



United Republic of Tanzania

# Tanzania

## National Panel Survey Wave 4, 2014 – 2015



National Bureau of Statistics  
Ministry of Finance and Planning  
Dar es Salaam  
February 2017





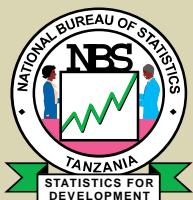
United Republic of Tanzania

# TANZANIA NATIONAL PANEL SURVEY

## WAVE 4, 2014 - 2015

National Bureau of Statistics  
Ministry of Finance and Planning  
**Dar es Salaam**

**February 2017**



The Fourth Wave of the Tanzania National Panel Survey (NPS) was implemented by the National Bureau of Statistics (NBS) in collaboration with Office of Chief Government Statistician (OCGS) Zanzibar, from October 2014 to November 2015. The main financiers of the fourth wave of the NPS included: Ministry of Finance and Planning, European Commission (EC) and the World Bank / Gates Foundation. Additional financial assistance was also received from the Tanzania Statistical Master Plan (TSMP) Basket fund.

Additional information about the survey may be obtained from the National Bureau of Statistics Director General, 18 Kivukoni Road, P.O. Box 796, 11992 Dar es Salaam, Tanzania (Telephone: 255-22-212-2724; Email: [dg@nbs.go.tz](mailto:dg@nbs.go.tz)) or National Bureau of Statistics General Office, P.O. Box 796, Dar es Salaam, Tanzania (Telephone: 255-22-212-2722/3; Fax: 255-22-213-0852; website: [www.nbs.go.tz](http://www.nbs.go.tz)).

Recommended citation: National Bureau of Statistics (NBS) [Tanzania]. 2016. Tanzania National Panel Survey Report (NPS) - Wave 4, 2012 - 2013. Dar es Salaam, Tanzania: NBS.

## Contents

	Page
<b>List of Tables .....</b>	<b>iii</b>
<b>List of Figures .....</b>	<b>v</b>
<b>Foreword .....</b>	<b>vii</b>
<b>CHAPTER 1.....</b>	<b>1</b>
<b>Introduction.....</b>	<b>1</b>
1.0    Introduction .....	1
1.1    Objectives .....	1
1.2    Sample Design.....	2
1.3    Panel Sample Trim and Refresh .....	2
1.4    Revised Sample Design.....	3
1.5    Fieldwork.....	4
1.6    Tracking and Attrition .....	5
<b>CHAPTER TWO .....</b>	<b>7</b>
<b>Social and Demographic Characteristics of Households .....</b>	<b>7</b>
<b>2.0    Introduction .....</b>	<b>7</b>
2.1    Population Distribution by Age and Sex .....	7
2.2