while Kaskazini Pemba had least production (9 tons; 5.9 percent) (Figure 3.33).

Moreover, results show that, the average productivity of green gram in Tanzania was 0.4 tons/ha, whereby 0.4 tons/ha was in Mainland Tanzania and 0.4 tons/ha in Tanzania Zanzibar. In Mainland Tanzania, Pwani region had the highest productivity (0.8 tons/ha), followed by Kilimanjaro and Mwanza with 0.6 tons/ha each. On the other hand, the lowest productivity of 0.1 tons/ha was reported in Dodoma, Dar es Salaam, Lindi, Kagera and Songwe regions. In Tanzania Zanzibar, Kaskazini Pemba region had productivity of 0.5 tons/ha (Figure 3.32 & 3.33).

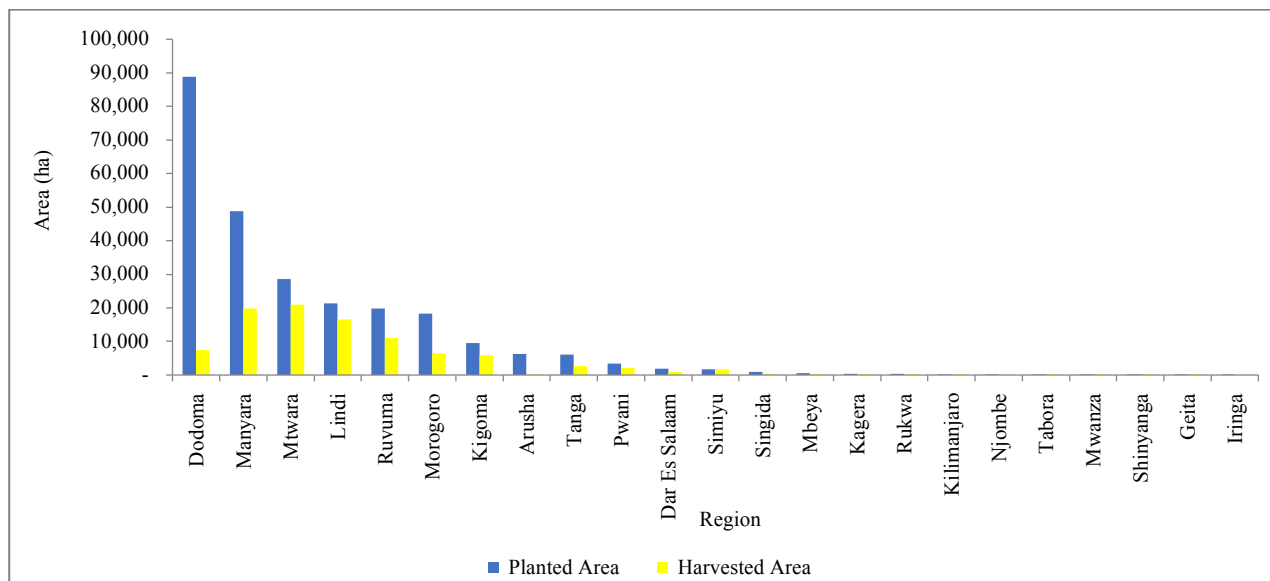
#### **3.1.3.4 Pigeon Peas**

The 2019/20 NSCA results revealed that, a total of 90,687 households were engaged in growing pigeon peas in Tanzania during short rainy season (86,975 households were in Mainland Tanzania and 3,712 households in Tanzania Zanzibar) and 534,264 households during long rainy season (533,373 households were in Mainland Tanzania and 891 households in Tanzania Zanzibar). Furthermore, 79,828 households were engaged in growing pigeon peas as a permanent crop.

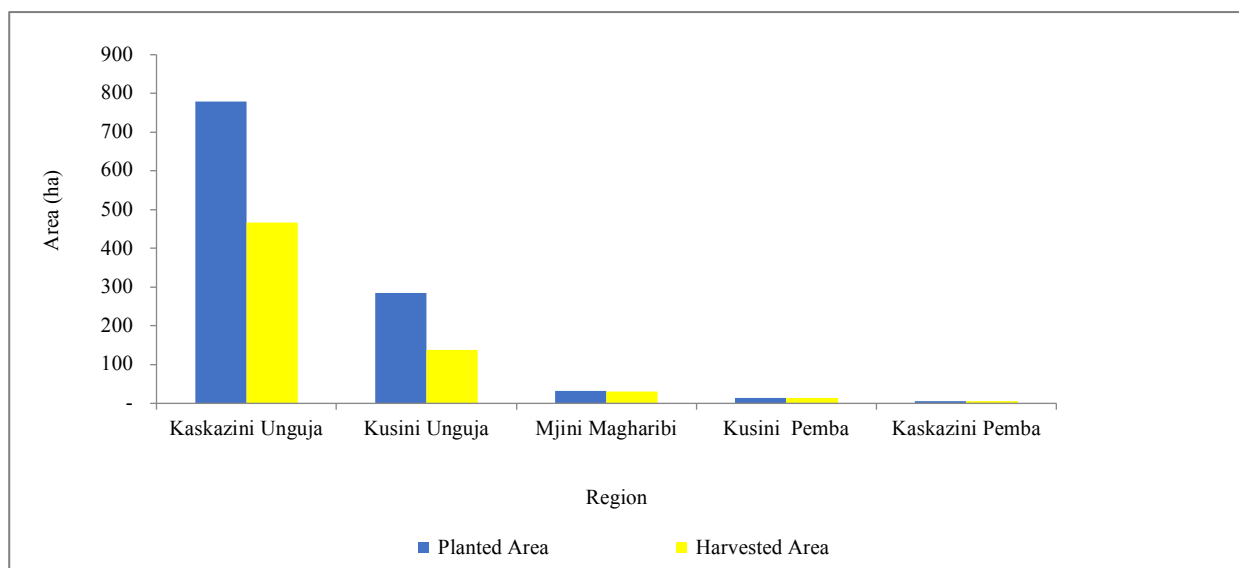
The total area planted with pigeon peas by smallholder farmers in Tanzania during the 2019/20 agricultural year was 258,251 ha, of which 257,135 ha was in Mainland Tanzania and 1,116 ha in Tanzania Zanzibar. Among regions that grew pigeon peas in Mainland Tanzania, Dodoma region with 88,817 ha (34.5 percent) reported the largest planted area, followed by Manyara (48,228 ha; 19.0 percent) and Mtwara (28,594 ha; 11.1 percent) while the least planted area was in Geita (22 ha; 0.01 percent). In Tanzania Zanzibar, Kaskazini Unguja region had largest planted area with pigeon peas 779 ha (69.8 percent), followed by Kusini Unguja (285 ha; 25.5 percent) and least was in Kaskazini Pemba region (16 ha; 0.5 percent) (Figure 3.34 & 3.35).

The total harvested area with pigeon peas was 97,092 ha out of which 96,437 ha was in Mainland Tanzania and 655 ha in Tanzania Zanzibar. In Mainland Tanzania, Mtwara region reported the largest harvested area (20,975 ha; 21.8 percent), followed by Manyara (19,720 ha; 20.4 percent), and Lindi (16,540 ha; 17.2 percent) and the least harvested area was in Mwanza (7 ha; 0.01 percent). In Tanzania Zanzibar, the largest harvested area with pigeon peas was reported in Kaskazini Unguja region with 466 ha (71.2 percent), followed by Kusini Unguja (137 ha; 20.9 percent) and least area harvested was in Kaskazini Pemba (6 ha; 0.9 percent) (Figure 3.34& 3.35).

**Figure 3.34: Planted and Harvested Area with Pigeon Peas by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania**



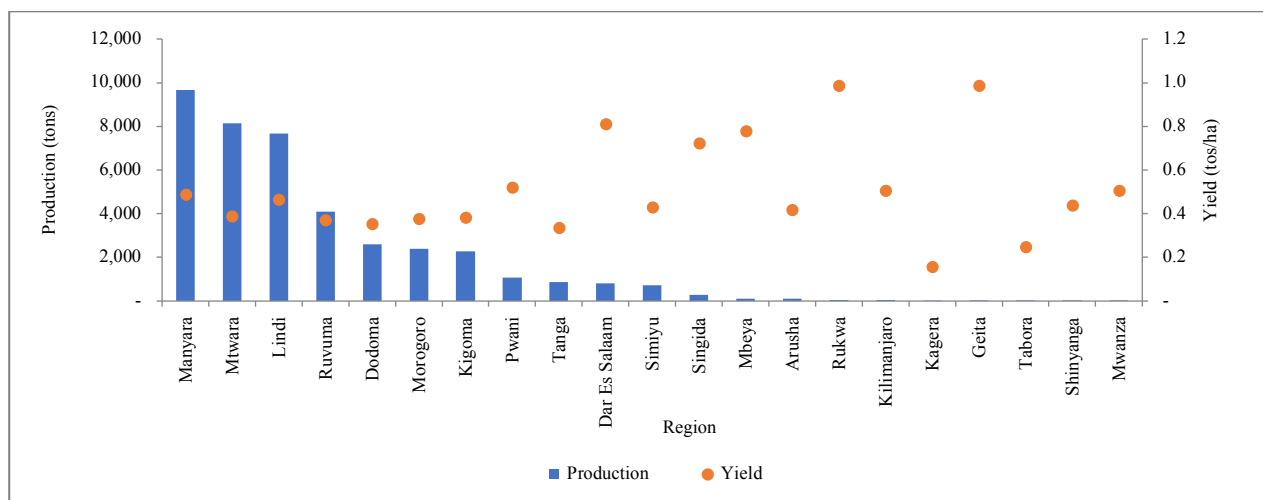
**Figure 3.35: Planted and Harvested Area with Pigeon Peas by Smallholder Farmers by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



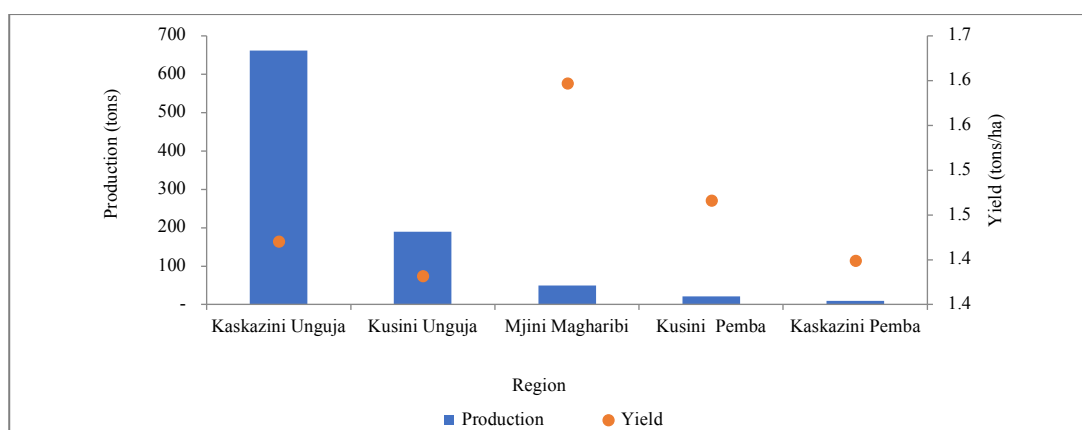
The total production of pigeon peas in Tanzania was 41,922 tons, of which, 40,990 tons were produced in Mainland Tanzania and 931 tons in Tanzania Zanzibar. The highest production of pigeon peas in Mainland Tanzania was reported in Manyara region (9,652 tons; 23.5 percent), followed by Mtwara (8,851 tons; 19.9 percent) and Lindi (7,682 tons; 18.7 percent) and Mwanza region reported the least production (4 tons; 0.01 percent) (Figure 3.36). In Tanzania Zanzibar, the highest pigeon peas production was reported in Kaskazini Unguja (662 tons; 71.1 percent), followed by Kusini Unguja (190 tons; 20.4 percent), while the lowest pigeon peas production was observed in Kaskazini Pemba (8 tons; 0.9 percent) (Figure 3.37).

Furthermore, results show that, the average productivity of pigeon peas in Tanzania was 0.4 tons/ha, that of Mainland Tanzania was 0.4 tons/ha and Tanzania Zanzibar was 1.4 tons/ha. In Mainland Tanzania, the highest productivity was in Rukwa and Geita region with 1.0 tons/ha each, followed by Dar es Salaam and Mbeya (0.8 tons/ha each) and Singida (0.7 tons/ha). On the other hand, the lowest productivity was in Tabora and Kagera regions each with 0.2 tons/ha. In Zanzibar, the highest productivity was in Mjini Magharibi region (1.6 tons/ha), followed by Kusini Pemba (1.5 tons/ha). The remaining regions had the lowest productivity of 1.4 tons/ha each (Figure 3.36 & 3.37).

**Figure 3.36: Production and Yield of Pigeon Peas by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania**



**Figure 3.37: Production and Yield of Pigeon Peas by Smallholder Farmers by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



### 3.1.3.5 Other Pulses

Other pulses include chick peas, bambaranuts, field peas, fiwi and upupu. The total area planted with other pulses was 208,317 ha out of which 208,245 ha were in Mainland Tanzania and 72 ha in Tanzania Zanzibar. The total area harvested with other pulses was 97,895 ha (97,881 ha in Mainland

Tanzania and 14 ha in Tanzania Zanzibar). The total quantity harvested was 78,910 tons with 78,903 tons from Mainland Tanzania and 7 tons from Tanzania Zanzibar.

### **3.1.4 Oil Seeds and Nuts Crops**

Oil seeds and nuts grown in Tanzania include groundnuts, sunflower, oil palm and sesame. These crops were produced during both short and long rainy seasons in Tanzania. The results revealed that, a total area of 1,514,617 ha was planted with oil seeds and nuts in Tanzania, out of which 1,508,208 ha (99.6 percent) was occupied by smallholder farmers and 6,410 ha (0.4 percent) by large scale farms. Out of the total planted area by smallholder farmers, 1,506,977 ha were in Mainland Tanzania and 1,231 ha in Tanzania Zanzibar.

Total harvested area with oil seeds and nuts under smallholder farmers in Tanzania was 1,365,297 ha out of which 1,364,280 ha was in Mainland Tanzania and 1,017 ha in Tanzania Zanzibar. The results also show that, a total harvested area with oil seeds and nuts was 90.5 percent of the total planted area by smallholder farmers.

Furthermore, a total quantity of 1,279,657 tons of oil seeds and nuts was produced in Tanzania whereby 1,277,925 tons (99.9 percent) was produced by smallholder farmers and 1,731 tons (0.1 percent) by large scale farms. Of the total quantity produced by smallholder farmers, 1,277,235 tons was in Mainland Tanzania and 690 tons in Tanzania Zanzibar.

#### **3.1.4.1 Groundnuts**

The 2019/20 NSCA results show that, a total of 293,997 households were engaged in growing groundnuts in Tanzania during short rainy season (288,804 households were in Mainland Tanzania and 5,193 households in Tanzania Zanzibar) and 931,792 households during long rainy season (929,736 households were in Mainland Tanzania and 2,056 households in Tanzania Zanzibar).

The total planted area for groundnuts was 528,373 ha out of which 527,142 ha were in Mainland Tanzania and 1,231 ha in Tanzania Zanzibar. In Mainland Tanzania, Dodoma region had the largest planted area with groundnuts (132,427 ha; 25.1 percent), followed by Tabora (103,486 ha; 19.6 percent) and Shinyanga (45,746 ha; 8.7 percent). On the other hand, Pwani region had the least planted area (352 ha; 0.1 percent). In Tanzania Zanzibar, Kusini Pemba region had the largest planted area of 829 ha (67.4 percent), followed by Kaskazini Pemba (273 ha; 22.2 percent); while Kaskazini Unguja had the least planted area (42 ha, 3.4 percent).



The total harvested area with groundnuts was 484,684 ha out of which 483,668 ha was in Mainland Tanzania and 1,017 ha in Tanzania Zanzibar. In Mainland Tanzania, Dodoma region reported the largest harvested area (126,539 ha; 26.2 percent), followed by Tabora (89,199 ha; 18.4 percent) and Shinyanga (39,011 ha; 8.1 percent) and the least harvested area was in Pwani (323 ha; 0.1 percent). In Tanzania Zanzibar, the largest harvested area with groundnuts was reported in Kaskazini Pemba region with 660 ha (65.0 percent), followed by Kaskazini Pemba (264 ha; 26.0 percent) and least area harvested was in Kusini Unguja (19 ha; 1.8 percent).

Production of groundnuts in Tanzania was 621,697 tons, out of which 621,665 tons were produced by smallholder farmers and 32 tons produced by large scale farms. From the production of smallholder farmers, 620,975 tons was in Mainland Tanzania and 690 tons in Tanzania Zanzibar. Dodoma region had the highest production (176,287 tons; 28.4 percent), followed by Tabora (97,677 tons; 15.7 percent) and Geita (50,062 tons; 8.1 percent). On the other hand, Mara region had a least production (605 tons; 0.1 percent). In Tanzania Zanzibar, Kusini Pemba led with the production of 455 tons (65.9 percent), followed by Kaskazini Pemba (189 tons; 27.4 percent) while Mjini Magharibi had a least production (9 tons; 1.2 percent)

Moreover, results show that, the average productivity of groundnuts in Tanzania was 1.3 tons/ha (1.3 tons/ha in Mainland Tanzania and 0.7 tons/ha in Tanzania Zanzibar). The highest productivity was in Pwani region (2.6 tons/ha), followed by Dar es Salaam (2.3 tons/ha) and Iringa (2.1 tons/ha). On the other hand, the lowest productivity was in Lindi and Mtwara regions each with 1.0 tons/ha. In Tanzania Zanzibar, the highest productivity was in Kaskazini Unguja region (0.8 tons/ha) while the least productivity was in Mjini Magharibi (0.2 tons/ha) (Table 3.3).

**Table 3.3: Planted and Harvested Area, Quantity Harvested and Yield of Groundnuts by Region During 2019/20 Agricultural Year, Tanzania**

Region	Groundnuts			
	Planted Area (ha)	Harvested Area (ha)	Quantity Harvested (tons)	Yield (tons/ha)
Dodoma	132,427	126,539	176,287	1.4
Arusha	-	-	-	-
Kilimanjaro	2,065	1,999	2,919	1.5
Tanga	2,932	2,743	3,331	1.2
Morogoro	4,393	4,029	5,132	1.3
Pwani	352	323	840	2.6
Dar Es Salaam	693	443	1,015	2.3
Lindi	2,870	2,724	2,713	1.0
Mtwara	17,123	16,076	16,712	1.0
Ruvuma	5,789	5,327	7,154	1.3
Iringa	943	896	1,924	2.1
Mbeya	20,601	19,235	24,382	1.3
Singida	22,533	20,138	21,769	1.1
Tabora	103,486	89,199	97,677	1.1
Rukwa	13,529	13,206	21,701	1.6
Kigoma	16,272	15,174	18,697	1.2
Shinyanga	45,746	39,011	41,031	1.1
Kagera	12,890	11,223	14,350	1.3
Mwanza	13,585	12,952	16,933	1.3
Mara	469	425	605	1.4
Manyara	10,350	10,350	21,156	2.0
Njombe	1,276	1,230	2,006	1.6
Katavi	17,373	16,290	22,996	1.4
Simiyu	15,327	14,390	16,085	1.1
Geita	40,702	36,773	50,062	1.4
Songwe	23,416	22,973	33,497	1.5
<b>Mainland Tanzania</b>	<b>527,142</b>	<b>483,668</b>	<b>620,975</b>	<b>1.3</b>

### 3.1.4.2 Sunflower

The 2019/20 NSCA results show that, a total of 110,335 households were engaged in growing sunflower in Mainland Tanzania during short rainy season and 661,520 households during long rainy season. There was no production of sunflower reported in Tanzania Zanzibar during 2019/20 agricultural year.

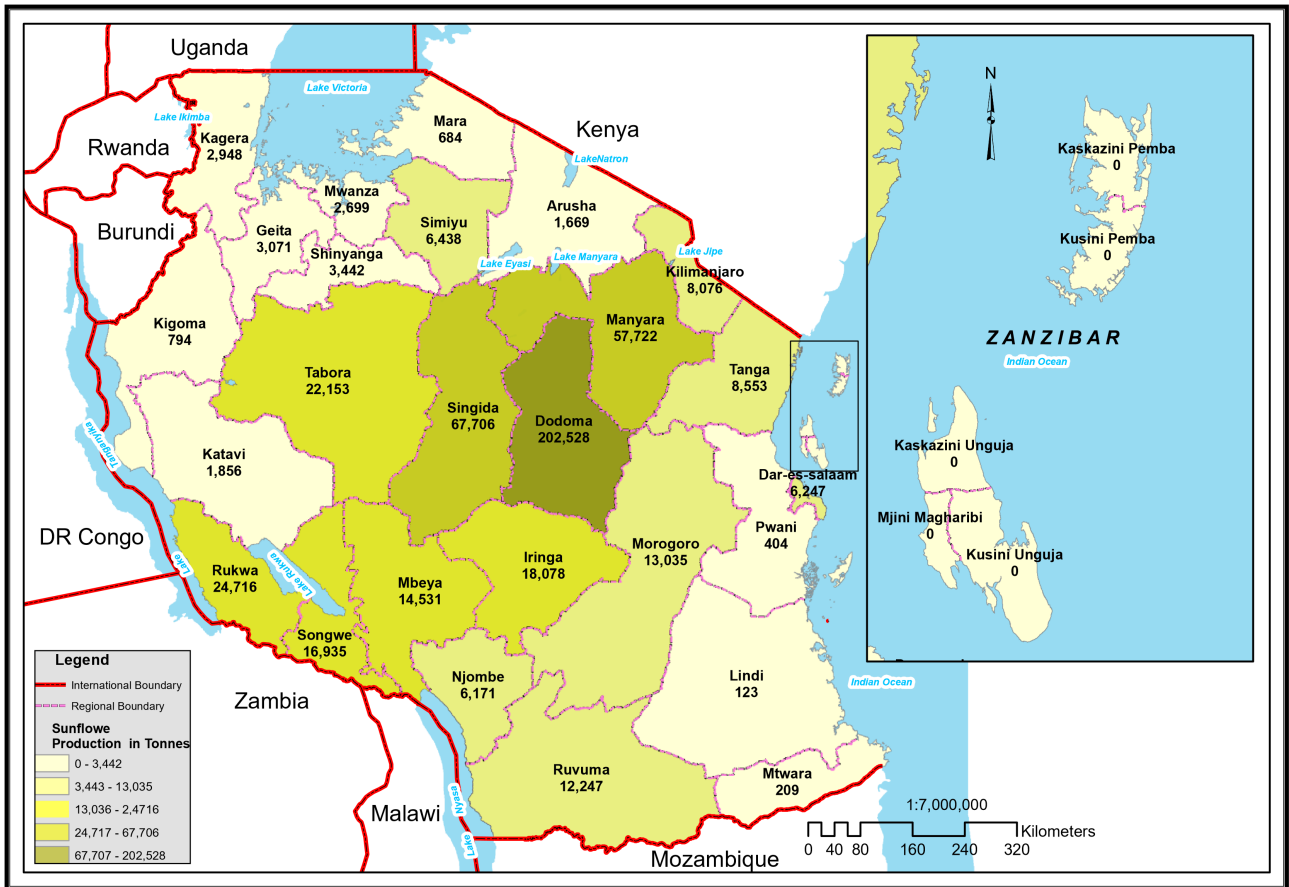
The total planted area for sunflower was 529,394 ha out of which 524,050 ha were from smallholder farmers and 5,344 ha from large scale farms. From the total planted area by smallholder farmers, Dodoma region had the largest planted area with sunflower (202,658 ha; 38.7 percent), followed by Singida (85,457 ha; 16.3 percent) and Manyara (57,228 ha; 10.9 percent). On the other hand, Lindi region had the least planted area (151 ha; 0.03 percent).

The total harvested area with sunflower was 481,641 ha from smallholder farmers. Dodoma region reported the largest harvested area (193,533 ha; 40.2 percent), followed by Singida (75,527 ha; 15.7 percent) and Manyara (53,780 ha; 11.2 percent) and the least harvested area was in Lindi (117 ha; 0.02 percent). The results also reveal that, a total harvested area with sunflower was 91.9 percent of the total planted area by smallholder farmers.

Production of sunflower in Tanzania stands at 504,422 out of which 503,032 tons was produced by smallholder farmers and 1,390 tons was produced by large scale farmers. From the total production of smallholder farmers, Dodoma region had the highest production of 202,528 tons (40.3 percent), followed by Singida (67,706 tons 13.5 percent) and Manyara (57,722 tons ;11.5 percent). On the other hand, Lindi region had the least production (123 tons; 0.02 percent) (Table 3.4 & Map 3.5).

Moreover, results show that, the average productivity of sunflower in Tanzania was 1.0 tons/ha the highest productivity was in Kagera region (1.8 tons/ha), followed by Pwani (1.7 tons/ha) and Dar es Salaam (1.6 tons/ha). On the other hand, the lowest productivity was in Mtwara regions (0.8 tons/ha) (Table 3.4).

Map 3.5: Sunflower Production by Region During 2019/20 Agricultural Year, Tanzania



**Table 3.4: Planted and Harvested Area, Quantity Harvested and Yield of Sunflower by Region During 2019/20 Agricultural Year, Mainland Tanzania**

Region	Sunflower			
	Planted Area (ha)	Harvested Area (ha)	Quantity Harvested (tons)	Yield (tons/ha)
Dodoma	202,658	193,533	202,528	1.0
Arusha	2,089	1,500	1,669	1.1
Kilimanjaro	7,238	6,550	8,075	1.2
Tanga	7,385	7,134	8,553	1.2
Morogoro	14,030	10,881	13,035	1.2
Pwani	345	243	404	1.7
Dar Es Salaam	4,197	3,925	6,247	1.6
Lindi	151	117	123	1.1
Mtwara	264	264	209	0.8
Ruvuma	11,218	11,057	12,246	1.1
Iringa	21,316	16,251	18,078	1.1
Mbeya	12,280	12,041	14,530	1.2
Singida	85,457	75,527	67,706	0.9
Tabora	21,228	19,619	22,153	1.1
Rukwa	28,636	26,281	24,716	0.9
Kigoma	645	645	794	1.2
Shinyanga	4,594	3,658	3,442	0.9
Kagera	1,885	1,677	2,948	1.8
Mwanza	2,246	2,116	2,699	1.3
Mara	658	530	684	1.3
Manyara	57,228	53,780	57,722	1.1
Njombe	7,026	6,912	6,171	0.9
Katavi	1,735	1,542	1,856	1.2
Simiyu	7,317	6,581	6,438	1.0
Geita	2,714	2,625	3,071	1.2
Songwe	19,509	16,651	16,935	1.0
<b>Mainland Tanzania</b>	<b>524,050</b>	<b>481,641</b>	<b>503,032</b>	<b>1.0</b>

### 3.1.4.3 Sesame

The Census results show that, a total of 56,097 households were engaged in growing sesame in Mainland Tanzania during short rainy season and 425,018 households during long rainy season. There was no production of sesame reported in Tanzania Zanzibar during 2019/20 agricultural year.

The total planted area for sesame was 443,068 ha out of which 442,689 ha were from smallholder farmers and 379 ha from large scale farms. From the total planted area by smallholder farmers, Lindi region had the largest planted area with sesame (113,169 ha; 25.6 percent), followed by Dodoma (77,719 ha; 17.6 percent) and Songwe (71,464 ha; 16.1 percent). The least planted area was reported in Geita region (142 ha; 0.03 percent).

The total harvested area with sesame was 392,110 ha from smallholder farmers. Lindi region reported the largest harvested area (91,820 ha; 23.4 percent), followed by Dodoma (74,375 ha; 19.0 percent) and Songwe (62,413 ha; 15.9 percent). Mara region had the least harvested area (59 ha; 0.02 percent). The results also reveal that, a total harvested area with sesame was 88.6 percent of the total planted area by smallholder farmers.

Production of sesame in Tanzania was 128,842 tons, out of which 128,588 tons was produced by smallholder farmers and 254 tons was produced by large scale farms. From the total production of smallholder farmers, Lindi region had the highest production of 26,900 tons (20.9 percent), followed by Songwe (23,544 tons; 18.3 percent) and Dodoma (21,980 tons; 17.1 percent) while the least production was reported in Mara (82 tons; 0.1 percent) (Table 3.5 & Map 3.5).

Results further show that, the average productivity of sesame in Tanzania was 0.3 tons/ha. The highest productivity was in Mara region (1.4 tons/ha), followed by Mwanza, Tanga, Simiyu, Tabora and Geita each with 0.9 tons/ha. On the other hand, the lowest productivity was in Rukwa, Lindi, Dodoma, Singida, Mtwara, Katavi, Pwani, Ruvuma and Kilimanjaro regions each with 0.3 tons/ha (Table 3.5).

**Table 3.5: Planted and Harvested Area, Quantity Harvested and Yield of Sesame by Region During 2019/20 Agricultural Year, Tanzania**

Region	Sesame			
	Planted Area (ha)	Harvested Area (ha)	Quantity Harvested (tons)	Yield (tons/ha)
Dodoma	77,719	74,375	21,980	0.3
Arusha	306	306	169	0.6
Kilimanjaro	924	895	304	0.3
Tanga	1,247	895	819	0.9
Morogoro	20,171	17,563	6,523	0.4
Pwani	21,840	17,591	5,832	0.3
Dar Es Salaam	4,580	4,580	1,819	0.4
Lindi	113,169	91,820	26,900	0.3
Mtwara	37,877	34,577	10,433	0.3
Ruvuma	42,844	39,818	13,237	0.3
Iringa	2,288	1,880	1,202	0.6
Mbeya	2,316	2,316	1,192	0.5
Singida	23,342	21,971	6,616	0.3
Tabora	550	247	219	0.9
Rukwa	6,454	6,255	1,730	0.3
Kigoma	-	-	-	-
Shinyanga	567	567	430	0.8
Kagera	-	-	-	-
Mwanza	168	168	154	0.9
Mara	169	59	82	1.4
Manyara	2,174	2,080	886	0.4
Njombe	-	-	-	-
Katavi	10,925	10,140	3,075	0.3
Simiyu	1,452	1,452	1,321	0.9
Geita	142	142	121	0.9
Songwe	71,464	62,413	23,544	0.4
<b>Mainland Tanzania</b>	<b>442,689</b>	<b>392,110</b>	<b>128,588</b>	<b>0.3</b>

#### 3.1.4.4 Oil Palm

The 2019/20 NSCA results show that, a total of 29,255 households were engaged in growing oil palm in Mainland Tanzania during 2019/20 agricultural year. Oil palm was grown in only eight region of Mainland Tanzania and there was no production of oil palm reported in Tanzania Zanzibar.

The total planted area for oil palm was 13,736 ha, out of which 13,096 ha were from smallholder farmers and 640 ha from large scale farms. From the total planted area by smallholder farmers, Kigoma region had the largest planted area with oil palm (7,025 ha; 53.6 percent), followed by Pwani (3,609 ha; 27.6 percent) and Mbeya (1,922 ha; 14.7 percent). On the other hand, Kagera region had the least planted area (4 ha; 0.03 percent).

The total harvested area with oil palm was 7,067 ha (6,861 ha from smallholder farmers and 206 ha from large scale farms). Kigoma region reported the largest harvested area (4,726 ha; 68.9 percent), followed by Mbeya (1,614 ha; 23.5 percent) and Pwani (384 ha; 5.6 percent), and the least harvested

area was in Kagera (2 ha; 0.02 percent). The results also revealed that, the total harvested area with oil palm was 53.4 percent of the total planted area by smallholder farmers.

Production of oil palm in Tanzania was 24,696 tons, out of which 24,640 tons was produced by smallholder farmers and 56 tons by large scale farms. From the total production by smallholder farmers, Kigoma region had the largest production (17,987 tons; 73.0 percent), followed by Mbeya (5,013 tons; 20.3 percent) and Pwani (1,262 tons ;5.1 percent), while Kagera region reported the least production (6 tons; 0.02 percent) (Table 3.6).

**Table 3.6: Planted and Harvested Area, Quantity Harvested and Yield of Oil Palm by Region During 2019/20 Agricultural Year, Mainland Tanzania**

Region	Oil Palm						
	Number of Households	Planted Area with MONO CROP (ha)	Number of Households	Area covered by permanent crop in MIXED CROP (ha)	Total Planted Area (MONO + MIXED CROPS) (ha)	Area Harvested (ha)	Quantity harvested (tons)
Dodoma	-	-	-	-	-	-	-
Arusha	-	-	-	-	-	-	-
Kilimanjaro	-	-	-	-	-	-	-
Tanga	-	-	-	-	-	-	-
Morogoro	1,185	0	11,419	308	308	84	237
Pwani	923	428	6,032	3,180	3,609	384	1,262
Dar Es Salaam	1,308	3	962	-	3	-	-
Lindi	-	-	-	-	-	-	-
Mtwara	-	-	-	-	-	-	-
Ruvuma	-	-	-	-	-	-	-
Iringa	-	-	-	-	-	-	-
Mbeya	7,973	439	15,430	1,483	1,922	1,614	5,013
Singida	-	-	-	-	-	-	-
Tabora	1,622	140	207	0	141	30	74
Rukwa	-	-	-	-	-	-	-
Kigoma	8,895	4,913	10,003	2,112	7,025	4,726	17,987
Shinyanga	-	-	-	-	-	-	-
Kagera	-	-	5,149	4	4	2	6
Mwanza	7,349	59	3,942	8	67	5	22
Mara	-	-	-	-	-	-	-
Manyara	-	-	-	-	-	-	-
Njombe	-	-	-	-	-	-	-
Katavi	-	-	80	16	16	16	40
Simiyu	-	-	-	-	-	-	-
Geita	-	-	-	-	-	-	-
Songwe	-	-	-	-	-	-	-
<b>Mainland Tanzania</b>	<b>29,255</b>	<b>5,984</b>	<b>53,224</b>	<b>7,112</b>	<b>13,096</b>	<b>6,861</b>	<b>24,640</b>



### **3.1.5 Fruits and Vegetables**

There is a wide range of fruit and vegetable crops grown in different parts of Tanzania. The fruits and vegetables discussed under this sub-section are tomatoes, onions, cabbage, okra, watermelon, orange, pineapple, mango and banana. However, most of the fruits are produced from permanent tree crops while vegetables are temporary crops.

#### **3.1.5.1 Tomato**

The 2019/20 NSCA results show that, a total of 72,586 households were engaged in growing tomatoes in Tanzania during short rainy season (62,663 households were in Mainland Tanzania and 9,923 households in Tanzania Zanzibar) and 131,734 households during long rainy season (125,069 households were in Mainland Tanzania and 6,665 households in Tanzania Zanzibar).

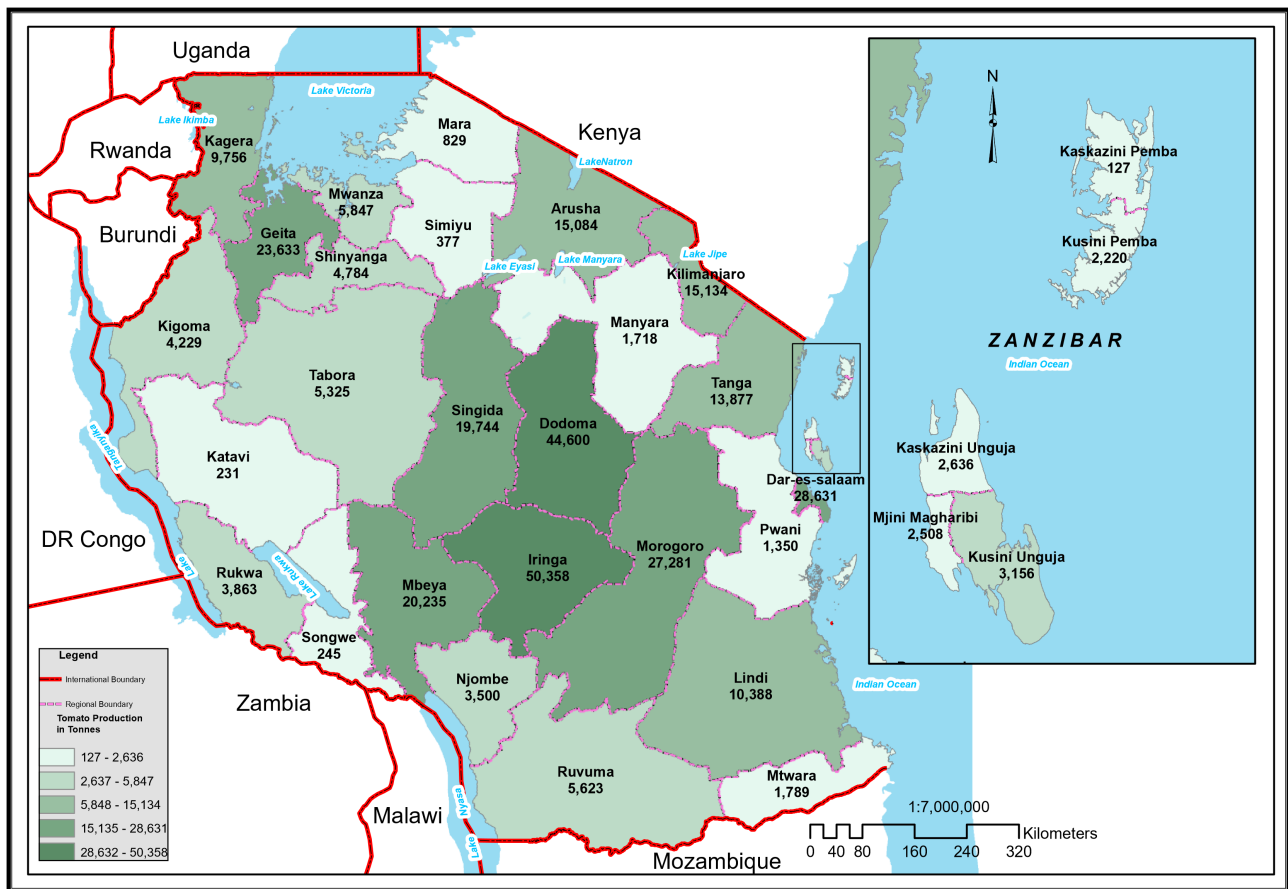
The total planted area for tomato was 51,658 ha, out of which 51,595 ha were from smallholder farmers and 63 ha from large scale farms. From the total planted area by smallholder farmers 49,187 ha was in Mainland Tanzania and 2,408 ha in Tanzania Zanzibar. In Mainland Tanzania, Iringa region had the largest planted area with tomato (9,390 ha; 19.1 percent), followed by Dodoma (6,054 ha; 12.3 percent) and Tanga (3,533 ha; 7.2 percent). On the other hand, Katavi region had the least planted area (33 ha; 0.1 percent). In Zanzibar, Kaskazini Unguja led with the planted area of 720 ha (29.9 percent), followed by Kusini Unguja (596 ha; 24.7 percent) while the least planted area was reported in Kaskazini Pemba (63 ha; 2.6 percent).

The total harvested area with tomato was 34,531 ha out of which 32,792 ha was in Mainland Tanzania and 1,739 ha in Tanzania Zanzibar. In Mainland Tanzania, Dodoma region reported the largest harvested area (4,939 ha; 15.1 percent), followed by Iringa (4,679 ha; 14.3 percent) and Morogoro (2,637 ha; 8.0 percent) and the least harvested area was in Katavi (18 ha; 0.1 percent). In Tanzania Zanzibar, the largest harvested area with tomato was reported in Kaskazini Unguja region (562 ha; 32.3 percent), followed by Mjini Magharibi (443 ha; 25.5 percent) and least harvested area was in Kaskazini Pemba (31 ha; 1.8 percent). The results also reveal that, a total harvested area with tomato was 66.9 percent of the total planted area by smallholder farmers.

Production of tomato in Tanzania was 329,907 tons, out of which 329,078 tons was produced by smallholder farmers and 829 tons was produced by large scale farmers. From the production of smallholder farmers, 318,431 tons were in Mainland Tanzania and 10,647 tons in Tanzania Zanzibar. In Mainland, Iringa region had the highest production of tomato (50,358 tons; 15.8 percent), followed by Dodoma (44,600 tons; 14.0 percent) and Dar es Salaam (28,631 tons; 9.0 percent). On the other hand, Katavi region had the least production (231 tons; 0.1 percent). In Zanzibar, Kusini Unguja led

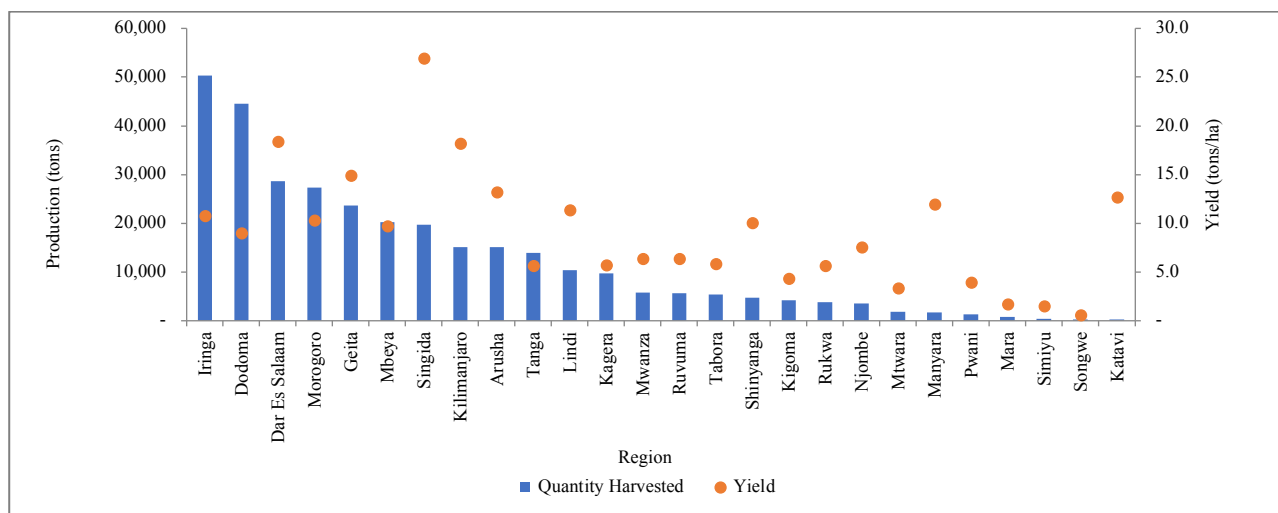
with the production of 3,156 tons (29.6 percent), followed by Kaskazini Unguja (2,636 tons; 24.8 percent) while Kaskazini Pemba had the least production (127 tons; 1.2 percent) (Map 3.6).

**Map 3.6: Tomato Production by Region During 2019/20 Agricultural Year, Tanzania**

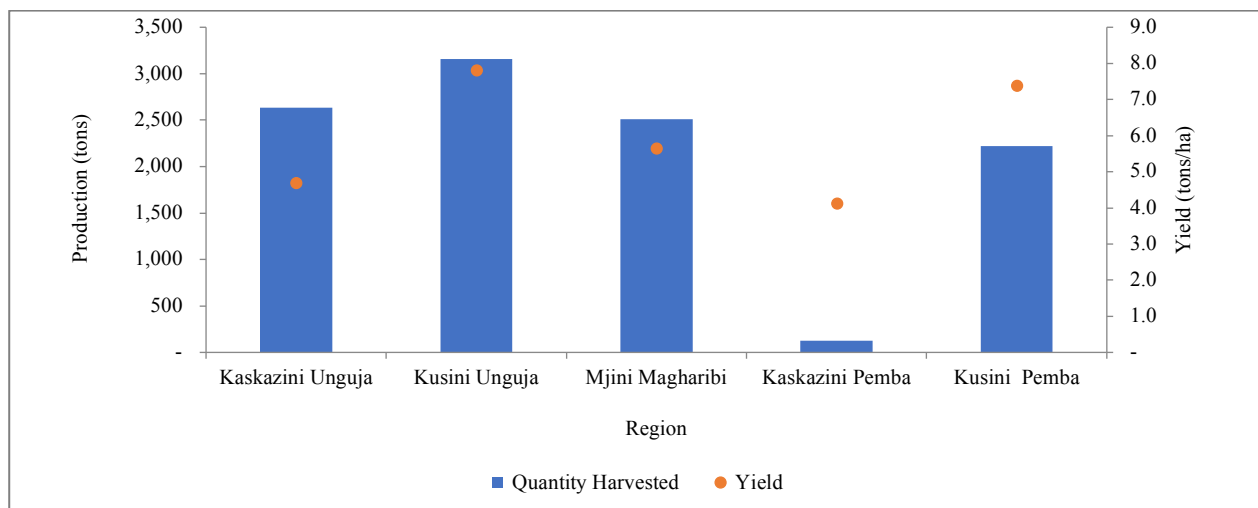


Moreover, results show that, the average productivity of tomato in Tanzania was 9.5 tons/ha (9.7 tons/ha in Mainland Tanzania and 6.1 tons/ha in Tanzania Zanzibar). The highest productivity was in Singida region (26.9 tons/ha), followed by Dar es Salaam (18.4 tons/ha) and Kilimanjaro (18.2 tons/ha). On the other hand, the lowest productivity was in Songwe region (0.6 tons/ha). In Zanzibar, the highest productivity was in Kusini Unguja region (7.8 tons/ha) while the least productivity was in Kaskazini Pemba (4.1 tons/ha) (Figure 3.38 & 3.39).

**Figure 3.38: Quantity Harvested and Yield of Tomato by Region during 2019/20 Agricultural Year, Mainland Tanzania**



**Figure 3.39: Quantity Harvested and Yield of Tomato by Region during 2019/20 Agricultural Year, Tanzania Zanzibar**



### 3.1.5.2 Onions

The 2019/20 NSCA results reveal that, a total of 22,690 households were engaged in growing onions in Tanzania during short rainy season (22,647 households were in Mainland Tanzania and 43 households in Tanzania Zanzibar). During long rainy season, 52,097 households were involved in growing onions in Mainland Tanzania, while there were no households reported to grow onions in Tanzania Zanzibar.

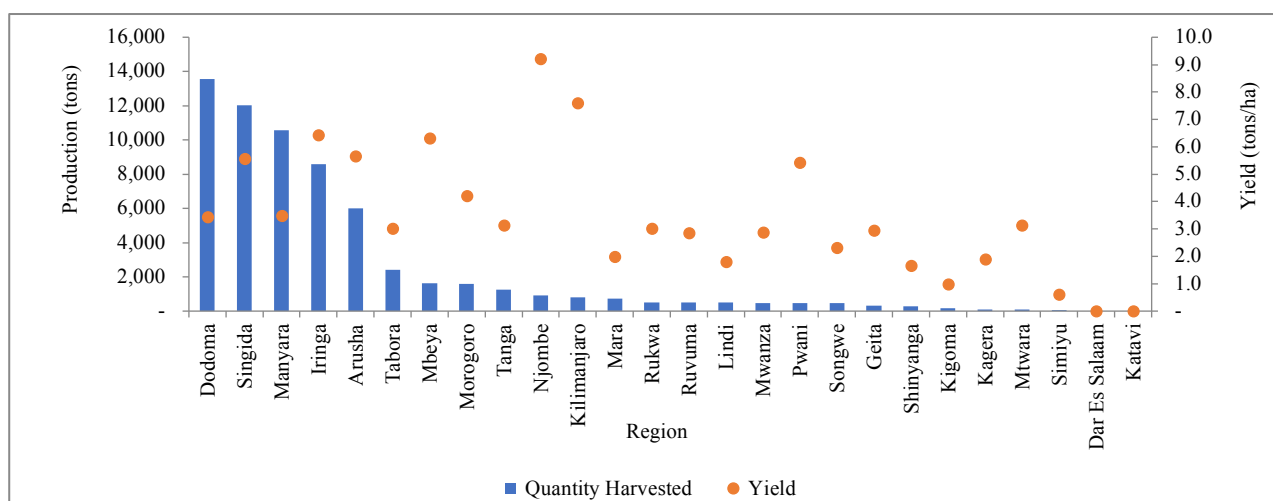
The total planted area for onions was 28,352 ha, out of which 28,336 ha were from smallholder farmers and 16 ha from large scale farms. From the total planted area by smallholder farmers, 28,323 ha was in Mainland Tanzania and 13 ha in Tanzania Zanzibar. In Mainland Tanzania, Dodoma region had the largest planted area with onions (5,708 ha; 20.2 percent), followed by Singida (4,124 ha; 14.6

percent) and Manyara (3,588 ha; 12.7 percent), while Kagera region on the other hand, had the least planted area (49 ha; 0.2 percent). In Tanzania Zanzibar, onions were only grown in Mjini Magharibi region with a planted area of 13 ha.

The total harvested area with onions was 15,585 ha out of which 15,572 ha was in Mainland Tanzania and 13 ha in Tanzania Zanzibar. In Mainland Tanzania, Dodoma region reported the largest harvested area (3,927 ha; 25.2 percent), followed by Manyara (3,014 ha; 19.4 percent) and Singida (2,159 ha; 13.9 percent) and the least harvested area was in Mtwara (26 ha; 0.2 percent). In Tanzania Zanzibar, the only region reported harvested area was Mjini Magharibi (13 ha; 100.0 percent). The results reveal that, a total harvested area with onions was 55.0 percent of the total planted area by smallholder farmers.

Onions production in Tanzania was 64,007 tons, of which 63,956 tons was produced by smallholder farmers and 51 tons was produced by large scale farms. From the production of smallholder farmers, 63,954 tons were in Mainland Tanzania and 2 tons in Tanzania Zanzibar. In Mainland Tanzania, Dodoma Region had the highest production (13,551 tons; 21.2 percent), followed by Singida (12,022 tons; 18.8 percent) and Manyara (10,564 tons; 16.5 percent). On the other hand, Simiyu region had the least production (64 tons; 0.1 percent). In Tanzania Zanzibar, Mjini Magharibi produced 2 tons as it was the only region engaged in production (Figure 3.40).

**Figure 3.40: Quantity Harvested and Yield of Onions by Region During 2019/20 Agricultural Year, Mainland Tanzania**



### 3.1.5.3 Cabbage

The 2019/20 NSCA results reveal that, a total of 8,846 households were engaged in growing cabbage in Tanzania during short rainy season (8,802 households were in Mainland Tanzania and 44 households in Tanzania Zanzibar). During long rainy season, 14,215 households were involved in growing cabbage in Mainland Tanzania, while there were no households reported to grow cabbage in Tanzania Zanzibar.

The total planted area of cabbage was 4,484 ha, of which 4,482 ha were in Mainland Tanzania and 2 ha in Tanzania Zanzibar. In Mainland Tanzania, Tanga region, had the largest planted area with cabbage (1,383 ha; 30.8 percent), followed by Kigoma (484 ha; 10.8 percent) and Mbeya (354 ha; 7.9 percent). On the other hand, Mara region had the least planted area (15 ha; 0.3 percent). In Tanzania Zanzibar, only Mjini Magharibi produced cabbage with the planted area of 2 ha.

The total harvested area with cabbage was 2,811 ha, of which 2,809 ha was in Mainland Tanzania and 2 ha in Tanzania Zanzibar. In Mainland Tanzania, Tanga region reported the largest harvested area (1,167 ha; 41.6 percent), followed by Iringa (238 ha; 8.5 percent) and Mbeya (173 ha; 6.2 percent) and the least harvested area was in Mara (15 ha; 0.5 percent). In Tanzania Zanzibar, the only region reported harvested area was Mjini Magharibi (2 ha; 100.0 percent). The results reveal that, a total harvested area with cabbage was 99.9 percent of the total planted area by smallholder farmers.

Production of cabbage in Tanzania was 35,156 tons, of which 35,154 tons were in Mainland Tanzania and 2 tons in Tanzania Zanzibar. In Mainland Tanzania, Tanga region had the highest production (9,714 tons; 27.6 percent), followed by Kilimanjaro (4,973 tons; 14.1 percent) and Mbeya (3,662 tons; 10.4 percent). On the other hand, Simiyu region had the least production (39 tons; 0.1 percent). In Tanzania Zanzibar, Mjini Magharibi produced 2 tons (100.0 percent) as it was the only region engaged in cabbage production (Table 3.7).

Moreover, results show that, the average productivity of cabbage in Tanzania was 12.5 tons/ha (12.5 tons/ha in Mainland Tanzania and 1.1 tons/ha in Tanzania Zanzibar). The highest productivity was in Lindi region (39.5 tons/ha), followed by Kilimanjaro (34.5 tons/ha) and Dodoma (30.8 tons/ha). On the other hand, the lowest productivity was in Singida region (1.9 tons/ha).

**Table 3.7: Number of Household, Planted Area, Quantity Harvested and Yield of Cabbage by Region During 2019/20 Agricultural Year, Tanzania**

Region	Planted Area (ha)	Harvested Area (ha)	Quantity Harvested (tons)	Yield (tons/ha)
Dodoma	19	19	598	30.8
Arusha	272	117	1,901	16.3
Kilimanjaro	144	144	4,973	34.5
Tanga	1,383	1,167	9,714	8.3
Morogoro	120	108	1,337	12.4
Pwani	46	46	148	3.2
Dar Es Salaam	-	-	-	-
Lindi	54	54	2,127	39.5
Mtwara	81	-	-	-
Ruvuma	189	132	2,493	19.0
Iringa	280	238	2,542	10.7
Mbeya	354	173	3,662	21.1
Singida	54	31	60	1.9
Tabora	49	-	-	-
Rukwa	-	-	-	-
Kigoma	484	208	3,596	17.3
Shinyanga	115	-	-	-
Kagera	338	125	299	2.4
Mwanza	61	41	474	11.6
Mara	15	15	78	5.3
Manyara	-	-	-	-
Njombe	32	11	-	-
Katavi	-	-	-	-
Simiyu	74	19	39	2.0
Geita	317	160	1,113	6.9
Songwe	-	-	-	-
<b>Mainland Tanzania</b>	<b>4,482</b>	<b>2,809</b>	<b>35,154</b>	<b>12.5</b>
Kaskazini Unguja	-	-	-	-
Kusini Unguja	-	-	-	-
Mjini Magharibi	2	2	2	1.1
Kaskazini Pemba	-	-	-	-
Kusini Pemba	-	-	-	-
<b>Tanzania Zanzibar</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>1.1</b>
<b>Tanzania</b>	<b>4,484</b>	<b>2,811</b>	<b>35,156</b>	<b>12.5</b>

### 3.1.5.4 Watermelon

The 2019/20 NSCA results reveal that, a total of 16,707 households were engaged in growing watermelon in Tanzania during short rainy season (13,907 households were in Mainland Tanzania and 2,800 households in Tanzania Zanzibar). During long rainy season, a total of 19,271 households were involved in growing watermelon in Tanzania, of which 17,987 were in Mainland Tanzania and 1,284 in Tanzania Zanzibar.

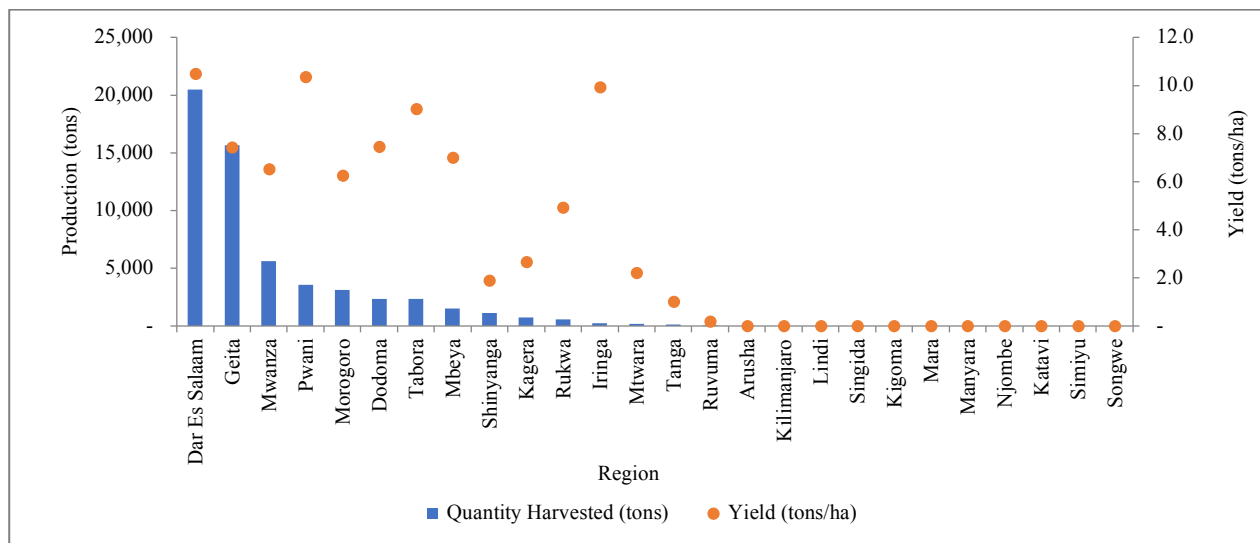
The total planted area for watermelon was 18,496 ha, of which 18,444 ha were from smallholder farmers and 52 ha from large scale farms. From the total planted area by smallholder farmers, 16,537 ha was in Mainland Tanzania and 1,907 ha in Tanzania Zanzibar. In Mainland Tanzania, Dar es Salaam region had the largest planted area with watermelon (7,036 ha; 42.5 percent), followed by Geita (2,668 ha; 16.1 percent) and Morogoro (1,032 ha; 6.2 percent), while Ruvuma region had the least planted area (14 ha; 0.1 percent). In Tanzania Zanzibar, Mjini Magharibi had the largest planted area with watermelon (898 ha; 48.1 percent), followed by Kaskazini Unguja (560 ha; 29.4 percent) and the least region was Kusini Unguja (104 ha 5.5 percent).

The total harvested area with watermelon was 8,473 ha, of which 7,779 ha was in Mainland Tanzania and 694 ha in Tanzania Zanzibar. In Mainland Tanzania, Geita region reported the largest harvested area (2,099 ha; 27.0 percent), followed by Dar es Salaam (1,948 ha; 25.0 percent) and Mwanza (857 ha; 11.0 percent) and the least harvested area was in Ruvuma (14 ha; 0.2 percent). In Tanzania Zanzibar, Kaskazini Unguja had the largest harvested area (308 ha; 44.3 percent), followed by Mjini Magharibi (244 ha; 35.1 percent), while the least harvested area was Kaskazini Pemba (30 ha; 4.4 percent). The results also reveal that, a total harvested area with onions was 45.9 percent of the total planted area by smallholder farmers.

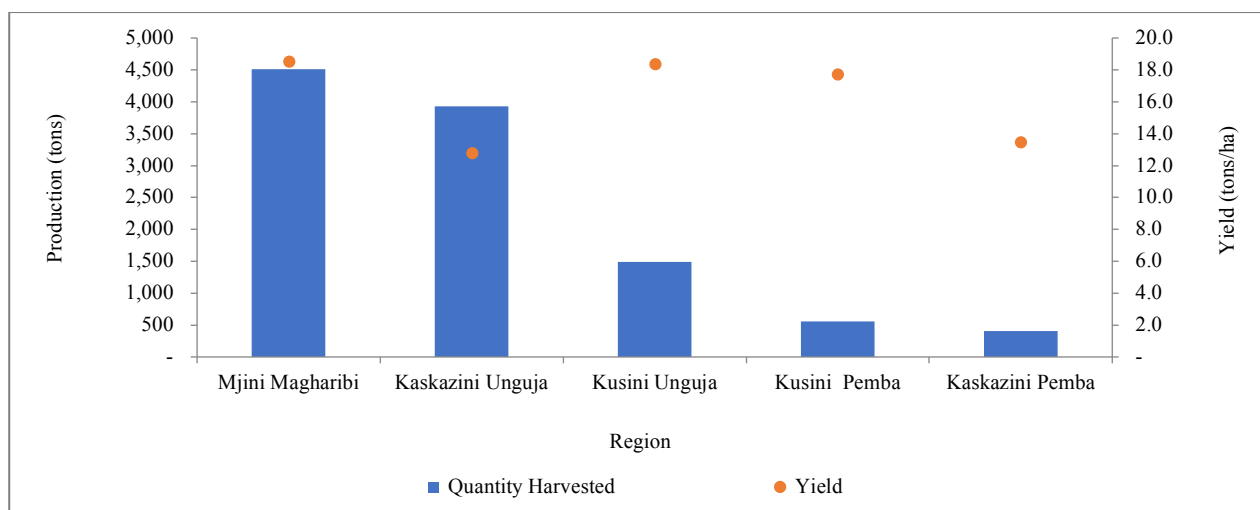
Watermelon production in Tanzania was 68,687 tons, of which 68,469 tons was produced by smallholder farmers and 218 tons was produced by large scale farms. From the production by smallholder farmers, 57,573 tons were in Mainland Tanzania and 10,897 tons in Tanzania Zanzibar. In Mainland Tanzania, Dar es Salaam region had the highest production (20,452 tons; 35.5 percent), followed by Geita (15,628 tons; 27.1 percent) and Mwanza (5,596 tons; 9.7 percent). On the other hand, Ruvuma region had the least production (3 tons; 0.01 percent). In Tanzania Zanzibar, Mjini Magharibi had the largest production of watermelon production (4,512 tons; 41.4 percent), followed by Kaskazini Unguja (3,931 tons; 36.1 percent), while the least production was in Kaskazini Pemba (409 tons; 3.8 percent) (Figure 3.41 & 3.42).

Moreover, results show that, the average productivity of watermelon in Tanzania was 8.1 tons/ha (7.4 tons/ha in Mainland Tanzania and 15.7 tons/ha in Tanzania Zanzibar). In Mainland Tanzania, the highest productivity was in Dar es Salaam region (10.5 tons/ha), followed by Pwani (10.4 tons/ha) and Iringa (9.9 tons/ha). On the other hand, the lowest productivity was in Ruvuma region (0.2 tons/ha) (Figure 3.41 & 3.42).

**Figure 3.41: Quantity Harvested and Yield of Watermelon by Region During 2019/20 Agricultural Year, Mainland Tanzania**



**Figure 3.42: Quantity Harvested and Yield of Watermelon by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



### 3.1.5.5 Okra

The 2019/20 NSCA results reveal that, a total of 30,930 households were engaged in growing okra in Tanzania during short rainy season (24,646 households were in Mainland Tanzania and 6,284 households in Tanzania Zanzibar). During long rainy season, a total of 34,967 households were involved in growing okra in Tanzania, of which 32,387 were in Mainland Tanzania and 2,580 in Tanzania Zanzibar.

The total planted area for okra was 12,108 ha, of which 12,072 ha were from smallholder farmers and 36 ha from large scale farms. From the total planted area by smallholder farmers, 10,479 ha was in Mainland Tanzania and 1,593 ha in Tanzania Zanzibar. In Mainland Tanzania, Dar es Salaam region



had the largest planted area with okra (6,759 ha; 64.5 percent), followed by Dodoma (663 ha; 6.3 percent) and Pwani (645 ha; 6.2 percent), while Mara region had the least planted area (19 ha; 0.2 percent). In Tanzania Zanzibar, Mjini Magharibi had the largest planted area with okra (913 ha; 57.3 percent), followed by Kaskazini Unguja (307 ha; 19.3 percent) and the least region was Kaskazini Pemba (8 ha 0.5 percent).

The total harvested area with okra was 10,177 ha, of which 9,067 ha was in Mainland Tanzania and 1,110 ha in Tanzania Zanzibar. In Mainland Tanzania, Dar es Salaam region reported the largest harvested area (6,443 ha; 71.1 percent), followed by Tanga (482 ha; 5.3 percent) and Pwani (344 ha; 3.8 percent) and the least harvested area was in Mara (19 ha; 0.2 percent). In Tanzania Zanzibar, Mjini Magharibi had the largest harvested area (643 ha; 58.0 percent), followed by Kaskazini Unguja (267 ha; 24.1 percent), while the least harvested area was Kusini Pemba (71 ha; 6.4 percent). The results also reveal that, a total harvested area with okra was 84.3 percent of the total planted area by smallholder farmers.

Okra production in Tanzania was 44,325 tons, out of which 44,241 tons was produced by smallholder farmers and 84 tons was produced by large scale farmers. From the production of smallholder farmers, 33,228 tons were in Mainland Tanzania and 11,004 tons in Tanzania Zanzibar. In Mainland, Dar Es Salaam region (24,041 tons; 72.3 percent) had the highest production, followed by Tanga (2,494 tons; 7.3 percent and yield 4.5 tons/ha) and Pwani (1,192 tons; 3.6 percent). On the other hand, Lindi region had the least production (38 tons; 0.1 percent). In Tanzania Zanzibar, Mjini Magharibi led with the production of 9,097 tons (82.7 percent), followed by Kaskazini Unguja with the production of 848 tons (7.7 percent), while the least production was reported in Kusini Pemba region (324 tons; 2.9 percent) (Table 3.8).

Moreover, results show that, the average productivity of okra in Tanzania was 4.3 tons/ha (3.7 tons/ha in Mainland Tanzania and 9.9 tons/ha in Tanzania Zanzibar). In Mainland Tanzania, the highest productivity was in Arusha region (5.8 tons/ha), followed by Tanga (5.2 tons/ha). On the other hand, the lowest productivity was in Singida region (0.8 tons/ha). In Tanzania Zanzibar, Mjini Magharibi had the highest yield of okra (14.1 tons/ha), whereas the lowest yield was reported in Kaskazini Unguja (3.2 tons/ha).

**Table 3.8: Planted and Harvested Area, Quantity and Yield of Okra by Region During 2019/20 Agricultural Year, Tanzania**

Region	Planted Area (ha)	Harvested Area (ha)	Quantity Harvested (tons)	Yield (tons/ha)
Dodoma	663	274	914	3.3
Arusha	159	159	913	5.8
Kilimanjaro	136	136	585	4.3
Tanga	568	482	2,494	5.2
Morogoro	243	174	787	4.5
Pwani	645	344	1,192	3.5
Dar Es Salaam	6,759	6,443	24,041	3.7
Lindi	86	27	38	1.4
Mtwara	345	285	392	1.4
Ruvuma	-	-	-	-
Iringa	227	209	632	3.0
Mbeya	60	54	96	1.8
Singida	149	125	102	0.8
Tabora	25	25	121	4.8
Rukwa	112	112	334	3.0
Kigoma	-	-	-	-
Shinyanga	67	29	83	2.8
Kagera	-	-	-	-
Mwanza	127	104	117	1.1
Mara	19	19	86	4.6
Manyara	-	-	-	-
Njombe	-	-	-	-
Katavi	-	-	-	-
Simiyu	-	-	-	-
Geita	32	32	154	4.8
Songwe	56	34	155	4.6
<b>Mainland Tanzania</b>	<b>10,479</b>	<b>9,067</b>	<b>33,238</b>	<b>3.7</b>
Kaskazini Unguja	307	267	848	3.2
Kusini Unguja	204	128	734	5.7
Mjini Magharibi	913	643	9,097	14.1
Kaskazini Pemba	8	-	-	-
Kusini Pemba	161	71	324	4.6
<b>Tanzania Zanzibar</b>	<b>1,593</b>	<b>1,110</b>	<b>11,004</b>	<b>9.9</b>
<b>Tanzania</b>	<b>12,072</b>	<b>10,177</b>	<b>44,241</b>	<b>4.3</b>

### 3.1.5.6 Banana

Banana production in Tanzania involved 1,761,560 households, out of which 1,627,578 were in Mainland Tanzania and 133,982 in Tanzania Zanzibar. The total planted area with banana was 343,766 ha, of which 343,501 ha were from smallholder farmers and 265 ha from large scale farms. From the total planted area by smallholder farmers, 313,485 ha were in Mainland Tanzania and 30,016 ha in Tanzania Zanzibar. In Mainland Tanzania, Kagera region had the largest planted area with Banana (137,186 ha; 43.8 percent), followed by Kilimanjaro (40,744 ha; 13.0 percent) and Mbeya (18,611 ha; 5.9 percent). On the other hand, Simiyu region had the least planted area (24 ha;

0.01 percent). In Tanzania Zanzibar, Kusini Pemba region led with planted area of 12,875 ha (42.9 percent), followed by Mjini Magharibi (5,685 ha; 18.9 percent); while Kusini Unguja had the least planted area (2,856 ha; 9.5 percent).

The total harvested area with banana was 241,798 ha, of which 241,638 ha were from smallholder farmers and 160 ha from large scale farms. From the total harvested area by smallholder farmers, 216,619 ha were in Mainland Tanzania and 25,019 ha in Tanzania Zanzibar. In Mainland Tanzania, Kagera region reported the largest harvested area (102,630 ha; 47.4 percent), followed by Kilimanjaro (34,705 ha; 16.0 percent) and Mbeya (12,528 ha; 5.8 percent) and the least harvested area was in Simiyu (3 ha; 0.001 percent). In Tanzania Zanzibar, Kusini Pemba had the largest harvested area (10,162 ha; 40.6 percent), followed by Mjini Magharibi (5,458 ha; 21.8 percent), while the least harvested area was Kusini Unguja (2,047 ha; 8.2 percent).

Banana production in Tanzania was 2,039,433 tons, out of which 2,037,371 tons was produced by smallholder farmers and 2,062 tons was produced by large scale farmers. Out of the total production by smallholder farmers, 1,949,287 tons were in Mainland Tanzania and 88,085 tons in Tanzania Zanzibar. In Mainland Tanzania, Kagera region had the highest production (1,131,452 tons; 52.9 percent), followed by Kilimanjaro (262,650 tons; 13.5 percent) and Mbeya (127,759 tons; 6.6 percent). On the other hand, Simiyu region had the least production (33 tons; 0.002 percent). In Tanzania Zanzibar, Mjini Magharibi led with the production of 27,069 tons (30.7 percent), followed by Kusini Pemba (26,635 tons; 30.2 percent). On the other hand, Kusini Unguja had the least production (8,646 tons; 9.8 percent) (Table 3.9).

**Table 3.9: Number of Households, Planted and Harvested Area, Quantity Harvested of Banana by Region During 2019/20 Agricultural Year, Tanzania**

Region	Planted		Number of Households	Area covered by permanent crop in Mixed Crop (ha)	Total Planted Area (Mono + Mixed Crops) (ha)	Area Harvested (ha)	Quantity harvested (tons)
	Number of Households	Area with Mono Crop (ha)					
Dodoma	13,067	1,243	7,149	301	1,544	993	7,319
Arusha	22,216	3,671	23,396	4,268	7,940	5,962	32,632
Kilimanjaro	58,947	17,688	100,215	23,056	40,744	34,705	262,650
Tanga	28,817	5,541	68,930	10,493	16,034	12,044	92,701
Morogoro	30,494	4,397	57,154	8,197	12,594	9,571	92,917
Pwani	8,628	1,909	46,902	8,506	10,415	6,726	63,722
Dar Es Salaam	94,863	5,399	33,147	2,574	7,973	4,220	28,758
Lindi	8,028	7,181	3,838	1,448	8,629	2,449	19,103
Mtwara	6,062	602	16,624	1,196	1,798	1,650	10,204
Ruvuma	13,185	2,565	45,752	3,932	6,497	3,630	32,606
Iringa	1,909	230	46,295	1,344	1,574	439	6,654
Mbeya	56,032	9,599	74,826	9,012	18,611	12,528	127,759
Singida	14,292	3,176	9,901	181	3,357	184	1,343
Tabora	15,950	645	7,224	115	761	52	436
Rukwa	1,220	270	1,125	132	402	402	1,893
Kigoma	22,382	4,859	100,557	8,966	13,825	11,518	82,912
Shinyanga	7,504	180	1,206	30	210	80	607
Kagera	125,734	50,356	319,284	86,830	137,186	102,630	1,031,452
Mwanza	34,490	2,921	15,678	1,026	3,947	675	12,047
Mara	6,598	1,892	8,504	1,785	3,677	2,350	16,875
Manyara	6,440	524	3,095	218	741	361	2,760
Njombe	8,762	1,790	5,913	135	1,926	977	5,729
Katavi	507	145	252	138	283	90	924
Simiyu	870	24	-	-	24	3	33
Geita	11,959	9,888	19,671	661	10,550	597	3,278
Songwe	6,345	1,107	5,639	1,134	2,242	1,786	11,973
<b>Mainland Tanzania</b>	<b>605,301</b>	<b>137,805</b>	<b>1,022,277</b>	<b>175,680</b>	<b>313,485</b>	<b>216,619</b>	<b>1,949,287</b>
Kaskazini Unguja	13,191	2,108	6,698	919	3,028	2,699	9,504
Kusini Unguja	6,582	1,708	4,689	1,149	2,856	2,047	8,646
Mjini Magharibi	8,814	2,614	15,824	3,071	5,685	5,458	27,069
Kaskazini Pemba	15,370	3,660	7,365	1,913	5,573	4,653	16,230
Kusini Pemba	15,093	3,851	40,356	9,024	12,875	10,162	26,635
<b>Tanzania Zanzibar</b>	<b>59,050</b>	<b>13,941</b>	<b>74,932</b>	<b>16,075</b>	<b>30,016</b>	<b>25,019</b>	<b>88,085</b>
<b>Tanzania</b>	<b>664,351</b>	<b>151,745</b>	<b>1,097,209</b>	<b>191,756</b>	<b>343,501</b>	<b>241,638</b>	<b>2,037,371</b>

### **3.1.5.7 Mango**

Mango production in Tanzania involved 658,965 households, of which 631,242 were in Mainland Tanzania and 27,723 in Tanzania Zanzibar. The total planted area with mango was 96,560 ha, of which 95,363 ha were from smallholder farmers and 1,197 ha from large scale farms. Out of the total planted area by smallholder farmers, 91,954 ha were in Mainland Tanzania and 3,409 ha in Tanzania Zanzibar.

In Mainland Tanzania, Ruvuma region had the largest planted area (16,418 ha; 17.9 percent) with Mango, followed by Geita (16,412 ha; 17.8 percent) and Pwani (13,983 ha; 15.2 percent). On the other hand, Manyara region had the least planted area (15 ha; 0.02 percent). In Tanzania Zanzibar, Kusini Pemba led with the planted area of 1,242 ha (36.4 percent), followed by Kusini Unguja (765 ha (22.4 percent)); while Kaskazini Pemba region had the least planted (51 ha; 1.5 percent).

The total harvested area with mango was 32,580 ha, of which 31,845 ha were from smallholder farmers and 735 ha from large scale farms. Out of the total planted area by smallholder farmers, 30,688 ha were in Mainland Tanzania and 1,157 ha in Tanzania Zanzibar. In Mainland Tanzania, Ruvuma region reported the largest harvested area (15,955 ha; 52.0 percent), followed by Dar es Salaam (3,308 ha; 10.8 percent) and Pwani (2,923 ha; 9.5 percent) and the least harvested area was in Songwe (0.4 ha; 0.01 percent). In Tanzania Zanzibar, Kusini Unguja had the largest harvested area (427 ha; 36.9 percent), followed by Mjini Magharibi (5258 ha; 22.2 percent), while the least harvested area was Kaskazini Pemba (26 ha; 2.6 percent).

Mango production in Tanzania was 526,518 tons, out of which 525,142 tons was produced by smallholder farmers and 1,376 tons was produced by large scale farms. Out of the total production by smallholder farmers, 507,829 tons were in Mainland Tanzania and 17,313 tons in Tanzania Zanzibar. In Mainland Tanzania, Ruvuma region (283,879 tons; 55.9 percent) had the highest production, followed by Dar es Salaam (58,671 tons; 11.6 percent) and Pwani (47,949 tons; 9.4 percent). On the other hand, Songwe region had the least production of mango (6 tons; 0.001 percent).

In Tanzania Zanzibar, Kusini Unguja led with the production of 6,754 tons (39.0 percent), followed by Mjini Magharibi (4,387 tons; 25.3 percent), while Kaskazini Pemba had least production of 466 tons (2.7 percent) (Table 3.10).

**Table 3.10: Number of Households, Planted and Harvested Area, Quantity Harvested of Mango by Region During 2019/20 Agricultural Year, Tanzania**

Region	Mango					
	Number of Households	Area of Plants in MONO CROP (ha)	Number of Households	Area covered by permanent crop in MIXED CROP (ha)	Area Harvested (ha)	Quantity harvested (tons)
Dodoma	2,890	1,161	12,390	364	342	2,068
Arusha	3,983	66	4,693	93	68	1,030
Kilimanjaro	2,569	84	2,920	13	18	326
Tanga	6,978	1,497	23,277	3,794	2,027	28,380
Morogoro	17,973	490	44,016	2,997	371	6,123
Pwani	3,777	3,978	43,525	10,005	2,923	47,949
Dar Es Salaam	46,495	4,699	22,174	3,510	3,308	58,671
Lindi	5,935	6,280	1,310	252	494	7,749
Mtwara	1,993	144	10,321	736	558	9,325
Ruvuma	667	59	12,669	16,359	15,955	283,879
Iringa	2,128	6	18,785	76	20	368
Mbeya	12,217	8,252	25,757	1,429	1,314	15,882
Singida	21,542	1,058	19,898	1,119	46	173
Tabora	13,790	868	11,700	685	712	15,579
Rukwa	960	381	-	-	91	1,627
Kigoma	3,863	76	29,012	311	288	5,129
Shinyanga	15,331	844	1,525	91	511	2,340
Kagera	11,157	50	62,685	147	28	495
Mwanza	46,506	2,735	19,690	250	817	9,504
Mara	942	75	2,068	172	187	2,945
Manyara	1,027	15	-	-	-	-
Njombe	1,208	107	425	0	11	204
Katavi	78	16	260	55	16	556
Simiyu	885	38	214	86	10	183
Geita	9,555	15,862	20,780	550	572	7,336
Songwe	4,252	16	2,447	4	0	6
<b>Mainland Tanzania</b>	<b>238,701</b>	<b>48,859</b>	<b>392,541</b>	<b>43,096</b>	<b>30,688</b>	<b>507,829</b>
Kaskazini Unguja	952	316	3,980	432	244	2,599
Kusini Unguja	494	76	3,774	689	427	6,754
Mjini Magharibi	48	2	6,434	601	258	4,387
Kaskazini Pemba	119	5	491	47	26	466
Kusini Pemba	858	180	10,573	1,062	202	3,108
<b>Tanzania Zanzibar</b>	<b>2,471</b>	<b>579</b>	<b>25,252</b>	<b>2,830</b>	<b>1,157</b>	<b>17,313</b>
<b>Tanzania</b>	<b>241,172</b>	<b>49,438</b>	<b>417,793</b>	<b>45,926</b>	<b>31,845</b>	<b>525,142</b>

### 3.1.5.8 Orange

Orange production in Tanzania involved 241,205 households out of which 228,406 households were in Mainland Tanzania and 12,799 in Tanzania Zanzibar. The total planted area with orange was 48,173 ha, of which 47,807 ha were from smallholder farmers and 366 ha from large scale farms. Out of the total planted area by smallholder farmers, 46,454 ha were in Mainland Tanzania and 1,353 ha in Tanzania Zanzibar. In Mainland Tanzania, Tanga region had the largest planted area with Orange (23,827 ha; 51.3 percent), followed by Pwani (8,765 ha; 18.9 percent) and Lindi (4,540 ha; 9.8 percent). On the other hand, Rukwa region had the least planted area (0.4 ha; 0.001 percent). In Tanzania Zanzibar, Kusini Pemba led with the planted area of 411 ha (30.4 percent), followed by Mjini Magharibi with the planted area of 406 ha (30.0 percent). Kaskazini Pemba had the least planted area with orange (3 ha; 0.2 percent).

The total harvested area with orange was 25,697 ha, of which 25,397 ha were from smallholder farmers and 300 ha from large scale farms. Out of the total harvested area by smallholder farmers, 24,627 ha were in Mainland Tanzania and 770 ha in Tanzania Zanzibar. In Mainland Tanzania, Tanga region reported the largest harvested area (16,289 ha; 66.1 percent), followed by Pwani (3,703 ha; 15.0 percent) and Mtwara (1,008 ha; 4.1 percent) and the least harvested area was in Shinyanga (0.4 ha; 0.02 percent). In Tanzania Zanzibar, Mjini Magharibi had the largest harvested area (355 ha; 46.1 percent), followed by Kusini Unguja (260 ha; 33.7 percent), while the least harvested area was Kaskazini Unguja (63 ha; 8.2 percent).

Orange production in Tanzania was 162,691 tons, out of which 159,727 tons was produced by smallholder farmers and 2,964 tons was produced by large scale farms. Out of the total production by smallholder farmers, 151,769 tons were in Mainland Tanzania and 7,958 tons in Tanzania Zanzibar. In Mainland Tanzania, Tanga region had the highest production (117,582 tons; 77.5 percent), followed by Pwani (17,332 tons; 11.4 percent) and Mtwara (8,066 tons; 5.3 percent). On the other hand, Manyara region had the least production (4 tons; 0.002 percent). In Tanzania Zanzibar, Mjini Magharibi led with the production of 3,614 tons (45.4 percent), followed by Kusini Unguja (2,796 tons; 37.2 percent), while Kaskazini Unguja had the least production (639 tons; 8.0 percent) (Table 3.11).

**Table 3.11: Number of Households, Planted and Harvested Area, Quantity Harvested of Oranges by Region During 2019/20 Agricultural Year, Tanzania**

Region	Planted		Number of Households	Area covered by permanent crop in Mixed Crop (ha)	Total Planted Area (Mono + Mixed Crops) (ha)	Area Harvested (ha)	Quantity harvested (tons)
	Number of Households	Area with Mono Crop (ha)					
Dodoma	575	1	1,250	2	2	1	23
Arusha	1,398	2	3,170	70	72	30	81
Kilimanjaro	634	-	1,410	519	519	82	508
Tanga	11,320	13,182	20,036	10,645	23,827	16,289	117,582
Morogoro	2,894	153	9,888	1,203	1,356	1,000	1,623
Pwani	3,564	1,227	24,332	7,538	8,765	3,703	17,332
Dar Es Salaam	11,913	892	7,719	387	1,279	262	795
Lindi	3,102	3,730	1,966	811	4,540	567	1,087
Mtwara	2,421	218	17,231	1,208	1,426	1,008	8,066
Ruvuma	-	-	1,922	152	152	121	242
Iringa	1,971	4	2,631	4	8	2	42
Mbeya	2,538	19	8,345	1,176	1,195	912	1,092
Singida	1,215	1	3,829	2	3	*	6
Tabora	5,150	147	2,802	8	155	40	79
Rukwa	243	0	-	-	0	-	-
Kigoma	903	1	9,118	389	390	3	77
Shinyanga	2,629	165	469	0	165	0	20
Kagera	3,085	38	8,579	6	45	1	46
Mwanza	24,917	1,030	10,885	130	1,159	489	2,436
Mara	375	49	1,120	95	144	74	408
Manyara	93	4	164	3	7	4	4
Njombe	287	2	495	23	25	2	99
Katavi	121	12	-	-	12	-	-
Simiyu	40	-	-	-	-	-	-
Geita	2,888	1,168	5,709	38	1,205	35	123
Songwe	1,060	1	-	-	1	-	-
<b>Mainland Tanzania</b>	<b>85,336</b>	<b>22,046</b>	<b>143,070</b>	<b>24,408</b>	<b>46,454</b>	<b>24,627</b>	<b>151,769</b>
Kaskazini Unguja	539	91	1,271	58	149	63	639
Kusini Unguja	560	66	2,280	318	384	260	2,799
Mjini Magharibi	-	-	4,446	406	406	355	3,614
Kaskazini Pemba	-	-	78	3	3	-	-
Kusini Pemba	-	-	3,625	411	411	92	907
<b>Tanzania Zanzibar</b>	<b>1,099</b>	<b>156</b>	<b>11,700</b>	<b>1,197</b>	<b>1,353</b>	<b>770</b>	<b>7,958</b>
<b>Tanzania</b>	<b>86,435</b>	<b>22,202</b>	<b>154,770</b>	<b>25,605</b>	<b>47,808</b>	<b>25,397</b>	<b>159,728</b>



### 3.1.5.9 Pineapple

Pineapple production in Tanzania involved 53,939 households out of which 46,463 households were in Mainland Tanzania and 7,476 in Tanzania Zanzibar. The total planted area with pineapple was 24,601 ha, of which 24,033 ha were from smallholder farmers and 568 ha from large scale farms. Out of the total planted area by smallholder farmers, 22,976 ha were in Mainland Tanzania and 1,057 ha in Tanzania Zanzibar.

In Mainland Tanzania, Pwani region had the largest planted area with pineapple (13,103 ha; 57.0 percent), followed by Dar es Salaam (4,553 ha; 19.8 percent) and Kagera (1,087 ha; 4.7 percent). On the other hand, Iringa region had the least planted area of 0.4 ha (0.002 percent). In Tanzania Zanzibar, Kusini Pemba led with the planted area of 338 ha (32.0 percent), followed by Kaskazini Unguja (274 ha; 25.9 percent), while Kusini Unguja had the least planted area with pineapple (70 ha; 6.6 percent).

The total harvested area with pineapple was 11,631 ha, of which 11,223 ha were from smallholder farmers and 408 ha from large scale farms. Out of the total harvested area by smallholder farmers, 10,751 ha were in Mainland Tanzania and 472 ha in Tanzania Zanzibar. In Mainland Tanzania, Pwani region reported the largest harvested area (8,211 ha; 76.4 percent), followed by Dar es Salaam (1,432 ha; 13.3 percent) and Tanga (212 ha; 2.0 percent), while the least harvested area was in Iringa (0.4 ha; 0.04 percent). In Tanzania Zanzibar, Mjini Magharibi had the largest harvested area (189 ha; 39.9 percent), followed by Kusini Pemba (126 ha; 26.6 percent), while the least harvested area was Kaskazini Pemba (18 ha; 3.9 percent).

Pineapple production in Tanzania was 114,263 tons, out of which 111,299 tons was produced by smallholder farmers and 2,964 tons was produced by large scale farms. Out of the total production by smallholder farmers, 95,710 tons were in Mainland Tanzania and 15,589 tons in Tanzania Zanzibar. In Mainland Tanzania, Pwani region had the highest production (90,687 tons; 94.8 percent), followed by Dar es Salaam (2,831 tons; 3.0 percent) and Geita (568 tons; 0.6 percent). On the other hand, Iringa region had a least production (4 tons; 0.004 percent). In Tanzania Zanzibar, Mjini Magharibi led with the production of 6,177 tons (39.6 percent), followed by Kaskazini Unguja (3,827 tons; 24.6 percent), while Kusini Unguja had the least production (780 tons; 5.0 percent) (Table 3.12).

**Table 3.12: Agricultural Households, Planted and Harvested Area, Quantity Harvested of Pineapple by Region During 2019/20 Agricultural Year, Tanzania**

Region	Planted		Number of Households	Area covered by permanent crop in Mixed Crop (ha)	Total Planted Area (Mono + Mixed Crops) (ha)	Area Harvested (ha)	Quantity harvested (tons)
	Number of Households	Area with Mono Crop (ha)					
Dodoma	210	21	-	-	21	-	-
Arusha	-	-	-	-	-	-	-
Kilimanjaro	-	-	-	-	-	-	-
Tanga	-	-	1,639	346	346	212	246
Morogoro	964	385	1,581	199	584	138	114
Pwani	5,813	2,972	13,270	10,131	13,103	8,211	90,687
Dar Es Salaam	2,895	3,121	708	1,432	4,553	1,432	2,831
Lindi	786	968	-	-	968	35	35
Mtwara	853	172	1,324	229	401	210	271
Ruvuma	515	333	802	74	407	27	88
Iringa	-	-	472	0	0	0	4
Mbeya	253	2	253	2	3	-	-
Singida	-	-	-	-	-	-	-
Tabora	-	-	-	-	-	-	-
Rukwa	-	-	-	-	-	-	-
Kigoma	-	-	2,884	37	37	2	119
Shinyanga	-	-	-	-	-	-	-
Kagera	2,594	964	5,249	124	1,087	113	283
Mwanza	1,621	633	-	-	633	94	465
Mara	-	-	-	-	-	-	-
Manyara	-	-	-	-	-	-	-
Njombe	407	41	-	-	41	-	-
Katavi	-	-	-	-	-	-	-
Simiyu	-	-	-	-	-	-	-
Geita	1,143	699	227	92	790	276	568
Songwe	-	-	-	-	-	-	-
<b>Mainland Tanzania</b>	<b>18,054</b>	<b>10,310</b>	<b>28,409</b>	<b>12,666</b>	<b>22,976</b>	<b>10,751</b>	<b>95,710</b>
Kaskazini Unguja	747	134	565	140	274	115	3,827
Kusini Unguja	125	20	434	50	70	25	780
Mjini Magharibi	-	-	2,292	226	226	189	6,177
Kaskazini Pemba	272	110	179	40	150	18	1,157
Kusini Pemba	302	29	2,560	310	338	126	3,648
<b>Tanzania Zanzibar</b>	<b>1,446</b>	<b>293</b>	<b>6,030</b>	<b>765</b>	<b>1,057</b>	<b>472</b>	<b>15,589</b>
<b>Tanzania</b>	<b>19,500</b>	<b>10,603</b>	<b>34,439</b>	<b>13,431</b>	<b>24,034</b>	<b>11,223</b>	<b>111,299</b>

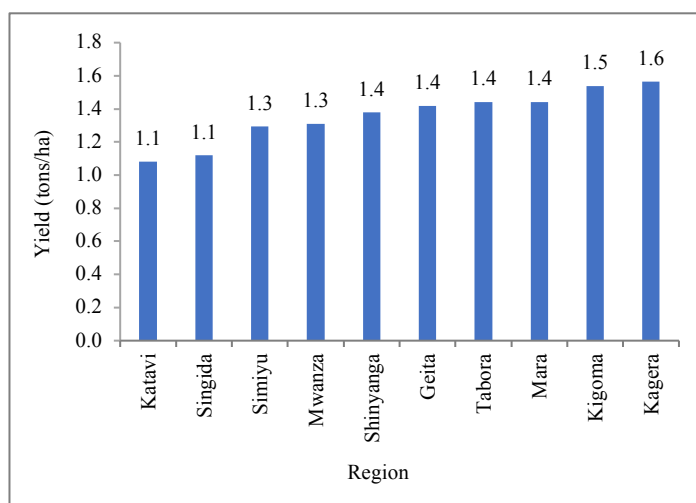
### 3.1.6 Cash Crops

This section presents the results of major annual and permanent cash crops. Annual cash crops were cotton and tobacco while permanent were coffee, cashew nuts, coconuts, sisal, tea, clove and sugarcane. Moreover, cash crops results presented hereunder are number of agricultural households, planted area, harvested area, quantity harvested, yield and holding size.

#### 3.1.6.1 Cotton

Cotton is amongst the most popular and major cash crops in Tanzania and it was grown in Mainland Tanzania only. A total of 120,918 households were engaged in growing cotton in Tanzania during short rainy season and 152,190 households during long rainy season. The total area planted with cotton was 314,601 ha out of which, 313,370 ha was from smallholder farmers and 1,231 ha from large scale farms. Furthermore, 119,310 ha were planted during the short rainy season (37.9

**Figure 3.43: Productivity of Cotton by Major Producing Region During 2019/20 Agricultural Year, Mainland Tanzania**



percent) and 195,291 ha in the long rainy season (62.1 percent). From smallholder farmers, Simiyu region had the largest planted area with cotton (152,979 ha; 48.8 percent), followed by Shinyanga (43,601 ha; 13.9 percent) and Geita (32,185 ha; 10.3 percent). Kigoma region had the least planted area (1,711 ha; 0.5 percent).

A total of 246,534 ha (78.7 percent of the total planted area with cotton) was harvested. Simiyu Region with 126,518 ha (51.3 percent) had the largest area of cotton harvested, followed by Shinyanga (31,856 ha; 12.9 percent) and Tabora (26,391 ha; 10.7 percent), while the least harvested area (1,473 ha; 0.6 percent) was in Kigoma region.

The total production for cotton was 331,524 tons (330,845 tons from smallholder farmers and 679 tons from large scale farms). Simiyu region had the highest production (163,729 tons; 49.5 percent) of cotton, followed by Shinyanga (43,914 tons; 13.3 percent) and Tabora (37,993 tons; 11.5 percent). The lowest production was recorded in Kigoma (2,263; 0.7 Percent).

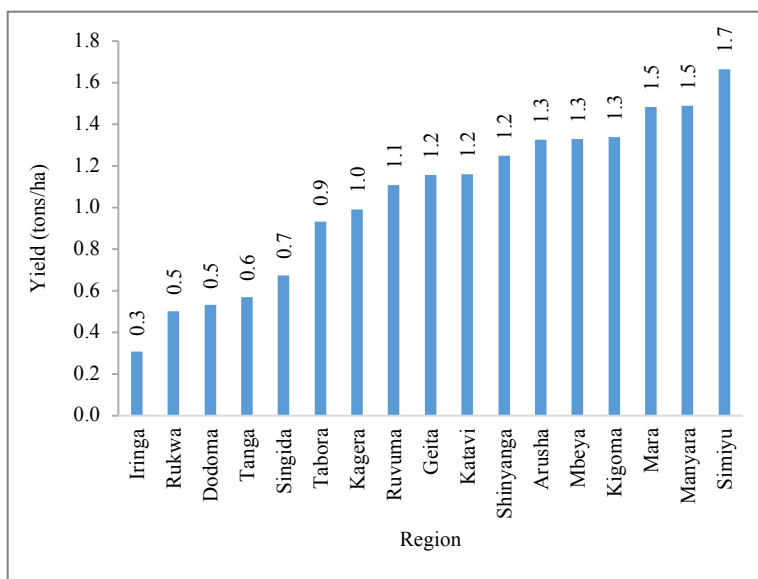
Moreover, results show that, the average productivity of cotton in Tanzania was 1.3 tons/ha. The highest productivity was in Kagera region (1.6 tons/ha), followed by Kigoma (1.5 tons/ha). On the other hand, the lowest productivity was in Singida and Katavi regions (1.1 tons/ha each) (Figure 3.43).

### 3.1.6.2 Tobacco

Tobacco was planted only in 17 regions of Mainland in both short and long rainy seasons. The total area planted with tobacco was 54,685 ha (54,524 ha were from smallholder farmers and 161 ha from large scale farms). Out of the total planted area by smallholder farmers, 5,958 ha were planted during the short rainy season and 48,566 ha in the long rainy season. From the smallholder farmers, Tabora region (24,371 ha; 44.7 percent) had the largest area planted with tobacco, followed by Mbeya (12,828 ha; 23.5 percent) and Shinyanga (4,527 ha; 8.3 percent), while Rukwa region had the least planted area (5 ha; 0.01 percent).

A total of 52,794 ha which accounted for 96.8 percent of the total planted area with tobacco was harvested. Tabora region with 23,697 ha (44.9 percent) had the largest area of tobacco harvested, followed by Mbeya (12,828 ha; 24.3 percent) and Shinyanga (4,486 ha; 8.5 percent), whereas Rukwa region had the least harvested area (5 ha; 0.01 percent).

**Figure 3.44: Productivity of Tobacco by Major Producing Regions During 2019/20 Agricultural Year, Mainland Tanzania**



The total production for tobacco was 58,257 tons (58,104 tons from smallholder farmers and 153 tons from large scale farms). From the total production by smallholder farmers, Tabora Region had the highest production (22,403 tons; 38.6 percent) of tobacco, followed by Mbeya (16,635 tons; 28.6 percent) and Shinyanga (5,603 tons; 9.6 percent), while the lowest production was recorded in Rukwa (3 tons; 0.01 Percent).

Further results reveal that, the average yield of tobacco in Tanzania was 1.1 tons/ha. Simiyu region had the largest yield (1.7 tons/ha), followed by Mara and Kigoma (1.5 tons/ha each), while the least yield was in Iringa region (0.3 tons/ha) (Figure 3.44).

### 3.1.6.3 Coffee

Coffee is one of the major cash crops grown in Tanzania and was grown in 15 regions of Mainland Tanzania. There were 465,216 smallholder households and 42 large scale farms involved in production of coffee. The total area planted with coffee was 159,280 ha (151,408 ha from smallholder farmers and 7,872 ha from large scale farms) whereby 125,289 ha were harvested (117,535 ha from smallholder farmers and 7,754 ha from large scale farms). The total production of coffee was 116,568 tons, of which 75,323 tons from smallholder farmers and 41,245 tons from large scale farms.

The Census results further reveal that, from smallholder farmers, Kagera region had the largest area (78,307 ha; 51.7 percent) planted with coffee with production of 44,915 tons (59.6 percent of the smallholder farmers production) from 64,473 ha harvested, followed by Ruvuma with planted area of 35,893 ha (23.7 percent) and produced 11,355 tons (15.5 percent), and Songwe with planted 13,110 ha (8.7 percent) and production of 7,176 tons (9.5 percent) (Table 3.13).

**Table 3.13: Number of Households, Area Planted, Area Harvested, Production and Yield of Coffee from Smallholder Farmers by Region, 2019/20 Agricultural Year, Tanzania**

Region	Number of households	Area Planted (ha)	Area harvested (ha)	Quantity harvested (tons)
Arusha	3,399	839	274	85
Kilimanjaro	35,253	5,673	3,103	1,003
Tanga	8,630	2,312	2,029	680
Morogoro	2,618	1,244	469	47
Dar Es Salaam	6,342	1,412	969	1,192
Ruvuma	61,953	35,893	28,025	11,421
Iringa	915	5	-	-
Mbeya	22,164	7,671	5,598	6,995
Kigoma	20,195	3,010	1,927	1,306
Kagera	273,252	78,307	64,465	44,915
Mwanza	416	321	52	26
Mara	2,790	969	353	252
Manyara	93	38	38	9
Njombe	1,190	461	387	195
Katavi	281	143	107	21
Songwe	25,583	13,110	9,738	7,176
<b>Mainland Tanzania</b>	<b>465,074</b>	<b>151,408</b>	<b>117,534</b>	<b>75,323</b>

### 3.1.6.4 Sugarcane

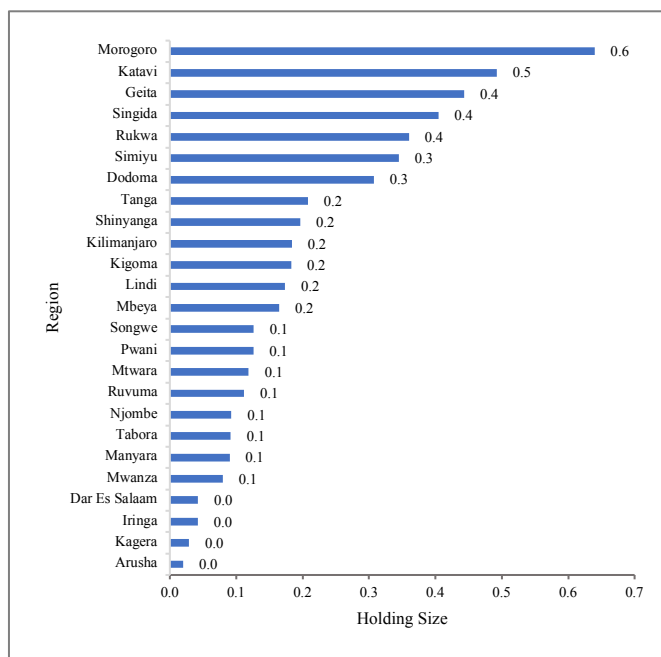
Census results show that, there were 125,903 households engaged in growing Sugarcane in the country whereby Mainland Tanzania had 123,146 (97.8 percent) and Tanzania Zanzibar had 2,757 (2.2 percent). The total area planted with sugarcane was 29,804 ha, out of which Mainland Tanzania had 27,167 ha; 91.2 percent (23,829 ha from smallholder farmers and 3,338 ha from large scale farms). Tanzania Zanzibar had 2,637 ha; 8.8 percent (1,008 ha from smallholder farmers and 1,629 ha from large scale farms). The total area harvested was 6,938 ha, out of which 4,361 ha were from smallholder farmers and 2,577 ha from large scale farms.

The total sugarcane production in Tanzania was 265,482 tons with 193,763 tons from Mainland Tanzania (98,840 tons from smallholder farmers; 94,923 from large scale farms) and 71,719 tons from Tanzania Zanzibar, of which 12,313 tons were from smallholder farmers and 59,406 tons from large scale farms.

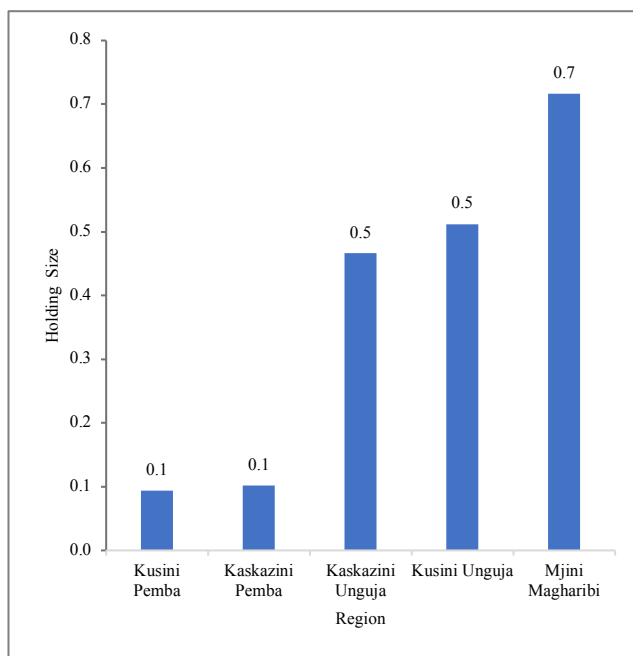
From smallholder farmers, the largest average planted area per household (0.6 ha) was in Morogoro region, followed by Katavi (0.5 ha), Rukwa and Singida both recording an average of (0.4 ha). Furthermore, in

Mainland Tanzania, Morogoro region had the largest Sugarcane planted area (8,069 ha; 33.9 percent) with a production of 19,986 tons (20.2 percent) from 681 ha harvested. Focusing on production, it was followed by Mwanza with a planted area of 463 ha (1.9 percent) and produced 14,440 tons (14.6 percent) from 252 ha harvested, and Tanga region with a planted area of 2,738 ha (11.5 percent) and

**Figure 3.45: Average Planted Area with Sugarcane per Household by Region During 2019/20 Agricultural Year, Mainland Tanzania**



**Figure 3.46: Average Planted Area with Sugarcane per Household by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



produced 13,957 tons (14.1 percent) from a harvested area of 714 ha. In Tanzania Zanzibar, Kaskazini Unguja region had the largest Sugarcane planted area (381 ha; 37.8 percent) with a production of 1,963 tons (15.9 percent) from 104 ha harvested. Focusing on production, it was followed by Mjini Magharibi with a planted area of 248 ha (24.6 percent) and produced 4,812 tons (39.1 percent) from 244 ha harvested and Kusini Unguja region with a planted area of 279 ha (27.7 percent) and produced 4,569 tons (37.1 percent) from a harvested area of 243 ha (Figure 3.45 & 3.46).

### **3.1.6.5 Cashewnuts**

The 2019/20 Census results show that, there were 667,437 households engaged in growing cashewnuts in the country whereby Mainland Tanzania had 666,938 households and Tanzania Zanzibar had 499 households. The total area planted with cashewnuts was 811,733 ha out of which Mainland Tanzania had 811,673 ha (808,083 ha from smallholder farmers and 3,590 ha from large scale farms) and Tanzania Zanzibar had 59 ha from smallholder farmers and none came from large scale farms.

The total cashewnuts production in Tanzania was 391,119 tons out of which Mainland Tanzania had 391,110 tons (390,403 tons from smallholder farmers; 707 tons from large scale farms) and Tanzania Zanzibar had 9 tons from smallholder farmers and none came from large scale farms. The total area harvested from smallholder farmers was 560,728 ha out of which, 560,702 ha was in Mainland Tanzania and 26 ha in Tanzania Zanzibar.

In Mainland Tanzania, from smallholder farmers, Mtwara Region had the largest cashewnuts planted area (349,170 ha; 43.2 percent) and produced 201,411 tons (51.6 percent) from 294,919 ha harvested. It was followed by Lindi with a planted area of 243,609 ha (30.1 percent) and produced 106,686 tons (27.3 percent) from 150,018 ha harvested and Ruvuma region with a planted area of 98,497 ha (12.2 percent) and produced 38,877 tons (10.0 percent) from a harvested area of 61,101 ha (10.9 percent). The results presented exclude regions that did not plant cashewnut (Table 3.14).

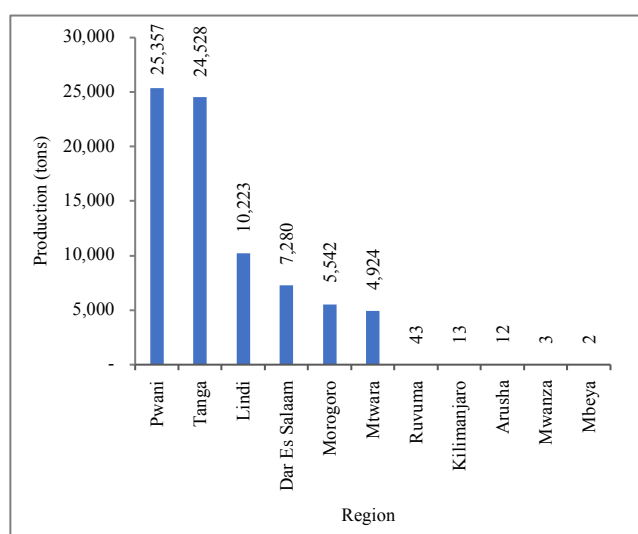
**Table 3.14: Number of Households, Area Planted and Harvested and Production of Cashewnuts by Region, 2019/20 Agricultural Year, Tanzania**

Region	Number of households	Area Planted(ha)	Area harvested (ha)	Quantity harvested (tons)
Dodoma	7,181	8,174	-	-
Tanga	21,152	14,311	3,654	3,157
Morogoro	2,454	754	-	-
Pwani	70,697	61,815	39,074	30,171
Dar Es Salaam	32,459	18,658	11,526	9,858
Lindi	168,877	243,609	150,018	106,686
Mtwara	302,870	349,170	294,919	201,411
Ruvuma	48,328	98,497	61,101	38,877
Iringa	204	356	286	207
Mbeya	1,725	1,119	-	-
Singida	5,133	4,826	-	-
Tabora	169	17	-	-
Kigoma	1,947	2,779	-	-
Mwanza	395	2	-	-
Njombe	1,863	2,193	124	37
Katavi	924	897	-	-
Geita	279	338	-	-
Songwe	281	569	-	-
<b>Mainland Tanzania</b>	<b>666,938</b>	<b>808,083</b>	<b>560,702</b>	<b>390,404</b>
Kaskazini Unguja	108	-	-	-
Kusini Pemba	391	59	26	9
<b>Tanzania Zanzibar</b>	<b>499</b>	<b>59</b>	<b>26</b>	<b>9</b>
<b>Tanzania</b>	<b>667,437</b>	<b>808,143</b>	<b>560,728</b>	<b>390,413</b>

### 3.1.6.6 Coconut

Coconut is one of the popular oily cash crops grown in Mainland Tanzania and Tanzania Zanzibar. There were 261,033 households (220,398 households in Mainland Tanzania and 40,635 in Tanzania Zanzibar) engaged in production of coconut. The total area planted with coconut was 83,409 ha, of which Mainland Tanzania had 75,730 ha (72,626 ha from smallholder farmers and 3,104 ha from large scale farms) and Tanzania Zanzibar had 7,679 ha (7,607 ha from smallholder farmers and 72 ha from large scale farms).

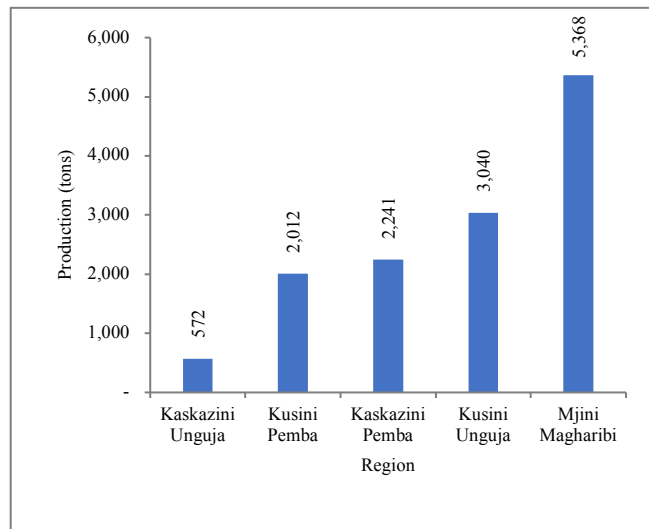
**Figure 3.47: Production of Coconut by Region During 2019/20 Agricultural Year, Mainland Tanzania**





A total production of 91,339 tons was harvested out of which, Mainland Tanzania had 78,063 tons (77,926 tons from smallholder farmers; 137 tons from large scale farms) and Tanzania Zanzibar had 13,276 tons (13,233 tons from smallholder farmers; 43 tons from large scale farms). However, from smallholder farmers a total of 49,221 ha was harvested which accounted for 61.3 percent of the planted area.

**Figure 3.48: Production of Coconut by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



The Census results further show that, from smallholder farmers, Tanga region had the largest area planted with coconut (21,085 ha; 29.0 percent) with a production of 24,528 tons (31.5 percent) from 15,329 ha harvested, followed by Pwani with planted area of 18,885 ha (23.5 percent) and produced 25,357 tons (32.5 percent), and Lindi region with planted area of 15,150 ha (18.9 percent) and production of 10,223 tons (13.1 percent). In Tanzania Zanzibar, Mjini Magharibi region had the largest coconut planted area (2,385 ha; 31.4 percent) with a production of 5,368 tons (40.6 percent) from 2,209 ha harvested. Focusing on production, it was followed by Kusini Unguja with a planted area of 1,236 ha (16.3 percent) and produced 3,040 tons (23.0 percent) from 714 ha harvested (Figure 3.47 & 3.48).

### 3.1.6.7 Sisal

Sisal was grown in only six regions of Mainland Tanzania and none was grown in Tanzania Zanzibar. A total of 10,302 households were engaged in growing sisal. The total area of 72,176 ha was planted with sisal, out of which 8,958 ha were from smallholder farmers and 63,218 ha from large scale farms. A total area of 44,517 ha was harvested, out of which 6,561 ha from smallholder farmers and 37,956 ha from large scale farms, resulted to a total production of 613,457 tons (33,223 tons smallholder farmers and 580,234 tons from large scale farms). Further results show that, from smallholder farmers, Tanga region had the highest production of sisal (33,165 tons; 99.8 percent) (Table 3.15).

**Table 3.15: Number of Households, Area Planted and Harvested and Production of Sisal by Region, 2019/20 Agricultural Year, Tanzania**

Region	Number of households	Area Planted (ha)	Area harvested (ha)	Quantity harvested (tons)
Arusha	1,174	163	5	3
Tanga	3,658	8,308	6,517	33,165
Morogoro	188	76	-	-
Singida	294	30	-	-
Kigoma	522	157	-	-
Kagera	3,255	104	39	51
Simiyu	253	102	-	-
Geita	958	18	-	3
<b>Mainland Tanzania</b>	<b>10,302</b>	<b>8,958</b>	<b>6,561</b>	<b>33,222</b>
<b>Tanzania Zanzibar</b>	-	-	-	-
<b>Tanzania</b>	<b>10,302</b>	<b>8,958</b>	<b>6,561</b>	<b>33,222</b>

### 3.1.6.8 Tea

Census results reveal that, there were 18,661 households engaged in growing Tea in the country and all households were from Mainland Tanzania, none from Tanzania Zanzibar. Tea was grown in only 6 regions of Mainland Tanzania. The total area planted with tea was 15,119 ha of which, 7,246 ha was from smallholder farmers and 7,873 from large scale farms. From smallholder farmers, Tanga region had the largest area planted (3,274 ha; 45.2 percent) with tea, followed by Mbeya (1,809 ha; 25.0 percent) and Iringa (913 ha; 12.6 percent). The total area harvested with tea was 13,375 ha of which, 5,621 ha was from smallholder farmers and 7,754 from large scale farms. A total of 5,621 ha harvested from smallholder farmers accounted for 77.6 percent of the total planted area with tea. Tanga region had the largest area of tea harvested 2,269 ha (40.4 percent), followed by Mbeya (1,682 ha; 29.9 percent) and Iringa (862 ha; 15.3 percent).

The total production for tea was 66,540 tons out of which, 25,295 tons were from smallholder farmers and 41,245 tons from large scale farms. From smallholder farmers, Mbeya region had the highest production of tea (9,876 tons; 39.0 percent), followed by Tanga (9,474 tons; 37.5 percent) and Iringa (3,014 tons; 11.9 percent) while the lowest production was recorded in Morogoro (1 ton; 0.01 percent) (Table 3.16).

**Table 3.16: Number of Households, Area Planted and Harvested, Production and Yield of Tea by Region During 2019/20 Agricultural Year, Mainland Tanzania**

Region	Number of households	Area Planted (ha)	Area harvested (ha)	Quantity harvested (tons)	Percent
Tanga	8,496	3,274	2,269	9,474	37.5
Morogoro	245	198	198	1	0.0
Iringa	749	913	862	3,014	11.9
Mbeya	6,796	1,809	1,682	9,876	39.0
Kagera	338	17	17	30	0.1
Njombe	2,037	1,036	593	2,900	11.5
<b>Mainland Tanzania</b>	<b>18,661</b>	<b>7,246</b>	<b>5,621</b>	<b>25,295</b>	<b>100.0</b>

### 3.1.6.9 Clove

Clove was grown in only two regions of Mainland Tanzania and in all five regions of Tanzania Zanzibar. A total of 36,480 households, were engaged in the production of clove out of which, 11,383 households were in Mainland Tanzania and 25,097 households in Tanzania Zanzibar.

The total area planted with clove was 12,263 ha out of which, 11,583 ha was from smallholder farmers (94.5 percent) and 680 ha from large scale farms (5.5 percent). From smallholder farmers, Morogoro Region had the largest area planted with clove (1,513 ha; 55.0 percent) compared to Tanga (1,240 ha; 45.0 percent). A total of 3,526 ha (30.4 percent of the total planted area with clove) was harvested, out of which 1,217 ha were in Mainland Tanzania and 2,308 ha in Zanzibar. Morogoro region had the largest harvested area of clove with 641 ha (52.7 percent) compared to Tanga (575 ha; 47.3 percent). In Tanzania Zanzibar, Kusini Pemba region had the largest harvested area of clove with 1,607 ha (69.6 percent), followed by Kaskazini Pemba (295 ha; 12.8 percent), while Kusini Unguja had the least harvested area (28 ha; 1.2 percent).

The total production for clove was 3,364 tons out of which, 3,281 tons were from smallholder farmers and 83 tons from large scale farms. In Mainland Tanzania, Morogoro region (575 tons; 62.1 percent) had the highest production of clove, followed by Tanga (351 tons; 37.9 percent). In Tanzania Zanzibar, Kusini Pemba region had the largest production of clove (1,086 tons; 46.1 percent), followed by Kaskazini Pemba (653 tons; 27.8 percent), while the least production was in Kaskazini Unguja (114 tons; 4.8 percent) (Table 3.17).

**Table 3.17: Number of Households, Planted and Harvested Area, Quantity Harvested of Cloves by Region During 2019/20 Agricultural Year, Tanzania**

Region	Number of households	Area Planted (ha)	Area harvested (ha)	Quantity harvested (tons)
Tanga	6,261	1,240	575	351
Morogoro	5,122	1,513	641	575
<b>Mainland Tanzania</b>	<b>11,383</b>	<b>2,753</b>	<b>1,216</b>	<b>926</b>
Kaskazini Unguja	2,041	509	176	114
Kusini Unguja	642	87	28	116
Mjini Magharibi	3,321	778	204	385
Kaskazini Pemba	1,451	676	295	653
Kusini Pemba	17,642	6,778	1,607	1,086
<b>Tanzania Zanzibar</b>	<b>25,097</b>	<b>8,830</b>	<b>2,310</b>	<b>2,355</b>
<b>Tanzania</b>	<b>36,480</b>	<b>11,583</b>	<b>3,526</b>	<b>3,281</b>

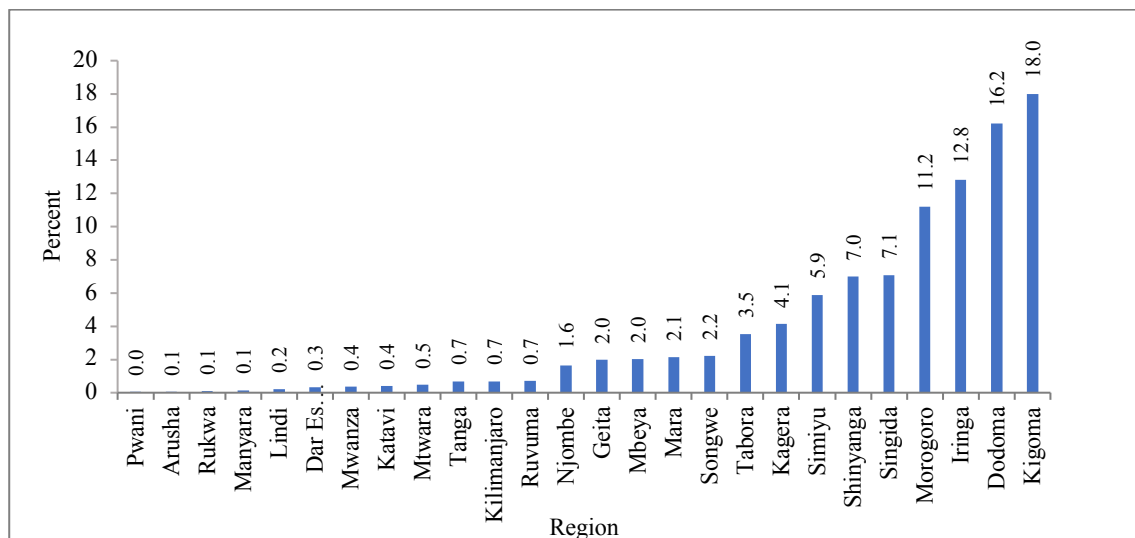
## 3.2 Agro-Processing

This section presents the number of agricultural households by their main products and where did they sell their products across different regions of Tanzania during the 2019/20 agricultural year. The Agro-processing of agricultural crops discussed in this section referred to the crops harvested on the farm and converted into consumable forms by households so as to increase their values for market. During the 2019/20 agricultural year, the main crop products produced from agro-processing by the smallholders were flour/meal, grain, oil, juice, fiber, pulp and others. major places which were used by households to sell their products were neighbours, local market/trade store, secondary market, cooperatives, farmers association, large scale farms, at farm and other places. however, some of the smallholders did not sell their products.

### 3.2.1 Households Involved in Agro-processing

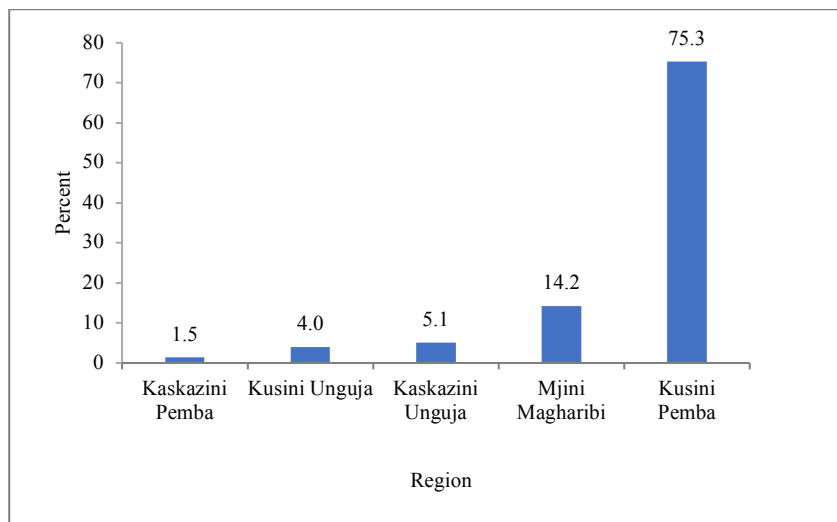
A total number of agricultural households reported to process their crops was 1,029,125 out of which 1,008,130 were in Mainland Tanzania and 20,995 in Tanzania Zanzibar. In Mainland Tanzania, Kigoma region had the largest number of agricultural households (181,410; 18.0 percent) which processed different crops, followed by Dodoma (163,535; 16.2 percent) and Iringa region (129,209; 12.8 percent).

**Figure 3.49: Percentage of Agricultural Households Reported to Process Different Crops by Region During 2019/20 Agricultural Year, Mainland Tanzania**



In Tanzania Zanzibar, Kusini Pemba region had the largest number of agricultural households (15,801; 75.3 percent) that processed crops, followed by Mjini Magharibi (2,972; 14.2 percent) and Kaskazini Unguja (1,072; 5.1 percent) (Figure 3.49 & 3.50).

**Figure 3.50: Percentage of Agricultural Households Reported to Process Different Crops by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



### 3.2.2 Quantity of Major Crop Products

The Census results show that, a total of 93,646 tons of flour/meal were produced, out of which, 93,627 tons (99.98 percent) were in Mainland Tanzania and 20 tons (0.02) in Tanzania Zanzibar. Flour/meal was produced from maize, sorghum, bulrush millet, finger-millet, cassava, cowpeas and coffee. Moreover, a total of 50,164 tons of grain were produced, out of which 49,097 tons (97.9 percent) were in Mainland Tanzania and 1,067 tons (2.1 percent) in Tanzania Zanzibar. Grain was produced from paddy, bambaranuts, cashewnuts and coffee.

Further results show that, a total of 7,583,897 litres of oil were produced, whereas, 7,472,305 litres (98.5 percent) were from Mainland Tanzania and 111,592 litres (1.5 percent) in Tanzania Zanzibar. Oil was produced from sunflower, sesame, groundnuts, coconut and soyabeans. Furthermore, juice was only produced in Tanzania Zanzibar with 1,002 litres from lime, while fiber was only produced in Mainland Tanzania with 6,441 tons from sisal (Table 3.18).

**Table 3.18: Quantity of Major Crops Products During 2019/20 Agricultural Year, Tanzania**

	Flour/meal (tons)	Grain (tons)	Oil (litres)	Juice (litres)	Fiber (tons)	Other (tons)
Tanzania	93,646	50,164	7,583,897	1,002	6,441	8,308
Mainland	93,627	49,097	7,472,305	0	6,441	8,058
Zanzibar	20	1,067	111,592	1,002	0	250

### 3.2.3 Major Outlets for Selling Agro-processed Products

#### 3.2.3.1 Flour/Meal

A total of 20,429 households (20.2 percent) reported to sell flour/meal to several places of which, 20,374 households were in Mainland Tanzania and 55 households in Tanzania Zanzibar. Agricultural households reported to sell flour/meal to the local market/trade store were the highest (9,053; 44.3 percent), followed by households that sold their flour/meal to the neighbours (8,771; 42.9 percent) and to the secondary market (602; 2.9 percent). However, 2,485 households (10.8 percent) did not sell their Flour/meal.

#### 3.2.1.2 Grain

A total of 42,100 households (41.6 percent) from Mainland Tanzania reported to sell grain to various places, and none reported to sell grain in Tanzania Zanzibar. Agricultural households reported to sell grain to the local market/trade store were the highest (19,138; 45.5 percent), followed by households that sold grain to the neighbours (11,122; 26.4 percent) and to the marketing cooperatives at farm (3,891; 9.2 percent). Nevertheless, 390 households (0.9 percent) did not sell their grain.

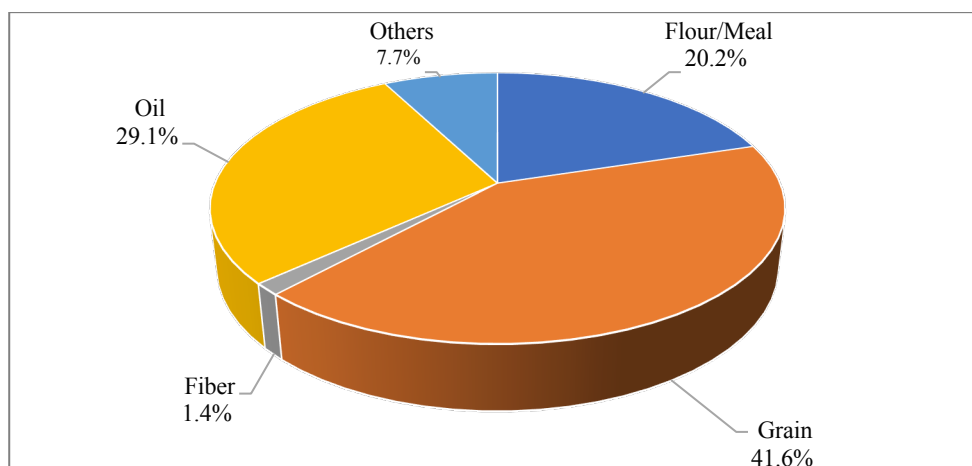
### 3.2.1.3 Oil

A total of 29,391 households (29.1 percent) from Mainland Tanzania reported to sell oil to various places and none of the households reported to sell their oil in Tanzania Zanzibar. Agricultural households that sold oil to the local market/trade store were the highest (17,739; 60.4 percent) followed by households that sold oil to the neighbours (5,533; 18.8 percent) and to the trader at farm (2,235; 7.6 percent). Nevertheless, 734 households (2.4 percent) did not sell their oil.

### 3.2.1.4 Fiber

A total of 1,415 households (1.4 percent) from Mainland Tanzania reported to sell fiber to various places, and none from Tanzania Zanzibar. Agricultural households reported to sell fiber to the local secondary market were the highest (723; 51.1 percent), followed by households that sold fiber to the local market (176; 12.4 percent) and to the marketing cooperatives at farm (175; 12.4 percent) (Figure 3.51).

**Figure 3.51: Percentage of Households Reported to Sell Major Crop Products During 2019/20 Agricultural Year, Tanzania**



### 3.2.3 Main Type of Packaging Material

This Census captured information on different types of packaging materials for major products (flour/meal, grain, oil, juice and fiber) used by agricultural households during 2019/20 agricultural year. Packages used for these products were leno bags, sacks, box, hermetic bags, plastic containers and bottles.

#### 3.2.3.1 Flour/Meal

A total of 817,189 agricultural households used different types of packaging for flour/meal, out of which, 815,618 households were in Mainland Tanzania and 1,571 households in Tanzania Zanzibar.

In Mainland Tanzania, most agricultural households used leno bags for packaging (425,646; 52.2 percent), followed by plastic containers (194,170; 23.8 percent), sacks (138,728; 17.0 percent), and hermetic bags (30,297; 3.7 percent). In Tanzania Zanzibar, majority of the agricultural households used leno bags for packaging (1,181; 75.2 percent), followed by sacks (209; 13.3 percent) and plastic containers (181; 11.5 percent).

### **3.2.3.2 Grain**

A total of 203,580 agricultural households used different types of packaging for grain, out of which, 184,401 households were in Mainland Tanzania and 19,179 households in Tanzania Zanzibar. In Mainland Tanzania, most agricultural households used leno bags for packaging (99,371; 53.9 percent), followed by sacks (51,356; 27.9 percent) and hermetic bags (18,568; 10.1 percent). In Tanzania Zanzibar, all agricultural households reported to use only two packaging material, namely leno bags (18,489; 96.4 percent) and sacks (690, 3.6).

### **3.2.3.3 Oil**

A total of 128,505 agricultural households used different types of packaging for oil, of which, 128,036 were in Mainland Tanzania and 469 in Tanzania Zanzibar. In Mainland Tanzania, majority of the agricultural households used plastic containers for packaging (65,169; 50.9 percent), followed by bottles (36,193; 28.3 percent).

## **3.3 Irrigation**

Irrigation is the application of a specific amount of water at a particular location in order to meet the requirements of a crop growing at that location in amount that are appropriate to the crop's stage of growth. It can also mean the application of water in amounts necessary to bring soil to the desired moisture level prior to crop planting. This section presents information on area under irrigation and main crop irrigated by smallholder farmers.

### **3.3.1 Area Planted under Irrigation**

Census results show that, irrigated crop production was carried out during short and long rainy seasons in both Mainland Tanzania and Tanzania Zanzibar. The total area under irrigation for annual crops was 289,381 ha (272,897 ha in Mainland Tanzania and 16,484 ha in Tanzania Zanzibar) accounting for 2.5 percent of the total planted area. Similarly, the total area under irrigation for permanent crops was 26,567 ha (24,622 ha in Mainland Tanzania and 1,945 ha in Tanzania Zanzibar) accounting for 1.3 percent of the total planted area. Area under irrigation in Mainland Tanzania for annual crops was 272,897 equivalent to 2.4 percent of the total planted area, while in Tanzania



Zanzibar, the area under irrigation was 16,489 ha equivalent to 15.1 percent of the total planted area. Both Mainland Tanzania and Tanzania Zanzibar, irrigated crop production was carried out mostly during short rainy season. Considering the small proportion of area under irrigation, crop production remains largely dependent on rainfed (Table 3.19).

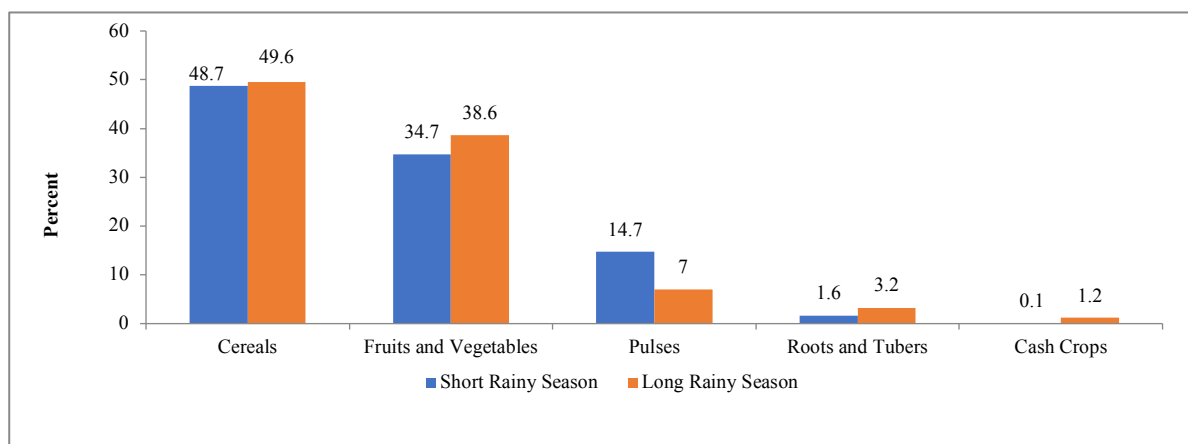
**Table 3.19: Area under Irrigation During Short and Long Rainy Seasons During 2019/20 Agricultural Year, Tanzania**

Planting Season	Mainland Tanzania			Tanzania Zanzibar			Tanzania		
	Planted Area (ha)	Irrigated (ha)		Planted Area (ha)	Irrigated (ha)		Planted Area (ha)	Irrigated (ha)	
		Number	Percent		Number	Percent		Number	Percent
Short Rainy Season	3,269,062	135,716	4.2	66,658	9,068	13.6	3,335,720	144,783	4.3
Long Rainy Season	8,370,002	137,183	1.6	59,355	7,421	12.5	8,429,358	144,603	1.7
Short and Long Rainy Season	11,639,064	272,899	2.3	126,013	16,489	13.1	11,765,079	289,385	2.5

### 3.3.2 Main Crops Irrigated

Census results show that during short rainy season, total area irrigated for annual crops was 144,783 ha and 144,603 ha during long rainy season. Among crop types, cereals occupied large area under irrigation (48.7 percent) during short rainy season, followed by fruits and vegetables (34.7 percent), and pulses (14.7 percent). Similar pattern was observed during long rainy season were cereals occupied large area under irrigation (49.6 percent), followed by fruits and vegetables (38.6 percent), and pulses (7.0 percent). Irrigation in oil seeds and nuts, and roots and tubers were too small during both short and long rainy seasons (Figure 3.52).

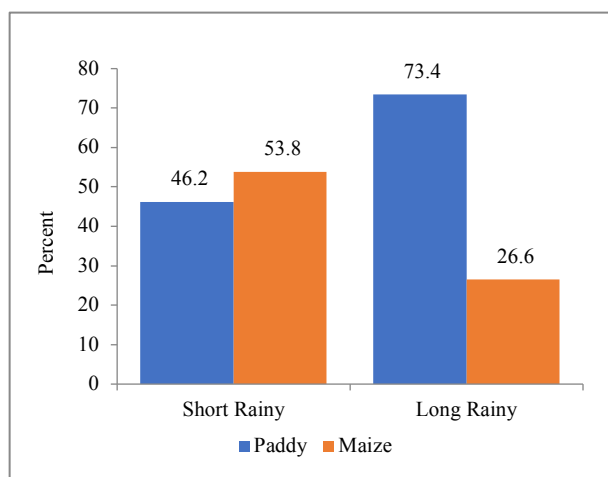
**Figure 3.52: Percentage of Planted Area under Irrigation by Main Crop During 2019/20 Agricultural Year, Tanzania**



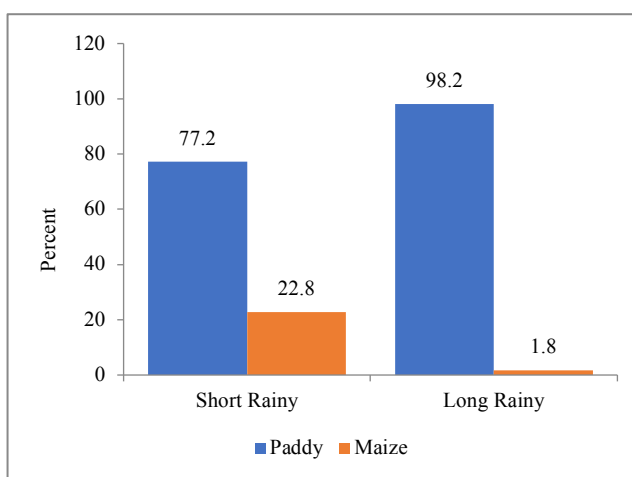
### 3.3.2.1 Cereals

Census results show that, among cereal crops, only paddy and maize were reported to be irrigated in Mainland Tanzania and Tanzania Zanzibar. In Mainland Tanzania, out of the total irrigated area under cereal crops, maize occupied larger area under irrigation (36,471 ha; 53.8 percent), followed by paddy (31,291 ha; 46.2 percent) during short rainy season. On the contrary, paddy occupied larger area under irrigation (49,079 ha; 73.4 percent) during long rainy season, followed by maize (17,803 ha; 26.6 percent). In Tanzania Zanzibar, out of the total irrigated area under cereal crops, paddy was more irrigated during long rainy seasons (4,698 ha; 98.2 percent) compared to short rainy season (2,074 ha; 77.2 percent) (Figure 3.53 & 3.54).

**Figure 3.53: Percent of Irrigated Area Planted with Cereals by Planting Season During 2019/20 Agricultural Year, Mainland Tanzania**



**Figure 3.54: Percent of Irrigated Area Planted with Cereals by Planting Season During 2019/20 Agricultural Year, Tanzania Zanzibar**



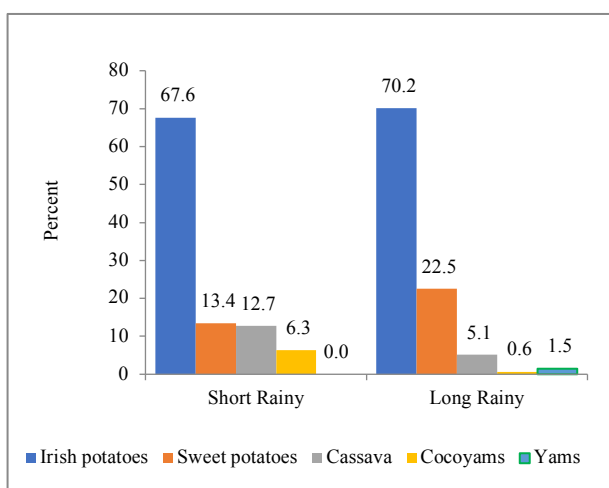
### 3.3.2.2 Root and Tuber Crops

Census results show that, cassava, sweet potato, irish potato, yams and coco yams were reported to be irrigated in Tanzania. In Mainland Tanzania, the total irrigated area under root and tuber crops was 2,087 ha during short rainy season, of which irish potatoes occupied the largest area under irrigation (1,410 ha; 67.6 percent), followed by sweet potato (279 ha; 13.4 percent), while the least irrigated area was occupied by coco yams (132 ha; 6.3 percent) during short rainy season. Similarly, during long rainy season, a total of 4,395 ha of root and tuber crops were irrigated of which irish potatoes occupied the largest area under irrigation (3,085 ha; 70.2 percent), followed by sweet potato (990 ha; 22.5 percent), whereas the least irrigated area was occupied by cocoyams (28 ha; 0.6 percent).

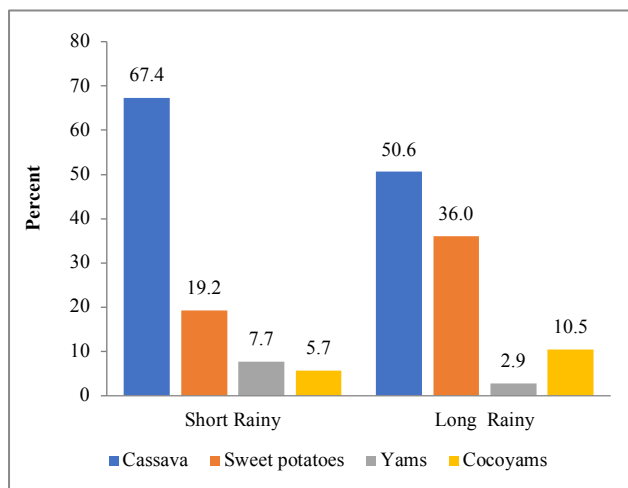
In Tanzania Zanzibar, out of the total irrigated area under root and tuber crops (257 ha) during short rainy season, cassava occupied the largest area under irrigation (173 ha; 67.4 percent), followed by

sweet potato (49 ha; 19.2 percent), while the least irrigated area was occupied by coco yams (15 ha; 5.7 percent). Similarly, during long rainy season, a total of 227 ha of root and tuber crops were irrigated of which cassava occupied the largest area under irrigation (115 ha; 50.6 percent), followed by sweet potato (82 ha; 36.0 percent), whereas the least irrigated area was occupied by yams (6 ha; 2.9 percent) (Figure 3.55 & 3.56).

**Figure 3.55: Percentage of Area planted with Roots and Tubers under Irrigation During 2019/20 Agricultural Year, Mainland Tanzania**



**Figure 3.56: Percentage of Area planted with Roots and Tubers under Irrigation During 2019/20 Agricultural Year, Tanzania Zanzibar**

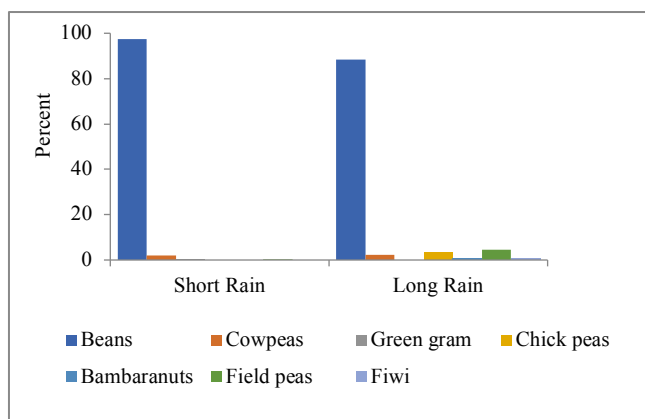


### 3.3.2.3 Pulses

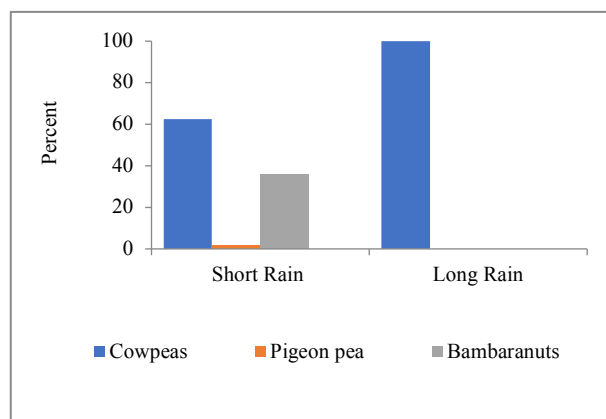
Census result shows that, beans, cow peas, green gram, pigeon peas, chick peas, bambaranuts, field peas, and fiwi were reported to be irrigated in Tanzania. In Mainland Tanzania, the total irrigated area under pulses was 21,120 ha during short rainy season, of which beans occupied the largest area under irrigation (20,540 ha; 97.3 percent), followed by cowpeas (432 ha; 2.0 percent), while the least irrigated area was occupied by green gram (65 ha; 0.3 percent). Similarly, out of the total irrigated area under pulses (10,019 ha) during long rainy season, beans occupied the largest area under irrigation (8,898 ha; 88.8 percent), followed by field peas (439 ha; 4.4 percent), whereas the least irrigated area was occupied by fiwi (77 ha; 0.8 percent).

In Tanzania Zanzibar, out of the total irrigated area under pulses (182 ha) during short rainy season, cowpeas occupied the largest area under irrigation (114 ha; 62.4 percent), followed by bambaranut (65 ha; 35.8 percent), while the least irrigated area was occupied by pigeon peas (3 ha; 1.8 percent). Similarly, during long rainy season, cowpeas was the only pulse crop irrigated, occupying an area of 35 ha (100.0 percent) (Figure 3.57 & 3.58).

**Figure 3.57: Percent of Planted Area with Pulses under Irrigation During 2019/20 Agricultural Year, Mainland Tanzania**



**Figure 3.58: Percent of Planted Area with Pulses under Irrigation During 2019/20 Agricultural Year, Tanzania Zanzibar**



### 3.3.2.4 Fruits and Vegetables

Census results show that, fruits and vegetables were among crops reported to be irrigated in Tanzania by smallholder farmers. In Mainland Tanzania, a total of 44,408 ha was irrigated during short rainy season and 53,441 ha in long rainy season. Tanzania Zanzibar, a total of 5,851 ha was irrigated during short rainy season and 2,314 ha in long rainy season.

In Mainland Tanzania, out of the total irrigated area under fruits and vegetable (44,408 ha) during short rainy season, tomato occupied the largest area under irrigation (14,592 ha; 32.9 percent), followed by onion (7,110 ha; 16.0 percent), and watermelon (7,081 ha; 15.9 percent), while the least irrigated areas was occupied by strawberry (13 ha; 0.03 percent). Similarly, a total of 53,441 ha of fruits and vegetable were irrigated during long rainy season, of which tomato occupied the largest area under irrigation (19,730 ha; 36.9 percent), followed by onion (11,297 ha; 21.1 percent) and watermelon (5,565 ha; 10.4 percent), while the least irrigated area was occupied by squash (6 ha; 0.01 percent).

In Tanzania Zanzibar, out of the total irrigated area under fruits and vegetable (5,851 ha) during short rainy season, watermelon occupied the largest area under irrigation (1,468 ha; 25.1 percent), followed by tomato (1,097 ha; 18.7 percent) and okra (935 ha; 16.0 percent), whilst the least irrigated area was occupied by cabbage (2 ha; 0.03 percent). On the other hand, during long rainy season, tomato occupied the largest area under irrigation (462 ha; 20.0 percent), followed by amaranth (398 ha; 17.2 percent), whereas the least irrigated area was occupied by sweet/bell pepper (4 ha; 0.2 percent) (Table 3.20).

**Table 3.20: Percentage of Area planted with Fruits and Vegetables Under Irrigation by Seasons During 2019/20 Agricultural Year, Tanzania**

Crop	Mainland Tanzania		Tanzania Zanzibar	
	Short Rainy	Long Rainy	Short Rainy	Long Rainy
Onion	16.0	21.1	0.2	-
Ginger	4.8	0.9	-	-
Garlic	0.2	0.7	-	-
Strawberry	0.03	-	-	-
Cabbage	2.6	4.1	0.0	-
Spinach	4.0	4.4	0.4	0.5
Carrot	0.2	0.3	0.1	0.3
Chilies	2.3	1.6	1.9	10.2
Amaranths	6.0	4.2	12.2	17.2
Pumpkins	0.8	0.4	2.9	1.7
Cucumber	0.8	1.2	9.0	8.4
Egg Plant	0.4	1.0	7.9	11.1
Watermelon	15.9	10.4	25.1	17.1
Cauliflower	0.1	0.1	-	-
Okra	4.5	2.9	16.0	8.2
Tomatoes	32.9	36.9	18.7	20.0
Bitter tomato	2.2	5.6	2.6	4.4
Sweet/bell pepper	0.9	1.8	0.2	0.2
Squash	-	0.01	-	-
Sweet potato leaves	3.7	1.1	2.6	0.7
Mnavu/Mnafu	0.4	0.3	-	-
Figiri sukuma wiki	0.5	0.5	-	-
Brocol	0.2	0.1	-	-
Pumpkin leaves	0.4	0.2	-	-

### 3.4 Input Use

This section presents results on the use of improved seeds, organic and inorganic fertilizers and pesticides which includes herbicides, fungicides and insecticides. The results presented in this section are based on the use and area of application and not on the quantity applied.

#### 3.4.1 Use of Improved Seeds

Census results show that in Tanzania, the total area planted with improved seeds during 2019/20 agricultural year was 2,593,526 ha, which accounts for 22.0 percent of the total cultivated area. On the other hand, the area planted with local seeds was 8,906,314 ha representing 75.7 percent of the total cultivated area, while the area planted with both local and improved seeds was 250,884 ha which is equivalent to 2.1 percent of the total planted area (Table 3.21).

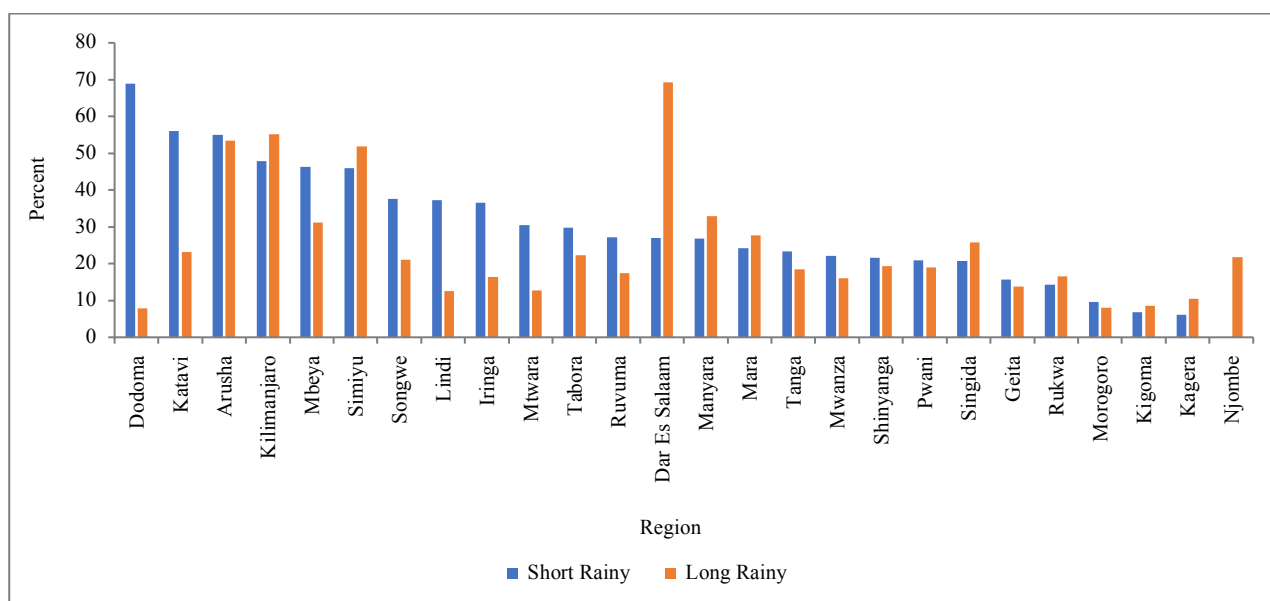
**Table 3.21: Number of Households and Area Planted by Type of Seed Used During 2019/20 Agricultural Year, Tanzania**

Selected Characteristic	Tanzania	Mainland Tanzania	Tanzania Zanzibar
Cultivated Area (ha)	11,765,077	11,639,063	126,014
Area Planted with Local seeds (ha)	8,906,314	8,823,340	82,975
Area planted with Improved Seeds (ha)	2,593,526	2,564,212	29,314
Area Planted with Local and Improved Seeds (ha)	250,884	237,444	13,439

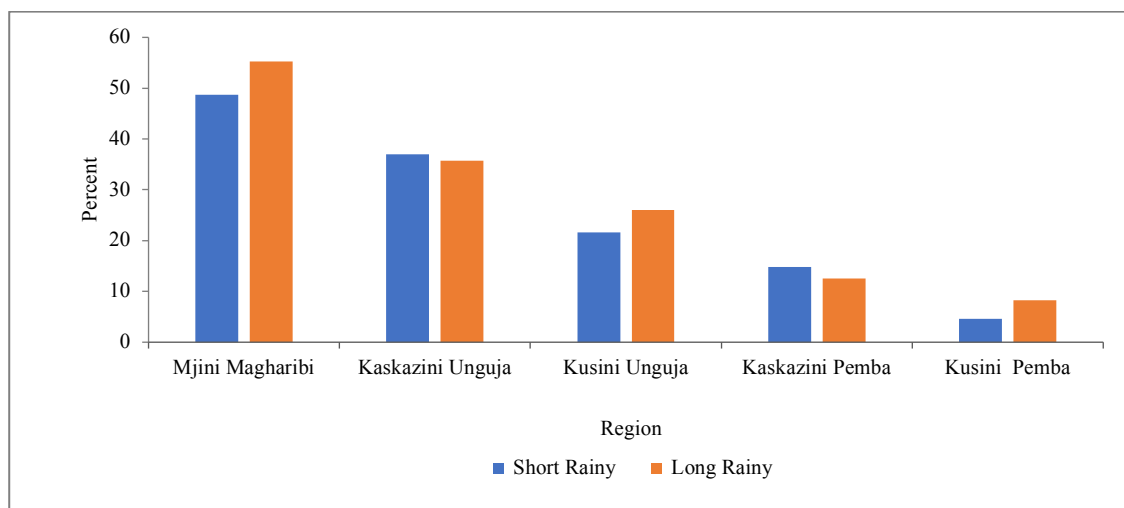
*Note: The size of cultivated area is not equal to planted area. Planted area may be less or equal to cultivated area.*

Area planted with improved seeds was larger in short rainy season as compared to that of long rainy season in most of the regions, except for Kilimanjaro, Dar es Salaam, Rukwa, Kigoma, Kagera, Mara, Manyara, Njombe, and Simiyu regions in Mainland Tanzania (Figure 3.10). Similar pattern is observed in Tanzania Zanzibar with exception of Kaskazini Unguja and Kaskazini Pemba (Figure 3.59 & 3.60).

**Figure 3.59: Percentage of Planted Area with Improved Seeds by Region During 2019/20 Agricultural Year, Mainland Tanzania**



**Figure 3.60: Percentage of Planted Area with Improved Seeds by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



### 3.4.2 Fertilizer Use

The census results on fertilizer use show that, 2.5 million hectares, which is equivalent to 21.4 percent of total planted area, were applied with fertilizers, out of which 2.4 million hectares were in Mainland Tanzania and 31,612 hectares in Tanzania Zanzibar. Out of the total planted area, 13.3 percent was applied with organic fertilizers and 8.0 percent with inorganic fertilizers (Table 3.22).

The result further shows that, the proportion of area planted with fertilizer is higher in Tanzania Zanzibar (25.1 percent) as compared to Mainland Tanzania (21.3 percent). However, in general these results indicate that fertilizer is only used in low proportion on the area under cultivation (Table 3.22).

**Table 3.22: Area Planted with Fertilizer and Type of Fertilizers During 2019/20 Agricultural Year, Tanzania**

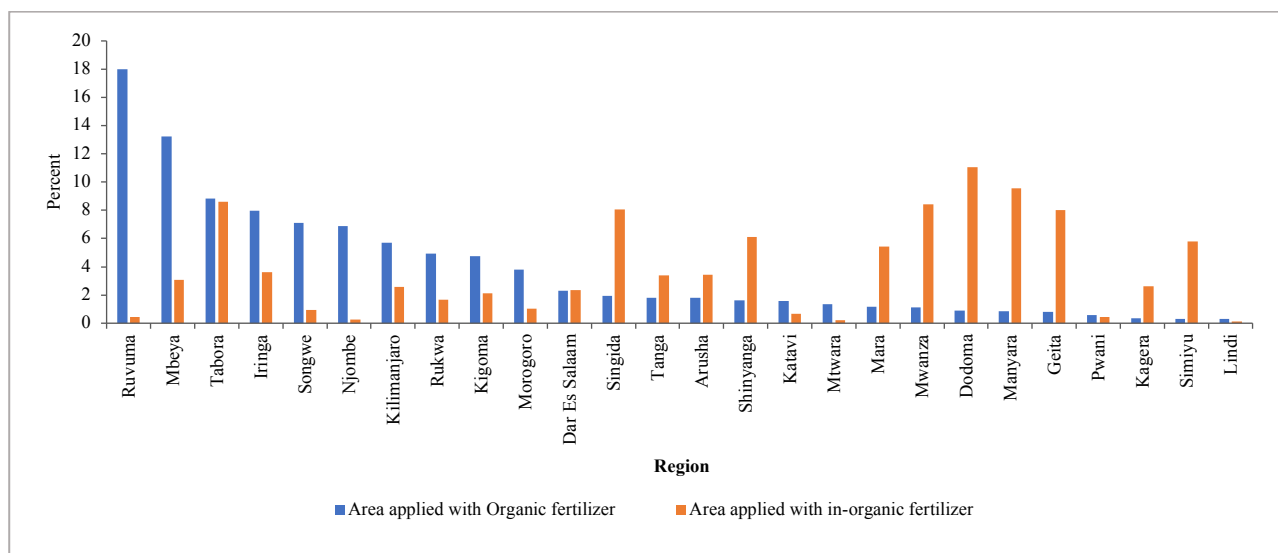
Coverage	Planting Season	Total Planted Area (ha)	Area Applied with Fertilizer (ha)				Total (ha)	
			Organic Fertilizer		Inorganic Fertilizer		Number	Percent
			Number	Percent	Number	Percent		
<b>Mainland Tanzania</b>	Short Rainy	3,269,062	317,413	9.7	349,849	10.7	667,263	20.4
	Long Rainy	8,370,000	1,232,444	14.7	582,498	7.0	1,814,942	21.7
	<b>Sub-Total</b>	<b>11,639,063</b>	<b>1,549,857</b>	<b>13.3</b>	<b>932,348</b>	<b>8.0</b>	<b>2,482,205</b>	<b>21.3</b>
<b>Tanzania Zanzibar</b>	Short Rainy	66,658	5,913	8.9	8,766	13.2	14,679	22.0
	Long Rainy	59,356	11,511	19.4	5,422	9.1	16,933	28.5
	<b>Sub-Total</b>	<b>126,014</b>	<b>17,424</b>	<b>13.8</b>	<b>14,188</b>	<b>11.3</b>	<b>31,612</b>	<b>25.1</b>
<b>Tanzania</b>	Short Rainy	3,335,720	323,326	9.7	358,615	10.8	681,941	20.4
	Long Rainy	8,429,356	1,243,955	14.8	587,920	7.0	1,831,875	21.7
	<b>Total</b>	<b>11,765,076</b>	<b>1,567,281</b>	<b>13.3</b>	<b>946,535</b>	<b>8.0</b>	<b>2,513,817</b>	<b>21.4</b>

The census results reveal that area applied with fertilizer varies across regions. In Mainland Tanzania, Ruvuma region had the largest area applied with organic fertilizer (18.0 percent), followed by Mbeya (13.2 percent), and Tabora (8.9 percent), while Lindi region had the least (0.3 percent). In Tanzania Zanzibar, Kusini Pemba region had the largest area applied with organic fertilizer (38.1 percent), followed by Kaskazini Unguja (21.6 percent), while Kusini Unguja region had the least (5.1 percent) (Figures 3.61 & 3.62).

On the other hand, in Mainland Tanzania Dodoma region had the largest area applied with inorganic fertilizer (11.1 percent), followed by Manyara (9.6 percent) and Tabora (8.6 percent), whereas Lindi region recorded the least area applied with inorganic fertilizer (0.1 percent) In Tanzania Zanzibar, Mjini Magharibi region had the largest area applied with inorganic fertilizer (38.3 percent), followed by Kaskazini Unguja (27.4 percent), whilst Kusini Pemba region recorded the least area applied with inorganic fertilizer (8.3 percent).

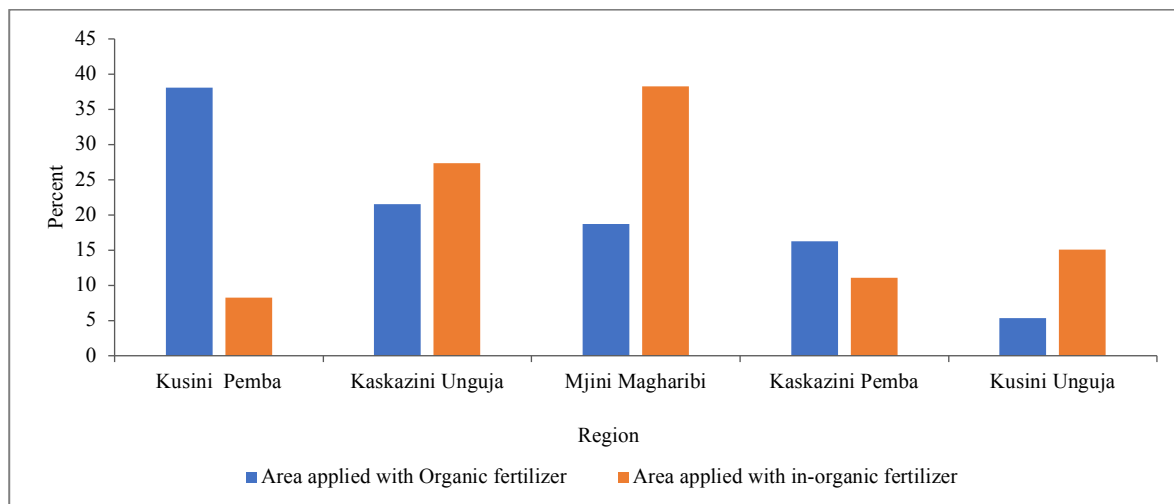
Despite the average planted area applied with organic fertilizer being higher than that with inorganic fertilizer, some regions indicated to have more planted area applied with inorganic fertilizer than organic fertilizer (Figures 3.61 & 3.62).

**Figure 3.61: Percentage of Area Applied with Fertilizer by Type of Fertilizer and Region During 2019/20 Agricultural Year, Mainland Tanzania**





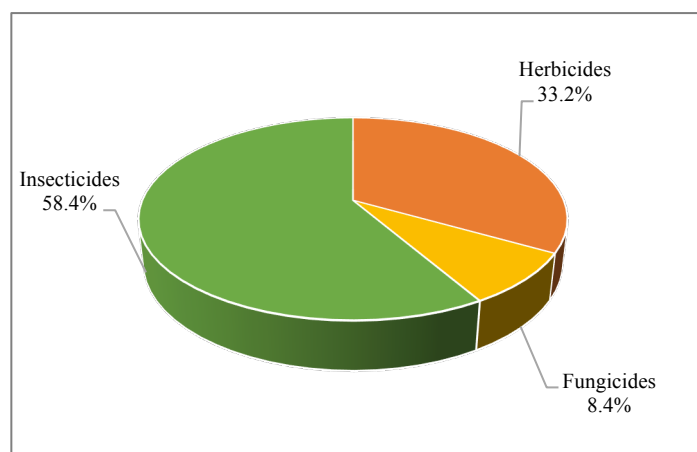
**Figure 3.62: Percentage of Area Applied with Fertilizer by Type of Fertilizer and Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



### 3.4.3 Use of Pesticides

Pesticides are chemicals intended to kill or control pests which includes insects, weeds, fungi etc. This section analyses the use of these chemicals by smallholder farmers during short and long rainy seasons in Tanzania. The results show that, a total area of 3,159,513 ha was applied with pesticides, equivalent to 26.9 percent of the total planted area with crops. Insecticides was the most common pesticides used in the country accounting

**Figure 3.63: Percentage Distribution of Area Applied with Pesticides During 2019/20 Agricultural Year, Tanzania**



for 58.4 percent of the total area applied with pesticides, followed by herbicides (33.2 percent) and fungicides (8.4 percent) (Figure 3.63 & Table 3.24).

#### 3.4.3.1 Herbicides

At national level, the total area applied with herbicides was 1,049,499 ha which is equivalent to 8.9 percent of the total planted area, (1,039,709 ha were from Mainland Tanzania and 9,790 ha from Tanzania Zanzibar). Large part of the planted area was applied with herbicides during long rainy season (817,878 ha) than in the short rainy season (231,622 ha).

In Mainland Tanzania, cereal crops had the largest area applied with herbicides (815,975 ha, 78.5 percent), followed by oil seeds and nuts (98,386ha; 9.5 percent) and pulses (65,348 ha, 6.3 percent),

while other crops had the least area applied with herbicides (57 ha; 0.01 percent). On the other hand, in Tanzania Zanzibar, cereal crops had the largest area applied with herbicides (7,861 ha, 80.3 percent), followed by fruits and vegetables (1,859,386ha; 9.5 percent) and pulses (65,348 ha, 6.3 percent), whereas roots and tubers had the least area applied with herbicides (69 ha, 0.7 percent) (Table 3.24).

### **3.4.3.2 Fungicides**

The application of fungicides occupied 263,921 ha which is equivalent to 2.2 percent of the total planted area at national level (258,767 ha from Mainland Tanzania and 5,153 ha from Tanzania Zanzibar). Large part of the planted area was applied with fungicides during long rainy season (179,141 ha) than in the short rainy season (84,779 ha).

In Mainland Tanzania, pulses had the largest area applied with fungicides (82,481 ha, 31.9 percent), followed by fruits and vegetables (71,909 ha; 27.8 percent) and cereal crops (46,093 ha, 17.8 percent), while other crops had the least area applied with fungicides (57 ha; 0.02 percent). On the other hand, in Tanzania Zanzibar, fruits and vegetables had the largest area applied with fungicides (4,581 ha, 88.9 percent), followed by cereal crops (550 ha; 10.7 percent), while roots and tubers had the least area applied with fungicides (2 ha, 0.04 percent) (Table 3.24).

### **3.4.3.3 Insecticides**

In Tanzania, the total area applied with insecticides was 1,846,094 ha equivalent to 15.7 percent of the total planted area (1,834,030 ha from Mainland Tanzania and 12,064 ha from Tanzania Zanzibar). Large part of the planted area was applied with insecticides during long rainy season (1,307,013 ha) than in the short rainy season (539,081 ha).

In Mainland Tanzania, cereal crops had the largest area applied with insecticides (1,040,520 ha, 56.7 percent), followed by cash crops (246,898 ha; 13.5 percent) and pulses (240,838 ha, 13.1 percent), while other crops had the least area applied with insecticides (513 ha; 0.03 percent). On the other hand, in Tanzania Zanzibar, fruits and vegetables had the largest area applied with fungicides (6,542 ha, 54.2 percent), followed by cereal crops (4,298 ha; 35.6 percent), while other crops had the least area applied with fungicides (11 ha, 0.1 percent) (Table 3.23).

**Table 3.23: Area Applied with Pesticides by Type of Pesticides and Planting Season, Tanzania**

Coverage	Planting Season	Total Planted Area (ha)	Area Applied with Pesticides						Total Applied with Pesticides (ha)	
			Herbicides		Fungicides		Insecticides		Area (ha)	Percent
			Area (ha)	Percent	Area (ha)	Percent	Area (ha)	Percent		
Mainland Tanzania	Short	3,269,062	227,925	7.0	81,154	2.5	530,877	16.2	839,956	25.7
	Long	8,370,000	811,784	9.7	177,613	2.1	1,303,152	15.6	2,292,549	27.4
	<b>Sub-total</b>	<b>11,639,063</b>	<b>1,039,709</b>	<b>8.9</b>	<b>258,767</b>	<b>2.2</b>	<b>1,834,029</b>	<b>15.8</b>	<b>3,132,505</b>	<b>26.9</b>
Tanzania Zanzibar	Short	66,658	3,696	5.5	3,626	5.4	8,205	12.3	15,527	23.3
	Long	59,356	6,093	10.3	1,528	2.6	3,859	6.5	11,480	19.3
	<b>Sub-total</b>	<b>126,014</b>	<b>9,790</b>	<b>7.8</b>	<b>5,153</b>	<b>4.1</b>	<b>12,064</b>	<b>9.6</b>	<b>27,008</b>	<b>21.4</b>
Tanzania	Short	3,335,720	231,621	6.9	84,780	2.5	539,082	16.2	855,483	25.6
	Long	8,429,356	817,877	9.7	179,141	2.1	1,307,011	15.5	2,304,030	27.3
	<b>Total</b>	<b>11,765,076</b>	<b>1,049,499</b>	<b>8.9</b>	<b>263,921</b>	<b>2.2</b>	<b>1,846,093</b>	<b>15.7</b>	<b>3,159,513</b>	<b>26.9</b>

### 3.5 Access to Farm Inputs

This section reports on the number of crops growing households, their access and use of farm inputs, availability and its sources. Type of farm inputs under discussion are inorganic fertilizer, farmyard manure, compost manure, insecticide/fungicide, herbicides and improved seeds.

There were 7,677,291 crop growing households in Tanzania (7,499,219 households in Mainland Tanzania and 178,072 in Tanzania Zanzibar). The 2019/20 results reveal that, 2,863,638 households reported using improved seeds accounting for 37.3 percent of the crop growing households in Tanzania. Also, inorganic fertilizer was used by 1,727,796 households equivalent to 22.5 percent of crop growing households, whilst compost manure was reported by 348,740 (4.5 percent).

In Mainland Tanzania, the use of improved seeds was reported by 2,775,767 households (37.0 percent of the crop growing households). Insecticides/fungicides use was reported by 2,102,717 households (28.0 percent), whereas, compost manure was reported by 335,036 households (22.0 percent). Similar case was observed in Tanzania Zanzibar, whereby improved seeds use was reported by 87,703 households (48.8 percent), whilst 51,771 households (28.9 percent) reported to use farm yard manure. Compost manure was reported by 14,832 households (8.2 percent) (Table 3.24).

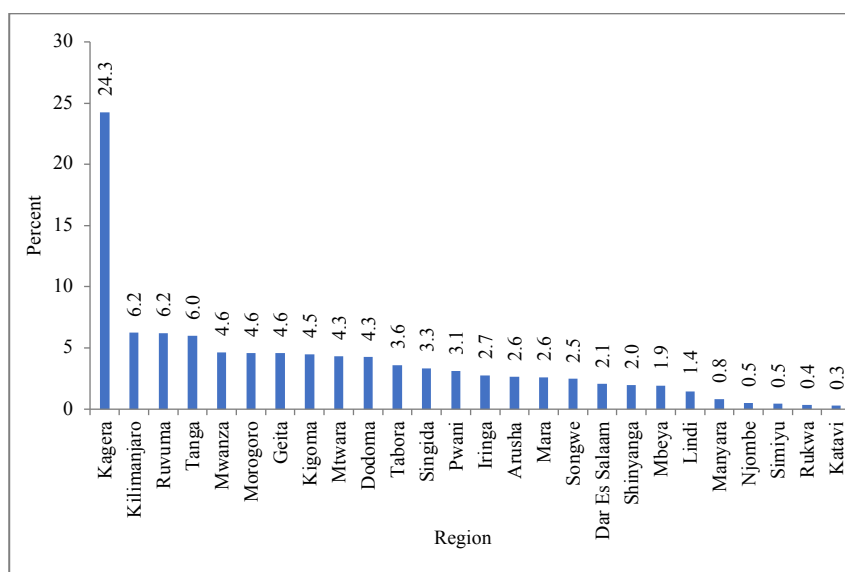
**Table 3.24: Number and Percentage of Agricultural Households Reporting the Use of Farm Inputs During 2019/20 Agricultural Year, Tanzania**

Type of Input	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Number	Percent	Number	Percent	Number	Percent
Inorganic Fertilizer	1,727,796	22.5	1,685,682	22.5	42,114	23.6
Farm Yard Manure	1,497,283	19.5	1,445,512	19.3	51,771	29.1
Compost Manure	348,740	4.5	333,908	4.5	14,832	8.3
Insecticide/fungicide	2,131,808	27.8	2,102,717	28.0	29,091	16.3
Herbicide	876,880	11.4	854,788	11.4	22,092	12.4
Improved Seeds	2,863,470	37.3	2,775,767	37.0	87,703	49.3

### 3.5.1 Compost Manure

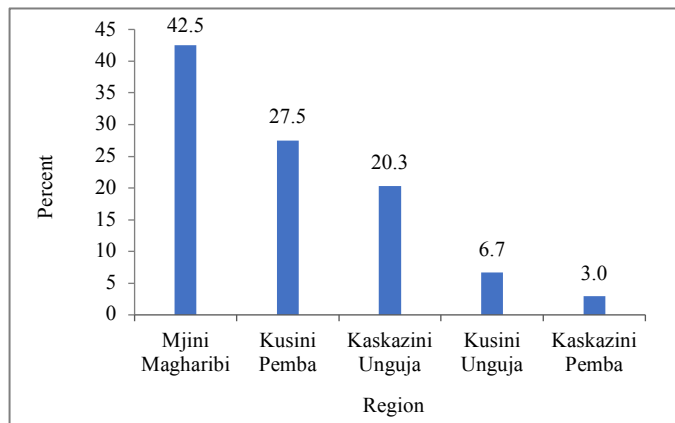
The Census results show that, 348,740 households reported to use compost manure (333,908 were in Mainland Tanzania and 14,832 in Tanzania Zanzibar). When comparing regions within Mainland Tanzania, the largest number of smallholder farmers using compost manure was reported in Kagera region (24.3 percent), followed by Kilimanjaro and Ruvuma (6.2 percent each). The lowest number of households reported to use compost manure was reported in Katavi region with 0.3 percent (Figure 3.64).

**Figure 3.64: Percentage of Households by Source of Compost Manure During 2019/20 Agricultural Year, Mainland Tanzania**



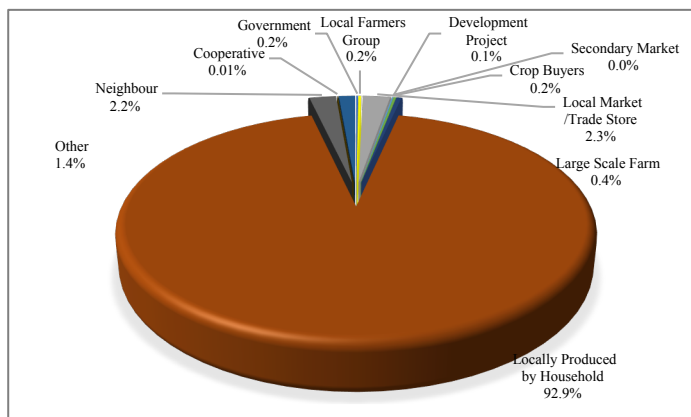
In Tanzania Zanzibar, the largest number of households using compost manure was reported in Mjini Magharibi region (42.5 percent), followed by Kusini Pemba (27.5 percent). The least number of households reported to use compost manure was in Kaskazini Pemba (3.0 percent) (Figure 3.65).

**Figure 3.65: Percentage of Households by Source of Compost Manure During 2019/20 Agricultural Year, Tanzania Zanzibar**



Out of the households reported to use compost manure in Tanzania, 92.9 percent reported to use compost manure that was locally produced by their own households, followed by those purchasing from local market/ trade store (2.3 percent). Few households obtained compost manure from cooperatives (0.01 percent) (Figure 3.66).

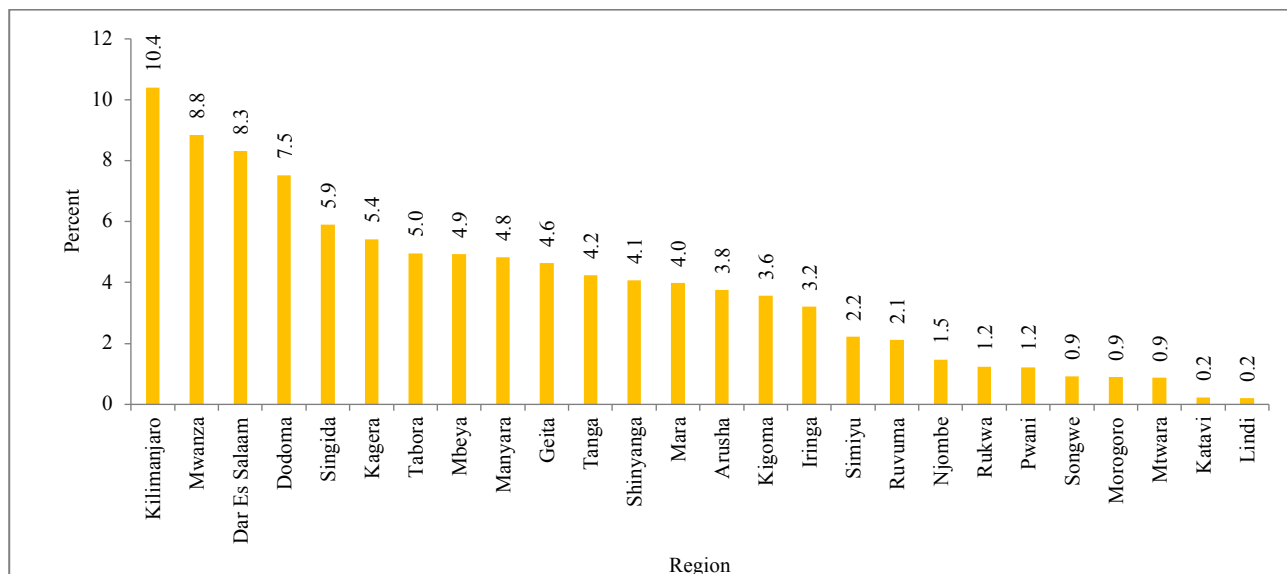
**Figure 3.66: Percentage Distribution of Households by Source of Compost Manure, Tanzania**



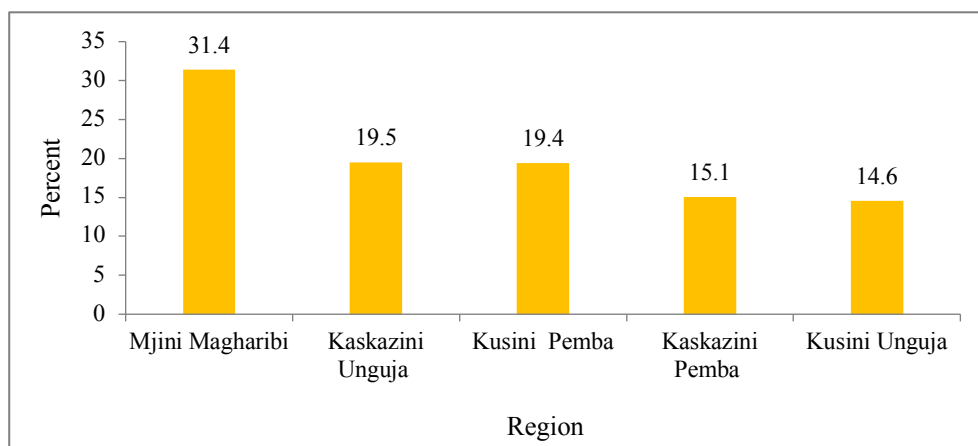
### 3.5.2 Farmyard Manure

During 2019/20 agricultural year, farmyard manure was reported to be used by 1,497,286 households, of which 1,445,515 were in Mainland Tanzania and 51,771 in Tanzania Zanzibar. In Mainland Tanzania, farmyard manure was mostly used in Kilimanjaro region (10.4 percent of the crop growing households), followed by Mwanza (8.8 percent) and Dar es Salaam (8.3 percent), while the least number of households were reported in Lindi region (0.2 percent). When comparing regions within Tanzania Zanzibar, the largest number of households reported to use farmyard manure was Mjini Magharibi region (31.4 percent) and Kaskazini Unguja (19.5 percent), whilst the least number of households was reported in Kusini Unguja (14.6 percent) (Figures 3.67 & 3.68).

**Figure 3.67: Percentage of Households Reporting Source of Farmyard Manure During 2019/20 Agricultural Year, Mainland Tanzania**

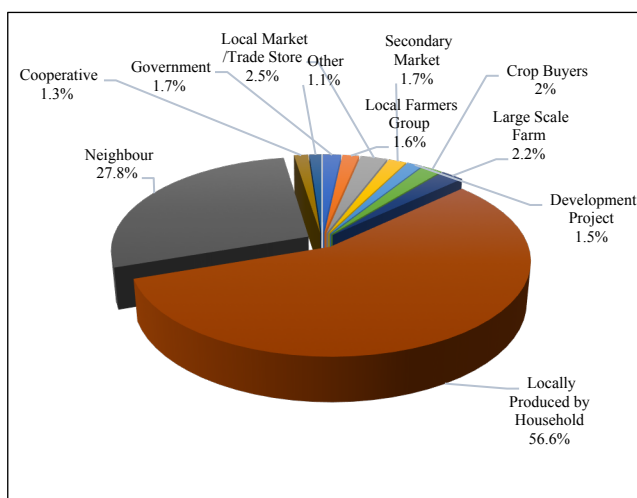


**Figure 3.68: Percentage of Households Reporting Source of Farmyard Manure During 2019/20 Agricultural Year, Tanzania Zanzibar**



**Figure 3.69: Percentage Distribution of Households by Source of Farmyard Manure During 2019/20 Agricultural Year, Tanzania**

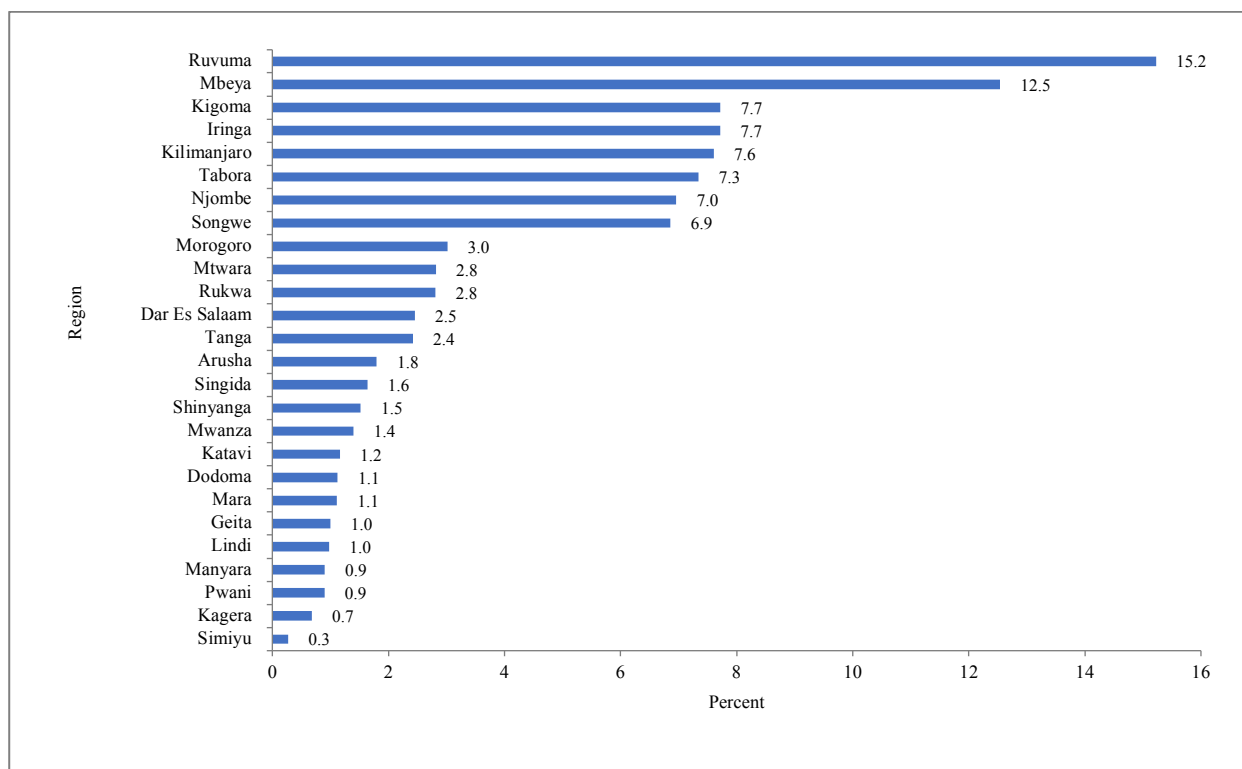
Farmyard manure as reported during 2019/20 agricultural year was mainly produced locally by households (847,914 households; 56.6 percent), followed by farmyard manure obtained from neighbors (415,867 households; 27.8 percent). A small number of households (17,147 households, 1.1 percent) obtained farm yard manure from other sources (Figure 3.69).



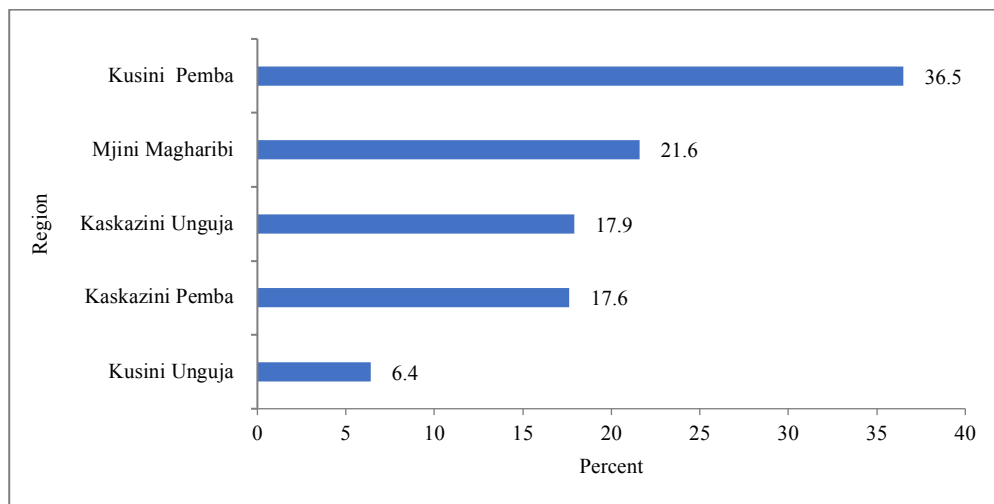
### 3.5.3 Inorganic Fertilizer

Out of 1,727,796 households reported to use inorganic fertilizer in Tanzania, 1,685,682 households were found in Mainland Tanzania and 42,114 households in Tanzania Zanzibar. In Mainland Tanzania, Ruvuma region was leading with 15.2 percent of the crops growing households using inorganic fertilizers, followed by Mbeya (12.5 percent), and Kigoma (7.7 percent), whilst the least number of households reported to use inorganic fertilizer was in Simiyu region (0.3percent). In Tanzania Zanzibar, the highest chemical fertilizer use was reported by households in Kusini Pemba (36.5 percent), followed by Mjini Magharibi (21.6 percent). The least number of households using inorganic fertilizer was in Kusini Unguja (6.4 percent) (Figures 3.70 & 3.71).

**Figure 3.70: Percentage of Households Reporting Source of Inorganic Fertilizer During 2019/20 Agricultural Year, Mainland Tanzania**

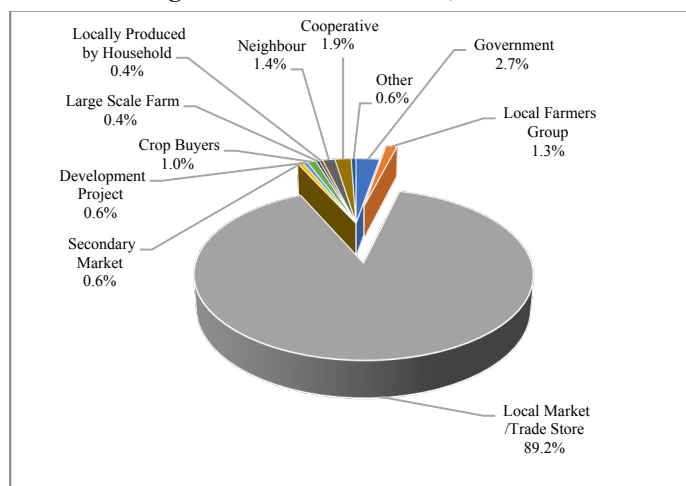


**Figure 3.71: Percentage of Households Reporting Source of Chemical Fertilizer During 2019/20 Agricultural Year, Tanzania Zanzibar**



Inorganic fertilizer used by smallholder farmers was mostly purchased from local market/trade store (1,540,804, 89.2 percent), followed by Government (46,993, 2.7 percent), and Cooperatives (32,268; 1.9 percent). Fewer households reported to use other sources such as larger scale farms and locally produced by Household (0.4 percent each) (Figure 3.72).

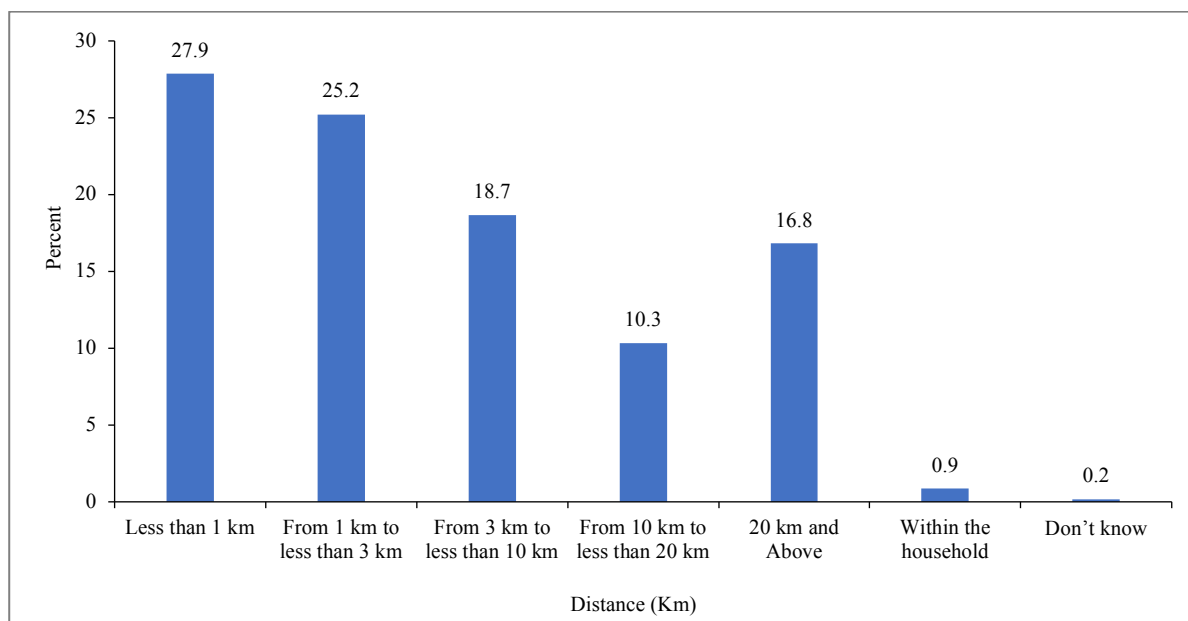
**Figure 3.72: Percentage Distribution of Households by Source of Inorganic Fertilizer During Agricultural Year 2019/20, Tanzania**



A total number of 917,578 agricultural households in Tanzania (53.1 percent) accessed inorganic fertilizers within a distance of 3 kilometers from their homestead, whilst 322,321 households (18.7 percent) accessed inorganic fertilizer within a distance of 3 to 10 kilometers (Figure 3.73).



**Figure 3.73: Percentage of Agricultural Households Reporting Distance to Chemical Fertilizer During 2019/20 Agricultural Year, Tanzania**

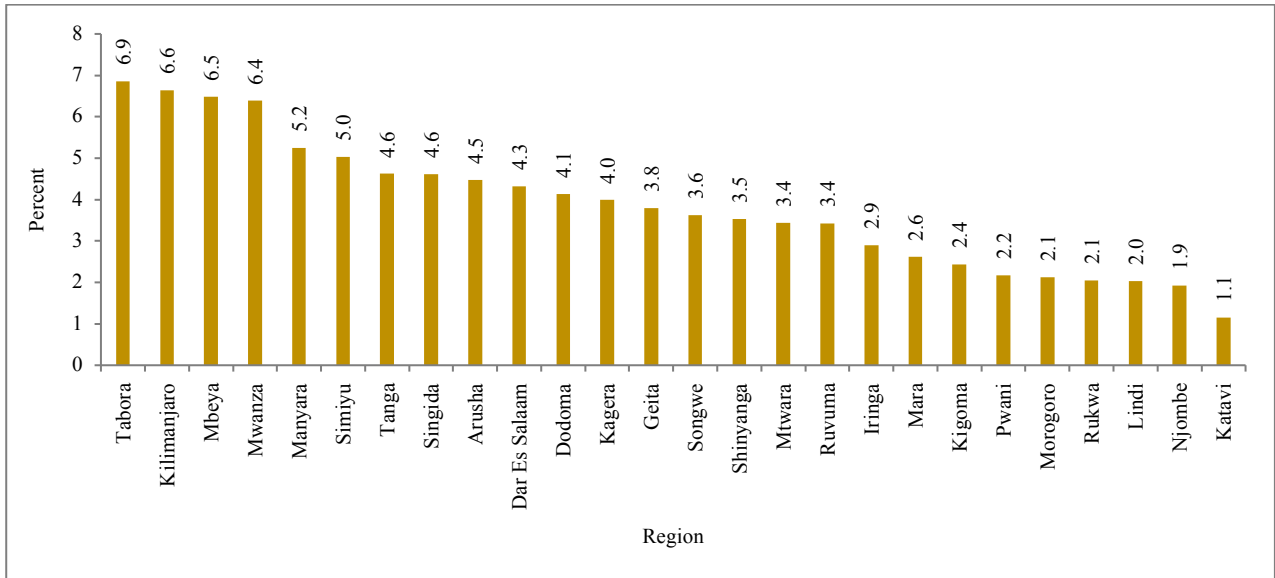


### 3.5.4 Improved seeds

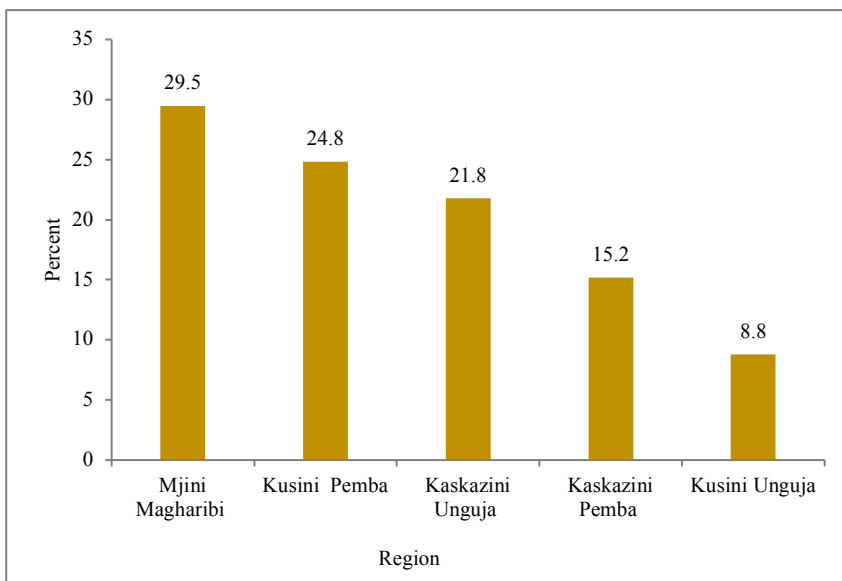
The 2019/20 NSCA findings shows that, a total number of 2,863,470 crop growing households reported using improved seeds in Tanzania, equivalent to 37.3 percent of the total number of crops growing households. Of the total households using improved seeds, 2,775,767 households were in Mainland Tanzania and 87,703 in Tanzania Zanzibar.

Tabora region reported the largest number of households used improved seeds in Mainland Tanzania (190,331; 6.9 percent), followed by Kilimanjaro (184,369; 6.6 percent) and Mbeya (179,914; 6.5 percent), whereas the region with the least number of households was Katavi (31,780; 1.1 percent). For the case of Tanzania Zanzibar, Mjini Magharibi was leading with 25,836 households (29.5 percent of households using improved seeds), followed by Kusini Pemba (21,764 households; 24.8 percent). The region with the least number of agricultural households using improved seeds was Kusini Unguja (7,698; 8.8 percent) ((Figures 3.74 & 3.75).

**Figure 3.74: Percentage of Households Reporting Source of Improved Seeds During 2019/20 Agricultural Year, Mainland Tanzania**

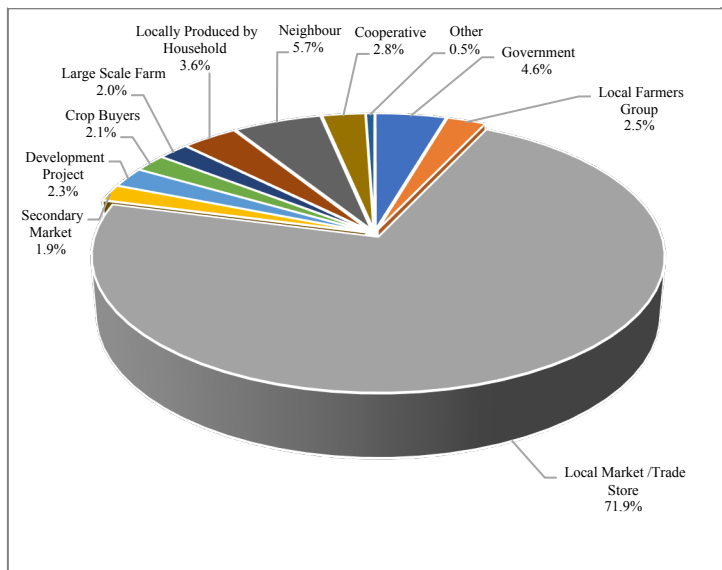


**Figure 3.75: Percentage of Households Reporting Source of Improved Seeds During 2019/20 Agricultural Year, Tanzania Zanzibar**



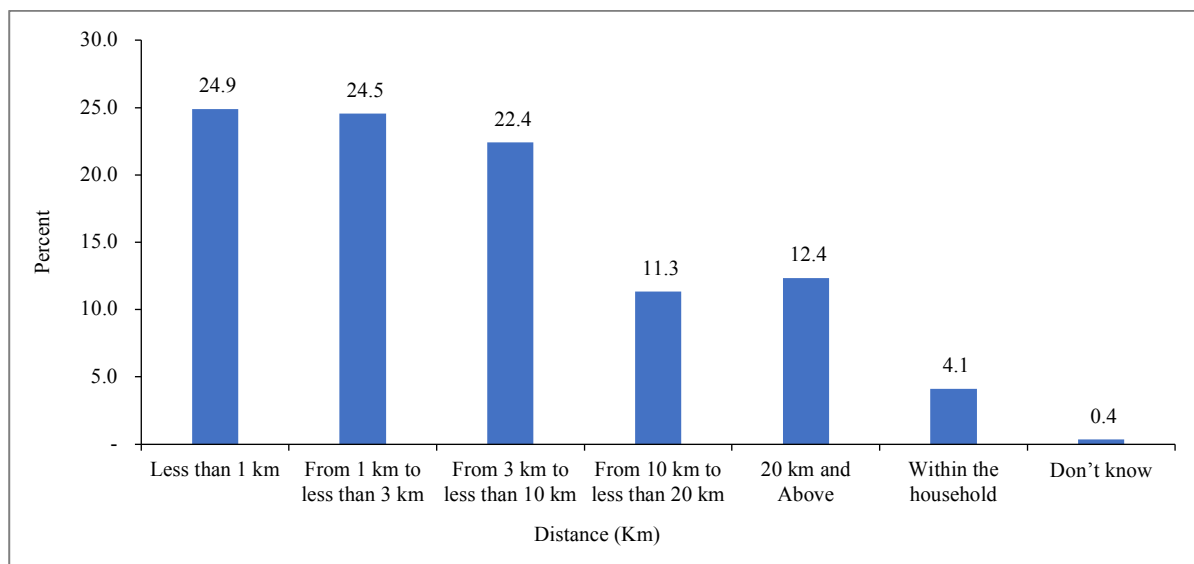
Most of the households obtained improved seeds from Local market/Trade store (2,059,903; 71.9 percent). Other sources of improved seeds were Neighbour (55,462 households; 2.6 percent) and Government (4.6 percent), followed by locally produced by the households (3.6 percent) and cooperatives (2.8 percent) (Figure 3.76).

**Figure 3.76: Percentage Distribution of Households by Source of Improved Seeds During 2019/20 Agricultural Year, Tanzania**



A total number of 1,415,401 households in Tanzania (49.4 percent of total crop farming households reported to use improved seeds) accessed improved seeds within a distance of 3 kilometers from their homestead, whilst 641,182 households (22.4 percent) accessed the same within a distance of 3 to 10 kilometers (Figure 3.77).

**Figure 3.77: Percentage of Agricultural Households Reporting Distance to Improved Seeds During 2019/20 Agricultural Year, Tanzania**

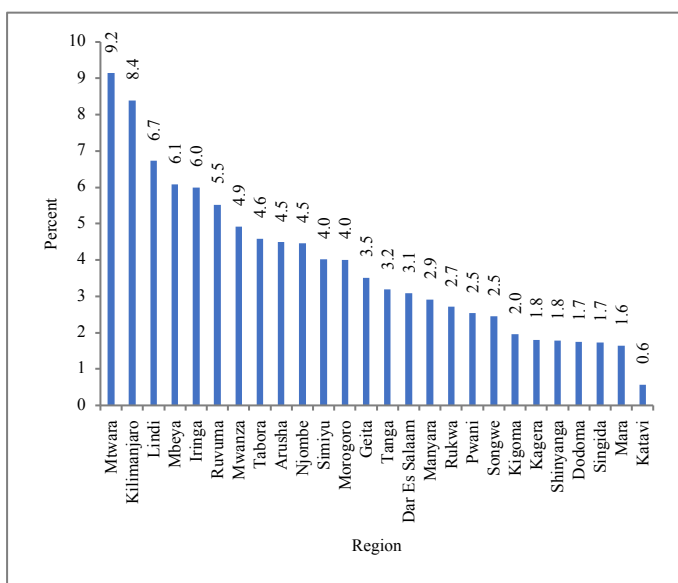


### 3.5.5 Insecticide/ Fungicides

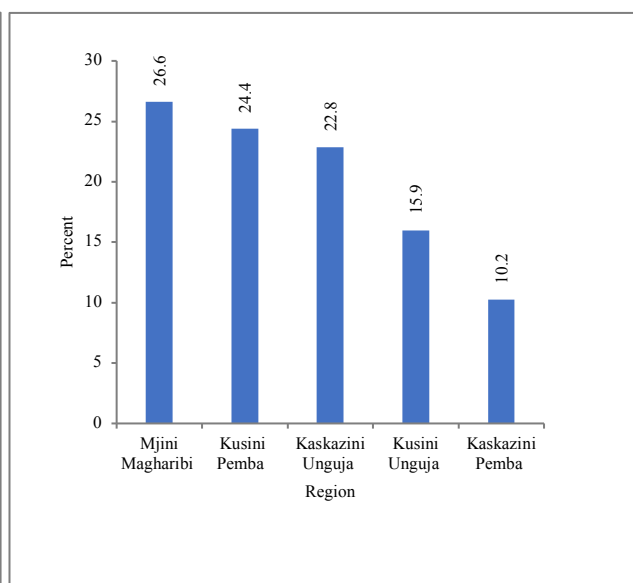
Insecticide use was reported by 2,131,808 households in Tanzania, equivalent to 27.8 percent of the total number of crops growing households. From the total number of households reported to use insecticides/fungicides, 2,102,717 households were in Mainland Tanzania and 29,091 in Tanzania Zanzibar.

In Mainland Tanzania, Mtwara region was leading with 192,446 households (9.2 percent of the households using insecticides), followed by Kilimanjaro (176,380 households; 8.4 percent) and Lindi (141,419 households; 6.0 percent), while the least number of households was reported in Katavi region (11,919 households; 0.6 percent). For the case of Tanzania Zanzibar, Mjini Magharibi region (7,737 households; 26.6 percent), followed by Kusini Pemba (7,094 households; 24.4 percent), whereas the least region was in Kaskazini Pemba (2,977 households; 10.2 percent) (Figure 3.78 & 3.79).

**Figure 3.78: Percentage of Households Reporting Source of Improved Seeds During 2019/20 Agricultural Year, Mainland Tanzania**

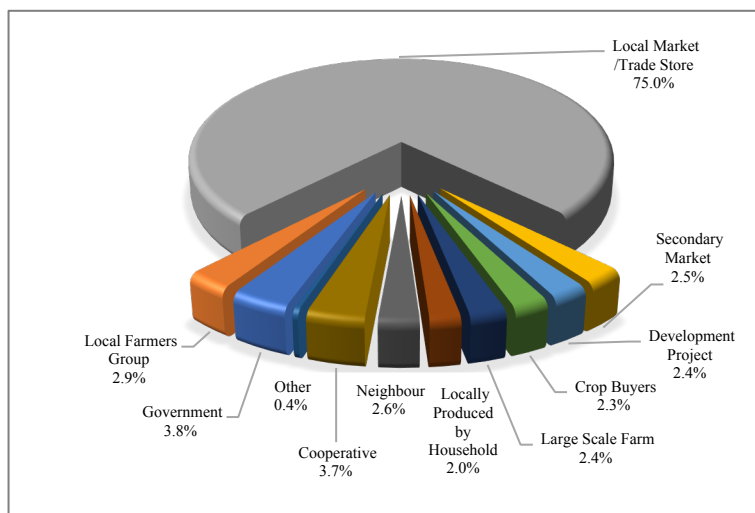


**Figure 3.79: Percentage of Households Reporting Source of Improved Seeds During 2019/20 Agricultural Year, Tanzania Zanzibar**



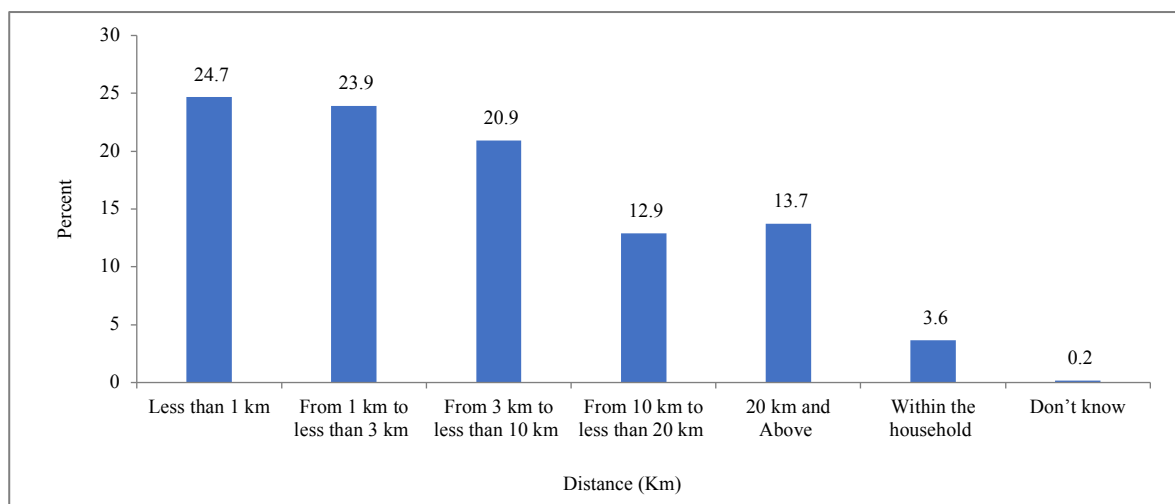
of the insecticides applied by smallholder farmers were obtained from local market/trade store (1,599,407 ;75.0 percent of the crops growing households), followed by Government (80,433 households; 3.8 percent) and Cooperatives (79,614 households; 3.7 percent) (Figure 3.80).

**Figure 3.80: Percentage Distribution of Households by Source of Insecticide/ Fungicides During 2019/20 Agricultural Year, Tanzania**



A total number of 1,035,510 households in Tanzania (48.6 percent) accessed insecticides/fungicides within a distance of 3 kilometers from their homestead, whilst 446,528 households (20.9 percent) accessed the same within a distance of 3 to 10 kilometers (Figure 3.81).

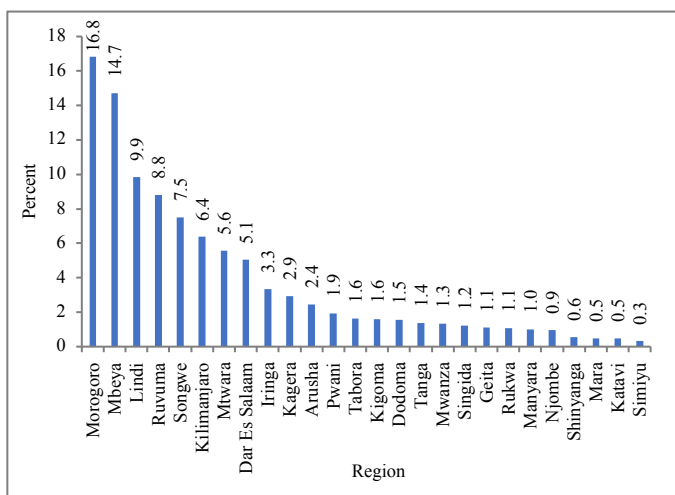
**Figure 3.81: Percentage Distribution of Agricultural Households Reporting Distance to Insecticides/ Fungicides During 2019/20 Agricultural Year, Tanzania**



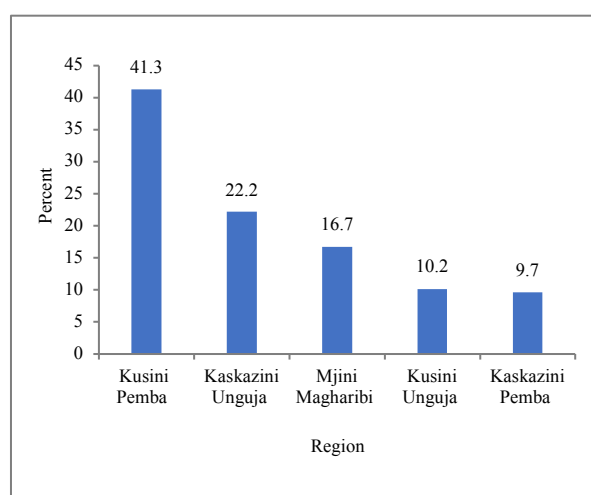
### 3.5.6 Herbicide

Herbicide use was reported by 876,880 (11.4 percent of the crop growing households) in Tanzania, out of which 854,788 households were in Mainland Tanzania and 22,092 in Tanzania Zanzibar. In Mainland Tanzania, Morogoro was leading with 143,833 (16.8 percent) of the households using herbicides, followed by Mbeya (125,683; 14.7 percent) and Lindi (84,240; 9.9 percent). Region with the least use of herbicides was observed in Simiyu (2,965; 0.3 percent). In Tanzania Zanzibar, Kusini Pemba region was leading with 9,116 (41.3 percent) of households using herbicides, followed by Kaskazini Unguja (4,897; 22.2 percent), whilst, the least percentage was in Kaskazini Pemba (2,134; 9.7 percent) (Figure 3.82 & 3.83).

**Figure 3.82: Percentage Distribution of Households Reporting Source of herbicide During 2019/20 Agricultural Year, Mainland Tanzania**

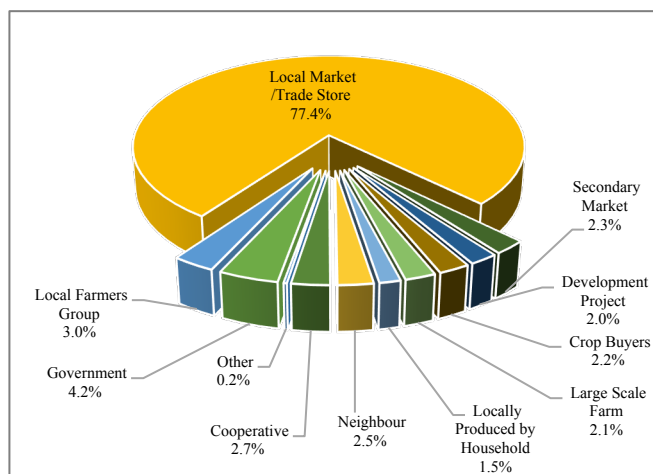


**Figure 3.83: Percentage of Households Reporting Source of Herbicide During 2019/20 Agricultural Year, Tanzania Zanzibar**



As for other inorganic inputs, herbicide was mostly obtained by households through purchasing from local market/trade store (678,745; 77.4 percent). Other sources such as government (36,554; 4.2 percent) and local farmers group (26,079; 3.0 percent) were reported by few households (Figure 3.84).

**Figure 3.84: Percentage Distribution of Households by Source of Herbicides During 2019/20 Agricultural Year, Tanzania**



A total number of 437,155 households in Tanzania (49.9 percent) accessed herbicide within a distance of 3 kilometers from their homestead, whilst 164,531 households (18.8 percent) accessed the same within a distance of 3 to 10 kilometers

### 3.6 Crop Extension Services

This section presents information on various extension services received, sources and practices by crop growing households during 2019/20 agricultural year. The extension services discussed in this section include spacing, use of agrochemicals, erosion control, fertilizer and seed use, and marketing to mention the few.

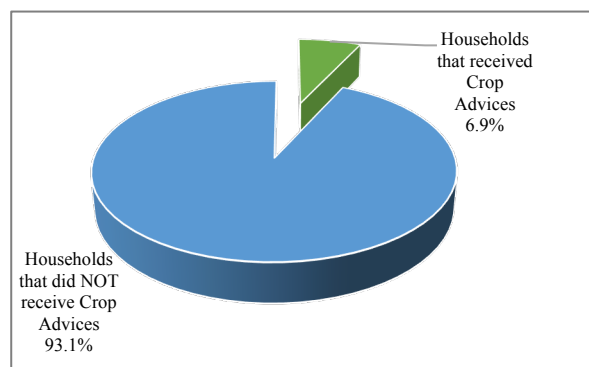
#### 3.6.1 Access to Crop Extension Services

Out of 7,677,291 crop growing households in Tanzania, 537,701 households (7.0 percent) received crop extension service during 2019/20 agricultural year. Out of the total households received extension service in Tanzania, 519,802 were from Mainland Tanzania and 17,899 were from Tanzania Zanzibar (Figure 3.85).

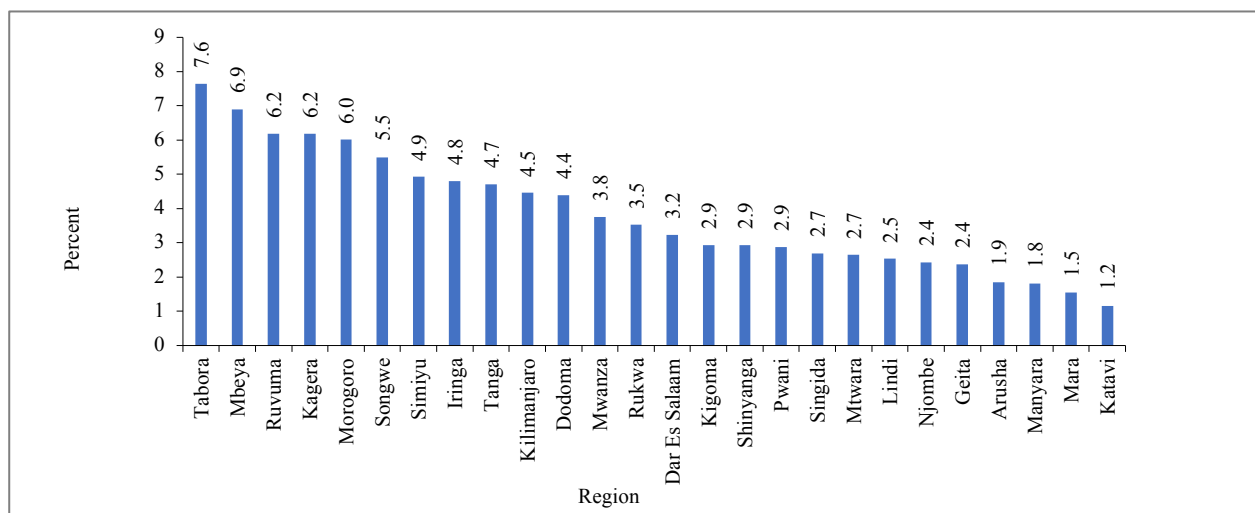
In Mainland Tanzania, from the total number of households reported to receive extension service,

Tabora region had largest number of households (39,697; 7.6 percent), followed by Mbeya (35,796; 6.9 percent) and Ruvuma (32,104; 6.2 percent). On the other hand, Katavi region reported the least number of households received extension (5,994; 1.2 percent) (Figure 3.86). In Tanzania Zanzibar, Mjini Magharibi had the largest number of households reported to receive extension service (5,099; 28.5 percent), followed by Kusini Pemba (4,672; 26.1 percent) and the least region was Kusini Unguja (2,616; 14.6 percent).

**Figure 3.85: Percentage Distribution of Agricultural Households Receiving Crop Extension Advices During 2019/20 Agricultural Year, Tanzania**

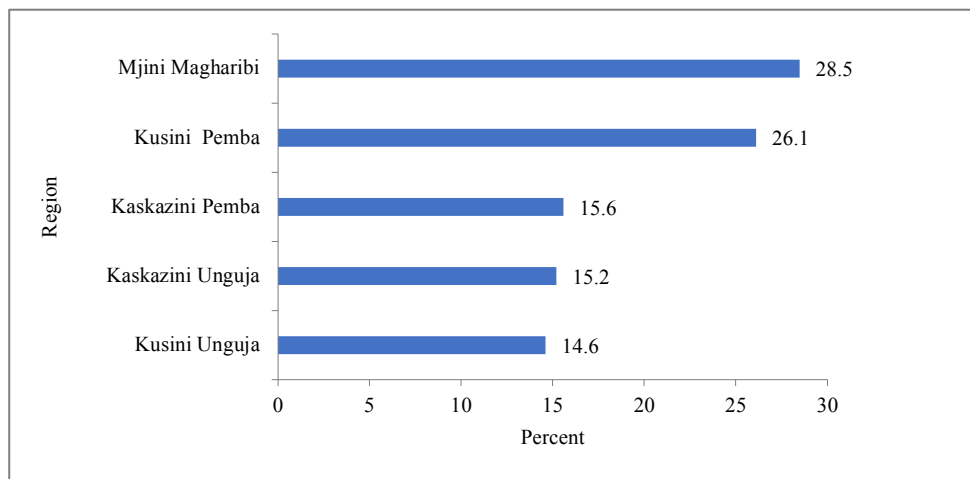


**Figure 3.86: Percentage Distribution of Agricultural Households Reported to Receive Crop Extension Services by Region During 2019/20 Agricultural Year, Mainland Tanzania**



In Tanzania Zanzibar, Mjini Magharibi had the highest number of the households that received crop extension services (5,099; 28.5 percent), followed by Kusini Pemba (4,672; 26.1 percent) and the least proportion of households was in Kusini Unguja (2,616; 14.6 percent) (Figure 3.87).

**Figure 3.87: Percentage Distribution of Agricultural Households Receiving Crop Extension Advices by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



As compared to the 2007/08 Agriculture Census, the proportion of crops growing households that received crop extension service has decreased significantly from 67.0 percent in 2007/08 to 7.0 percent in 2019/20 agricultural years. This might be as a result of an increased number of farming households accompanied with the limited number of extension officers in the country.

### 3.6.2 Source of Extension Services

The government provided most of the extension advice which accounted for more than 70 percent of majority of the crop growing households while providing different kinds of extension services such as integrated pest management, rice intensification, irrigation technology and organic fertilizer use. NGOs/Development projects were reported to provide extension services by proportional of 6 to 10 percent of households among all the services reached by smallholders. Other extension service sources reported were cooperatives, large scale farmers and registered private agro dealers (Figure 3.88).



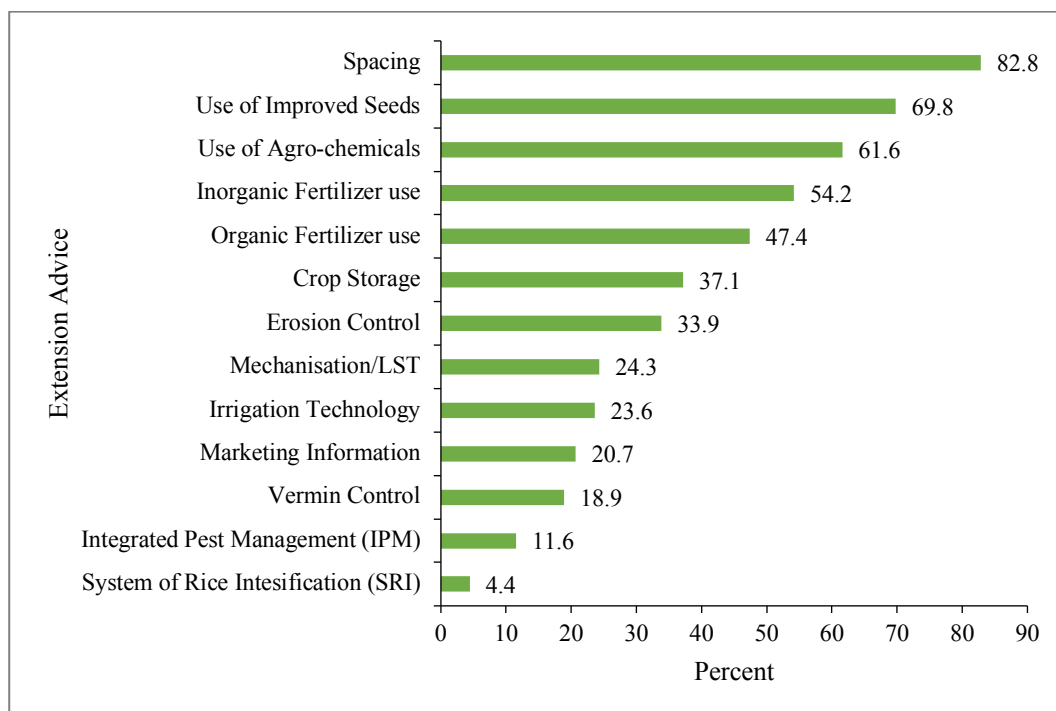
**Figure 3.88: Percentage of Agricultural Households Receiving Extension by Type of Extension Service Provider During 2019/20 Agricultural Year, Tanzania**



### 3.6.3 Extension Message Practices

Smallholder farmers that received extension services were asked on whether they have practiced different extension messages advice received during 2019/20 agricultural year. The results show that, among selected extension message received, spacing had the highest proportion (82.8 percent) of the agricultural households reported to practice the advice. Apart from that, use of improved seeds was practiced by 69.8 percent of the agricultural households, and use of agro-chemicals was practiced by 61.6 percent of the agricultural households. On the other hand, the least proportional of the households practiced System of Rice Intensification (SRI) (4.4 percent) (Figure 3.89).

**Figure 3.89: Percentage of Agricultural Households Received Extension Message by Type of Extension Advices Practiced During 2019/20 Agricultural Year, Tanzania**



### 3.7 Agriculture Mechanization

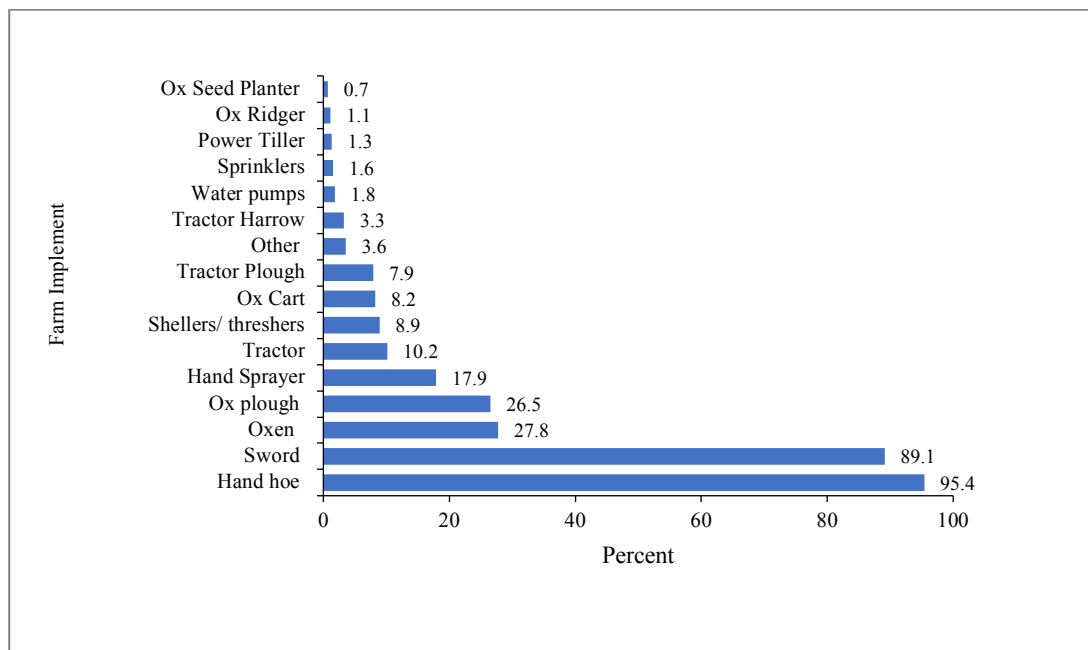
Agriculture mechanization involves application of appropriate tools, implements and machines to mechanize the work of agriculture, from simple and basic hand tools to more sophisticated and motorized equipment. It simplifies work and reduces labour while improving productivity.

#### 3.7.1 On Farm Investments

Majority of the households in Tanzania (7,477,152; 95.4 percent) reported to use hand hoe and sword (6,982,450, 89.1 percent) for their farming activities. In Mainland Tanzania, 7,309,858 households reported to use hand hoe equivalent to 95.5 percent and sword (6,808,056, 88.9 percent). In Tanzania Zanzibar, the majority of the agricultural households used sword and hand hoe (174,394; 96.8 percent and 167,294; 92.8 percent respectively).

Other farming implements used by smallholder farmers reported were oxen (27.8 percent), ox plough (26.5 percent), hand sprayer (17.9 percent) and tractors (10.2 percent). In addition to that, less than 10 percent of households used other farming implements (Figure 3.90).

**Figure 3.90: Percentage of Agricultural Households that Reported Using Farm Implements/Assets During 2019/20 Agricultural Year, Tanzania**



All regions in Mainland Tanzania have reported the use of hand hoe for over 90 percent of their households in cultivating land, except Dar es Salaam 87.6 percent and Arusha 79.0 percent.

Likewise, for the households that used sword for over 90 percent were in Lindi, Mtwara, Kigoma, Tanga, Ruvuma, Shinyanga, Kagera, Kilimanjaro, Iringa, Njombe and Dodoma regions. For the rest of the regions, the use of sword ranged from 81.1 to 89.9 percent.

Similarly, in Tanzania Zanzibar, hand hoe was used by over 90 percent of the households in Kusini Pemba, Kaskazini Pemba and Mjini Magharibi regions. In addition, sword was used by more than 95 percent of the households in Zanzibar (Table 3.25).

**Table 3.25: Number and Percentage of Agricultural Households Reported to Use Farm Implements/Assets by Region During 2019/20 Agricultural Year, Tanzania**

Region	Equipment/Asset											Total Agricultural Households
	Panga	Hand Hoe	Oxen	Ox Plough	Ox Seed Planter	Ox Cart	Tractor	Tractor Plough	Tractor Harrow	Power Tiller	Ox Ridger	
Dodoma	91.2	97.7	57.9	54.9	1.0	16.6	19.6	18.1	1.5	2.5	1.2	510,148
Arusha	75.4	79.0	25.5	21.9	4.0	6.5	38.0	26.3	9.9	0.7	2.3	221,016
Kilimanjaro	94.3	96.1	6.6	5.7	0.8	1.1	31.5	20.2	8.5	1.3	0.4	294,311
Tanga	95.5	96.8	1.4	1.7	0.3	0.7	11.8	9.5	1.6	0.7	0.2	351,412
Morogoro	88.7	94.3	18.5	18.2	1.8	2.7	33.7	26.5	9.1	0.7	0.8	413,216
Pwani	89.4	91.4	1.9	2.0	0.1	0.4	9.0	7.4	2.7	0.2	0.5	217,921
Dar Es Salaam	83.4	87.6	3.8	5.5	1.0	1.7	10.2	9.1	6.8	1.5	0.7	414,300
Lindi	97.1	98.1	0.1	0.2	0.2	0.1	7.2	6.0	0.1	0.2	-	229,664
Mtwara	97.1	98.7	0.1	0.4	0.1	0.1	4.6	3.4	3.8	0.3	0.1	305,034
Ruvuma	95.4	99.0	0.4	0.1	0.1	0.6	1.9	1.3	0.7	0.2	0.2	332,020
Iringa	92.4	98.9	38.0	36.5	0.7	5.8	14.0	12.9	2.4	8.1	0.9	209,485
Mbeya	83.4	95.6	28.0	26.8	1.2	1.2	3.0	3.1	5.2	9.7	1.0	380,639
Singida	89.5	98.2	69.2	62.8	0.1	24.3	4.5	2.4	1.0	0.2	1.1	272,662
Tabora	88.1	97.6	56.8	57.6	0.1	24.8	2.2	1.5	1.3	0.4	3.0	369,971
Rukwa	85.1	91.0	75.1	73.6	0.2	11.1	0.7	0.5	2.8	2.6	2.9	218,249
Kigoma	95.7	99.2	0.9	0.4	0.2	0.4	-	-	0.3	-	0.2	348,378
Shinyanga	95.0	98.7	76.5	69.6	0.5	20.8	3.4	2.7	0.5	0.1	1.6	204,926
Kagera	94.6	98.4	3.3	2.9	0.7	1.8	0.6	0.3	4.3	0.3	0.4	483,019
Mwanza	78.6	94.4	33.2	33.4	0.3	7.3	1.3	1.1	1.3	0.4	1.1	406,034
Mara	89.9	92.7	45.5	45.3	0.3	4.2	1.6	1.8	5.8	0.2	1.2	233,931
Manyara	78.8	90.9	37.2	35.7	2.6	18.7	39.7	29.7	2.5	0.6	2.3	272,224
Njombe	92.0	96.3	25.3	28.8	0.2	2.5	2.0	1.7	1.2	0.2	0.6	160,108
Katavi	76.6	93.3	39.0	37.9	0.4	13.2	1.2	1.0	0.8	0.1	3.7	76,867
Simiyu	89.0	98.2	61.3	60.3	0.3	33.9	15.2	10.5	1.3	0.3	1.4	180,689
Geita	81.1	98.1	37.1	34.5	0.1	10.9	0.6	0.5	0.7	-	1.4	269,141
Songwe	84.8	96.1	51.7	43.6	1.4	23.0	0.9	1.1	4.5	0.6	4.3	281,820
<b>Mainland Tanzania</b>	<b>88.9</b>	<b>95.5</b>	<b>28.3</b>	<b>27.1</b>	<b>0.7</b>	<b>8.3</b>	<b>10.2</b>	<b>8.0</b>	<b>3.3</b>	<b>1.3</b>	<b>1.2</b>	<b>7,657,185</b>
Kaskazini Unguja	96.3	86.4	1.5	0.4	0.4	1.4	13.2	5.6	6.8	0.3	0.5	31,594
Kusini Unguja	96.7	80.4	4.3	0.6	-	9.9	11.4	12.1	11.2	2.0	-	17,593
Mjini Magharibi	93.6	91.6	13.3	13.7	-	6.0	7.4	5.7	5.0	4.2	0.4	35,873
Kaskazini Pemba	96.8	97.7	0.9	-	-	0.4	2.9	1.3	-	-	0.3	40,781
Kusini Pemba	99.1	97.8	0.6	0.3	0.3	3.2	7.5	6.5	0.5	0.3	0.3	54,379
<b>Tanzania Zanzibar</b>	<b>96.8</b>	<b>92.8</b>	<b>3.7</b>	<b>2.9</b>	<b>0.1</b>	<b>3.5</b>	<b>7.8</b>	<b>5.6</b>	<b>3.5</b>	<b>1.2</b>	<b>0.3</b>	<b>180,220</b>
<b>Tanzania</b>	<b>89.1</b>	<b>95.4</b>	<b>27.8</b>	<b>26.5</b>	<b>0.7</b>	<b>8.2</b>	<b>10.2</b>	<b>7.9</b>	<b>3.3</b>	<b>1.3</b>	<b>1.1</b>	<b>7,837,405</b>

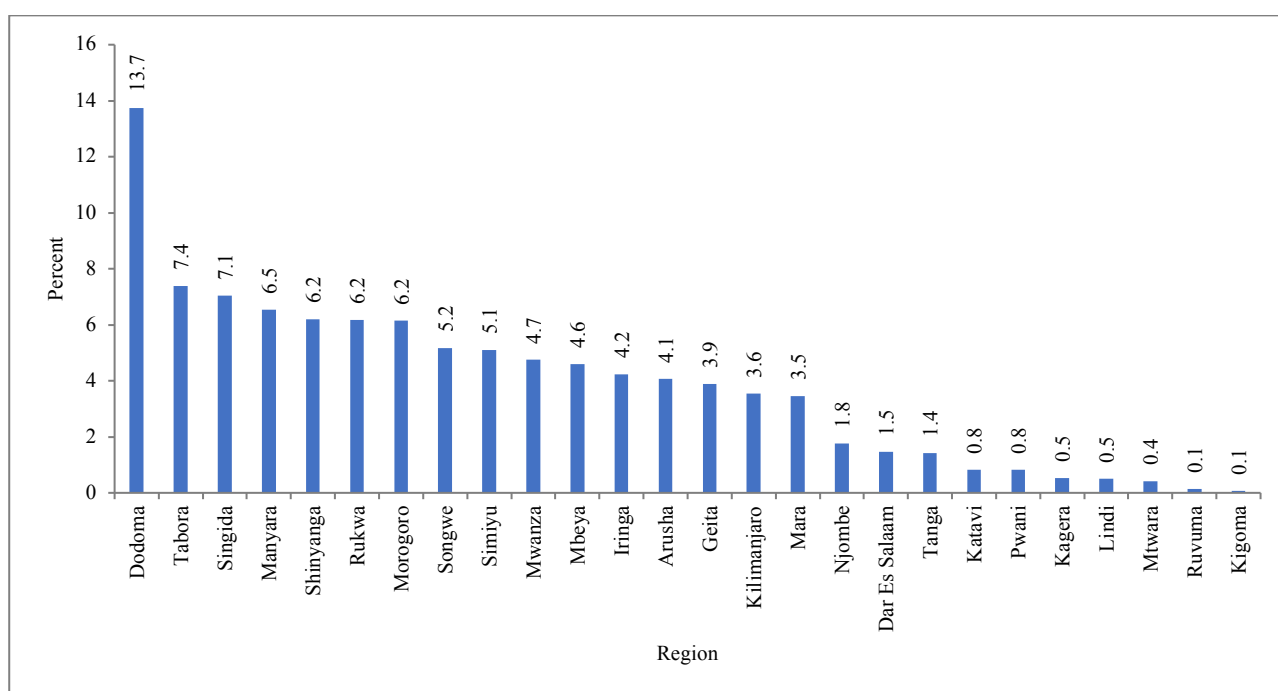
Comparatively, there is a decrease of 2.2 percent in use of hand hoe from 97.6 percent in 2007/08 to 95.4 percent in 2019/20 agricultural year. On the other hand, there was a slight increase in the use of tractor plough from 7.3 percent in 2007/08 to 7.9 percent in 2019/20.

### 3.7.2 Use of Tractors and Draft Animals

In Tanzania, 2,606,143 equivalents to 33.3 percent of the agricultural households used tractors/draft animals for agricultural activities, out of which 2,592,870 households were in Mainland Tanzania and 13,273 in Tanzania Zanzibar.

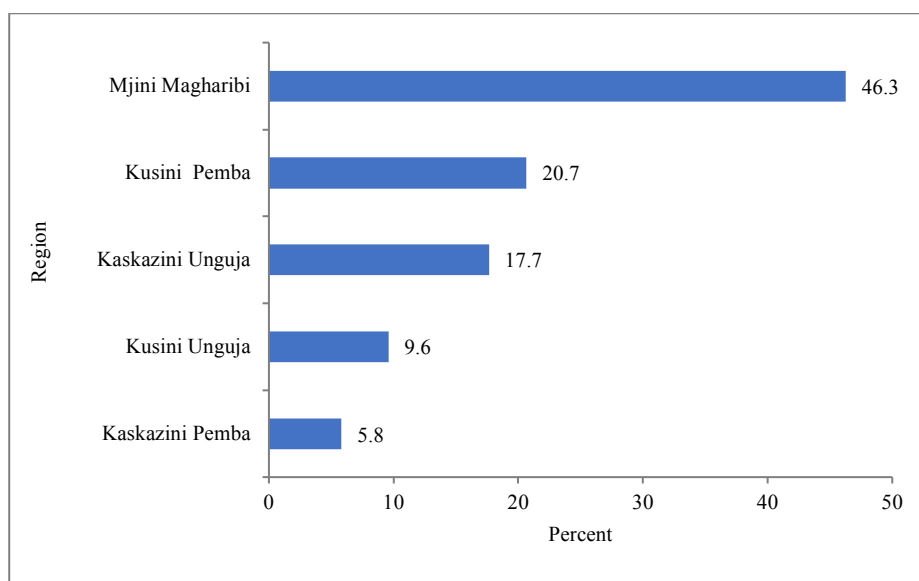
In Mainland Tanzania, Dodoma region had the highest proportion of households using tractors/draft animals (13.7 percent), followed by Tabora (7.4 percent) and Singida (7.1 percent). The least proportion of households that used tractors/ draft animals was in Kigoma region with 0.1 percent (Figure 3.91).

**Figure 3.91: Percentage of Agricultural Households Reported Using Farm Tractors/Draft Animals by Region During 2019/20 Agricultural Year, Mainland Tanzania**



In Tanzania Zanzibar, Mjini Magharibi was leading with 46.3 percent of the households using tractors or draft animals, followed by Kusini Pemba (20.7 percent), whilst the least proportion of the households using the same was in Kaskazini Pemba (5.8 percent) (Figure 3.92).

**Figure 3.92: Percentage of Agricultural Households that Reported Using Tractors/Draft Animals by Region during 2019/20 Agricultural Year, Tanzania Zanzibar**



### 3.8 Crop Marketing

This section presents the results on crop commercialization and main marketing challenges. crop commercialization focuses on cereals, roots and tubers, fruit and vegetables, pulses, and oils seeds and nuts. Crop commercialization is defined here as the production of agricultural crops for sale in the market, rather than for family consumption. The degree of commercialization is determined using the crop commercialization index. Commercialization index of “0” implies that a household is completely engaged in crop production for subsistence (for family consumption), while commercialization index of “100” implies that a household is completely engaged in crop production for market (full commercialization).

#### 3.8.1 Crop commercialization

Census results show that, the level of crop commercialization depends on the type of the crop produced. In Tanzania, the average commercialization index for fruit and vegetables was 60.8 percent, pulses were 22.1 percent, oils seeds and nuts 21.2 percent, cereals 19.0 percent and roots and tubers were 14.5 percent.

The higher crop commercialization index recorded for fruit and vegetables (60.8 percent) is an indication that on average most quantity of fruit and vegetables produced were marketed and only 39 percent were not sold. On the other hand, low crop commercialization indices recorded for cereals, roots and tubers, pulses, oils seeds and nuts indicate that, on average these crops were mostly produced for household consumption.

However, census results at regional level show that, some regions recorded commercialization index of more than 50 percent. In Mainland Tanzania, these regions were Dar es Salaam (63.7 percent for cereals) and Mbeya (87.4 percent for roots and tubers). In terms of fruit and vegetables it was higher in Iringa (92.2 percent), Kilimanjaro (92.1 percent) and Arusha (81.6 percent) and in terms of oil and seeds and nuts it was higher in Pwani (82.7 percent). In Tanzania Zanzibar, only Kaskazini Pemba recorded commercialization index of more than 50.3 percent for oils seeds and nuts (Table 3.26).

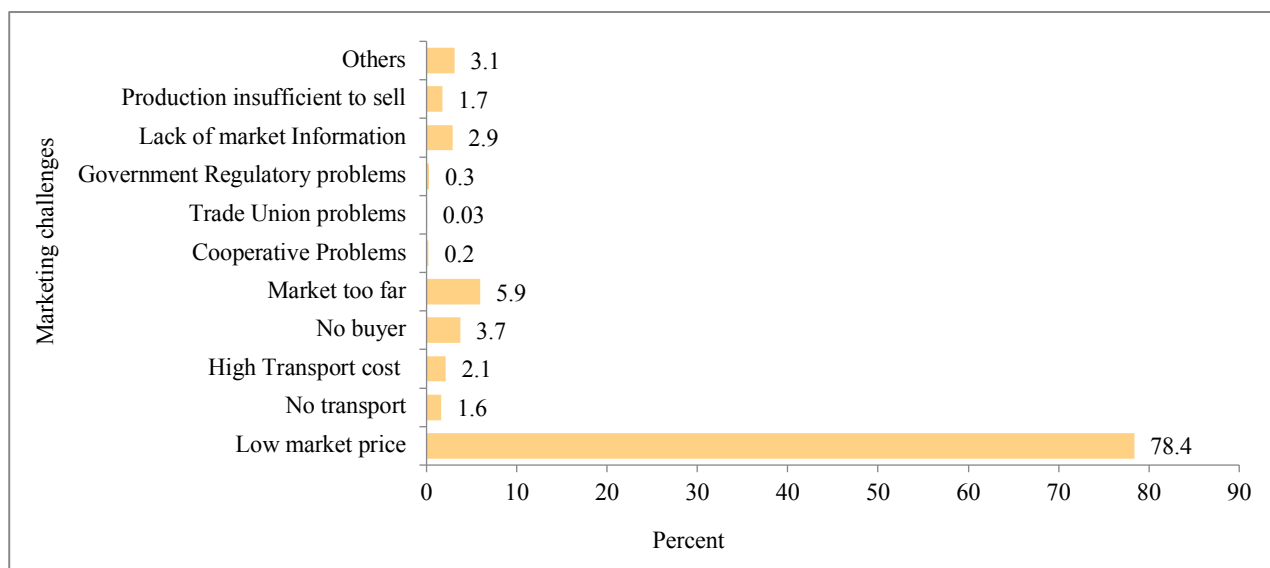
**Table 3.26: Crop Commercialization Index by Crop Type and Region During 2019/20 Agricultural Year, Tanzania**

Region	Crop Commercialization Indices (Percent)				
	Cereals	Roots and Tubers	Fruit and Vegetables	Pulses	Oils Seeds and Nuts
Dodoma	8.8	27.1	55.2	19.9	19.9
Arusha	12.1	68.3	81.6	25.3	5.8
Kilimanjaro	26.8	61.4	92.1	32.1	9.2
Tanga	27.2	58.3	76.1	22.3	15.6
Morogoro	16.3	19.7	34.5	24.1	25.6
Pwani	9.9	23.7	41.0	14.8	82.7
Dar Es Salaam	63.7	8.8	47.7	22.7	25.3
Lindi	3.4	6.7	48.6	33.0	71.2
Mtwara	5.8	1.0	59.6	26.7	42.8
Ruvuma	38.6	19.6	68.1	39.2	47.0
Iringa	19.0	58.5	92.2	32.7	14.1
Mbeya	18.4	68.1	36.9	24.5	21.1
Singida	7.7	25.4	70.0	12.1	25.3
Tabora	15.5	2.1	44.9	3.1	13.3
Rukwa	29.9	12.2	59.5	36.1	23.4
Kigoma	20.3	16.7	50.8	20.9	21.1
Shinyanga	16.8	1.3	36.7	6.6	6.1
Kagera	30.4	8.4	57.2	21.8	10.3
Mwanza	14.1	2.5	51.2	13.0	3.4
Mara	16.8	4.4	77.7	27.2	29.3
Manyara	11.0	66.9	70.2	17.3	10.0
Njombe	20.8	87.4	58.6	34.6	20.0
Katavi	18.9	12.3	68.2	37.0	24.6
Simiyu	8.5	0.3	60.4	21.4	8.3
Geita	19.1	19.7	79.1	5.4	10.6
Songwe	19.5	36.0	60.5	16.3	25.4
<b>Mainland Tanzania</b>	<b>19.1</b>	<b>15.1</b>	<b>62.2</b>	<b>22.2</b>	<b>21.2</b>
Kaskazini Unguja	7.4	17.5	49.4	0.4	49.8
Kusini Unguja	7.8	12.0	49.3	2.3	41.2
Mjini Magharibi	12.8	9.6	25.8	0.0	23.4
Kaskazini Pemba	0.3	0.8	28.3	0.0	50.3
Kusini Pemba	0.2	13.0	24.5	0.8	46.3
<b>Tanzania Zanzibar</b>	<b>5.2</b>	<b>8.7</b>	<b>36.1</b>	<b>0.7</b>	<b>45.7</b>
<b>Tanzania</b>	<b>19.0</b>	<b>14.5</b>	<b>60.8</b>	<b>22.1</b>	<b>21.2</b>

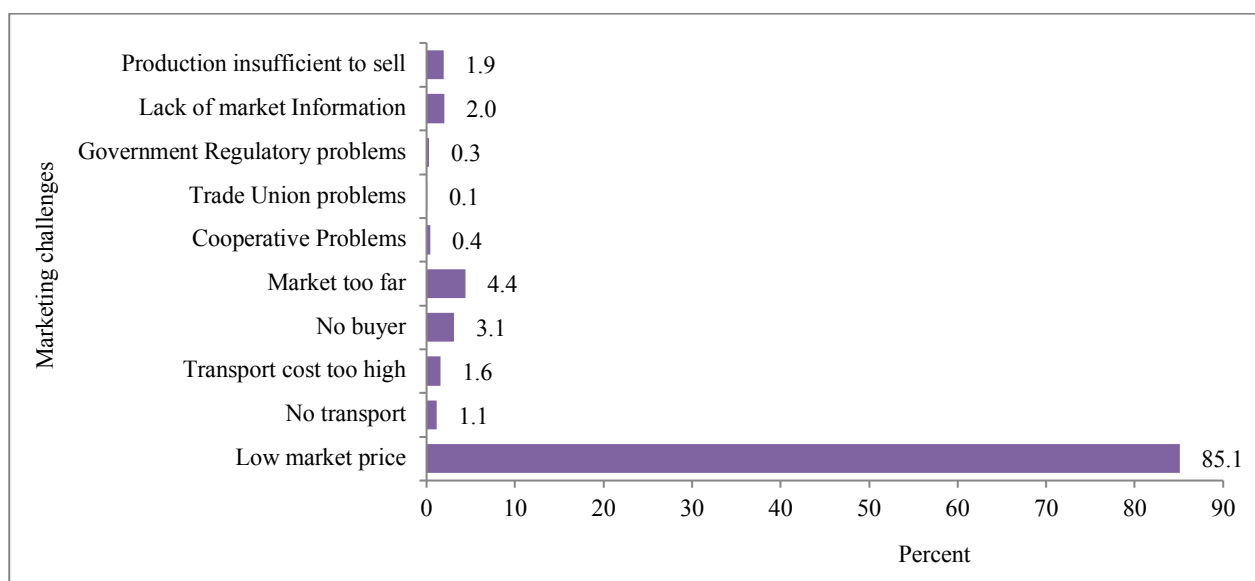
### 3.8.2 Main Marketing Challenges

Households reported various marketing challenges encountered during both short and long rainy seasons in Tanzania. Majority of households (78.4 percent during short and 85.1 percent long rains) indicated low market price was the most important marketing challenge. The magnitude of low market price was felt more during the long rainy than in short rainy. Other reported marketing challenges were minor, cited by 5 percent or less of the households growing crops. This included market being too far, lack of buyers and lack of market information (Figure 3.93 & 3.94).

**Figure 3.93: Percentage of Households Reported Marketing Challenges by Type of Challenge During 2019/20 Agricultural Year, Short Rainy Season, Tanzania**



**Figure 3.94: Percentage of Households Reported Marketing Challenges by Type of Challenge During 2019/20 Agricultural Year, Long Rainy Season, Tanzania**





## CHAPTER FOUR

### LIVESTOCK, FISH FARMING AND BEEKEEPING RESULTS

#### 4.0 Introduction

Livestock rearing is one of the main agricultural activities in the country that is contributing towards the National Strategic Goals (NSGs) and the objective of the Tanzania Development Vision 2025. In the year 2019/20, the livestock sub-sector contributed 7.1 percent to the National Gross Domestic Product and grew by 5 percent (The Economic Survey 2020).

Furthermore, the livestock sub-sector plays a significant role in the economy of agricultural households in Tanzania as it provides best source of animal protein, food security, cash income, manure for the crop and vegetable production, draught animal power, and other socio – economic functions. The main types of livestock raised in Tanzania are cattle, goats, sheep, pigs, chicken, other birds including ducks, turkeys and guinea fowls; and other livestock (rabbits, donkeys and guinea pigs). Livestock products produced include meat, milk, eggs, hides and skins.

This chapter presents the results in relation to the livestock population at national and regional levels in both Mainland Tanzania and Tanzania Zanzibar. Other livestock variables discussed in this chapter include livestock diseases, methods of cattle identification, livestock products (milk, eggs, and hides and skin), extension services and pests and parasites control. Moreover, it includes data from large scale farms to enable national estimation of livestock population, production and products. The reference date for livestock population was as of 1<sup>st</sup> August 2020, while other livestock related variables were collected based on the 2019/20 agricultural year. Whenever possible the 2019/20 census results are compared with previous Agriculture Censuses over the period between 2002/03 and 2007/08.

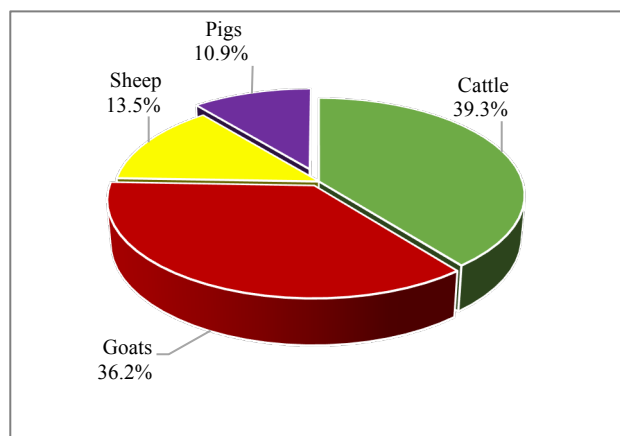
#### 4.1 Livestock Population

The main types and number of livestock covered in the 2019/20 Agricultural Sample Census were categorized into three areas; i) Main livestock raised includes cattle, goats, sheep and pigs; ii) Poultry which comprises of chicken, ducks and turkeys; and iii) Other livestock that were recorded includes rabbits, donkeys, horses and dogs.

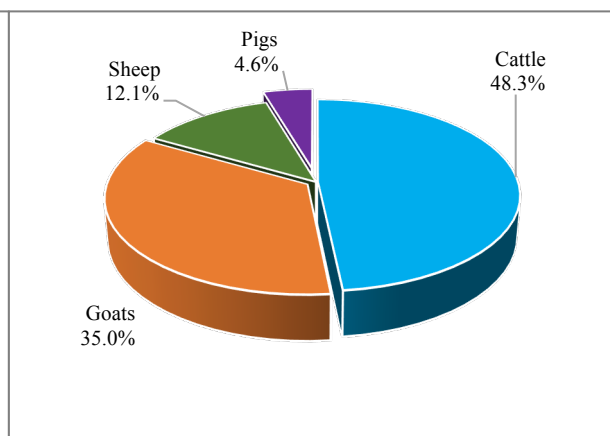
A total of 2,747,911 households, out of 7,837,405 agricultural households, were involved in rearing livestock in Tanzania during 2019/20 agricultural year. The results show that, 1,971,550 households (39.3 percent) raised cattle, followed by goats (1,815,220; 36.2 percent), sheep (677,273; 13.5 percent) and pigs (546,986; 10.9 percent). Cattle were the most dominant livestock raised with

33,928,391 (48.3 percent) heads, followed by goats (24,568,396; 35.0 percent), sheep (8,516,990; 12.1 percent), and pigs (3,208,495; 4.6 percent) (Figure 4.1 & 4.2).

**Figure 4.1: Percentage of Households Rearing Livestock by Type During 2019/20 Agricultural Year, Tanzania**



**Figure 4.2: Percentage of Livestock Population by Type During 2019/20 Agricultural Year, Tanzania**



#### 4.1.1 Cattle Population

A total of 1,971,550 households were engaged in rearing cattle in Tanzania, whereby 1,915,625 households were reported in Mainland Tanzania and 55,925 in Tanzania Zanzibar. The total number of cattle in Tanzania was 33,928,391 out of which, 33,785,423 (99.6 percent) were kept by smallholder farmers and 142,968 (0.4 percent) raised in large scale farms. The number of cattle kept by smallholder farmers in Mainland Tanzania were 33,514,716 and 270,707 in Tanzania Zanzibar as reflected in Table 4.1.

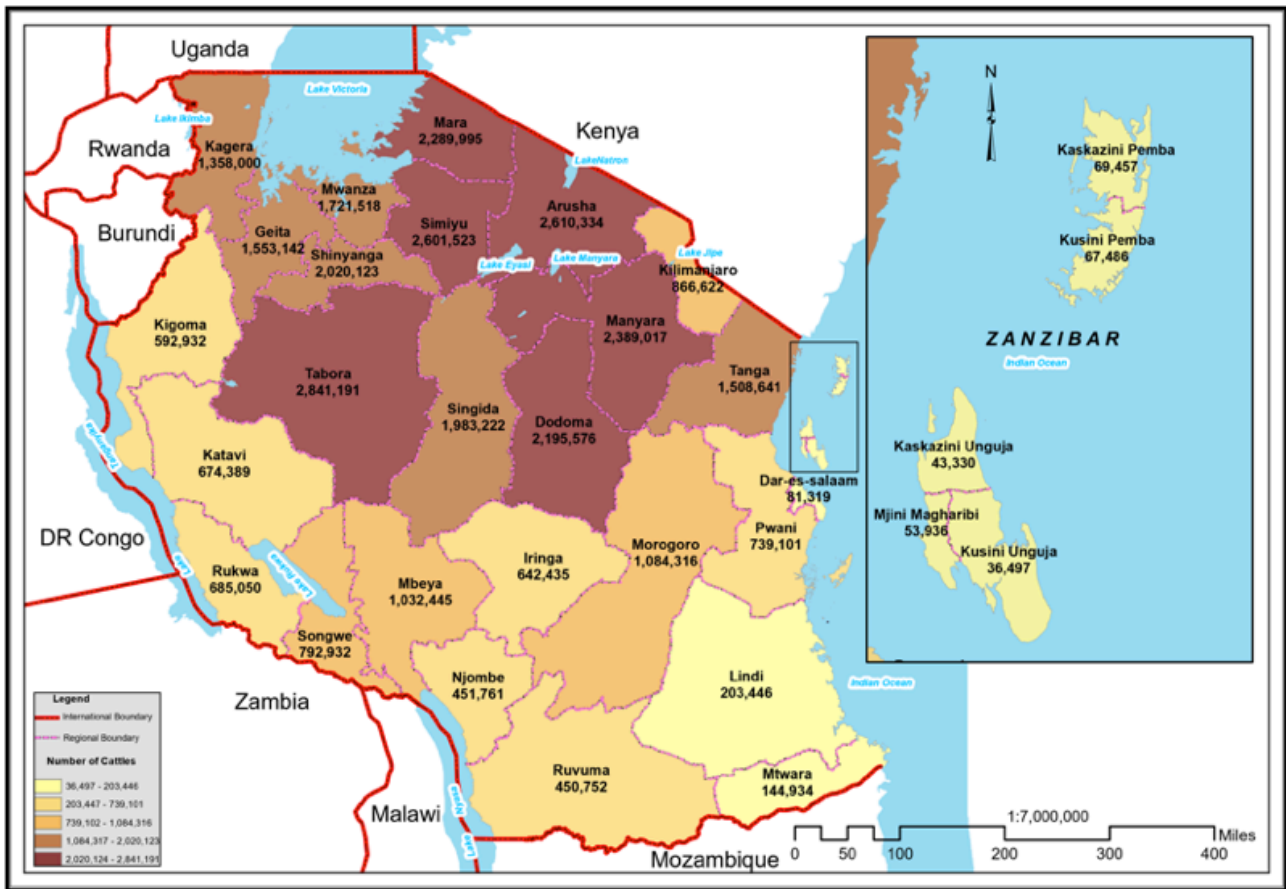
**Table 4.1: Number of Households and Livestock/Chicken by Type for Smallholder Farmers and Large Scale Farms as of 1<sup>st</sup> August 2020, Tanzania**

Livestock Type	Tanzania		Smallholder Farmers				Large Scale Farms	
			Mainland Tanzania		Tanzania Zanzibar		Mainland Tanzania	Tanzania Zanzibar
	Number of Households	Number of livestock	Number of Households	Number of livestock	Number of Households	Number of livestock	Number of livestock	Number of livestock
Cattle	1,971,550	33,928,391	1,915,625	33,514,716	55,925	270,707	142,677	291
Goats	1,815,219	24,568,396	1,796,739	24,423,120	18,480	111,429	33,653	194
Sheep	677,273	8,516,990	677,081	8,492,044	192	871	24,012	63
Pig	536,986	3,208,495	536,841	3,201,163	145	2,209	5,123	0
Chicken	4,338,882	87,659,580	4,238,344	71,414,297	100,538	3,705,505	12,481,099	58,679

In Mainland Tanzania, Tabora region had the highest number of cattle (2,841,191; 8.5 percent) from smallholder farmers, followed by Arusha (2,610,334; 7.8 percent) and Simiyu (2,601,523; 7.8 percent). In Tanzania Zanzibar, Kaskazini Pemba region had the highest number of cattle (69,457;

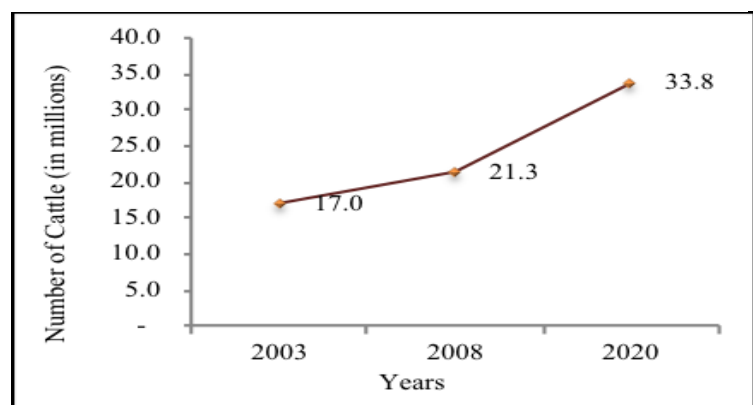
25.7 percent), followed by Kusini Pemba (67,486; 24.9 percent) and Mjini Magharibi (53,936; 19.9 percent) (Map 4.1).

**Map 4.1: Cattle Population Reported by Smallholder Farmers by Region in Tanzania as of 1<sup>st</sup> August 2020**



The cattle population raised by smallholder farmers has increased from 21,280,875 in year 2008 to 33,785,422 in the 2020, representing an increase of about 59 percent, giving an annual growth rate of approximately 5.0 percent over the period of twelve years. In 2003 Agriculture Census, the smallholder farmers raised 16,999,793 cattle, this shows a population growth of 25.0 percent in the period of 5 years (2003 – 2008) but the annual growth rate remained the same (5.0 percent) (Figure 4.3).

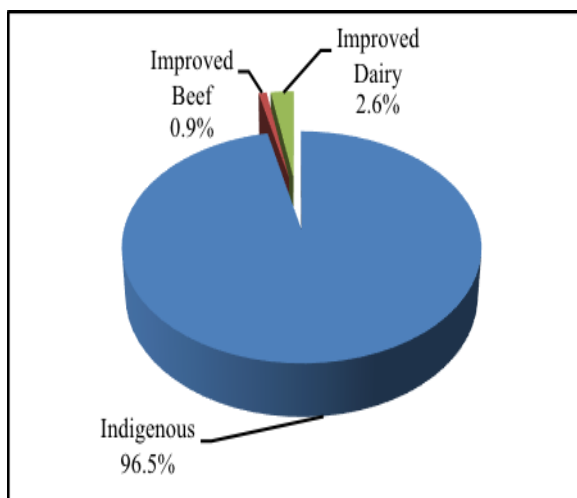
**Figure 4.3: Cattle Population Growth in 2003, 2008 and 2020 Agriculture Censuses, Tanzania**



#### 4.1.1.1 Types of Cattle

There were three main types of cattle raised in Tanzania during 2019/20 agricultural year namely; indigenous, dairy and beef. In Tanzania, indigenous cattle were 32,617,693 heads (96.5 percent), followed by Dairy cattle (865,628; 2.6 percent), and Beef cattle (302,101; 0.9 percent) (Figure 4.4).

**Figure 4.4: Percentage of Cattle by Type During 2019/20 Agricultural Year, Tanzania**



Out of 33,514,716 cattle recorded in Mainland Tanzania, indigenous cattle had the highest number with 32,378,139 heads (96.6 percent), followed by dairy cattle (836,056; 2.5 percent), and beef cattle (300,521; 0.9 percent).

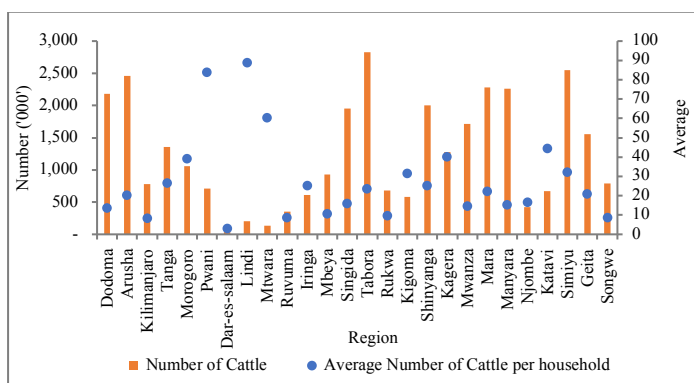
In Tanzania Zanzibar, a total of 270,707 cattle was raised, out of which, indigenous cattle had the highest number of 239,554 heads (85.5 percent), followed by dairy cattle (29,572 heads; 17.2 percent), and beef cattle (1,580 heads; 0.6 percent). Moreover, the average numbers of cattle per households were 17 and 5 heads in Mainland Tanzania and Tanzania Zanzibar respectively.

#### 4.1.1.2 Indigenous Cattle Population

The indigenous type dominated the cattle population. There were 1,786,773 households raised indigenous cattle during the 2019/20 agricultural year, out of which 1,733,341 households were in Mainland Tanzania and 53,432 in Tanzania Zanzibar. The total number of indigenous cattle raised was 32,617,693, out of which 32,378,139 heads were in Mainland Tanzania and 239,554 heads in Tanzania Zanzibar.

In Mainland Tanzania, Tabora region had the highest number of indigenous cattle (2,828,691; 8.7 percent), followed by Simiyu (2,545,664; 7.9 percent) and Arusha (2,463,768; 7.6 percent). Dar es Salaam region had the least number of indigenous cattle (39,177; 0.1 percent). Further results revealed that, Lindi had the highest

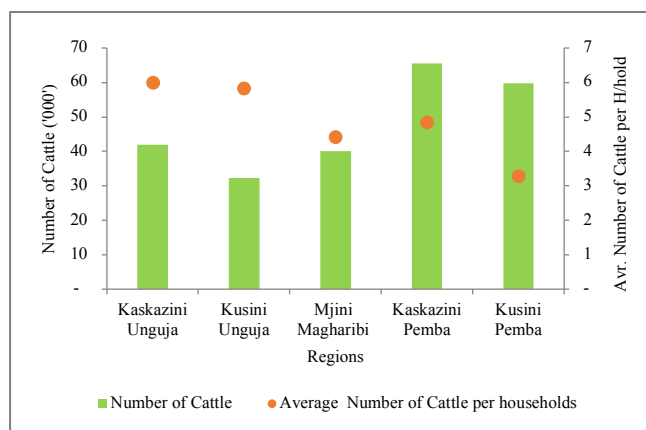
**Figure 4.5: Indigenous Cattle Population and Average Number of Cattle per Household by Region as of 1<sup>st</sup> August 2020, Mainland Tanzania**



average number of cattle raised by smallholder farmers per household with 76 heads per household, followed by Pwani (65 heads per household) and Mtwara (61 heads per household), while Dar es Salaam had the lowest average (4 heads per household) (Figure 4.5).

In Tanzania Zanzibar, 239,554 cattle (88.5 percent) of the total cattle population were of indigenous type. The results show that Kaskazini Pemba region had the highest number of indigenous cattle (69,509; 27.4 percent) followed by Kusini Pemba (59,710 heads; 24.9 percent), while Kusini Unguja had the least number of cattle (32,259 heads; 13.5 percent). Moreover, the three regions of Tanzania Zanzibar, Kaskazini Unguja,

**Figure 4.6: Indigenous Cattle Population and Average Number of Cattle per Household by Region as of 1<sup>st</sup> August 2020, Tanzania Zanzibar**



Kusini Unguja and Mjini Magharibi had an average of 6 heads per household each, while Kusini Pemba region recorded the lowest average number of 3 heads per household (Figure 4.6).

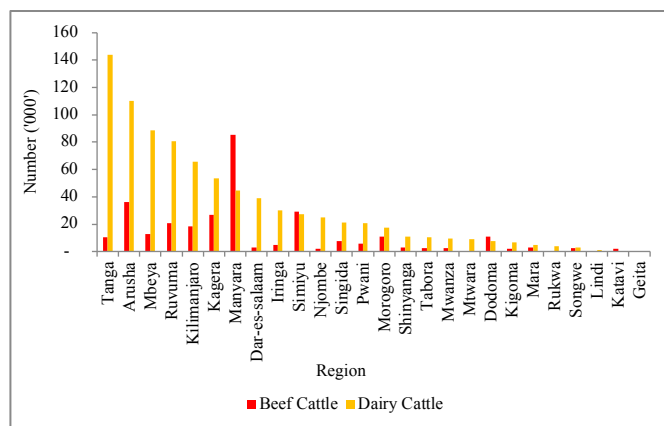
Generally, the censuses results show a steady increase on the number of indigenous cattle in Tanzania from 16.4 million in year 2003 to 20.7 million in 2008 and 32.6 million in 2020.

#### 4.1.1.3 Improved Cattle Population

Improved cattle breed, in this census is categorized as beef or dairy breeds. During the 2019/20 agricultural Census there were 267,957 households reared improved cattle in Tanzania, whereby 261,581 households were in Mainland Tanzania and 6,376 households in Tanzania Zanzibar. The number of improved cattle recorded was 1,167,729 of which beef cattle were 302,101 (25.9 percent) and dairy cattle 865,628 (74.1 percent). Mainland Tanzania recorded 1,136,577 heads of the improved cattle and Tanzania Zanzibar had 31,152 heads.

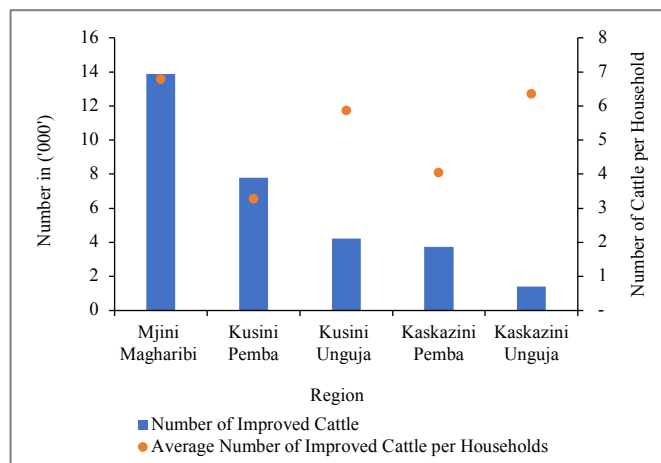
In Mainland Tanzania, Tanga region had the highest number of the improved cattle 154,252 (13.6 percent) followed by Arusha (146,566 heads; 12.9 percent) and Manyara (130,117 heads; 11.5 percent) while in Geita region there was no improved cattle recorded. The average number of improved cattle per household in Mainland Tanzania was four (4) heads (Figure 4.7).

**Figure 4.7: Number of Improved Cattle by Type and Region as of 1<sup>st</sup> August 2020, Mainland Tanzania**



For the case of Tanzania Zanzibar, Mjini Magharibi had the highest number of improved cattle 13,879 (44.8 percent), followed by Kusini Pemba (7,776 heads; 25.1 percent) whereas Kaskazini Unguja had the lowest number of improved cattle (1,392 heads; 4.5 percent). The average number of improved cattle per household in Tanzania Zanzibar was five heads (Figure 4.8).

**Figure 4.8: Number of Improved Cattle and Average Number per Household by Region During 2019/20 Agricultural Year, Zanzibar**



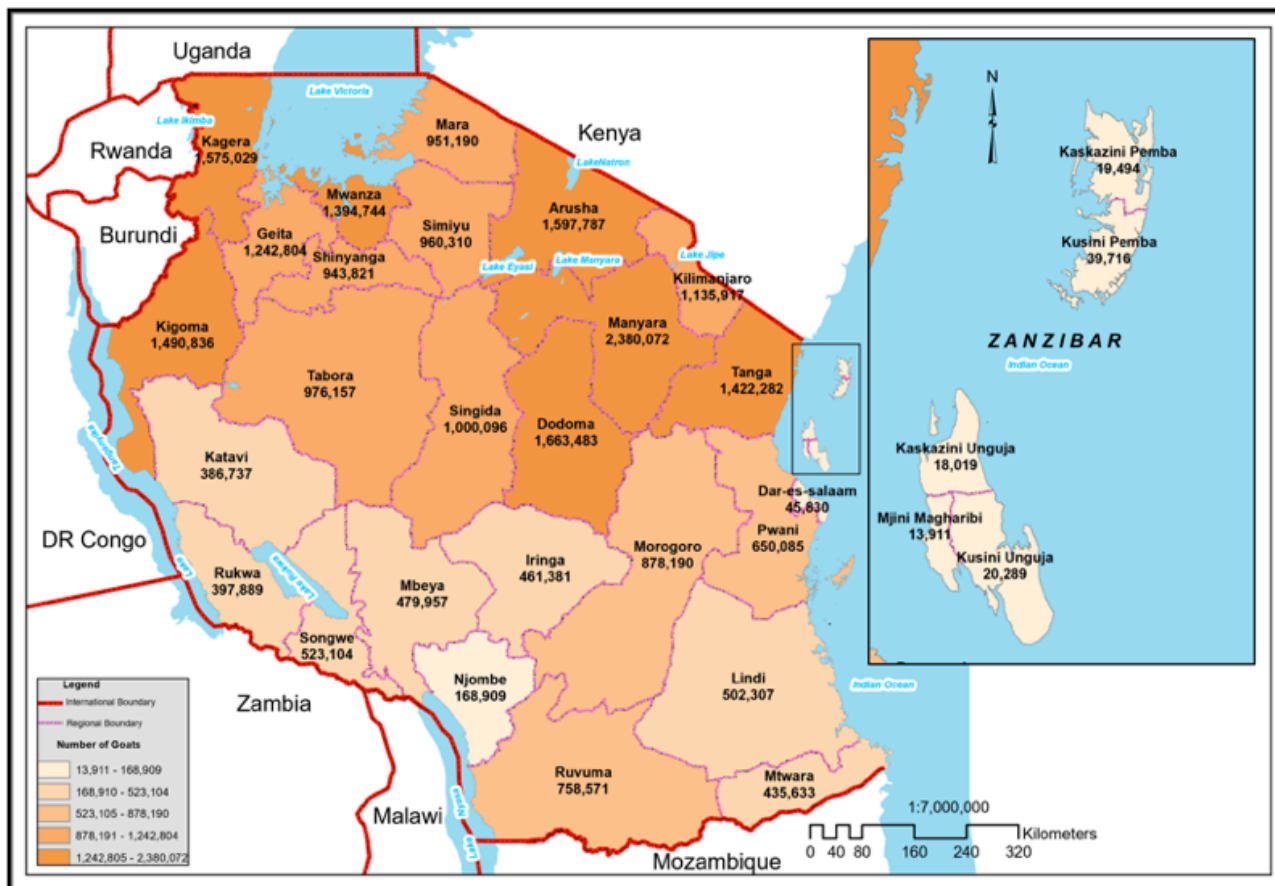
#### 4.1.2 Goat Population

The 2019/20 agricultural census results show that, during 2019/20 agricultural year, the number of households in Tanzania engaged in goat rearing was 1,815,219, out of which, 1,796,739 households were in Mainland Tanzania and 18,480 in Tanzania Zanzibar. The total number of goats reared in Tanzania was 24,568,396 whereby 24,534,549 (99.9 percent) from smallholder farmers and 33,847 goats (0.1 percent) were reared in large scale farms. Smallholder farmers in Mainland Tanzania reared 24,423,120 goats and 111,429 goats in Tanzania Zanzibar. Most of the households 759,300 (42 percent) reared 1 to 4 heads, while 60,931 households (3.4 percent) reared more than 40 goats, representing 22 percent of the total goat population.

Regions with highest number of goats from smallholder farmers in Mainland Tanzania were Manyara region with 2,380,072 heads (9.7 percent), followed by Dodoma 1,663,483 heads (6.8 percent) and Arusha 1,597,787 heads (6.5 percent), while Dar es Salaam with 45,830 heads (0.2 percent) had the least number of goats raised. In Tanzania Zanzibar, Kusini Pemba region had the highest number of

goats raised by smallholder farmers with 39,716 heads (35.6 percent), followed by Kusini Unguja (20,289 heads; 18.2 percent), while Mjini Magharibi had the lowest number of goats raised by smallholder farmers (13,911 heads; 12.5 percent) (Map 4.2).

**Map 4.2: Goat Population Reported by Smallholders by Region as of 1st August 2020, Tanzania**



In Mainland Tanzania, most of goat rearing households (749,143; 41.8 percent) reared 1 to 4 goats, followed by those reared 5 to 9 goats (519,220; 29.0 percent) and 10 to 14 goats (227,583; 12.7 percent), while the least number of households reared 35 to 39 goats (11,332; 0.6 percent). However, the largest goat population were reared by households with more than 40 herd size (5,285,660 heads; 21.6 percent) and 5 to 9 herd size (5,265,000 heads; 21.6 percent), whereas the least goat's population was reared by households with 35 to 39 herd size (548,921 heads; 2.2 percent) (Table 4.2).

In Tanzania Zanzibar, most of goat rearing households (10,156; 55.4 percent) reared 1 to 4 goats, followed by those reared 5 to 9 goats (6,279; 34.2 percent) and 10 to 14 goats (1,298; 7.1 percent), while the least number of households reared more than 40 goats (43; 0.2 percent). However, the largest goat population were reared by households with 5 to 9 herd size (46,812 heads; 42.0 percent) and 1 to 4 herd size (30,832 heads; 27.7 percent), whereas the least goats population was reared by households with more than 40 herd size (1,811 heads; 1.6 percent) (Table 4.2).



Comparatively, in Tanzania the average number of goats per household has increased from 9 goats in 2007/08 agricultural census to 14 goats in 2019/20 agricultural census.

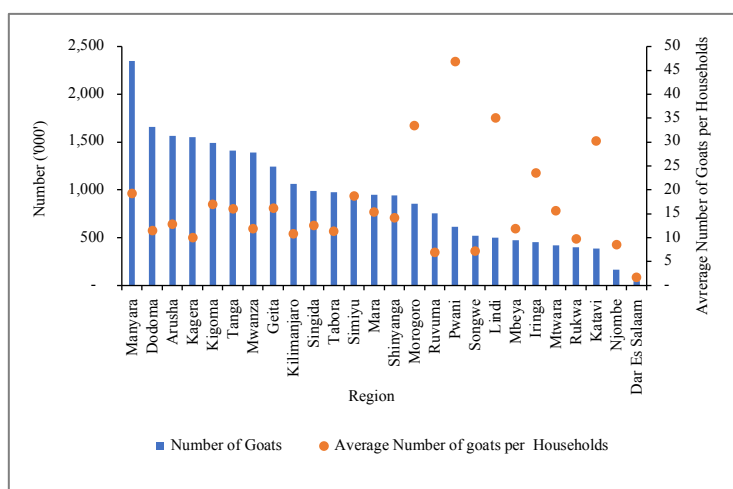
**Table 4.2: Number of Agricultural Households Rearing Goats and Heads of Goats by Herd Size as of 1<sup>st</sup> August 2020, Mainland Tanzania and Tanzania Zanzibar**

Herd size	Mainland Tanzania				Tanzania Zanzibar			
	Goat Rearing Households		Heads of Goats		Goat Rearing Households		Heads of Goats	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1 - 4	749,143	41.8	3,376,808	13.8	10,156	55.4	30,832	27.7
5 - 9	519,220	29	5,265,000	21.6	6,279	34.2	46,812	42.0
10 - 14	227,583	12.7	3,879,443	15.9	1,298	7.1	18,122	16.3
15 - 19	107,191	6	2,428,691	9.9	365	2	6,409	5.8
20 - 24	61,392	3.4	1,755,520	7.2	-	-	-	-
25 - 29	31,616	1.8	1,032,573	4.2	123	0.7	4,323	3.9
30 - 34	22,673	1.3	850,506	3.5	77	0.4	3,121	2.8
35 - 39	11,332	0.6	548,921	2.2	-	-	-	-
40+	60,887	3.4	5,285,660	21.6	43	0.2	1,811	1.6
Total	1,791,038	100	24,423,121	100.0	18,341	100	111,429	100

#### 4.1.2.1 Indigenous Goats

The number of households engaged in indigenous goat rearing in Tanzania was 1,782,178, of which 1,763,959 households were in Mainland Tanzania and 18,219 in Tanzania Zanzibar. The total number of indigenous goats raised by smallholder farmers in Tanzania was 24,232,809 whereby 24,122,945 were from Mainland Tanzania and 109,864 from Tanzania Zanzibar.

**Figure 4.9: Number of Indigenous Goats and Average Number of Goats per Household by Region as of 1<sup>st</sup> August 2020, Mainland Tanzania**

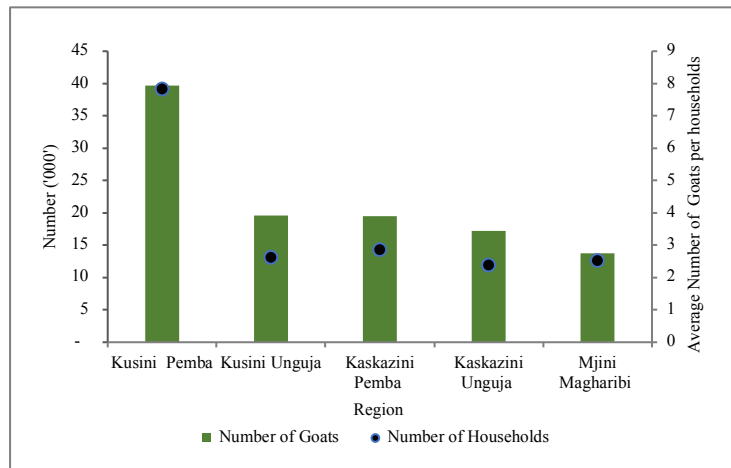


In Mainland Tanzania, Manyara region had the highest number of indigenous goats (2,348,974 heads; 9.7 percent), followed by Dodoma (1,659,908 heads; 6.9 percent) and Arusha (1,563,765 heads; 6.5 percent) (Figure 4.9).



In Tanzania Zanzibar, Kusini Pemba region had the highest number of indigenous goats (39,716 heads; 36.2 percent), followed by Kusini Unguja (19,610 heads; 17.8 percent) while, Mjini Magharibi had the lowest number (13,790 heads 12.5 percent) (Figure 4.10). The Agricultural census results show a steady increase on the number of indigenous goats

**Figure 4.10: Number of Indigenous Goats and Average Number per Household by Region as of 1<sup>st</sup> August 2020, Tanzania Zanzibar**

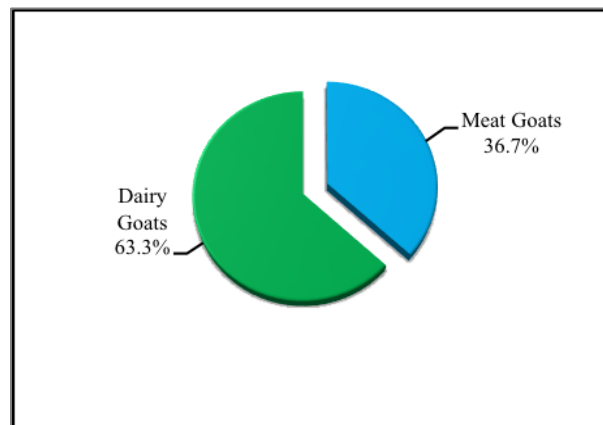


from 15.2 million in year 2008 to 24.5 million in 2020 representing approximately 62 percent increase.

#### 4.1.2.2 Improved Goats

The number of households in Tanzania engaged in improved goat rearing was 63,859 out of which 63,593 households were in Mainland Tanzania and 266 in Tanzania Zanzibar. There were two types of improved goats raised in Tanzania, those for meat 110,856 (36.7 percent) and dairy 190,884 (62.3 percent) (Figure 4.11).

**Figure 4.11: Percentage and Types of Improved Goats as of 1<sup>st</sup> August 2020, Tanzania**



Households in Mainland Tanzania raised 300,175 improved goats (99.5 percent), out of which 109,957 heads (36.7 percent) were for meat and 190,218 heads (63.3 percent) for dairy. In Tanzania Zanzibar, 899 heads (57.4 percent) for goat meat and 666 heads (42.6 percent) for dairy.

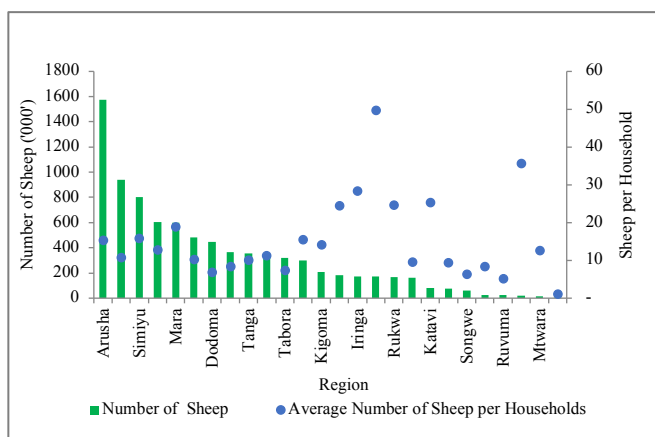
In Mainland Tanzania, Kilimanjaro region had the highest number of improved goats 74,338 (24.8 percent), followed by Pwani (35,782 heads; 11.9 percent) and Arusha (34,022 heads; 11.3 percent) while Lindi and Katavi had no improved goats.

In Tanzania Zanzibar, improved goats were raised in three (3) regions only. Kaskazini Unguja with 765 heads (48.9 percent) had the highest number, followed by Kusini Unguja (679 heads; 43.4 percent) and Mjini Magharibi with the lowest number (121 heads; 7.7 percent).

### 4.1.3 Sheep Population

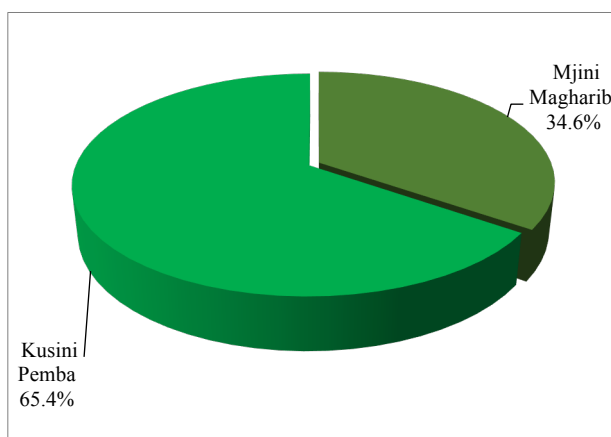
Sheep rearing practice was low in Mainland Tanzania as well as in Tanzania Zanzibar in terms of number of household and its population compared to cattle and goat. In 2019/20 agricultural census, 8,516,989 sheep were recorded, of which 8,492,914 heads (99.7 percent) were from smallholders and 24,075 (0.3 percent) from large scale farms. A total of 677,273 households were involved in sheep rearing in Tanzania, whereby 677,081 households were in Mainland Tanzania, and 192 households in Tanzania Zanzibar. The average number of sheep per household for smallholder farmers in Mainland Tanzania was 12, while in Tanzania Zanzibar was 5 (Figure 4.12).

**Figure 4.12: Sheep Population and Average Number per Household by Region as of 1<sup>st</sup> August 2020, Mainland Tanzania**



In Mainland Tanzania the results show that Pwani region had the highest average number of sheep per household (46 heads), followed by Lindi and Iringa with 36 and 28 heads per household respectively, while Dar es Salaam had the lowest average of one sheep per household. For the case the of Tanzania Zanzibar, there were only two regions recorded to raise sheep, Mjini Magharibi and Kusini Pemba with an average of 6 and 4 heads per household respectively (Figure 4.12 & 4.13).

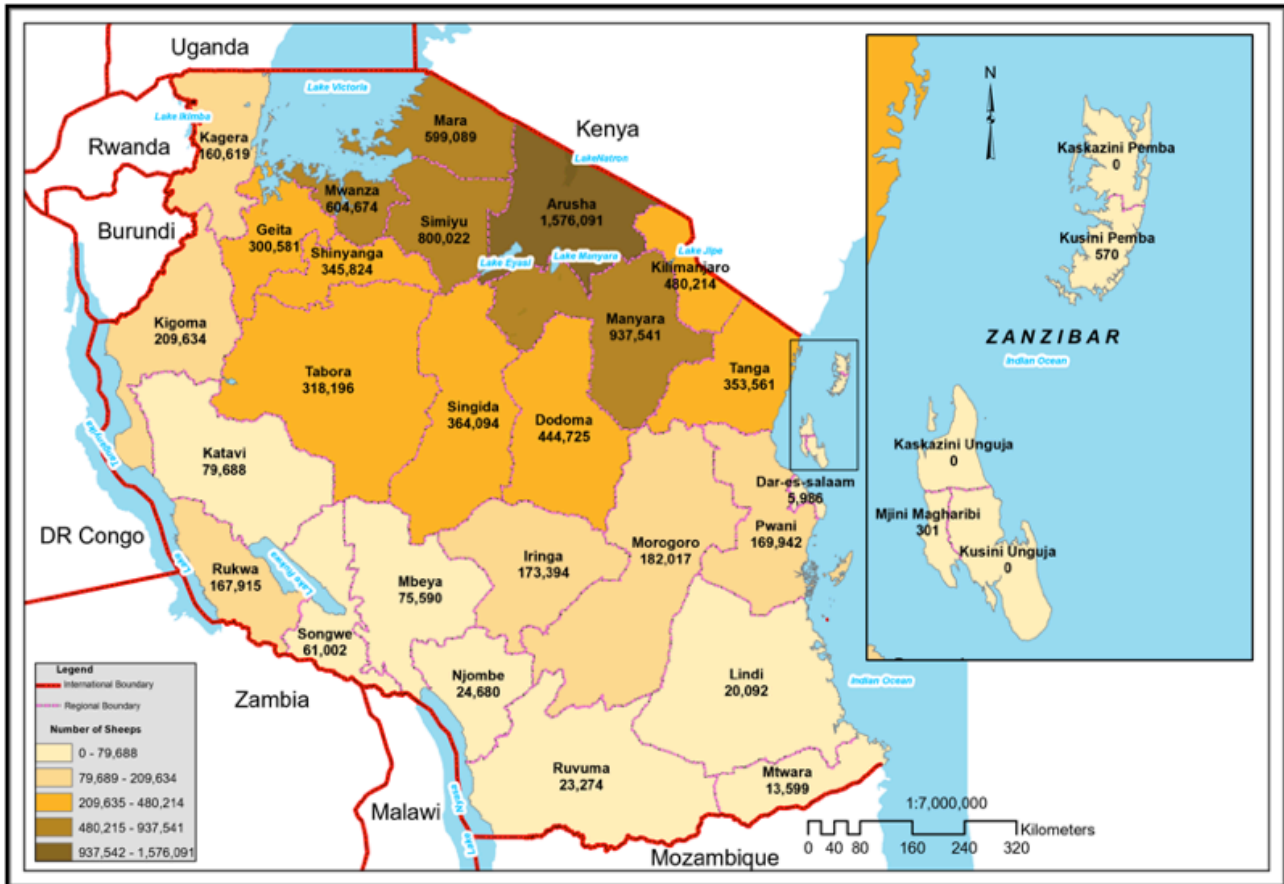
**Figure 4.13: Percentage of Sheep Population by Region as of 1<sup>st</sup> August 2020, Tanzania Zanzibar**



In Mainland Tanzania, most of the sheep kept were indigenous totaling 8,438,573 (99.4 percent) and there were only 53,471 (0.6 percent) improved sheep for mutton. Arusha had the largest number of sheep 1,576,091 (18.6 percent) kept by smallholder farmers followed by Manyara (937,541 heads; 11.0 percent) and Mwanza (604,674 heads; 7.1 percent). In Tanzania Zanzibar, sheep were reared in

two regions, those were Kusini Pemba (570 heads; 65.4 percent) and Mjini Magharibi (301 heads; 34.6 percent). The Agricultural census results show a steady increase in the number of sheep raised from 5.7 million in 2008 to 8.5 million in 2020 equivalent to 48.6 percent increase (Map 4.3).

**Map 4.3: Tanzania Sheep Population Reported by Smallholders by Region as of 1<sup>st</sup> August 2020, Tanzania**

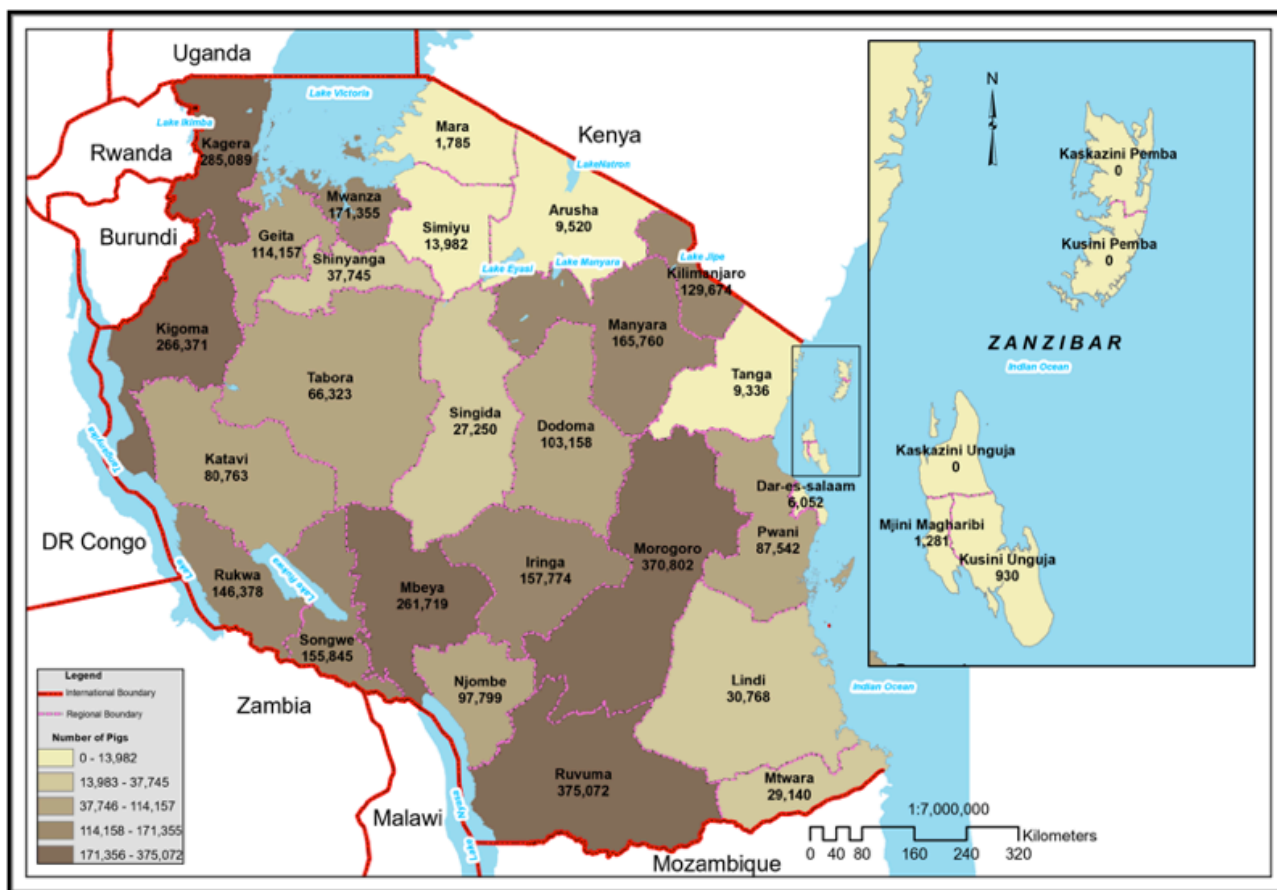


#### 4.1.4 Pig Population

The number of households reported rearing pig in Tanzania during 2019/20 agricultural year was 536,986 of which 536,841 households were in Mainland Tanzania and 145 households in Tanzania Zanzibar. The total number of pigs raised in Tanzania was 3,208,495 (3,203,372 pigs from smallholder farmers and 5,123 from large scale farms). The number of pigs reared by smallholder farmers in Mainland Tanzania was 3,201,163 heads, while in Tanzania Zanzibar was 2,209 heads.

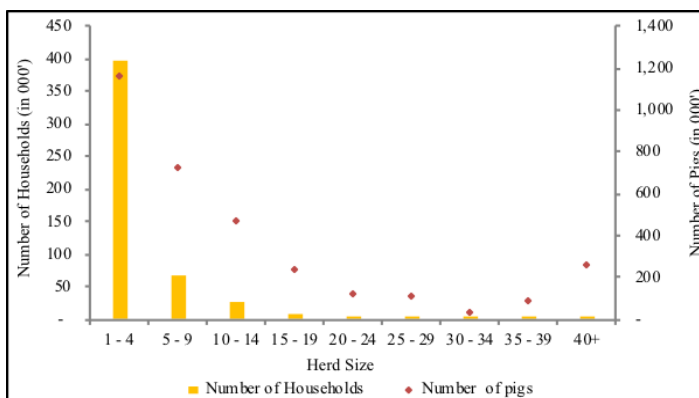
In Mainland Tanzania, Ruvuma region had the largest number of pigs 375,072 (11.7 percent) followed by Morogoro (370,802 heads; 11.6 percent) and Kagera (285,089 heads; 8.9 percent). In Tanzania Zanzibar, pigs were raised only in Mjini Magharibi (1,281 heads; 57.9 percent) and Kusini Unguja (930 heads; 42.1 percent) regions. The agricultural census results show a double increase on the number of indigenous pigs from 1.6 million in 2007/08 to 3.2 million in 2019/20 (Map 4.4).

Map 4.4: Tanzania Pig Population Reported by Smallholder by Region as of 1<sup>st</sup> August 2020, Tanzania



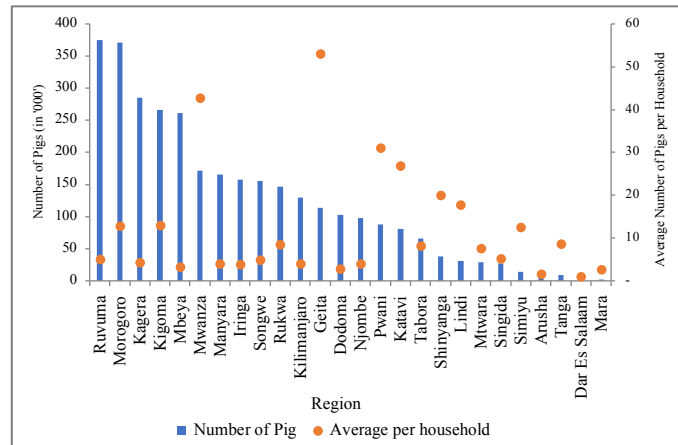
The average number of pigs per household in Tanzania was 6 heads. The majority of households (399,131; 77 percent) reared 1 to 4 heads, followed by 69,586 households (13.4 percent) reared 5 to 9 heads and 27,923 households (5.4 percent) reared 10 to 14 heads (Figure 4.14).

Figure 4.14: Number of Households Rearing Pigs and Number of Pigs by Herd Size During 2019/20 Agricultural Year, Tanzania



In Mainland Tanzania the results show that Geita had the highest average number of pigs per household with 53 heads per household, followed by Mwanza and Pwani with 43 and 31 heads per household respectively while Dar es Salaam had the lowest average of one pig per household. For the case of Tanzania Zanzibar where only two regions recorded to raise pig, Mjini Magharibi and Kusini Unguja had an average of 15 and 16 heads per household respectively (Figure 4.15).

**Figure 4.15: Number of Agricultural Households Rearing Pigs by Herd size During the 2019/20 Agricultural Year in Mainland Tanzania**

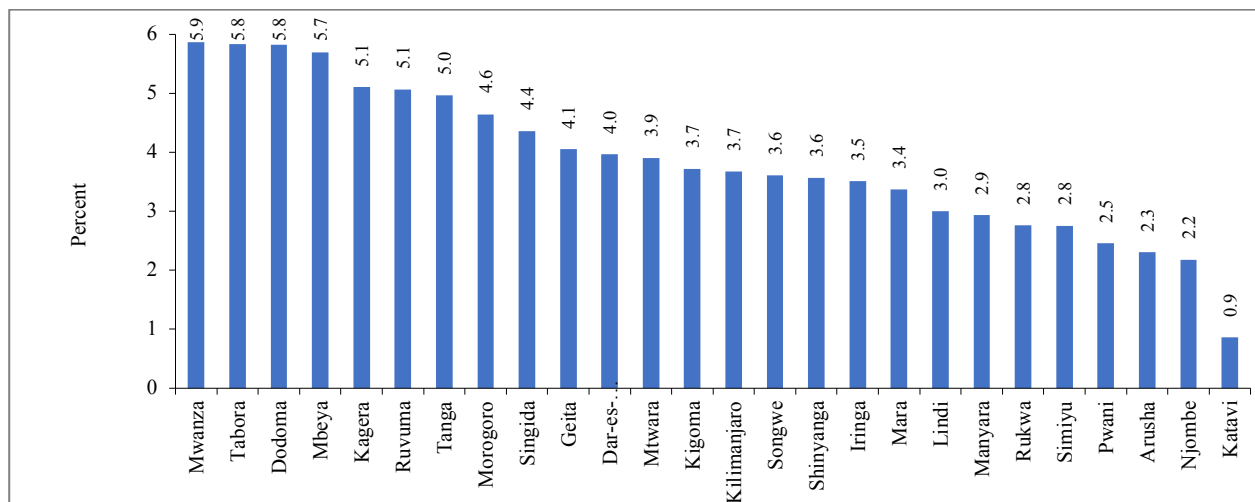


#### 4.1.5 Chicken Population

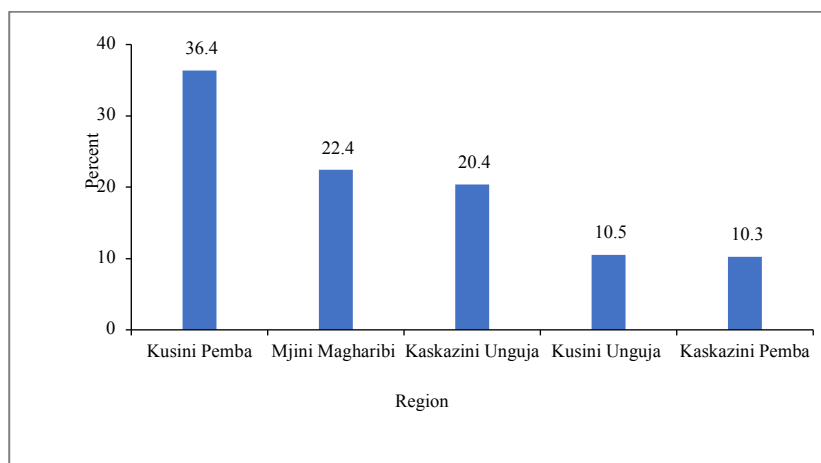
The 2019/20 NSCA results show that, in Tanzania out of 7,837,405 agricultural households, a total of 4,338,882 (55.4 percent) households raised chicken during 2019/20 agricultural year. Of the total households raised chicken, 4,238,344 were from Mainland Tanzania and 100,538 from Tanzania Zanzibar.

In Mainland Tanzania, Mwanza region had the largest number of households raising chicken (248,617 households; 5.9 percent), followed by Tabora (247,554; 5.8 percent) and Dodoma (246,790; 5.8 percent). The lowest number of households raising chicken was reported in Katavi (36,586 households, 0.9 percent), while in Tanzania Zanzibar, Kusini Pemba region had the largest number of households raising chicken (36,593; 36.4 percent), followed by Mjini Magharibi (22,553; 22.4 percent). The lowest number was reported in Kaskazini Pemba (10,336; 10.3 percent) (Figure 4.16 & 4.17).

**Figure 4.16: Percentage Distribution of Households Raising Chicken by Region During 2019/20 Agricultural Year, Mainland Tanzania**

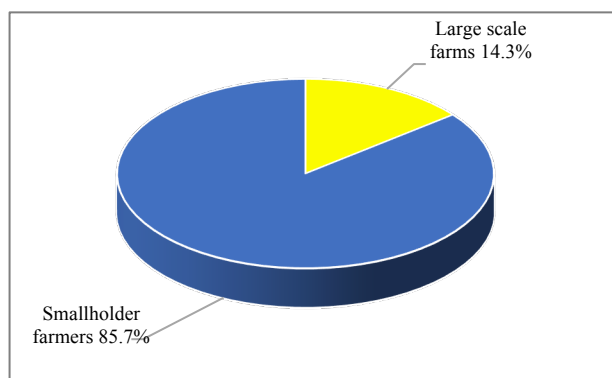


**Figure 4.17: Percentage Distribution of Households Raising Chicken by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



The total number of chicken in Tanzania from both smallholder farmers and large scale farms was 87,659,580, of which 75,119,802 (85.7 percent) chicken were from smallholder farmers and 12,539,778 (14.3 percent) from large scale farms. Out of the total chicken from smallholder farmers, 71,414,297 chicken were from Mainland and 3,705,505 from Tanzania Zanzibar (Figure 4.18).

**Figure 4.18 Percentage Distribution of Chicken from Smallholder Farmers and Large Scale Farms as of 1st August 2019/20, Tanzania**

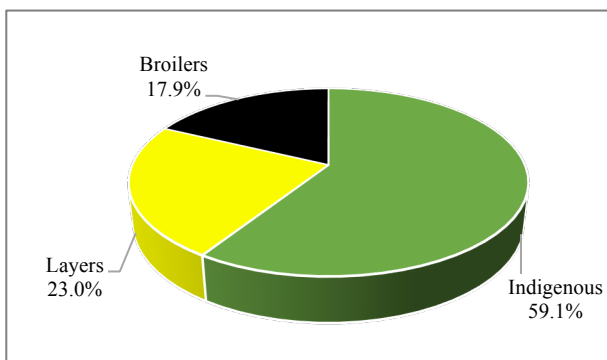


From the total population of chicken in Mainland Tanzania, the dominant specie was indigenous chicken (42,212,121; 59.1 percent), followed by layers (16,432,644; 23 percent) and broilers (12,769,532; 17.9 percent), while in Tanzania Zanzibar, the dominant specie was layers (2,116,994; 57.1 percent) followed by indigenous (1,508,540; 40.7 percent) and broilers (79,971; 2.2 percent) (Figure 4.19 & 4.20).

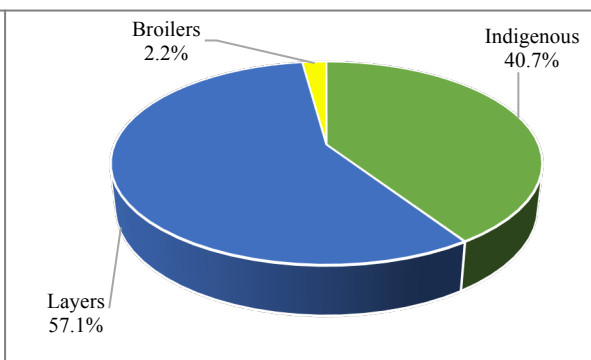
In Mainland Tanzania, Dar es salaam region had the highest population of chicken (8.9 million; 12.4 percent), followed by Tabora (5.0 million; 6.9 percent) and Dodoma (4.2 million; 5.9 percent), whereas, the lowest number of chicken were reported in Katavi region (0.7 million; 1.0 percent). In addition, the population of chicken in Dar es Salaam region was mainly contributed by layers and broilers which accounted for 90.5 percent of the total chicken.

In Tanzania Zanzibar, Kusini Unguja region had the largest number of chicken (1.9 million; 50.7 percent), followed by Kusini Pemba (0.6 million; 17.4 percent). The lowest number of chickens was in Kaskazini Pemba (0.2 million; 4.2 percent) (Figure 4.20 and Map 4.5).

**Figure 4.19: Percentage Distribution of Chicken by Type as of 1st August 2020, Mainland Tanzania**

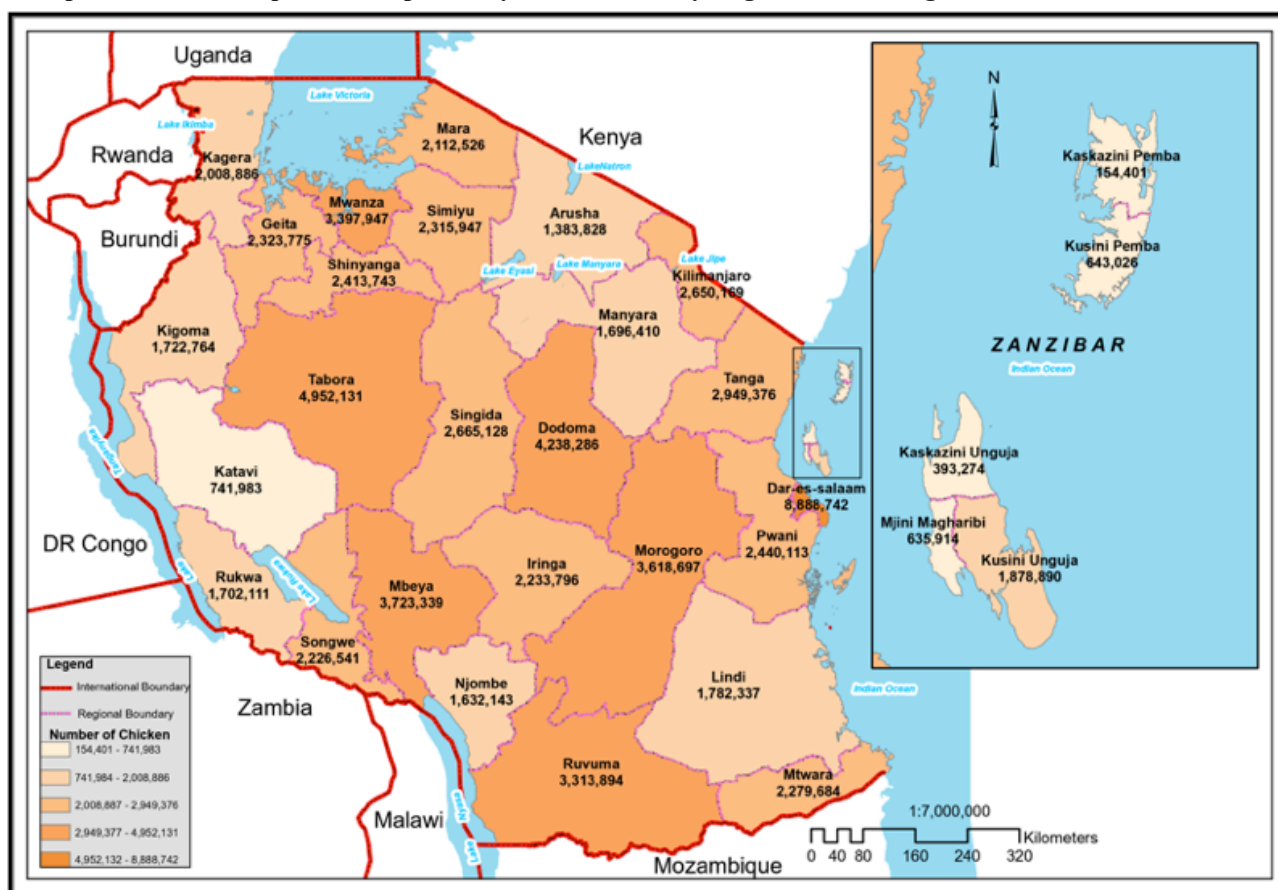


**Figure 4.20: Percentage Distribution of Chicken by Type as of 1st August 2020, Tanzania Zanzibar**





**Map 4.5: Chicken Population Reported by Smallholders by Region as of 1<sup>st</sup> August 2020, Tanzania**



Furthermore, majority of the smallholder farmers in Tanzania raised 1 to 49 chicken, which is equivalent to 95.2 percent of the total households rearing chicken (an average of 13 chicken per household). Only 0.04 percent of households kept over 700 chicken with an average of 2,289 chicken per household, whereas the national average number of chickens per household was 18 (Table 4.3).

**Table 4.3: Number of Agricultural Households Rearing Chicken and Number of Chicken by Flock Size as of 1<sup>st</sup> August 2020, Tanzania**

Flock Size	Chicken Rearing Households		Number of Chicken	Average Chicken per Household
	Number	Percent		
1-49	4,132,024	95.2	50,947,564	12.3
50-99	158,258	3.6	9,621,927	61
100-299	33,322	0.8	4,804,460	144
300-499	8,141	0.2	2,603,995	320
500-699	5,306	0.1	2,948,163	556
700+	1,832	0.04	4,193,692	2,289
<b>Total</b>	<b>4,338,883</b>	<b>100.0</b>	<b>75,119,801</b>	<b>17</b>

Chicken population for smallholder farmers in Tanzania has increased from 43.1 million in 2007/08 to 75.1 million in 2019/20 census which is equivalent to 74.2 percentage increase (Table 4.4).



**Table 4.4: Number of Households and Chicken by Type of Chicken for the 2002/03, 2007/08 and 2019/20 Agriculture Censuses, Tanzania**

Type of chicken	2002/03		2007/08		2019/20	
	Number of Households	Number of Chicken	Number of Households	Number of Chicken	Number of Households	Number of Chicken
Indigenous	2,925,710	31,614,837	3,781,695	41,895,605	3,897,380	43,720,661
Broilers	8,131	565,712	14,150	584,028	331,164	12,849,503
Layers	16,427	1,126,697	30,091	1,265,872	409,835	18,549,638
Total Improved		1,692,409		1,849,900		31,399,141
Total Chicken		33,307,246		43,745,505		75,119,802

#### 4.1.5.1 Indigenous Chicken Population

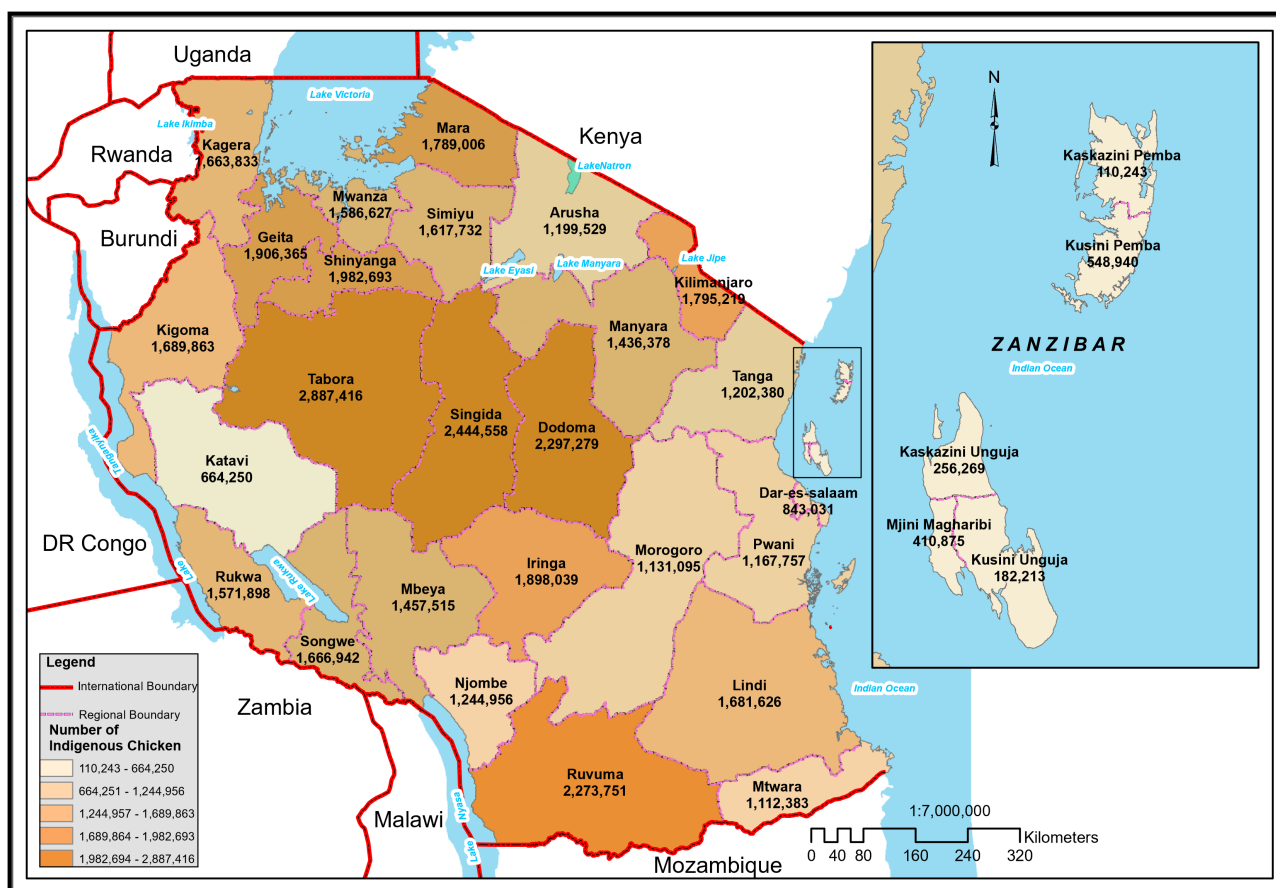
Indigenous chicken was the dominant type raised by most of the households (3,897,380; 89.8 percent) rearing chicken in both Mainland Tanzania and Tanzania Zanzibar. In Mainland Tanzania 89.6 percent of the total chicken rearing households raised indigenous chicken, while layers and broilers accounted for 9.6 percent and 7.8 percent respectively. On the other hand, in Tanzania Zanzibar indigenous chicken were raised by 96.6 percent of the total households raising chicken, whereas, layers and broilers accounted for 2.9 percent and 0.6 percent respectively (Table 4.5).

**Table 4.5: Number of Households, Total Number of Chicken and Percentage by Type of Chicken as of 1<sup>st</sup> August 2020, Tanzania**

Type of Chicken	Tanzania				Mainland Tanzania				Tanzania Zanzibar			
	Number of Households	Percent	Number of Chicken	Percent	Number of Households	Percent	Number of Chicken	Percent	Number of Households	Percent	Number of Chicken	Percent
Indigenous	3,897,380	89.8	43,720,661	58.2	3,797,537	89.6	42,212,121	59.1	99,843	99.3	1,520,508	40.9
Layers	409,835	9.45	18,549,638	24.7	406,909	9.6	16,432,644	23	2,926	2.9	2,116,994	56.9
Broilers	331,164	7.6	12,849,503	17.1	330,591	7.8	12,769,532	17.9	573	0.6	79,971	2.2
Total	4,338,882	100	75,119,802	100	4238344	100	71,414,297	100	100,538	100	3,717,473	100

In Mainland Tanzania, Tabora region had the highest number of indigenous chicken (2,887,416; 6.8 percent), followed by Singida (2,444,558; 5.8 percent) and Dodoma (2,297,279; 5.4 percent), while Katavi region had the lowest number of indigenous chicken (664,250; 1.6 percent). In Tanzania Zanzibar, Kusini Pemba region had the largest number of chicken (548,940; 36.4 percent) while the least number was reported in Kaskazini Pemba (110,243 chicken 7.3 percent) (Map 4.6).

**Map 4.6: Indigenous Chicken Population Reported by Smallholders by Region as of 1st August 2020, Tanzania**



In addition, 99.3 percent of the households keeping indigenous chicken reared from 1 to 49 chicken with an average of 11 chicken per household. Only 0.7 percent of households kept fifty and above indigenous chicken (Table 4.6).

**Table 4.6: Number and Percentage of Households Rearing Indigenous Chicken by Flock Size and Average Number of Chicken per Household as of 1<sup>st</sup> August 2020, Tanzania**

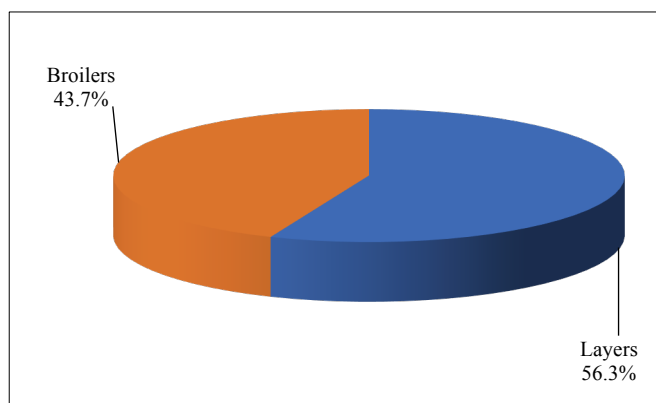
Flock size	Number of Households	Percent	Number of Chicken	Chicken per Household
1-49	3,870,215	99.3	41,798,248	11
50-99	24,505	0.6	1,466,004	60
100-299	2,309	0.1	334,905	145
300-499	353	0.01	121,501	344
500-699	-	-	-	-
700+	-	-	-	-
<b>Total</b>	<b>3,897,382</b>	<b>100</b>	<b>43,720,658</b>	<b>11</b>

In comparison with previous census, the number of indigenous chicken for smallholder farmers has increased from 41,895,605 in 2007/08 to 43,720,661 in 2019/20 agriculture censuses, equivalent to 4.4 percentage increase. Similarly, the number of households rearing indigenous chicken has increased by 0.4 percent over the same period.

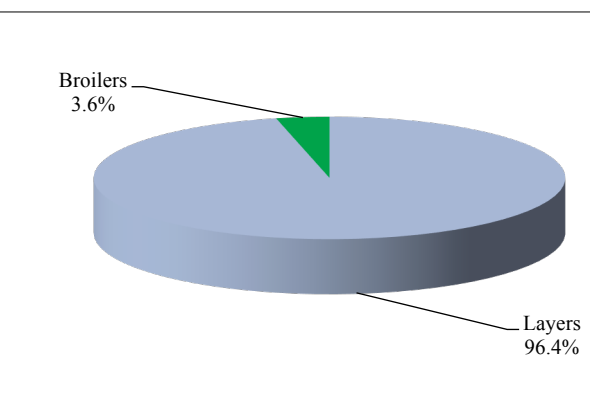
#### 4.1.5.2 Improved Chicken Population

The total number of improved chicken in Tanzania was 31,399,141 of which 29,202,176 chicken were from Mainland Tanzania and 2,196,965 from Tanzania Zanzibar. In Mainland Tanzania, the total population of layers and broilers was 16,432,644 (56.3 percent) and 12,769,532 (43.7 percent) respectively, while in Tanzania Zanzibar there were 2,116,994 (96.4 percent) layers and 79,971(3.6 percent) broilers (Figure 4.21 & 4.22).

**Figure 4.21: Percentage Distribution of Improved Chicken as of 1st August 2020, Mainland Tanzania**



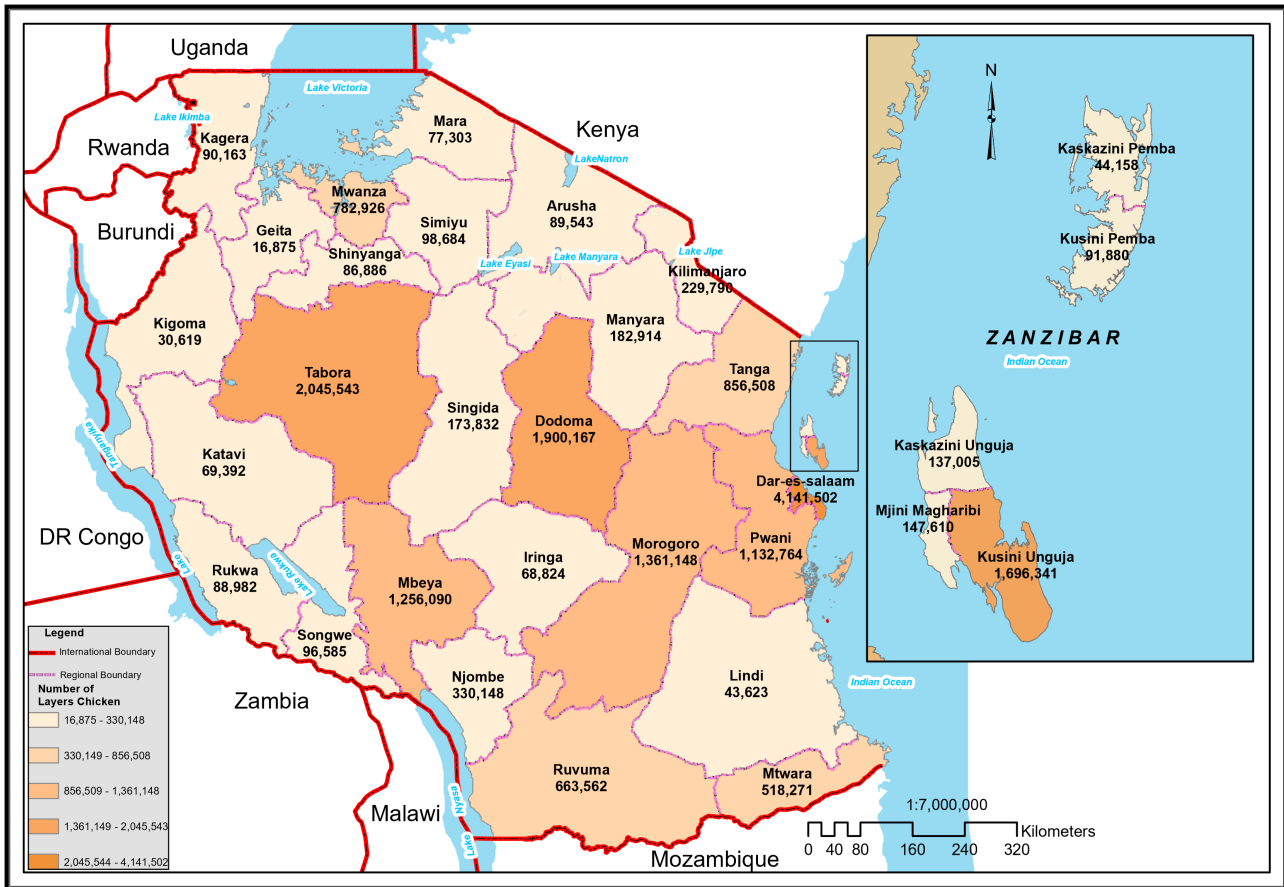
**Figure 4.22: Percentage Distribution of Improved Chicken as of 1st August 2020, Tanzania Zanzibar**



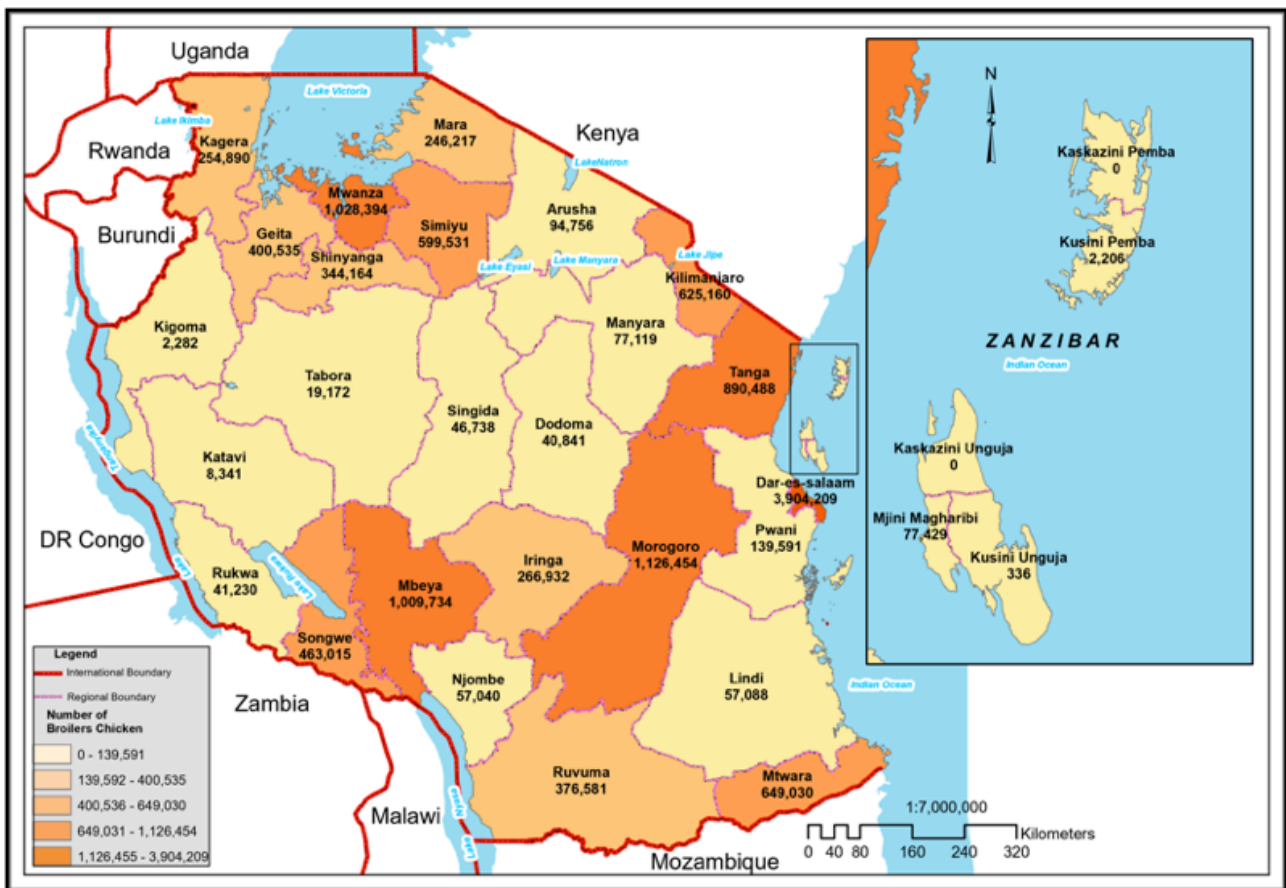
Most of the layers in Mainland Tanzania were raised in Dar es Salaam region (25.2 percent). Other regions with slightly high numbers of layers were Tabora (12.4 percent) and Dodoma (11.6 percent) while, the least number of layers were in Geita (0.1 percent). Similarly, for the case of broilers, Dar es salaam region was leading with 3,904,209 birds (30.6 percent), followed by Morogoro (1,126,454 birds; 8.8 percent) and Mwanza (1,028,394 birds; 8.1 percent). The least broilers population was reported in Kigoma region (2,282 birds; 0.02 percent).

In Tanzania Zanzibar, the largest population of layers was reported in Kusini Unguja region (1,696,341 chicken, 80.1 percent), followed by Mjini Magharibi (147,610 chicken; 7.0 percent), and the least layers population was found in Kaskazini Pemba (44,158 chicken, 2.1 percent). The largest population of broilers was in Mjini Magharibi (77,429 chicken, 96.8 percent) while the least number of broilers was reported in Kusini Unguja (336; 0.4 percent) (Map 4.7 & 4.8).

**Map 4.7: Layers Population Reported by Smallholders by Region as of 1st August 2020, Tanzania**



**Map 4.8: Broilers Population Reported by Smallholders by Region as of 1st August 2020, Tanzania**



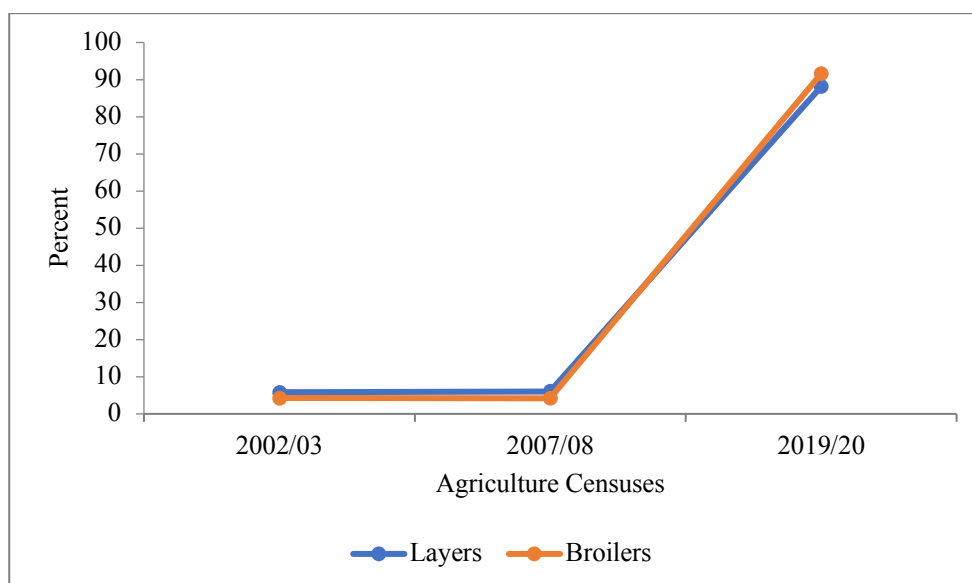
The census results show that, 71.7 percent of the households rearing layers in Tanzania raised 1 to 49 chicken (an average of 17 chicken per household). However, 21.8 percent of households raised between 50 to 100 chicken (an average of 60 chicken per households) and 6.4 percent of households raised 100 and above layers. Furthermore, the results show that, for broilers, 83.8 percent of households raised 1 to 49 chicken with an average of 20 chicken per household and few households (16.1 percent) raised more than 50 broilers (Table 4.7).

**Table 4.7: Number of Households and Chicken, Percentage of Households and Average Number of Improved Chicken per Household by Flock Size, Tanzania**

Flock Size	Layers				Broilers			
	Number of Households	Percent of Households rearing Layers	Number of Layers	Number of Chicken per Household	Number of Households	Percent of Households rearing broilers	Number of Broilers	Number of Chicken per Household
1-49	293,992	71.7	4,984,355	17	277,395	83.8	5,479,385	20
50-99	89,416	21.8	5,348,351	60	34,813	10.5	2,081,821	60
100-299	20,852	5.1	2,914,989	140	9,987	3.0	1,563,305	157
300-499	1,815	0.4	611,996	337	7,062	2.1	2,277,095	322
500-699	2,982	0.7	1,562,491	524	858	0.3	428,847	500
700+	780	0.2	3,127,458	4,010	1,052	0.3	1,019,049	969
<b>Total</b>	<b>409,837</b>	<b>100</b>	<b>18,549,640</b>	<b>45</b>	<b>331,167</b>	<b>100</b>	<b>12,849,502</b>	<b>39</b>

In Tanzania, the number of layers has increased from 1,265,872 chicken in 2007/08 to 18,549,640 in 2019/20 agriculture censuses, which is more than 10 times increase. Similarly, the number of broilers has increased from 584,028 to 12,769,532 more than 20 times increase over the same period (Figure 4.23).

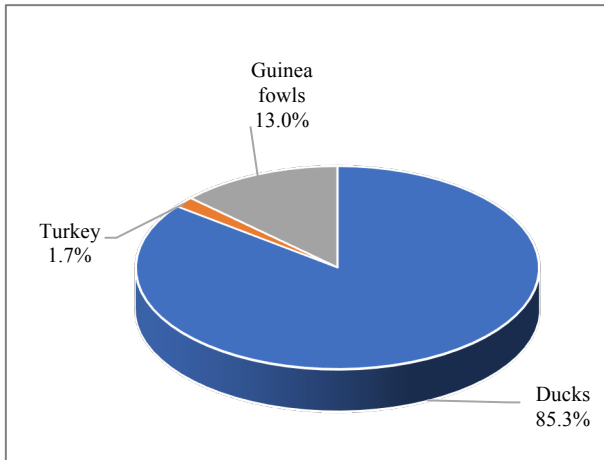
**Figure 4.23: Improved Chicken Population Trend for the 2002/03, 2007/08 and 2019/20 Agricultural Censuses, Tanzania**



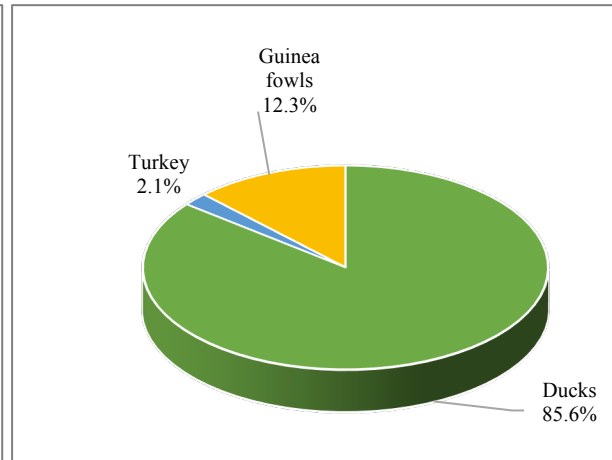
#### 4.1.6 Other Poultry

Other poultry namely, ducks, turkeys and guinea fowls were reported in the 2019/20 agriculture census, though they were kept in small number as compared to chicken. A total of 4,355,750 ducks (4,229,018 in Mainland Tanzania and 126,732 in Zanzibar) had the highest number, followed by 662,177 guinea fowls (643,953 in Mainland Tanzania and 18,224 in Tanzania Zanzibar) and 86,859 turkey (83,831 in Mainland Tanzania and 3,028 in Tanzania Zanzibar) (Figure 4.24 and 4.25).

**Figure 4.24: Percentage Distribution of Other Poultry Population as of 1<sup>st</sup> August 2020, Mainland Tanzania**



**Figure 4.25: Percentage Distribution of Other Poultry Population as of 1<sup>st</sup> August 2020, Tanzania Zanzibar**



In Mainland Tanzania, Dar es Salaam region had largest population of ducks (555,437; 13.1 percent), followed by Tabora (320,087; 7.6 percent), while the least number was reported in Njombe (15,881; 0.4 percent). Turkey was mostly raised in Dar es Salaam (24,703; 29.5 percent), followed by Mtwara (9,224; 11.0 percent) and Kilimanjaro (7,778; 9.3 percent), while the least number was reported in Mara region (262; 0.3 percent). The largest number of guinea fowls was reported in Dodoma region (130,720; 20.3 percent), followed Rukwa (65,811; 10.2 percent) and Singida (65,687; 10.2 percent). The least number guinea fowls was reported in Dar es Salaam (3,303; 0.5 percent) (Table 4.8).

In Tanzania Zanzibar, Mjini Magharibi region had largest population of ducks (43,304; 34.2 percent), followed by Kusini Pemba (36,858; 29.1 percent) and Kaskazini Unguja (28,368; 22.4 percent), while the least number was reported in Kaskazini Pemba (5,939; 4.7 percent). Turkey was mostly raised in Kusini Pemba (1,869; 61.7 percent), followed by Mjini Magharibi (1,050; 34.7. percent), while the least number was reported in Kusini Unguja region (109; 3.6 percent). The largest number of guinea fowls was in Kusini Pemba region (8,465; 46.4 percent), followed by Mjini Magharibi (6,281; 34.5 percent) and the least number was reported in Kaskazini Unguja (1,361; 7.5 percent) (Table 4.8).

**Table 4.8: Number and Percentage of Other Poultry by Region as of 1<sup>st</sup> August 2020, Tanzania**

Region	Ducks	Percent	Turkey	Percent	Guinea Fowls	Percent
Dodoma	110,600	2.6	2,256	2.7	130,720	20.3
Arusha	31,379	0.7	1,909	2.3	4,314	0.7
Kilimanjaro	88,680	2.1	7,778	9.3	5,581	0.9
Tanga	216,968	5.1	1,238	1.5	14,015	2.2
Morogoro	241,318	5.7	-	-	33,017	5.1
Pwani	128,687	3.0	3,968	4.7	8,162	1.3
Dar-es-salaam	555,437	13.1	24,703	29.5	3,303	0.5
Lindi	54,477	1.3	2,712	3.2	16,237	2.5
Mtwara	41,922	1.0	9,224	11.0	10,611	1.6
Ruvuma	88,469	2.1	1,155	1.4	12,538	1.9
Iringa	175,836	4.2	2,203	2.6	13,502	2.1
Mbeya	208,759	4.9	3,408	4.1	9,253	1.4
Singida	83,576	2.0	2,857	3.4	65,687	10.2
Tabora	320,087	7.6	1,729	2.1	40,429	6.3
Rukwa	182,859	4.3	2,226	2.7	65,811	10.2
Kigoma	219,779	5.2	-	-	8,961	1.4
Shinyanga	140,290	3.3	582	0.7	19,782	3.1
Kagera	189,802	4.5	-	-	17,116	2.7
Mwanza	294,261	7.0	1,663	2.0	19,221	3.0
Mara	148,627	3.5	262	0.3	6,156	1.0
Manyara	56,672	1.3	3,470	4.1	19,506	3.0
Njombe	15,881	0.4	5,260	6.3	5,033	0.8
Katavi	85,513	2.0	966	1.2	15,413	2.4
Simiyu	157,007	3.7	1,391	1.7	19,165	3.0
Geita	253,921	6.0	-	-	33,845	5.3
Songwe	138,211	3.3	2,871	3.4	46,575	7.2
<b>Mainland</b>	<b>4,229,018</b>	<b>100</b>	<b>83,831</b>	<b>100</b>	<b>643,953</b>	<b>100</b>
Kaskazini Unguja	28,368	22.4	-	-	1,361	7.5
Kusini Unguja	12,263	9.7	109	3.6	2,117	11.6
Mjini Magharibi	43,304	34.2	1,050	34.7	6,281	34.5
Kaskazini Pemba	5,939	4.7	-	-	-	-
Kusini Pemba	36,858	29.1	1,869	61.7	8,465	46.4
<b>Zanzibar</b>	<b>126,732</b>	<b>100.0</b>	<b>3,028</b>	<b>100.0</b>	<b>18,224</b>	<b>100.0</b>
<b>Tanzania</b>	<b>4,355,750</b>		<b>86,859</b>		<b>662,177</b>	

#### 4.1.7 Other Livestock Population

Other livestock reported, during the 2019/20 NSCA includes rabbits, donkeys, horses, and guinea pigs. Among other types of livestock, dogs (2,776,918) had the highest population, followed by guinea pigs (1,494,857), rabbits (932,998) and donkeys (408,957) whereas, horses (183) had the least population.

In Mainland Tanzania, Geita region had largest population of dogs (302,879), followed by Mwanza (287,270), while the least number was reported in Dar es Salaam (1,222). Guinea pigs were mostly



raised in Iringa (580,141), followed by Njombe (408,130) and Simiyu (283,733), while the least number was reported in Manyara (1,136). The largest number of rabbits was reported in Kagera region (154,012), followed by Kigoma (131,755) and the least number was reported in Simiyu (217).

In Tanzania Zanzibar, Mjini Magharibi region had largest population of dogs (5,303), followed by Kusini Unguja (2,891), while the least number was reported in Kaskazini Unguja (1,924). Rabbits were mostly raised in Kusini Pemba (3,827), followed by Mjini Magharibi (3,571) and Kusini Unguja (3,099), while the least number was reported in Kaskazini Pemba (286). Moreover, the largest number of guinea pigs was reported in two regions, which are Mjini Magharibi (2,368) and Kusini Unguja (1,550) (Table 4.9).

**Table 4.9: Number of Other Livestock by Type and Region, Tanzania**

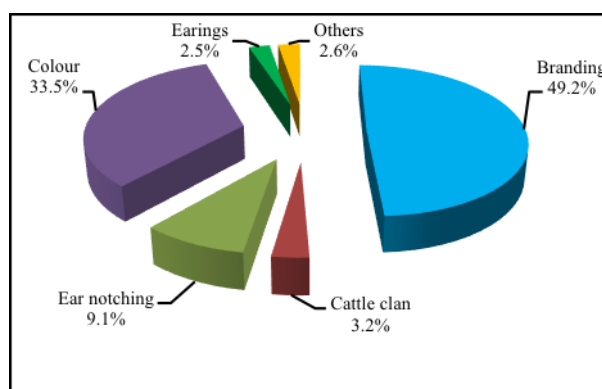
Region	Type of Livestock					
	Rabbits	Donkeys	Horses	Dogs	Guinea pigs	Others
Dodoma	14,581	70,723	-	82,464	-	26,727
Arusha	11,314	56,284	183	67,842	15,695	14,975
Kilimanjaro	36,024	15,835	-	35,937	7,064	32,541
Tanga	66,486	5,625	-	57,758	3,761	44,317
Morogoro	48,063	3,055	-	86,320	29,156	53,167
Pwani	22,120	2,708	-	50,635	1,579	7,071
Dar Es Salaam	7,071	581	-	1,228	-	101
Lindi	-	-	-	17,857	-	52,021
Mtwara	4,106	-	-	2,786	1,739	74,796
Ruvuma	34,955	1,683	-	61,165	47,261	134,615
Iringa	111,745	26,627	-	150,249	580,141	321,388
Mbeya	50,841	6,152	-	72,977	16,867	122,722
Singida	11,854	28,642	-	142,939	-	221,155
Tabora	833	27,727	-	243,768	2,107	110,836
Rukwa	60,268	27,320	-	75,441	57,259	102,138
Kigoma	131,755	1,542	-	98,029	10,112	213,732
Shinyanga	4,932	12,616	-	184,779	-	104,069
Kagera	154,012	-	-	132,995	-	87,547
Mwanza	37,051	4,820	-	287,270	-	248,875
Mara	1,439	26,476	-	204,440	-	489,840
Manyara	1,630	44,292	-	72,722	1,136	7,973
Njombe	74,186	4,950	-	44,373	408,130	27,749
Katavi	9,327	5,641	-	75,865	1,905	60,697
Simiyu	217	6,553	-	141,021	283,733	79,865
Geita	27,328	15,848	-	302,879	-	388,744
Songwe	10,860	13,257	-	83,179	27,212	57,609
<b>Mainland Tanzania</b>	<b>932,998</b>	<b>408,957</b>	<b>183</b>	<b>2,776,918</b>	<b>1,494,857</b>	<b>3,085,270</b>
Kaskazini Unguja	-	66	-	1,924	-	4,131
Kusini Unguja	3,099	-	-	2,891	1,550	-
Mjini Magharibi	3,571	-	-	5,303	2,368	19,381
Kaskazini Pemba	286	459	-	-	-	286
Kusini Pemba	3,827	-	-	1,962	-	15,229
<b>Tanzania Zanzibar</b>	<b>10,783</b>	<b>525</b>	<b>-</b>	<b>12,080</b>	<b>3,918</b>	<b>39,027</b>
<b>Tanzania</b>	<b>943,781</b>	<b>409,482</b>	<b>183</b>	<b>2,788,998</b>	<b>1,498,775</b>	<b>3,124,297</b>

## 4.2 Method of Cattle Identification

Cattle identification has been essential for households to keep records of their livestock on parentage, birth date, production records, health history, and other important management information. Identification is also important to indicate ownership of a particular livestock, or to indicate the herd/flock.

In 2019/20 agricultural year, five main methods of cattle identification reported by households include branding, cattle clans, ear notching, colour and earrings. A total of 1,971,550 cattle raising households in Tanzania reported using different methods of cattle identification, of which 1,915,625 households were in Mainland and 55,925 households in Tanzania Zanzibar.

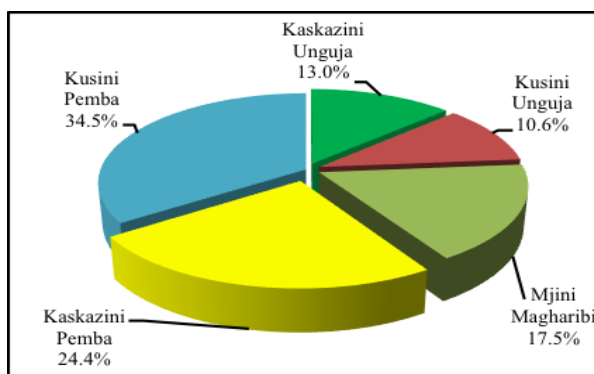
**Figure 4.26: Percentage of Households and Type of Method of Cattle Identification Used During 2019/20 Agricultural Year, Mainland Tanzania**



Census results show that in Mainland Tanzania, identification of cattle by branding was mostly used (948,845; 49.2 percent), followed colour (644,602; 33.5 percent) and ear notching (174,596; 9.1 percent). Among the household used branding method, Manyara region had the largest number of households (121,183; 12.8 percent), followed Tabora (106,679; 11.2 percent) and Arusha (92,085; 9.7 percent), whereas the least reported region was Mtwara (714; 0.08 percent) (Figure 4.26).

For the case of Tanzania Zanzibar, cattle identification by colour was mostly reported by 54,031 households (95.4 percent), followed by cattle clan (538; 0.9 percent) and earring (474; 0.8 percent). Among the households used colour method, Kusini Pemba region had the largest number of households (18,634; 34.5 percent), followed Kaskazini Pemba (13,182; 24.4 percent), whereas the least number of households was reported in Kusini Unguja region (5,718; 10.6 percent) (Figure 4.27).

**Figure 4.27: Percentage of Households Using Colour as a Method of Cattle Identification by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



### 4.3 Livestock and Poultry Products

This section presents the result of livestock and poultry products reported during the 2019/20 Agriculture Census. The products include milk, chicken eggs, hides and skins.

#### 4.3.1 Milk Production

The total milk production reported during 2019/20 agricultural year in Tanzania was 3,130,774,084 litres from cows and 25,690,876 litres from goats. Out of the total cow milk produced, 3,112,940,008 litres were from smallholder farmers (3,076,489,371 in Mainland Tanzania and 36,450,637 in Tanzania Zanzibar) and 17,834,076 litres from large scale farms (17,574,621 in Mainland Tanzania and 259,455 in Tanzania Zanzibar) whereas the total goat milk production from smallholder farmers was 25,678,361 litres (25,565,561 in Mainland Tanzania and 112,800 in Tanzania Zanzibar) and 12,515 litres from large scale farms (10,895 in Mainland Tanzania and 1,620 in Zanzibar).

#### Cow Milk

The results show that, 54.4 percent of the total cattle keeping households in Mainland Tanzania reported to produce milk, while in Tanzania Zanzibar, 39.8 percent reported milk production. For smallholder farmers, the total milk produced was 3,112,940,008 litres, of which 3,076,489,371 litres were produced in Mainland Tanzania (1,913,683,988 litres during wet season; 1,162,805,383 litres during dry season) and 36,450,637 litres in Tanzania Zanzibar (23,343,263 litres during wet season, 13,107,374 litres during dry season) (Table 4.10).

**Table 4.10: Cow Milk Production for Large Scale Farms and Smallholder Farmers During 2019/20 Agricultural Year, Tanzania**

Livestock	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Smallholder Farmers	Large Scale Farms	Smallholder Farmers	Large Scale Farms	Smallholder Farmers	Large Scale Farms
Cow Milk	3,112,940,008	17,834,076	3,076,489,371	17,574,621	36,450,637	259,455

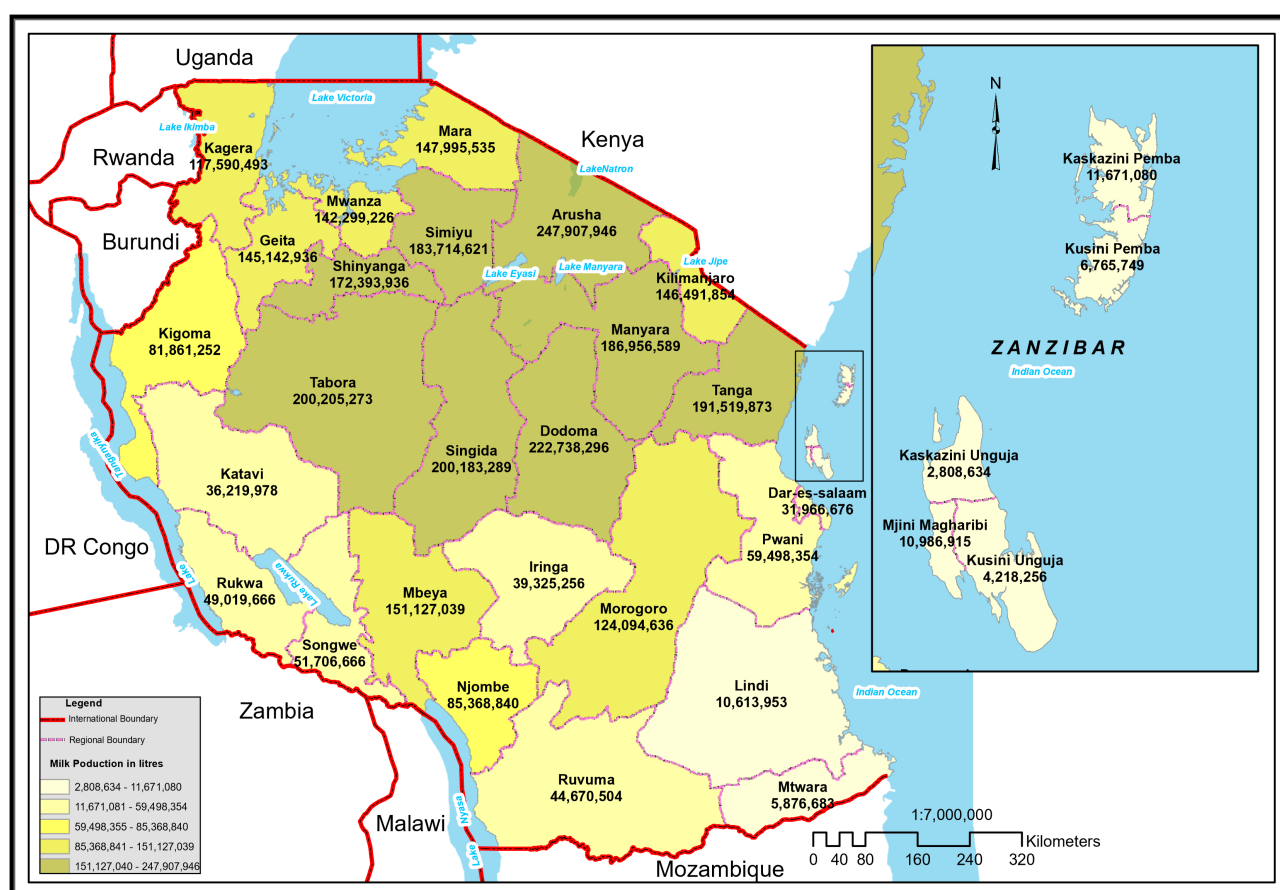
The average milk production per cow per day for indigenous cattle was 3 litres in both Mainland Tanzania and Tanzania Zanzibar during wet and dry seasons. For improved cattle, the average milk production per cow per day during wet and dry seasons was 8 litres in Mainland Tanzania, while in Tanzania Zanzibar the production was 9 and 7 litres during wet and dry season respectively (Table 4.11).

**Table 4.11: Average Milk Production per Cow per Day by Type of Cattle and Season During 2019/20 Agricultural Year, Tanzania**

Type of Cattle	Season	Average Milk Production per cow per day (litres)	
		Mainland Tanzania	Tanzania Zanzibar
Indigenous Cattle	Wet Season	3	3
	Dry Season	3	3
Improved Cattle	Wet Season	8	9
	Dry Season	8	7

In Mainland Tanzania, Arusha region had the highest production of milk (247,907,946 litres; 8.1 percent of the total milk produced), followed by Dodoma (222,738,296 litres; 7.2 percent) and Tabora (200,205,273 litres; 6.5 percent). The least production was reported in Mtwara region (5,876,683 litres; 0.2 percent) (Map 4.9).

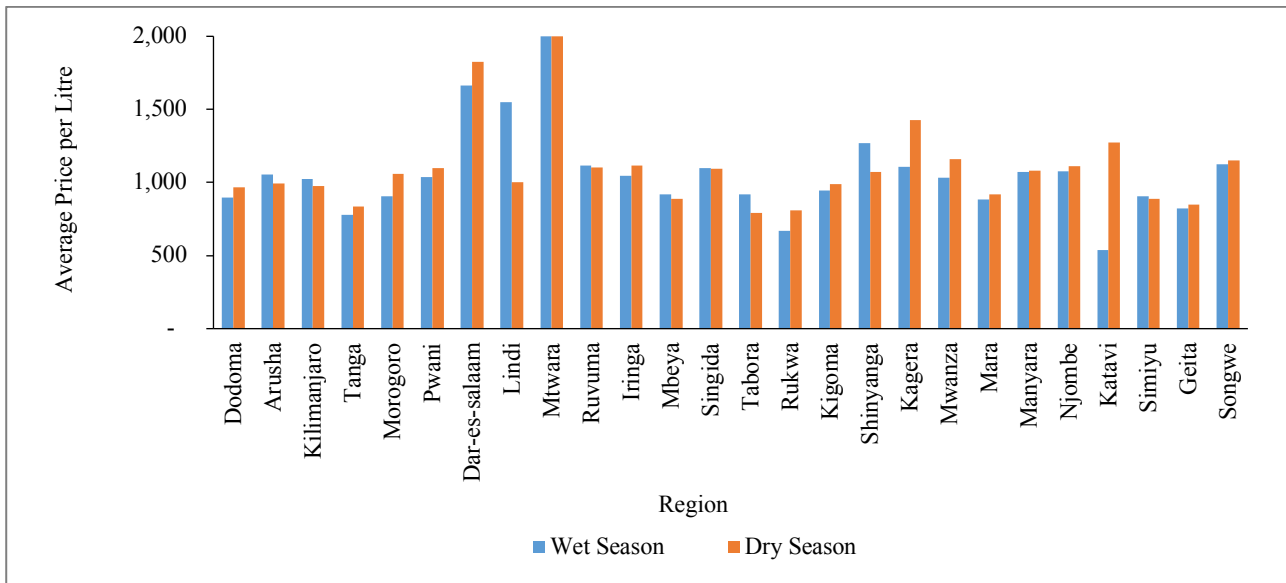
**Map 4.9: Cow Milk Production Reported by Smallholders by Region During 2019/20 Agricultural Year, Tanzania**



The highest milk price per litre was reported in Mtwara region (TZS 2,000 in wet and dry season), followed by Dar es Salaam (TZS 1,665 in wet season and TZS 1,825 in dry season). The lowest milk

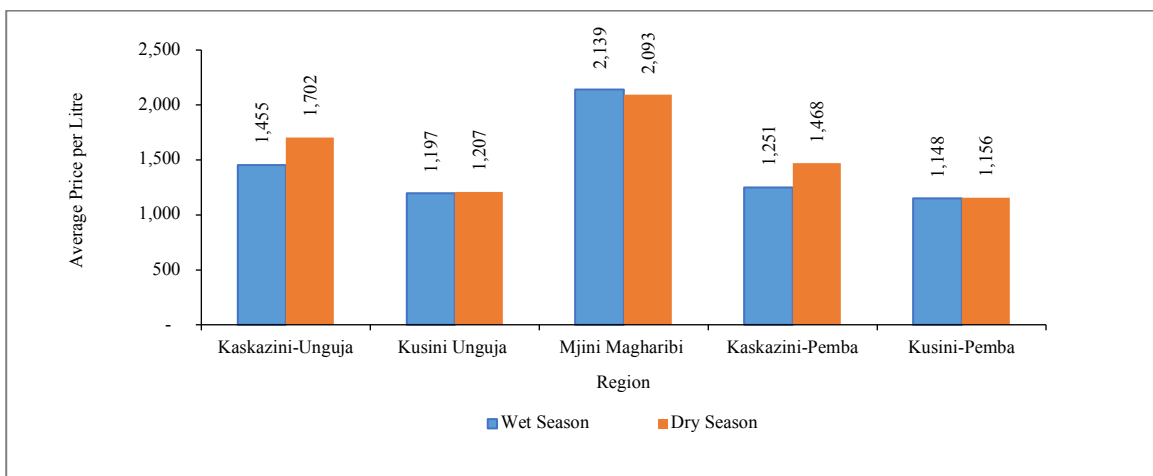
price was reported in Katavi (TZS 539 in wet season) and Tabora (TZS 790 in dry season) (Figure 4.28).

**Figure 4.28: Average Price of Cow Milk by Region and Season During 2019/20 Agricultural Year, Mainland Tanzania**



In Tanzania Zanzibar, Kaskazini Unguja region had the highest production of milk (11,671,080 litres; 32 percent), followed by Kusini Unguja (10,986,916 litres; 30.1 percent) and the least production was reported in Kusini Pemba (2,809,505 litres; 7.7 percent). The highest milk price per litre was TZS 2,139 in Mjini Magharibi during wet season and TZS 2,093 during dry season. The lowest price was TZS 1,148 in Kusini Pemba during wet season and TZS 1,156 during dry season (Figure 4.29).

**Figure 4.29: Average Price of Cow Milk by Region and Season During 2019/20 Agricultural Year, Tanzania Zanzibar**



## Goat Milk

The results show that, 2.2 percent of the total goats keeping households in Mainland Tanzania reported to produce milk while in Tanzania Zanzibar, 0.4 percent of the total households reported the same. For smallholder farmers, the total milk produced was 25,678,361 litres of which 25,565,561 litres were produced in Mainland Tanzania (17,040,069 litres during wet season; 8,525,492 litres during dry season) and 112,800 litres in Tanzania Zanzibar (45,120 litres during wet season, 67,680 litres during dry season) (Table 4.12).

**Table 4.12: Goat Milk Production for Large Scale Farms and Smallholder Farmers During 2019/20 Agricultural Year, Tanzania**

Livestock	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Smallholder Farmers	Large Scale Farms	Smallholder Farmers	Large Scale Farms	Smallholder Farmers	Large Scale Farms
Goat Milk	25,678,361	12,515	25,565,561	10,895	112,800	1,620

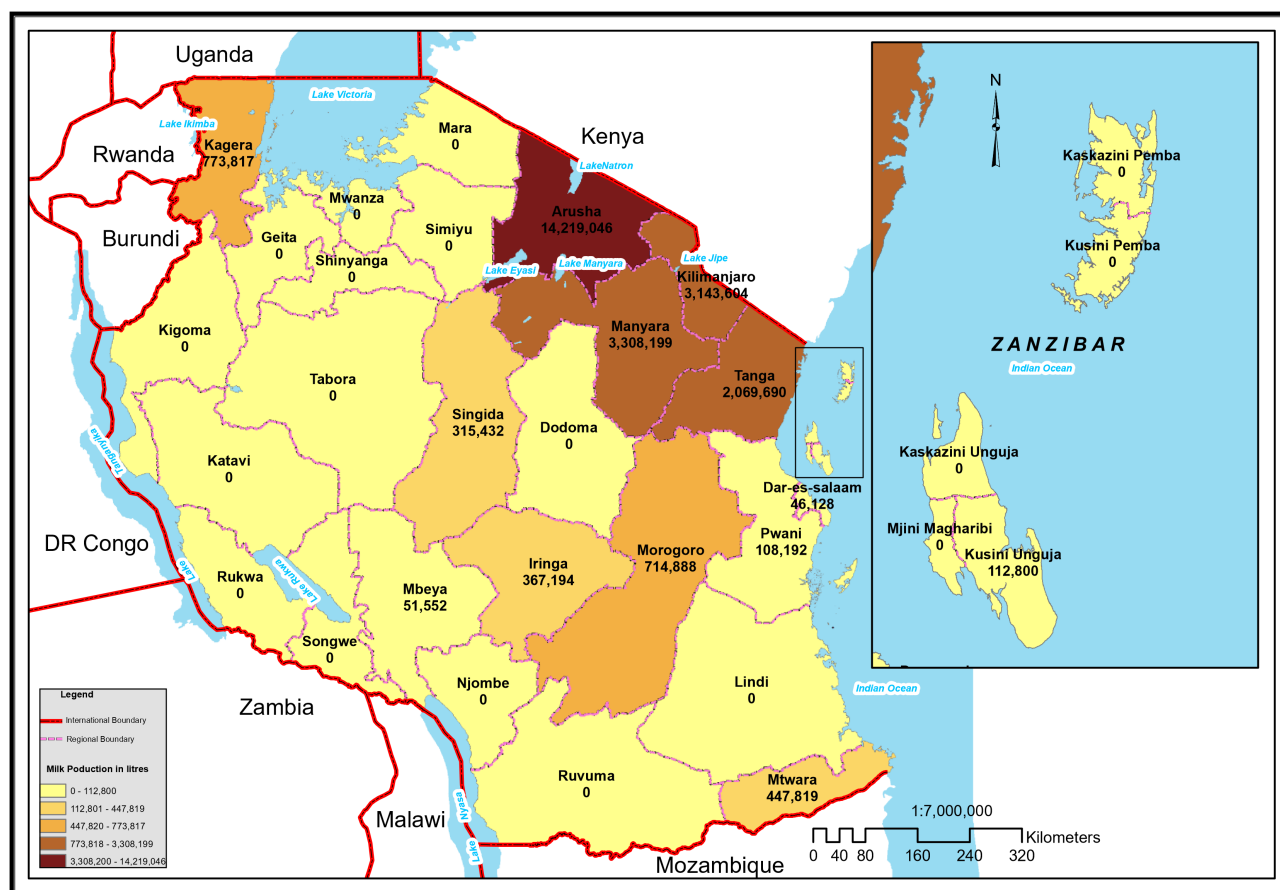
The average milk production per goat per day was 3 litres in Mainland Tanzania during wet and dry season and; 2 and 3 litres in Tanzania Zanzibar during wet and dry season respectively. The average lactation length was 51 days in Mainland Tanzania and 6 days in Tanzania Zanzibar during wet season whereas 41 days in Mainland Tanzania and 6 days in Tanzania Zanzibar during dry season (Table 4.13).

**Table 4.13: Average Milk Production per Goat per Day by Season During 2019/20 Agricultural Year, Tanzania**

Season	Average Milk Production per Goat per Day (Litres)	
	Mainland Tanzania	Tanzania Zanzibar
Wet Season	3	2
Dry Season	3	3

In Mainland Tanzania, Arusha region had the highest production of milk (11,671,725 litres; 55.1 percent), followed by Manyara (2,941,877 litres; 13.9 percent) and Kilimanjaro (2,457,317 litres; 11.6 percent). The least goat milk production was reported in Dar Es Salaam region (43,865 litres; 0.2 percent). Whilst in Tanzania Zanzibar production of goat milk was reported in Kusini Unguja only (112,702 litres) (Map 4.10).

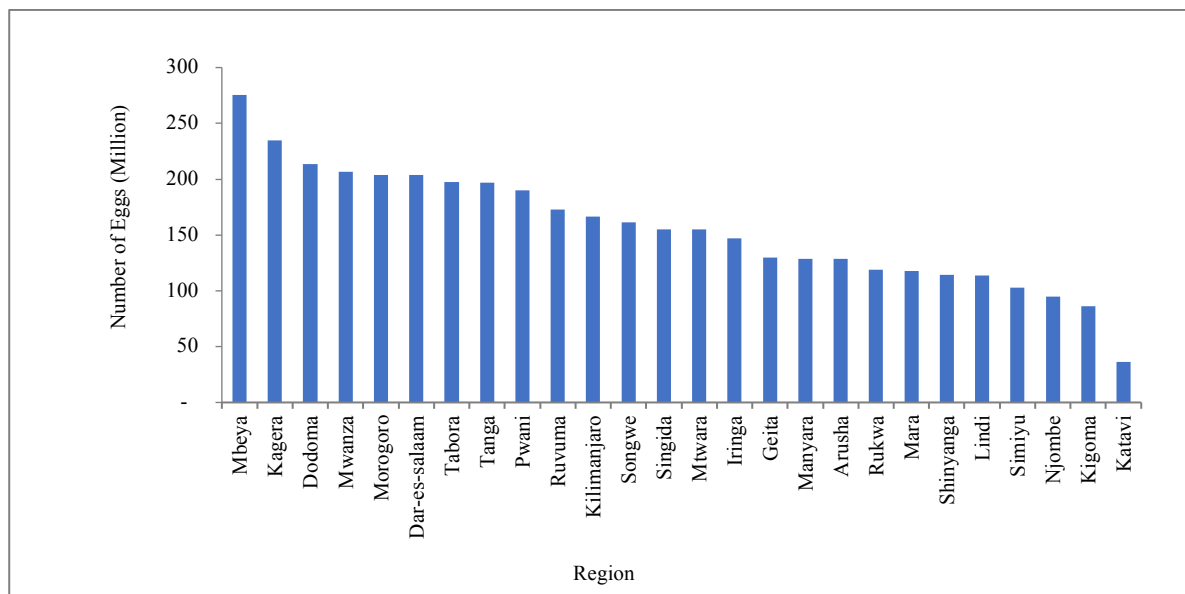
**Map 4.10: Goat Milk Production Reported by Smallholders by Region During 2019/20 Agricultural Year, Tanzania**



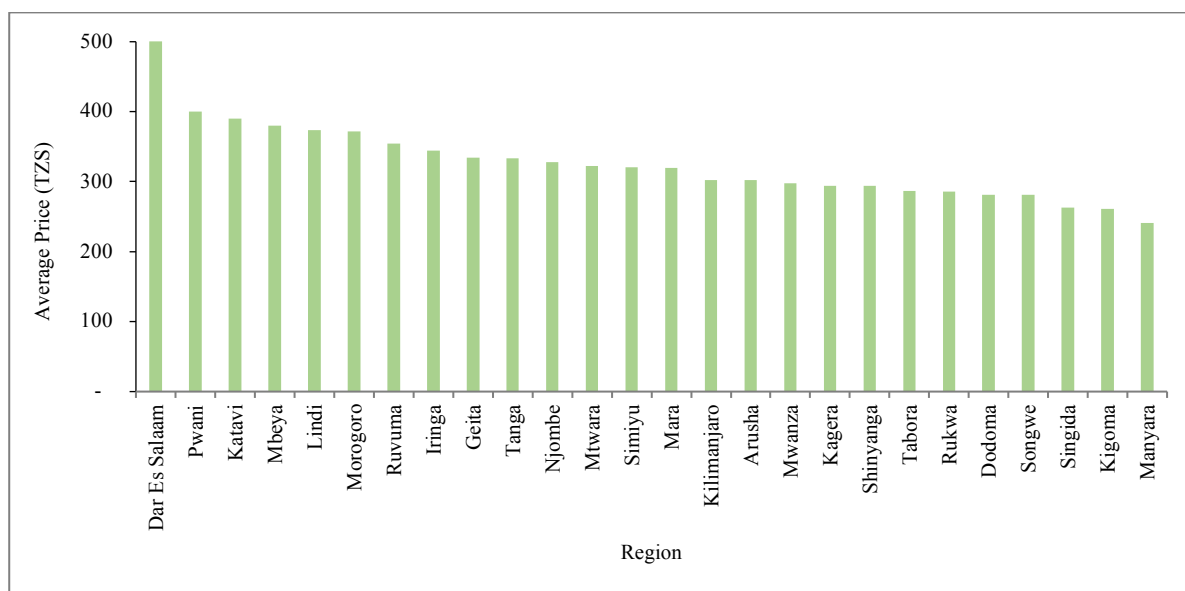
### 4.3.2 Chicken Eggs Production

The results show that, the total eggs production was 4,375,888,580 of which 4,280,616,938 (97.8 percent) were from smallholder farmers and 95,271,642 (2.2 percent) from large scale farms. Out of the total eggs from the smallholder farmers, 4,056,838,638 eggs were produced in Mainland Tanzania and 223,778,300 in Tanzania Zanzibar. Mbeya region had the highest production of eggs (276 million; 6.7 percent), followed by Kagera 235 million (5.8 percent) and Dodoma 214 million (5.3 percent) eggs. The least production of eggs was recorded in Katavi region (36 million; 0.9 percent). The average price per egg was TZS 319 while in Tanzania Zanzibar, the average price was TZS 365. The price ranged from a minimum of TZS 241 per egg in Manyara region to a maximum of TZS 501 in Dar es Salaam (Figure 4.30 & 4.31).

**Figure 4.30: Eggs Production by Region During 2019/20 Agricultural Year, Mainland Tanzania**



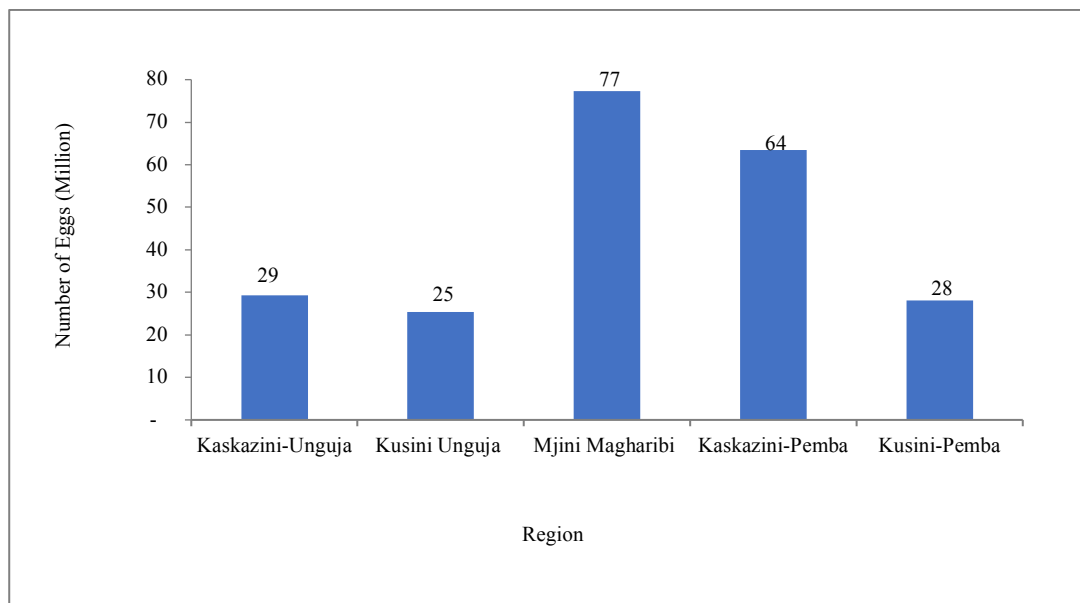
**Figure 4.31: Average Price of an Egg by Region During 2019/20 Agricultural Year, Mainland Tanzania**



In Tanzania Zanzibar, the production of eggs was higher in Mjini Magharibi region (77 million eggs; 34.6 percent), followed by Kaskazini Pemba (64 million eggs; 28.4 percent) and Kaskazini Unguja (29 million eggs; 13.1 percent) The least production was reported in Kusini Unguja (25 million eggs; 11.3 percent) (Figure 4.32).

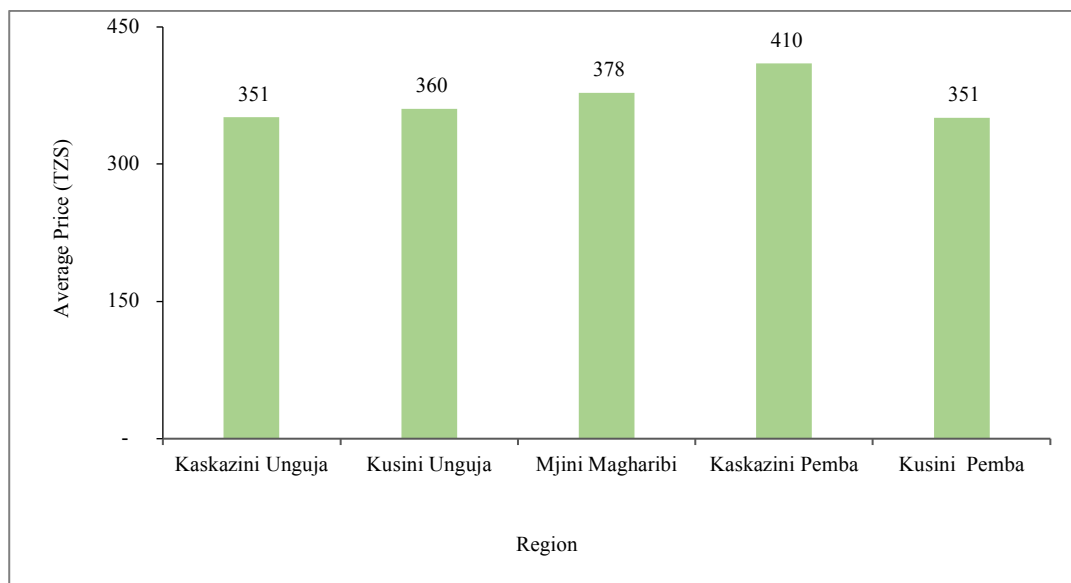


**Figure 4.32: Eggs Production by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



The minimum price per egg was TZS 351 in Kusini Pemba region and Kaskazini Unguja, and the maximum was TZS 410 in Kaskazini Pemba (Figure 4.33).

**Figure 4.33: Average Price of an Egg by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



### 4.3.3 Hides and Skins

Production of hides and skins were among the livestock products information collected during the 2019/20 agricultural year at household level. This excludes hides and skins produced from abattoirs and slaughter houses available in the country. The results show that, the total production of hides in Tanzania was 246,935 pieces, out of which, 8,886 pieces (3.6 percent) were from large scale farms

and 238,049 pieces (96.4 percent) from smallholder farmers. The total production from smallholder farmers was reported only in Mainland Tanzania.

In addition to that, information on pieces of skins produced from goat and sheep were reported, of which the total of 1,008,870 pieces (1,094 from large scale farms and 1,007,776 from smallholder farmers) were produced from goat skins and 91,475 pieces (1,171 from large scale farms and 90,304 from smallholder farmers) from sheep skins.

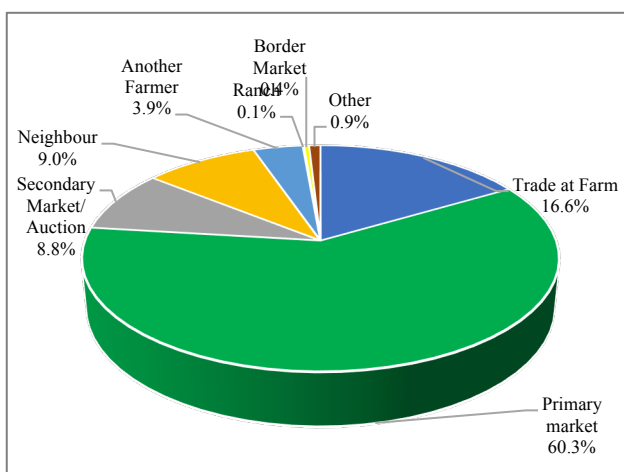
#### 4.4 Outlet for Sales of Livestock and Livestock Product

##### 4.4.1 Cattle Outlets

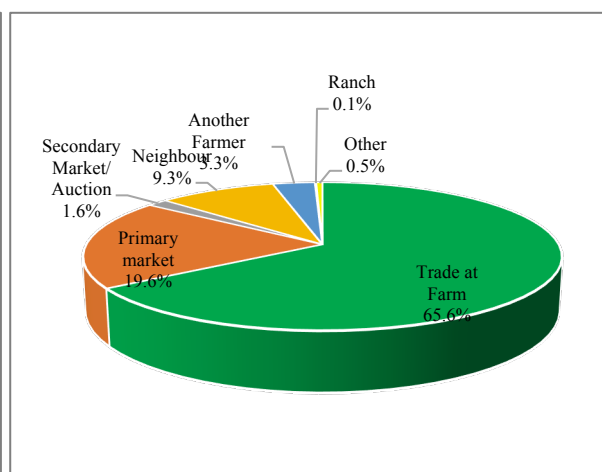
The 2019/20 NSCA results show that, most of the households reported to sell their cattle to primary market (1,679,678; 59.8 percent), followed by those who trade at farm (486,461; 17.3 percent) and neighbor (253,952; 9.0 percent). The least number of households reported to sell their cattle to ranch (1,761; 0.1 percent). Similar behavior of outlets for sell of cattle was reported in Mainland Tanzania, where most of households sold their cattle to primary market (1,672,059; 60.3 percent), followed by those who traded at farm (460,931; 16.6 percent) and neighbor (250,337; 9.0 percent). Whilst, the least number of households reported to sell their cattle to ranch (1,706; 0.1 percent) (Figure 4.34).

The situation was different in Tanzania Zanzibar whereby majority of households traded their cattle at farm (25,530; 65.6 percent), followed by those sold at primary market (7,619; 19.6 percent). The least number of households reported to sell their cattle to ranch (55; 0.1 percent) (Figure 4.35).

**Figure 4.34: Percentage Distribution of Households Reported Outlet for Sale of Cattle During 2019/20 Agricultural Year, Mainland Tanzania**



**Figure 4.35: Percentage Distribution of Households Reported Outlet for Sale of Cattle During 2019/20 Agricultural Year, Tanzania Zanzibar**

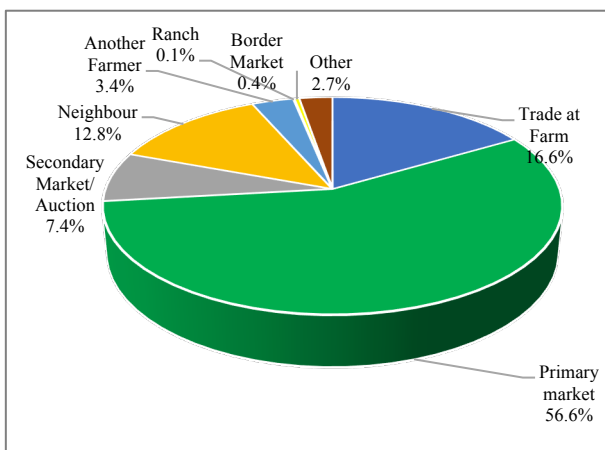


### 4.5.2 Goats Outlets

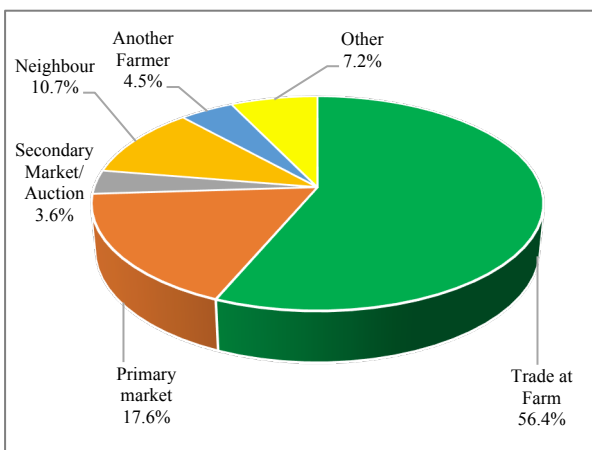
In Tanzania, most of the households reported to sell their goats to primary market (1,564,086; 56.3 percent), followed by those who trade at farm (467,505; 16.8 percent) and neighbor (356,226; 12.8 percent). The least number of households reported to sell their goats to ranch (2,243; 0.1 percent). Similar behavior of outlets for sell of goats was reported in Mainland Tanzania, where most of households sold their goats to primary market (1,561,303; 56.6 percent), followed by those who traded at farm (458,589; 16.6 percent) and neighbor (354,528; 12.8 percent). Whilst, the least number of households reported to sell their goats to ranch (2,243; 0.1 percent) (Figure 4.36).

In Tanzania Zanzibar, majority of households traded their goats at farm (8,916; 56.4 percent), followed by those sold at primary market (2,783; 17.6 percent). The least number of households reported to sell their goats to secondary market (564; 3.6 percent) (Figure 4.37).

**Figure 4.36: Percentage Distribution of Households Reported Outlet for Sale of Goats During 2019/20 Agricultural Year, Mainland Tanzania**



**Figure 4.37: Percentage Distribution of Households Reported Outlet for Sale of Goats During 2019/20 Agricultural Year, Tanzania Zanzibar**



### 4.4.3 Chicken Outlets

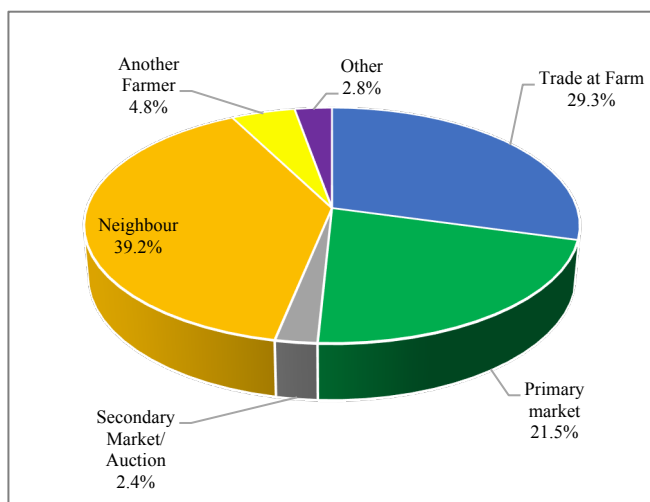
During 2019/20 Agricultural year, majority of the households reported to sell their chicken to neighbours (1,589,889; 39.5 percent), followed by those who traded at farm (1,172,484; 29.1 percent) and primary market (855,894; 21.3 percent). The least number of households reported to sell their chicken to secondary market (93,477; 2.3 percent).

Furthermore, in Mainland Tanzania, most of households sold their chicken to neighbour (1,551,011; 39.2 percent), followed by those who trade at farm (1,159,961; 29.3 percent) and primary market

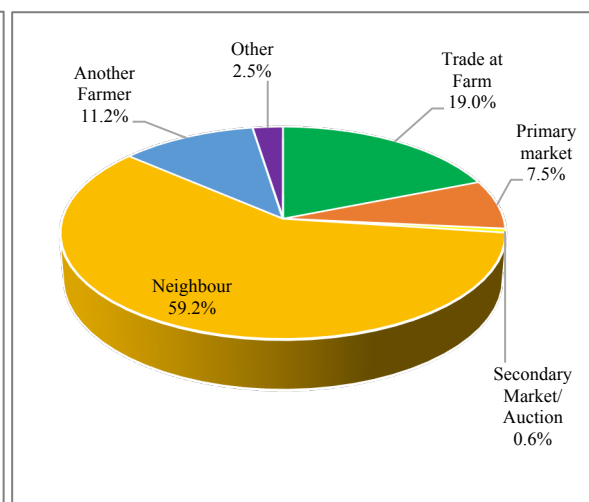
(850,975; 21.5 percent). The least number of households reported to sell their chicken to secondary market (93,068; 2.4 percent) (Figure 4.38).

In Tanzania Zanzibar, most of the households traded their chicken to neighbor (38,878; 59.1 percent), followed by those traded at farm (12,523; 19.0 percent). The least number of households reported to sell their chicken to secondary market (409; 0.6 percent) (Figure 4.39).

**Figure 4.38: Percentage Distribution of Households Reported Outlet for Sale of Chicken During 2019/20 Agricultural Year, Mainland Tanzania**



**Figure 4.39: Percentage Distribution of Households Reported Outlet for Sale of Chicken During 2019/20 Agricultural Year, Tanzania Zanzibar**



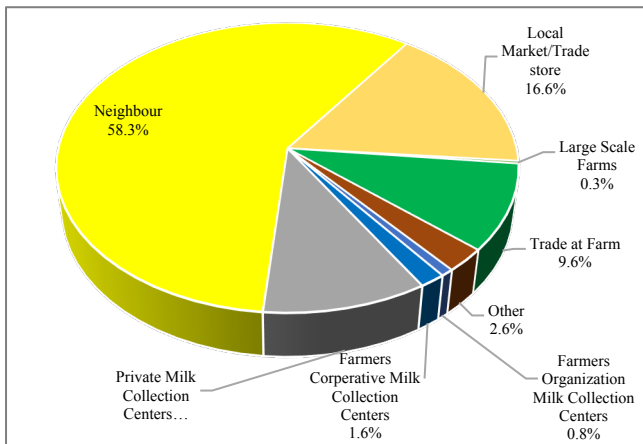
#### 4.4.4 Milk Outlets

In Tanzania, majority of the households reported to sell milk to neighbours (246,886; 55.4 percent), followed by those who sell to the local market/trade store (70,149; 15.7 percent) and at farm (47,456; 10.6 percent). The least number of households reported to sell milk to large scale farms (1,574; 0.4 percent).

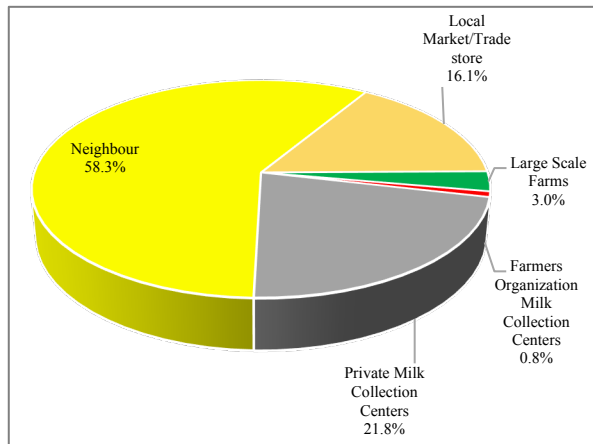
In Mainland Tanzania, most of households sold their milk to neighbor (239,348; 56.4 percent), followed by local market/trade store (68,065; 16.0 percent) and private milk collection centers (41,953; 9.9 percent). The least number of households reported to sell their milk to large scale farms (1,201; 0.3 percent) (Figure 4.40).

In Tanzania Zanzibar, most of the households traded their milk to trade at farm (8,236; 38.8 percent), followed by those who sold to neighbor (7,538; 35.5 percent). The least number of households reported to sell their milk to other places (51; 0.2 percent) (Figure 4.41).

**Figure 4.40: Percentage Distribution of Households Reported Outlet for Sale of Milk During 2019/20 Agricultural Year, Mainland Tanzania**



**Figure 4.41: Percentage Distribution of Households Reported Outlet for Sale of Milk During 2019/20 Agricultural Year, Mainland Tanzania**



## 4.5 Livestock Pests and Parasites Control

Livestock pests and parasites pose a great threat to livestock causing illness and hence reduced production, growth and sometimes deaths. Their control is most important in livestock rearing. In the 2019/20 agricultural year, the results on pests and disease control is presented in two segments. The first segment presents the results on common livestock diseases whilst the second segment presents the results on the control methods of specific types of pests and parasites.

### 4.5.1 Common Livestock Diseases

The livestock diseases and pests control focused on species of cattle, goats, sheep, pigs and chickens. The most common livestock diseases reported for these animals include Tick Borne Diseases, Contagious Bovine Pleura Pneumonia (CBPP), Contagious Caprine Pleuropneumonia (CCPP), trypanosomiasis, lumpy skin disease, helmenthioitis, Foot and Mouth Disease (FMD), brucellosis, black quarter, anthrax, and Newcastle Disease (NCD).

#### 4.5.1.1 Cattle Diseases

##### a) Tick Borne Diseases

The total number of households reported encountering tick borne diseases to their cattle was 428,637 (417,517 in Mainland Tanzania and 11,120 in Tanzania Zanzibar), which represents 21.7 percent of the total cattle rearing households during the 2019/20 agricultural year.

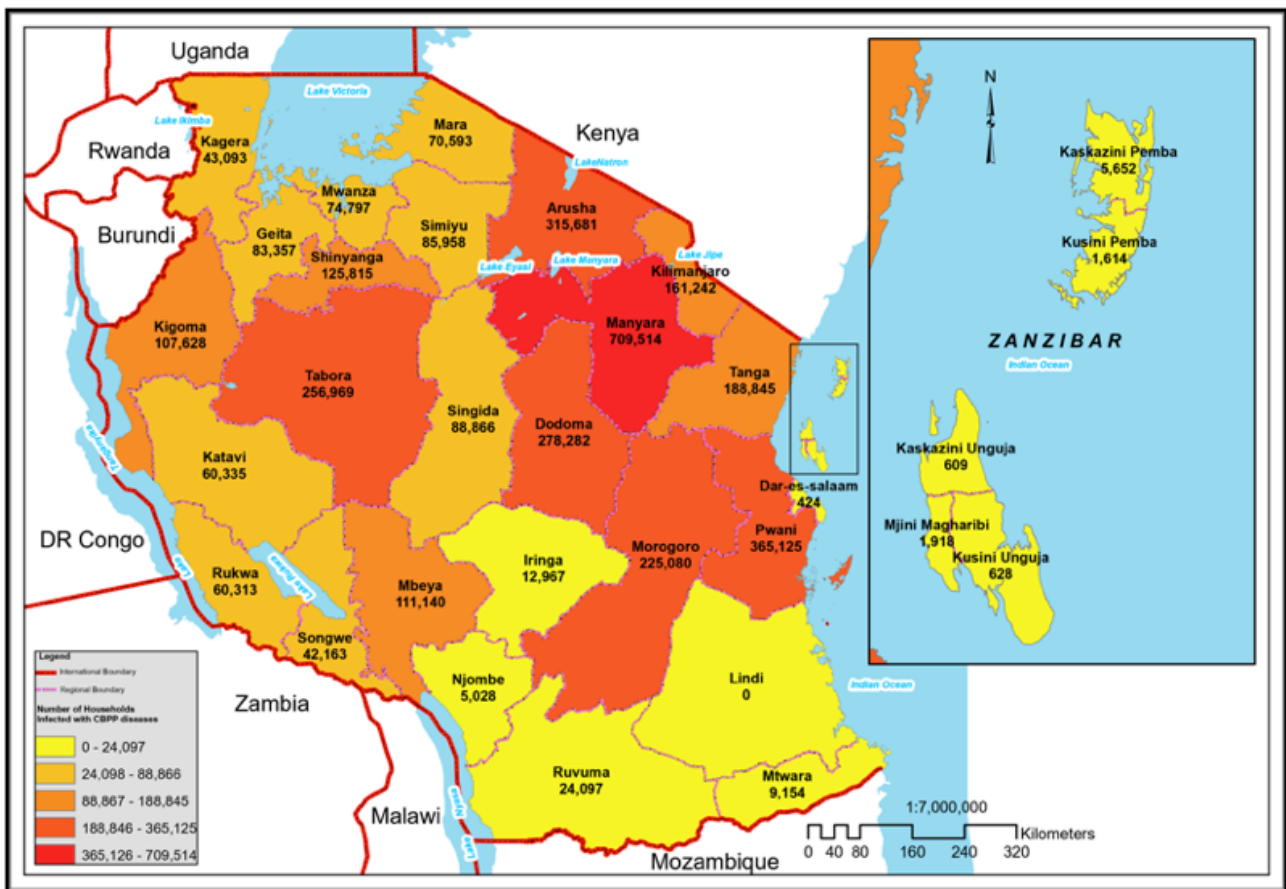
A total of 4,359,545 cattle were infected with tick borne diseases, of which 4,333,180 cattle were in Mainland Tanzania and 26,365 in Tanzania Zanzibar. In Mainland Tanzania, Pwani region had the highest proportion of cattle infected with tick borne diseases (409,825 heads;



followed by Pwani (365,125; 10.4 percent) and Arusha (315,681; 9.0 percent). The lowest proportion of cattle infected was reported in Dar es Salaam region (424; 0.01 percent).

In Tanzania Zanzibar, Kaskazini Pemba region had the highest number of cattle infected with CBPP disease (5,652; 54.2 percent), followed by Mjini Magharibi (1,918; 18.4 percent) and Kusini Pemba (1,614; 15.5 percent). The lowest proportion was reported in Kaskazini Unguja region (609; 5.8 percent) (Map 4.12).

**Map 4.12: Number of Households Reported CBPP Disease Infections During 2019/20 Agricultural Year, Tanzania**



### c) Trypanosomiasis

The total number of households reported to encounter trypanosomiasis disease in their animals was 191,846 (191,407 in Mainland Tanzania and 439 in Tanzania Zanzibar); which represents 9.7 percent of the total cattle keeping households during the 2019/20 agricultural year.

A total number of 1,685,215 cattle were infected with trypanosomiasis disease, of which 1,684,467 cattle were in Mainland Tanzania and 748 in Tanzania Zanzibar. In Mainland



Tanzania, Kilimanjaro region had the highest proportion of cattle infected with trypanosomiasis disease (256,077 heads; 15.2 percent), followed by Arusha (247,040; 14.7 percent) and Tanga (233,321; 13.9 percent). The lowest proportion was reported in Njombe region (774 heads; 0.05 percent).

In Tanzania Zanzibar, Mjini Magharibi region had the highest number of cattle infected with trypanosomiasis disease (339; 45.3 percent), followed by Kusini Unguja (235; 31.4 percent) and the lowest proportion was reported in Kaskazini Unguja (174 heads; 23.3 percent) (Table 4.14).

**Table 4.14: Number of Reported Cases of Cattle Diseases Occurrence by Type and Region During 2019/20 Agricultural Year**

Region	Diseases							
	Trypanosomiasis		Lumpy Skin Disease		Helmenthiosis		Black Quarter	
	Number Infected	Percent	Number Infected	Percent	Number Infected	Percent	Number Infected	Percent
Dodoma	74,135	4.4	95,682	5.3	113,577	3.0	9,495	1.5
Arusha	247,040	14.7	129,323	7.2	333,918	8.8	10,943	1.7
Kilimanjaro	256,077	15.2	37,979	2.1	285,172	7.5	4,220	0.7
Tanga	233,321	13.9	61,772	3.4	340,980	8.9	16,590	2.6
Morogoro	98,249	5.8	106,586	5.9	105,395	2.8	19,054	3.0
Pwani	97,367	5.8	44,036	2.4	127,241	3.3	313,786	48.7
Dar Es Salaam	3,388	0.2	424	0.0	847	0.0	-	-
Lindi	72,357	4.3	-	-	14,096	0.4	-	-
Mtwara	7,628	0.5	9,154	0.5	9,154	0.2	-	-
Ruvuma	19,136	1.1	41,106	2.3	60,242	1.6	19,844	3.1
Iringa	17,682	1.0	30,059	1.7	93,713	2.5	8,251	1.3
Mbeya	33,837	2.0	63,548	3.5	151,579	4.0	18,982	2.9
Singida	61,804	3.7	88,866	4.9	132,385	3.5	20,480	3.2
Tabora	24,418	1.4	206,389	11.4	136,042	3.6	83,428	13.0
Rukwa	8,448	0.5	58,937	3.3	53,830	1.4	2,750	0.4
Kigoma	38,159	2.3	38,159	2.1	136,002	3.6	-	-
Shinyanga	25,949	1.5	48,753	2.7	83,353	2.2	9,698	1.5
Kagera	33,775	2.0	103,655	5.7	173,535	4.6	-	-
Mwanza	20,975	1.2	50,656	2.8	306,707	8.0	9,498	1.5
Mara	93,571	5.6	143,678	8.0	550,629	14.4	11,073	1.7
Manyara	171,005	10.2	184,474	10.2	202,512	5.3	8,899	1.4
Njombe	774	0.0	15,084	0.8	30,943	0.8	35,197	5.5
Katavi	10,708	0.6	19,768	1.1	17,091	0.4	1,030	0.2
Simiyu	9,762	0.6	110,363	6.1	36,336	1.0	3,796	0.6
Geita	22,474	1.3	77,228	4.3	282,761	7.4	5,312	0.8
Songwe	2,428	0.1	39,073	2.2	35,761	0.9	31,567	4.9
<b>Mainland Tanzania</b>	<b>1,684,467</b>	<b>100.0</b>	<b>1,804,752</b>	<b>100.0</b>	<b>3,813,801</b>	<b>100.0</b>	<b>643,893</b>	<b>100.0</b>
Kaskazini Unguja	174	23.3	4,785	16.1	5,308	9.0	2,958	39.4
Kusini Unguja	235	31.4	5,337	17.9	7,221	12.3	1,256	16.7
Mjini Magharibi	339	45.3	5,078	17.0	13,428	22.9	2,708	36.0
Kaskazini Pemba	-	-	5,652	19.0	22,904	39.0	595	7.9
Kusini Pemba	-	-	8,949	30.0	9,829	16.7	-	-
<b>Tanzania Zanzibar</b>	<b>748</b>	<b>100.0</b>	<b>29,801</b>	<b>100.0</b>	<b>58,690</b>	<b>100.0</b>	<b>7,517</b>	<b>100.0</b>
<b>Tanzania</b>	<b>1,685,215</b>		<b>1,834,553</b>		<b>3,872,491</b>		<b>651,410</b>	



#### **d) Lumpy Skin**

The total number of households reported lumpy skin disease infection in their cattle was 321,874 (308,468 in Mainland Tanzania and 13,406 in Tanzania Zanzibar), which represents 16.3 percent of the total cattle keeping households during the 2019/20 agricultural year.

A total number of 1,834,553 cattle were reported to be infected with lumpy skin problem; of which 1,804,752 cattle were in Mainland Tanzania and 29,801 in Tanzania Zanzibar. In Mainland Tanzania, Tabora region had the highest proportion of cattle infected with lumpy skin disease (206,389; 11.4 percent), followed by Manyara (184,474; 10.2 percent) and Mara (143,678; 8.0 percent). The lowest proportion of cattle infected was reported in Dar es Salaam region (424 heads; 0.02 percent).

In Tanzania Zanzibar, Kusini Pemba region had the highest number of cattle infected by Lumpy Skin disease (8,949 heads; 30 percent), followed by Kaskazini Pemba (5,652; 19.0 percent) and Kusini Unguja (5,337; 17.9 percent). The lowest proportion of cattle infected was reported in Kaskazini Unguja region (4,785; 16.1 percent) (Table 4.14).

#### **e) Helmenthiosis**

The total number of households reported helmenthiosis disease infections in their cattle was 473,638 (456,343 in Mainland Tanzania and 17,295 in Tanzania Zanzibar), which represents 24.0 percent of the total cattle keeping households during 2019/20 agricultural year.

A total number of 3,872,491 cattle were reported to be infected with helmenthiosis disease, of which 3,813,801 cattle were in Mainland Tanzania and 58,690 in Tanzania Zanzibar. In Mainland Tanzania, Mara region had the highest proportion of cattle infected with helmenthiosis diseases (550,629; 14.4 percent), followed by Tanga (340,980; 8.9 percent) and Arusha (333,918; 8.8 percent). The lowest proportion of cattle infected was reported in Dar es Salaam (847; 0.02 percent)

In Tanzania Zanzibar, Kaskazini Pemba region had the highest number of cattle infected by helmenthiosis disease (22,904; 39.0 percent), followed by Mjini Magharibi (13,428; 22.9 percent) and Kusini Pemba (9,829; 16.7 percent). The lowest proportion of cattle infected was reported in Kaskazini Unguja region (5,308 heads; 0.9 percent) (Table 4.14).

#### **f) Black Quarter Disease**

The total number of households reported black quarter disease infections to their cattle was 52,019 (49,534 in Mainland Tanzania and 2,485 in Tanzania Zanzibar), which represents 2.6 percent of the total cattle keeping households during 2019/20 agricultural year.

A total number of 651,410 cattle were infected with black quarter disease, of which 643,893 heads in Mainland Tanzania and 7,517 heads in Tanzania Zanzibar. In Mainland Tanzania, Pwani region had the highest proportion of cattle infected with black quarter disease (313,786; 48.7 percent), followed by Tabora (83,428; 13.0 percent) and Njombe (35,197; 5.5 percent). The lowest proportion of cattle infected was reported in Katavi region (1,030; 0.2 percent)

In Tanzania Zanzibar, Kaskazini Unguja region had the highest number of cattle infected by black quarter disease (2,958; 39.4 percent), followed by Mjini Magharibi (2,708; 36.0 percent) and Kusini Unguja (1,256; 16.7 percent). The lowest proportion of cattle infected was reported in Kaskazini Pemba region (595; 7.9 percent) (Table 4.14).

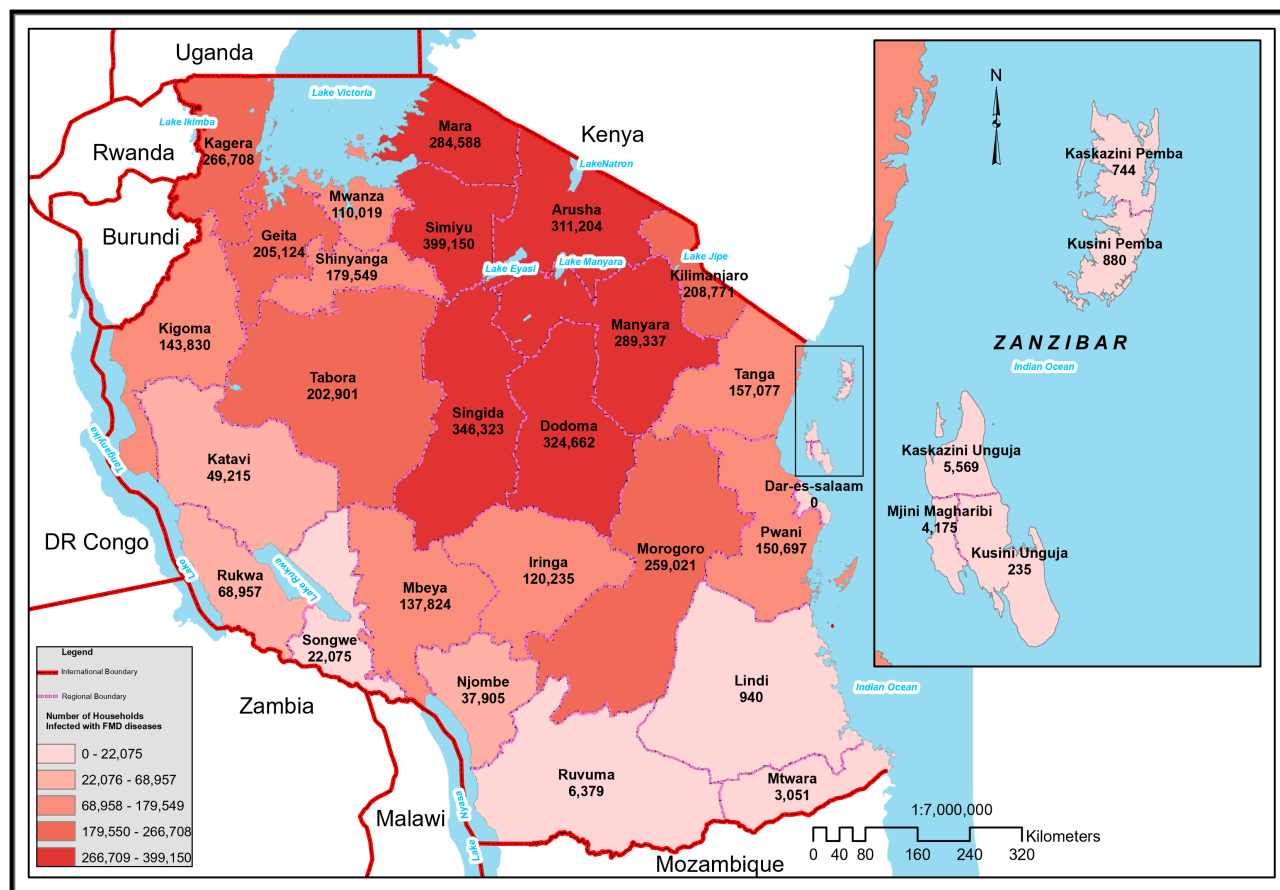
#### **g) Foot Mouth Disease (FMD)**

The total number of households reported FMD infection in their cattle was 389,136 (384,651 in Mainland Tanzania and 4,485 in Tanzania Zanzibar), which represents 19.7 percent of the total cattle keeping households during 2019/20 agricultural year.

A total number of 4,297,145 cattle were reported to be infected with FMD, of which 4,285,542 heads in Mainland Tanzania and 11,603 heads in Tanzania Zanzibar. In Mainland Tanzania, Simiyu region had the highest proportion of cattle infected with FMD problem (399,150; 9.3 percent), followed by Singida (346,323; 8.1 percent) and Dodoma (324,662; 7.6 percent). The lowest proportion of cattle infected was reported in Lindi region (940; 0.02 percent)

In Tanzania Zanzibar, Kaskazini Unguja region had the highest number of cattle infected by FMD problem (5,569; 48.0 percent), followed by Mjini Magharibi (4,175; 36.0 percent) and Kusini Pemba (880; 7.6 percent). The lowest proportion of cattle infected was reported in Kusini Unguja region (235; 2.0 percent) (Map 4.13).

**Map 4.13: Number of Households Reported FMD Infections During 2019/20 Agricultural Year, Tanzania**



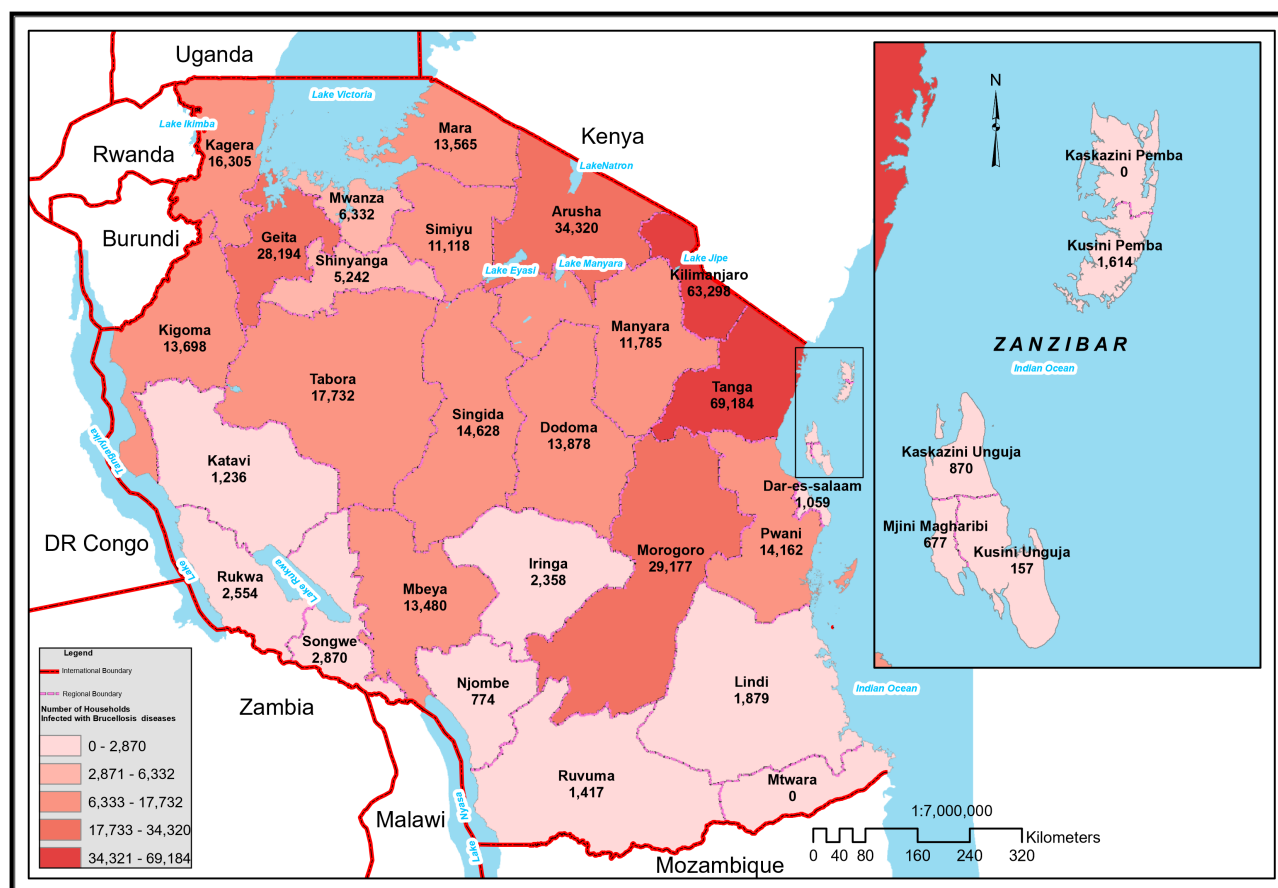
**h) Brucellosis Disease**

The total number of households reported brucellosis infections in their cattle was 103,080 (100,583 in Mainland Tanzania and 2,497 in Tanzania Zanzibar), which represents 5.2 percent of the total cattle keeping households during the 2019/20 agricultural year.

The report revealed that, a total number of 393,563 cattle were infected with brucellosis disease, of which 390,245 cattle were in Mainland Tanzania and 3,318 in Tanzania Zanzibar. In Mainland Tanzania, Tanga region had the highest proportion of cattle infected with brucellosis disease (69,184 heads; 17.7 percent), followed by Kilimanjaro (63,298; 16.2 percent) and Arusha (34,320; 8.8 percent). The lowest proportion of cattle infected was reported in Njombe region (774; 0.2 percent).

In Tanzania Zanzibar, Kusini Pemba region had the highest number of cattle infected by brucellosis disease (1,614; 48.6 percent), followed by Kaskazini Unguja (870; 26.2 percent) and Mjini Magharibi (677; 20.4 percent). The lowest proportion of cattle infected was reported in Kusini Unguja region (157; 4.7 percent) (Map 4.14).

**Map 4.14: Number of Households Reported Brucellosis Disease Infections During 2019/20 Agricultural Year, Tanzania**



#### 4.5.1.2 Goat diseases

##### a) Foot Rot Disease

The total number of households reported foot rot disease infections in their goats was 214,118 (213,611 in Mainland Tanzania and 507 in Tanzania Zanzibar, which represents 11.8 percent of the total goat rearing households during 2019/20 agricultural year.

A total number of 2,006,290 goats were reported to be infected with foot rot disease, of which 2,004,896 goats in Mainland Tanzania and 1,394 in Tanzania Zanzibar. In Mainland Tanzania, Arusha region had the highest number of goats infected with foot rot disease (258,726; 12.9 percent), followed by Dodoma (210,248; 10.5 percent) and Tanga (180,919; 9.0 percent). The lowest number of goats infected was reported in Ruvuma region (4,301; 0.2 percent).

In Tanzania Zanzibar, Kusini Unguja region had the highest number of goats infected with foot rot disease (529; 37.9 percent), followed by Kaskazini Unguja (400; 28.7 percent) and Kaskazini Pemba (330; 23.7 percent). The lowest proportion of goats infected was reported in Mjini Magharibi region (135; 9.7 percent) (Table 4.15).

**Table 4.15: Number of Reported Cases of Goat Disease Occurrences by Type and Region During 2019/20 Agricultural Year, Tanzania**

Region	Goat Disease									
	Foot Rot		Helminthiosis		Tetanus		Mange		Black Quarter	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Dodoma	210,248	10.5	117,657	3.0	11,653	3.9	30,279	4.3	18,853	6.7
Arusha	258,726	12.9	382,450	9.9	16,341	5.5	33,465	4.8	14,316	5.1
Kilimanjaro	171,198	8.5	401,325	10.3	12,687	4.2	40,717	5.8	29,780	10.6
Tanga	180,919	9.0	430,276	11.1	47,219	15.8	102,998	14.7	21,483	7.6
Morogoro	87,400	4.4	117,007	3.0	10,469	3.5	45,183	6.4	34,153	12.1
Pwani	112,878	5.6	147,465	3.8	16,305	5.4	21,418	3.0	33,989	12.1
Dar Es Salaam	4,839	0.2	7,253	0.2	-	-	847	0.1	-	-
Lindi	30,367	1.5	68,861	1.8	-	-	-	-	-	-
Mtwara	11,721	0.6	37,265	1.0	-	-	8,961	1.3	4,338	1.5
Ruvuma	4,301	0.2	82,223	2.1	648	0.2	43,821	6.2	5,253	1.9
Iringa	88,844	4.4	58,192	1.5	-	-	5,270	0.8	662	0.2
Mbeya	60,869	3.0	77,731	2.0	6,040	2.0	22,967	3.3	6,040	2.1
Singida	143,828	7.2	60,422	1.6	8,649	2.9	16,597	2.4	-	-
Tabora	47,909	2.4	52,951	1.4	13,781	4.6	31,488	4.5	6,603	2.3
Rukwa	31,154	1.6	46,281	1.2	3,519	1.2	19,056	2.7	3,614	1.3
Kigoma	86,135	4.3	485,819	12.5	-	-	23,401	3.3	17,339	6.2
Shinyanga	62,810	3.1	71,948	1.9	11,479	3.8	43,108	6.1	7,008	2.5
Kagera	52,527	2.6	310,635	8.0	9,050	3.0	64,399	9.2	41,436	14.7
Mwanza	30,868	1.5	251,180	6.5	3,900	1.3	25,475	3.6	14,534	5.2
Mara	59,020	2.9	251,333	6.5	2,004	0.7	20,400	2.9	438	0.2
Manyara	82,883	4.1	182,464	4.7	70,574	23.5	49,321	7.0	4,974	1.8
Njombe	8,191	0.4	11,505	0.3	-	-	4,439	0.6	379	0.1
Katavi	11,243	0.6	12,111	0.3	5,965	2.0	5,930	0.8	3,893	1.4
Simiyu	98,354	4.9	26,618	0.7	26,345	8.8	30,751	4.4	7,325	2.6
Geita	57,601	2.9	168,834	4.4	15,237	5.1	6,886	1.0	2,436	0.9
Songwe	10,063	0.5	18,198	0.5	7,823	2.6	5,305	0.8	2,311	0.8
<b>Mainland Tanzania</b>	<b>2,004,896</b>		<b>3,878,004</b>	100.0	<b>299,688</b>	100.0	<b>702,482</b>	100.0	<b>281,157</b>	100.0
Kaskazini Unguja	400	28.7	673	3.9	-	-	553	23.9	-	-
Kusini Unguja	529	37.9	4,711	27.4	141	100.0	150	6.5	982	47.6
Mjini Magharibi	135	9.7	347	2.0	-	-	-	-	130	6.3
Kaskazini Pemba	330	23.7	5,559	32.4	-	-	1,268	54.9	825	40.0
Kusini Pemba	-	-	5,879	34.2	-	-	339	14.7	127	6.2
<b>Zanzibar</b>	<b>1,394</b>	<b>100</b>	<b>17,169</b>	100.0	<b>141</b>	100.0	<b>2,310</b>	100.0	<b>2,064</b>	100.0
<b>Tanzania</b>	<b>2,006,290</b>		<b>3,895,173</b>		<b>299,829</b>		<b>704,792</b>		<b>283,221</b>	

**b) Helminthiosis**

The total number of households reported helminthiosis problem in their goats was 421,516 (417,597 in Mainland Tanzania and 3,919 in Tanzania Zanzibar), which represents 23.2 percent of the total goat keeping households during the 2019/20 agricultural year. A total number of 3,895,173 goats were reported to be infected with helminthiosis, of which 3,878,004 heads in Mainland Tanzania and 17,169 heads in Tanzania Zanzibar. In Mainland Tanzania, Kigoma region had the highest number of goats infected with helminthiosis disease (485,819; 12.5 percent), followed by Tanga (430,276; 11.1 percent) and Kilimanjaro

(401,325; 10.3 percent). The lowest proportion of goats infections were reported in Dar es Salaam region (7,253; 0.2 percent).

In Tanzania Zanzibar, Kusini Pemba region had the highest number of goats infected with helminthiosis disease (5,879; 34.2 percent), followed by Kaskazini Pemba (5,559; 32.4 percent) and Kusini Unguja (4,711; 27.4 percent). The lowest proportion of goats infected was reported in Mjini Magharibi region (347; 2 percent) (Table 4.15).

### **c) Tetanus Disease**

The total number of households reported tetanus disease infections to their goats was 38,987 (38,883 in Mainland Tanzania and 104 in Tanzania Zanzibar), which represents 2.1 percent of the total goat keeping households during the 2019/20 agricultural year.

A total number of 299,829 goats were reported to be infected with tetanus disease, of which 299,688 goats in Mainland Tanzania and 141 in Tanzania Zanzibar. In Mainland Tanzania, Manyara region had the largest number of goats infected with tetanus disease (70,574; 23.5 percent) followed by Tanga (47,219; 15.8 percent) and Simiyu (26,345; 8.8 percent). The lowest proportion of goat's infections was reported in Ruvuma region (648; 2 percent). In Tanzania Zanzibar, Kusini Unguja region with 141 heads (100 percent) was the only area that had some goats infected by Tetanus problem (Table 4.15).

### **d) Mange Disease**

The total number of households reported mange disease infections to their goats was 111,034 (110,073 in Mainland Tanzania and 961 in Tanzania Zanzibar), which represents 6.1 percent of the total goat keeping households during the 2019/20 agricultural year.

A total number of 704,792 goats were reported to be infected with mange disease, of which 702,482 goats in Mainland and 2,310 in Tanzania Zanzibar. In Mainland Tanzania, Tanga region had the highest proportion of goats infected with mange problem (102,998; 14.7 percent), followed by Kagera (64,399; 9.2 percent) and Manyara (49,321; 7.0 percent). The lowest proportion of goats infected was reported in Dar es Salaam region (847; 0.1 percent).

In Tanzania Zanzibar, Kaskazini Pemba region had the highest number of goats infected by mange disease (1,268; 54.9 percent), followed by Kaskazini Unguja (553; 23.9 percent) and Kusini Pemba (339; 14.7 percent). The lowest proportion of goats infected was reported in Kusini Unguja region (150; 6.5 percent) (Table 4.15).

#### **e) Black Quarter Disease**

The total number of households reported Black Quarter infections in their goats was 30,077 (29,670 in Mainland Tanzania and 407 in Tanzania Zanzibar), which represents 1.7 percent of the total goat keeping households during the 2019/20 agricultural year.

A total number of 283,221 goats were reported to be infected with Black Quarter disease, of which 281,157 heads in Mainland Tanzania and 2,064 in Tanzania Zanzibar. In Mainland Tanzania, Kagera region had the largest number of goats infected with Black Quarter disease (41,436; 14.7 percent), followed by Morogoro (34,153; 12.2 percent) and Pwani (33,989; 12.1 percent). The lowest proportion of goats' infections was reported in Njombe region (379; 0.1 percent). In Tanzania Zanzibar, Kusini Unguja region had the largest number of goats infected with Black Quarter disease (982 heads; 47.6 percent), followed by Kaskazini Pemba (825 heads; 40.0 percent) and Mjini Magharibi (130 heads; 6.3 percent). The lowest proportion of goats' infections was reported in Kusini Pemba region (127 heads; 6.2 percent) (Table 4.15).

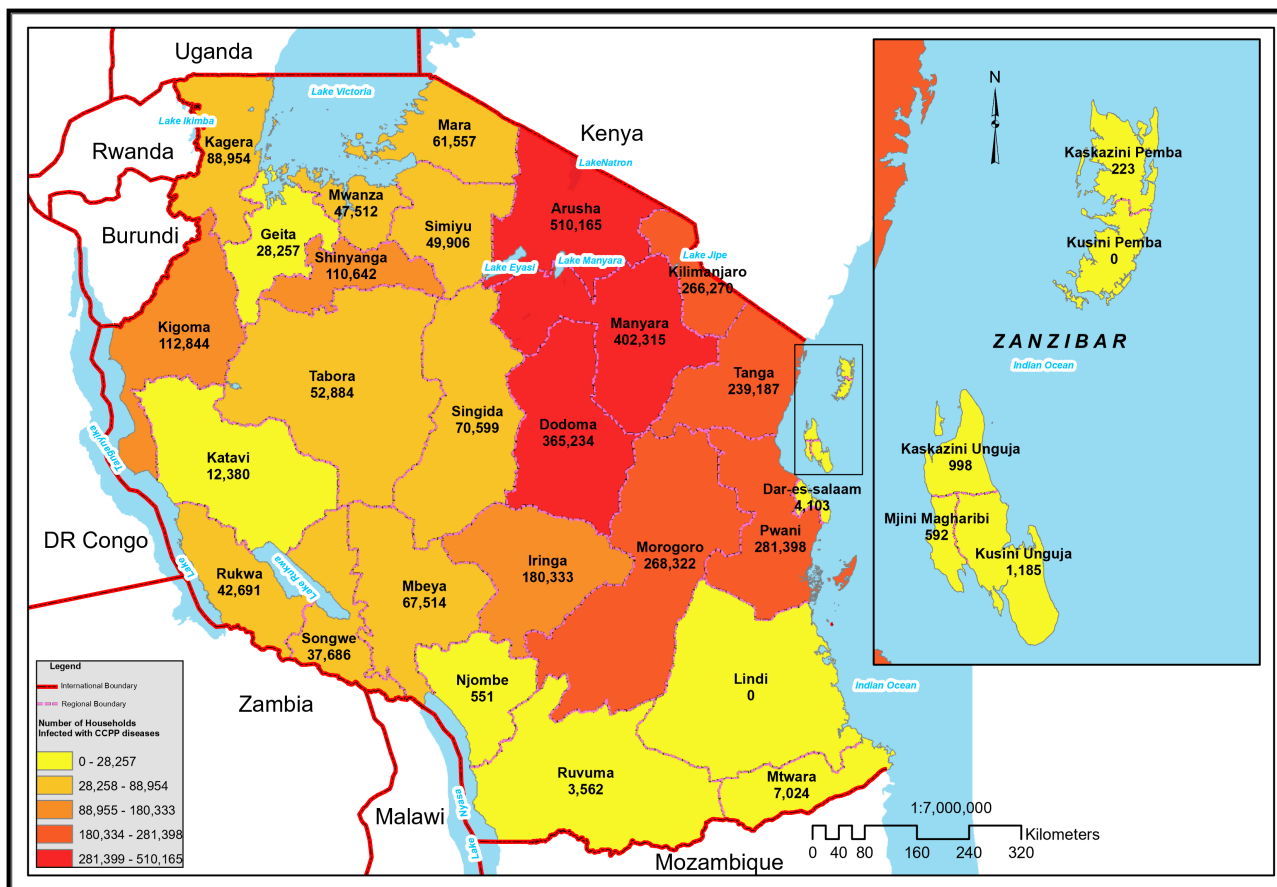
#### **f) Contagious Caprine Pleuropneumonia (CCPP) Disease**

The total number of households reporting infection of CCPP disease to their goats was 274,874 (274,016 in Mainland Tanzania and 858 in Tanzania Zanzibar), which represents 15.1 percent of the total goat keeping households during the 2019/20 agricultural year.

A total number of 3,314,888 goats were reported to be infected with CCPP disease, of which 3,311,890 goats in Mainland Tanzania and 2,998 in Tanzania Zanzibar. In Mainland Tanzania, Arusha region had the highest proportion of goats infected with CCPP disease (510,165; 15.4 percent), followed by Manyara (402,315; 12.1 percent) and Dodoma (365,234; 11.0 percent). The lowest proportion of goats infected was reported in Njombe region (551; 0.02 percent)

In Tanzania Zanzibar, Kusini Unguja region had the highest number of goats infected with CCPP disease (1,185; 39.5 percent), followed by Kaskazini Unguja (998; 33.3 percent) and Mjini Magharibi (592; 19.7 percent). The lowest proportion of goats infected was reported in Kaskazini Pemba region (223; 7.4 percent) (Map 4.15).

**Map 4.15: Number of Households Reported CCPP Disease Infections During 2019/20 Agricultural Year, Tanzania**



### g) Brucellosis Disease

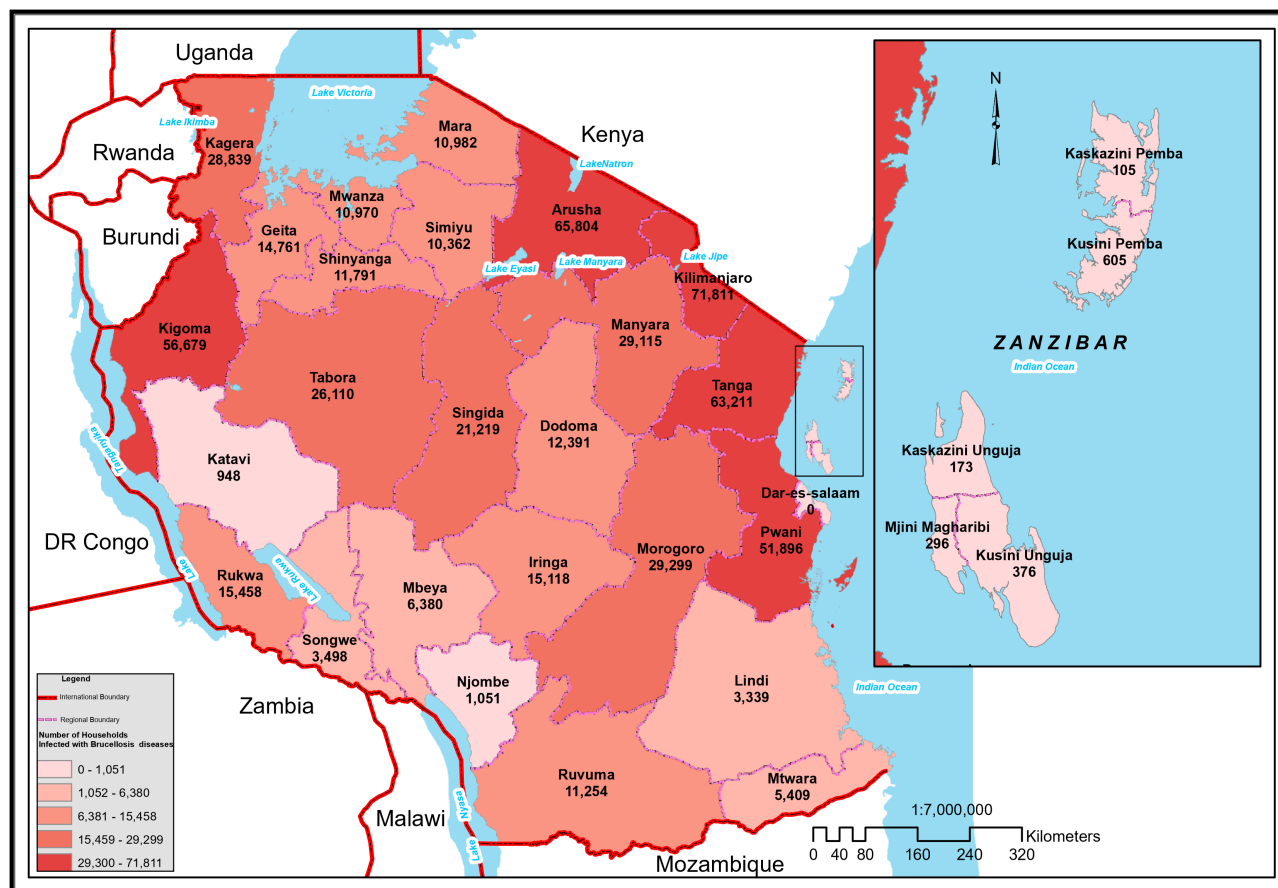
The total number of households reported Brucellosis disease infections to their goats was 134,999 (133,989 in Mainland Tanzania and 1,010 in Tanzania Zanzibar), which represents 7.4 percent of the total goat keeping households during the 2019/20 agricultural year.

A total number of 579,250 goats were reported to be affected with brucellosis problem, of which 577,695 goats in Mainland Tanzania and 1,555 in Tanzania Zanzibar. In Mainland Tanzania, Kilimanjaro region had the highest proportion of goats infected with brucellosis disease (71,811; 12.4 percent), followed by Arusha (65,804; 11.4 percent) and Tanga (63,211; 10.9 percent). The lowest proportion of goats' infections was reported in Katavi region (948; 0.2 percent).

In Tanzania Zanzibar, Kusini Pemba region had the largest number of goats infected with brucellosis disease (605; 38.9 percent), followed by Kusini Unguja (376; 24.2 percent) and Mjini Magharibi (296; 19.0 percent). The lowest proportion of goats infected was reported in Kaskazini Pemba region (105; 6.8 percent) (Map 4.16).



**Map 4.16: Number of Households Reported Brucellosis Disease Infections During 2019/20 Agricultural Year, Tanzania**

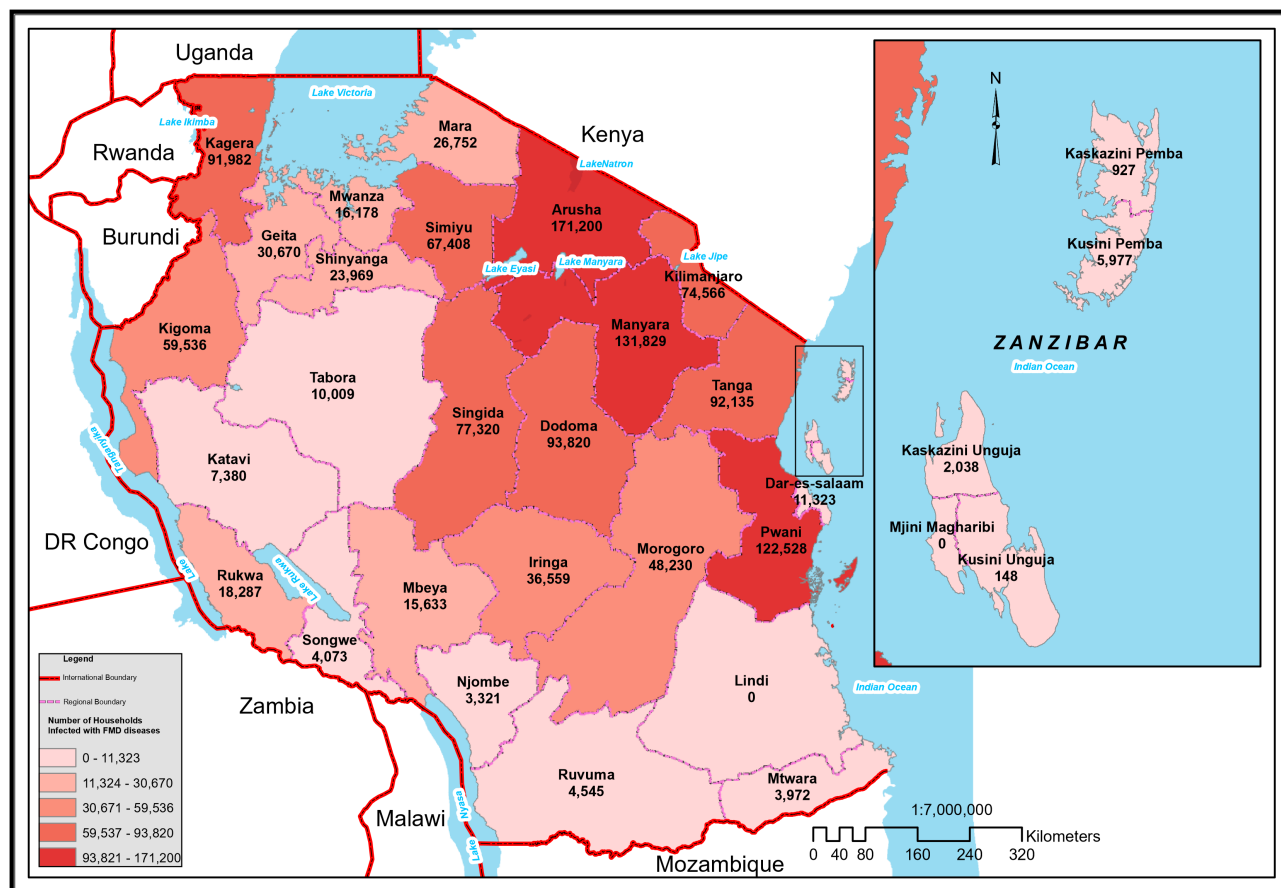


### **h) Foot and Mouth Disease (FMD)**

The total number of households reported FMD infections in their goats was 132,315 (129,562 in Mainland Tanzania and 2,753 in Tanzania Zanzibar), which represents 7.3 percent of the total goat keeping households during the 2019/20 agricultural year. A total number of 1,252,315 goats were reported to be infected with FMD disease, of which 1,243,225 heads in Mainland Tanzania and 9,090 heads in Tanzania Zanzibar.

In Mainland Tanzania, Arusha region had the largest number of goats infected with FMD disease (171,200; 13.8 percent), followed by Manyara (131,829; 10.6 percent) and Pwani (122,528; 9.9 percent). The lowest proportion of goats' infections was reported in Njombe region (3,321; 0.3 percent). In Tanzania Zanzibar, Kusini Pemba region had the largest number of goats infected by FMD disease (5,977; 65.8 percent), followed by Kaskazini Unguja (2,038; 22.4 percent) and Kaskazini Pemba (927; 10.2 percent). The lowest proportion of goats' infections was reported in Kusini Unguja region (148; 1.6 percent) (Map 4.17).

**Map 4.17: Number of Households Reported FMD Infections During 2019/20 Agricultural Year, Tanzania**



### 4.5.1.3 Sheep Diseases

#### a) Foot Rot Disease

The total number of households reported to encounter foot rot disease in their sheep was 65,942 (65,942 in Mainland Tanzania, while there was no such disease in Tanzania Zanzibar), which represents 9.7 percent of the total sheep keeping households during 2019/20 agricultural year.

A total number of 661,653 sheep were reported to be infected with foot rot disease in Mainland Tanzania. Arusha region had the largest number of sheep infected with foot rot disease (173,133; 26.2 percent), followed by Kilimanjaro (76,916; 11.6 percent) and Pwani (75,956; 11.5 percent). The lowest proportion of sheep infections was reported in Rukwa region (2,020; 0.3 percent) (Table 4.16).

**Table 4.16: Number of Reported Cases of Sheep Diseases Occurrences by Type and Region During 2019/20 Agricultural Year, Mainland Tanzania**

Region	Foot Rot		Helminthiosis		Trypanosomiasis		Black Quarter	
	Number Infected	Percent	Number Infected	Percent	Number Infected	Percent	Number Infected	Percent
Dodoma	19,746	3.0	16,339	1.3	-	-	220	0.3
Arusha	173,133	26.2	408,558	32.3	113,481	71.6	1,496	2.1
Kilimanjaro	76,916	11.6	113,849	9.0	10,170	6.4	4,924	6.8
Tanga	42,489	6.4	98,236	7.8	7,031	4.4	-	-
Morogoro	45,703	6.9	36,635	2.9	-	-	971	1.3
Pwani	75,956	11.5	84,190	6.6	3,728	2.4	20,006	27.8
Dar Es Salaam	-	-	1,593	0.1	-	-	-	-
Lindi	-	-	-	-	-	-	-	-
Mtwara	-	-	-	-	-	-	2,976	4.1
Ruvuma	-	-	989	0.1	-	-	-	-
Iringa	-	-	4,633	0.4	-	-	1,324	1.8
Mbeya	46,881	7.1	9,861	0.8	-	-	7,766	10.8
Singida	17,942	2.7	24,315	1.9	-	-	10,537	14.6
Tabora	3,577	0.5	8,283	0.7	2,225	1.4	3,448	4.8
Rukwa	2,020	0.3	12,471	1.0	1,949	1.2	-	-
Kigoma	2,810	0.4	48,654	3.8	6,229	3.9	-	-
Shinyanga	15,502	2.3	14,565	1.2	-	-	619	0.9
Kagera	3,155	0.5	19,109	1.5	821	0.5	-	-
Mwanza	22,670	3.4	79,970	6.3	-	-	-	-
Mara	16,430	2.5	154,367	12.2	4,764	3.0	13,565	18.8
Manyara	43,373	6.6	82,602	6.5	985	0.6	232	0.3
Njombe	-	-	-	-	-	-	-	-
Katavi	-	-	-	-	-	-	-	-
Simiyu	47,811	7.2	20,462	1.6	1,569	1.0	3,931	5.5
Geita	5,539	0.8	26,337	2.1	-	-	-	-
Songwe	-	-	-	-	5,596	3.5	-	-
<b>Mainland Tanzania</b>	<b>661,653</b>	<b>100</b>	<b>1,266,018</b>	<b>100</b>	<b>158,548</b>	<b>100</b>	<b>72,015</b>	<b>100</b>

## b) Helminthiosis Disease

The total number of households reported problem of helminthiosis disease to their sheep was 123,203 which, represents 18.2 percent of the total sheep keeping households during 2019/20 agricultural year. On the other hand, none of the infections were reported in Tanzania Zanzibar,

A total number of 1,266,018 sheep were reported to be infected with helminthiosis disease in Mainland Tanzania. Arusha region had the largest number of sheep infected with helminthiosis disease (408,558; 32.3 percent), followed by Mara (154,367; 12.2 percent) and Kilimanjaro (113,849; 9.0 percent). The lowest proportion of sheep infections was reported in Ruvuma region (989; 0.1 percent) (Table 4.16).

### c) **Trypanosomiasis Disease**

During the agricultural year 2019/20, the total number of households reported trypanosomiasis disease infections in their sheep was 18,417 in Mainland Tanzania, which represents 2.7 percent of the total sheep keeping households and Tanzania Zanzibar reported no disease infections.

A total number of 158,548 sheep were reported to be infected with trypanosomiasis disease in Mainland Tanzania. Arusha region had the largest number of sheep infected with trypanosomiasis disease (113,481; 71.6 percent), followed by Kilimanjaro (10,170; 6.4 percent) and Tanga (7,031; 4.4 percent). The lowest proportion of sheep infections was reported in Kagera region (821; 0.5 percent) (Table 4.16).

### d) **Black Quarter Disease**

The total number of households reported Black Quarter disease infections in their sheep was 5,868 (5,868 in Mainland Tanzania, which represents 0.9 percent of the total sheep keeping households during 2019/20 agricultural year), and there was no infection reported in Tanzania Zanzibar,

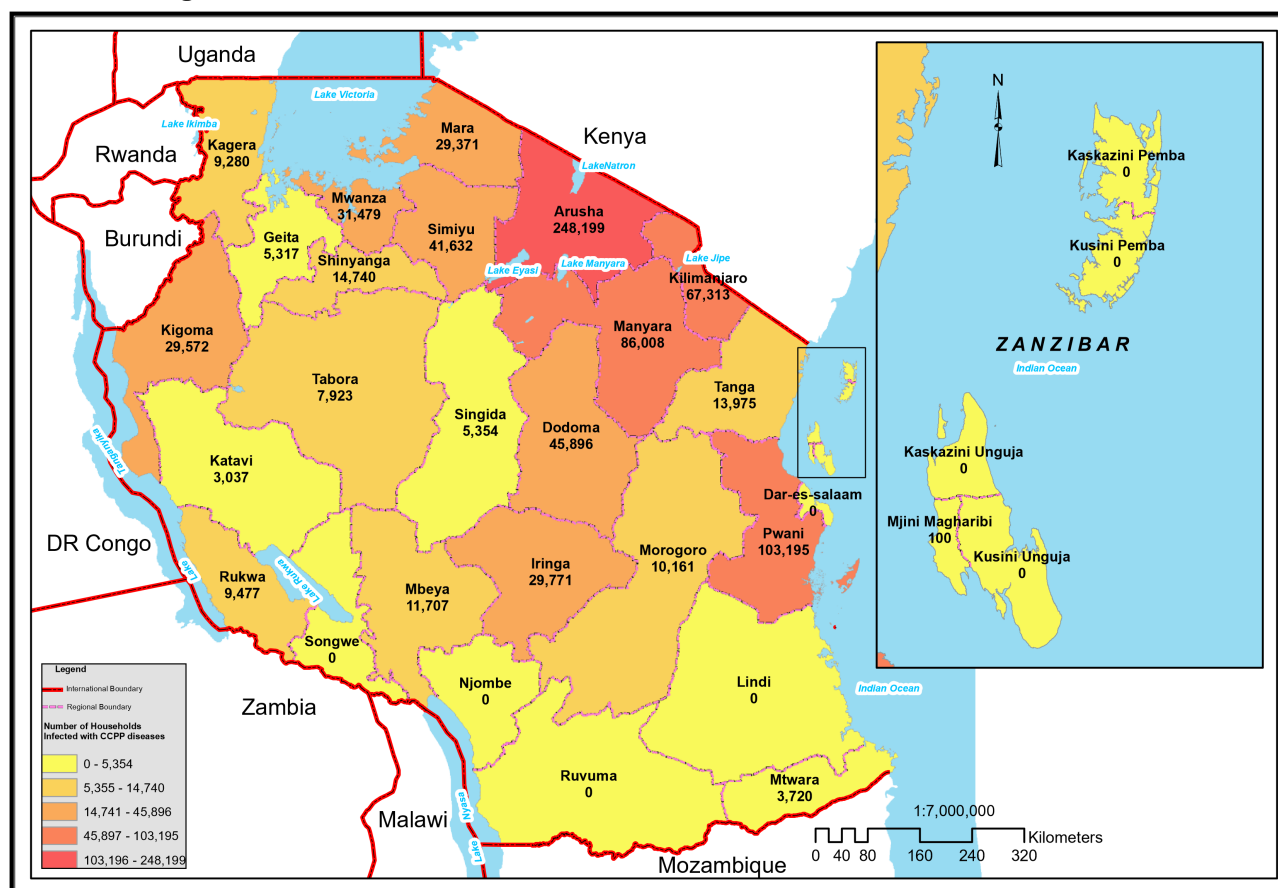
A total number of 72,015 sheep were reported to be infected with Black Quarter disease in Mainland Tanzania. Pwani region had the largest number of sheep infected with Black Quarter problem (20,006; 27.8 percent), followed by Mara (13,565; 18.8 percent) and Singida (10,537; 14.6 percent). The lowest proportion of sheep infections was reported in Dodoma region (220; 0.3 percent) (Table 4.16).

### e) **CCPP Disease**

The total number of households reported CCPP disease infections in their sheep was 81,172 (81,122 in Mainland Tanzania and 50 in Tanzania Zanzibar), which represents 12.0 percent of the total sheep keeping households during the 2019/20 agricultural year.

A total number of 807,227 sheep were reported to be infected with CCPP disease of which 807,127 heads were in Mainland Tanzania and 100 heads in Tanzania Zanzibar. In Mainland Tanzania, Arusha region had the largest number of sheep infected with CCPP disease (248,199; 30.8 percent), followed by Pwani (103,195; 12.8 percent) and Manyara (86,008; 10.7 percent). The lowest proportion of sheep infections was reported in Katavi region (3,037; 0.4 percent). In Tanzania Zanzibar, Mjini Magharibi is the only region reported sheep with CCPP disease infections (100 heads) (Map 4.18).

**Map 4.18: Number of Households Reported CCPP Disease Infections During 2019/20 Agricultural Year, Tanzania**



**f) Foot and Mouth Disease (FMD)**

The total number of households reported FMD infections in their sheep was 39,168 (39,168 in Mainland Tanzania, which represents 5.8 percent of the total sheep keeping households during 2019/20 agricultural year, and there was no household reported FMD infection in Tanzania Zanzibar).

A total number of 559,177 sheep were reported to have been infected with FMD disease in Mainland Tanzania. Arusha region had the largest number of sheep infected with FMD disease (247,020; 44.2 percent), followed by Pwani (84,492; 15.1 percent) and Kilimanjaro (59,683; 10.7 percent). The lowest proportion of sheep infections was reported in Rukwa region (768; 0.1 percent) (Map 4.19).





**Table 4.17: Number of Reported Cases of Pig Diseases Occurrences by Type and Region During 2019/20 Agricultural Year, Tanzania**

Region	Pig Disease									
	ASF		Anaemia		Brucellosis		Mange		FMD	
	Number Infected	Percent	Number Infected	Percent	Number Infected	Percent	Number Infected	Percent	Number Infected	Percent
Dodoma	4,554	2.3	-	-	885	8.1	8,334	3.0	-	-
Arusha	-	-	-	-	-	-	521	0.2	351	2.9
Kilimanjaro	-	-	-	-	208	1.9	18,926	6.9	-	-
Tanga	-	-	-	-	-	-	924	0.3	-	-
Morogoro	31,309	15.8	1,637	26.9	1,913	17.4	57,125	20.7	-	-
Pwani	4,958	2.5	-	-	-	-	5,657	2.1	620	5.1
Dar Es Salaam	-	-	-	-	-	-	-	-	-	-
Lindi	-	-	-	-	-	-	5,219	1.9	1,041	8.6
Mtwara	-	-	-	-	631	5.8	-	-	-	-
Ruvuma	4,766	2.4	-	-	669	6.1	56,253	20.4	385	3.2
Iringa	14,542	7.4	-	-	931	8.5	13,661	5.0	2,837	23.4
Mbeya	63,501	32.1	1,647	27.0	419	3.8	19,291	7.0	3,284	27.1
Singida	-	-	-	-	-	-	2,224	0.8	547	4.5
Tabora	2,289	1.2	539	8.8	180	1.6	-	-	599	4.9
Rukwa	-	-	-	-	639	5.8	9,521	3.5	-	-
Kigoma	-	-	-	-	-	-	9,633	3.5	2,138	17.6
Shinyanga	8,336	4.2	-	-	-	-	1,570	0.6	-	-
Kagera	18,746	9.5	1,074	17.6	2,164	19.7	22,313	8.1	-	-
Mwanza	-	-	-	-	1,010	9.2	5,924	2.2	-	-
Mara	-	-	-	-	-	-	-	-	-	-
Manyara	4,401	2.2	-	-	-	-	16,807	6.1	-	-
Njombe	1,702	0.9	-	-	-	-	9,391	3.4	323	2.7
Katavi	-	-	-	-	226	2.1	-	-	-	-
Simiyu	-	-	-	-	1,096	10.0	-	-	-	-
Geita	6,358	3.2	-	-	-	-	4,624	1.7	-	-
Songwe	32,374	16.4	1,198	19.7	-	-	7,487	2.7	-	-
<b>Mainland Tanzania</b>	<b>197,836</b>	<b>100</b>	<b>6,095</b>	<b>100</b>	<b>10,971</b>	<b>100</b>	<b>275,405</b>	<b>100</b>	<b>12,125</b>	<b>100</b>
Kaskazini Unguja	-	-	-	-	-	-	-	-	-	-
Kusini Unguja	-	-	5,114	100	-	-	77	100	-	-
Mjini Magharibi	-	-	-	-	-	-	-	-	-	-
Kaskazini Pemba	-	-	-	-	-	-	-	-	-	-
Kusini Pemba	-	-	-	-	-	-	-	-	-	-
<b>Tanzania Zanzibar</b>	<b>-</b>	<b>-</b>	<b>5,114</b>	<b>100</b>	<b>-</b>	<b>-</b>	<b>77</b>	<b>100</b>	<b>-</b>	<b>-</b>
<b>Tanzania</b>	<b>197,836</b>	<b>-</b>	<b>11,209</b>	<b>-</b>	<b>10,971</b>	<b>-</b>	<b>275,482</b>	<b>-</b>	<b>12,125</b>	<b>-</b>

**b) Anaemia**

The total number of households reported anaemia infections to their pigs was 1,545 (1,488 in Mainland Tanzania and 57 in Tanzania Zanzibar), which represents 0.3 percent of the total pig keeping households during 2019/20 agricultural year.



A total number of 11,209 pigs were reported to encounter anaemia, of which 6,095 pigs were in Mainland Tanzania and 5,114 in Tanzania Zanzibar. In Mainland Tanzania, Mbeya region had the largest number of pigs reported anaemic condition (1,647; 27.0 percent), followed by Morogoro (1,637; 26.9 percent) and Songwe (1,198; 19.7 percent). The lowest proportion of pigs showing anaemia was reported in Tabora region (539; 8.8 percent). In Tanzania Zanzibar, Kusini Unguja region was the only region reported anaemia condition in about 5,114 pigs (100 percent) (Table 4.17).

#### **c) Brucellosis**

The total number of households reported infection of brucellosis disease in their pigs was 6,038 in Mainland Tanzania, which represents 1.1 percent of the total pig keeping households during 2019/20 agricultural year, and nothing was reported in Tanzania Zanzibar.

A total number of 10,971 pigs were reported to be infected with brucellosis disease in Mainland Tanzania. Kagera region had the largest number of pigs infected with brucellosis disease (2,164; 19.7 percent), followed by Morogoro (1,913; 17.4 percent) and Simiyu (1,096; 10.0 percent). The lowest proportion of pig infections was reported in Tabora region (180; 1.6 percent) (Table 4.17).

#### **d) Mange**

The total number of households reported infection with mange disease in their pigs was 54,103 (54,046 in Mainland Tanzania and 57 in Tanzania Zanzibar), which represents 10.1 percent of the total pig keeping households during 2019/20 agricultural year.

A total number of 275,482 pigs were reported to be infected with mange disease, of which 275,405 pigs in Mainland Tanzania and 77 in Tanzania Zanzibar. In Mainland Tanzania, Morogoro region had the largest number of pigs infected with mange disease (57,125; 20.7 percent), followed by Ruvuma (56,253; 20.4 percent) and Kagera (22,313; 8.1 percent). The lowest proportion of pigs' infections was reported in Arusha region (521; 0.2 percent). In Tanzania Zanzibar, Kusini Unguja region with 77 heads (100.0 percent) was the only region infected by mange disease (Table 4.17).

#### **e) Foot and Mouth Disease (FMD)**

The total number of households reported infection with Foot and Mouth Disease (FMD) in their pigs was 5,078 in Mainland Tanzania, which represents 0.9 percent of the total pig rearing households during 2019/20 agricultural year, and there was no infection reported in Tanzania Zanzibar.

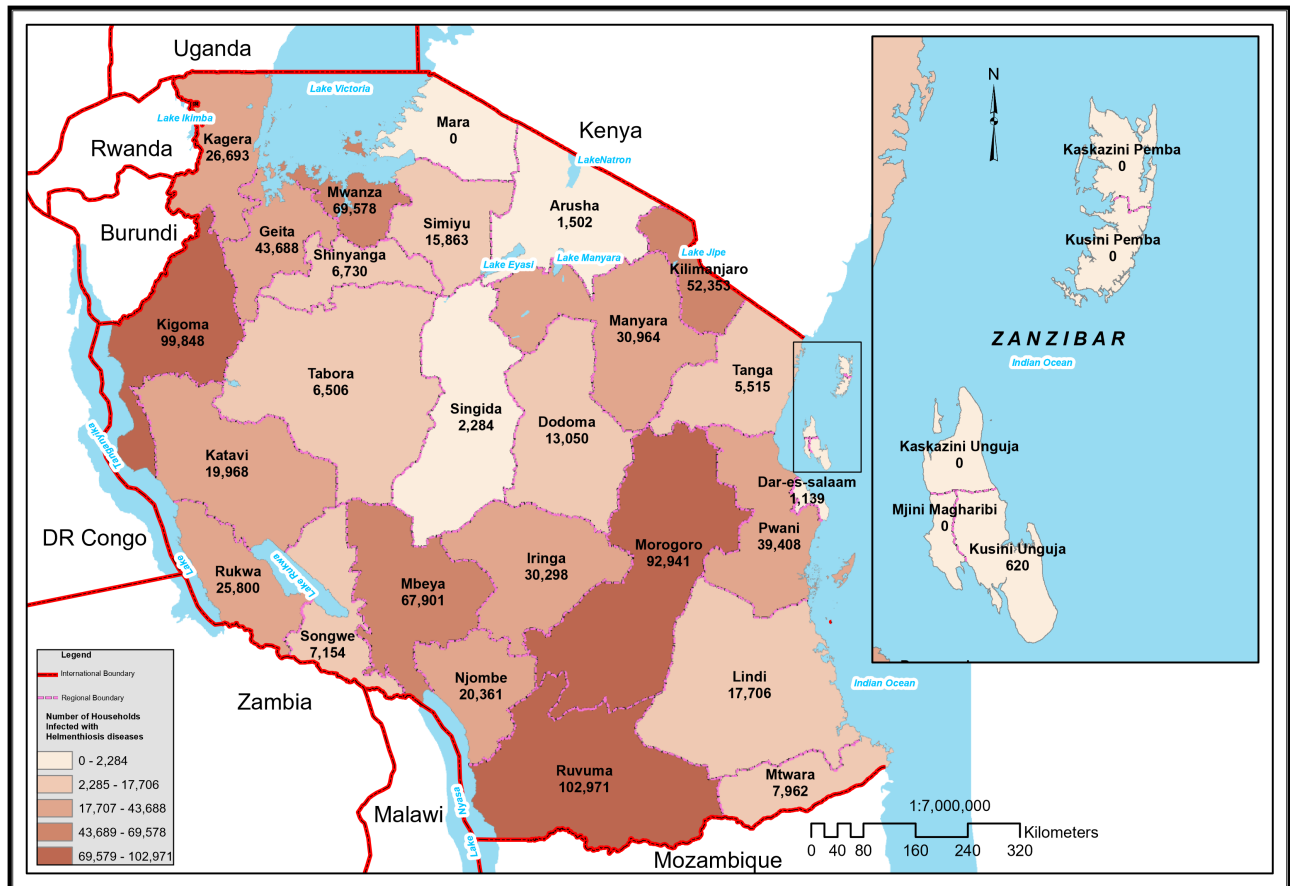
Furthermore, a total of 12,125 pigs were reported to be infected with FMD. Mbeya region had the largest number of pigs infected with FMD (3,284; 27.0 percent), followed by Iringa (2,837; 23.4 percent) and Kigoma (2,138; 17.6 percent). The lowest proportion of pigs' infections was reported in Njombe region (323; 2.7 percent) (Table 4.17).

#### **f) Helminthiosis**

The total number of households reported helminthiosis infections in their pigs was 133,022 (132,965 in the Mainland Tanzania and 57 in Tanzania Zanzibar) which represents 24.8 percent of the total pig keeping households during 2019/20 agricultural year.

A total number of 808,803 pigs were reported to be infected with helminthiosis, of which 808,183 heads in Mainland Tanzania and 620 heads in Tanzania Zanzibar. In Mainland Tanzania, Ruvuma region had the largest number of pigs infected with helminthiosis (102,971; 12.7 percent), followed by Kigoma (99,848; 12.4 percent) and Morogoro (92,941; 11.5 percent). The lowest proportion of pig infections was reported in Dar es Salaam region (1,139; 0.1percent). In Tanzania Zanzibar, Kusini Unguja region with 620 heads (100.0 percent) was the only region infected by helminthiosis (Map 4.21).

**Map 4.21: Number of Households Reported Helminthiasis Disease Infections During 2019/20 Agricultural Year, Tanzania**



#### 4.5.1.5 Poultry Diseases

The census results show that, in Tanzania Newcastle Disease (NCD) was highly reported by poultry keeping households (1,918,622; 42.1 percent), followed by fowl pox (560,008; 12.3 percent) and coryza (429,622; 9.4 percent). Fowl typhoid had least number of households (89,195; 2.0 percent) reported to affect poultry. Similarly, the number of poultry infected by Newcastle Disease was highest (48,195,341), followed by fowl pox (13,897,171) and coryza (9,388,535), while fowl typhoid (2,136,031) had the least number of poultry infected.

In Mainland Tanzania, Newcastle Disease was mostly reported by households (1,858,311; 41.8 percent) to affect poultry during 2019/20 agriculture year, followed by fowl pox (551,508; 12.4 percent) and coryza (411,533; 9.2 percent). Fowl typhoid (86,758; 1.9 percent) had least number of households reported to affect poultry, followed by gumoro (100,416 households; 2.2 percent). Similarly, the number of poultry infected by Newcastle Disease was higher (47,073,133 birds) compared to other diseases. Fowl pox was the second disease with large number (13,823,946 birds) of poultry infected, followed by coryza (9,041,801 birds), while fowl typhoid (2,104,320) had the least number of poultry infected.

In Tanzania Zanzibar, Newcastle Disease was mostly reported by households (60,312; 58.3 percent) to affect poultry during 2019/20 agriculture year, followed by coryza (18,088; 17.5 percent) and fowl pox (8,500; 8.2 percent). Coccidiosis (430; 0.4 percent) had the least number of households reported to affect poultry, followed by fowl pox (8,500; 8.2 percent). Similarly, the number of poultry infected by Newcastle Disease was higher (1,122,208) compared to other diseases. Coryza was the second disease with large number (346,734 birds) of poultry infected, followed by fowl pox (73,255), while coccidiosis (5,211) had the least number of poultry infected (Table 4.18).

**Table 4.17: Number of Households Reported Occurrence of Diseases and Number of Poultry Infected by Type of Disease During 2019/20 Agricultural Year, Tanzania**

Disease Type	Tanzania			Mainland Tanzania			Tanzania Zanzibar		
	Household reported occurrence of disease	Percent	Number of Poultry Infected	Household reported occurrence of disease	Percent	Number of Poultry Infected	Household reported occurrence of disease	Percent	Number of Poultry Infected
Newcastle Disease	1,918,622	42.1	48,195,341	1,858,311	41.8	47,073,133	60,312	58.3	1,122,208
Gumboro	101,811	2.2	2,290,024	100,416	2.3	2,277,828	1,394	1.3	12,196
Coccidiosis	152,236	3.3	3,379,982	151,806	3.4	3,374,771	430	0.4	5,211
Coryza	429,622	9.4	9,388,535	411,533	9.2	9,041,801	18,088	17.5	346,734
Fowl pox	560,008	12.3	13,897,171	551,508	12.4	13,823,946	8,500	8.2	73,225
Fowl typhoid	89,195	2.0	2,136,031	86,758	1.9	2,104,320	2,439	2.4	31,709
Total Poultry Keeping Households	4,552,945			4,449,563			103,382		

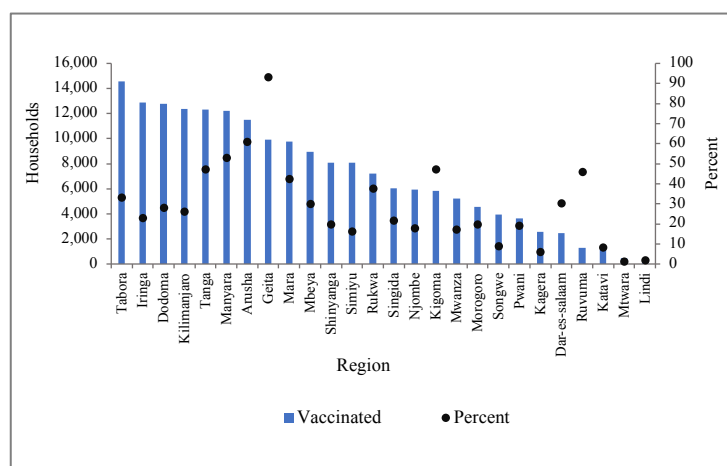
## 4.5.2 Livestock Vaccination

### 4.5.2.1 Vaccine Against Various Livestock Diseases

#### a) Foot and Mouth Disease (FMD)

The census results show that, 187,365 livestock rearing households reported to receive vaccination on Foot and Mouth Disease (FMD), of which 184,008 households were in Mainland Tanzania and 3,357 in Tanzania Zanzibar. In Mainland Tanzania, the region with the largest proportion of livestock rearing households that vaccinated their livestock against FMD was Tabora

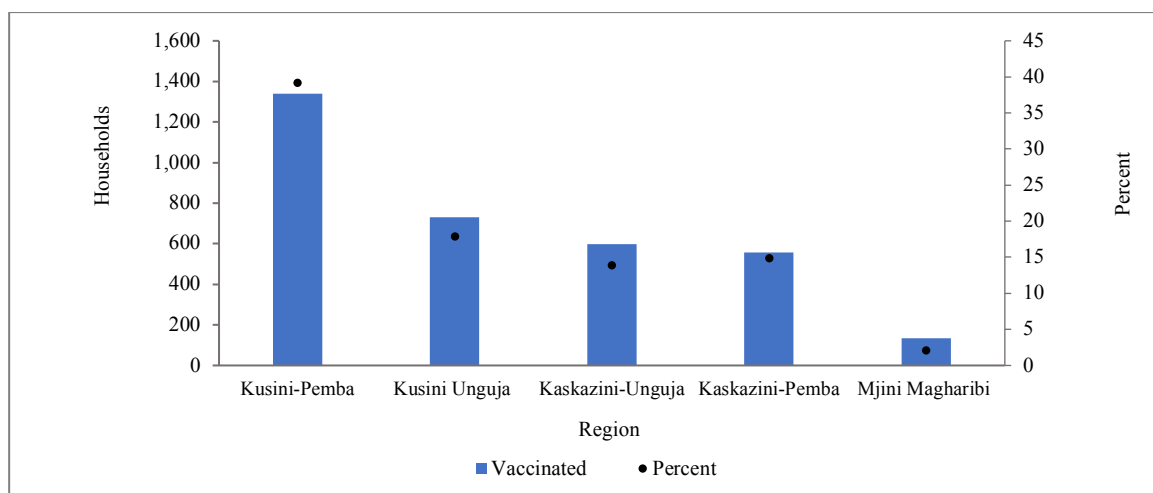
**Figure 4.42: Number and Percent of Households Reported to Vaccinate Livestock Against FMD by Region During 2019/20 Agricultural Year, Mainland Tanzania**



(14,559; 33.2 percent), followed by Iringa (12,876; 23.1 percent) and Dodoma (12,753; 28.0 percent). Region with the least number of households that vaccinated their animals against FMD was Lindi (266; 2.0 percent) (Figure 4.42).

In Tanzania Zanzibar, the region with the largest number of livestock rearing households, that vaccinated their livestock against FMD, was Kusini Pemba (1,338; 39.1 percent), followed by Kusini Unguja (731; 17.9 percent) and Kaskazini Unguja (598; 13.8 percent). The region with the least proportion was Mjini Magharibi (133; 2.1 percent) (Figure 4.43).

**Figure 4.43: Number and Percent of Households Reported to Vaccinate Livestock Against FMD by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**

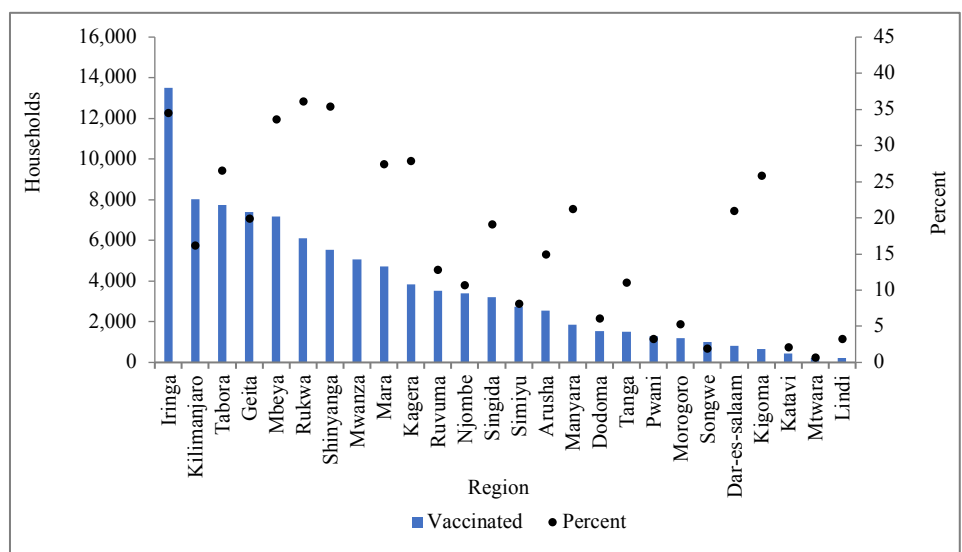


**b) Rabies**

The census results show that, 96,356 livestock rearing households vaccinated their animals against rabies, of which 95,337 were in Mainland Tanzania and 1,019 in Tanzania Zanzibar.

In Mainland Tanzania, the region with the largest proportion of livestock

**Figure 4.44: Number and Percent of Households Reported to Vaccinate Livestock Against Rabies by Region During 2019/20 Agricultural Year, Mainland Tanzania**

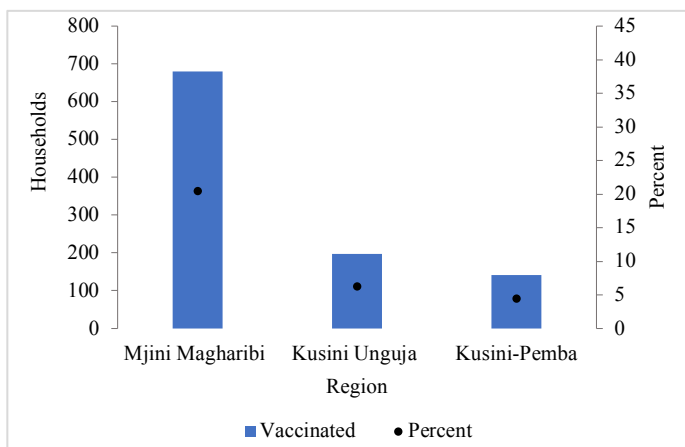


rearing households that vaccinated their livestock against Rabies was Iringa (13,512; 34.5 percent);

followed by Kilimanjaro (8,035; 16.2 percent) and Tabora (7,744; 26.6 percent). The region with the least number of households which vaccinated their animals against Rabies was Lindi (225; 3.3 percent) (Figure 4.44).

In Tanzania Zanzibar, the vaccination was reported in three regions only. The region with the largest number of livestock rearing households which vaccinated their livestock against rabies, was Mjini Magharibi (680; 20.6 percent), followed by Kusini Unguja (197; 6.3 percent). The region with the least proportion was Kusini Pemba (142; 4.6 percent) (Figure 4.45).

**Figure 4.45: Number and Percent of Households Reported to Vaccinate Livestock Against Rabies by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



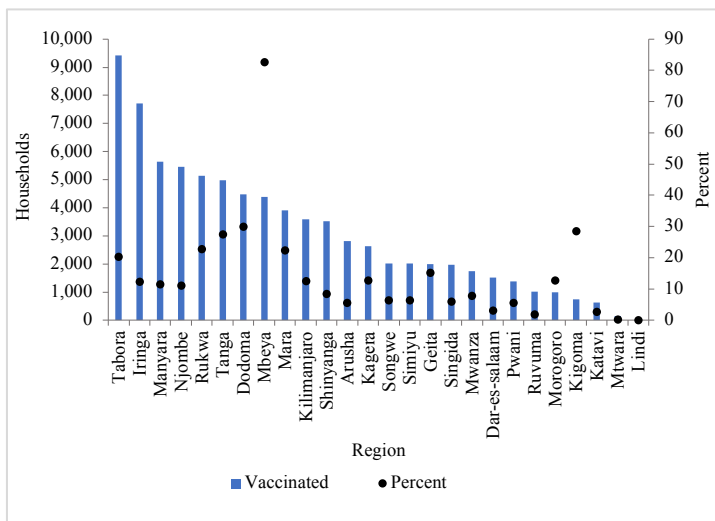
### c) Black Quarter

Black quarter vaccination was applied in cattle, goats, sheep, and pigs during 2019/20 agricultural year. The census results show that, 82,029 livestock rearing households reported applying vaccination on Black Quarter disease, of which 79,860 were in Mainland Tanzania and 2,169 in Tanzania Zanzibar.

In Mainland Tanzania, the region with the largest number of livestock rearing households that vaccinated their

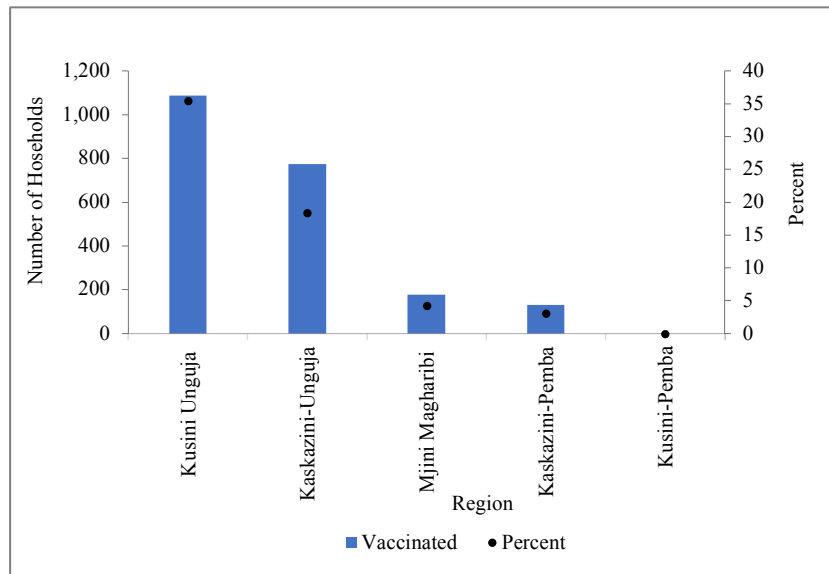
livestock against Black Quarter was Tabora (9,433; 20.4 percent), followed by Iringa (7,707; 12.4 percent) and Manyara (5,643; 11.5 percent). The region with the least proportion of households that vaccinated their animals against Black Quarter was Mtwara (153; 0.3 percent) (Figure 4.46).

**Figure 4.46: Number and Percent of Households Reported to Vaccinate Livestock Against Black Quarter by Region During 2019/20 Agricultural Year, Mainland Tanzania**



In Tanzania Zanzibar, the region with the largest number of livestock rearing households, which vaccinated their livestock against Black Quarter Disease, was Kusini Unguja (1,088; 35.5 percent), followed by Kaskazini Unguja (773; 18.4 percent) and Mjini Magharibi (178; 4.3 percent), whereas the region with the least number of households was Kaskazini Pemba (130; 6 percent) (Figure 4.47).

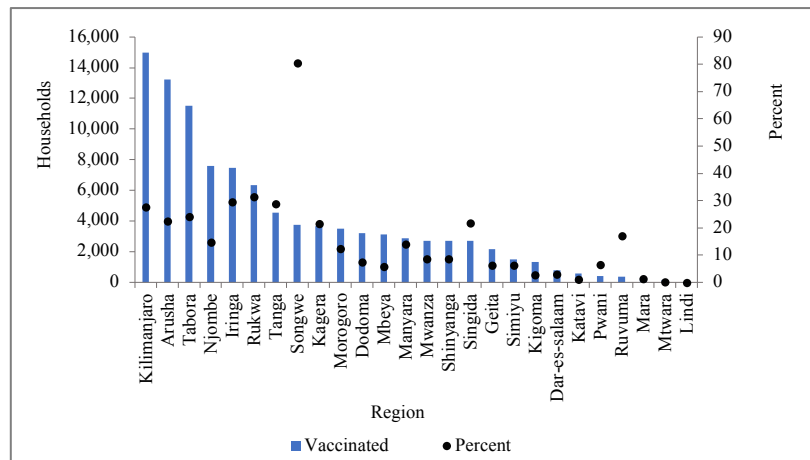
**Figure 4.47: Number and Percent of Households Reported to Vaccinate Livestock Against Black Quarter by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



**d) Anthrax**

The census results show that, 102,589 livestock rearing households reported vaccinating their animals against Anthrax disease, of which 101,519 were in Mainland Tanzania and 1,070 in Tanzania Zanzibar.

**Figure 4.48: Number and Percent of Households Reported to Vaccinate Livestock Against Anthrax by Region During 2019/20 Agricultural Year, Mainland Tanzania**

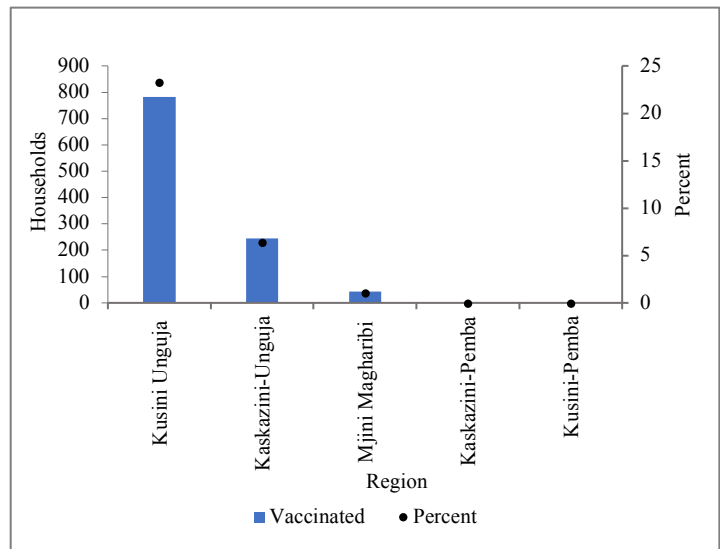


In Mainland Tanzania, the region with the largest number of livestock rearing households

which vaccinated their livestock against anthrax was Kilimanjaro (14,987; 27.8 percent), followed by Arusha (13,249; 22.4 percent) and Tabora (11,502; 24.0 percent). Region with the least number of households that vaccinated their animals against anthrax was Mtwara (153; 0.2 percent) (Figure 4.48).

In Tanzania Zanzibar, the vaccination was applied in three regions only. However, the region with the largest number of livestock rearing households vaccinated their livestock against anthrax was Kusini Unguja (782; 73.1 percent), followed by Kaskazini Unguja (244; 22.8 percent) and Mjini Magharibi (44; 4.1 percent) (Figure 4.49).

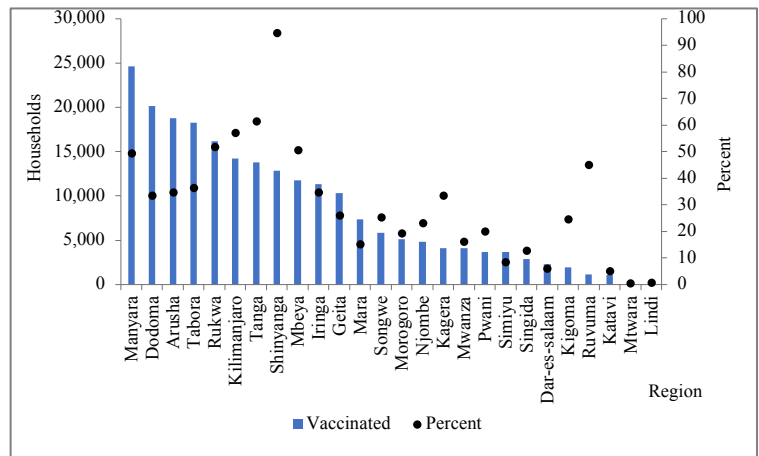
**Figure 4.49: Number and Percent of Households Reported to Vaccinate Livestock Against Anthrax by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



**d) Contagious Bovine Pleuro-Pneumonia (CBPP)**

The census results show that, 222,713 livestock rearing households reported to apply vaccination against CBPP disease, of which 220,637 were in Mainland and 2,076 in Tanzania Zanzibar.

**Figure 4.50: Number and Percent of Households Reported to Vaccinate Livestock Against CBPP Disease by Region During 2019/20 Agricultural Year, Mainland Tanzania**



In Mainland Tanzania, the region with the largest number of livestock rearing households vaccinated their livestock

against CBPP was Manyara (24,594; 49.2 percent), followed by Dodoma (20,185; 33.5 percent) and Arusha (18,758; 34.7 percent). The region with the least number of households that vaccinated their animals against CBPP was Lindi (78; 0.6 percent) (Figure 4.50).

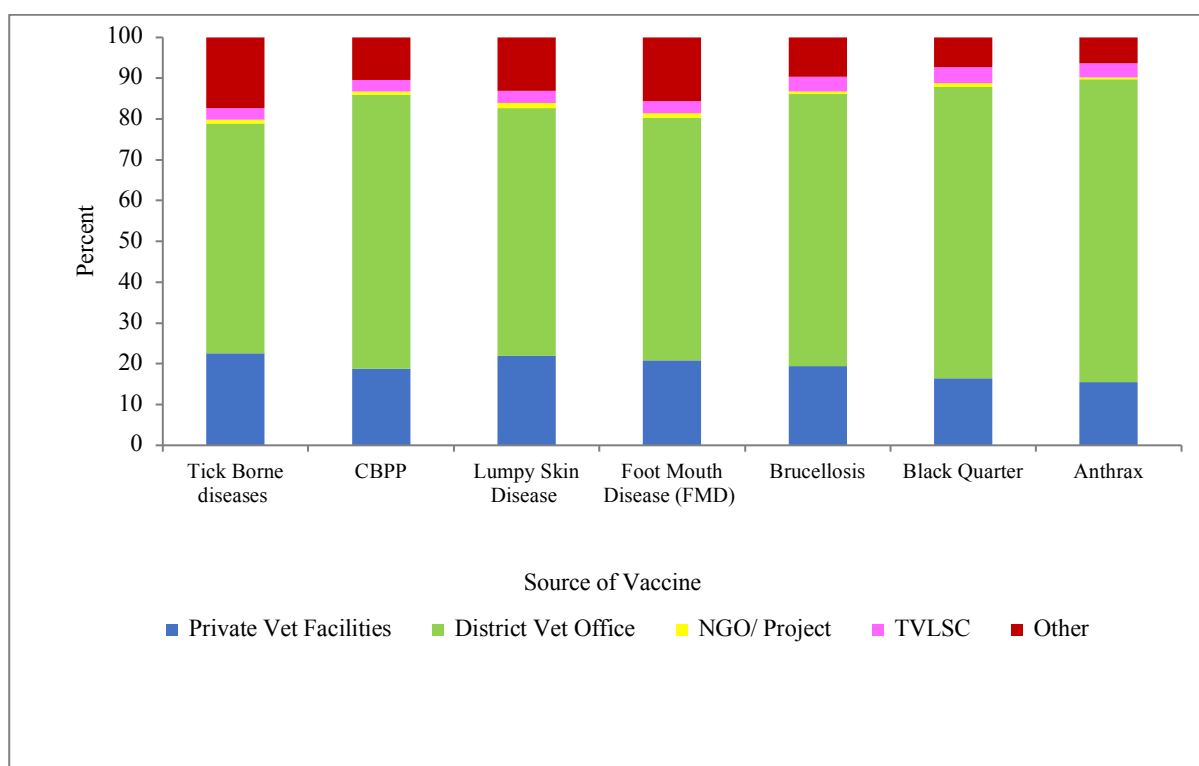
In Tanzania Zanzibar, the region with the largest number of livestock rearing households, which vaccinated their livestock against CBPP was Kusini Pemba (845; 40.7 percent), followed by Kusini Unguja (820; 39.5 percent) and Kaskazini Pemba (241; 11.6 percent). The region with the least number was Mjini Magharibi (44 households; 2.1 percent) (Figure 4.51).



#### 4.5.2.2 Source of Vaccines

During 2019/20 agricultural year, livestock rearing households reported different sources of obtaining vaccine for their animals. The Census results show that, District Vet Office was the main source of vaccine reported by more than 55 percent of the households for various livestock diseases. Private Vet facilities were reported to provide vaccine by proportional of 15 to 23 percent of households among other sources used by livestock keepers. Other sources reported were NGOs/Projects (0.5 to 1.3 percent), Tanzania Veterinary Laboratory Agency Centers (TVLA) (2.8 to 4.0 percent) and other (6.3 to 17.3 percent) (Figure 4.51).

**Figure 4.51: Percentage of Cattle Rearing Households Reported Sources of Vaccine by Type Disease During 2019/20 Agricultural Year, Tanzania**



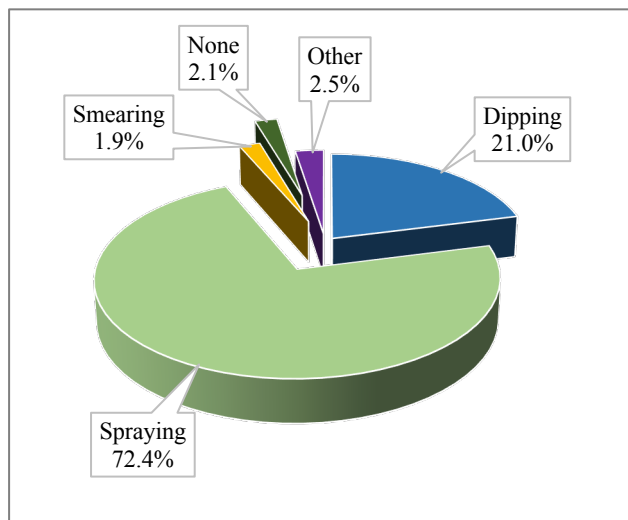
#### 4.5.3 Livestock Pest and Parasites control methods

In the 2019/20 agricultural year, specific livestock pest and parasites control methods were applied for the control of ticks, tsetse flies and Newcastle Disease as follows -

#### 4.5.3.1 Tick Control Methods

The Census results show that, Tick Borne Diseases were amongst the common diseases infecting livestock during 2019/20 agricultural year. In Mainland Tanzania, high number of livestock rearing households encountered tick problem were in Manyara, Dodoma, Mbeya, Shinyanga, Mwanza and Rukwa regions, while in Tanzania Zanzibar were Kusini Pemba, Kusini Unguja and Kaskazini Pemba. The control methods for Tick Born Diseases included spraying that was applied by 239,789 households (72.4 percent); dipping (69,652; 21.0 percent); smearing (6,323, 1.9 percent); others (8,396; 2.5 percent) and those which did not practice any control method for the Tick-Born Diseases were 6,818 households representing 2.1 percent (Figure 4.52).

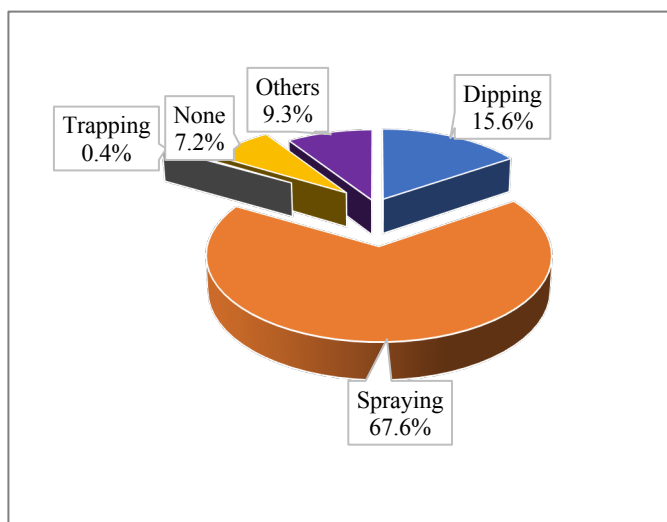
Figure 4.52: Percentage Distribution of Households Reported Tick Control Methods During 2019/20 Agricultural Year, Tanzania



#### 4.5.3.2 Tsetse Fly Control Methods

The Census results show that, tsetse flies problem was another challenge that infected livestock raising households during 2019/20 agricultural year. In Mainland Tanzania, high number of livestock raising households encountered tsetse flies problem were in Arusha, Manyara, Dodoma, Kilimanjaro, Rukwa, Mbeya and Tanga regions, while in Tanzania Zanzibar were in Kusini Pemba and Mjini Magharibi only.

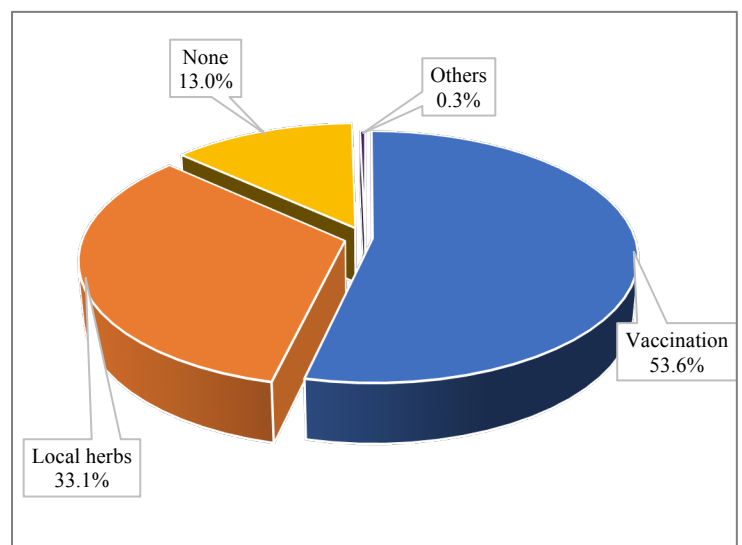
Figure 4.53: Percent of Households Reported Tsetse Flies Control Methods During 2019/20 Agricultural Year, Tanzania



The control methods employed for the control of tsetse flies disease include spraying, that was applied by 61,936 households (67.6 percent); dipping (14,258; 15.6 percent); trapping (355; 0.4 percent); others (8,494; 9.3 percent) and those which did not practice any control method for the tsetse flies were 6,579 households representing 7.2 percent (Figure 4.53).

#### 4.5.3.3 The Control Methods of Newcastle Disease (NCD)

Figure 4.54: Percent of Households Reported NCD Control Methods During 2019/20 Agricultural Year, Tanzania



The Census results show that, Newcastle Disease was amongst the most prevalent disease infecting poultry during 2019/20 agricultural year. In Mainland Tanzania, large number of households encountering NCD problem were in Mbeya, Tanga, Mwanza, Iringa, Geita, Dodoma and Rukwa regions, while in Tanzania Zanzibar were in Mjini Magharibi, Kusini Unguja and Kaskazini Unguja. The control methods for

NCD included vaccination that was applied by 218,916 households (53.6 percent); local herbs (134,945; 33.1 percent); other (1,375; 0.3 percent); and those which did not practice any control method for the NCD constituted 52,866 households representing 13.0 percent (Figure 4.54).

#### 4.5.4 Deworming Practices

The Census results show that, during 2019/20 agricultural year, the total number of households reported to deworm their livestock in Tanzania was 664,918 representing 56.9 percent of the total households practiced pest and parasite control. Out of the total, 650,803 households were in Mainland Tanzania and 14,115 in Tanzania Zanzibar. In Mainland Tanzania, the largest number of households (412,091; 36.2 percent) reported to deworm their cattle, followed by goat (277,754; 24.1 percent) and chicken (162,607; 14.3 percent). The lowest number of households (114,192; 10.0 percent) reported to deworm pig.

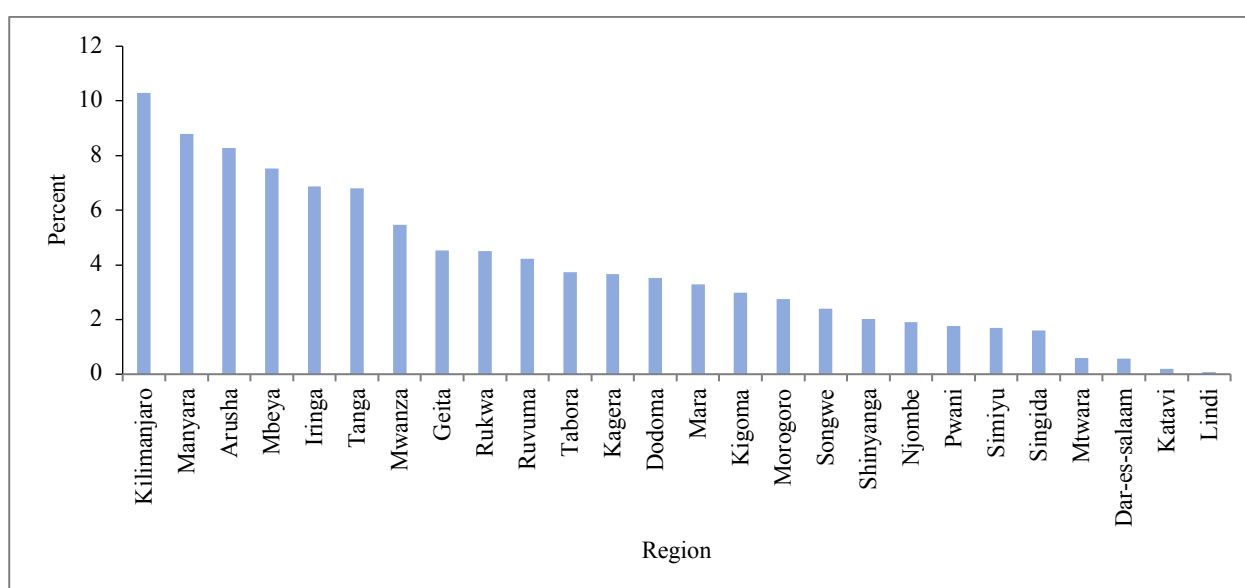
In Tanzania Zanzibar, the largest number of households (11,115; 38.5 percent) reported to deworm their cattle, followed by chicken (3,819; 13.2 percent) and goat (3,294; 11.4 percent). There were no households reported to deworm pig and sheep in Tanzania Zanzibar (Table 4.19).

**Table 4.19: Number and Percentage of Households Reported to Deworm Livestock During 2019/20 Agriculture Year, Tanzania**

	Households Reported to Deworm					
	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Number	Percent	Number	Percent	Number	Percent
Cattle	423,206	36.2	412,091	36.2	11,115	38.5
Goat	281,048	24.1	277,754	24.4	3,294	11.4
Sheep	132,935	11.4	132,935	11.7	0	0.0
Pig	114,192	9.8	114,192	10.0	0	0.0
Chicken	166,426	14.2	162,607	14.3	3,819	13.2
Households practiced Pest and Parasite control	1,168,000		1,139,116		28,884	

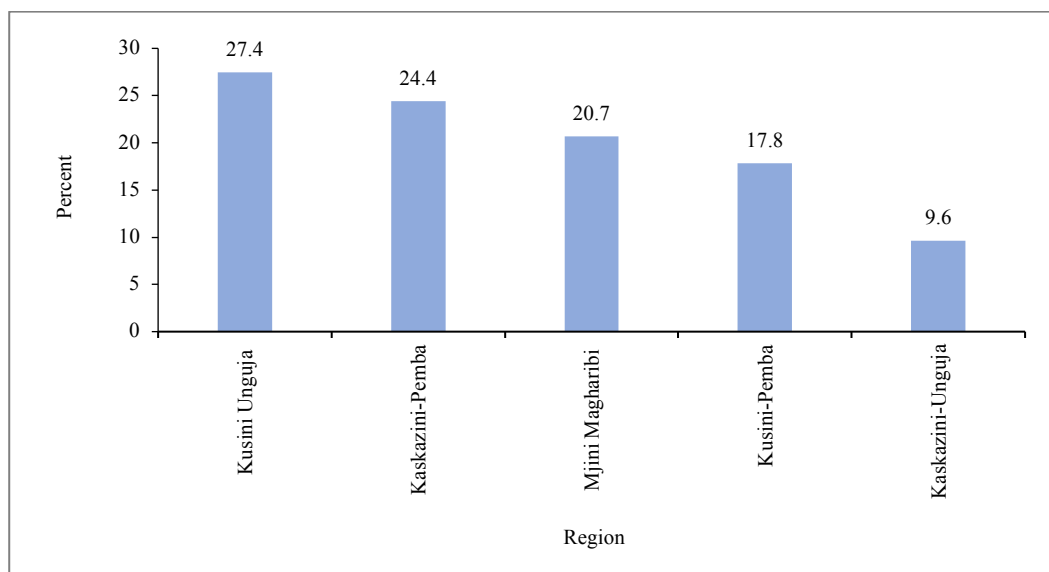
In Mainland Tanzania, deworming practices was highly reported in Kilimanjaro region (66,983 households; 10.3 percent), followed by Manyara (57,268 households; 8.8 percent) and Arusha (53,816 households; 8.3 percent). Lindi region had the lowest number of households (499; 0.1 percent) reported to practice deworming of their livestock (Figure 4.55).

**Figure 4.55: Percentage of Households Reported to Deworm Livestock During 2019/20 Agriculture Year, Mainland Tanzania**



In Tanzania Zanzibar, the highest number of households reported to practice deworming was in Kusini Unguja region (3,872; 27.4 percent), followed by Kaskazini Pemba (3,449; 24.4 percent), while the least was in Kaskazini Unguja region (1,359; 9.6 percent) (Figure 4.56).

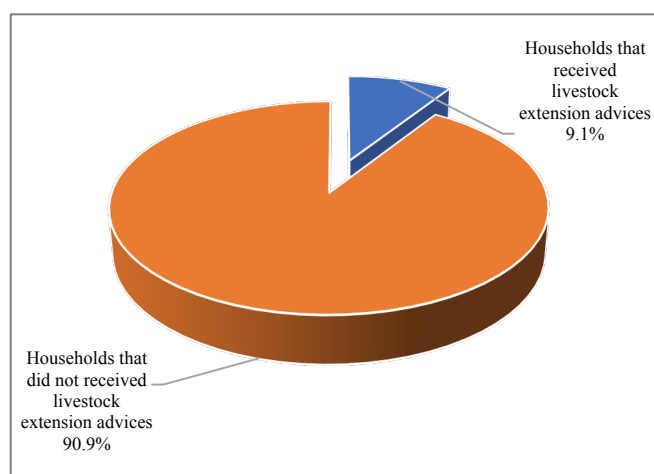
**Figure 4.56: Percentage of Households Reported to Deworm Livestock During 2019/20 Agricultural Year, Tanzania Zanzibar**



**Figure 4.57: Percentage of Households Received Extension Service Advice for Livestock During 2019/20 Agricultural Year, Tanzania**

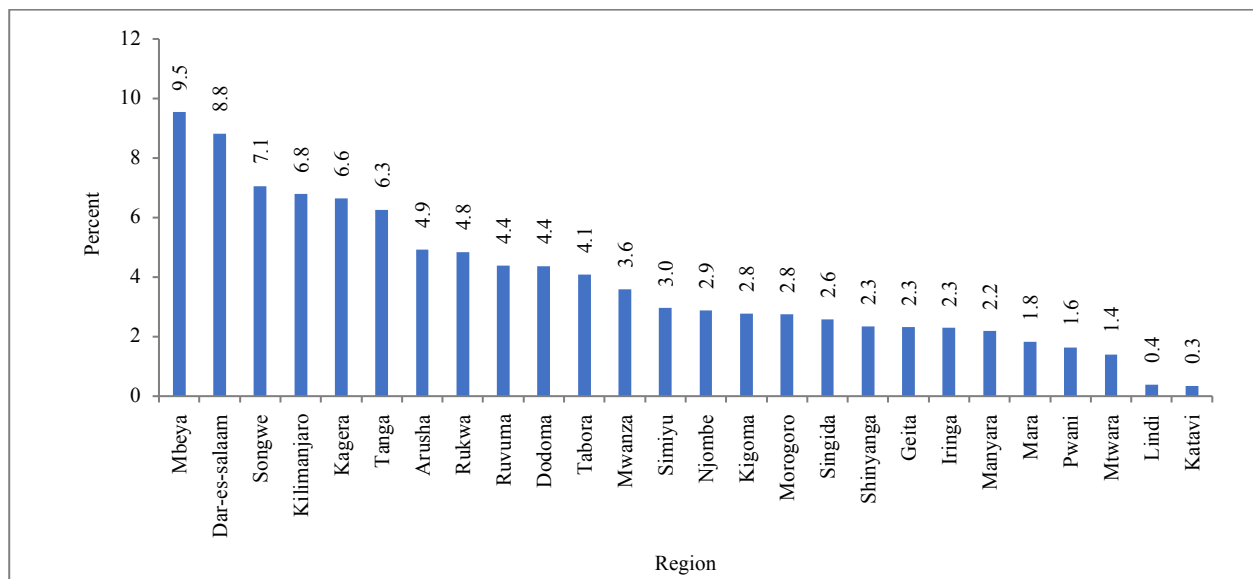
#### 4.6 Livestock Extension Services

During 2019/20 NSCA, the total number of households engaged in rearing livestock was 2,747,910, whereby 2,683,454 households were in Mainland Tanzania and 64,456 households in Tanzania Zanzibar. Only few numbers of households (9.1 percent) of the total households rearing livestock received livestock extension services and 90.9 percent did not receive extension services on livestock (Figure 4.57).



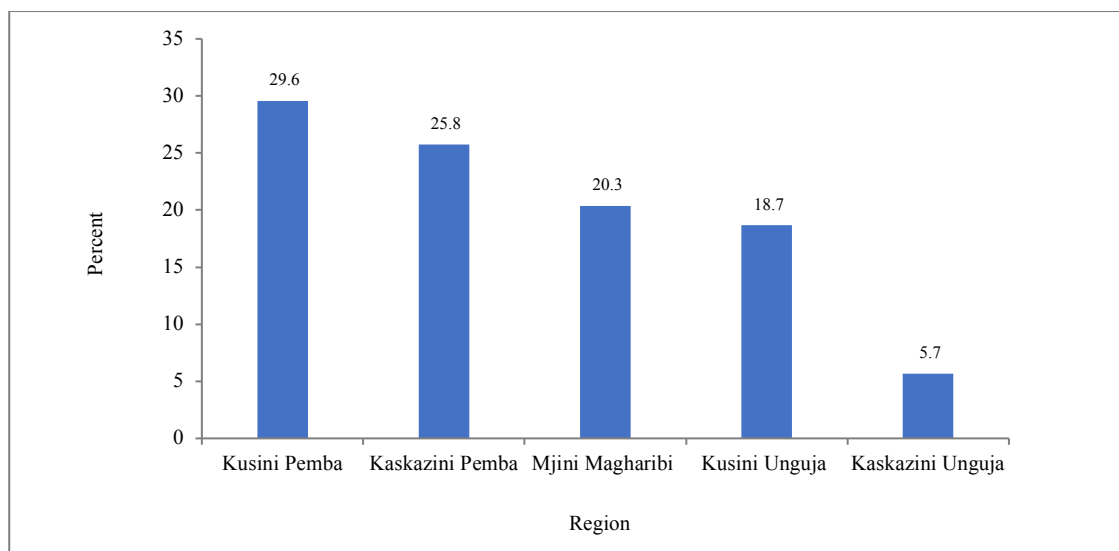
In Mainland Tanzania, the largest number of households received extension advice was reported in Mbeya region (23,335; 9.5 percent), followed by Dar es Salaam (21,586; 8.8 percent) and Songwe (17,262; 7.1 percent). Katavi region had the least number of households (850; 0.3 percent) received extension services (Figure 4.58).

**Figure 4.58: Number of Households Received Extension Advices for Livestock by Region During 2019/20 Agricultural Year, Mainland Tanzania**



In Tanzania Zanzibar, the largest number of households reported to receive extension services advice was in Kusini Pemba region (1,818; 29.6 percent), followed by Kaskazini Pemba (1,584; 25.8 percent), while Kaskazini Unguja region had least number of households (349; 5.7 percent) (Figure 4.59).

**Figure 4.59: Number of Households Received Extension Service Advices for Livestock by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



#### 4.6.1 Extension Service Received by Households

The 2019/20 NSCA results show that, different extension advices were provided to households rearing livestock. The extension advice on disease control was provided to majority of households in Tanzania (167,374; 18.0 percent), followed by feeds and proper feeding (129,039; 13.9 percent) and

proper housing (100,391; 10.8 percent), while the least number of households reported to receive extension advice on other messages (6,827; 0.7 percent).

In Mainland Tanzania, the extension advice on disease control was received by majority of households (163,374; 17.9 percent), followed by feeds and proper feeding (126, 559; 13.9 percent) and housing (98,792; 10.8 percent). The least number of households received extension advice was on group formation and strengthening (21,054; 2.3 percent) (Table 4.20).

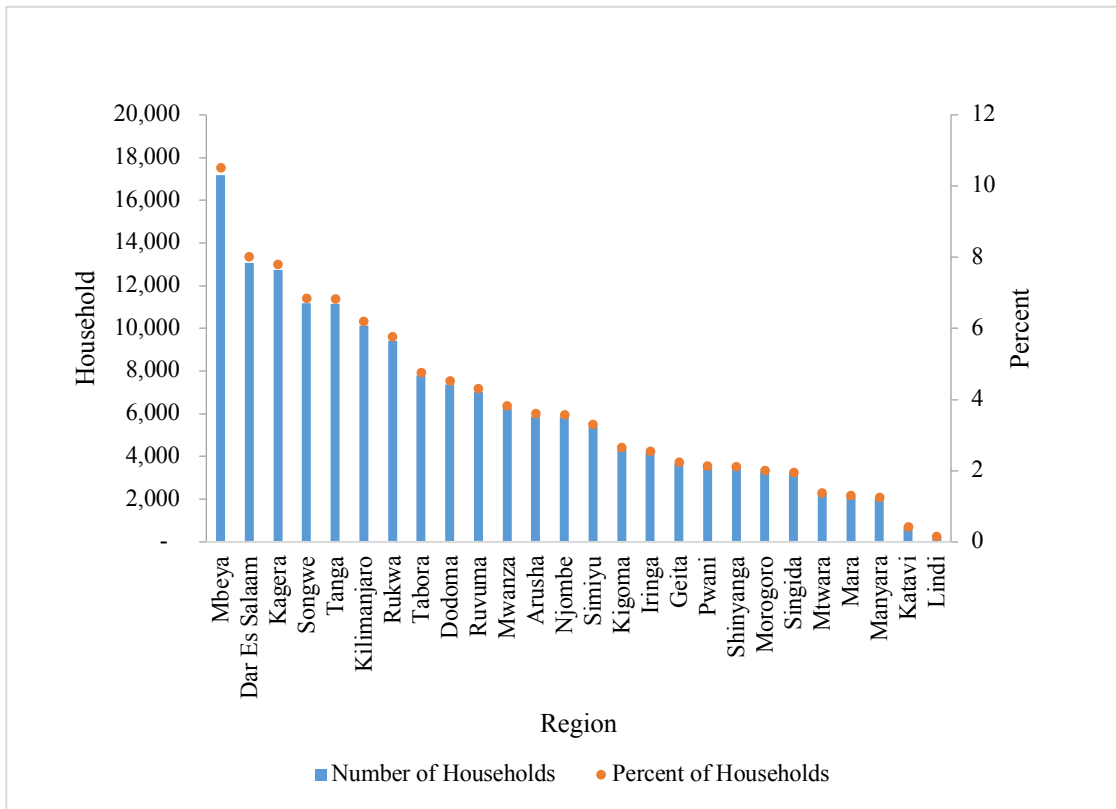
In Tanzania Zanzibar, the extension advice on disease control was received by majority of households (4,000; 22.8 percent), followed by feeds and proper feeding (2,480; 14.2 percent) and calf rearing (2,198; 12.5 percent). The least number of households received extension advice was on livestock branding (198; 1.1 percent) (Table 4.20).

**Table 4.20: Number and Percentage of Households Received Extension Services on Livestock by Type of Extension Advice for Livestock During 2019/20 Agricultural Year, Tanzania**

Extension Advice	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Number of Households	Percent	Number of Households	Percent	Number of Households	Percent
Feeds and proper feeding	129,039	13.9	126,559	13.9	2,480	14.2
Proper housing	100,391	10.8	98,792	10.8	1,599	9.1
Proper milking and milk hygiene	68,451	7.4	66,659	7.3	1,792	10.2
Livestock fattening	85,246	9.2	84,457	9.3	789	4.5
Disease control	167,374	18.0	163,374	17.9	4,000	22.8
Herd/flock size and selection	46,921	5.1	45,894	5.0	1,027	5.9
Keeping based on carrying capacity	64,204	6.9	63,079	6.9	1,125	6.4
Pasture establishment	29,278	3.2	28,729	3.2	549	3.1
Group formation and strengthening	21,601	2.3	21,054	2.3	547	3.1
Calf rearing	63,586	6.8	61,388	6.7	2,198	12.5
Use of improved bulls/AI	27,887	3.0	27,178	3.0	709	4.0
Livestock branding	75,575	8.1	75,377	8.3	198	1.1
Castration	42,075	4.5	41,675	4.6	400	2.3
Others advices	6,827	0.7	6,723	0.7	104	0.6

For the case of advice on disease control in Mainland Tanzania, Mbeya was the leading region by having 17,184 households (10.5 percent), followed by Dar es Salaam (13,082; 8.0 percent) and Kagera (12,735; 7.8 percent). The least number of households received advice on disease control was reported in Lindi region (250; 0.2 percent) (Figure 4.60).

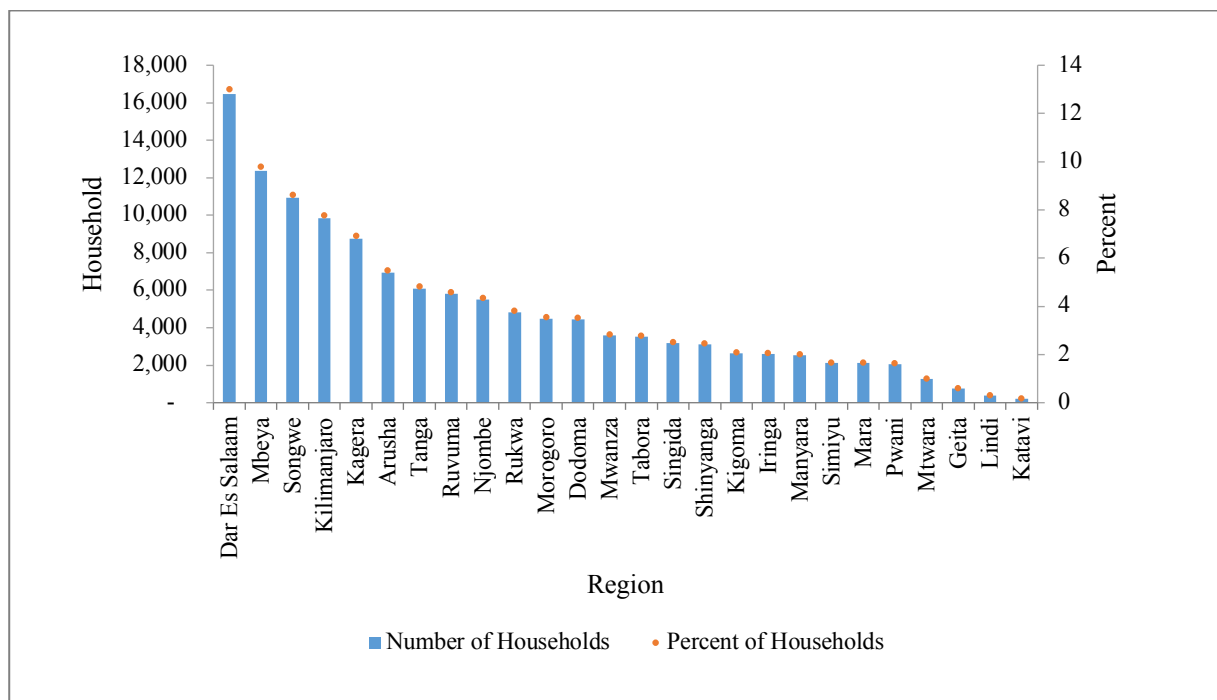
**Figure 4.60: Number and Percentage of Households Received Extension Advice on Disease Control for Livestock by Region During 2019/20 Agricultural Year, Mainland Tanzania**



Likewise, Dar es Salaam region had the largest number of households received advice on feed and proper feeding (16,448; 13.0 percent), followed by Mbeya (12,380; 9.8 percent) and Songwe (10,927; 8.6 percent). The least number of households received advice on feed and proper feeding of livestock was reported in Katavi region (217; 0.2 percent) (Figure 4.61).

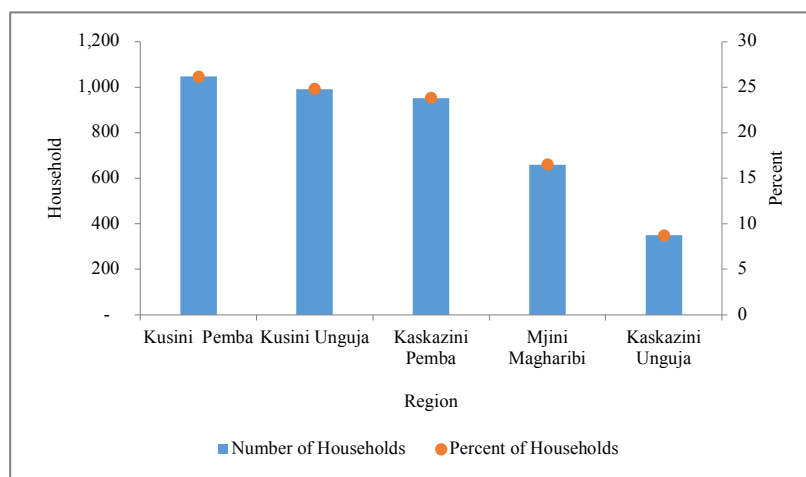


**Figure 4.61: Number and Percentage of Households Received Extension Advice on Feed and Proper Feeding for Livestock by Region During 2019/20 Agriculture Year, Mainland Tanzania**



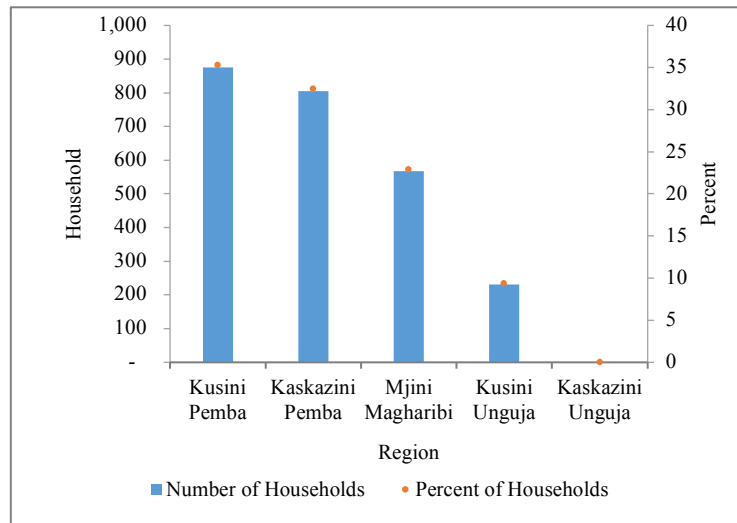
In Tanzania Zanzibar, Kusini Pemba region reported the largest number of households (1,047; 26.2 percent) that received extension advice on disease control, followed by Kusini Unguja (992; 24.8 percent) and Kaskazini Pemba (952; 23.8 percent). The least number of households received advice on disease control was reported in Kaskazini Unguja region (349; 8.7 percent) (Figure 4.62).

**Figure 4.62: Number and Percentage of Households Received Extension Advice on Disease Control for Livestock by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



Likewise, Kusini Pemba region reported the largest number of households that received advice on feed and proper feeding (875; 35.3 percent), followed by Kaskazini Pemba (805; 32.5 percent). The least number of households received advice on feed and proper feeding of livestock was reported in Kusini Unguja region (232; 9.4 percent) (Figure 4.63).

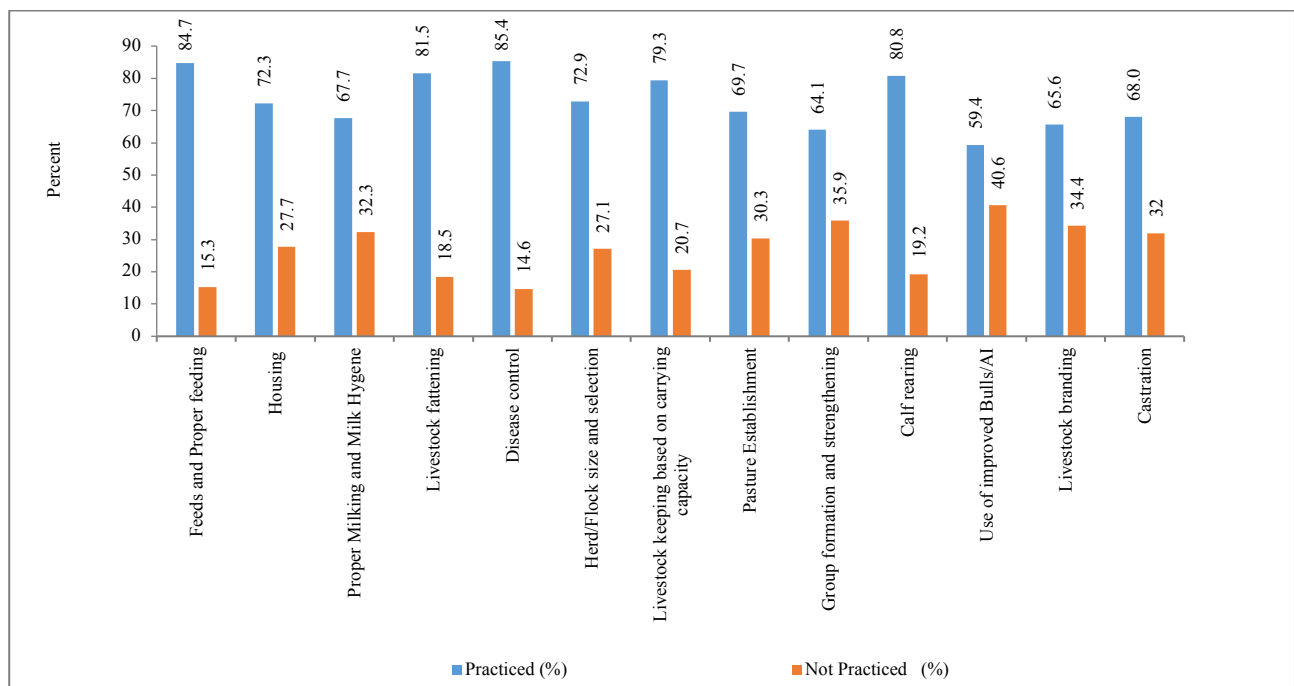
**Figure 4.63: Number of Households Received Extension Advice Feed and Proper Feeding for Livestock by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



#### 4.6.2 Advice Practiced

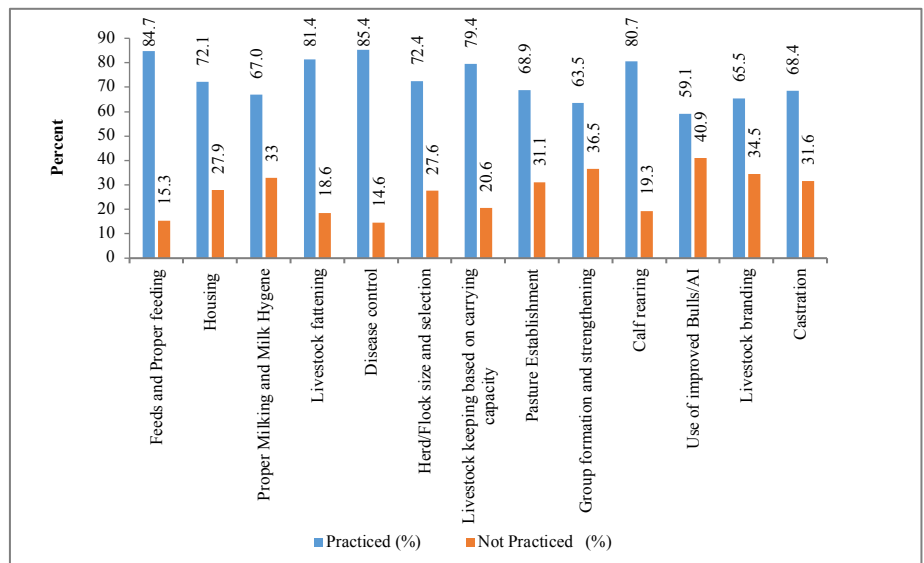
The 2019/20 NSCA results show that, among the received extensions services reported by livestock keeping households in Tanzania, the most practiced extension service was disease control (85.4 percent), followed by feeds and proper feeding (84.7 percent) and livestock fattening (81.5 percent). On the other hand, the least practiced extension service reported by livestock keeping households was use of improved bulls/AI (59.4 percent) (Figure 4.64).

**Figure 4.64: Percentage of Households Reported to Practice Livestock Extension Services During 2019/20 Agricultural Year, Tanzania**



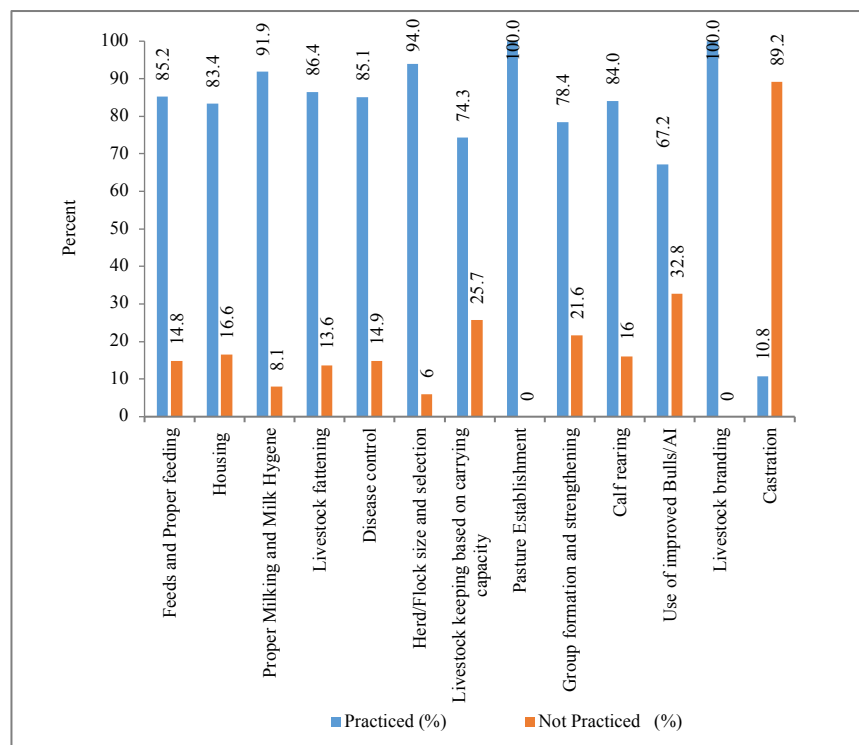
In Mainland Tanzania, the most practiced livestock extension service reported by livestock keeping households was disease control (85.4 percent), followed by feeds and proper feeding (84.7 percent) and livestock fattening (81.4 percent). On the other hand, the least practiced extension service reported by livestock keeping households was use of improved bulls/AI (59.1 percent) (Figure 4.65).

**Figure 4.65: Percentage Households Reported to Practice Livestock Extension Services During 2019/20 Agricultural Year, Mainland Tanzania**



In Tanzania Zanzibar, the most practiced extension service reported by livestock keeping households were livestock branding (100.0 percent) and pasture establishment (100.0 percent), followed by herd/flock size and selection (94.0 percent) and proper milking and milk hygiene (91.9 percent). On the other hand, the least practiced extension service reported by livestock keeping households was castration (10.8 percent) (Figure 4.66).

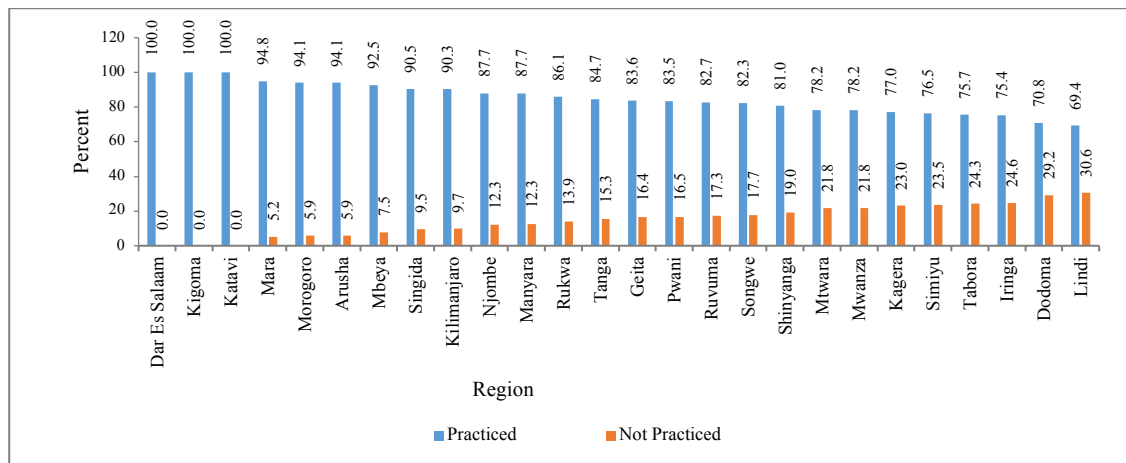
**Figure 4.66: Percentage Households Reported to Practice Livestock Extension Services During 2019/20 Agricultural Year, Tanzania Zanzibar**



In Mainland Tanzania, regions with high percentage of livestock keeping households that reported to practice disease control extension services were Dar es Salaam (100.0 percent), Kigoma (100.0 percent) Katavi (100.0 percent), followed by Mara (94.8 percent). Whilst the region with lowest

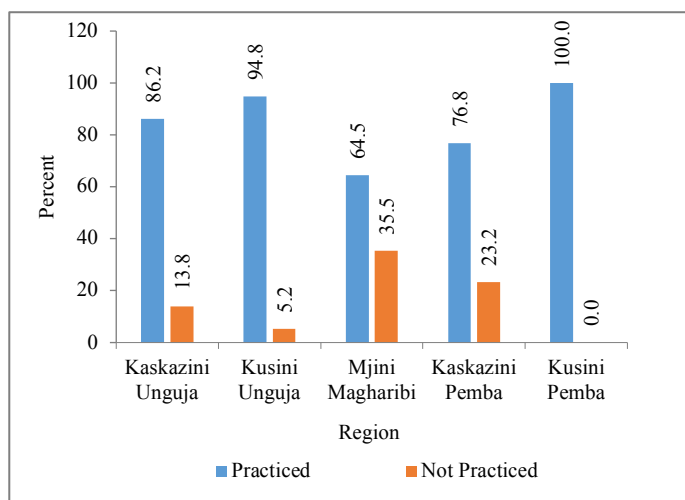
percentage of livestock keeping households that reported to practice disease control extension services was Lindi (69.4 percent) (Figure 4.67).

**Figure 4.67: Percentage Households Reported to Practice Livestock Extension Services During 2019/20 Agricultural Year, Mainland Tanzania**



In Tanzania Zanzibar, the region with highest percentage of livestock keeping households within the region that reported to practice disease control extension services was Kusini Pemba (100.0 percent), followed by Kusini Unguja (94.8 percent). Whilst the region with lowest percentage was Mjini Magharibi (64.5 percent) (Figure 4.68).

**Figure 4.68: Percentage Households Reported to Practice Livestock Extension Services by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



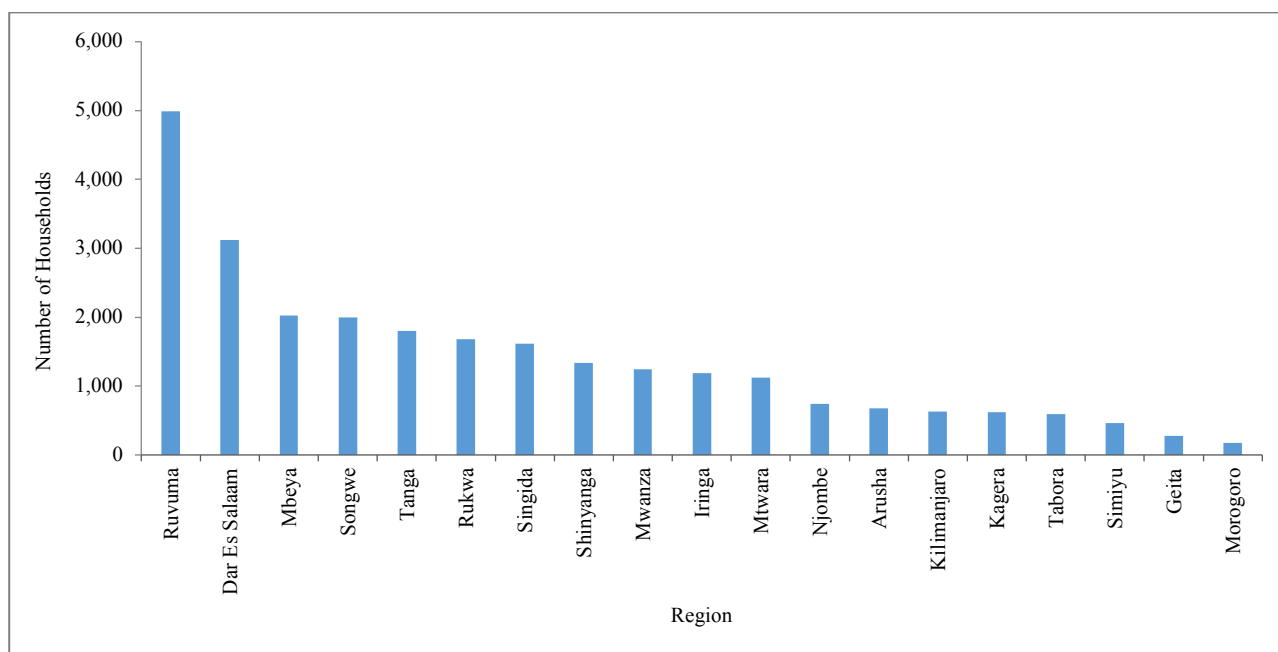
## 4.7 Fish Farming

The Fisheries Sector plays an important role in the economy of Tanzania. During 2020, the sector recorded a growth of 6.7 percent and accounted for 1.7 percent share to GDP. However, this chapter presents census results on fish farming for both smallholder farmers and large-scale farms, specifically fish production, sources of fingerlings, frequency of stocking, outlet for selling fish and source of fish feeds. The species of fish considered in the census include tilapia, milk fish, prawns and african catfish.

### 4.7.1 Fish Farming Households

The 2019/20 NSCA results show that, total number of households reported to practice fish farming in Tanzania was 26,662 (26,294 in Mainland Tanzania and 368 in Tanzania Zanzibar). In Mainland Tanzania, region with highest number of households practiced fish farming were Ruvuma (19.0 percent), followed by Dar es Salaam (11.9 percent) and Mbeya (7.7 percent). The region with the lowest number of households practiced fish farming was Morogoro (0.7 percent), while there were no households reported to practice fish farming in Dodoma, Pwani, Lindi, Kigoma Manyara, Mara and Katavi regions (Figure 4.69). In Tanzania Zanzibar, only Kusini Pemba region with 368 households was reported to practice fish farming.

**Figure 4.69: Number of Agricultural Households Practicing Fish Farming by Region During 2019/20 Agricultural Year, Mainland Tanzania**



The number of households reported to practice fish farming in Tanzania has increased from 0.2 percent in 2007/08 to 0.3 percent in 2019/20 agricultural years. Similarly, the number of households reported to practice fish farming in Mainland Tanzania has increased from 0.2 percent in 2007/08 to 0.3 percent in 2019/20, while that of Tanzania Zanzibar increased from 0.02 percent in 2007/08 to 0.2 percent in 2019/20 agricultural years.

#### 4.7.2 Fish Production

The 2019/20 NSCA results show that, a total number of stocked fish was 52,979,610 fingerlings (49,379,641 fingerlings from smallholder farmers and 3,599,969 from large scale farms). The total production of fish was 12,936 tons (12,626 tons from smallholder farmers and 310 tons from large scale farms). Whilst the total quantity of fish sold was 2,090 tons (1,847 tons from smallholder farmers and 243 tons from large scale farms).

In Mainland Tanzania, a total number of stocked fish was 52,648,933 fingerlings and quantity of harvested was 12,872 tons and a total of 2,031 tons were sold. In Tanzania Zanzibar, a total number of stocked fish was 330,677 fingerlings and quantity of harvested was 64 tons, and a total of 59 tons were sold.

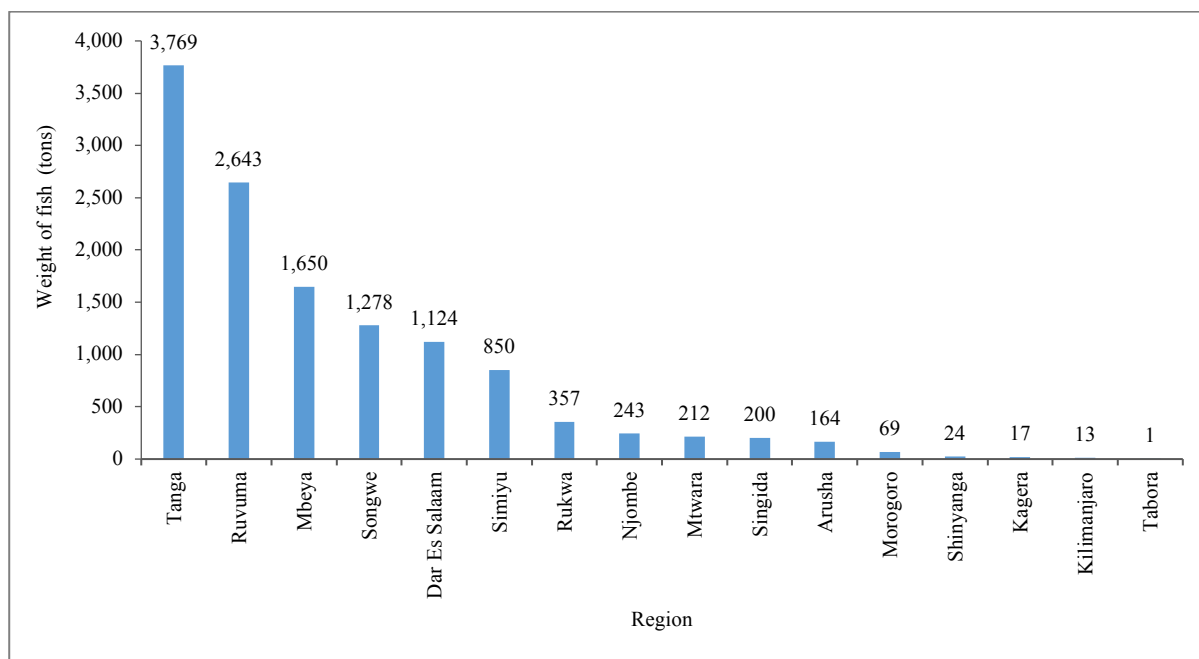
The total quantity of fish harvested by smallholder farmers was 12,626 tons (12,615 tons in Mainland Tanzania and 11 tons in Tanzania Zanzibar) and 1,846 tons (1,835 tons in Mainland Tanzania and 11 tons in Tanzania Zanzibar) were sold (Table 4.21).

**Table 4.21: Number of Stocked and Harvested Fish, Weights of Harvested and Sold Fish, During 2019/20 Agriculture Year, Tanzania**

Number/Quantity	Tanzania			Mainland Tanzania			Tanzania Zanzibar		
	Total	Large Scale Farms	Smallholder Farmers	Total	Large Scale Farms	Smallholder Farmers	Total	Large Scale Farms	Smallholder Farmers
Number of stocked fish	52,979,610	3,599,969	49,379,641	52,648,933	3,442,578	49,206,355	330,677	157,391	173,286
Number of fish harvested	9,157,037	1,661,350	7,495,687	9,055,561	1,594,050	7,461,511	101,476	67,300	34,176
Weight harvested (Kg)	12,936,625	310,352	12,626,273	12,872,420	257,539	12,614,881	64,205	52,813	11,392
Weight of fish sold (Kg)	2,089,893	243,196	1,846,697	2,030,526	195,221	1,835,305	59,367	47,975	11,392

In Mainland Tanzania, for the case of smallholder farmers, Tanga region had largest quantity of harvested fish (3,769 tons; 29.9 percent), followed by Ruvuma (2,643 tons; 21.0 percent) and Mbeya (1,650 tons; 13.1 percent). Tabora region reported the least quantity of fish harvested (1 ton; 0.004 percent) (Figure 4.70). In Tanzania Zanzibar, only Kusini Pemba region was reported to harvest a total of 11 tons of fish during 2019/20 agricultural year.

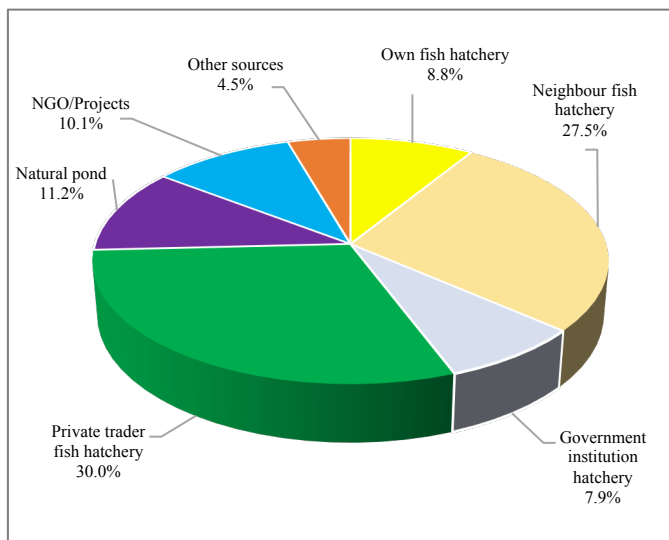
**Figure 4.70: Weight of Fish Harvested by Smallholder Farmers by Region During 2019/20 Agricultural Year, Mainland Tanzania**



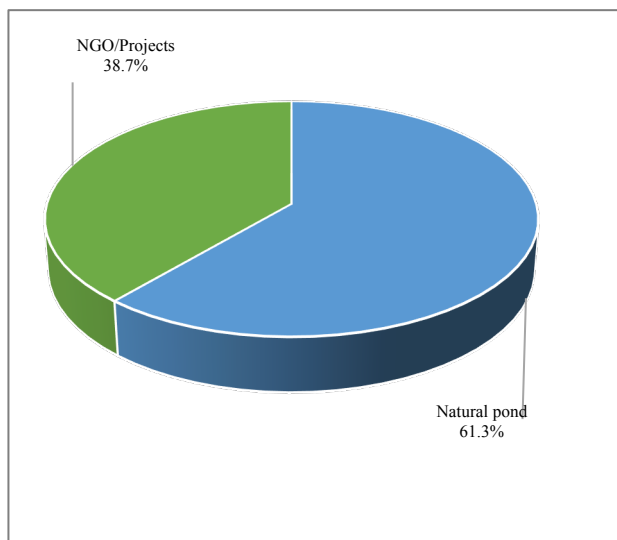
### 4.7.3 Source of Fingerlings

In Mainland Tanzania, the main source of fingerlings reported by households was private trade fish hatchery (8,964; 30.0 percent), followed by neighbor fish hatchery (8,234 households; 27.5 percent). Other sources reported by households include natural pond (3,335; 11.2 percent), NGOs/Development projects (3,029; 10.1 percent), own fish hatchery (2,641; 8.8 percent) and Government Institution hatchery (2,350; 7.9 percent). In Tanzania Zanzibar, the main sources of fingerlings reported by households were natural pond (225; 61.3 percent) and NGO/Project (142; 38.7 percent) (Figure 4.71 & 4.72).

**Figure 4.71: Percentage Distribution of Main Sources of Fish Fingerlings Reported by Households During 2019/20 Agricultural Year, Mainland Tanzania**



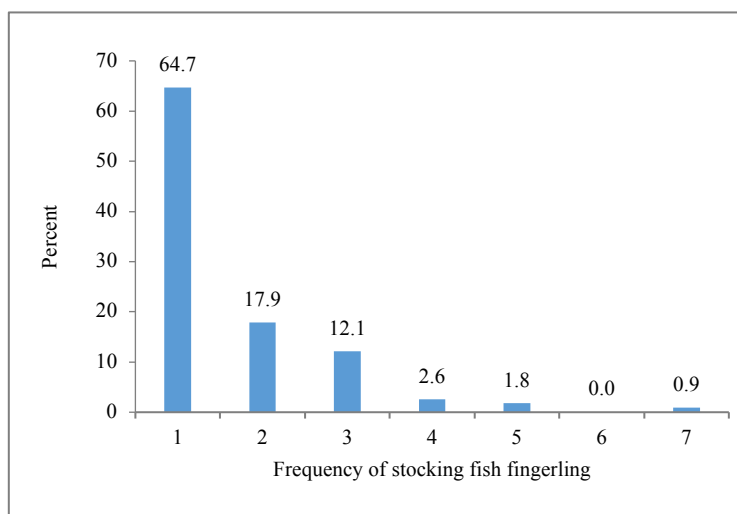
**Figure 4.72: Percentage Distribution of Main Sources of Fish Fingerlings Reported by Households During 2019/20 Agricultural Year, Tanzania Zanzibar**



#### 4.7.4 Frequencies of Fish Stocking

During 2019/20 agricultural year, most of the fish farming households in Tanzania (64.7 percent) were reported to stock fish fingerlings in their ponds once per year. There were other households that stocked fish fingerlings twice per year (17.9 percent), three times per year (12.1 percent) and more than three times (5.3 percent) (Figure 4.73).

**Figures 4.73: Percentage of Frequency of Stocking Fingerling During 2019/20 Agricultural Year, Tanzania**



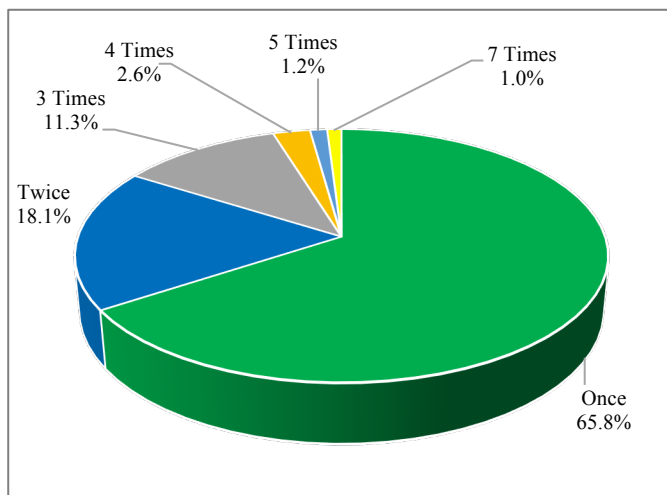
In Mainland Tanzania, majority of households (65.8 percent) stocked fingerlings in their ponds once per year. Those who stocked twice per year were 18.1 percent, while 11.3 percent stocked three times per year and 4.8 percent stocked more than three times. The situation was different in Tanzania Zanzibar, where most of households (61.3 percent) stocked fingerlings in their ponds three times per year and 38.7 percent stocked five times (Figure 4.74 & 4.75).

According to the 2019/20 NSCA results, the number of households that stocked fingerlings once per year had decreased from 68 percent in 2007/08 to 64.6 percent in 2019/20 agricultural year, while

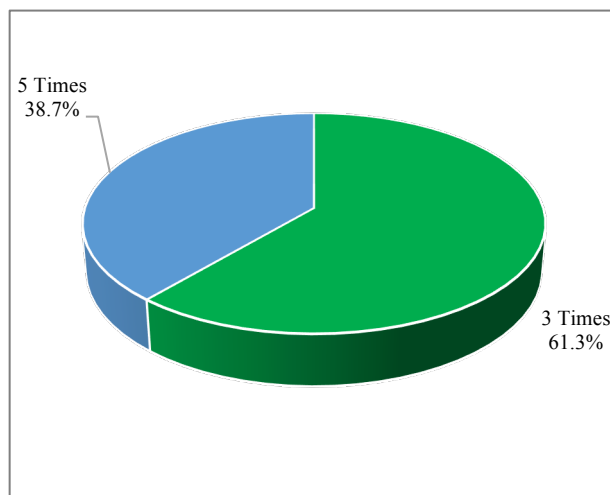


those who stocked fingerling more than three times had increased from 0.1 percent in 2007/08 to 5.3 percent in 2019/20 agricultural year.

**Figure 4.74: Percentage Distribution of Frequency of Stocking Fingerlings During 2019/20 Agricultural Year, Mainland Tanzania**



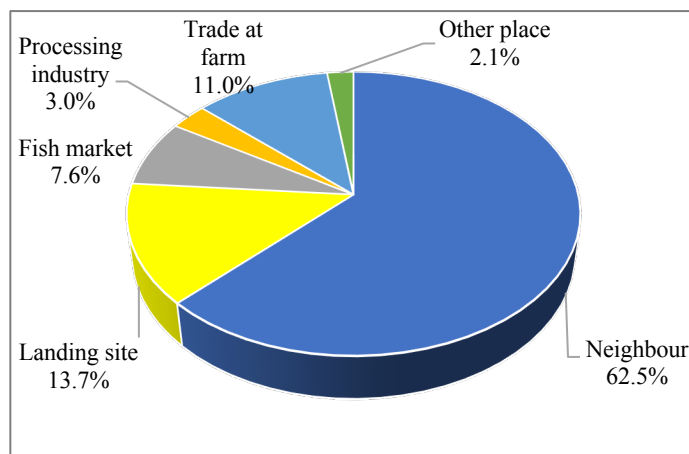
**Figure 4.75: Percentage Distribution of Frequency of Stocking Fingerlings During 2019/20 Agricultural Year, Tanzania Zanzibar**



#### 4.7.5 Outlets for Selling Fish

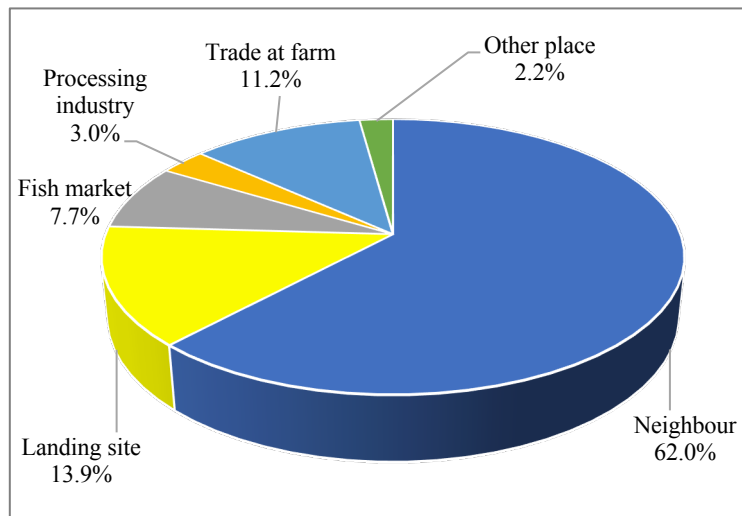
The 2019/20 NSCA results show that, most of the households that sold fish, reported to sell fish to their neighbours (6,118; 62.5 percent), followed by those who sold at landing site (1,344; 13.7 percent) and trade at the farm (1,078; 11.0 percent). Other outlets reported were fish markets (740; 7.6 percent), processing industry (293; 3.0 percent) and the remaining households (209; 2.1 percent) reported to sell their fish to other selling locations (Figure 4.76).

**Figure 4.76: Percentage Distribution of Households Reported Outlets for Selling Fish During 2019/20 Agricultural Year, Tanzania**



Similar behavior of outlets for selling fish was reported in Mainland Tanzania, where most of households sold their fish to their neighbours (62.0 percent), followed by landing site (13.9 percent), trade at the farm (11.2 percent), fish markets (7.7 percent), processing industry (3.0 percent) and the remaining 2.2 percent sold to other selling locations (Figure 4.77). The situation was different in Tanzania Zanzibar where 100 percent of households sold their fish to neighbours.

**Figure 4.77: Percentage Distribution of Households Reported Outlet for Selling Fish During 2019/20 Agricultural Year, Mainland Tanzania**



#### 4.7.6 Fish Feeds

The results of 2019/20 NSCA shows that, the total amount of fish feeds reported by households in Tanzania was 254,038 kgs (251,278 in Mainland Tanzania and 2,760 in Tanzania Zanzibar). Moreover, fish feeds included homemade feeds (224,517 kg; 88.4 percent), locally compounded feeds (21,556 kg; 8.5 percent), imported manufactured feeds (4,045 kg; 1.6 percent) and other feed sources (3,920 kg; 1.5 percent).

In Mainland Tanzania, fish feeds included homemade feeds (224,457kg; 89.3 percent), locally compounded feeds (18,856 kg, 7.5 percent), imported manufactured feeds (4,045 kg 1.6 percent) and other feeds sources (3,920 kg; 1.6 percent). In Tanzania Zanzibar, the main source of fish feeds was from locally compounded feeds (2,700 kg; 97.8 percent) and homemade feeds (60 kg; 2.2 percent) (Table 4.22).

**Table 4.22: Number of Households and Quantity of Feeds Used by Main Source of Fish Feeds During 2019/20 Agricultural Year, Tanzania**

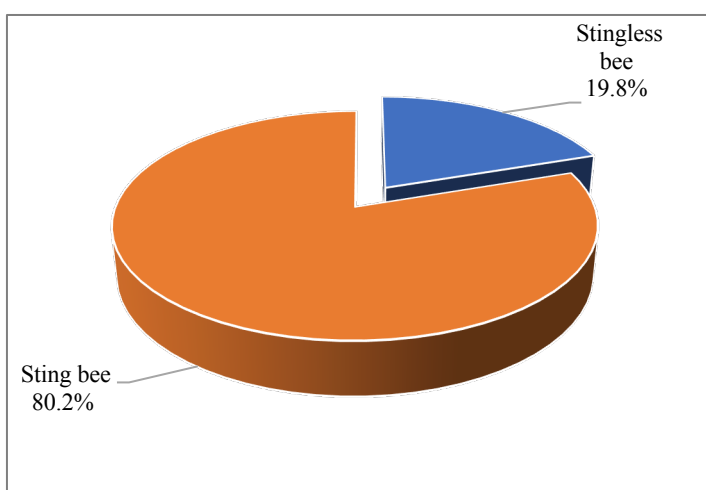
Main Source	Tanzania			Mainland Tanzania			Tanzania Zanzibar		
	Number of Households	Quantity Kgs	Percent	Number of Households	Quantity Kgs	Percent	Number of Households	Quantity Kgs	Percent
Homemade feeds	19,828	224,517	88.4	19,603	224,457	89.3	225	60	2.2
Locally compounded feeds	3,568	21,556	8.5	3,426	18,856	7.5	142	2,700	97.8
Imported manufactured feeds	398	4,045	1.6	398	4,045	1.6	0	0	0
Other source	2,868	3,920	1.5	2,868	3,920	1.6	0	0	0
<b>Total</b>	<b>26,662</b>	<b>254,038</b>	<b>100.0</b>	<b>26,295</b>	<b>251,278</b>	<b>100.0</b>	<b>367</b>	<b>2,760</b>	<b>100.0</b>

## 4.8 Bee Keeping

Bee keeping is practiced in both Mainland Tanzania and Tanzania Zanzibar. Two types of beehives were used improved and local type. Majority of agricultural households keeping bees in Tanzania were keeping sting bees.

The Census results show that, a total of 106,549 households were involved in bee keeping, which is equivalent to 1.4 percent of the total agricultural households in Tanzania. Most of households were engaged in sting beekeeping (80.2 percent) compared to stingless bees (19.8 percent) (Figure 4.78).

**Figure 4.78: Percentage Distribution of Households by Category of Bee Kept During 2019/20 Agricultural Year, Tanzania**

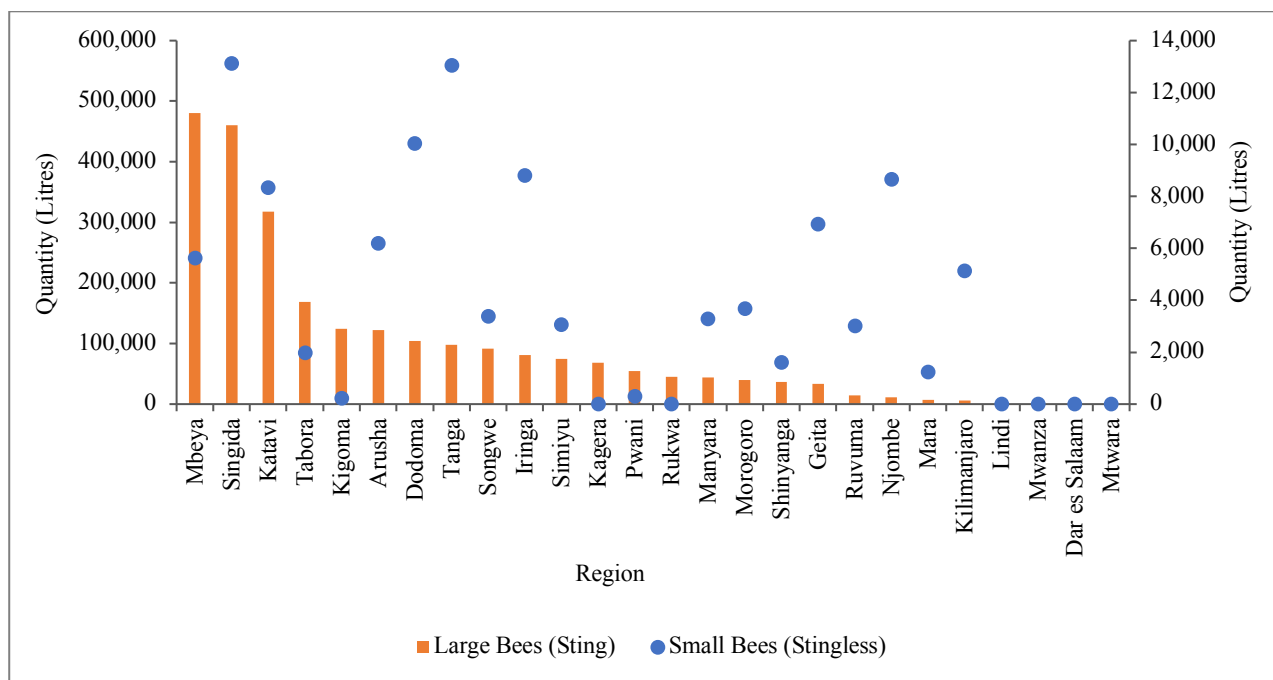


### 4.8.1 Honey Production

The total of 2,601,994 litres of honey were produced from both sting and stingless bees during 2019/20 agricultural year. Out of the total, 2,591,034 litres (2,489,723 litres from sting bee and 101,311 litres from stingless bees) were produced in Mainland Tanzania and 10,958 litres in Tanzania Zanzibar (9,765 litres from sting bee and 1,193 litres from stingless bees).

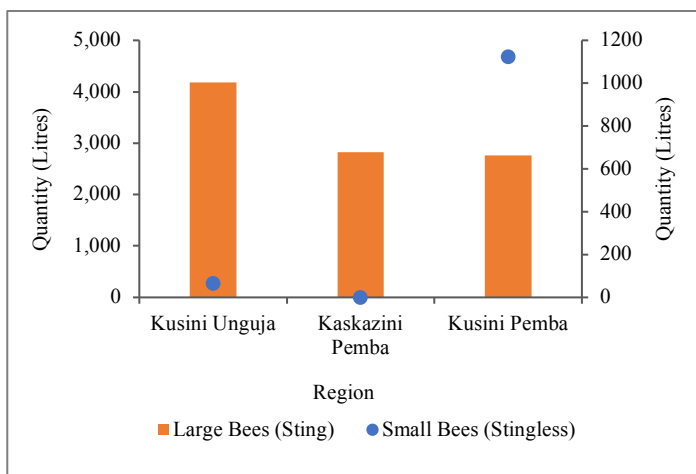
In Mainland Tanzania, the largest quantity of honey from stingless bees was reported in Singida region (13,130 litres; 12.2 percent), followed by Tanga (13,049 litres; 12.1 percent) and Dodoma (10,045 litres; 9.3 percent), whereas the region with least production of honey from stingless bees was Kigoma, (228 litre; 0.2 percent). Furthermore, the largest quantity of honey from sting bees was reported in Mbeya region (480,673 litres; 19.3 percent), followed by Singida (460,316 litres; 18.5 percent) and Katavi (317,176 litres; 12.7 percent). The region with least production of honey from sting bees was Mwanza (752 litre; 0.03 percent) (Figure 4.79).

**Figure 4.79: Quantity of Honey Produced from Stingless and Sting Bees by Region During 2019/20 Agricultural Year, Mainland Tanzania**



In Tanzania Zanzibar, honey production from stingless bees was only reported in Kusini Pemba (1,126 litres; 94.4 percent) and Kusini Unguja (67 litres; 5.6 percent) regions. On the other hand, production of honey from sting bees was reported in Kusini Unguja region (4,180 litres; 42.8 percent), Kaskazini Pemba (2,826.0 litres; 28.9 percent) and Kusini Pemba (2,759 litres; 28.3 percent) (Figure 4.80).

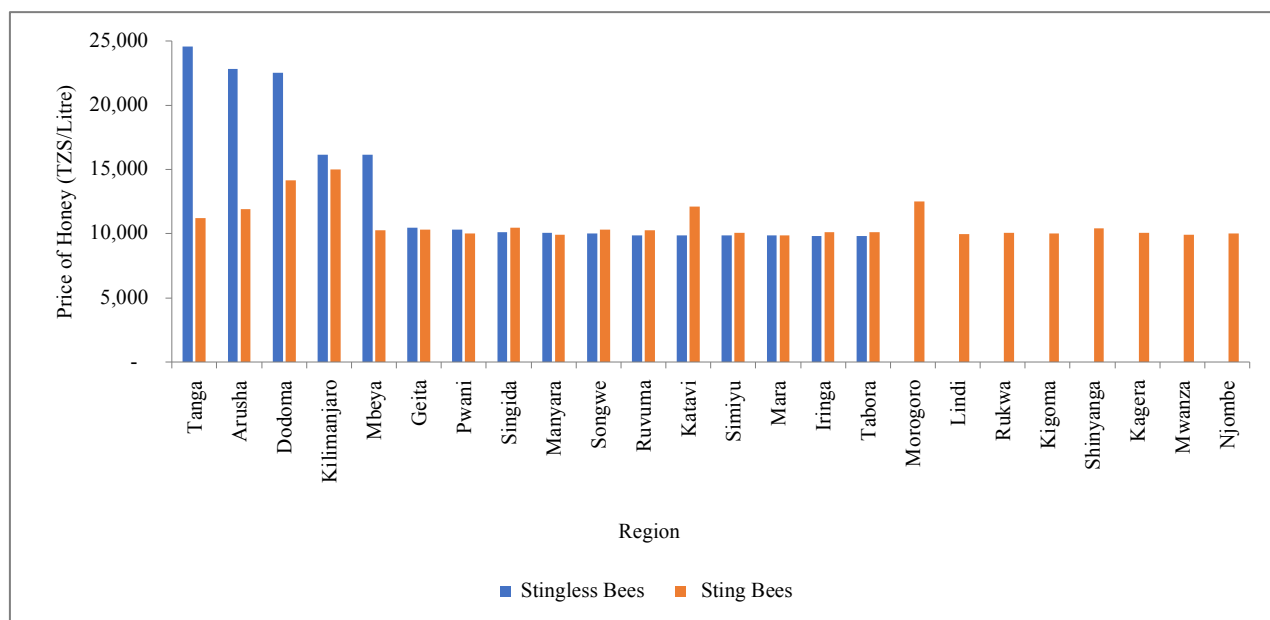
**Figure 4.80: Quantity of Honey Produced from Sting and Stingless Bees by Region During 2019/20 Agricultural Year, Tanzania Zanzibar**



#### 4.8.2 Sales and Market of Harvested Honey

The results show that, the average price of honey per litre from stingless bees was TZS 13,727 and TZS 11,518 for sting bees. In Mainland Tanzania, the average price of honey per litre from stingless bees was TZS 13,260 and TZS 10,795 for sting bee. The average price of honey produced by stingless and sting bees varied between regions. The highest price of honey from stingless bee was reported in Tanga (24,551 TZS/litre), followed by Arusha (22,823 TZS/litre) and Dodoma (22,502 TZS/litre). The lowest price of honey from stingless bees was reported in Tabora (9,800 TZS/litre). Similarly, the highest price honey by sting bees was reported in Kilimanjaro (15,000 TZS/litre), followed by Dodoma (14,156 TZS/litre) and Morogoro (12,511 TZS/litre). The lowest price of honey from sting bees was reported in Mara region (9,867 TZS/litre) (Figure 4.81).

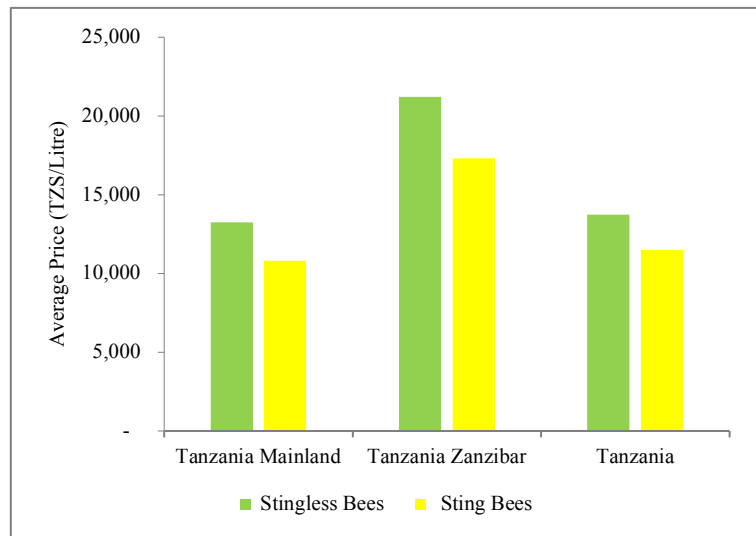
**Figure 4.81: The Average Price of Honey per Litre from Stingless and Sting During 2019/20 Agricultural Year, Mainland Tanzania**



In Tanzania Zanzibar, Kusini Pemba was the only region reported to sell honey from stingless bees with the average price of TZS 21,209 per litre.

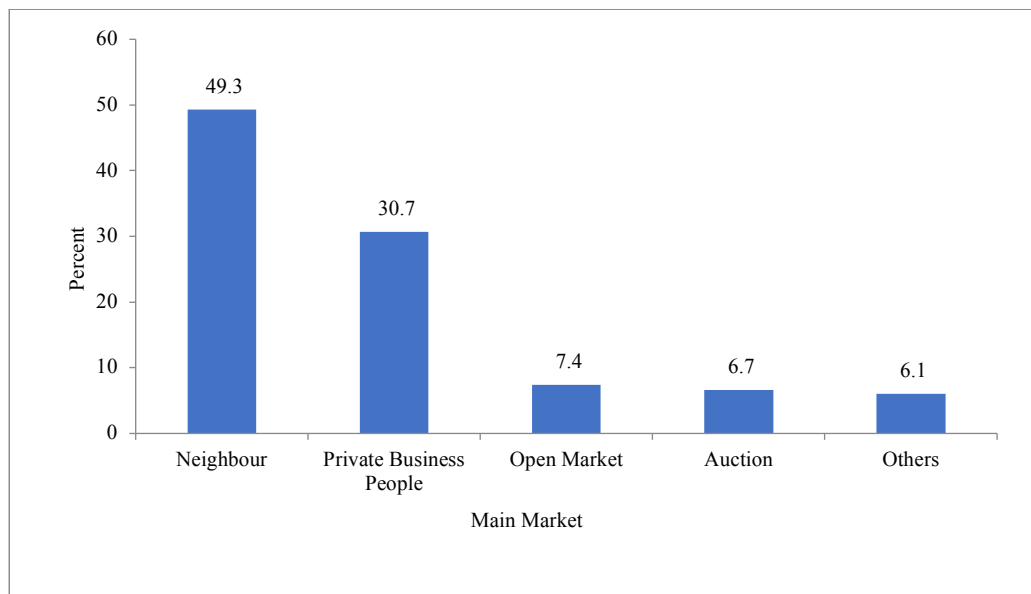
For the case of sting bees, the average price of honey was TZS 17,307 per litre whereas Kaskazini Pemba region reported the highest price of TZS 20,000 per litre, while Kusini Pemba reported the lowest average price (13,483 TZS/litre) (Figure 4.82).

**Figure 4.82: The Average Price of Honey per Litre from Stingless and Sting Bees During 2019/20 Agricultural Year, Tanzania**



Furthermore, the census results reveal that, the majority of households in Mainland Tanzania reported neighbors (49.3 percent) as their main market for honey, followed by private business people (30.7 percent) and open market (7.4 percent). The least number of households (6.1 percent) reported other market as the main market for honey produced (Figure 4.83).

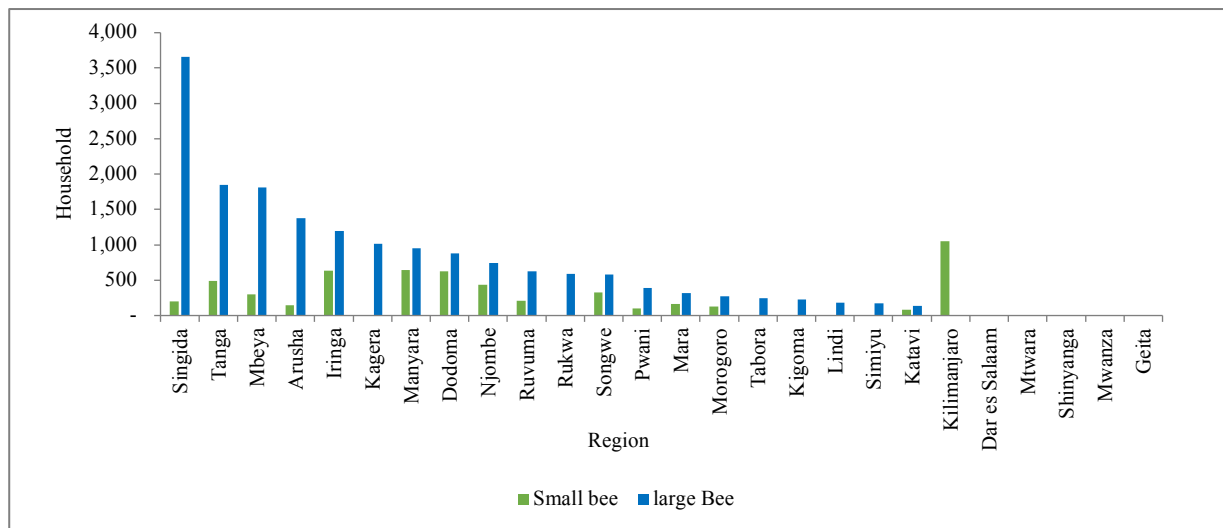
**Figure 4.83: Percentage of Households Reported the Main Markets of Honey During 2019/20 Agricultural Year, Mainland Tanzania**



The results show that, Kilimanjaro region had the largest number of households (1,054 19.1 percent) that reported neighbours as the main market of honey from stingless bee, followed by Manyara (640; 11.6 percent) and Iringa (631; 11.4 percent), while the least number of households was reported in Katavi (83; 1.5 percent). However, for sting bees, Singida region had the largest number of

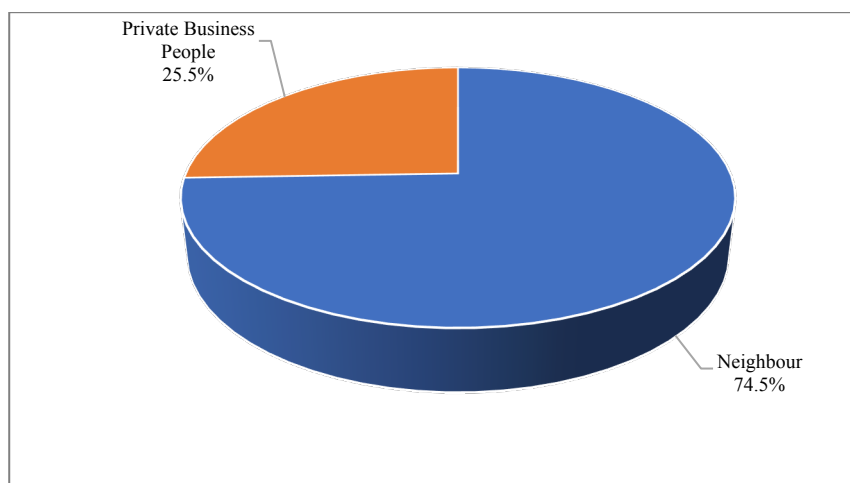
households (3,659; 21.3 percent) that reported neighbours as the main market for honey, followed by Tanga (1,849; 10.7) and Mbeya (1,812; 10.5 percent), while the least number of households was reported in Katavi (134; 0.8 percent) (Figure 4.84).

**Figure 4.84: Number of Households Reported Neighbours as the Main Market for Honey Sales by Region During 2019/20 Agricultural Year, Mainland Tanzania**



Likewise, in Tanzania Zanzibar, the majority of households reported neighbors (52.3 percent) and private business people (17.9 percent) as the main market for honey, while the households who did not sell were 29.8 percent (Figure 4.85).

**Figure 4.85: Percentage of Households Reported the Main Markets of Honey During 2019/20 Agricultural Year, Tanzania Zanzibar**



Furthermore, majority of households (101; 100 percent) in Kaskazini Pemba region reported selling to neighbours as the main market for honey by stingless bees. Similarly, selling to neighbours was also reported as the main market of honey produced by sting bees, whereby Kusini Pemba region had 335 households (64.1 percent) and 188 households (35.9 percent) were reported in Kaskazini Pemba.

## CHAPTER FIVE

### AGRICULTURAL CREDIT

#### 5.0 Introduction

In any agricultural development, farmers or agricultural household members need credits to support their agricultural activities. This can be done by borrowing money from different sources such as bank, individuals, cooperative societies, etc to acquire productive assets, land, machinery and/or any other input in production (fertilizer, seeds, agrochemicals, labor, etc). The major objective is to enhance agricultural operation and improve production of crops, livestock, fisheries and their products.

#### 5.1 Agricultural Households Reported to Borrow Money

The census results show that, a total of 7,837,405 agricultural households reported to engage in agricultural activities during 2019/20 agricultural year. Out of that, 294,618 households (3.8 percent) reported their members borrowed money from different sources for agricultural activities. For the household members that borrowed money for agricultural activities, a total of 291,035 household members were in Mainland Tanzania, while 3,582 members were in Tanzania Zanzibar. Moreover, out of 294,618 household members, 3,828 received at most two credits (Table 5.1).

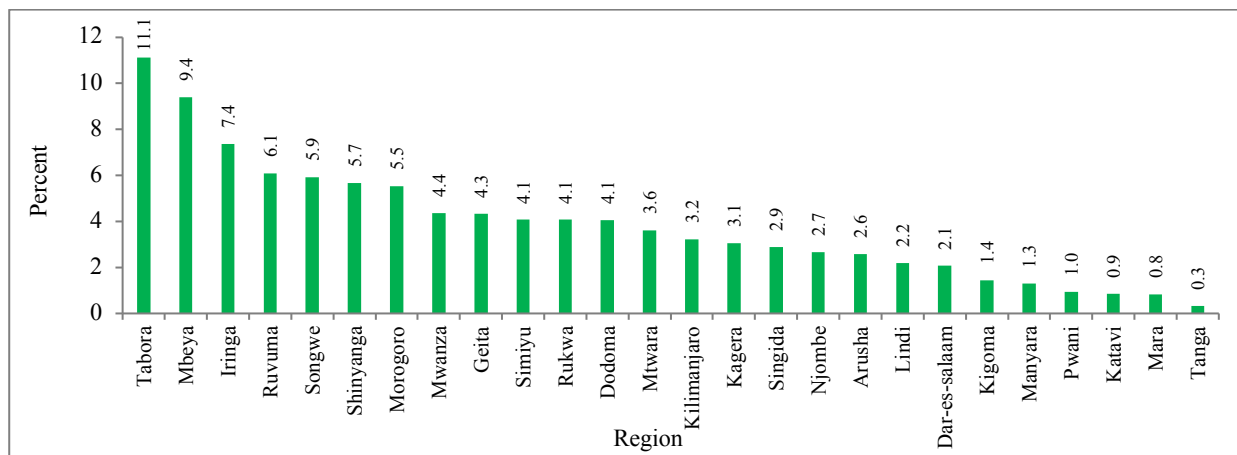
**Table 5.1: Number and Percentage of Agricultural Household Members Reported to Borrow Money for Agricultural Activities During 2019/20 Agricultural Year, Tanzania**

	Borrowed Money for Agricultural Activities		Did Not Borrow Money for Agricultural Activities		Total Households	
	Number of Households	Percent	Number of Households	Percent	Number	Percent
Mainland Tanzania	291,035	3.8	7,366,153	96.2	7,657,185	100.0
Tanzania Zanzibar	3,583	2.0	176,637	98.0	180,220	100.0
Tanzania	294,618	3.8	7,542,790	96.2	7,837,405	100.0

In Mainland Tanzania, Tabora region was leading with 32,359 household members (11.1 percent) that borrowed money for agricultural activities, followed by Mbeya (27,328; 9.4 percent) and Iringa (21,409; 7.4 percent). Tanga region had the least proportional of household members (957; 0.3 percent) (Figure 5.1).

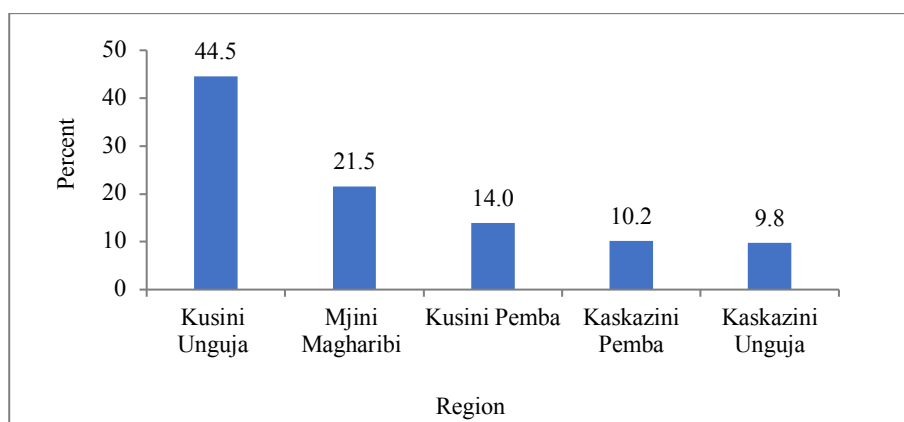


**Figure 5.1: Percentage of Agricultural Households Reported to Borrow Money for Agricultural Activities During 2019/20 Agricultural Year, Mainland Tanzania**



In Tanzania Zanzibar, Kusini Unguja was the leading region having larger number of household members reported to borrow money for agricultural activities (1,595; 44.5 percent), followed by Mjini Magharibi (772; 21.5 percent), whilst Kaskazini Unguja reported to have the lowest proportional of household members (350; 9.8 percent) (Figure 5.2).

**Figure 5.2: Percentage of Agricultural Households Reported to Borrow Money for Agricultural Activities During 2019/20 Agricultural Year, Tanzania Zanzibar**



## 5.2 Agricultural Household Members Received Credit by Sex

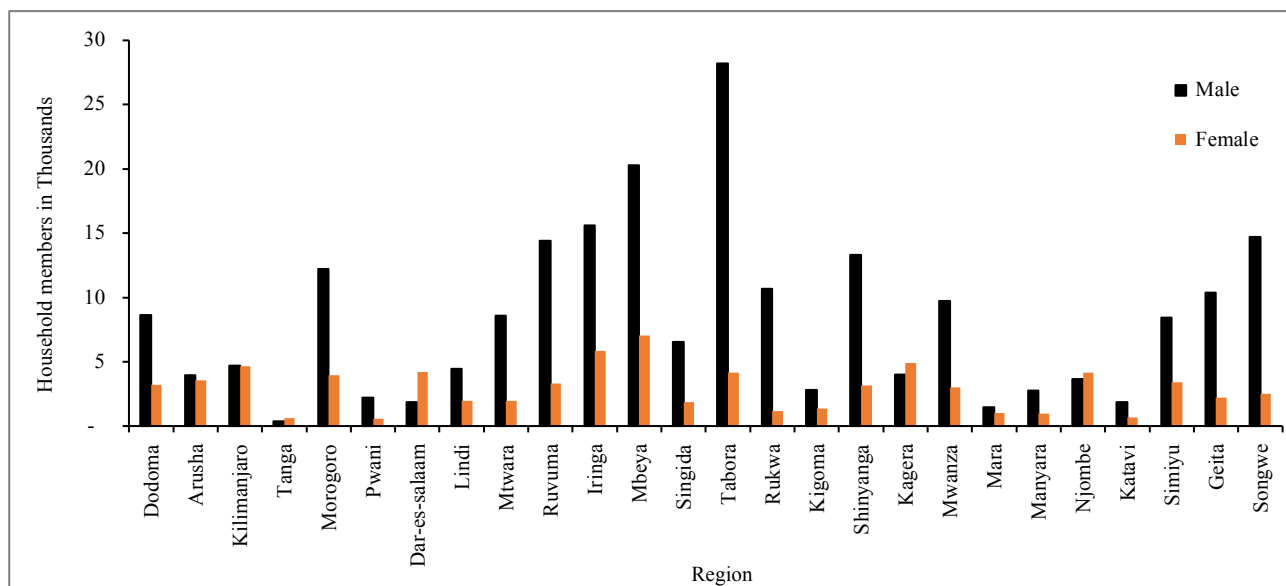
The census results show that, a total of 294,618 household members received credits from different sources during 2019/20 agricultural year in Tanzania, of which 217,403 members (73.8 percent) were males and 77,201 (26.2 percent) were females.

In Mainland Tanzania, a total of 291,035 household members received credits for agricultural activities, out of which 215,683 (73.8 percent) were males and 77,201 females (26.2 percent). Furthermore, Tabora region was leading with 32,357 household members (28,192 males and 4,165

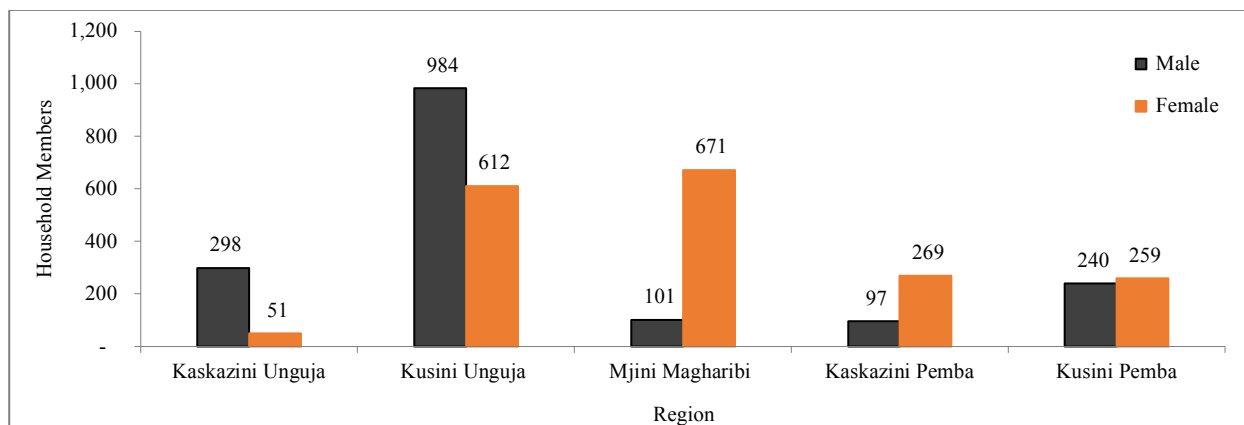
female) that received first credit, followed by Mbeya with 27,327 members (20,308 males and 7,019 females) and Iringa with 21,409 members (15,586 males and 5,823 females). Tanga region reported the smallest number, which is 957 members (352 males and 605 females) (Figure 5.3).

In Tanzania Zanzibar, a total of 3,582 household members reported to receive credits for agricultural activities, out of which majority were females (1,862; 51.9 percent) as compared to males (1,720; 48.0 percent). Moreover, Kusini Unguja region was leading with 1,596 members (984 males and 612 females) that received first credit for agricultural activities, followed by Mjini Magharibi having 772 members (101 males and 671 females), while Kaskazini Unguja had the smallest household members 349 (males 298 and females 51) (Figure 5.4).

**Figure 5.3: Number of Agricultural Household Members Received First Credit by Sex and Region During 2019/20 Agricultural Year, Mainland Tanzania**



**Figure 5.4: Number of Agricultural Household Members Received First Credit by Sex and Region During 2019/20 agricultural year, Tanzania Zanzibar**



It should be well noted that, for all household members that received the second credit (i.e., more than one loan) for agricultural activities, there were amongst of the members that received first credit. Thus, a total of 3,828 household members equivalent to 1.3 percent reported to receive the second credit, of which males were 2,042 (53.3 percent) and females 1,786 (46.7 percent). In Mainland Tanzania, 3,674 household members (96.0 percent) borrowed the second credit, out of that, males were 1,981 (53.9 percent) and females 1,693 (46.1 percent). In Tanzania Zanzibar, a total of 154 household members (4.0 percent) received second credit, out of that, majority were females (93; 60.4 percent) as compared to males (61; 39.6 percent) (Table 5.2).

**Table 5.2: Number of Agricultural Household Members Received Second Credit by Sex During 2019/20 Agricultural Year, Tanzania**

Sex	Mainland Tanzania		Tanzania Zanzibar		Tanzania	
	Number	Percent	Number	Percent	Number	Percent
Male	1,981	53.9	61	39.6	2,042	53.3
Female	1,693	46.1	93	60.4	1,786	46.7
Total	3,674	100.0	154	100.0	3,828	100.0

### 5.2.1 Source of Credits

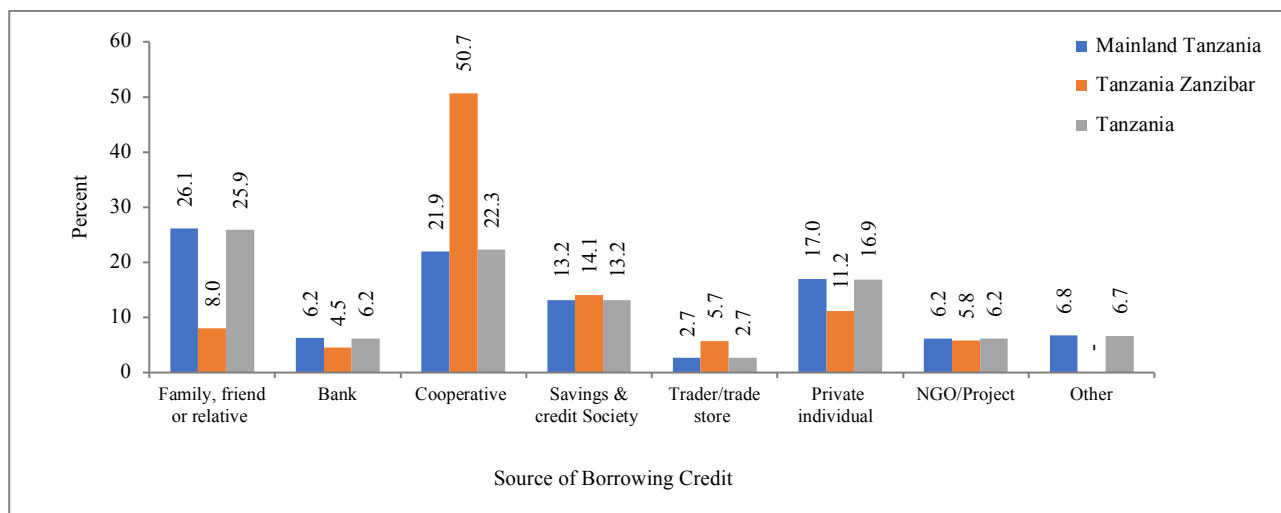
During the 2019/20 agricultural year, sources of credit obtained by household members were categorized into family/friends/relative; bank, cooperatives, saving and credit societies, trade/trade store, private individual, NGO/project and other. Majority of household members received first credit from family/friends/relatives (76,214 members; 25.9 percent), out of them 63,059 were males and 13,155 females. That was followed by those who received first credit from cooperatives (65,601 members; 22.3 percent) whereby 53,543 were males and 12,058 females, and those received from private individual (49,765; 16.9 percent), whereby 39,461 were males and 10,304 females. However, there were few household members who received their first credit from trade/trade store (7,982 members; 2.7 percent), whereby 7,320 were males and 662 females.

In Mainland Tanzania, family/friends/relatives was reported as the main source of credit by majority of household members that obtained first credit (75,926; 26.1 percent) of which 62,771 were males and 13,155 females. On the other hand, trade/trade store was reported by few household members (7,777 members; 2.7 percent), of which 7,265 were males and 512 females (Figure 5.6).

In Tanzania Zanzibar, the main source of credit was cooperatives, which accounted for 50.7 percent of household members (1,815) obtained first credit, out of which, 581 were males and 1,234 females.

Bank was recorded as the least source obtained by 161 household members (4.5 percent), of which 104 were males and 57 females (Figure 5.5).

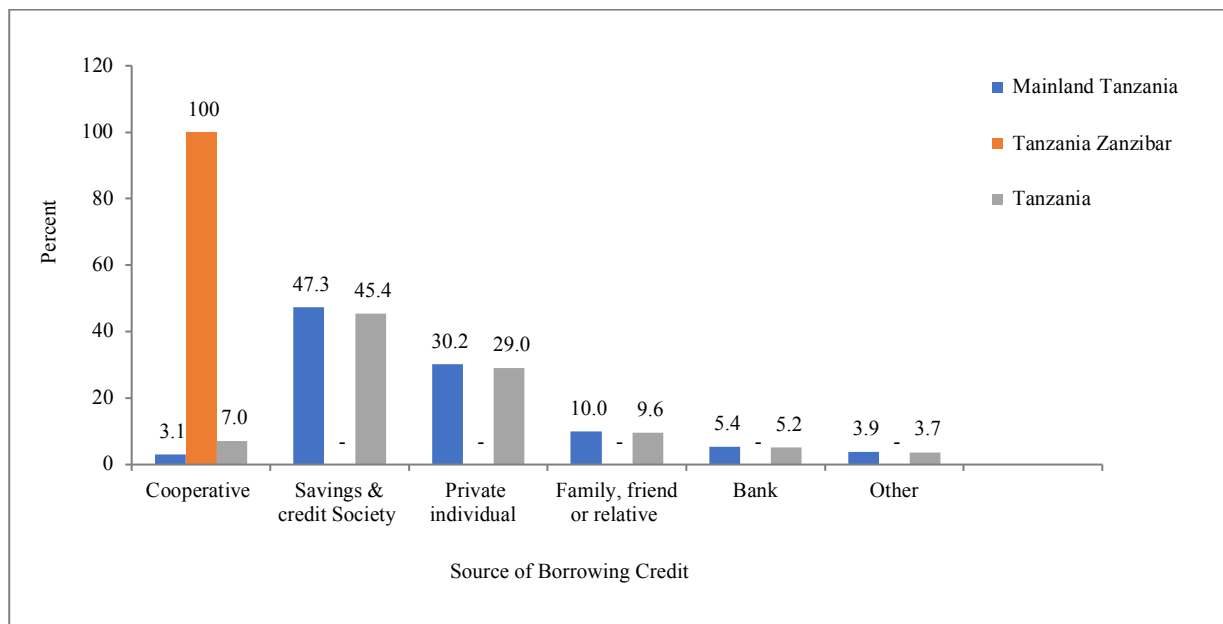
**Figure 5.5: Percentage of Agricultural Household Members Received First Credit by Source During 2019/20 Agricultural Year, Tanzania**



Similarly, 3,828 household members (2,042 males and 1,786 females) reported to receive the second credit during 2019/20 agricultural year in Tanzania. Majority of household members (1,739; 45.4 percent) obtained their credit from savings and credit societies, whereby 451 were males and 1,288 females. Only 3.7 percent of the household members (143 males only) received their second credit from “other sources” (Figure 5.6).

In Mainland Tanzania, majority of household members (1,739; 47.3 percent) reported to receive second credit from savings and credit societies, whereby 451 were males and 1,288 females, while few household members (114 males only) reported to borrow from cooperative (3.1 percent). In Tanzania Zanzibar, only 154 household members (61 males and 93 females) equivalent to 100 percent received second credit from cooperatives during 2019/20 agricultural year.

**Figure 5.6: Percentage of Agricultural Household Members Received Second Credit by Source During 2019/20 Agricultural Year, Tanzania**



### 5.2.2 Uses of Credits

In Tanzania, majority of household members (142,809; 23.1 percent) reported to spend credits in paying labour for agricultural activities, followed by 136,650 members (22.1 percent) who spent in seeds and 125,505 members (20.3 percent) who spent in fertilizers. Nevertheless, few household members (268; 0.04 percent) spent their credit for fish farming activities.

In Mainland Tanzania, majority of household members (140,743; 23.1 percent) reported to spend credits in paying labour for agricultural activities. Tabora region had the highest number (12,012 members; 8.5 percent) as compared to other regions, while, Tanga region had the least (801 members; 0.6 percent). A total of 134,669 household members (22.8 percent) reported to spend their credits in seeds, of which, Tabora region had the highest number (20,057 members; 14.9 percent), while Tanga region had least members (526; 0.4 percent). Furthermore, 124,025 household members (20.4 percent) reported to spend credits on fertilizer, of which, Mbeya region had the highest number (20,833 members; 16.8 percent), while Tanga region had least members (156; 0.1 percent).

In Mainland Tanzania, majority of household members (2,066; 20.8 percent) reported to spend credits in paying labour for agricultural activities. Kusini Unguja region had the highest number (1,052 members; 50.9 percent) as compared to other regions, while, Kaskazini Unguja region had the least (147 members; 7.1 percent). A total of 1,981 household members (19.9 percent) reported to spend their credits in seeds, of which, Kusini Unguja region had the highest number (712 members; 35.9 percent), while Kusini Pemba region had least members (101; 5.1 percent). Furthermore, 1,873

household members (18.8 percent) reported to spend credits on agro chemicals, of which, Kusini Unguja region had the highest number (604 members; 32.2 percent), while Kaskazini Pemba region had least members (97; 5.2 percent) (Table 5.3).

**Table 5.3 Percentage of Agricultural Household Members Reported the Use of Credit by Region During 2019/20 Agricultural Year, Tanzania**

Region	Percentage Use of First Credit									
	Labour	Seeds	Fertilizers	Agro-chemicals	Tools/Equipment	Irrigation Structures	Fish farming	Bee keeping	Livestock	Other
Dodoma	3.2	3.8	-	0.6	12.6	-	-	-	5.7	5.5
Arusha	3.9	3.7	1.8	2.7	4.3	13.5	-	-	9.0	2.1
Kilimanjaro	4.4	4.8	4.8	3.9	3.4	1.8	-	-	2.6	4.9
Tanga	0.6	0.4	0.1	0.1	-	-	-	-	1.3	0.6
Morogoro	7.9	3.9	2.7	8.0	9.3	1.3	-	100.0	1.0	6.6
Pwani	1.5	1.2	1.2	2.1	2.6	4.8	-	-	-	0.8
Dar-es-salaam	2.4	2.9	2.3	3.3	2.4	8.5	-	-	13.0	-
Lindi	1.4	0.8	0.8	5.0	0.7	-	-	-	-	2.4
Mtwara	2.3	0.7	1.1	8.3	5.1	-	-	-	-	2.0
Ruvuma	4.3	3.6	12.3	4.8	6.3	5.2	-	-	4.9	3.2
Iringa	6.1	7.8	13.2	7.8	7.3	24.1	-	-	3.0	6.2
Mbeya	7.9	6.8	16.8	9.5	12.5	16.2	-	-	3.0	6.8
Singida	3.1	3.9	2.1	1.7	1.8	-	-	-	11.1	5.2
Tabora	8.5	14.9	14.9	16	4.2	15.4	-	-	-	14.1
Rukwa	5.1	1.8	2.4	2.0	1.3	1.1	100.0	-	2.4	8.1
Kigoma	2.0	1.1	2.0	0.4	1.0	-	-	-	-	1.4
Shinyanga	6.7	6.3	2.8	3.5	1.6	-	-	-	-	4.2
Kagera	3.8	5.0	1.5	2.3	4.6	-	-	-	22.0	0.8
Mwanza	4.1	5.3	1.5	3.6	5.2	2.5	-	-	7.3	10.6
Mara	1.4	0.7	0.3	0.5	1.4	-	-	-	1.1	1.2
Manyara	1.6	1.9	0.2	0.9	1.3	-	-	-	2.7	1.1
Njombe	1.6	3.2	5.6	1.7	0.8	1.2	-	-	-	0.7
Katawi	1.4	0.9	0.7	0.9	-	-	-	-	0.8	0.8
Simiyu	3.7	5.5	1.4	3.9	1.7	2.2	-	-	1.4	5.3
Geita	4.5	5.6	1.0	4.2	3.8	-	-	-	-	2.4
Songwe	6.6	3.4	6.8	2.4	4.8	2.1	-	-	7.8	3.1
<b>Mainland Tanzania</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Kaskazini-Unguja	7.1	12.5	20.2	18.7	-	18.0	-	-	-	6.3
Kusini Unguja	50.9	35.9	34.4	32.2	26.5	39.7	100.0	100.0	15.9	81.3
Mjini Magharibi	14.0	34.0	22.6	31.0	48.4	42.2	-	-	84.1	12.4
Kaskazini Pemba	10.5	12.5	6.6	5.2	25.0	-	-	-	-	-
Kusini Pemba	17.5	5.1	16.3	12.9	-	-	-	-	-	-
<b>Tanzania Zanzibar</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

### 5.2.3 Value of Credits

In Tanzania, smallholder farmers reported to receive a total credit of Tanzania Shillings 200.7 billion for their agricultural activities during 2019/20 agricultural year, with the repayment value of TZS 284.0 billion equivalent to an increment of 41.5 percent of credit value. Out of total credits, TZS 199.1 billion was credited in Mainland Tanzania with the repayment value of TZS 281.2 billion, while, TZS 1.6 billion was credited in Tanzania Zanzibar with the repayment of TZS 2.8 billion.

At National level, banks were reported as the main source that credited a large amount (TZS 69.5 billion; 34.6 percent) for agricultural activities with the repayment of TZS 104.4 billion (36.8

percent). On the other hand, trade/trade store was reported as the minor source that credited TZS 4.3 billion (2.1 percent, of the total credits) with the repayment of TZS 4.9 billion (1.7 percent).

In Mainland Tanzania, the results show that, smallholder farmers in Mbeya region reported the highest number of credits with a total value of TZS 42.7 billion (21.5 percent), with the repayment of TZS 54.9 billion (19.5 percent), of which bank was the main source (52.2 percent). It was followed by Tabora region which received credits of TZS 33.0 billion (16.7 percent) with the repayment of TZS 40.7 billion (14.5 percent), of which cooperative was the main source (46.7 percent) and Kilimanjaro region with a total credit of TZS 14.8 billion (7.5 percent) with the repayment of TZS 25.2 billion, whereby savings and credit societies was the main source (51.3 percent). On the contrary, Tanga region reported the least credit value (TZS 0.21 billion; 0.1 percent) that led to the repayment of TZS 0.23 billion and the main source of credit was savings and credit societies (46.8 percent).

In Tanzania Zanzibar, smallholder farmers in Kusini Unguja region reported the highest amount of credits (TZS 690.5 million; 44.2 percent) with the repayment of TZS 1.7 billion, of which cooperative was the main source (40.9 percent). It was followed by, Mjini Magharibi region (TZS 521.8 million; 33.4 percent) with the repayment of Tshs 693.7 million of which cooperative was the main source (66.2 percent). Conversely, Kaskazini Pemba region reported small amount credits (TZS 58.9 million; 3.8 percent) with the repayment value of (TZS 58.9 million) of which NGO was the main source (82.2 percent) (Table 5.4).

**Table 5.4: Value and Percentage of Credits and Repayments by Region During 2019/20 Agricultural Year, Tanzania**

Region	Value of Credit		Value of Repayment	
	Total (TZS)	Percent	Total (TZS)	Percent
Dodoma	3,252,963,701	1.6	4,842,378,760	1.7
Arusha	9,089,286,062	4.6	18,170,203,277	6.5
Kilimanjaro	14,838,366,585	7.5	25,188,926,888	9.0
Tanga	206,354,676	0.1	232,230,720	0.1
Morogoro	5,285,159,167	2.7	6,769,635,803	2.4
Pwani	2,113,044,593	1.1	2,484,954,186	0.9
Dar-es-salaam	11,519,801,067	5.8	12,857,871,818	4.6
Lindi	2,791,354,322	1.4	13,671,608,078	4.9
Mtwara	13,017,142,868	6.6	17,463,456,246	6.2
Ruvuma	6,603,701,346	3.3	8,836,792,026	3.1
Iringa	11,294,124,120	5.7	12,787,642,183	4.5
Mbeya	42,693,605,827	21.5	54,970,173,511	19.5
Singida	4,269,979,569	2.2	6,364,175,885	2.3
Tabora	33,000,820,863	16.7	40,704,624,336	14.5
Rukwa	5,532,381,348	2.8	9,971,070,939	3.5
Kigoma	762,519,511	0.4	815,534,311	0.3
Shinyanga	5,626,084,599	2.8	10,613,990,937	3.8
Kagera	4,789,347,737	2.4	5,227,601,602	1.9
Mwanza	2,472,788,431	1.2	3,082,262,132	1.1
Mara	756,809,017	0.4	1,013,075,830	0.4
Manyara	4,482,520,116	2.3	5,245,027,931	1.9
Njombe	2,007,586,952	1.0	2,409,329,298	0.9
Katavi	1,407,693,419	0.7	1,689,914,321	0.6
Simiyu	1,563,646,381	0.8	2,336,916,728	0.8
Geita	2,581,032,656	1.3	4,123,088,373	1.5
Songwe	7,162,937,581	3.6	9,348,385,849	3.3
<b>Mainland Tanzania</b>	<b>199,121,052,514</b>	<b>100.0</b>	<b>281,220,871,968</b>	<b>100.0</b>
Kaskazini Unguja	123,976,795	7.9	123,976,795	4.4
Kusini Unguja	690,459,736	44.2	1,728,332,347	61.9
Mjini Magharibi	521,759,366	33.4	693,699,445	24.8
Kaskazini Pemba	58,930,208	3.8	58,930,208	2.1
Kusini Pemba	166,808,105	10.7	187,723,105	6.7
<b>Tanzania Zanzibar</b>	<b>1,561,934,210</b>	<b>100.0</b>	<b>2,792,661,900</b>	<b>100.0</b>
<b>Tanzania</b>	<b>200,682,986,724</b>		<b>284,013,533,868</b>	

#### 5.2.4 Main Reason for Not Borrowing Credit

The census results show that, out of total 7,837,405 agricultural households whose members reported to engage in agricultural activities during 2019/20 agricultural year, 7,542,787 members (96.2 percent) reported not to borrow money from different sources in Tanzania. Out of 7,542,787, a total of 7,366,149 members reported not to borrow money for agricultural activities in Mainland Tanzania, whilst 176,638 members was in Tanzania Zanzibar.

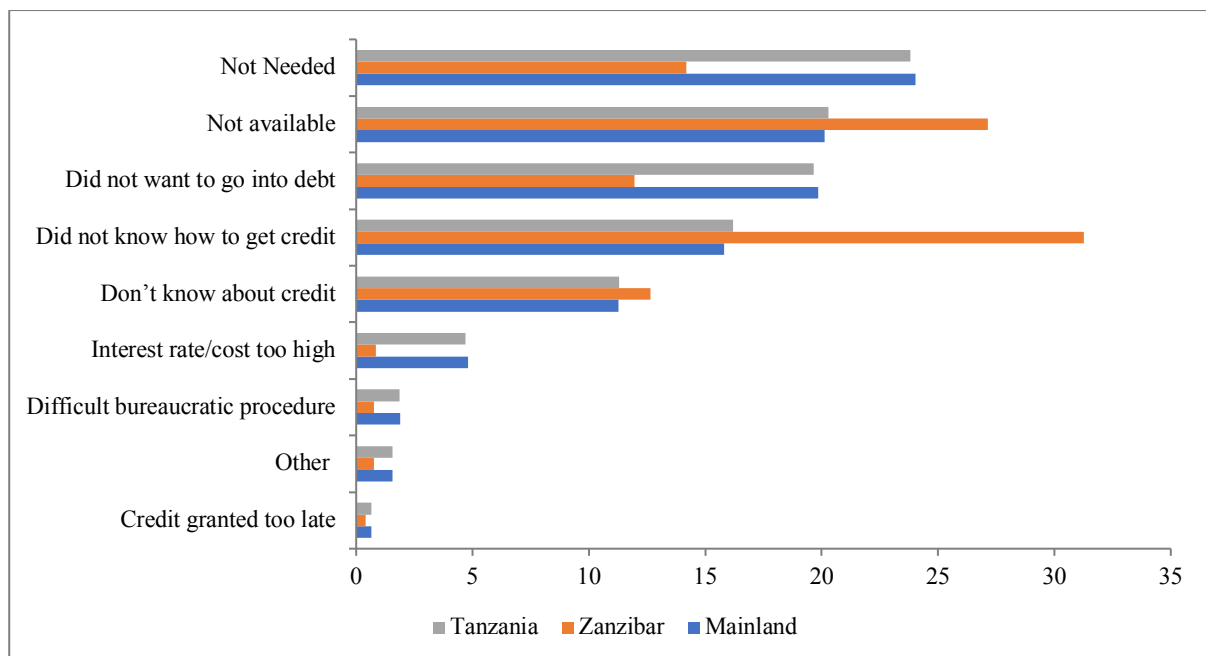


Results further show that, amongst 1,795,943 household members (23.8 percent) reported “did not need” credits for their agricultural activities. This was followed by 1,530,795 members (20.3 percent) who reported that “credits were not available” and 1,483,157 members (19.7 percent) who reported that “did not want to go into debt”. Additionally, minority of household members (48,704; 0.6 percent) reported that “credit granted too late” as their main reason of not applying for credits.

In Mainland Tanzania, majority of household members (1,770,883 members; 24.0 percent) reported “Not needed” credits for their agricultural activities. This was followed by members who reported “Not available” (1,482,850; 20.1 percent) and “Did not want to go into debt” (1,462,033; 19.9 percent). Additionally, few household members (47,990; 0.7 percent) reported that “credit granted too late” as their main reason of not borrowing credits.

In Tanzania Zanzibar, majority of household members (55,231 members; 31.3 percent) reported “Did not know how to get credit” for their agricultural activities. This was followed by 47,945 members (27.1 percent) who reported “credits not available” and 25,060 members (14.2 percent) reported “did not need credits”. Additionally, few household members (714; 0.4 percent) reported that “credit granted too late” as their main reason of not borrowing credits (Figure 5.7).

**Figure 5.7: Percentage of Agricultural Households Reported Main Reason for Not Borrowing Credit During the 2019/20 Agricultural Year, Tanzania**



### **5.3 Agricultural Constraints**

In Tanzania, during the 2019/20 agricultural year, climate change was the major constraint reported by majority of households (1,326,432; 18.0 percent). This was followed by cost of inputs (1,152,368 households; 15.6 percent), access to land (998,362; 13.5 percent), low prices of agricultural produce (532,619; 7.2 percent), and pest and diseases (495,102 households; 6.7 percent (Table 5.5).

Similar trend was observed in Mainland Tanzania regarding the most reported constraints by households that affected agricultural activities during 2019/20 agricultural year. The results show that, climate change with 1,318,550 households (18.3 percent) was mostly reported, followed by cost of inputs (1,141,152; 15.8 percent), access to land (978,589; 13.6 percent), low prices of agricultural produce (530,068; 7.4 percent) and; pests and diseases (476,974; 6.6 percent) (Table 5.5).

In Tanzania Zanzibar, crop theft with 34,360 households (20.8 percent) was the major constraint that affected agricultural activities reported by households, followed by access to land (19,773; 12.0 percent), crop destructive by wild animals (18,207; 11.0 percent), pests and diseases (18,128; 11.0 percent) and cost of inputs (11,216; 6.8 percent) (Table 5.5).

**Table 5.5: Number and Percentage of Agricultural Households Reported Major Constraints During 2019/20 Agricultural Year, Tanzania**

Constraint	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Number	Percent	Number	Percent	Number	Percent
Access to land	998,362	13.5	978,589	13.6	19,773	12.0
Land Ownership	308,369	4.2	300,361	4.2	8,008	4.9
Soil fertility	393,573	5.3	385,477	5.3	8,096	4.9
Availability of quality seeds	286,893	3.9	283,238	3.9	3,655	2.2
Irrigation equipments	39,773	0.5	38,066	0.5	1,707	1.0
Availability of Agro Chemicals	99,447	1.3	97,748	1.4	1,700	1.0
Availability of Veterinary drugs	62,300	0.8	61,208	0.8	1,092	0.7
Cost of Inputs	1,152,368	15.6	1,141,152	15.8	11,216	6.8
Extension Services	231,899	3.1	228,118	3.2	3,782	2.3
Availability of forest products	2,507	0.0	2,367	0.0	139	0.1
Access to credit	189,645	2.6	186,769	2.6	2,876	1.7
Harvesting	34,423	0.5	34,036	0.5	387	0.2
Threshing/Dehulling	1,986	0.0	1,986	0.0	-	-
Crop Storage	6,130	0.1	6,086	0.1	43	0.0
Agro Processing	1,874	0.0	1,874	0.0	-	-
Access to Market and marketing Information	102,912	1.4	102,520	1.4	392	0.2
Transportation costs	46,788	0.6	46,302	0.6	486	0.3
Distraction by wild animals	262,307	3.6	244,100	3.4	18,207	11.0
Crop theft	89,677	1.2	55,316	0.8	34,360	20.8
Livestock theft	25,381	0.3	17,037	0.2	8,344	5.1
Pests and Diseases	495,102	6.7	476,974	6.6	18,128	11.0
Cess	10,059	0.1	10,002	0.1	57	0.0
Off-farm Income	53,199	0.7	52,617	0.7	582	0.4
Conflicts between farmers and livestock keepers	50,496	0.7	49,255	0.7	1,241	0.8
Climate change (drought, floods, etc)	1,326,432	18.0	1,318,550	18.3	7,882	4.8
Availability of inputs	256,324	3.5	250,356	3.5	5,968	3.6
Availability of Industrial agrochemicals	61,518	0.8	60,689	0.8	830	0.5
Access to water for agricultural activities	17,366	0.2	15,702	0.2	1,664	1.0
Low prices of agricultural produces	532,619	7.2	530,068	7.4	2,552	1.5
Cost of land ownership	31,214	0.4	31,088	0.4	126	0.1
Governmental Policies Laws Regulations and Guidelines	17,349	0.2	17,349	0.2	-	-
Availability of quality pasture and Animal feeds	19,807	0.3	19,434	0.3	373	0.2
Access to water for domestic use	68,749	0.9	68,415	0.9	334	0.2
Lack of capitals/Money	18,789	0.3	18,789	0.3	-	-
Lack /Poor infrastructure	1,930	0.0	1,930	0.0	-	-
Other	74,469	1.0	73,362	1.0	1,106	0.7
<b>Total</b>	<b>7,372,036</b>	<b>100.0</b>	<b>7,206,930</b>	<b>100.0</b>	<b>165,106</b>	<b>100.0</b>

## CHAPTER SIX

### POVERTY INDICATORS

#### 6.0 Introduction

Housing characteristics, water and sanitation can be used as indicators of poverty and socio-economic status of the households. This section describes type of material used for roofing, wall and floor; toilet facility, sources of drinking water, energy for cooking and lighting used by households.

#### 6.1 Roofing Materials

The census results show that, out of 7,837,405 agricultural households in Tanzania, majority of households (6,404,329; 81.7 percent) used iron sheet for roofing, followed by those used grass/leaves (1,130,136; 14.4 percent). Material that was used by the least number of households was concrete (8,843; 0.1 percent) (Table 6.1).

**Table 6.1: Number and Percentage of Households by Type of Roofing Material During 2019/20 Agricultural Year, Tanzania**

Roof Material	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Number	Percent	Number	Percent	Number	Percent
Iron Sheets	6,404,325	81.7	6,246,398	81.6	157,927	87.6
Tiles	27,558	0.4	27,373	0.4	185	0.1
Concrete	8,843	0.1	8,843	0.1	-	-
Asbestos	9,186	0.1	8,916	0.1	270	0.1
Grass/leaves	1,130,136	14.4	1,108,599	14.5	21,537	12.0
Grass & mud	232,851	3.0	232,550	3.0	301	0.2
Other	24,508	0.3	24,508	0.3	-	-
<b>Total</b>	<b>7,837,405</b>	<b>100.0</b>	<b>7,657,185</b>	<b>100.0</b>	<b>180,220</b>	<b>100.0</b>

In Mainland Tanzania, out of 7,657,185 agricultural households, majority of households (6,246,398; 81.6 percent) used iron sheet for roofing, followed by those used grass/leaves (1,108,597; 14.5 percent) and grass and mud (232,550; 3.0 percent). Concrete was used by few households (8,843; 0.1 percent). Kagera region had the largest number of households reported to use iron sheet (433,905; 6.9 percent), followed by Dodoma region (411,904; 6.6 percent) and Dar es Salaam (397,931; 6.4 percent). Katavi region reported the least number of households using iron sheet (61,760; 1.0 percent) (Table 6.1 & 6.2).

In Tanzania Zanzibar, majority of households (157,927; 87.6 percent) used iron sheet for roofing, followed by those used grass/leaves (21,537; 12.0 percent) and grass and mud (301; 0.2 percent). Tiles was used by the least number of households (185; 0.1 percent). Kusini Pemba region had the

largest number of households (50,545; 32.0 percent) reported to use iron sheet, followed by Mjini Magharibi region (33,106; 21.0 percent) and the least number of households was reported in Kusini Unguja (15,762; 10.0 percent) (Table 6.1 & 6.2).

Compared to 2007/08 agricultural census, there was an increase of households using iron sheet for roofing from 49.1 percent in 2007/08 to 81.7 percent in 2019/20 and a notable decrease of households using grass/leaves from 38.1 percent in 2007/08 to 14.4 percent in 2019/20 agricultural year. Similar pattern was reported in households using grass and mud for roofing, the number has decreased from 10.6 percent in 2007/08 to 3.0 percent in 2019/20 agricultural year.

**Table 6.2: Percentage of Households reported Materials Used for Roof Construction by Region During 2019/20 Agricultural Year, Tanzania**

Region	Roof Materials						
	Iron Sheets	Tiles	Concrete	Asbestos	Grass/Leaves	Grass & mud	Other
Dodoma	6.6	5.8	4.1	2.5	2.6	25.6	30.1
Arusha	2.4	-	-	6.3	4.2	9.0	-
Kilimanjaro	4.6	2.3	-	-	0.6	0.4	1.6
Tanga	4.5	10.3	-	8.6	5.4	0.6	22.3
Morogoro	5.4	3.1	-	15.7	6.1	2.5	2.2
Pwani	2.7	2.9	-	-	4.1	0.8	2.2
Dar-es-salaam	6.4	23.6	92.5	-	0.2	-	-
Lindi	2.5	1.0	-	-	6.5	1.3	1.0
Mtwara	3.6	4.1	-	3.8	6.2	5.2	-
Ruvuma	4.2	-	-	-	5.3	3.0	2.0
Iringa	2.8	5.5	-	2.7	2.5	1.4	-
Mbeya	5.5	1.5	-	15.2	2.7	2.1	1.0
Singida	3.4	3.7	-	-	1.5	15.3	19.6
Tabora	3.7	-	-	4.6	11.5	4.9	5.1
Rukwa	2.6	1.6	-	-	4.1	4.0	-
Kigoma	4.6	6.2	-	-	5.2	1.0	2.7
Shinyanga	2.3	0.4	3.4	10.2	4.0	5.4	3.9
Kagera	6.9	3.8	-	6.9	3.7	2.1	3.8
Mwanza	5.5	5.6	-	12.2	4.9	1.4	-
Mara	3.0	-	-	4.0	4.0	1.4	0.2
Manyara	3.1	11.6	-	1.3	5.2	8.6	1.8
Njombe	2.5	1.1	-	-	0.4	0.3	-
Katavi	1.0	0.6	-	0.7	1.3	0.3	0.3
Simiyu	2.6	2.8	-	5.5	1.2	2.7	-
Geita	3.9	1.2	-	-	2.4	0.2	-
Songwe	3.7	1.2	-	-	4.4	0.4	-
Mainland	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Kaskazini Unguja	18.9	41.6	-	-	7.7	-	-
Kusini Unguja	10.0	58.4	-	100.0	6.7	-	-
Mjini Magharibi	21.0	-	-	-	11.5	100.0	-
Kaskazini Pemba	18.1	-	-	-	56.3	-	-
Kusini Pemba	32.0	-	-	-	17.8	-	-
Zanzibar	100.0	100.0	-	100.0	100.0	100.0	-

## 6.2 Floor Materials

The census results show that, out of 7,837,405 agricultural households in Tanzania, majority of households (4,662,235; 59.5 percent) used earth/sand as the material for floor, followed by those used cement (2,838,249; 36.2 percent) and ceramic tiles terrazzo (204,989; 2.6 percent). Vinyl or asphalt strips was used by the least number of households (12,267; 0.2 percent) (Table 6.3).

**Table 6.3: Number and Percentage of Households by Type of Floor Material During 2019/20 Agricultural Year, Tanzania**

Floor Material	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Number	Percent	Number	Percent	Number	Percent
Earth/Sand	4,662,235	59.5	4,611,343	60.2	50,892	28.2
Wood Planks Bamboo Palm	42,354	0.5	42,354	0.6	-	-
Parquet/Polished Wood	24,482	0.3	24,482	0.3	-	-
Vinyl/Asphalt Strips	12,267	0.2	12,267	0.2	-	-
Ceramic Tiles/ Terrazzo	204,989	2.6	202,027	2.6	2,962	1.6
Cement	2,838,249	36.2	2,711,885	35.4	126,364	70.1
Other	52,828	0.7	52,828	0.7	-	-
Total	7,837,405	100.0	7,657,185	100.0	180,220	100.0

In Mainland Tanzania, out of 7,657,185 agricultural households, majority of households (4,611,343; 60.2 percent) used earth/sand as the material for floor, followed by those used cement (2,711,885; 35.4 percent) and ceramic tiles terrazzo (202,027; 2.6 percent). vinyl or asphalt strips was used by few households. (12,267; 0.2 percent). Dodoma region had the largest number of households reported to use earth/sand as the material (379,910; 8.2 percent), followed by Kagera (351,782; 7.6 percent) and Kigoma (281,218; 6.1 percent). Dar es Salaam region reported the least number of households (22,215; 0.5 percent) (Table 6.3 & 6.4).

In Tanzania Zanzibar, only three floor materials were used, these were earth/sand, cement and tiles. Out of total 180,220 agricultural households, majority of households (126,364; 70.1 percent) used cement for flooring, followed by those used earth/sand (50,892; 28.2 percent) and ceramic tiles (2,962; 1.6 percent). Tiles was used by the least number of households (185; 0.1 percent). Kusini Pemba region had the largest number of households (34,568; 27.40 percent) reported to use cement for floor, followed by Mjini Magharibi region (28,912; 22.9 percent) and the least number of households was reported in Kusini Unguja (14,349; 11.4 percent) (Table 6.3 & 6.4).

Comparatively, the use of earth/sand for floor in Tanzania has decreased from 81.8 percent in 2007/08 to 59.5 percent in 2019/20 agricultural years. Moreover, the use of cement as the flooring material has increased from 15.6 percent in 2007/08 to 36.2 percent in 2019/20 agricultural year

**Table 6.4: Percentage of Households Reported Materials Used for Floor Construction by Region During 2019/20 Agricultural Year, Tanzania**

Region	Floor Materials									
	Earth, Sand, Dung	Wood Planks, Bamboo, Palm	Parquet or Polished Wood	Vinyl or Asphalt Strips	Ceramic Tiles, Terrazzo	Cement	Other			
Dodoma	8.2	5.0	0.80	6.6	3.1	4.4	0.6			
Arusha	3.1	9.4	1.84	4.3	4.3	2.3	-			
Kilimanjaro	2.3	1.2	4.08	-	10.7	6.0	0.3			
Tanga	5.1	8.4	0.68	-	4.0	3.8	3.8			
Morogoro	5.2	2.7	1.15	4.2	1.9	5.9	16.1			
Pwani	2.4	4.8	7.94	-	5.1	3.5	0.2			
Dar-es-salaam	0.5	-	-	-	37.8	11.6	3.4			
Lindi	3.7	4.2	-	-	0.6	2.1	1.0			
Mtwara	4.3	1.3	2.29	2.0	1.4	3.8	-			
Ruvuma	4.7	1.9	4.35	-	0.7	4.0	5.8			
Iringa	2.1	2.5	-	-	2.3	3.9	4.6			
Mbeya	3.5	0.9	8.05	79.6	4.1	7.4	0.8			
Singida	3.8	1.4	0.81	-	1.5	2.4	49.3			
Tabora	5.6	1.7	9.33	-	1.5	3.9	-			
Rukwa	2.8	0.8	-	-	0.5	3.2	-			
Kigoma	6.1	2.9	5.46	-	3.2	2.1	1.2			
Shinyanga	3.1	1.6	3.09	-	0.8	2.1	0.3			
Kagera	7.6	9.3	-	-	4.2	4.2	7.6			
Mwanza	5.2	4.4	3.22	-	4.5	5.6	1.1			
Mara	3.4	1.7	2.51	-	1.8	2.7	0.1			
Manyara	4.4	4.6	22.98	-	3.0	2.1	0.4			
Njombe	1.6	0.8	1.26	3.3	0.8	3.1	-			
Katavi	1.1	-	-	-	0.4	0.9	1.4			
Simiyu	3.1	0.7	8.44	-	0.5	1.2	2.2			
Geita	3.7	4.4	-	-	0.8	3.4	-			
Songwe	3.3	23.6	11.74	-	0.6	4.3	-			
Mainland Tanzania	100.0	100.0	100.00	100.0	100.0	100.0	100.0			
Kaskazini Unguja	15.5	-	-	-	7.2	18.6	-			
Kusini Unguja	4.8	-	-	-	27.7	11.4	-			
Mjini Magharibi	11.2	-	-	-	41.8	22.9	-			
Kaskazini Pemba	30.3	-	-	-	11.3	19.8	-			
Kusini Pemba	38.2	-	-	-	12.0	27.4	-			
Tanzania Zanzibar	100.0	-	-	-	100.0	100.0	-			

### 6.3 Wall Materials

The census results show that, out of 7,837,405 agricultural households in Tanzania, majority of households (3,228,627; 41.2 percent) used baked bricks, followed by those used sun dried bricks (1,793,347; 22.9 percent) and poles and mud (1,633,146; 20.8 percent). grass was used by the least number of households (16,538; 0.2 percent) (Table 6.5).



**Table 6.5: Number and Percentage of Households by Type of Wall Material During 2019/20 Agricultural Year, Tanzania**

Wall Material	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Number	Percent	Number	Percent	Number	Percent
Grass	16,538	0.2	16,338	0.2	200	0.1
Poles and Mud	1,633,146	20.8	1,573,677	20.6	59,469	33.0
Sun-Dried Bricks	1,793,347	22.9	1,776,008	23.2	17,339	9.6
Baked Bricks	3,228,627	41.2	3,228,280	42.2	347	0.2
Wood Timber	45,874	0.6	45,874	0.6	-	-
Cement Blocks	950,860	12.1	886,204	11.6	64,656	35.9
Stones	28,511	0.4	10,498	0.1	18,013	10.0
Brick Stones	43,750	0.6	23,937	0.3	19,813	11.0
Other	96,754	1.2	96,372	1.3	382	0.2
<b>Total</b>	<b>7,837,405</b>	<b>100.0</b>	<b>7,657,185</b>	<b>100.0</b>	<b>180,220</b>	<b>100.0</b>

In Mainland Tanzania, out of 7,657,185 agricultural households, majority of households (3,228,280; 42.2 percent) used baked bricks, followed by those used sun dried bricks (1,776,008; 23.2 percent) and poles and mud (1,573,677; 20.6 percent). Stones were used by least number of households (10,498 0.1 percent). Ruvuma region had the largest number of households who reported to use baked bricks (294,180; 9.1percent), followed by Morogoro (283,572; 8.8 percent) and Kigoma (274,997; 8.5 percent). Dar es Salaam region reported the least number of households (4,559; 0.1 percent) (Table 6.5 & 6.6).

In Tanzania Zanzibar, out of 180,220 agricultural households, majority of households (64,656; 35.9 percent) used cement blocks for walling, followed by those used poles and mud (59,469; 33.0 percent) and bricks stones (19,813; 11.0 percent). Grass was used by the least number of households (200; 0.1 percent). Kaskazini Unguja region had the largest number of households (25,430; 39.3 percent) reported to used cement blocks, followed by Mjini Magharibi region (16,886; 26.1 percent) and the least number of households was reported in Kusini Unguja (6,928; 10.7 percent) (Table 6.5 & 6.6).

**Table 6.6: Percentage of Agricultural Households Reported Materials Used for Wall Construction by Region During 2019/20 Agricultural Year, Tanzania**

Region	Wall Materials									
	Grass	Poles and Mud	Sun-Dried Bricks	Baked Bricks	Wood, Timber	Cement Blocks	Stones	Brick stones	Other	
Dodoma	14.0	5.6	9.0	5.8	-	3.9	-	3.1	38.4	
Arusha	5.4	8.6	0.3	0.8	9.5	5.1	1.3	5.2	2.0	
Kilimanjaro	-	2.6	0.8	2.9	70.4	10.8	9.4	37.7	5.2	
Tanga	-	12.6	1.4	2.9	0.5	3.7	7.8	1.5	2.4	
Morogoro	3.5	5.4	0.7	8.8	0.9	2.7	1.9	5.9	4.7	
Pwani	9.1	8.1	0.1	0.3	0.7	8.5	3.7	-	2.2	
Dar-es-salaam	-	1.1	4.2	0.1	-	34.9	29.5	14.8	1.9	
Lindi	4.3	7.2	1.7	2.3	-	1.1	12.8	1.7	0.6	
Mtwara	1.5	7.0	5.1	2.1	-	3.9	9.2	1.0	0.6	
Ruvuma	4.6	0.8	1.1	9.1	4.4	0.3	-	3.0	0.4	
Iringa	2.7	2.2	2.7	2.9	-	0.4	-	1.1	30.1	
Mbeya	3.4	1.0	7.8	6.6	0.6	1.1	2.2	4.9	1.7	
Singida	-	2.3	8.3	1.8	0.4	3.2	-	-	0.8	
Tabora	1.6	2.9	11.7	3.1	-	1.7	-	1.3	2.0	
Rukwa	2.5	0.1	1.5	5.9	0.9	0.0	1.9	-	0.2	
Kigoma	3.7	1.6	2.5	8.5	1.3	0.2	3.7	-	1.0	
Shinyanga	1.0	1.3	8.0	0.8	-	1.5	-	1.7	0.8	
Kagera	15.2	14.5	3.7	5.1	1.0	2.4	-	1.1	1.6	
Mwanza	6.0	1.3	10.1	4.1	4.7	7.5	5.3	8.8	2.5	
Mara	1.4	3.4	2.8	3.4	-	2.2	5.8	-	0.1	
Manyara	6.0	8.7	0.7	3.3	3.0	1.4	1.8	0.4	0.5	
Njombe	1.4	0.1	0.4	4.6	0.3	0.2	-	0.9	-	
Katavi	3.7	0.2	0.3	2.1	0.2	0.0	-	-	0.3	
Simiyu	-	0.2	7.4	0.7	-	2.8	-	1.3	-	
Geita	4.0	1.0	5.4	4.7	0.5	0.6	3.6	-	-	
Songwe	5.0	0.2	2.4	7.2	0.6	0.1	-	4.4	-	
<b>Mainland Tanzania</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Kaskazini Unguja	65.0	5.4	0.8	-	-	39.3	7.3	6.9	-	
Kusini Unguja	35.0	3.7	16.6	-	-	10.7	28.3	0.3	88.2	
Mjini Magharibi	-	7.2	81.0	51.6	-	26.1	0.8	1.5	11.8	
Kaskazini Pemba	-	28.4	0.7	48.4	-	11.9	54.5	30.7	-	
<b>Kusini Pemba</b>	<b>-</b>	<b>55.3</b>	<b>0.9</b>	<b>-</b>	<b>-</b>	<b>11.9</b>	<b>9.0</b>	<b>60.7</b>	<b>-</b>	
<b>Tanzania Zanzibar</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>-</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

## 6.4 Toilet Facilities

The census results show that, during 2019/20 agricultural year, the most used toilet facility by agricultural households in Tanzania was a pit latrine without slab/open pit (3,971,653; 50.7 percent). This was followed by flush toilet with cistern (1,416,673; 18.1 percent) and pit latrine with slab/not washable (727,072; 9.3 percent), however, there were 569,986 households (7.3 percent) reported to have no toilet facility (Table 6.7).

**Table 6.7: Number and Percentage of Agricultural Households by Type of Toilet Facility During 2019/20 Agricultural Year, Tanzania**

Toilet Facility	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Number	Percent	Number	Percent	Number	Percent
No toilet/bush	569,986	7.3	537,042	7.0	32,944	18.3
Pit latrine without slab/open pit	3,971,653	50.7	3,954,214	51.6	17,439	9.7
Pit latrine with slab/not washable	727,072	9.3	714,549	9.3	12,523	6.9
Pit latrine with slab/washable	628,248	8.0	598,951	7.8	29,297	16.3
Ventilated improved pit latrine	264,475	3.4	254,961	3.3	9,514	5.3
Pour flush toilet	202,580	2.6	189,666	2.5	12,914	7.2
Flash toilet with cistern	1,416,673	18.1	1,352,053	17.7	64,620	35.9
Composting toilet/ECOSAN latrine	31,497	0.4	31,157	0.4	340	0.2
Other type	25,224	0.3	24,596	0.3	628	0.3
<b>Total</b>	<b>7,837,405</b>	<b>100.0</b>	<b>7,657,185</b>	<b>100.0</b>	<b>180,220</b>	<b>100.0</b>

In Mainland Tanzania, most of households reported to use pit latrine without slab/open pit (3,954,214; 51.6 percent), followed by those used flush toilet with cistern (1,352,053; 17.7 percent) and pit latrine with slab/not washable (714,549; 9.3 percent) while 7.0 percent had no toilet facility. Moreover, from a total of 3,954,214 households using pit latrine without slab/open pit in Mainland, Kagera region was leading (325,426; 8.2 percent), followed by Dodoma (283,011; 7.2 percent) and Kigoma (275,637; 7.0 percent). Dar es Salaam region had the least number of households (26,571; 0.7 percent) (Table 6.7 & 6.8).

In Tanzania Zanzibar, majority of households used flush toilet with cistern (64,620; 35.9 percent), followed by those used pit latrine with slab/washable (29,297; 16.3 percent), while 32,944 households (18.3 percent) reported to have no toilets facilities. Mjini Magharibi region had the largest number of households (21,076; 32.6 percent) reported to use flush toilet with cistern, followed by Kaskazini Pemba region (15,413; 23.9) while Kusini Unguja had a least number of agricultural households (4,815; 7.5 percent) (Table 6.7 & 6.8).

**Table 6.8: Percentage of Agricultural Households by Type of Toilet Facility and Region During 2019/20 Agricultural Year, Tanzania**

Region	No toilet/bush	Pit latrine without slab/Open pit	Pit latrine with slab /Not washable	Pit latrine with slab /washable	Ventilated improved pit latrine	Pour Flush toilet	Flash toilet with cistern	Composting toilet/EC OSAN latrine	Other
Dodoma	3.6	7.2	11.4	4.3	4.9	2.9	6.1	1.1	0.0
Arusha	11.8	1.8	3.3	5.0	5.0	5.9	0.5	9.3	0.0
Kilimanjaro	2.2	2.0	3.7	4.2	7.3	5.8	8.6	14.2	5.4
Tanga	3.4	3.6	5.0	4.6	4.0	4.1	8.0	1.0	4.3
Morogoro	0.7	5.1	2.9	7.1	6.0	8.6	8.1	6.1	4.5
Pwani	1.5	2.7	5.6	3.9	0.9	3.1	2.2	0.8	0.7
Dar Es Salaam	1.1	0.7	2.7	12.2	12.0	31.3	14.6	3.5	3.1
Lindi	1.0	4.4	2.1	2.0	3.8	0.2	0.9	0.6	5.5
Mtwara	1.3	5.1	4.3	4.3	5.6	1.8	1.6	0.0	0.4
Ruvuma	1.2	4.3	4.6	4.1	0.9	2.8	6.3	9.3	3.0
Iringa	0.9	1.7	1.7	5.1	2.2	7.1	5.5	0.0	3.2
Mbeya	2.9	3.2	5.8	6.4	4.1	7.6	9.3	1.3	25.9
Singida	4.3	4.8	1.1	1.6	1.9	1.2	2.6	0.0	3.8
Tabora	11.3	6.0	3.2	2.8	2.6	0.2	1.8	9.0	0.0
Rukwa	1.2	4.2	1.4	1.2	0.1	0.2	2.2	0.0	0.7
Kigoma	0.9	7.0	2.3	2.1	1.4	4.1	2.0	0.0	3.8
Shinyanga	7.3	2.8	3.8	1.2	3.1	0.9	0.6	0.0	6.2
Kagera	5.9	8.2	9.2	5.2	4.3	0.9	0.9	1.6	13.1
Mwanza	5.9	5.2	5.3	5.3	6.2	2.8	4.8	38.4	2.9
Mara	6.9	3.0	2.6	2.6	2.3	1.3	2.5	0.0	6.2
Manyara	7.8	3.9	4.6	4.3	2.8	1.0	0.7	1.2	1.9
Njombe	0.3	1.4	4.1	4.8	5.7	3.5	1.9	0.0	0.0
Katavi	1.2	1.1	0.8	0.8	0.5	1.3	1.0	0.0	1.8
Simiyu	5.0	2.8	2.3	0.6	0.4	0.3	1.5	2.6	3.4
Geita	8.7	3.2	2.9	2.3	6.3	0.5	3.1	0.0	0.0
Songwe	1.6	4.7	3.2	2.1	5.8	0.7	2.7	0.0	0.0
<b>Mainland Tanzania</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Kaskazini Unguja	11.7	10.7	26.6	19.5	10.4	34.1	17.3	0.0	47.8
Kusini Unguja	1.5	8.5	12.9	25.8	10.4	4.8	7.5	0.0	0.0
Mjini Magharibi	0.2	38.9	20.1	11.1	4.2	13.6	32.6	0.0	8.1
Kaskazini Pemba	46.2	18.6	8.7	12.9	14.1	3.6	23.9	35.0	19.1
Kusini Pemba	40.4	23.3	31.7	30.8	60.8	44.0	18.8	65.0	25.0
<b>Tanzania Zanzibar</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

## 6.5 Source of Energy for Cooking

The 2019/20 NSCA results show that, majority of agricultural households (6,324,643; 80.7 percent) reported to use firewood as the main source of energy for cooking, followed by 1,170,040 households (14.9 percent) that reported to use charcoal and 181,193 households (2.3 percent) that used gas (industrial). The remaining sources (electricity, solar, biogas, gas, paraffin/kerosene, crop residual and generator/private source) jointly accounted for 2.2 percent of agricultural households (Table 6.9).

**Table 6.9: Number and Percentage of Agricultural Households Reported Main Source of Energy for Cooking During 2019/20 Agricultural Year, Tanzania**

Main Source	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Number	Percent	Number	Percent	Number	Percent
Mains electricity	24,839	0.3	23,852	0.3	987	0.5
Solar	40,964	0.5	40,630	0.5	334	0.2
Gas (Household biogas)	57,367	0.7	56,679	0.7	688	0.4
Gas (Industrial)	181,193	2.3	178,543	2.3	2,650	1.5
Paraffin/kerosene	5,608	0.1	5,143	0.1	465	0.3
Charcoal	1,170,040	14.9	1,146,838	15.0	23,202	12.9
Firewood	6,324,643	80.7	6,172,984	80.6	151,659	84.2
Crop Residues	12,446	0.2	12,446	0.2	-	-
Livestock dung	3,303	0.04	3,303	-	-	-
Natural Gas	-	-	-	-	-	-
Generator/Private source	752	0.01	752	-	-	-
Other	16,253	0.2	16,019	0.2	234	0.1
<b>Total</b>	<b>7,837,405</b>	<b>100.0</b>	<b>7,657,185</b>	<b>100.0</b>	<b>180,220</b>	<b>100.0</b>

In Mainland Tanzania, out of total households, 6,172,984 households (80.6 percent) reported to use firewood as the main source of energy for cooking, followed by those using charcoal (1,146,838; 15.0 percent) and industrial gas (178,543; 2.3). Dodoma region had the largest number of households (452,999; 7.3 percent) reported to use firewood as the main source of energy for cooking, followed by Kagera (449,557; 7.3 percent) and Mwanza (333,853; 5.4 percent), while Dar es Salaam had the least number of households (36,616; 0.6 percent) (Table 6.9 & 6.10).

In Tanzania Zanzibar, out of total households, 151,659 households (84.2 percent) reported to use firewood as the main source of energy for cooking, followed by those using charcoal (23,202; 12.9 percent) and industrial gas (2,650; 1.5 percent). Kusini Pemba region had the largest number of households (45,130; 29.8 percent) reported to use firewood as the main source of energy for cooking, followed by Kaskazini Pemba (36,101; 23.8 percent), while Kusini Unguja had the least number of households (15,092; 10.0 percent) (Table 6.9 & 6.10).

**Table 6.10: Percentage of Agricultural Households Reported Main Source of Energy for Cooking by Region During 2019/20 Agricultural Year, Tanzania**

Region	Mains electricity	Solar	Gas (household biogas)	Gas (Industrial)	Paraffin/kerosene	Charcoal	Firewood	Crop Residues	Livestock dung	Natural Gas	Generator/Private source	Other
Dodoma	1.4	1.5	4.0	4.7	-	3.6	7.3	26.4	-	-	100.0	5.1
Arusha	3.6	4.9	2.2	11.9	3.1	0.5	3.0	2.9	29.0	-	-	1.9
Kilimanjaro	4.5	4.1	7.2	11.6	17.0	1.1	4.1	2.2	29.3	-	-	2.9
Tanga	2.3	1.8	4.0	2.2	-	3.9	4.8	7.5	4.7	-	-	2.1
Morogoro	19.7	7.6	5.0	5.4	24.4	9.4	4.6	3.7	-	-	-	-
Pwani	2.8	2.2	2.2	3.0	-	5.0	2.4	7.4	-	-	-	1.8
Dar Es Salaam	20.6	2.1	46.3	29.3	-	25.3	0.6	-	-	-	-	-
Lindi	-	3.5	0.4	0.8	-	2.9	3.1	-	-	-	-	-
Mtwara	1.9	5.5	0.3	1.5	-	1.9	4.5	2.2	-	-	-	1.9
Ruvuma	8.5	19.6	2.3	0.5	10.7	3.0	4.6	1.2	-	-	-	4.6
Iringa	-	0.6	-	1.7	8.6	2.2	2.9	-	-	-	-	-
Mbeya	10.3	-	2.9	8.8	4.0	6.3	4.6	-	-	-	-	13.0
Singida	-	4.4	3.1	1.0	-	2.1	3.9	11.1	-	-	-	3.3
Tabora	1.2	4.4	2.1	0.8	-	3.6	5.2	7.4	-	-	-	1.4
Rukwa	0.9	1.2	0.6	0.1	7.6	2.8	3.0	1.6	-	-	-	-
Kigoma	-	2.4	5.6	0.8	-	2.8	5.0	-	-	-	-	5.5
Shinyanga	1.9	2.8	1.8	0.7	2.1	1.8	2.9	2.8	-	-	-	-
Kagera	4.2	3.6	2.5	1.9	-	2.2	7.3	3.0	-	-	-	2.1
Mwanza	4.9	6.9	0.5	6.1	-	4.7	5.4	6.0	-	-	-	12.8
Mara	2.4	3.1	1.6	1.8	8.1	1.4	3.4	2.2	-	-	-	5.6
Manyara	3.0	5.6	0.4	3.8	12.2	2.2	3.8	8.0	4.8	-	-	1.7
Njombe	1.2	3.2	0.3	0.3	2.3	1.0	2.4	-	-	-	-	-
Katavi	0.3	1.3	-	0.2	-	1.9	0.9	0.6	-	-	-	0.5
Simiyu	1.6	3.2	1.0	0.3	-	1.0	2.7	0.9	9.4	-	-	10.9
Geita	0.9	0.8	0.9	0.2	-	4.0	3.5	-	-	-	-	20.7
Songwe	2.0	3.8	2.9	0.6	-	3.3	3.8	2.9	22.7	-	-	2.4
<b>Mainland Tanzania</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>-</b>	<b>100.0</b>	<b>100.0</b>
Kaskazini Unguja	6.9	-	35.8	2.5	11.0	4.1	19.9	-	-	-	-	20.5
Kusini Unguja	11.6	-	8.3	2.1	23.9	9.3	10.0	-	-	-	-	-
Mjini Magharibi	43.2	100.0	56.0	95.5	20.9	29.8	16.6	-	-	-	-	-
Kaskazini Pemba	19.3	-	-	-	-	18.6	23.8	-	-	-	-	79.5
Kusini Pemba	19.1	-	-	-	44.3	38.2	29.8	-	-	-	-	-
<b>Tanzania Zanzibar</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.0</b>

## 6.6 Source of Energy for Lighting

The 2019/20 NSCA results show that, majority of agricultural households (3,189,141; 40.7 percent) reported to use solar as the source of energy for lighting, followed by 2,232,833 households (28.5 percent) that reported to use torch/rechargeable lamp and 1,554,824 households (19.8 percent) that used main electricity. The least number of households (6,625; 0.1 percent) were reported to use biogas (Table 6.11).

**Table 6.11: Number and Percentage of Agricultural Households Reported Main Source of Energy for Cooking during 2019/20 Agricultural Year, Tanzania**

Main Source	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Number	Percent	Number	Percent	Number	Percent
Mains electricity	1,554,824	19.8	1,488,539	19.4	66,285	36.8
Solar	3,189,141	40.7	3,171,862	41.4	17,279	9.6
Biogas	6,625	0.1	6,625	0.1	0	0.0
Hurricane Lamp	87,730	1.1	82,430	1.1	5,300	2.9
Pressure Lamp	38,772	0.5	35,711	0.5	3,061	1.7
Wick Lamp	541,994	6.9	459,244	6.0	82,750	45.9
Candles	34,166	0.4	34,066	0.4	100	0.1
Firewood	61,307	0.8	61,088	0.8	219	0.1
Torch/Rechargeable Lamp	2,232,833	28.5	2,228,489	29.1	4,344	2.4
Generator/Private source	14,153	0.2	13,440	0.2	713	0.4
Other	75,868	1.0	75,702	1.0	166	0.1
<b>Total</b>	<b>7,837,405</b>	<b>100.0</b>	<b>7,657,185</b>	<b>100.0</b>	<b>180,220</b>	<b>100.0</b>

In Mainland Tanzania, majority of households (3,171,862; 41.4 percent) reported to use solar as the main source of energy for lighting, followed by those using torch/rechargeable lamp (2,228,489; 29.1 percent) and main electricity (1,488,539; 19.4). Mtwara region had the largest number of households (203,598; 6.4 percent) reported to use solar as the main source of energy for lighting, followed by Tabora (201,314; 6.35 percent) and Kagera (200,099; 6.31 percent), while Katavi had the least number of households (43,408; 1.4 percent) (Table 6.11 & 6.12).

In Tanzania Zanzibar, majority of households (82,750; 45.9 percent) reported to use wick lamp as the main source of energy for lighting, followed by those using main electricity (66,285; 36.8 percent) and solar (17,279; 9.6 percent). Kusini Pemba region had the largest number of households (26,352; 31.8 percent) reported to use wick lamp as the main source of energy for lighting, followed by Kaskazini Pemba (24,333; 29.4 percent), while Kusini Unguja had the least number of households (4,554; 5.5 percent) (Table 6.11 & 6.12).

**Table 6.12: Percentage of Agricultural Households Reported Main Source of Energy for Lighting by Region During 2019/20 Agricultural Year, Tanzania**

Region	Mains electricity	Solar	Biogas	Hurricane Lamp	Pressure Lamp	Wick Lamp	Candles	Firewood	Torch/ Rechargeable Lamp	Generator/Private source	Other
Dodoma	3.1	5.8	-	3.9	-	1.1	-	7.2	11.8	4.5	6.5
Arusha	3.2	2.7	4.4	4.8	3.1	1.9	2.8	3.6	3.0	-	1.8
Kilimanjaro	9.2	2.4	-	9.3	10.0	6.3	6.0	2.5	1.6	1.2	1.8
Tanga	5.4	2.9	-	3.7	22.1	24.1	1.6	0.6	2.3	24.0	1.7
Morogoro	5.7	4.9	3.8	6.4	17.4	5.2	5.1	4.1	5.9	0.9	1.3
Pwani	3.2	2.5	-	1.2	6.4	7.6	1.3	2.9	2.1	6.4	0.2
Dar Es Salaam	19.5	1.5	35.2	24.4	2.4	1.3	46.3	1.5	1.3	-	1.6
Lindi	1.8	3.9	-	1.5	3.2	2.3	-	0.8	2.4	-	14.9
Mtwara	1.9	6.4	-	1.7	1.9	2.1	0.7	7.1	2.5	2.8	0.8
Ruvuma	3.5	6.2	11.2	2.2	0.7	0.2	1.6	4.2	3.3	-	4.7
Iringa	3.4	3.0	-	6.7	-	1.6	8.9	2.8	1.9	-	4.8
Mbeya	8.8	3.3	3.4	3.1	3.4	2.2	9.3	2.6	5.5	-	6.5
Singida	1.7	4.2	7.9	1.8	1.8	0.4	5.5	1.5	4.4	20.1	8.6
Tabora	2.4	6.3	-	1.3	0.4	1.3	-	7.5	5.2	3.1	6.1
Rukwa	1.8	2.7	-	4.7	3.1	10.4	-	3.6	2.2	1.3	2.3
Kigoma	2.9	4.8	-	0.7	-	3.0	-	3.8	5.8	2.6	10.3
Shinyanga	1.3	3.1	-	1.5	0.4	0.3	2.4	2.1	3.6	-	1.5
Kagera	3.8	6.3	13.3	10.8	11.5	21.6	-	6.9	4.6	12.1	6.3
Mwanza	4.2	6.0	-	2.2	3.1	1.1	1.6	3.6	6.3	1.9	3.6
Mara	1.8	3.9	3.0	4.6	0.9	3.4	-	1.7	2.7	1.4	1.0
Manyara	2.7	3.8	14.5	1.1	1.3	0.5	-	12.4	4.3	7.5	4.3
Njombe	2.3	2.7	2.4	1.7	-	0.4	3.2	2.9	1.5	-	1.3
Katavi	0.7	1.4	0.9	0.1	0.3	0.1	0.4	0.2	1.0	2.8	0.4
Simiyu	1.3	2.0	-	-	-	0.1	1.4	4.0	4.2	-	0.8
Geita	1.4	4.1	-	0.2	-	0.2	-	4.3	4.9	1.5	3.7
Songwe	3.0	3.0	-	0.5	6.4	1.4	2.0	5.6	5.6	6.0	3.0
<b>Mainland Tanzania</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Kaskazini Uguja	12.1	29.9	-	2.8	2.5	21.0	-	-	15.6	17.1	-
Kusini Uguja	12.8	11.7	-	12.4	-	5.5	55.0	78.5	37.4	-	-
Mjini Magharibi	27.9	23.8	-	20.2	11.1	12.3	45.0	21.5	23.8	82.9	-
Kaskazini Pemba	17.6	16.8	-	25.1	8.8	29.4	-	-	6.2	-	-
Kusini Pemba	29.6	17.7	-	39.5	77.7	31.8	-	-	17.0	-	100.0
<b>Tanzania Zanzibar</b>	<b>100.0</b>	<b>100.0</b>	<b>-</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>



## 6.7 Access to Drinking Water

### 6.7.1 Wet Season

The 2019/20 NSCA results show that, majority of agricultural households (3,250,900; 41.5 percent) reported to use piped water as the main source of drinking water during the wet season, followed by 1,003,934 households (12.8 percent) that reported to use unprotected well and 976,314 households (12.5 percent) that used surface water. The least number of households (6,016; 0.1 percent) were reported to use bottled water (Table 6.13).

**Table 6.13: Number and Percentage of Agricultural Households Reported Main Source of Drinking Water in Wet Season During 2019/20 Agricultural Year, Tanzania**

Source of Drinking Water	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Number	Percent	Number	Percent	Number	Percent
Piped water	3,250,900	41.5	3,110,262	40.6	140,638	78.0
Protected well	832,783	10.6	808,296	10.6	24,487	13.6
Protected/covered spring	104,403	1.3	104,036	1.4	367	0.2
Unprotected Well	1,003,934	12.8	991,434	12.9	12,500	6.9
Unprotected spring	333,257	4.3	333,200	4.4	57	0.0
Surface water (lake/dam/river/stream)	976,314	12.5	975,178	12.7	1,136	0.6
Covered rainwater catchment	83,129	1.1	83,072	1.1	57	0.03
Uncovered rainwater catchment	156,270	2.0	156,216	2.0	54	0.03
Water Vendor	53,199	0.7	53,058	0.7	141	0.1
Tanker truck	8,489	0.1	8,375	0.1	114	0.1
Bottled water	6,016	0.1	6,016	0.1	-	-
Borehole	131,373	1.7	130,706	1.7	667	0.4
Other	897,340	11.4	897,340	11.7	-	-
<b>Total</b>	<b>7,837,405</b>	<b>100.0</b>	<b>7,657,185</b>	<b>100.0</b>	<b>180,220</b>	<b>100.0</b>

In Mainland Tanzania, majority of households (3,110,262; 40.6 percent) reported to use piped water as the main source of drinking water during the wet season, followed by those using unprotected well (991,434; 12.9 percent) and surface water (975,178; 12.7). Dar es Salaam region had the largest number of households (328,217; 10.6 percent) reported to use piped water as the main source of drinking water during the wet season, followed by Kilimanjaro (260,585; 8.4 percent) and Morogoro (245,601; 7.9 percent), while Katavi had the least number of households (34,763; 1.1 percent) (Table 6.13 & 6.14).

In Tanzania Zanzibar, majority of households (140,638; 78.0 percent) reported to use piped water as the main source of drinking water during the wet season, followed by those using protected well (24,487; 13.6 percent) and unprotected well (12,500; 6.9 percent). Kusini Pemba region had the largest number of households (50,257; 35.7 percent) reported to use piped water as the main source of drinking water during the wet season, followed by Kaskazini Pemba (31,654; 22.5 percent), while Kusini Unguja had the least number of households (11,678; 8.3 percent) (Table 6.13 & 6.14).

**Table 6.14: Percentage Distribution of Agricultural Households Reported Main Source of Drinking Water in Wet Season by Region During 2019/20 Agricultural Year, Tanzania**

Region	Main Source of Drinking water													
	Piped water	Protected well	Protected/covered spring	Unprotected Well	Unprotected spring	Surface water (lake/dam/river/stream)	Covered rainwater catchment	Uncovered rainwater catchment	Water Vendor	Tanker truck	Bottled water	Borehole	Other	
Dodoma	6.6	2.9	13.9	9.2	5.4	8.0	0.9	7.7	7.4	-	-	9.4	5.6	
Arusha	4.6	1.2	2.6	0.1	1.6	4.8	1.6	0.9	2.2	4.4	-	0.2	1.0	
Kilimanjaro	8.4	0.6	0.7	0.2	2.6	0.3	2.2	0.6	3.4	-	-	1.4	0.9	
Tanga	4.3	1.4	1.3	2.6	5.8	5.8	1.2	2.4	3.9	2.1	-	1.0	10.4	
Morogoro	7.9	7.8	2.2	2.6	3.8	3.8	3.1	2.1	5.5	-	-	9.7	0.6	
Pwani	2.4	2.8	2.7	5.8	2.2	1.3	3.5	9.6	2.6	2.0	-	2.1	2.1	
Dar Es Salaam	10.6	3.0	3.3	0.4	0.5	0.3	3.7	2.0	42.8	67.2	80.4	0.5	1.1	
Lindi	2.5	2.7	1.3	3.0	1.9	1.9	4.8	2.6	1.3	-	-	0.7	7.1	
Mtwara	2.9	6.9	4.9	4.5	4.4	2.4	38.0	19.1	-	-	-	0.1	1.0	
Ruvuma	5.4	6.7	6.0	2.9	5.2	3.9	0.6	0.8	-	-	-	8.3	0.9	
Iringa	2.8	2.0	0.8	1.5	1.5	4.0	0.7	-	0.2	-	-	3.3	4.7	
Mbeya	6.8	5.1	3.3	2.1	3.1	3.8	4.6	4.4	1.7	17.5	3.6	0.6	4.6	
Singida	2.4	2.1	2.1	3.5	5.0	5.6	7.4	18.5	-	-	-	0.5	4.2	
Tabora	1.4	6.8	0.7	17.5	1.2	4.2	5.0	1.9	9.3	2.4	-	6.6	3.5	
Rukwa	2.2	2.1	4.7	3.4	4.1	2.5	1.1	5.8	3.0	-	2.2	12.2	3.1	
Kigoma	4.3	4.7	16.0	3.5	5.6	7.2	0.7	1.0	0.5	-	-	6.3	2.9	
Shinyanga	2.0	4.8	0.9	4.6	1.9	3.7	0.1	0.6	0.5	-	-	0.1	1.4	
Kagera	2.5	3.6	8.3	4.0	11.7	12.0	5.6	2.0	1.0	-	4.3	10.5	16.6	
Mwanza	3.4	7.4	8.4	10.2	7.9	1.2	2.2	3.2	2.5	4.4	-	9.2	8.2	
Mara	1.3	2.1	4.0	5.2	4.6	3.6	2.2	3.1	-	-	-	0.4	7.1	
Manyara	4.7	1.0	1.1	2.6	1.9	7.1	2.2	2.5	1.5	-	-	-	0.8	
Njombe	3.3	2.3	1.7	1.2	2.5	1.0	3.2	2.4	-	-	-	0.3	0.0	
Katavi	1.1	0.8	1.0	1.7	0.8	0.9	0.2	0.0	2.7	-	-	0.4	0.4	
Simiyu	1.5	6.9	1.8	1.4	0.8	2.4	1.2	2.0	-	-	2.4	6.2	2.6	
Geita	1.3	9.5	4.3	5.0	12.0	0.7	-	0.4	4.7	-	-	8.4	4.1	
Songwe	3.4	2.6	2.3	1.3	2.1	7.6	4.0	4.4	3.4	-	7.2	1.4	5.0	
<b>Mainland Tanzania</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	
Kaskazini Unguja	19.3	12.3	-	6.6	-	4.2	-	-	100.0	100.0	-	57.0	-	
Kusini Unguja	8.3	16.7	88.0	10.7	100.0	-	100.0	100.0	-	-	-	-	-	
Mjini Magharibi	14.2	51.5	12.0	16.9	-	95.8	-	-	-	-	-	7.2	-	
Kaskazini Pemba	22.5	15.0	-	43.7	-	-	-	-	-	-	-	-	-	
Kusini Pemba	35.7	4.5	-	22.2	-	-	-	-	-	-	-	35.8	-	
<b>Tanzania Zanzibar</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>-</b>	<b>100.0</b>	<b>-</b>	

## 6.7.2 Dry Season

Majority of agricultural households (3,464,199; 44.2 percent) in Tanzania reported to use piped water as the main source of drinking water during the dry season, followed by 1,291,071 households (16.5 percent) that reported to use surface water and 1,214,606 households (15.5 percent) that used unprotected well. The least number of households (5,711; 0.1 percent) were reported to use bottled water (Table 6.15).

**Table 6.15: Number and Percentage of Agricultural Households Reported Main Source of Drinking Water in Dry Season During 2019/20 Agricultural Year, Tanzania**

Source of Drinking Water	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Number	Percent	Number	Percent	Number	Percent
Piped water	3,464,199	44.2	3,324,552	43.4	139,647	77.5
Protected well	940,887	12.0	916,217	12.0	24,670	13.7
Protected/covered spring	129,045	1.6	128,348	1.7	697	0.4
Unprotected well	1,214,606	15.5	1,201,425	15.7	13,181	7.3
Unprotected spring	363,820	4.6	363,766	4.8	54	0.03
Surface water (lake/dam/river/stream)	1,291,071	16.5	1,290,144	16.8	927	0.5
Covered rainwater catchment	49,463	0.6	49,463	0.6	-	-
Uncovered rainwater catchment	77,250	1.0	77,196	1.0	54	0.03
Water vendor	88,661	1.1	88,520	1.2	141	0.1
Tanker truck	13,756	0.2	13,578	0.2	178	0.1
Bottled water	5,711	0.1	5,711	0.1	-	-
Borehole	152,690	1.9	152,023	2.0	667	0.4
Other	46,247	0.6	46,247	0.6	-	-
<b>Total</b>	<b>7,837,405</b>	<b>100.0</b>	<b>7,657,185</b>	<b>100.0</b>	<b>180,220</b>	<b>100.0</b>

In Mainland Tanzania, majority of households (3,324,552; 43.4 percent) reported to use piped water as the main source of drinking water during the dry season, followed by those using surface water (1,290,144; 16.8 percent) and unprotected well (1,201,425; 15.7). Dar es Salaam region had the largest number of households (334,336; 10.1 percent) reported to use piped water as the main source of drinking water during the dry season, followed by Kilimanjaro (263,615; 7.9 percent) and Morogoro (243,623; 7.3 percent), while Mara had the least number of households (29,229; 0.9 percent) (Table 6.15 & 6.16).

In Tanzania Zanzibar, majority of households (139,647; 77.5 percent) reported to use piped water as the main source of drinking water during the dry season, followed by those using protected well (24,670; 13.7 percent) and unprotected well (13,181; 7.3 percent). Kusini Pemba region had the largest number of households (49,713; 35.6 percent) reported to use piped water as the main source of drinking water during the dry season, followed by Kaskazini Pemba (31,243; 22.4 percent), while Kusini Unguja had the least number of households (11,563; 8.3 percent) (Table 6.15 & 6.16).

**Table 6.16: Percentage Distribution of Agricultural Households Reported Main Source of Drinking Water in Dry Season by Region During 2019/20 Agricultural Year, Tanzania**

Region	Piped water	Protected well	Protected/covered spring	Unprotected Well	Unprotected spring	Surface water (lake/dam/river/stream)	Covered rainwater catchment	Uncovered rainwater catchment	Water Vendor	Tanker truck	Bottled water	Borehole	Other
Dodoma	6.5	3.2	9.7	10.4	5.6	5.9	1.2	10.1	6.3	-	2.7	9.1	8.4
Arusha	4.5	1.3	2.4	0.1	1.6	3.4	1.6	-	1.6	7.1	-	0.4	1.6
Kilimanjaro	7.9	0.6	1.0	0.2	2.7	0.4	1.3	1.0	2.0	8.0	-	1.5	1.0
Tanga	4.7	2.2	3.9	3.1	6.5	7.6	1.5	2.7	6.4	6.1	-	1.0	2.5
Morogoro	7.3	6.9	1.9	2.2	3.5	3.3	3.4	2.2	4.0	-	3.0	9.0	1.3
Pwani	2.6	3.0	3.1	5.6	1.9	1.2	0.8	1.4	4.2	-	-	1.6	1.6
Dar Es Salaam	10.1	2.5	2.7	0.5	0.2	0.2	2.6	-	31.4	60.4	69.1	0.6	1.9
Lindi	3.5	3.4	0.9	2.9	2.2	2.2	4.1	0.8	5.4	0.9	-	1.8	3.1
Mtwara	3.1	6.0	3.1	3.7	3.8	3.0	36.6	32.7	0.9	-	-	0.3	-
Ruvuma	5.0	6.1	5.6	2.4	4.3	3.5	0.7	-	0.1	-	-	7.6	-
Iringa	3.0	2.0	1.1	2.4	2.2	3.8	0.6	-	0.1	-	-	3.3	0.5
Mbeya	6.6	5.3	5.3	2.2	3.7	3.9	7.9	1.2	3.3	10.8	3.8	1.4	7.9
Singida	2.5	2.3	1.5	4.8	3.7	4.5	11.8	34.0	-	-	-	0.6	10.1
Tabora	1.5	6.4	0.7	15.9	0.9	3.6	2.8	0.5	7.5	-	-	6.4	3.3
Rukwa	2.2	2.6	6.9	3.3	5.5	2.4	2.0	0.2	2.5	-	2.3	11.7	1.3
Kigoma	4.1	4.5	12.3	3.3	5.3	6.6	0.6	-	-	-	8.0	5.0	4.1
Shinyanga	1.9	4.7	1.0	4.5	1.9	2.6	0.6	0.3	0.4	-	-	0.1	8.0
Kagera	3.3	3.4	13.8	4.4	11.3	15.5	9.7	2.7	0.6	4.6	4.5	9.0	17.7
Mwanza	3.9	8.5	6.9	10.0	6.3	1.6	-	1.3	4.2	-	-	11.2	7.9
Mara	0.9	3.0	4.1	5.0	4.7	6.9	3.0	1.0	0.2	-	-	1.2	3.3
Manyara	4.7	1.1	0.9	2.0	1.9	5.5	2.0	2.7	1.7	2.1	-	-	0.4
Njombe	3.0	2.1	1.8	0.9	2.9	1.0	2.7	2.5	-	-	4.0	0.1	0.6
Katavi	1.1	0.7	0.8	1.5	0.8	0.7	0.6	0.1	1.6	-	-	0.2	0.8
Simiyu	1.6	6.8	2.0	1.6	0.8	2.4	-	0.3	0.8	-	2.5	6.5	2.4
Geita	1.2	8.9	4.1	5.2	13.5	0.6	-	0.3	6.6	-	-	9.2	3.0
Songwe	3.3	2.6	2.3	2.1	2.2	7.6	2.1	1.8	7.9	-	-	1.2	7.4
<b>Mainland Tanzania</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Kaskazini Unguja	19.1	11.9	-	9.0	-	10.4	-	-	100.0	100.0	-	57.0	-
Kusini Unguja	8.3	17.5	30.6	10.5	100.0	-	-	100.0	-	-	-	-	-
Mjini Magharibi	14.6	50.0	12.8	16.0	-	89.6	-	-	-	-	-	7.2	-
Kaskazini Pemba	22.4	16.1	-	42.3	-	-	-	-	-	-	-	-	-
Kusini Pemba	35.6	4.5	56.7	22.1	-	-	-	-	-	-	-	35.8	-
<b>Tanzania Zanzibar</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>-</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>-</b>	<b>100.0</b>	<b>-</b>

## 6.8 Distance to Source of Drinking Water

Distance to water sources during wet and dry season was almost the same regardless of the type of water source. The findings show that, during wet season, 5,806,789 households (74.1 percent) in Tanzania reported to obtain drinking water in a distance of less than 1 kilometer compared to 4,858,590 households (62.0 percent) during dry season in 2019/20 agricultural year. Few households (33,250; 0.4 percent) obtained drinking water from a distance of 10 kilometer and above during wet season compared to 81,417 households (1.0 percent) during dry season (Table 6.17 & 6.18).

Most households in Mainland Tanzania (5,629,890; 73.5 percent) obtained water in a distance of less than 1 kilometer during wet season compared to 4,682,221 households (61.1 percent) during dry season. In Tanzania Zanzibar, about 98 percent of households reported to obtain drinking water from a distance of less than 1 kilometer during both wet and dry seasons (Table 6.17 & 6.18).

**Table 6.17: Number and Percentage of Agricultural Households Reported Distance to Source of Drinking Water in Wet Season by Region during 2019/20 Agricultural Year**

Distance (Km)	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Number	Percent	Number	Percent	Number	Percent
Less than 1km	5,806,789	74.1	5,629,890	73.5	176,899	98.2
1.00 - 1.99 Km	1,172,740	15.0	1,170,312	15.3	2,428	1.3
2.00 - 2.99 Km	492,612	6.3	491,850	6.4	762	0.4
3.00 - 4.99 Km	235,212	3.0	235,212	3.1	-	-
5.00 - 9.99 Km	96,806	1.2	96,806	1.3	-	-
10 Km and above	33,250	0.4	33,120	0.4	130	0.1
<b>Total</b>	<b>7,837,407</b>	<b>100.0</b>	<b>7,657,190</b>	<b>100.0</b>	<b>180,217</b>	<b>100.0</b>

**Table 6.18: Number and Percentage of Agricultural Households Reported Distance to Source of Drinking Water in Dry Season by Region during 2019/20 Agricultural Year, Tanzania**

Distance (Km)	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Number	Percent	Number	Percent	Number	Percent
Less than 1 km	4,858,590	62.0	4,682,221	61.1	176,369	97.9
1.00 - 1.99 Km	1,434,353	18.3	1,431,781	18.7	2,572	1.4
2.00 - 2.99 Km	743,196	9.5	742,528	9.7	668	0.4
3.00 - 4.99 Km	452,718	5.8	452,584	5.9	134	0.1
5.00 - 9.99 Km	267,130	3.4	267,023	3.5	107	0.1
10 Km and above	81,417	1.0	81,050	1.1	367	0.2
<b>Total</b>	<b>7,837,404</b>	<b>100.0</b>	<b>7,657,187</b>	<b>100.0</b>	<b>180,217</b>	<b>100.0</b>

## 6.9 Time Spent to Main Source of Drinking Water

The findings show that, during wet season, majority of households (4,884,803; 62.3 percent) spent less than 10 minutes to and from main source of drinking water in Tanzania while few households (1,336,433; 17.1 percent), spent 1 hour and above to and from main source of drinking water. In Mainland Tanzania, majority of households (4,718,375; 61.6 percent) had been spending less than 10 minutes to and from main source of drinking water and few households (76,394; 1.0 percent) spent 40 to 49 minutes during wet season. In Tanzania Zanzibar, majority of households (166,428; 92.3 percent) spent less than 10 minutes to and from main source of drinking water and few households (1,415; 0.8 percent) spent 20 to 29 minutes (Table 6.19).

**Table 6.19: Number and Percentage of Agricultural Households Reported Time Spent to and from Source of Drinking Water in Wet Season during 2018/19 Agricultural Year, Tanzania**

Time	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Number	Percent	Number	Percent	Number	Percent
Less than 10 Minutes	4,884,803	62.3	4,718,375	61.6	166,428	92.3
10.00 - 19.00	497,955	6.4	493,834	6.4	4,121	2.3
20.00 - 29.00	325,462	4.2	324,047	4.2	1,415	0.8
30.00 - 39.00	390,786	5.0	389,279	5.1	1,507	0.8
40.00 - 49.00	76,394	1.0	76,394	1.0	0	0.0
50.00 - 59.00	325,566	4.2	322,399	4.2	3,167	1.8
1 Hour and above	1,336,433	17.1	1,332,849	17.4	3,584	2.0
<b>Total</b>	<b>7,837,399</b>	<b>100.0</b>	<b>7,657,177</b>	<b>100.0</b>	<b>180,222</b>	<b>100.0</b>

The findings further show that, during dry season, majority of households (3,888,479; 49.6 percent) spent less than 10 minutes to and from main source of drinking water in Tanzania while few households (103,915; 1.3 percent), spent 40 to 49 minutes to and from main source of drinking water. In Mainland Tanzania, majority of households (3,722,755; 48.6 percent) had been spending less than 10 minutes to and from main source of drinking water and few households (103,915; 1.4 percent) spent 40 to 49 minutes during dry season. In Tanzania Zanzibar, majority of households (165,724; 92.0 percent) spent less than 10 minutes to and from main source of drinking water and few households (1,361; 0.8 percent) spent 20 to 29 minutes (Table 6.20).

**Table 6.20: Number and Percentage of Agricultural Households Reported Time Spent to and from Source of Drinking Water in Dry Season during 2018/19 Agricultural Year, Tanzania**

Time	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
	Number	Percent	Number	Percent	Number	Percent
Less than 10 Minutes	3,888,479	49.6	3,722,755	48.6	165,724	92.0
10.00 - 19.00	475,658	6.1	471,719	6.2	3,939	2.2
20.00 - 29.00	349,394	4.5	348,033	4.5	1,361	0.8
30.00 - 39.00	474,412	6.1	472,632	6.2	1,780	1.0
40.00 - 49.00	103,915	1.3	103,915	1.4	-	-
50.00 - 59.00	354,879	4.5	351,349	4.6	3,530	2.0
1 Hour and above	2,190,670	28.0	2,186,784	28.6	3,886	2.2
<b>Total</b>	<b>7,837,407</b>	<b>100.0</b>	<b>7,657,187</b>	<b>100.0</b>	<b>180,220</b>	<b>100.0</b>

Compared to 2007/08 agriculture census, the number of households that spent 1 hour and above to and from main source of drinking water during wet season in Tanzania has decreased from 20.0 percent in 2007/08 to 17.1 percent in 2019/20 agricultural year; whereas the number of household spending less than 10 minutes has increased from 24.4 percent in 2007/08 to 62.3 percent in 2019/20. Similar pattern was observed during dry season as the number of households that spent 1 hour and above decreased from 36.9 percent to 28.0 percent while households that spends less than 10 minutes has increased from 18.6 percent in 2007/08 to 49.6 percent in 2019/20.

### 6.10 Ownership of Assets

Ownership of assets is an important variable in assessing the household's economic well-being. The findings show that, telephone - mobile phone was owned by majority of agricultural households (6,387,758; 81.5 percent), followed by torch (4,964,248; 63.3 percent) and radio/cassette (3,743,660; 47.8 percent) during 2019/20 agricultural year. On the other hand, bajaji was owned by the least number of households (32,864; 0.4 percent) (Table 6.21).

In Mainland Tanzania, telephone - mobile phones were owned by majority of agricultural households (6,221,185; 81.2 percent), followed by torch (4,874,005; 63.7 percent) and radio/cassette (3,659,248; 47.8 percent), while *bajaji* (32,587; 0.4 percent) and telephone - landline (49,244; 0.6 percent) were owned by few households. In Tanzania Zanzibar, majority of agricultural households (166,573; 92.4 percent) owned mobile phones, followed by kerosene lamp (134,917 ;74.9 percent) and bicycle (96,449; 53.5 percent), while few households owned *bajaji* (277; 0.2 percent) (Table 6.21).

**Table 6.21: Percentage of Agricultural Households Reported Ownership of Assets During 2019/20 Agricultural Year, Tanzania**

Asset	Tanzania	Mainland Tanzania	Tanzania Zanzibar
Radio / cassette (music system)	47.8	47.8	46.8
Telephone (landline)	0.6	0.6	0.2
Telephone (mobile)	81.5	81.2	92.4
Pressing Iron	21.2	21.1	23.3
Wheelbarrow	7.0	7.1	3.3
Bicycle	41.8	41.5	53.5
Vehicle	2.6	2.6	4.1
Television	19.0	18.8	26.2
Refrigerator	6.2	5.9	18.5
Motor Cycle	12.4	12.4	13.8
Tricycle	0.4	0.4	0.2
Personal computer/laptop	2.2	2.2	2.9
Kerosene lamps	16.1	14.7	74.9
Solar panel	45.8	46.5	12.3
Generator	1.2	1.2	1.2
Electric/ gas stove	9.6	9.5	12.8
Torch	63.3	63.7	50.1

## 6.11 Food Consumption Pattern

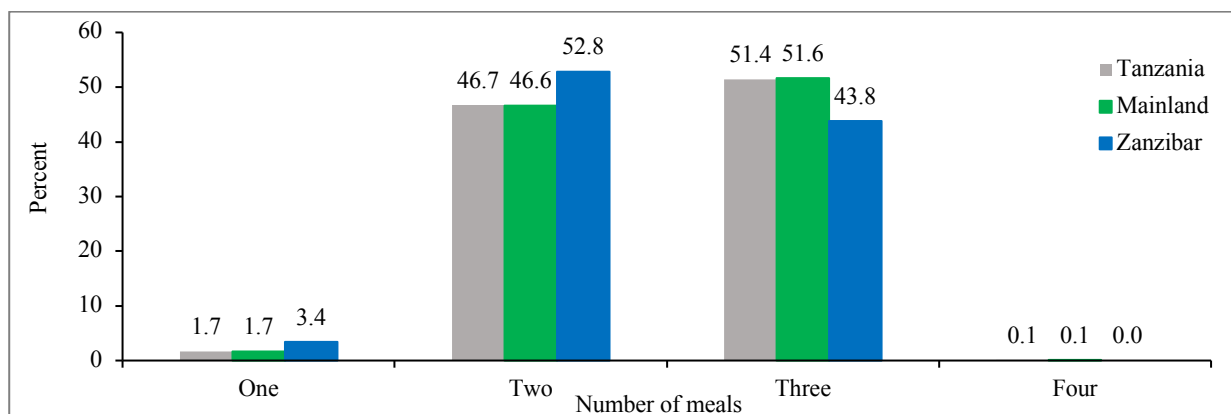
### 6.11.1 Number of Meals per Day

Census results show that, most of the agricultural households in Tanzania reported to take three meals per day (4,028,800; 51.4 percent), followed by those who take two meals per day (3,663,798; 46.7 percent) and (137,001; 1.7 percent) take meals once a day. However, very few agricultural households (0.1 percent) took four meals per day during 2019/20 agricultural year (Figure 6.1).

In comparison, the number of households that take three meals per day has increased by 6.4 percent from 45.0 percent in 2007/08 to 51.4 percent in 2019/20 agricultural years. On the other hand, the number of households that take two meals per day has decreased by 6.3 percent from 53.0 percent in 2007/08 to 46.7 percent in 2019/20.



**Figure 6.1: Percentage of Agricultural Households Reported Number of Meals Normally Taken per Day During 2019/20 Agricultural Year, Tanzania**



In Mainland Tanzania, the number of households reported to take three meals per day has increased from 41 percent in 2007/08 to 51.6 percent in 2019/20, while those taking one meal per day had decreased from 2 percent in 2007/08 to 1.7 percent in 2019/20 agricultural years. In addition, the households taking two meals per day has also decreased from 57 percent in 2007/08 to 46.6 percent in 2019/20 agricultural years.

In Tanzania Zanzibar, the number of households taking three meals per day has increased from 40 percent in 2007/08 to 43.8 percent in 2019/20, and those who have been taking one meal per day has also increased from 3 percent in 2007/08 to 3.4 percent in 2019/20 agricultural years. However, households taking two meals per day has decreased from 57 percent in 2007/8 to 52.8 percent in 2019/20 (Figure 6.1).

### 6.11.2 Meat Consumption

The Census results show that, 3,756,195 households (47.9 percent) reported to consume meat at least once in the last seven days during 2019/20 agricultural year, while 4,081,210 households (52.1 percent) reported not to eat meat at all. In addition, 41,299 households (0.5 percent) reported to consume meat in all days of the past seven days. However, 1,711,534 households (21.8 percent) reported to consume meat once in the last seven days (Table 6.22).

In comparison, percentage of households that reported to consume meat in all days of the last seven days has increased by 0.3 percent from 0.2 percent in 2007/08 to 0.5 percent in 2019/20 agricultural years.

**Table 6.22: Number and Percentage of Households Reported to Consume Meat in Last 7 days in 2007/08 and 2019/20 Agriculture Censuses, Tanzania**

Year	Number of Meals	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
		Number	Percent	Number	Percent	Number	Percent
2019/20	Not Eaten	4,081,210	52.1	3,963,355	51.8	117,854	65.4
	One	1,711,534	21.8	1,685,542	22.0	25,990	14.4
	Two	1,234,552	15.8	1,215,638	15.9	18,914	10.5
	Three	540,733	6.9	530,738	6.9	9,997	5.5
	Four	148,545	1.9	144,204	1.9	4,340	2.4
	Five	61,489	0.8	59,788	0.8	1,698	0.9
	Six	18,043	0.2	17,523	0.2	520	0.3
	Seven	41,299	0.5	40,393	0.5	904	0.5
	<b>Total</b>	<b>7,837,405</b>	<b>100</b>	<b>7,657,181</b>	<b>100</b>	<b>180,217</b>	<b>100</b>
2007/08	Not Eaten	2,210,009	37.9	2,122,106	37.2	87,903	66.5
	One	2,136,833	36.6	2,110,777	37.0	26,056	19.7
	Two	1,058,232	18.1	1,044,842	18.3	13,389	10.1
	Three	309,293	5.3	305,501	5.4	3,791	2.9
	Four	80,028	1.4	79,453	1.4	575	0.4
	Five	25,849	0.4	25,497	0.4	352	0.3
	Six	5,681	0.1	5,654	0.1	27	0.0
	Seven	12,596	0.2	12,498	0.2	99	0.1
	<b>Total</b>	<b>5,838,523</b>	<b>100</b>	<b>5,706,329</b>	<b>100</b>	<b>132,193</b>	<b>100</b>

In Mainland Tanzania, a total of 3,693,827 agricultural households (48.2 percent) reported to consume meat at least once in the last seven days, while 3,963,555 households (51.8 percent) reported not to eat meat at all. In addition, 40,393 households (0.5 percent) reported to consume meat in all days of the past seven days. However, 1,685,542 households (22.0 percent) reported to consume meat once in the last seven days.

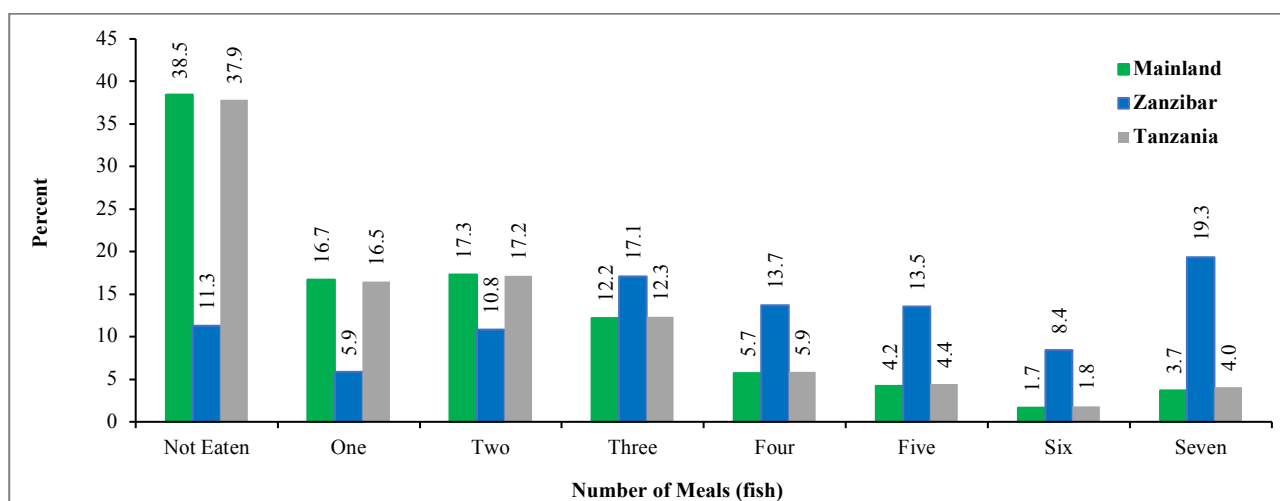
In Tanzania Zanzibar, a total of 62,363 agricultural households (34.6 percent) reported to consume meat at least once in the last seven days, while 117,854 households (65.4 percent) reported not to eat meat at all. In addition, 25,990 households (14.4 percent) reported to consume meat once in the past seven days. However, 904 households (0.5 percent) reported to consume meat in all days of the last seven days.

### 6.11.3 Fish Consumption

The Census results show that, 4,870,106 households reported to consume fish in the last seven days during 2019/20 agricultural year in Tanzania. Number of households that never ate fish in the last seven days was 2,967,299 (37.9 percent) while, 317,035 households (4.0 percent) reported to consume fish in all days of last seven days. However, 1,289,500 (16.5 percent) households ate fish once in the last seven days (Figure 6.2).

In comparison, the number of households that reported to consume fish in three days of the last seven days increased by 1.3 percent from 11.0 percent 2007/08 to 12.3 percent in 2019/20 agricultural year. Also, percentage of households that reported to consume fish in five days of last seven days has increased by 0.5 from 3.9 percent in 2007/8 to 4.4 percent in 2019/20. However, the percentage of households that reported to have consumed fish in all days of the last seven days has decreased by 0.1 percent from 4.1 percent in 2007/8 to 4.0 percent in 2019/20.

**Figure 6.2: Percentage of Agricultural Households Reported Number of Days the Household Consumed Fish in the Last Seven Days During 2019/20 Agricultural Year, Tanzania**



In Mainland Tanzania, a total of 4,710,279 agricultural households (61.5 percent) reported to consume fish at least once in the last seven days, while 2,946,906 households (38.5 percent) reported not to eat fish at all. In addition, 282,237 households (3.7 percent) reported to consume meat in all days of the past seven days. However, 1,278,940 households (16.7 percent) reported to consume fish once in the last seven days.

In Tanzania Zanzibar, a total of 159,827 agricultural households (88.7 percent) reported to consume fish at least once in the last seven days, while 20,391 households (11.3 percent) reported not to eat fish at all. In addition, 10,560 households (5.9 percent) reported to consume fish once in the past

seven days. However, 34,798 households (19.3 percent) reported to consume meat in all days of the last seven days.

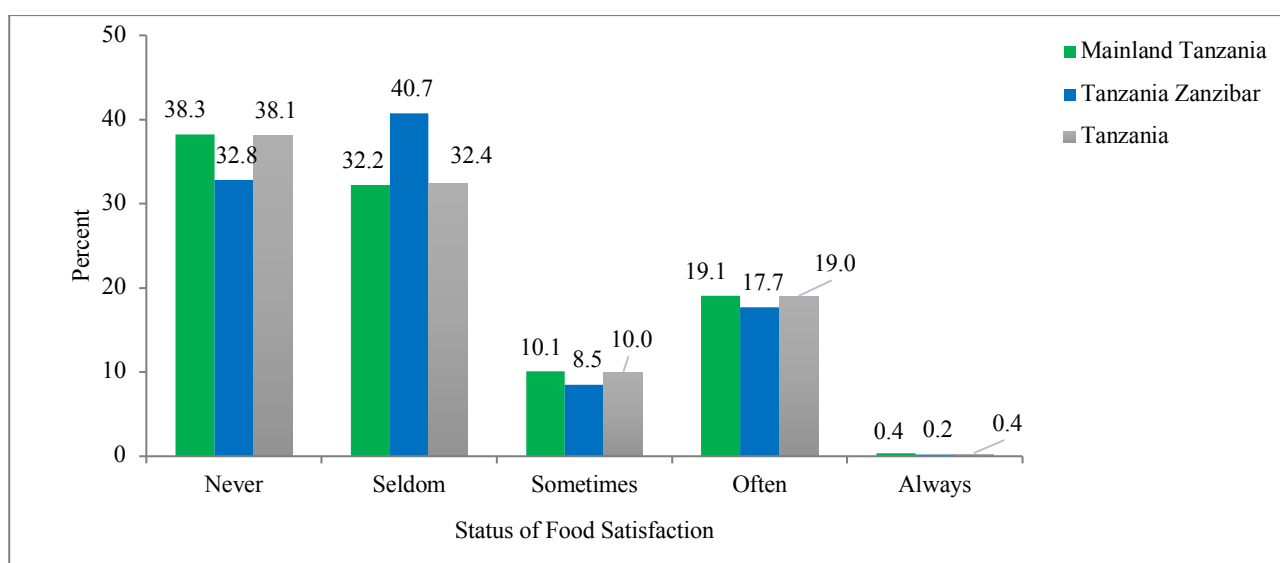
#### 6.11.4 Status of Food Satisfaction

The Census results show that, in the last twelve months prior to the execution period of the 2019/20 NSCA, a total of 2,989,185 agricultural households (38.1 percent) in Tanzania had never experienced food shortage problems. Moreover, 2,541,474 households (32.4 percent), were rarely experiencing problems in satisfying the food needs; 785,165 households (10.0 percent) sometimes experienced problems in satisfying their food needs; 1,492,258 households (19.0 percent) often experienced problems; and 29,326 households (0.4 percent) always had food problems (Figure 6.3).

In comparison, households that always had food problems has decreased by 5.9 percent from 6.3 percent in 2007/08 to 0.4 percent in 2019/20 agricultural years. Households never experienced food insufficiency problems have decreased by 2.4 percent from 40.5 percent in 2007/08 to 38.1 percent in 2019/20. Also, number of households rarely experienced problems in satisfying food requirements in the last twelve months has decreased from 33.6 percent to 32.4 percent in 2019/20 agricultural years (Table 6.23).

Furthermore, the percentage of people experiencing food problems requirement sometimes has slightly increased from 9.9 percent in 2007/8 to 10.0 percent of households in 2019/20, and those often-experienced food problems have increased by 9.3 percent from 9.7 percent in 2007/8 to 19.0 percent in 2019/20.

**Figure 6.3: Percentage of Agricultural Households Reported the Status of Food Satisfaction in the Last Twelve Months During 2019/20 Agricultural Year, Tanzania**



In Mainland Tanzania, a total of 2,930,023 households (38.3 percent) reported never experienced food insufficiency, followed by those reported to seldomly experienced food insufficiency (2,864,069 households; 32.2 percent), while 28,953 households (0.4 percent) reported to always experienced food insufficiency.

In Tanzania Zanzibar, a total of 73,405 households (40.7 percent) reported seldomly experienced food insufficiency, followed by those reported never to experienced food insufficiency (59,162 households; 32.8 percent), while 373 households (0.2 percent) reported to always experienced food insufficiency.

**Table 6.23: Number and Percentage of Households Reported Status of Food Satisfaction in the Last Twelve Months During 2007/08 and 2019/20 Agricultural Year, Tanzania**

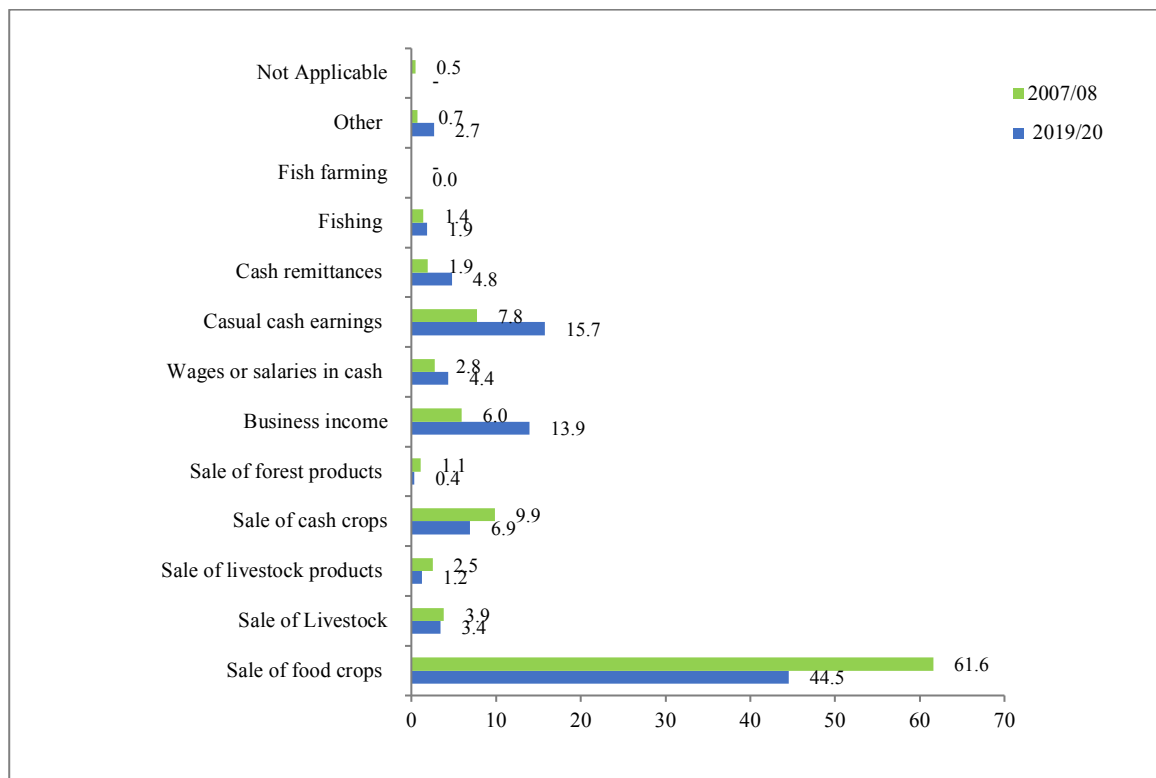
Year	Satisfaction	Tanzania		Mainland Tanzania		Tanzania Zanzibar	
		Number	Percent	Number	Percent	Number	Percent
2019/20	Never	2,989,185	38.1	2,930,023	38.3	59,162	32.8
	Seldom	2,541,474	32.4	2,468,069	32.2	73,405	40.7
	Sometimes	785,165	10.0	769,820	10.1	15,345	8.5
	Often	1,492,258	19.0	1,460,322	19.1	31,936	17.7
	Always	29,326	0.4	28,953	0.4	373	0.2
	<b>Total</b>		<b>7,837,408</b>	<b>100</b>	<b>7,657,187</b>	<b>100</b>	<b>180,221</b>
2007/08	Never	2,362,254	40.5	2,308,002	40.4	54,252	41.0
	Seldom	1,960,865	33.6	1,913,138	33.5	47,727	36.1
	Sometimes	580,026	9.9	567,835	10.0	12,192	9.2
	Often	567,716	9.7	556,312	9.7	11,404	8.6
	Always	367,662	6.3	361,043	6.3	6,619	5.0
	<b>Total</b>		<b>5,838,523</b>	<b>100</b>	<b>5,706,329</b>	<b>100</b>	<b>132,193</b>

### 6.11.5 Main Source of Household Income

During 2019/20 agricultural year, a total of 3,490,327 agricultural households (44.5 percent) reported sales of food crops as the main source of cash income in Tanzania. It was followed by casual earnings (1,234, 056; 15.7 percent) and business income (1,093,310; 13.9 percent). Furthermore, fish farming was reported by few households (2,729; 0.03 percent) as their main source of income (Figure 6.4).

In comparison, the number of households reported casual cash earnings as among of the earning activity was increased by 7.9 percent from 7.8 percent in 2007/08 to 15.7 percent in 2019/20. Likewise, there was an increase by 7.9 percent of household that reported business income as the earning activity from 6.0 percent in 2007/8 to 13.9 percent in 2019/20 agricultural years.

**Figure 6.4: Percentage of Households by Main Source of Cash Income in 2007/8 and 2019/20 Agricultural Years, Tanzania**



In Mainland Tanzania, the sales of food crops were the main source of households' income (3,457,562; 45.2 percent), on which Kagera region reported the highest number households (297,861; 8.6 percent), followed by Dodoma (278,882; 8.1 percent) and Morogoro (233,838; 6.8 percent). Katavi region had the least number of households (42,702; 1.2 percent) reported sales of food crops as main source of households' income.

In Tanzania Zanzibar, the leading source of cash income was casual cash earnings (34,505; 19.1 percent), on which Kusini Pemba region reported the highest number households (9,447; 27.4 percent), followed by Kaskazini Pemba (8,897; 25.8 percent) and Kusini Unguja had the least number of households (3,161; 9.2 percent) reported casual cash earnings as main source of households' income (Table 6.24).

**Table 6.24: Percentage of Agricultural Households Reported Main Source of Household Income During 2007/08 and 2019/20 Agriculture Censuses, Tanzania**

Main Source	2019/20			2007/08		
	Tanzania	Mainland Tanzania	Tanzania Zanzibar	Tanzania	Tanzania Mainland	Tanzania Zanzibar
Sale of food crops	44.5	45.2	18.2	61.6	62.3	31.4
Sale of Livestock	3.4	3.5	0.9	3.9	3.9	1.7
Sale of livestock products	1.2	1.2	1.4	2.5	2.5	2.5
Sale of cash crops	6.9	7	3.4	9.9	10	2.9
Sale of forest products	0.4	0.4	0.1	1.1	1.1	1
Business income	13.9	13.9	17.5	6	5.8	12.8
Wages or salaries in cash	4.4	4.3	9.5	2.8	2.6	12.6
Casual cash earnings	15.7	15.7	19.1	7.8	7.7	9.9
Cash remittances	4.8	4.6	10.7	1.9	1.8	8.2
Fishing	1.9	1.6	15.5	1.4	1.1	14.9
Fish farming	0.03	0.04	-	n/a	n/a	n/a
Other	2.7	2.7	3.6	0.7	0.7	1.2
Not Applicable	n/a	n/a	n/a	0.5	0.5	0.8
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

## CHAPTER SEVEN

### CONCLUSION AND RECOMMENDATION

#### 7.0 Introduction

The 2019/20 National Sample Census of Agriculture collected a large amount of data on, inter alia, crops and livestock production, planted and harvested areas, input use, storage, marketing, farmer's access to extension services, as well as fish farming. The coverage was both for smallholder farmers and large-scale farms. Wherever possible, data for the 2019/20 Census is compared with the previous National Censuses data so as to identify any structural changes between the census periods.

The conclusion is organized into four sections. The first section gives conclusions with respect to the current status of agriculture in Tanzania in general. It focuses on the agricultural household characteristics; main type of agricultural activities of the household; and land access and use pattern. The second section describes conclusion regarding the current status of crop sub-sector in Tanzania, and it focuses mainly on production, area under production and productivity, use of inputs, irrigation farming and access to extension services. The third section gives conclusion with regard to the main findings of the livestock sub-sector and focuses on livestock numbers by species, regional distribution of livestock, livestock diseases, access to livestock extension services and their contribution to crop production. The fourth section discusses conclusion in regard to fish farming in terms of fish farming systems, type of stocked fish and production, fish sales and fish feeds.

#### 7.1 Conclusion

##### 7.1.1 Status of the Agriculture in Tanzania

1. The 2019/20 National Sample Census of Agriculture results show that, a total of 7,837,405 households were involved in agricultural activities, of which 7,657,185 (97.7 percent) were in Mainland Tanzania and 180,220 (2.3 percent) in Tanzania Zanzibar. In term of locality, 6,325, 358 (80.7 percent) households were in rural areas and 1,512,043 (19.3 percent) of the households were in urban areas. The number of agricultural households has increased from 5,838,523 in 2007/08 to 7,837,405 in 2019/20 NSCA. Crop production was the most common agricultural activity at the national level with 5,088,135 households (64.3 percent), followed by 2,589,156 households (33.3 percent) engaged in crop and livestock, 157,290 households (2.0 percent) engaged in livestock only, whilst the least



number of households were involved in fish farming (1,358), followed by pastoralism (1,465) jointly having less than one percent;

2. It has been observed that, there has been an increasing trend for the households involved in “crop only”, “crop and livestock” and “livestock only” activities since the last two Agriculture Census conducted in 2002/03 and 2007/08, while decreasing trend has been revealed for those households involved in “pastoralist” activities;
3. In Mainland Tanzania, large number of households engaged in agriculture were recorded in Dodoma, Kagera, Dar es Salaam, Morogoro and Mwanza regions ranged from 400,000 to 520,000 households; followed by Mbeya, Tabora, Tanga, Kigoma, Ruvuma, and Mtwara regions ranged between 300,000 and 400,000 households. Katavi region had the least number of households engaged in agriculture (76,867), followed by Njombe (160,108). In Tanzania Zanzibar, Kusini Pemba and Kaskazini Pemba had large number of agriculture households ranged between 40,000 and 55,000 households, while region with the least number of households engaged in agriculture was Kusini Unguja with 17,593 households;
4. The population of agricultural household members in Tanzania was 40,992,748 (39,902,860 in Mainland Tanzania and 1,089,888 in Tanzania Zanzibar), of which 49.8 percent were males and 50.2 percent were females. The population of agricultural household’s members has increased from 31 million in 2007/08 to 41 million in 2019/20 NSCA. Furthermore, about 44 percent of the 2019/20 agricultural population was below 15 years of age while that of the 15 - 64 years age group which participates most in production accounted for 51 percent of the agricultural population and 5 percent of the population was above 65 years;
5. Taking together the number of agricultural households in Tanzania and the population of agricultural smallholder’s members, one can deduce that the average household size for agricultural household was 5.2 persons as compared to 5.3 in 2007/08. In Mainland Tanzania, Simiyu region had the largest average number of people per household (7.3), followed by Tabora and Mwanza (7.1). The smallest household sizes were in Njombe (3.7), followed by Lindi (3.8). Tanzania Zanzibar had a slightly larger average household size than Mainland Tanzania with an average of 6.0 persons per household, and all of its regions having an average above 5 persons per household;

6. The 2019/20 NSCA results show that total usable land available to smallholder farmers was 20,588,267 ha (20,588,027 were in Mainland Tanzania and 186,240 in Tanzania Zanzibar), equivalent to 2.7 ha per household. The total area of utilized land was 16,717,289 ha (80.5 percent of the total usable land available), giving an average land area utilized for agriculture per household of 2.1 ha;
7. The results further revealed that land was dominantly planted with annual crops occupying 57.9 percent of the total land area used in 2019/20, whereas permanent crops (including planted trees) accounts for 9.3 percent and 6.6 percent was planted with a mixture of annual and permanent crops. The area kept under fallow was 8.5 percent whereas the area under fish farming was the least common type of land use with 0.04 percent. Only 5.9 percent of usable land available to smallholder farmers was not used;
8. At national level, about one-third (33.0 percent) of the agricultural households indicated to have sufficient land available for their use, while the remaining 67.0 percent considered the land to be insufficient. Land sufficiency in Tanzania Zanzibar (51.2 percent) was relatively better compared to that of Mainland Tanzania (32.6 percent);
9. Land sufficiency varied greatly between regions of Mainland Tanzania. In Mtwara, Lindi and Pwani regions at least 50 percent or slightly more of the households reported land sufficiency while all other regions reported land sufficiency below 50 percent. In the latter group, land scarcity was most acute in Arusha, Rukwa, Kilimanjaro, Simiyu and Katavi regions where more than 80 percent of the households reported land insufficiency. On the other hand, Mjini Magharibi and Kaskazini Pemba in Tanzania Zanzibar showed acute land scarcity with land sufficiency below 50 percent;
10. During the 2019/20 agricultural year, most of the agricultural households were affected by the climate changes, high cost of inputs, limited access to land, pest and diseases, as well as low prices for their agricultural produce; and
11. Climate change and theft were the main challenges faced by the agricultural households in Mainland Tanzania and Tanzania Zanzibar, respectively.

### **7.1.2 Status of Crop Sub-sector in Tanzania**

1. The crop sub-sector plays an important role in Tanzania economy providing jobs, subsistence and income to 7,677,291 agricultural households growing crops (98.0 percent of the total agriculture households). The number of crops growing households has increased by 32.9 percent since the 2007/08 Agriculture Census;
2. There is a wide variety of crops grown in the country, nevertheless, maize dominates smallholder crop production. Other important food crops include cassava, bananas, paddy, beans and groundnuts. The rest of the crops are only grown in small amounts, albeit, some of these crops such as tea, cashew nuts and coffee have significant importance in certain areas where the climate is more suitable for their production;
3. Maize, paddy and sorghum were the major cereal crops grown in Tanzania during the 2019/20 agricultural year, occupying the largest planted area. Among the three major crops, maize had a largest share of planted area compared to others, while the least crop was sorghum;
4. The 2019/20 NSCA results show that, the total production of major cereal crops in Tanzania was 10,761,559 tons, whereby maize was leading (6,504,725 tons), followed paddy (3,380,715 tons) and sorghum (601,470 tons);
5. Cassava, sweet potatoes and Irish potatoes, were reported as major grown roots and tuber crops for 2019/20 agricultural year, occupying the total area of 1,095,713 hectares. The total production of these crops was 2,564,829 tons, while cassava contributing larger part of it compared to other crops. Cassava and sweet potatoes were the major roots and tuber crops produced in both Mainland Tanzania and Tanzania Zanzibar;
6. It was also observed that, beans and cow-peas were the major pulses grown in the country, in 2019/20 agricultural year. The total area occupied by these crops was 892,786 hectares, while beans taking the largest part of it. On the other hand, the total production of these two crops by both smallholder farmers and large-scale farms were 801,149 tons;
7. In 2019/20 agricultural year, sunflower, sesame and palm oil were observed as main oil seeds and nuts grown in Tanzania, with a total planted area of 1,523,009 hectares. This area was utilized by both smallholder and large-scale farmers. The largest area was occupied by sunflower, with the area of 537,786 hectares;

8. The total production of oil seeds and nuts was 1,282,286 tons, of which groundnuts was leading with a total of 621,911 tons, followed by sunflower with 508,209 tons and sesame production of 128,152 tons. Groundnuts observed to produce largest part of production of oil seeds and nuts in both Mainland Tanzania and Tanzania Zanzibar;
9. The 2019/20 NSCA results show that, out of the 7,677,291 agriculture's households growing crops, 411,108 households (5.4 percent) practiced irrigation (88.4 percent in Mainland Tanzania and 11.6 percent in Tanzania Zanzibar). These households irrigated an area of 289,381 hectares planted with crops (94.3 percent in Mainland Tanzania; 5.7 percent in Tanzania Zanzibar), equivalent to 2.5 percent of the total area planted with crops;
10. It has been observed that, out of the total area cultivated (11.8 million hectares) during the 2019/20 agricultural year, more than 75 percent of it was planted with local seed, while the share of improved seed was 22 percent;
11. The census results show that, 2.5 million hectares (26.6 percent of the total planted area) was applied with fertilizer (2.4 million hectares were in Mainland Tanzania and 31,613 hectares in Tanzania Zanzibar). Area applied with organic fertilizers dominated by 62.3 percent when compared to area applied with inorganic fertilizers;
12. The majority of the agricultural households in the country processed their maize crop, with the purpose of adding value, followed by those households which processed paddy, and then sunflower, as compared to other crops, during the reference period. Most of the agricultural households in Tanzania Zanzibar, reported to process paddy crop compared with other types of crops;
13. Crop yields are very low as can be implied from limited capital investment in smallholder agriculture as well as very small areas undertaking irrigated agriculture and the use of complementary inputs such as fertilizer and pesticides is equally low;
14. Low coverage of extension services was evident; some of the highest crop producing regions received less extension than other regions. Even though oxen use is largely limited to areas that have large population of cattle such as Shinyanga hand cultivation remains the predominant means of land cultivation; and
15. Besides most of the smallholder farmers being affected by climate change (17.8 percent), other constraints that affected the agricultural activities during 2019/20 agriculture year

were cost of inputs (15.6 percent), access to land (13.5 percent), low prices of agricultural produces (7.2 percent), and pest and diseases (6.7 percent).

### **7.1.3 Status of the Livestock Sub-sector in Tanzania**

1. The 2019/20 NSCA results show that, main livestock species kept by smallholder farmers include cattle, goats, sheep, pigs and chicken. In 2019/20 Agricultural year, there were about 2.7 million households which kept livestock. In the surveyed households, cattle were the most dominant specie followed by goats, sheep and pigs. As of 1<sup>st</sup> August 2020, the respective numbers and percentages were 33,928,390 (48.3 percent) for cattle, 24,568,396 (35.0 percent) for goats, 8,516,990 (12.1 percent) for sheep and 3,208,493 (4.6 percent) for pigs. Most of the livestock (99.2 percent) were kept by the smallholder farmers. The contribution of large-scale farms being less than one percent. The total number of chickens reported was 87.7 million, of which 75.1 million were recorded from smallholders and 12.5 million from large scale farms;
2. For the three consecutive agriculture censuses conducted, the results show that, there is an increasing trend of livestock population in the country;
3. Branding and cattle's color were the main method of cattle identification used by households in Mainland Tanzania and Tanzania Zanzibar, respectively;
4. The total production of cow milk in the country from smallholder farmers and large-scale farms for 2019/20 agricultural years was about 3 billion litres, goat milk production was about 25 million litres; and
5. Methods used to control ticks for cattle, goat and sheep were spraying, dipping and smearing. The census results show that more than 70 percent of the households keeping livestock in the country, reported to use spraying method to control tick disease on cattle, goat and sheep.

### **7.1.4 Status of Fish Farming in Tanzania**

1. It was reported that, more than 26,000 of smallholder households and 78 large scale farms were engaged in fish farming in the country, during the 2019/20 agricultural year;
2. Tilapia stocked by the majority of smallholder households in Mainland Tanzania, compared with other available species, accounting for 83.3 percent of the total production of fish. Milkfish was the only specie stocked by smallholder farmers and large-scale farms in Tanzania Zanzibar with total production of 12,936 tons; and

3. It has been reported that, there was an increase of more than 100 percent of agricultural households practicing fish farming in the country since 2007/08 NSCA.

## **7.2 Recommendations**

### **7.2.1 Crop Sub sector**

#### **1. Crop Productivity**

Crop productivity varied from one crop to another. In general, productivity for most crops was low compared to existing potential.

*Recommendation: Steps should be taken to encourage the use of good agricultural practices such as improved seeds, fertilizer application, spacing, agro-chemicals as well as market intensification which aims at increasing productivity of the crop production sub-sector in the country.*

#### **2. Use of Inputs**

- i). Generally, the use of inputs including improved seeds, fertilizers and pesticides is low (less than 30 percent of planted area) and it varied across regions. Of these inputs, fertilizers were most widely used (26.6 percent of planted areas was applied with fertilizers). However, proportion of area applied with inorganic and organic fertilizers is almost the same (51.4 percent and 49.6 percent for inorganic and organic fertilizers respectively). Also, albeit the use of pesticides was rather limited, most households used more insecticides than fungicides and herbicides.

*Recommendation: Use of improved seeds, fertilizers and pesticides inputs is essential for enhancing crop productivity under smallholder farming setting countrywide. Hence timely availability and access of these inputs is very critical in addressing the prevailing challenge.*

- ii). More efforts should be put in place to increase the timely availability/access of inputs in the country, which might promote the use of it for crop production by smallholder farmers.

#### **3. Access to Land**

Majority of households reported insufficient access to land. The high proportion of households reporting land insufficiency is consistent with the low average land available per household (2.7 ha). Land scarcity was most acute in Arusha, Rukwa, Katavi and Simiyu regions where more than 80 percent of the households reported land insufficiency.

*Recommendation: Government should work out a strategy to overcome land insufficiency especially in regions with acute problem of land scarcity. Methodologies for increasing crop production should concentrate*



*more on crop intensification rather than increasing area under cultivation.*

#### **4. Irrigation Farming**

Only a small proportion of crop land (2.5 percent of planted area) was irrigated. Consequently, benefits of using productivity enhancing inputs such as improved seeds, fertilizers and pesticides are not fully exploited.

*Recommendation: Efforts must be made to ensure expansion of irrigation facilities and development of new ones in order to assure that majority of farmers have access to these facilities*

#### **5. Access to Extension Services**

In general, almost all regions, access to extension services was rather limited, with less than 10 percent of the smallholder farmers receiving extension service advices. Nevertheless, Public staff provided the main source of extension advice to smallholder farmers.

*Recommendation: Besides enhancing access to extension services, joint participation of government and private sector in providing extension service should aim to improve the quality of its services to ensure increased adoption of improved practices for increased crop productivity.*

#### **7.3.2 Livestock Sub sector**

1. Based on the decrease of number of agricultural households engaged in pastoralism in the country, the Government should keep on promoting commercial livestock industry;
2. About 50 percent of the cattle keeping households used the recommended method of identification (branding and earrings). Therefore, Government efforts on increasing awareness of identification of livestock to livestock keeping households should be enhanced in line with “*The Livestock Identification, Registration and Traceability Act, 2010*”; and
3. Despite the Government effort towards establishing milk collection centres, census results, revealed that about 10 percent of the households used milk collection centre to sell their milk. Therefore, Government should continue with its efforts to create awareness and promote the use of milk collection centre system so as to commercialise milk industry.

### **7.2.3 Fish Farming**

1. Despite the increase of more than 100 percent of agricultural households practicing fish farming in the country since 2007/08 NSCA, more efforts to create awareness and promote commercial aquaculture to bridge the fish demand.

## **LIST OF APPENDICES**

Appendix I: Listing Form





Appendix II: Smallholder Farmers Questionnaire

Appendix III: Community Questionnaire

Appendix IV: Organization of the Census



## APPENDIX II: SMALLHOLDER FARMERS QUESTIONNAIRE

ACQ 1	 United Republic of Tanzania <b>NATIONAL SAMPLE CENSUS OF AGRICULTURE 2019/20</b> <b>SMALL SCALE FARMERS QUESTIONNAIRE</b> (This information is collected under the Statistics Act, [Cap 351 R.E 2019]) <b>THIS INFORMATION IS STRICTLY CONFIDENTIAL AND IS TO BE USED FOR STATISTICAL PURPOSES ONLY</b> Executed by the Ministry of Agriculture; Ministry of Livestock and Fisheries; President's Office, Regional Administration and Local Governments; Ministry of Industries and Trade; Ministry of Agriculture, Natural resources, Livestock and Fisheries, Zanzibar; the National Bureau of Statistics and the Office of the Chief Government Statistician, Zanzibar	<b>CONFIDENTIAL</b>
  		
<b>SECTION 1: IDENTIFICATION DETAILS</b>		
HH GPS coordinates		
Y(S)	<input type="text"/>	<input type="text"/>
X(E)	<input type="text"/>	<input type="text"/>
	CODE	NAME
1. REGION	<input type="text"/>	_____
2. DISTRICT	<input type="text"/>	_____
3. WARD/SHEHIA	<input type="text"/>	_____
4. VILLAGE/MTAA	<input type="text"/>	_____
5. ENUMERATION AREA	<input type="text"/>	_____
6. HH NUMBER & NAME OF HH HEAD	<input type="text"/>	_____
7. NAME OF LOCAL LEADER/SHEHA		_____
8. PHONE No.OF LOCAL LEADER/SHEHA		_____
9. NAME OF ENUMERATOR .....	10. ENUMERATOR ID .....	
11. DATE OF INTERVIEW .....		
12. DID THE HOUSEHOLD AGREE TO BE INTERVIEWED?	YES.....1, No..... <input type="checkbox"/>	

**Table of Contents**

S/N	Topic	Page Number
1	Identifications details	1
2	Activities of the Household	1
3	Household Information	2
4	Land Access/Ownership/Tenure	3
5	Land Use	3
6	Conservational Farming	3
7	Access and use of Resources	3
8	Annual and Permanent Crops Production	4
8.1	Annual Crop and Vegetable Production - Short Rainy Season	4
8.2	Annual Crop and Vegetable Production - Long Rainy Season	6
8.3	Permanent/Perennial Crops and Fruit Tree Production	8
9	Main use of Crop Residuals	10
10	Agroprocessing	10
11	Crop Storage	11
12	On Farm Investments	12
12.1	Farm Implements	12
12.2	Use of Tractors and Draft Animals	12
12.3	Use of Organic Fertilizer	12
12.4	Access to Farm Inputs	12
12.5	Irrigation Practice	12
12.6	Soil Erosion	13
13	Access and use of Credit for Agricultural purposes	13
14	Crop Extension Services	13
	<b>Livestock Production and Products</b>	14
15	Cattle	14
15.2	Cattle Population	14
15.3	Cattle Intake	14
15.4	Cattle Offtake	14
15.5	Cattle Diseases	14
15.6	Cattle Identification	14
15.7	Milk Production	14
16	Goat	15
16.2	Goat Population	15
16.3	Goat Intake	15
16.4	Goat Offtake	15
16.5	Goat Diseases	15
15.6	Milk Production	15
17	Sheep	16
17.2	Sheep Population	16
17.3	Sheep Intake	16
17.4	Sheep Offtake	16
17.5	Sheep Diseases	16

S/N	Topic	Page Number
18	Pigs	17
	18.2 Pig Population	17
	18.3 Pig Intake	17
	18.4 Pig Offtake	17
	18.5 Pig Diseases/Pests/Condition	17
19.0	Poultry	18
	19.1 Poultry Population	18
	19.2 Poultry Diseases	18
20.0	Other Livestock	18
	20.1 Other Livestock Population	18
	20.2 Other Livestock Product	18
21.0	Outlet for Sales of Livestock	18
22.0	Livestock Structures/Accessories	18
23.0	Livestock Pest & Parasite Control	19
24.0	Livestock Extension	19
25.0	Livestock Extension Service Providers	19
26.0	Government Regulatory Challenges	19
27.0	Fish Farming	20
28.0	Bee Keeping	20
29.0	Labour Use	21
30.0	Subsistence vs Non-Subsistence	21
31.0	Access to infrastructure and other Services	21
32.0	Agricultural Constraints	22
33.0	Market Information	22
34.0	Poverty Indicators at household Level	23
	34.1 House construction	23
	34.2 House assets	23
	34.3 Energy use by household	23
	34.4 Access to drinking water	23
	34.5 Access to toilet facilities	23
	34.6 Food consumption patterns	23
	34.7 Source of household income	23
35	Result of the interview	24

<b>2.0</b>	<b>AGRICULTURAL ACTIVITIES OF THE HOUSEHOLD</b>
2.1	What type of agricultural activity does this household practice? <input type="checkbox"/>
<div style="border: 1px solid black; padding: 5px; margin: 5px;"> <p><b>Codes (2.1)</b></p> <p>Crops only.....1</p> <p>Livestock only .....2</p> <p>Fish farming .....3</p> <p>Pastoralist.....4</p> <p>Crops and Livestock .....5</p> </div>	

3.0 HOUSEHOLD INFORMATION																	
3.1 GIVE DETAILS OF PERSONAL PARTICULARS OF ALL HOUSEHOLD MEMBERS BEGINNING WITH THE HEAD OF HOUSEHOLD																	
S/N	Please give the names of the persons who usually live in your household starting with the head of the household	What is the relationship of (NAME) to the head of the household?	Is (NAME) male or female? (M=1, F=2)	How old is (NAME)? (IF AGE IS 97 OR ABOVE THEN WRITE 97, BELOW ONE YEAR WRITE '00')	BELOW 18 YEARS				5 YEARS AND ABOVE				18 YEARS AND ABOVE				
					Survival of Parents		Read & Write	Schooling Status	Education Level	Involvement into Farming	Main activity	Involvement in value addition	Land ownership	Title deed possession	Type of tenure	Membership	Off-farm Income
					Is (NAME)'s biological mother alive?	Is (NAME)'s biological father alive?	Does (NAME) know how to read and write in English or Kiswahili or both?	What is the schooling status of (NAME)?	What is the highest level of school (NAME) has reached?	How involved is (NAME) in farming activities?	What is the main activity of (NAME)?	Is (NAME) involved in value addition? (Yes=1, No=2, not)	Does (NAME) own any piece of agricultural land? (Yes=1, No=2)	Does (NAME) have a Title deed of the agricultural land? (Yes=1, No=2)	What Type of Tenure does (NAME) have on the agricultural land?	Is (NAME) a member of cooperative or farmers organization or	Does (NAME) generate any off-farm income? (Yes=1, No=2)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
3.1.1																	
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																	

**Relation to head (Col 2)**

Head of household .....1

Spouse .....2

Son/daughter .....3

Father/Mother .....4

Grandson/granddaughter...5

Other Relative .....6

Not Related .....8

**Read & Write (Col 7)**

Swahili .....1

English .....2

Swahili & English .....3

Any other language .....4

Don't Read/Write .....5

**Education Level Reached (Col 9)**

**Primary Education**

Pre Primary ..... 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

**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

Fish farming .....15

Agro processing .....16

Bee Keeping .....17

Seaweed farming..... 18

**Membership (Col 16)**

Yes, Cooperative .....1

Yes, Farmers Organisation.....2

Yes, Both .....3

No .....4

Not applicable.....9

**Education Status (Col 8)**

Attending School .....1

Dropped out .....2

Completed .....3

Never attended School...4

**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

**Type of Tenure (Col 15)**

Customary Right of Occupancy with certificate of customary right of occupancy.....1

Customary Right of Occupancy without certificate of customary right of occupancy...2

Granted Right of Occupancy (with title deed).....3

Others (Specify).....8



4.0		LAND ACCESS/OWNERSHIP/TENURE	
4.1	Details of land "owned" by the household in the 2019/20 agriculture year. Give area reported by the respondent in "acres".	<b>Area in Acres</b>	
4.1.1	Land <b>Leased/Certificate of ownership</b>		4.2 Was total land mentioned (Qs 4.1) available to the household used during agriculture year 2019/20 (Yes=1, No=2) <input type="checkbox"/>
4.1.2	Land owned under <b>Customary Law</b>		
4.1.3	Land <b>Bought</b> from others		
4.1.4	Land <b>Rented</b> from others		4.3 Do you consider to have sufficient agricultural land for your household ? (Yes=1, No=2) <input type="checkbox"/>
4.1.5	Land <b>Borrowed</b> from others		
4.1.6	Land <b>Share -cropped</b> from others		
4.1.7	Land under <b>Other</b> forms of tenure.....		4.4 Do any female members of your household have right to agricultural land (Yes=1, No=2) <input type="checkbox"/>
4.1.8	<b>Total Land</b>		
			4.5 From land mentioned (Qs 4.1) in what Region and District is the majority of Agricultural production? Region <input type="checkbox"/> <input type="checkbox"/> District <input type="checkbox"/> <input type="checkbox"/>
5.0		LAND USE	
5.1	Area operated by household under different forms of land use during 2019/20 agriculture year. Give area reported by the respondent in "acres".	<b>Area in Acres</b>	
5.1.1	Area under <b>Temporary Mono-crops</b>		
5.1.2	Area under <b>Temporary Mixed</b> crops (eg Maize & beans)		
5.1.3	Area under <b>Permanent Mono-crops</b>		
5.1.4	Area under <b>Permanent Mixed</b> crops (eg bananas, coffee & trees)		
5.1.5	Area under <b>Permanent/temporary mix</b> (eg bananas & maize)		
5.1.6	Area under <b>Fish farming</b>		
5.1.7	Area under <b>Pasture</b>		
5.1.8	Area under <b>Fallow</b>		
5.1.9	Area under <b>Natural Bush</b>		
5.1.10	Area under <b>Planted Trees</b>		
5.1.11	Area <b>Rented</b> to others		
5.1.12	Area <b>Unusable</b>		
5.1.13	Area of <b>Uncultivated Usable</b> land (excluding fallow)		
5.1.14	<b>Total area</b>		

<b>6.0</b>	<b>CONSERVATIONAL FARMING</b>				
6.1	Did this household practiced Conservation Farming during 2019/20 agricultural year? (If No go to section 7.0)		(Yes=1, No=2)	<input type="checkbox"/>	
6.2	Which method was used by this household for Conservational Farming?				
	S/N.	Methods	Yes=1, No=2		
	6.2.1	Contour farming (for sloped lands)	<input type="checkbox"/>		
	6.2.2	Planting of legumes and other soil conserving plants	<input type="checkbox"/>		
	6.2.3	Intense use of organic fertilizer over inorganic fertilizers	<input type="checkbox"/>		
	6.2.4	Covering soil with grasses/leaves	<input type="checkbox"/>		
	6.2.5	Fallowing	<input type="checkbox"/>		
	6.2.6	Other (specify)	<input type="checkbox"/>		
<b>7.0</b>	<b>ACCESS AND USE OF RESOURCES</b>				
7.1	In the following table indicate the distance from different fields used by the household to the following services				
S/N	Field Number	Distance (in kilometres) from field to:			<b>Distance codes</b> less than 100m .....1      2km and less than 3km .....6 100m and less than 300m .....2      3km and less than 5km ..... 7 300m and less than 500m .....3      5 km and less than 10 km .....8 500m and less than 1km.....4      Over 10 km .....9 1km and less than 2km .....5      Not Applicable.....99
		Homestead	Nearest road	Nearest Market	
7.1.1	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.1.2	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.1.3	3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.2	In the following table indicate the distance and use of the communal resources from household				
S/N	Communal Resource	Distance to resource (km)		Main hh use	<b>Instructions for distance to resource (Col 2 and 3):</b>  If under 1km, write 0 If above 1km round to whole numbers eg 1.50km= 2km, 1.25km= 1km If not applicable, write 999
	(1)	dry season (2)	wet season (3)	(4)	
7.2.1	Water for domestic use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>Main hh use (Col 4)</b> Home or farm Consumption/utilisation .....1 Sold to Neighbours .....2 Sold to trader on the farm .....3 Sold to village market .....4 Sold to wholesale at local market .....5 Sold to wholesale at major market .....6 Not used by household .....7 Not available .....8
7.2.2	Water for livestock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.2.3	Communal Grazing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.2.4	Communal Firewood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.2.5	Building poles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.2.6	Forest for bees (honey)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.2.7	Area for Hunting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.2.8	Area for Fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	





















<b>9.0 MAIN USE OF CROP RESIDUE</b>											
9.1 Did you use <b>residues</b> from any of your crops during the 2019/20 agricultural year? (Yes=1, No=2)											<input type="checkbox"/>
If the response is ' <b>NO</b> ' go to section 10.0											
9.2 List the <b>main crops</b> with residues and provide the following details:											
S/N	Crop name	Crop Code	Name of crop residues	crop residues code	Mainly used for	Quantity of Crop residues Produced	Unit	Kg/unit	Total quantity of crop residues produced (kg)	Quantity sold (kg) IF NOT SOLD, FILL "0000" THEN SKIP TO NEXT CROP	Price per unit (Tzs)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
9.2.1											
9.2.2											
9.2.3											
9.2.4											
9.2.5											
9.2.6											
<b>Name of Crop Residues (Col 3)</b> Green leaves & Stem.....1 Flower .....4 Straw, dry stems .....2 Fruit .....5 Root, tuber, .....3 Other (specify).....8			<b>Mainly used for (Col 5)</b> Feeding to livestock.....1 Consumed by household ..... 4 Building material .....2 Sold .....5 Fuel for cooking .....3 Grazing in Situ.....6 Other (specify).....8				<b>Unit (Col 7)</b> Loose Bundle/bunch .....1 kg .....5 Compressed bunch/Bale...2 Stems .....6 Tin .....3 Sack .....7 Bucket .....4 Acre.....8 Other (specify).....9				

<b>10.0</b>	<b>AGROPROCESSING</b>																
10.1	Did the household <b>process</b> any of the crops harvested on the farm during 2019/20 (Yes=1, No=2) <input type="checkbox"/>																
If the response is 'NO' go to section 11.0																	
10.2	List the <b>main crops processed</b> and provide the following details:																
S/N	Crop name	Crop code	where Processed	Name of the Main Product	Use of the main product	Quantity of Main Product	Unit	KG or Lt/unit	Main type of packaging	Quantity Sold (If)	Where sold	By product name	Use of By Product	Unit	Quantity of by product	KG or Lt/Unit	Quantity Sold
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
10.2.1																	
10.2.2																	
10.2.3																	
10.2.4																	
10.2.5																	
10.2.6																	
<div style="display: flex; justify-content: space-between;"> <div style="width: 20%; border: 1px solid black; padding: 5px;"> <p><b>Processed (Col 3)</b></p> <p>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.....8  Other (specify).....98</p> </div> <div style="width: 20%; border: 1px solid black; padding: 5px;"> <p><b>Main type of packaging (Col 9)</b></p> <p>Leno bags.....1  Sacks.....2  Box.....3  Hermetic bags.....4  Plastic containers.....5  Bottles.....6  Other (specify).....8</p> </div> <div style="width: 20%; border: 1px solid black; padding: 5px;"> <p><b>Main product code (Col 4)</b></p> <p>Flour/meal.....1  Grain.....2  Oil.....3  Juice.....4  Fiber.....5  Pulp.....6  Sheet.....7  Other(specify).....8</p> </div> <div style="width: 20%; border: 1px solid black; padding: 5px;"> <p><b>Used for (Col 5 &amp; 13)</b></p> <p>Household consumption.....1  Fuel for cooking.....2  Selling.....3  Animal consumption.....4  Did not use.....5  Other(specify).....8</p> </div> <div style="width: 20%; border: 1px solid black; padding: 5px;"> <p><b>Where sold (Col 11)</b></p> <p>Neighbour.....1  Local market/trade store.....2  Secondary Market.....3  Marketing Cooperative.....4  Farmers Association.....5  Large scale farm.....6  Trader at farm.....7  Did not sell.....8  Other(specify).....9</p> </div> <div style="width: 20%; border: 1px solid black; padding: 5px;"> <p><b>By-product code (Col 12)</b></p> <p>Bran.....01  Cake.....02  Husk.....03  Juice.....04  Fiber.....05  Pulp.....06  Oil.....07  Shell.....08  Other (specify).....98  Not applicable.....99</p> </div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 20%; border: 1px solid black; padding: 5px;"> <p><b>Unit (Col 7 &amp; 14)</b></p> <p>Loose bunch.....1  Compressed bundle.....2  Tin.....3  Bucket.....4  kg.....5  litre.....6  Bag.....7  Other (specify).....8</p> </div> </div>																	

<b>11.0</b>	<b>CROP STORAGE</b>						
<b>11.1</b>	Do you currently have any crops in storage? (Yes =1, No=2) <input type="checkbox"/>						
<i>If the response is 'NO' go to section 12.0</i>							
<b>11.2</b>	For each of the listed crops provide the following details on storage						
S/N	Crop Name	Stored Yes = 1 No = 2, If 2 go next crop	Current Quantity Stored (kg)	Main storage structure	Duration of storage	Main Purpose of Storage	Estimate Storage loss
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
11.2.1	Maize						
11.2.2	Paddy						
11.2.3	Sorghum/Millet						
11.2.4	Beans, peas, etc						
11.2.5	Wheat						
11.2.6	Cassava						
11.2.7	Coffee						
11.2.8	Cashewnut						
11.2.9	Tobacco						
11.2.10	Cotton						
11.2.11	Groundnuts						
11.2.12	Cloves						

**Main Storage Structure (Col 4)**  
 Locally made traditional structure...1  
 Improved locally made structure ...2  
 Private modern store.....3  
 Airtight drum .....4  
 In house storage.....5  
 Community warehouse.....6  
 Community warehouse  
 (Warehouse Receipt System).....7  
 Other(specify).....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 7)**  
 No loss .....1  
 Up to 1/4 loss of the stored quantity....2  
 Above 1/4 up to 1/2 loss .....3  
 Loss above 1/2.....4

12.0 ON-FARM INVESTMENT			
12.1 FARM IMPLEMENTS			
Farm implements and assets used and/or owned by the household during 2019/20 agricultural year			
S/N	Equipment/Asset Name	Used Yes=1, No=2	Number Owned
	(1)	(2)	(3)
12.1.1	Panga		
12.1.2	Hand Hoe		
12.1.3	Hand Sprayer		
12.1.4	Draft Animals		
12.1.5	Ox Plough		
12.1.6	Ox Seed Planter		
12.1.7	Ox/ Donkey Cart		
12.1.8	Tractor		
12.1.9	Tractor Plough		
12.1.10	Tractor Harrow		
12.1.11	Shellers/threshers		
12.1.12	Power Tiller		
12.1.13	Ox Ridger		
12.1.14	Water pumps		
12.1.15	Sprinklers		
12.1.16	Other (Specify)		

12.2 USE OF TRACTORS AND DRAFT ANIMALS				
Did you use Tractors/Draft animals to cultivate your land during 2019/20? (Yes=1, No=2) (If no, go to question 12.3) <input type="checkbox"/>				
S/N	Type	Number owned	Number used	Area Cultivated (Acres)
	(1)	(2)	(3)	(4)
12.2.1	Oxen			
12.2.2	Bulls			
12.2.3	Cows			
12.2.4	Donkeys			
12.2.5	Tractor			
12.2.6	Power Tiller			
12.3 APPLICATION OF ORGANIC FERTILIZER				
12.3.1 Did you apply organic fertiliser during 2019/20? (Yes=1, No=2) (If no, go to question 12.4) <input type="checkbox"/>				
	Type of organic Fertiliser	Quantity used (kg)		Area applied (acres)
	(1)	(2)	(3)	
12.3.2	Farm Yard Manure (FYM)			
12.3.3	Compost Manure			

12.4 ACCESS TO FARM INPUTS								
Give details of farm inputs used during the 2019/20 agricultural year								
S/N	Input name	Used, Yes=1 No=2; if No -> col 7	Source of input	Distance to Source	Source of finance	Quality of input	Reasons for not using	Plan to use next year Yes=1, No=2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
12.4.1	Chemical Fertiliser							
12.4.2	Farm Yard Manure							
12.4.3	Compost Manure							
12.4.4	Insecticide/fungicide							
12.4.5	Herbicide							
12.4.6	Improved Seeds							

**Source of input (Col 3)**

Government .....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  
 Cooperative .....10  
 Other (specify) .....98

**Distance to source (Col 4)**

Less than 1 Km .....1  
 From 1 km to less than 3 km.....2  
 From 3 km to less than 10 km.....3  
 From 10 km to less than 20 km.....4  
 20km & above .....5  
 Within the hh .....6  
 Not applicable ..... 9

**Source of finance (5)**

Sales of farm products .....1  
 Other Income generating activities.....2  
 Remittances .....3  
 Bank loan/credit .....4  
 Own produced .....5  
 Cooperative.....6  
 Other (specify) .....8  
 Not applicable .....9

**Quality of input (6)**

Excellent .....1  
 Good .....2  
 Average .....3  
 Poor .....4  
 Does not work .....5  
 Not applicable .....9

**Reason for not using (7)**

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 (specify) .....8  
 Not applicable .....9

**Source of water for irrigation (Col 1)**

River .....1 Borehole .....5  
 Lake .....2 Canal .....6  
 Dam .....3 Tap Water .....7  
 Well .....4 Other (Specify) .....8

**Method of Irrigation (Col 2)**

Gravity .....1  
 Hand bucket .....2  
 Hand/ Legs pump .....3  
 motor pump .....4  
 Drip.....5  
 Spinkler.....6  
 Other (Specify) .....8

12.5				
12.5.1	Does the household practice irrigation? (Yes=1, No=2) <input type="checkbox"/>			
If the response is 'NO' go to section 12.6				
12.5.2	Main source of water for irrigation	Main method of Irrigation	Potential Irrigatable Area (acres)	Area of irrigated Land agriculture year 2019/20(acres)
	(1)	(2)	(3)	(4)



<b>12.6 SOIL EROSION</b>									
12.6.1 Did your household experience any soil erosion problem on the farming land during the 2019/20 agricultural year? (Yes=1, No=2) <input type="checkbox"/>									
12.6.2 Did your household practise any soil erosion control on the farm(s) during the 2019/20 agricultural year? (Yes=1, No=2) <input type="checkbox"/> <i>If the response is 'NO' go to section 13.0</i>									
S/N	Type of erosion control	Used Yes =1 No =2 > NEXT TYPE	Number of structures	Year of construction		Type of erosion control	Used Yes=1 No=2> NEXT TYPE	Number of Structures	Year of Construction
	(1)	(2)	(3)	(4)		(1)	(2)	(3)	(4)
12.6.3	Terraces	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	12.6.7	Tree belts	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
12.6.4	Erosion control bunds	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	12.6.8	Water harvesting bunds	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
12.6.5	Gabions/Sandbags	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	12.6.9	Drainage ditches	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
12.6.6	Cover plants (e.g. Vetiver Grass)	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	12.6.10	Other (Specify)	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
<b>13.0 ACCESS AND USE OF CREDIT FOR AGRICULTURAL PURPOSES</b>									
13.1 During the year 2019/20 did any of the household members borrow money for agriculture activities? (Yes = 1, No = 2) <input type="checkbox"/> <i>(if the response is 'NO' go to question 13.3)</i>									
13.2 Give details of the credit obtained during the 2019/20 agricultural year? <i>(if the credit was provided in kind, for example by the provision of inputs, then estimate the value in 13.2.11)</i>									
			<b>Credit "a"</b>			<b>Credit "b"</b>			<b>Credit "c"</b>
	use codes to indicate source		<input type="text"/>			<input type="text"/>			<input type="text"/>
	Provided to, Male = 1, Female 2		<input type="text"/>			<input type="text"/>			<input type="text"/>
			Write Yes =1 or No =2 to indicate the use of the credit			Write Yes =1 or No =2 to indicate the use of the credit			Write Yes =1 or No =2 to indicate the use of the credit
13.2.1	Labour		<input type="text"/>			<input type="text"/>			<input type="text"/>
13.2.2	Seeds		<input type="text"/>			<input type="text"/>			<input type="text"/>
13.2.3	Fertilisers		<input type="text"/>			<input type="text"/>			<input type="text"/>
13.2.4	Agrochemicals		<input type="text"/>			<input type="text"/>			<input type="text"/>
13.2.5	Tools/equipment		<input type="text"/>			<input type="text"/>			<input type="text"/>
13.2.6	Irrigation structures		<input type="text"/>			<input type="text"/>			<input type="text"/>
13.2.7	Fish farming		<input type="text"/>			<input type="text"/>			<input type="text"/>
13.2.8	Bee keeping		<input type="text"/>			<input type="text"/>			<input type="text"/>
13.2.9	Livestock		<input type="text"/>			<input type="text"/>			<input type="text"/>
13.2.10	Other .....		<input type="text"/>			<input type="text"/>			<input type="text"/>
13.2.11	Value of Credit (TZS)		<input type="text"/>			<input type="text"/>			<input type="text"/>
13.2.12	Total value of repayment (TZS)		<input type="text"/>			<input type="text"/>			<input type="text"/>
13.2.13	Period of repayment (months)		<input type="text"/>			<input type="text"/>			<input type="text"/>
<b>Source of credit (13.2):</b> Family, friend or relative.....1 Bank.....2 Cooperative .....3 Savings & credit Soc .....4 Trader/trade store .....5 Private individual .....6 NGO/Project .....7 Other (Specify).....8									
13.3 If the answer to question 13.1 above is 'NO' what is the main reason for not borrowing Credit? <input type="checkbox"/>									
<b>Reason for not borrowing (13.3)</b> 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 Bureaucratic procedure .....6 Credit granted too late.....7 Dont know about credit .....8 Other (specify) .....98									

<b>14.0 CROP EXTENSION SERVICES</b>											
14.1 Did your household receive any <b>extension advice for crop production</b> during 2019/20 agriculture year? Yes = 1, No = 2 > <b>Section 15</b> <input type="checkbox"/>											
S/N	Extension Advice	Received Advice? Yes = 1 No = 2 > next extension message	Source of Extension Advice	How was the advice for .....received?	Message Practiced? (Yes=1, No=2)	S/N	Extension Advice	Received Advice Yes=1 , No=2 > <b>next extension message</b>	Source of crop extension	How was the advice received?	Message adopted? (Yes=1, No=2)
	(1)	(2)	(3)	(4)	(5)		(1)	(2)	(3)	(4)	(5)
14.1.1	Spacing					14.1.8	Mechanisation/LST				
14.1.2	Use of agrochemicals					14.1.9	Irrigation Technology				
14.1.3	Erosion control					14.1.10	Crop Storage				
14.1.4	Organic fertiliser use					14.1.11	Vermin control				
14.1.5	Inorganic fertiliser use					14.1.12	System of Rice Intensification (SRI)				
14.1.6	Use of improved seed					14.1.13	Intergrated Pests Management (IPM)				
14.1.7	Market information					<div style="border: 1px solid black; padding: 5px;"> <p><b>Source of extension (Col 3)</b></p> <p>Government .....1    NGO/Dev project .....2    Cooperative .....3    Large scale farmer .....4    Registered private Agro dealers.....5.    Lead farmer.....6            Other (Specify) ...8</p> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p><b>Means of receiving extension advice (Col 4)</b></p> <p>Mobile phone .....1            Email.....2            Face to face with extension officer.....3            TV.....4            Radio .....5            Other (Specify) .....8</p> </div>					
14.2	Did the household or any member of the household participate in Out Grower agreements during 2019/20 agricultural year? (Yes=1, No=2) <input type="checkbox"/>										
14.3	Did the household or any member of the household participate in contract production agreements during 2019/20 agricultural year? (Yes=1, No=2) <input type="checkbox"/>										

LIVESTOCK PRODUCTION AND PRODUCTS											
15.0 CATTLE											
15.1 Did the household own, raise or manage any CATTLE during 2019/20 agricultural year? (Yes =1 No =2) <input type="checkbox"/>											
(If no go to section 16.0)											
15.2 Cattle Population as of 1st August 2020					15.3 Cattle Intake during 2019/20 agricultural year						
S/N	Cattle type	Number of Indigenous	Number of Improved		Total	S/N	Number Purchased	Number given /obtained	Number Born	Total Intake of Cattle (CHECK IF C6=0 >NEXT ITEM)	Average price per head
			Beef	Dairy							
	(1)	(2)	(3)	(4)	(5)		(6)	(7)	(8)	(9)	(10)
15.2.1	Castrated Bulls (Oxen)					15.3.1					
15.2.2	Uncastrated Bulls					15.3.2					
15.2.3	Cows					15.3.3					
15.2.4	Steers					15.3.4					
15.2.5	Heifers					15.3.5					
15.2.6	Male Calves					15.3.6					
15.2.7	Female Calves					15.3.7					
15.2.8	Grand Total					15.3.8	Total Intake				

15.4 Cattle Offtake during 2019/20 agricultural year								
S/N	Cattle type	Number Sold/traded	Number consumed by hh	Number given away	Number stolen	Number died	Total Cattle Offtake (CHECK IF C2 = 0 >NEXT ITEM)	Average price per head
15.4.1	Castrated Bulls (Oxen)							
15.4.2	Uncastrated Bulls							
15.4.3	Cows							
15.4.4	Steers							
15.4.5	Heifers							
15.4.6	Male Calves							
15.4.7	Female Calves							
15.4.8	Total Offtake							

15.5 Cattle diseases								
S/N	Disease/parasite	Did Cattle got [...] disease in 2019/20? (Yes = 1 No = 2) If No > Col 7	Number Infected	Number treated	Number Recovered	Number Died	Last vaccinated	Main Source of Vaccine
15.5.1	Tick Borne diseases							
15.5.2	CBPP							
15.5.3	Trypanosomiasis							
15.5.4	Lumpy Skin Disease							
15.5.5	Helminthiosis							
15.5.6	Foot Mouth Disease (FMD)							
15.5.7	Brucellosis							
15.5.8	Black Quarter							
15.5.9	Anthrax							

15.6 Cattle Identification							
15.6.1 Which method do you use to identify your cattle? <input type="checkbox"/>							
<p><b>Methods for Cattle identification codes</b></p> Branding .....1 Cattle clan.....2 Ear notching.....3 Colour.....4 Eartags.....5 Others (specify).....8							

15.7 Cow Milk Production									
15.7.1 Did the household produce any milk during 2019/20 agriculture year? (Yes =1 No =2) <input type="checkbox"/>									
(If no go to section 16.)									
S/N	Season	Cattle type	Number of milked cows	Average milk production per cow per day (litres)	Average number of days cows were milked	Milk consumed by the Hh (Litres)	Amount of milk sold (Litres) (If amount sold is 0, > another cattle type)	Average price per litre per season	Where Sold
15.7.2	Wet Season	Improved Dairy							
15.7.3		Indigenous Cattle							
15.7.4	Dry Season	Improved Dairy							
15.7.5		Indigenous Cattle							

Last Vaccinated (Col 7)							
2020	1	2018	3	2017	4	Not Vaccinated...8	
2019	2	2015	6	before 2015	6		
2016	5						

Main Source of vaccine (Col 8)							
Private Veterinary Facilities	1	District Vet Office	2				
WGSP/Project	3	Tanzania Vet Laboratory Services Centres	4				
Other(Specify)	8	Not applicable ..... 9					

Where sold (Col 9)								
Neighbour	1							
Local market/trade store	2							
Private Milk Collection Centres	3							
Farmers Cooperative Milk Collection Centres	4							
Farmers organisation Milk Collection Centres	5							
Largescale farm	6							
Trader at farm	7							
Other (specify)	98							

<b>16.0 GOAT</b>																	
16.1 Did the household own, raise or manage any GOATS during the 2019/20 agricultural year? (Yes =1 No =2) <input type="checkbox"/>																	
(If no go to section 17.0)																	
<b>16.2 Goat Population as of 1st August 2020</b>					<b>16.3 Goat Intake during 2019/20</b>												
S/N	Goat type	Number of Indigenous	Number of Improved for		Total	S/N	Number Purchased	Number given/obtained	Number Born	Total Intake of Goats (CHECK IF C6 = 0 -> NEXT ITEM)	Average price per head						
	(1)	(2)	Meat (3)	Dairy (4)	(5)		(6)	(7)	(8)	(9)	(10)						
16.2.1	Billy Goat					16.3.1											
16.2.2	Castrated Goat					16.3.2											
16.2.3	She Goat					16.3.3											
16.2.4	Male Kid					16.3.4											
16.2.5	She Kid					16.3.5											
16.2.6	<b>Grand Total</b>					16.3.6	<b>Total Intake</b>										
<b>16.4 Goat Offtake during 2019/20</b>										<b>16.5 Goat diseases during 2019/20</b>							
S/N	Goat type	Number Sold/traded	Number consumed by hh	Number given away	Number Stolen	Number died	Total Goat Offtake (CHECK IF C2 = 0 -> NEXT ITEM)	Average price per head	S/N	Disease/parasite	Number Infected	Number treated	Number recovered	Number died	Last Vaccinated	Main Source of Vaccine	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
16.4.1	Billy goat								16.5.1	Foot Rot							
16.4.2	Castrated Goat								16.5.2	CCPP							
16.4.3	She Goat								16.5.3	Helminthiosis							
16.4.4	Male Kid								16.5.4	Tetanus							
16.4.5	She Kid								16.5.5	Mange							
16.4.6	<b>Total Offtake</b>								16.5.6	Brucellosis							
									16.5.7	Black Quarter							
									16.5.8	FMD							
16.6																	
16.6.1 Did the household produce any milk during 2019/20 agriculture year? (Yes =1 No =2) If no go to section 17.1 <input type="checkbox"/>																	
S/N	Season	Number of milked goats	Average milk production per goat per day	Average number of days goats were milked	Milk consumed by the Hh (Litres)	Amount of milk sold (Litres) (If amount sold is 0, > another season)	Average price per litre per season	Where sold									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)									
16.6.2	Wet Season																
16.6.3	Dry Season																
<b>Where sold (Col 8)</b> Neighbour.....1 Local market/trade store.....2 Private Milk Collection Centres.....3 Farmers Cooperative Milk Collection Centres.....4 Farmers organisation Milk Collection Centres.....5 Large scale farm.....6 Trader at farm.....7 Other (specify).....98										<b>Last Vaccinated (Col 7)</b> 2020.....1 2019.....2    2018.....3    2017.....4 2016.....5    2015.....6    before 2015.....6 Not Vaccinated...8							
<b>Main Source of vaccine (Col 8)</b> Private Veterinary Facilities.....1 District Vet Office.....2 NGO/Project.....3 Tanzania Vet Laboratory Services Centres.....4 Other (Specify).....8 Not applicable.....9																	

<b>17.0 SHEEP</b>																	
17.1 Did the household own, raise or manage any SHEEP during the 2019/20 agricultural year? <input type="checkbox"/>																	
(If no go to section 18.0)																	
<b>17.2 Sheep Population as of 1st August 2020</b>																	
S/N	Sheep type <i>(1)</i>	Number of Indigenous <i>(2)</i>	Number of Improved		Total <i>(5)</i>	<b>17.3 Sheep Intake during 2019/20</b>											
			for Mutton <i>(3)</i>	Dairy <i>(4)</i>		S/N	Number Purchased <i>(6)</i>	Number given/obtained <i>(7)</i>	Number Born <i>(8)</i>	Total Intake of Sheep (CHECK IF C6 = 0 >NEXT ITEM) <i>(9)</i>	Average price per head <i>(10)</i>						
17.2.1	Ram					17.3.1											
17.2.2	Castrated Sheep					17.3.2											
17.2.3	Ewe (She Sheep)					17.3.3											
17.2.4	Male lamb					17.3.4											
17.2.5	She lamb					17.3.5											
17.2.6	<b>Grand Total</b>					17.3.6	<b>Total Intake</b>										
<b>17.4 Sheep Offtake during 2019/20 agricultural year</b>																	
S/N	Sheep type <i>(1)</i>	Number Sold/traded <i>(2)</i>	Number consumed by household <i>(3)</i>	Number given away <i>(4)</i>	Number stolen <i>(5)</i>	Number died <i>(6)</i>	Total Sheep Offtake (CHECK IF C2 = 0 >NEXT ITEM) <i>(7)</i>	Average price per head <i>(8)</i>	<b>17.5 Sheep diseases</b>								
									S/N	Disease/ parasite <i>(1)</i>	Did Sheep got [...] disease in 2019/20? If No > Col 7 <i>(2)</i>	Number Infected <i>(3)</i>	Number treated <i>(4)</i>	Number recovered <i>(5)</i>	Number died <i>(6)</i>	Last Vaccinated <i>(7)</i>	Main Source of Vaccine <i>(8)</i>
17.4.1	Ram								17.5.1	Foot Rot							
17.4.2	Castrated Sheep								17.5.2	CCPP							
17.4.3	She Sheep								17.5.3	Helminthiasis							
17.4.4	Male lamb								17.5.4	Trypanosomiasis							
17.4.5	She lamb								17.5.5	FMD							
17.4.6	<b>Total Offtake</b>								17.5.6	Brucellosis							
<b>Last Vaccinated (Col 7)</b> 2020 .....1 2019 .....2    2018 .....3    2017 .....4 2016 .....5    2015 .....6    before 2015 .....6    Not Vaccinated...8										17.5.7	Black Quarter						
<b>Main Source of vaccine (Col 8)</b> Private Veterinary Facilities.....1    District Vet Office.....2    NGO/Project.....3    Tanzania Vet Laboratory Agency centre.....4 Other .....8    Not applicable .....9										17.5.8	Anthrax						

<b>18.0</b>	<b>PIG</b>							
18.1	Did the household own, raise or manage any PIGS during the 2019/20 agricultural year ? <input type="checkbox"/>							
	(If no go to section 19.0)							
<b>18.2</b>	<b>PIG Population as of 1 st August 2020</b>			<b>18.3 Pig intake during 2019/20</b>				
S/N	Pig type	Number	S/N	Number Purchased	Number given /obtained	Number Born	Total Pig Intake (CHECK IF C3 = 0 >NEXT ITEM)	Average Price per head
	(1)	(2)		(3)	(4)	(5)	(6)	(7)
18.2.1	Boar		18.3.1					
18.2.2	Castrated male		18.3.2					
18.2.3	Sow		18.3.3					
18.2.4	Gilt		18.3.4					
18.2.5	Male piglet		18.3.5					
18.2.6	She piglet		18.3.6					
18.2.7	<b>Grand Total</b>		18.3.7	<b>Grand Total</b>				
<b>18.4</b>	<b>Pig offtake during 2019/20 agricultural year</b>							
S/N	Pig type	Number Sold/traded	Number consumed by households	Number given away	Number stolen	Number Died	Total Pig Offtake (CHECK IF C2 = 0 >NEXT ITEM)	Average price per head
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
18.4.1	Boar							
18.4.2	Castrated male							
18.4.3	Sow							
18.4.4	Gilt							
18.4.5	Male piglet							
18.4.6	She piglet							
18.4.7	<b>Total Offtake</b>							
<b>18.5</b>	<b>Pig diseases/pests/conditions</b>							
S/N	Disease/Pest	Did pig got [...] disease in 2019/20? If If No > Col 7	Number Infected	Number treated	Number recovered	Number died	Last Vaccinated	Main Source of Vaccine
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
18.5.1	Anthrax							
18.5.2	ASF							
18.5.3	Anemia							
18.5.4	Helmenthiosis							
18.5.5	Brucellosis							
18.5.6	Mange							
18.5.7	FMD							

**Last Vaccinated (Col 7)**

2020.....1	2019.....2
2018.....3	2017.....3
2016.....4	2015.....5
Before 2015.....7	Not Vaccinated.....8

**Main Source (Col 8)**

Private Veterinary Facilities.....1
District Vet office .....2
NGO/Project.....3
Tanzania Vet Laboratory Agency centre.....4
Other .....8
Not applicable .....9

<b>19.0 POULTRY</b>							
19.1 Did the household own, raise or manage any Poultry during the 2019/20 agriculture year (Yes =1 No =2) <input type="checkbox"/>							
(If no go to section 20.0)							
<b>19.2 Give details of Poultry as of 1st August 2020 available and consumption and sales during the 2019/20 agriculture year</b>							
Poultry type	Number of poultry as of 1st August 2020 (Number)	Sold during 2019/20		Consumed during 2019/20			
		Number	Average Price/head	Number	Average price/head		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
19.2.1	Indigenous Chicken						
19.2.2	Layers						
19.2.3	Broilers						
19.2.4	Ducks						
19.2.5	Turkeys						
19.2.6	Guinea fowls						
<b>19.3 POULTRY DISEASES</b>							
		Did poultry got [...] disease in 2019/20? (Yes = 1 No = 2) If 2 -> Col 3 then Next Disease	Number Vaccinated	Number Infected	Number Treated	Number Died	Number recovered
(1)		(2)	(3)	(4)	(5)	(6)	(7)
19.3.1	Newcastle Disease						
19.3.2	Gumboro						
19.3.3	Coccidiosis						
19.3.4	Coryza						
19.3.5	Fowl pox						
19.3.6	Fowl typhoid						
<b>20.0 OTHER LIVESTOCK</b>							
20.1 Did the household own, raise or manage any OTHER LIVESTOCK during the 2019/20 agriculture year <input type="checkbox"/>							
(If no go to section 20.3)							
<b>20.2 Give details of other livestock available as of 1st October 2019 and details of consumption and sales during the 2019/20 agriculture year</b>							
Animal type	as of 1st August 2020 (Number)	Sold during 2019/20		Consumed during 2019/20			
		Number	Average Price/head	Number			
(1)	(2)	(3)	(4)	(5)			
20.2.1	Rabbits						
20.2.2	Donkeys						
20.2.3	Horses						
20.2.4	Dogs						
20.2.5	Guinea Pigs						
20.2.6	Other (specify).....						
<b>20.3 LIVESTOCK PRODUCTS</b>							
S/N	Product	Production of livestock product during 2019/20 agricultural year (Number/Pieces)	Sold during 2019/20		Consumed/utilised during 2019/20		
			Number	Average price/unit	Number		
(1)	(2)	(3)	(4)	(5)			
20.3.1	Eggs (indigenous)						
20.3.2	Eggs (Improved chicken)						
20.3.3	Hides						
20.3.4	Goat Skins						
20.3.5	Sheep Skins						

21.0 OUTLET FOR SALE OF LIVESTOCK						
S/N	Please, rank in order of importance the <b>outlets for sale of Livestock</b>					
	Importance of Outlet	Outlets for Cattle	Outlets for Goat	Outlets for Sheep	Outlets for pigs	Outlets for Chickens
	(1)	(2)	(3)	(4)	(5)	(6)
21.1	1st					
21.2	2nd					
21.3	3rd					
21.4	4th					
21.5	5th					
<p><b>Outlet code (Col 2, 3, 4, 5 &amp; 6)</b>  Trader at farm .....1    Abattoir/factory .....5  Primary Market .....2    Another farmer .....6  Secondary market/auction.....3    Ranch .....7  Neighbour .....4    Border Market .....8  Other (Specify).....98    Not applicable .....99</p> <p><b>Source of structure (Q 22 - Col 3)</b>  Self owned .....1    NGO .....6  Cooperative .....2    Large scale farm .....7  Local farmers association .....3    Other (Specify) .....8  Gov extension/veterinary .....4    Not applicable .....9  Development project .....5</p>						

22.0 LIVESTOCK STRUCTURES/ ACCESSORIES				
S/N	Access to functional Livestock structures/accessory			
	Type of Structure/accessory	Do you have access to [...] ? Yes = 1, No = 2, I Don't know = 3 If no, go to next structure/accessory	Source of Structure	Distance to structure from the household (km)
	(1)	(2)	(3)	(4)
22.1	Cattle Dip			
22.2	Spray Race			
22.3	Hand powered sprayer			
22.4	Cattle crush			
22.5	Primary Market			
22.6	Secondary Market			
22.7	Abattoir			
22.8	Slaughter house			
22.9	Slaughter Slab			
22.10	Hide/skin shed			
22.11	Input supply shop			
22.12	Veterinary Clinic			
22.13	Village holding ground			
22.14	Chacol dam			
22.15	Drencher			



21.0 OUTLET FOR SALE OF LIVESTOCK						
Please, rank in order of importance the outlets for sale of Livestock						
S/N	Importance of Outlet	Outlets for Cattle	Outlets for Goat	Outlets for Sheep	Outlets for pigs	Outlets for Chickens
	(1)	(2)	(3)	(4)	(5)	(6)
21.1	1st					
21.2	2nd					
21.3	3rd					
21.4	4th					
21.5	5th					
<p><b>Outlet code (Col 2, 3, 4, 5 &amp; 6)</b></p> <p>Trader at farm .....1 Abattoir/factory.....5            Primary Market .....2 Another farmer .....6            Secondary market/auction.....3 Ranch.....7            Neighbour .....4 Border Market .....8            Other (Specify).....98 Not applicable .....99</p> <p><b>Source of structure (Q 22 - Col 3)</b></p> <p>Self owned .....1 NGO .....6            Cooperative .....2 Large scale farm .....7            Local farmers association .....3 Other (Specify) .....8            Gov extension/veterinary .....4 Not applicable .....9            Development project .....5</p>						

22.0 LIVESTOCK STRUCTURES/ ACCESSORIES				
Access to functional Livestock structures/accessory				
S/N	Type of Structure/accessory	Do you have access to [...]? Yes = 1, No = 2, I Don't know = 3 If no, go to next structure/accessory	Source of Structure	Distance to structure from the household (km)
	(1)	(2)	(3)	(4)
22.1	Cattle Dip			
22.2	Spray Race			
22.3	Hand powered sprayer			
22.4	Cattle crush			
22.5	Primary Market			
22.6	Secondary Market			
22.7	Abattoir			
22.8	Slaughter house			
22.9	Slaughter Slab			
22.10	Hide/skin shed			
22.11	Input supply shop			
22.12	Veterinary Clinic			
22.13	Village holding ground			
22.14	Chacol dam			
22.15	Drencher			

<b>23.0</b>	<b>LIVESTOCK PEST &amp; PARASITE CONTROL</b>				
23.1	Did this household participate in any livestock pest and parasite control during 2019/20 agriculture year? (Yes=1, No=2) If No go to section 24				
23.2	Did you deworm your animals during 2019/20 agriculture year? (Yes=1, No=2) (If the response is 'NO' go to question 23.4)				
23.3	Which animals did you <b>deworm</b> ? (Dewormed =1, NOT dewormed = 2 Not Applicable.....9)				
23.3.1	Cattle	<input type="checkbox"/>	23.3.2	Goat <input type="checkbox"/>	
23.3.3	Sheep	<input type="checkbox"/>	23.3.4	Pigs <input type="checkbox"/>	
23.3.5	Chicken <input type="checkbox"/>				
23.4	Do your livestock normally encounter a <b>tick</b> problem? (Yes=1, No=2), if "NO" go 23.6				
23.5	Which method of tick control did you use? <b>Control method (Q 23.5)</b> Dipping.....1 Spraying.....2 Smearing.....3 None.....4 Other (Specify).....8				
23.6	Do your livestock normally encounter a <b>tsetse fly</b> problem? (Yes =1, No = 2) (If the response is 'NO' go to question 23.8)				
23.7	Which method of control did you mostly use? <b>Control method (Q 23.7)</b> Dipping.....1 Spraying.....2 Trapping.....3 None.....4 Other (Specify).....8				
23.8	Did you encounter a New Castle Disease problem on your chicken during 2019/20 agriculture year? (Yes = 1, No = 2) (If the answer is 'NO' go to question 23.10)				
23.9	Which method of control did you mostly use? <b>Methods of control (Question 23.9)</b> Vaccination.....1 Local Herbs.....2 None.....3 Others (Specify).....8				
23.10	Did you encounter a Fowl Typhoid for your chicken? Yes=1, No=2 (If the answer is 'NO' go to question 23.12)				
23.11	Which method of treatment did you mostly use? <b>Methods of control (Question 23.11)</b> Conventional treatment.....1 Local Herbs.....2 None.....3 Others (Specify).....8				
23.12	Did your livestock get vaccination against [.....] diseases? Code Yes =1, No = 2 or Not applicable (9) for each disease listed				
23.12.1	Foot and Mouth Disease	23.12.2	Lumpy skin	23.12.3	Rabies
23.12.4	Black Quarter	23.12.5	Anthrax	23.12.6	CBPP
<b>24.0</b>	<b>LIVESTOCK EXTENSION SERVICES</b>				
24.1	Did you receive any livestock extension advice during 2019/20 agriculture year? (Yes=1, No=2) if No GO to section 26 <input type="checkbox"/>				
S/N.	Livestock Extension Message	Received Advice Yes=1, No=2 -> Next Extension	Source of Livestock Extension	How was the advice received?	Advice Practiced (Yes = 1, No = 2)
24.1.1	Feeds and Proper feeding	(1)	(2)	(3)	(4)
24.1.2	Housing (Goat, Dairy, Poultry, Pigs)				
24.1.3	Proper Milking and Milk Hygiene				
24.1.4	Livestock fattening				
24.1.5	Disease control (dipping/spraying/vaccination)				
24.1.6	Herd/Flock size and selection				
24.1.7	Livestock keeping based on carrying capacity				
24.1.8	Pasture Establishment				
24.1.9	Group formation and strengthening				
24.1.10	Calf rearing				
24.1.11	Use of improved Bulls/ Artificial insemination (AI)				
24.1.12	Livestock branding				
24.1.13	Castration				
24.1.14	Others (specify)				
	<b>Source of livestock extension (Col 3)</b> Government.....1 NGO/Development project.....2 Cooperative.....3 Large scale livestock farmer.....4 Registered private vets and paravets.....5 Other (Specify).....8		<b>Means of receiving extension advice (Col 4)</b> Mobile phone.....1 Email.....2 Face to face with extension officer.....3 TV.....4 Radio.....5 Other (Specify).....8		

25.0 For the following Livestock Extension Service Providers give details							
S/N	Extension Provider	Did you receive Extension Service from []? Yes....1, No.....2 (If the answer is 2-> Other service provider)	If you pay for the service obtained from [], what is the costs per year?	Are you a contact farmer/group member from [] Yes....1, No.....2	No. of visits by extension agency year 2019/20	No. of messages adopted in the last 3 yrs (IF "0" GO NEXT EXTENSION PROVIDER)	Quality of Service
	(1)	(2a)	(2b)	(3)	(4)	(5)	(6)
25.1	Government						
25.2	NGO/dev project						
25.3	Registered private vets and paravets						
25.4	Cooperative						
25.5	Large Scale livestock farmer						
25.6	Other (Specify).....						
<b>Quality of services(Col 6)</b> Very good .....1 Good.....2 Average .....3 Poor.....4 Very poor.....5							
26.0 GOVERNMENT POLICY, LEGAL AND REGULATORY CHALLENGES							
26.1	Did you face challenges with government regulations during 2019/20 agriculture year?					Yes = 1, No = 2 (If No, go to section 27.0)	
	List in order of importance	<b>Challenges code</b> Land ownership by government.....1 Restrictions of Livestock movement between administrative boundaries .....2 Import of food/feed items.....3 Export/Import ban on Livestock/livestock products .....4 Livestock levy.....5					
	Challenge code						
26.1.1	1st						
26.1.2	2nd						
26.1.3	3rd						

<b>27.0</b>	<b>FISH FARMING</b>																																
<b>27.1</b>	Was fish farming carried out by this household during 2019/20? (Yes = 1, No = 2) <input type="checkbox"/>										(If the response is 'NO' go to section 28)																						
Specify details of fish farming practices																																	
S/N	Productin unit Number	Acquaculture system	Size of unit/pond (m2/m3)	Type of Water	Source of Water	Main Source of fingerlings	Frequency of stocking(No./ Year)	Number of Stocked Fish			Fish Sales			Fish Feeds																			
								Type of stocked Fish	Number of Stocked fish	Number of fish harvested. If not harvested, write 00->Col. 15	Weight of fish harvested	Weight of fish sold. If not sold, write 00->Col. 15	Average price of fish sold per Kg	Mainly sold to	Source of Fish Feeds	Amount used in Kg	Average price of feeds per Kg																
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)																
27.1.1	1																																
27.1.2	2																																
27.1.3	3																																
<table border="0"> <tr> <td style="border: 1px solid black; padding: 5px;"> <b>Acquaculture system (Col 2)</b>            Deep Water Cage.....1            Shallow water cage.....2            Natural pond.....3            Dig out POUND.....4            Water Reservoir.....5            Tank.....6            Other Specify.....8         </td> <td style="border: 1px solid black; padding: 5px;"> <b>Source of water (Col 5)</b>            Rain fed.....1            Ground water.....2            Rivers.....3            Lakes.....4            Dam.....5            Ocean.....6            Tap water.....7            Other.....8         </td> <td style="border: 1px solid black; padding: 5px;"> <b>Types of water (Col 4)</b>            Fresh Water.....1            Marine water.....2            Blackish Water.....3         </td> <td style="border: 1px solid black; padding: 5px;"> <b>Main source of fingerlings (Col 6)</b>            Own fish hatchery.....1            Neighbour fish hatchery.....2            Government institution hatchery.....3            Private trader fish hatchery.....4            Natural pond.....5            NGO/Project.....6            Other.....8         </td> <td style="border: 1px solid black; padding: 5px;"> <b>Type of Fish stocked (Col 8)</b>            Tilapia.....1            Milkfish.....2            African Cat fish.....3            Prawns.....4            Other (Specify).....8         </td> <td style="border: 1px solid black; padding: 5px;"> <b>Mainly sold to (Col 14)</b>            Neighbour.....1      Did not sell.....7            Landing site.....2      Other.....8            Fish market.....3            Processing industry.....4            Large scale farmer.....5            Trade at farm.....6         </td> <td style="border: 1px solid black; padding: 5px;"> <b>Source of Fish feeds (Col 15)</b>            Home made feeds.....1            Locally compounded feeds.....2            Imported manufactured feeds.....3            Other (Specify).....8         </td> </tr> </table>																		<b>Acquaculture system (Col 2)</b> Deep Water Cage.....1 Shallow water cage.....2 Natural pond.....3 Dig out POUND.....4 Water Reservoir.....5 Tank.....6 Other Specify.....8	<b>Source of water (Col 5)</b> Rain fed.....1 Ground water.....2 Rivers.....3 Lakes.....4 Dam.....5 Ocean.....6 Tap water.....7 Other.....8	<b>Types of water (Col 4)</b> Fresh Water.....1 Marine water.....2 Blackish Water.....3	<b>Main source of fingerlings (Col 6)</b> Own fish hatchery.....1 Neighbour fish hatchery.....2 Government institution hatchery.....3 Private trader fish hatchery.....4 Natural pond.....5 NGO/Project.....6 Other.....8	<b>Type of Fish stocked (Col 8)</b> Tilapia.....1 Milkfish.....2 African Cat fish.....3 Prawns.....4 Other (Specify).....8	<b>Mainly sold to (Col 14)</b> Neighbour.....1      Did not sell.....7 Landing site.....2      Other.....8 Fish market.....3 Processing industry.....4 Large scale farmer.....5 Trade at farm.....6	<b>Source of Fish feeds (Col 15)</b> Home made feeds.....1 Locally compounded feeds.....2 Imported manufactured feeds.....3 Other (Specify).....8									
<b>Acquaculture system (Col 2)</b> Deep Water Cage.....1 Shallow water cage.....2 Natural pond.....3 Dig out POUND.....4 Water Reservoir.....5 Tank.....6 Other Specify.....8	<b>Source of water (Col 5)</b> Rain fed.....1 Ground water.....2 Rivers.....3 Lakes.....4 Dam.....5 Ocean.....6 Tap water.....7 Other.....8	<b>Types of water (Col 4)</b> Fresh Water.....1 Marine water.....2 Blackish Water.....3	<b>Main source of fingerlings (Col 6)</b> Own fish hatchery.....1 Neighbour fish hatchery.....2 Government institution hatchery.....3 Private trader fish hatchery.....4 Natural pond.....5 NGO/Project.....6 Other.....8	<b>Type of Fish stocked (Col 8)</b> Tilapia.....1 Milkfish.....2 African Cat fish.....3 Prawns.....4 Other (Specify).....8	<b>Mainly sold to (Col 14)</b> Neighbour.....1      Did not sell.....7 Landing site.....2      Other.....8 Fish market.....3 Processing industry.....4 Large scale farmer.....5 Trade at farm.....6	<b>Source of Fish feeds (Col 15)</b> Home made feeds.....1 Locally compounded feeds.....2 Imported manufactured feeds.....3 Other (Specify).....8																											
<b>28.0</b>	<b>BEE KEEPING</b>																																
<b>28.1</b>	Did your household practised Bee keeping during 2019/20 agriculture year? (Yes= 1, No=2) <input type="checkbox"/>										If answer is No go to section 29																						
Give details on honey harvesting during 2019/20 agriculture year																																	
S/N	Type of bees	Number of Local Bee Hives	Number of improved Bee hives	Harvesting done? (Yes= 1, No =2->next)	Amount Produced per year (Litre)	Amount of honey Sold (Litre)	Average Price per Litre	Honey Market																									
									(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)																	
28.1.1	Small bees (Stingless Bees)								<table border="1"> <tr> <td colspan="8"><b>Honey Market (Col 8)</b></td> </tr> <tr> <td>Neighbour.....1</td> <td>Auction.....2</td> <td>Large Scale Farmers.....3</td> <td>Open market.....4</td> <td>Honey Processing Industry.....5</td> <td>Private business people.....6</td> <td>Did not sale.....7</td> <td>Others.....8</td> </tr> </table>									<b>Honey Market (Col 8)</b>								Neighbour.....1	Auction.....2	Large Scale Farmers.....3	Open market.....4	Honey Processing Industry.....5	Private business people.....6	Did not sale.....7	Others.....8
<b>Honey Market (Col 8)</b>																																	
Neighbour.....1	Auction.....2	Large Scale Farmers.....3	Open market.....4	Honey Processing Industry.....5	Private business people.....6	Did not sale.....7	Others.....8																										
28.1.2	Large bees																																

29.0 LABOUR USE				30.0 SUBSISTENCE vs NON-SUBSISTENCE					
29.1 Who is/are <b>mainly responsible</b> for undertaking the following tasks: (Hh members Aged 5 years old and above)				30.1 Indicate if any member of the household was involved in the following activities and assess the percentage used for subsistence/consumption by the household:					
S/N	Activity	Is your household involved in [...]? Yes = 1 No = 2 > NEXT ACTIVITY	Main responsible person(s)	S/N	Activity	Is your household involved in [...]? Yes = 1 No = 2 > NEXT ACTIVITY	Estimate % used for subsistence	Estimate % used for non subsistence	Check Total
	(1)	(2)	(3)		(1)	(2)	(3)	(4)	(5)
29.1.1	Land Clearing			30.1.1	Crop production				100
29.1.2	Land tilling (by hand)			30.1.2	Livestock production				100
29.1.3	Land tilling (oxen/tractor)			30.1.3	Vegetable production				100
29.1.4	Planting			30.1.4	Tree cutting for firewood				100
29.1.5	Weeding			30.1.5	Tree logging for poles				100
29.1.6	Crop Protection			30.1.6	Tree logging for timber				100
29.1.7	Harvesting			30.1.7	Tree logging for charcoal				100
29.1.8	Crop processing			30.1.8	Fishing				100
29.1.9	Crop marketing			30.1.9	Bee keeping				100
29.1.10	Cattle rearing/husbandry			30.1.10	Permanent employment/off farm income				100
29.1.11	Cattle herding			30.1.11	Temporary employment/off farm income				100
29.1.12	Cattle marketing			30.1.12	Remittances				100
29.1.13	Goat/sheep rearing/husbandry								
29.1.14	Goat and sheep herding								
29.1.15	Goat and sheep marketing								
29.1.16	Milking								
29.1.17	Pig rearing/husbandry								
29.1.18	Poultry keeping								
29.1.19	Collecting Water								
29.1.20	Collecting Firewood								
29.1.21	Pole cutting								
29.1.22	Timber wood cutting								
29.1.23	Building/maintaining houses								
29.1.24	Making local Beer								
29.1.25	Bee keeping								
29.1.26	Fishing								
29.1.27	Fish farming								
29.1.28	Off-farm income generation								
<b>Responsible person section 28.1 (Col 3)</b> 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				<b>ACCESS TO INFRASTRUCTURE &amp; OTHER SERVICES</b> 31.1 Give details of the access of the following services					
<b>Satisfied with service section 31 (Col 4)</b> Very good .....1 Average .....3 No good .....5 Good .....2 Poor .....4 Not applicable 9				S/N Type of Nearest service Distance in km (IF THE SERVICE IS NOT AVAILABLE, CODE 999, DON'T KNOW CODE 998) S/N Type of service Distance in km					
				(1) (2) (1) (2)					
				31.1.1 Primary School 31.1.8 Feeder Road 31.1.2 Secondary School 31.1.9 All weather road 31.1.3 Dispensary 31.1.10 Tarmac road 31.1.4 Health Centre 31.1.11 Primary market 31.1.5 Hospital 31.1.12 Secondary market 31.1.6 District Capital 31.1.13 Tertiary market 31.1.7 Regional Capital 31.1.14 Vet Clinic					
				S/N Type of Nearest service Distance in km (IF THE SERVICE IS NOT AVAILABLE CODE 999, DON'T KNOW CODE 998) Number of visits/year Level of satisfaction with service received					
				(1) (2) (3) (4)					
				31.1.15 Extension Centre 31.1.16 Research Station 31.1.17 Plant protection Lab 31.1.18 Land registration office 31.1.19 Livestock Dev Centre 31.1.20 Livestock Dipping facility					

32.0 AGRICULTURAL CONSTRAINTS		
From the list of constraints, select:		
32.1	The 5 most important constraints	
	<b>Order of most importance</b>	<b>Constraint</b>
	(1)	(2)
32.1.1	1st most constraint	
32.1.2	2nd most constraint	
32.1.3	3rd most constraint	
32.1.4	4th most constraint	
32.1.5	5th most constraint	
<b>33.0 MARKET INFORMATION</b> 33.1 Sources through which you obtain market information		
	<b>Source</b>	Yes = 1, No = 2
33.1.1	Tv	
33.1.2	Radio	
33.1.3	News papers	
33.1.4	Mobile Phones	
33.1.5	Local Authorities	
33.1.6	Farmers Organization	
33.1.7	Internet	
33.1.8	Fellow Farmers	
33.1.9	Other (Specify)	

**List of constraints**

Access to Land.....	1
Land Ownership.....	2
Soil Fertility.....	3
Availability of Quality Seeds.....	4
Irrigation Equipment.....	5
Availability of Agro-chemicals.....	6
Availability of Veterinary Drugs.....	7
Cost of Inputs.....	8
Extension Services.....	9
Availability of Forest Products.....	10
Access to Credit.....	11
Harvesting.....	12
Threshing/Dehulling.....	13
Crop Storage.....	14
Agro-processing.....	15
Access to Markets and Marketing Information.....	16
Transportation Cost.....	17
Destruction by Wild Animals/Birds.....	18
Crop Theft.....	19
Livestock Theft.....	20
Pests and Diseases.....	21
Cess.....	22
Off-farm Income.....	23
Conflict Between Farmers and Livestock Keepers.....	24
Climate Changes (Drought, Floods, etc.).....	25
Availability of inputs.....	26
Availability of Industrial Agro-chemical.....	27
Access to Water for Agricultural Activities.....	28
Low Prices of Agricultural Produces.....	29
Cost of Land Ownership.....	30
Governmental Policies, Laws, Regulation and Guidelines.....	31
Availability of Quality Pasture and Animal Feeds.....	32
Access to Water for Domestic Use.....	33
No Constraint.....	34
Lack of Capitals/Money.....	35
Lack/ Poor Infrastructure.....	36
Other (Specify).....	98

<b>34.0 POVERTY INDICATORS AT HOUSEHOLD LEVEL</b>																																													
<b>34.1 HOUSE CONSTRUCTION</b>		<b>34.2 HOUSEHOLD ASSETS</b>																																											
34.1.1 For the main dwelling, what are the building materials for following parts		34.2.1 Does your household own the following? ( <i>Operating assets</i> )																																											
34.1.1.1 Roof <input type="checkbox"/> 34.1.1.2 Floor <input type="checkbox"/> 34.1.1.3 Walls <input type="checkbox"/>		Asset <input type="checkbox"/> Yes=1, No=2																																											
34.1.2 Number of bed rooms <input type="text"/>		34.2.1.1 Radio/cassette, (music system)																																											
<table border="1"> <tr> <td><b>Roof Material</b></td> <td><b>Wall Material</b></td> </tr> <tr> <td>Iron Sheets.....1</td> <td>Grass.....1</td> </tr> <tr> <td>Tiles.....2</td> <td>Poles And Mud.....2</td> </tr> <tr> <td>Concrete.....3</td> <td>Sun-Dried Bricks.....3</td> </tr> <tr> <td>Asbestos.....4</td> <td>Baked Bricks.....4</td> </tr> <tr> <td>Grassleaves.....5</td> <td>Wood, Timber.....5</td> </tr> <tr> <td>Grass &amp; mud.....6</td> <td>Cement Blocks.....6</td> </tr> <tr> <td>Other (Specify).....8</td> <td>Stones.....7</td> </tr> <tr> <td></td> <td>Brick stones.....8</td> </tr> <tr> <td></td> <td>Other (specify).....98</td> </tr> </table>		<b>Roof Material</b>	<b>Wall Material</b>	Iron Sheets.....1	Grass.....1	Tiles.....2	Poles And Mud.....2	Concrete.....3	Sun-Dried Bricks.....3	Asbestos.....4	Baked Bricks.....4	Grassleaves.....5	Wood, Timber.....5	Grass & mud.....6	Cement Blocks.....6	Other (Specify).....8	Stones.....7		Brick stones.....8		Other (specify).....98	34.2.1.2 Telephone (landline)																							
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		34.2.1.3 Telephone (mobile)																																											
		34.2.1.4 Pressing Iron																																											
		34.2.1.5 Wheelbarrow																																											
		34.2.1.6 Bicycle																																											
		34.2.1.7 Vehicle																																											
		34.2.1.8 Television																																											
		34.2.1.9 Refrigerator																																											
		34.2.1.10 Motor Cycle																																											
		34.2.1.11 Bajaji																																											
		34.2.1.12 Personal computer/ laptop																																											
		34.2.1.13 Kerosine lamps																																											
		34.2.1.14 Solar panel																																											
		34.2.1.15 Generator																																											
		34.2.1.16 Electric gas stove																																											
		34.2.1.17 Torch																																											
<b>34.3 ENERGY USE BY HOUSEHOLD</b>		<b>34.4 ACCESS TO DRINKING WATER</b>																																											
34.3.1 Energy use and access by the household		Season <input type="checkbox"/> Main source of drinking water <input type="checkbox"/> Distance to source (in km) <input type="checkbox"/> Time to and from source (Hour : minute) <input type="checkbox"/>																																											
Main Source of energy for <input type="checkbox"/>		(1) <input type="checkbox"/> (2) <input type="checkbox"/> (3) <input type="checkbox"/> (4) <input type="checkbox"/>																																											
34.3.1.1 Lighting <input type="checkbox"/> 34.3.1.2 Cooking <input type="checkbox"/>		34.4.1 Wet Season <input type="checkbox"/> 34.4.2 Dry Season <input type="checkbox"/>																																											
<table border="1"> <tr> <td><b>Lighting energy</b></td> <td><b>Cooking energy</b></td> </tr> <tr> <td>Electricity.....01</td> <td>Main electricity.....01</td> </tr> <tr> <td>Solar.....02</td> <td>Solar.....02</td> </tr> <tr> <td>Biogas.....03</td> <td>Gas (h/biogas).....03</td> </tr> <tr> <td>Hurricane Lamp.....04</td> <td>Gas (Industrial).....04</td> </tr> <tr> <td>Pressure Lamp.....05</td> <td>Paraffin/Kerosene.....05</td> </tr> <tr> <td>Wick Lamp.....06</td> <td>Charcoal.....06</td> </tr> <tr> <td>Candles.....07</td> <td>Firewood.....07</td> </tr> <tr> <td>Firewood.....08</td> <td>Crop Residues.....08</td> </tr> <tr> <td>Torch/Rechargeable Lamp.....09</td> <td>Livestock dung.....09</td> </tr> <tr> <td>Generator/Private source.....10</td> <td>Natural Gas.....10</td> </tr> <tr> <td>Other (specify).....98</td> <td>Generator/Private source.....11</td> </tr> <tr> <td></td> <td>Other (specify).....98</td> </tr> </table>		<b>Lighting energy</b>	<b>Cooking energy</b>	Electricity.....01	Main electricity.....01	Solar.....02	Solar.....02	Biogas.....03	Gas (h/biogas).....03	Hurricane Lamp.....04	Gas (Industrial).....04	Pressure Lamp.....05	Paraffin/Kerosene.....05	Wick Lamp.....06	Charcoal.....06	Candles.....07	Firewood.....07	Firewood.....08	Crop Residues.....08	Torch/Rechargeable Lamp.....09	Livestock dung.....09	Generator/Private source.....10	Natural Gas.....10	Other (specify).....98	Generator/Private source.....11		Other (specify).....98	<table border="1"> <tr> <td><b>Main Source of drinking water (col 2)</b></td> <td></td> </tr> <tr> <td>Bored well.....01</td> <td>Covered rainwater catchment.....07</td> </tr> <tr> <td>Protected well.....02</td> <td>Uncovered rainwater catchment.....08</td> </tr> <tr> <td>Protected/covered spring.....03</td> <td>Water Vendor.....09</td> </tr> <tr> <td>Unprotected spring.....04</td> <td>Water truck.....10</td> </tr> <tr> <td>Unprotected spring.....05</td> <td>Borehole water.....11</td> </tr> <tr> <td>Surface water (lake/dam/river/stream).....06</td> <td>Borehole.....12</td> </tr> <tr> <td>Other (Specify).....98</td> <td></td> </tr> </table>		<b>Main Source of drinking water (col 2)</b>		Bored well.....01	Covered rainwater catchment.....07	Protected well.....02	Uncovered rainwater catchment.....08	Protected/covered spring.....03	Water Vendor.....09	Unprotected spring.....04	Water truck.....10	Unprotected spring.....05	Borehole water.....11	Surface water (lake/dam/river/stream).....06	Borehole.....12	Other (Specify).....98	
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<b>34.5 ACCESS TO TOILET FACILITIES</b>		<b>34.6 FOOD SECURITY AND CONSUMPTION IN THE HOUSEHOLD</b>																																											
34.5.1 What type of toilet does your household use? <input type="checkbox"/>		<b>Food consumption</b>																																											
<table border="1"> <tr> <td><b>Type of toilet</b></td> </tr> <tr> <td>No toilet/bush.....1</td> </tr> <tr> <td>Pit latrine without slab/ Open pit.....2</td> </tr> <tr> <td>Pit latrine with slab/ Not washable.....3</td> </tr> <tr> <td>Pit latrine with slab/ washable.....4</td> </tr> <tr> <td>Ventilated Improved Pit latrine (VIP).....5</td> </tr> <tr> <td>Pour flush toilet.....6</td> </tr> <tr> <td>Flush toilet with cistern.....7</td> </tr> <tr> <td>Composting toilet/ECOSAN latrine.....8</td> </tr> <tr> <td>Other (specify).....98</td> </tr> </table>		<b>Type of toilet</b>	No toilet/bush.....1	Pit latrine without slab/ Open pit.....2	Pit latrine with slab/ Not washable.....3	Pit latrine with slab/ washable.....4	Ventilated Improved Pit latrine (VIP).....5	Pour flush toilet.....6	Flush toilet with cistern.....7	Composting toilet/ECOSAN latrine.....8	Other (specify).....98	34.6.1 Number of meals the household normally take per day <input type="text"/>																																	
<b>Type of toilet</b>																																													
No toilet/bush.....1																																													
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Other (specify).....98																																													
		34.6.2 Number of days household consumed meat in the last seven days <input type="text"/>																																											
		34.6.3 Number of days household consumed Fish in the last seven days <input type="text"/>																																											
		34.6.4 How often did the household have problems in satisfying the food needs of the household in the past 12 months?																																											
		<table border="1"> <tr> <td>Never.....1</td> <td>Sometimes.....3</td> <td>Always.....5</td> </tr> <tr> <td>Seldom.....2</td> <td>Often.....4</td> <td></td> </tr> </table>		Never.....1	Sometimes.....3	Always.....5	Seldom.....2	Often.....4																																					
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Seldom.....2	Often.....4																																												
<b>34.7 MAIN SOURCE OF HOUSEHOLD INCOME</b>		Food Security ( The reference period should be the last 12 months) Yes = 1, No = 2																																											
34.7.1 What is the household main source of cash income? <input type="checkbox"/>		34.6.5 Did you or any other member in your household were <b>worried</b> you could not get enough food to eat?																																											
<table border="1"> <tr> <td><b>Main Source of Income codes</b></td> </tr> <tr> <td>Sale of food crops.....01</td> </tr> <tr> <td>Wages or salaries in cash.....02</td> </tr> <tr> <td>Sale of live stock.....03</td> </tr> <tr> <td>Casual cash earnings.....04</td> </tr> <tr> <td>Sale of live stock products.....05</td> </tr> <tr> <td>Cash remittances.....06</td> </tr> <tr> <td>Sale of cash crops.....07</td> </tr> <tr> <td>Fishing.....08</td> </tr> <tr> <td>Sale of forest products.....09</td> </tr> <tr> <td>Fish farming.....10</td> </tr> <tr> <td>Business income.....11</td> </tr> <tr> <td>Other.....12</td> </tr> <tr> <td>Other (specify).....98</td> </tr> </table>		<b>Main Source of Income codes</b>	Sale of food crops.....01	Wages or salaries in cash.....02	Sale of live stock.....03	Casual cash earnings.....04	Sale of live stock products.....05	Cash remittances.....06	Sale of cash crops.....07	Fishing.....08	Sale of forest products.....09	Fish farming.....10	Business income.....11	Other.....12	Other (specify).....98	34.6.6 Did you or any other member in your household were unable to eat <b>healthy</b> and <b>nutritious food</b> ?																													
<b>Main Source of Income codes</b>																																													
Sale of food crops.....01																																													
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Other (specify).....98																																													
		34.6.7 Did you or any other member in your household ate only a <b>few kinds of foods</b> ?																																											
		34.6.8 Did you or any other member in your household had to <b>skip a meal</b> ?																																											
		34.6.9 Did you or any other member in your household <b>ate less</b> than you thought you should?																																											
		34.6.10 Did your household <b>run out of food</b> ?																																											
		34.6.11 Did you or any other member in your household were <b>hungry</b> but did not eat?																																											
		34.6.12 Did you or any other member in your household went <b>without eating</b> for a whole day?"																																											

<b>35. Results of the Interview</b>		
Complete Interview.....1	Respondent not available.....2	Incomplete Interview.....3
Refusal.....4	No right person to respond.....5	Other.....98
Supervisor Name: _____ ID _____ Date ____ / ____ / ____		

**APPENDIX III: COMMUNITY QUESTIONNAIRE**

ACQ3



United Republic of Tanzania

**CONFIDENTIAL**

**NATIONAL SAMPLE CENSUS OF AGRICULTURE 2019/20  
COMMUNITY QUESTIONNAIRE**

THIS SURVEY IS CONDUCTED IN ACCORDANCE WITH THE STATISTICS ACT, [CAP 351 R.E 2019] AND THE OFFICE OF CHIEF GOVERNMENT STATISTICIAN ACT. NO. 9 OF 2007

THIS INFORMATION IS STRICTLY CONFIDENTIAL AND IS TO BE USED FOR STATISTICAL PURPOSES ONLY

Executed by the Ministry of Agriculture, Ministry of Livestock and Fisheries; President's Office, Regional Administration and Local Governments; Ministry of Industry and Trade; Ministry of Agriculture, Natural resources, Livestock and Fisheries - Zanzibar; National Bureau of Statistics and the Office of the Chief Government Statistician, Zanzibar



**SECTION 1: IDENTIFICATION BLOCK**

V(S)									
X(E)									

CODE

NAME

1. REGION

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---

2. DISTRICT

--	--

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3. WARD/SHEHIA

--	--	--

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4. VILLAGE/MTAA

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5. NAME OF VILLAGE LEADER

---

6. PHONE No.OF VILLAGE CHAIRPERSON

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## Table of Contents

<b>S/N</b>	<b>Topic</b>	<b>Page Number</b>
1	Identifications details	1
2	Average Farm Gate Price for each season for farmers	3
3	Access to Community Resources	4
4	Community Planted Trees	4
5	Non-Governmental (NGOs)/ International Organizations	4
6	Commumity Based Organizations (CBO)	4
7	Other Community Informations	4
8	Availability of infrastructure/services	5



## 2. AVERAGE FARM GATE PRICE FOR EACH SEASON FOR FARMERS

Obtain answers to the following questions from the meeting of enumerator and key informants in the village (**The number should not be below five people**). Key informants can be a village chairman, Village Executive Officer, Councillor, Ward Executive Officer, Village Extension Officer, or any knowledgeable member in the community.

**Procedure:** Administer this form after completing all smallholder questionnaires for the village.

1. Pick from crop list for the major crops and livestock and livestock products provided.
2. Enter price estimates per kg in col 4 and 5.

Crop Name	Crop Code	Unit of measure	Price/Unit	Price of measure						
				Minimum price per year (TZS/Kg)	Maximum price per year (TZS/Kg)					
(1)	(2)	(3)	(4)	(5)			(6)			
	<input type="text"/>	<input type="text"/>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Name of livestock/product	Livestock/product Code	Unit of measure	Minimum price per year (TZS/Unit)	Price per Unit (TZS)	
				Maximum price per year (TZS/Unit)	
(1)	(2)	(3)	(4)	(5)	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

- Type of livestock/product ( Column 2)**
- |                    |                        |
|--------------------|------------------------|
| Cattle.....01      | Beef.....12            |
| Goat.....02        | Goat Meat.....13       |
| Sheep.....03       | Mutton.....14          |
| Pigs.....04        | Pork.....15            |
| Donkeys.....05     | Milk.....16            |
| Chicken.....06     | Eggs.....17            |
| Ducks.....07       | Hide.....18            |
| Turkey.....08      | Skin.....19            |
| Guinea fowl.....09 | Other (specify).....98 |
| Rabbit.....10      |                        |
| Guinea pigs.....11 |                        |

- Unit of Measure - Crops (Column 3)**
- Kg.....1
  - Number.....2
  - Litre.....3
  - Bag.....4
  - Tin.....5
  - Bundle.....6
  - Bunch.....7
  - Other (Spacefy).....8

- Unit of Measure - Livestock (Column 3)**
- Kg.....1
  - Number.....2
  - Litre.....3
  - Portion/ Pieces.....4

<b>3 ACCESS TO COMMUNITY RESOURCES</b>				
3.1	Has the village set aside an area for communal land e.g. forest, grazing, etc. ?		(Yes =1 No =2)	<input type="checkbox"/> IF THE ANSWER IS NO PROCEED TO 3.2
	<b>Details of Communal land in Village/Street</b>		<b>Area in acres</b>	
3.1.1	Total area of communal land		<input type="text"/>	<input type="text"/>
3.1.2	Area of communal grazing land		<input type="text"/>	<input type="text"/>
3.1.3	Area of communal forest		<input type="text"/>	<input type="text"/>
3.1.4	Area of planted forest		<input type="text"/>	<input type="text"/>
3.1.5	Government reserve land		<input type="text"/>	<input type="text"/>
3.1.6	Area under other communal land uses (Specify)		<input type="text"/>	<input type="text"/>
<b>3.2 ACCESS AND USE TO COMMUNITY RESOURCES</b>				
	<b>Community Resources</b>	<b>Distance from the village to the community resource (kilometre)</b>		<b>Main use</b>
		<b>Dry season</b>	<b>Rainy season</b>	
	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>
3.2.1	Water for human consumption	<input type="text"/>	<input type="text"/>	<input type="text"/>
3.2.2	Water for livestock	<input type="text"/>	<input type="text"/>	<input type="text"/>
3.2.3	Communal grazing land	<input type="text"/>	<input type="text"/>	<input type="text"/>
3.2.4	Communal firewood	<input type="text"/>	<input type="text"/>	<input type="text"/>
3.2.5	Wood for charcoal burning	<input type="text"/>	<input type="text"/>	<input type="text"/>
3.2.6	Wood for building poles	<input type="text"/>	<input type="text"/>	<input type="text"/>
3.2.7	Forest for bee keeping (honey)	<input type="text"/>	<input type="text"/>	<input type="text"/>
3.2.8	Hunting Area	<input type="text"/>	<input type="text"/>	<input type="text"/>
3.2.9	Fishing Area	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Instructions on distance from the resource (Column 2 and 3)**

Distance is estimated from the centre of the village.

If the distance is under 1 km , enter "0"

If the distance is above 1 km enter whole number , eg.1.5 km= 2 km, 1.25 km= 1 km

If community resource not available in the Village, enter code "999"  
Not Applicable

**Main use (Column 4)**

Home or farm /livestock consumption....1  
Sold to traders in the village.....2  
Sold to the village market.....3  
Sold to retailers.....4  
Sold to wholesalers .....5  
Not available.....6

<b>4.0 COMMUNITY PLANTED TREES</b>										
4.1 Did your village have community planted trees during 2019/20 agricultural year? (Yes=1, No=2) <input type="checkbox"/> IF THE ANSWER IS NO PROCEED TO SECTION 5.0										
<b>Details of the community tree planting scheme</b>										
Na.	Distance from the village to the community forest	Forest Area (acre)	Type of planting	Type of Trees	Source of seeds/seedlings	Number of years since the start of planting. IF <=1 WRITE "00", >= 100 WRITE "99"	Main product of communal forest	Main use of communal forest main product		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		
4.2	<input type="text"/> <input type="text"/> . <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/>	<input type="text"/>		
<b>Type of planting (Column 3)</b> Plantation planting.....1 Spot planting.....2			<b>Source of seedlings (Column 5)</b> Seeds collection and planting.....1 Village Nursery.....2 Department of Forestry.....3 Private Individuals.....4 Research Centers.....5			<b>Main product of communal forest (Column 7)</b> Poles .....1 Wood .....2 Charcoal .....3 Firewood .....4 Other (Specify).....8		<b>Main use of communal forest products (Column 8)</b> Village development fund.....1 Household domestic use.....2 Household income.....3 Conservation.....4 Other (Specify).....8		

<b>5.0 NON GOVERNMENTAL (NGOs)/ INTERNATIONAL ORGANIZATIONS</b>				
5.1	Did any NGO visit the village during 2019/20 agricultural year? (Yes=1, No=2) <input type="checkbox"/> IF NO, PROCEED TO SECTION 6			
Na.	Type of NGO	Visited Yes =1, No =2 IF NO, GO TO NEXT TYPE OF NGO	Number of visits	Distance from the Village Office to the NGO/ International Organization office (km)
5.1.1	Extension Services	<input type="checkbox"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
5.1.2	Research	<input type="checkbox"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
5.1.3	Agricultural Services	<input type="checkbox"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
5.1.4	Input provision	<input type="checkbox"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
5.1.5	Community Development	<input type="checkbox"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
5.1.6	Other (specify)	<input type="checkbox"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<b>7.0 OTHER COMMUNITY INFORMATIONS</b>				
7.1	Did the village have Farmer Field Schools during 2019/20, agricultural year? (Yes=1, No=2) <input type="checkbox"/>			
7.3	Did the village have local ironsmiths during 2019/20 agricultural year? (Yes=1, No=2 ) IF THE ANSWER IS 2 PROCEED TO QUESTION 7.5 <input type="checkbox"/>			
7.5	Did the village have any training centres on Drought animals during 2019/20 agricultural year? (Yes=1, No=2 ) IF NUMBER 2 IS THE ANSWER PROCEED TO QUESTION 7.7 <input type="checkbox"/>			
7.7	Did the village have any Farmers' Associations / Organizations, Cooperatives and other bodies providing support and services to farmers. (Yes=1, No=2 ) IF THE ANSWER IS 2 PROCEED TO SECTION 8 <input type="checkbox"/>			

<b>6.0 COMMUNITY BASED ORGANIZATIONS (CBOs)</b>		
6.1	Did the village have any CBO during the 2019/20 agricultural year? (Yes=1, No=2) IF NO, PROCEED TO SECTION 7.0 <input type="checkbox"/>	
S/N	Type of CBO	Yes=1, No=2
6.1.1	Extension Services	<input type="checkbox"/>
6.1.2	Research	<input type="checkbox"/>
6.1.3	Agricultural Service	<input type="checkbox"/>
6.1.4	Input provision	<input type="checkbox"/>
6.1.5	Community Development	<input type="checkbox"/>
6.1.6	Other (specify)	<input type="checkbox"/>
7.2	Did the village participate in any research on crops/livestock in the village during 2019/20 agricultural year? (Yes=1, No=2) <input type="checkbox"/>	
7.4	Number of local ironsmiths	<input type="text"/> <input type="text"/>
7.6	Number of training centres for Drought animals	<input type="text"/> <input type="text"/>
7.8	Number of Farmers' Associations / Organizations, Cooperatives, and other bodies providing support and services to farmers	<input type="text"/> <input type="text"/>

### Definitions and working page for page 3

#### Question Specific Definitions:

Obtain answers to the following questions from the meeting between the enumerator and influential farmers in the village. Influential people can be Village Chairman, Village Government Executive Officer, Sheha, Councillor, Ward Executive Officer, Extension Officer in the village or any other person in the village and who is well informed about village matters. It is important to note that these questions must be asked in groups (of not less than 5 people) to obtain answers discussed and approved by many people.

#### Definitions of some specific terms

##### Access to community resources Section 1.0

**Community Resources:** Resources in which the hh members have no individual claim to and which are shared together by all the village.

**Community Land:** The area officially demarcated by the village as shared/public land.

**Available remaining Land:** Official area of communal land minus areas of squatting farmers.

**Government Land Reserve:** Area set aside by the government as national reserve

##### Community tree planting scheme (Section 14.3)

**Community Forest:** A forest planted on the communal land which is planted, replanted or spt planted by the members of the village.

**Plantation Planting:** An area designated by the village for planting a block(s) of trees .

**Spot Planted:** Replanting an area where selective logging has been carried out. A tree is planted to replace the one that has been cut.

**Indigenous Trees:** Trees that are native to Tanzania

**Exotic Trees:** Trees that are not native to Tanzania

**Non Government Organization (Section 3.0):** Is managed by people from outside the village and it normally covers more than one village/District/R egion. Its function is to provide deveoopment assistance to the farmer and is free from direct government links .

**Village level organization (Section 4.0):** is managed by members of the village. Its purpose is normally to access /provide development assistance to the village

8 AVAILABILITY OF INFRASTRUCTURE/SERVICES													
	Infrastructure/Services	1. Is the [INFRASTRUCTURE/ SERVICE] available in this village/Street?  Yes.....1, --> Question 4 No.....2 Not Applicable.....3 --> Next infrastructure/Service	2. What is the distance from the center of village to this service?			3. IF THE SERVICE / INSTITUTION NOT AVAILABLE IN A VILLAGE / STREET ASK; Cost of transport from village/street centre, one way, per person? FOR ANY RESPONSE GO TO NEXT INFRASTRUCTURE/ SERVICE					4. Number [INFRASTRUCTURE/ SERVICE]		
			KM			TZS					Number		
8.1	Regional Headquarter	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.2	District Headquarter	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.3	Government Pre-primary school or nursery school-the nearest	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.4	Private Pre-primary school or nursery school-the nearest	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.5	Government primary school-the nearest	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.6	Private Primary school-the nearest	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.7	Government Secondary school-the nearest	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.8	Private Secondary school-the nearest	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.9	Government hospital-the nearest	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.10	Private hospital-the nearest	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.11	Government health centre-the nearest	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.12	Private health centre-the nearest	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.13	Government dispensary-the nearest	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.14	Private dispensary-the nearest	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.15	Public transport (bus, train, boat)	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.16	Connection of electricity	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.17	Market (daily)	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.18	Periodic or permanent agricultural produce market	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.19	Agricultural produce collection network/center	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.20	Operational Marketing infrastructure	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.21	Operational Warehouse infrastructure	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Name of livestock/product	Livestock/product Code	Unit of measure	Minimum price per year (TZS/Unit)	Price per Unit (TZS)	
				Maximum price per year (TZS/Unit)	
(1)	(2)	(3)	(4)	(5)	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Type of livestock/product ( Column 2)**

Cattle.....01	Beef.....12
Goat.....02	Goat Meat.....13
Sheep.....03	Mutton.....14
Pigs.....04	Pork.....15
Donkeys.....05	Milk.....16
Chicken.....06	Eggs.....17
Ducks.....07	Hide.....18
Turkey.....08	Skin.....19
Guinea fowl..... 09	Other (specify).....98
Rabbit.....10	
Guinea pigs.....11	

**Unit of Measure - Crops (Column 3)**

Kg.....1

Number.....2

Litre.....3

Bag.....4

Tin.....5

Bundle.....6

Bunch.....7

Other (Spacefy).....8

**Unit of Measure - Livestock (Column 3)**

Kg.....1

Number.....2

Litre.....3

Portion/ Pieces.....4



IRRIGATION INFRASTRUCTURE										
8.37	Was there any irrigation scheme in the village/mtaa during 2019/20 agricultural year? (Yes=1, No=2). IF NO>6.39 IF YES, GIVE THE FOLLOWING DETAILS. <input type="checkbox"/>									
8.38	Mention the name of that Scheme	Code of the scheme	was the irrigation scheme fully developed? (Yes=1, No=2)	was the scheme working? (Yes=1, No=2)	What was the total area under irrigation? (ha)	Was the scheme having Registered Irrigators Organization (IO)? (Yes=1, No=2)	Was the scheme having Maintenance Plan of irrigation infrastructure? (Yes=1, No=2)	Was the Irrigator Organization having Bank Account? (Yes=1, No=2)	Was the Irrigators Organization having "Functional Management Committees"	Were Members of Irrigators Organization paying annual fees? (Yes=1, No=2)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
8.39	Was there any irrigation scheme near by your village/mtaa serving your Village/street during 2019/20 agricultural year? (Yes=1, No=2). IF NO FINISH THE INTERVIEW, IF YES, GIVE THE FOLLOWING DETAILS									
	Mention the name of that Scheme	Code of the scheme	Mention the Village/Mtaa where that scheme is available	Mention the Ward/Shehia where that scheme is available						
	(1)	(2)	(3)	(4)						
		<input type="text"/>								

## **APPENDIX IV: ORGANIZATION OF THE CENSUS**

### **PERSONS INVOLVED IN THE NATIONAL SAMPLE CENSUS OF AGRICULTURE 2019/20**

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**MBEYA**

Baraka M. Mwakilima  
 Consolata Kamanzi  
 Deogratius S. Lyimo  
 Elimringi Mafole  
 Humphrey Mwakajila  
 Joseph George  
 Joseph Kyando  
 Paul Mwaisemba  
 Salome Brown Mwangasa  
 Uswege Mwakalebela

**SINGIDA**

Aziza Luguli  
 Boniface Haule  
 Emmanuel David Mlilo  
 Emmanuel Msiru  
 Mwanahamisi Swedi Ally  
 Sinda Sungwa

**TABORA**

Aloyce Misayo  
 Angela B. Ngassa  
 Francis Bukwimba  
 Fundi Kassimfundi  
 Guntrum Chitembo  
 Hassan Y. Msogoti  
 Medard Deusdedith  
 Omary Rashid  
 Samwel John

**RUKWA**

Alexander Mwakiwone  
 Edes Mbelano  
 Ezekia Mwangoka  
 George Senga  
 Mwasauumu Shomari

**KIGOMA**

Bidangwa Bukuru  
 Edson J. Nkula  
 Francis Alfred  
 Joseph Kipanta  
 Lucas Mihambo  
 Salum Abdul

**SHINYANGA**

Evarist N Mlazi  
 Gerald Joseph Mashimbi  
 Leonard Samson  
 Mathias Onesmo Mapulule  
 Mpoki Mwaikambo  
 Msafiri Katopola  
 Nandatay Olekede  
 Robert Mlanzi

**KAGERA**

Aneth Alistides  
 Augustine Robert  
 Daudi Peter Zimbelya  
 Edner C. Malobo  
 Godfrey Mbaga  
 Jacqueline Majula  
 Philemon Lwehabula  
 Philemon Rwehabula

**MWANZA**

Augustino Laurent  
 Cyrius Lweyendeza  
 Heri H. Ngowo  
 Lenard C.K. Nago  
 Malembo M. Musomi  
 Maximilian Lucian Rite  
 Paschal Selemani  
 Rahimu Mwele

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 Catherine Emmanuel  
 Deodatus C. Mwendapole  
 Hadija Kerenge  
 Ibrahim Abubakar  
 Katherine Emmanuel  
 Khadija Kerenge  
 Likowala R. Msuku  
 Manturu M. Joseph  
 Rashid M. Mbega

**MANYARA**

Amina Shabani  
 Bahati Joshua  
 Festo E. Mwangosi  
 Peter G. Karani  
 Shahibu J. Shabani  
 Thomas Gauday  
 Winfrida Azekiel  
 Yunus Hassan Hussein

**NJOMBE**

Albert Mwinuka  
 Musa Njogolo  
 Neema Mlawa  
 Nicko Z. Kafyulilo  
 Remigius Mteewe

**KATAVI**

George G. Ndaranga  
 Gladness A. Salumu  
 Juma K. Machimu  
 Ramadhani N. Rashidi  
 Stellah B. Chenchele

**SIMIYU**

Allan Nestory William  
 Gotingo Nila  
 Helena Daudi  
 Mbonje Shija  
 Paulo Salasala  
 Ramadhani Herman

**GEITA**

Elizeus Novert  
 Katto Kaluletea  
 Laurian Masome  
 Sarah Michael

**SONGWE**  
Emily James Mwanitega  
Emmanuel Karoga

Keneth B. Mweniungu  
Masoud Matata  
Ramadhani Simba

Samwel W. Mwasandube

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Mokwe Kisigilo  
Noela Yared  
Omary Hassan

**ARUSHA**  
Anande Nyiti  
Antony Mtei  
Auson Wilson  
Ayubu Loakaki  
Denis Athanas  
Grace Muta  
Haji Mwamweta  
Hasna Kingu  
John Paul  
Joshua Mwayombo  
Kelvin Maghinde  
Lawrence Simon Kunambi  
Levina Salim  
Lucas Kiringo  
Mery Msue  
Saitoti Leyan Koika  
Stella Simeon  
Yohana Mwenda

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Andrew Peter  
Aniceth Mshanga  
Anthonio Costantino  
Eldebrand Ritte  
Fabian Massay  
Herieth Alfred  
Kisumbo Mariki  
Mariam Msangi  
Nicoleta Mbigili

Ramadhan Simba  
Reginald Chami  
Roseline Kimario  
Seraphin Cleofas  
Theresia Kimario

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Aman Mussa  
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Blandina Antony  
Christophora Adriano  
David Mdapo  
Edward Lalika  
Emmanuel Ndunguru  
Frank Mhando  
Jenipha Malya  
John Josephat  
Mariam Ernest Lukindo  
May Kiango  
Mohamed Mtoo  
Mzee Selemaini  
Saleh Mohamed  
Vivian Hamis Mayunga  
Yasin Mang'enya  
Zainabu Khalfan

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Ahmad Abdallah  
Anastazia Paul  
Anselmo Nsumba  
Daina Mwailima  
Edger Hebert Bihanda  
Erasto Mbago  
Gama Mwendowasaa  
Grayson Dzombe  
Happy Shayo  
Japhet G. Rumoka  
Jasper Kazoka  
Joseph Atanas  
Mathew R. Makwinya  
Moses C. Luoga  
Oscar Bukuku

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Reagan C. Rogath  
Sadiki Machota  
Salim Kapulilo  
Shani Gulisha  
Spensa Lishela  
Zawadi Juma

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Akyoo Jesca  
Claudi Kahanatuki  
Doreen Kornely  
Edith Malenge  
Kassim Ramadhani  
Lameck Kabunhu  
Lulu Njari  
Mohamed Nanyanje  
Raphael Chelele  
Salehe Mnama  
Shem Mwanjota  
Sophia Deus

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Clement Ngalaba  
Fanuel Mamu  
Godfrey Mbena

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Deogratius Komekome  
Lusano Ndwela  
Marcus Makondo  
Miraji Namkaa  
Paulina Pius  
Salum Mnonjera

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Awadhi Mbemba  
Beatrice William  
Dadi Hassan Ausi

Emmanuel Mwaisumbe  
Enea Erasto  
Hatibu Ahmad  
Martin Malang'ai  
Mathias Lugola  
Pascal Sebastian  
Selemani Mnyoka  
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Eveline Malilo David  
Fadhili Seif  
Huruma Selanyika  
Janeth Olech  
Lucy Modest Lumoli  
Martha Dickson  
Mary Temba  
Mtende Ally  
Mussa Matimbwa  
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Vaiileth Mfuse  
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Sabra Rashid  
Said Ndomba

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Baraka Mwamsojo  
Clezensia Rwegasira  
Consolatha Akiza Kamanzi  
Doreen Godwin Mawolle  
Dorice Chaula  
Elimringi Mafole  
Erasmus Ambrozi  
Erick Anam  
Esmaili Naftali Lema  
Faraja Kibona Yudah  
Glory Comphrence  
Grace Nyambo  
Humphrey Mwakajila  
Joseph Kyando  
Joseph Mwaipopo

Joseph Seleli  
Kassim Omary Chando  
Paul Mwaisemba

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Godwin Steven  
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Julius Shani  
Meoli Leiyo  
Michael Mponeja  
Talek Robert

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Deusi Medard  
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Geofrey Mtobesya  
Happiness Ngassa  
Hasani Y. Msogoti  
Jumanne S. Mapunda  
Linda Mwangoka  
Method T. Fute  
Mike Kitilla  
Philipo Faustine  
Vicent Mussa  
Winfrida Mikidadi  
Oliverson Josiah  
Wardas Kalago

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Edes Mbelano  
Ezekia Mwangoka  
George Senga  
Herney Malogo  
Jiles Chipeta  
John Evarist  
Mwasaumu Shomari

**KIGOMA**

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Geofrey Mpinga  
Joseph Kipanta  
Josiah Mwakijale  
Kafikiri, Amibralis  
Lucas Mihambo

Mariam Lihenye  
Salum Abdul

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Elisha Kabwogi  
Gelard Joseph  
Happy Magily  
Jumapili Mwendo  
Leonard Samson  
Luther Daud  
Mathias O. Mpulule  
Nandatay Olekede  
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Deogratius Joseph  
Epimachus Raphael  
Frank Mwesiga Jackson  
Godfrey Mbanga  
Jacqueline Majula  
Philemon Lwehabula  
Rachel Eliud  
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Edmund Mutembe  
Fadaki Maganga  
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Joseph Asser  
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Pascal Selemani  
Stanslaus Kasubiri  
Suzan Gwahila



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 Deodatus Chrisant Mwendapole  
 Elizeus Vedasto  
 Gambaseni Kusaga  
 Hassan Issa  
 Ibrahim Abubakar  
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 Likowala R. Msuku  
 Manturu M. Joseph  
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**MANYARA**

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**NJOMBE**

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 Christina Ndongole  
 Jerome Bange  
 Mussa Njogoro  
 Neema Mlawa  
 Ntuli Swebe  
 Remigius Mteweke

**KATAVI**

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 Antony Lugema  
 Dismas E. Malinyo  
 George Mahona  
 Gladness Salum  
 Jane Haonga  
 Johson Msemo  
 Lazaro Masumbuko

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 Perepetua Yusufu  
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 Shibeshi Pastory  
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 Elias Jumanne  
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 Japhet Maduhu  
 Laurian Masome  
 Peter Zakayo

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 Emanuel Karota  
 Fadhil Zuberi  
 Keneth Mweniungu  
 Leila Mateleka

Samwel Mwasandube

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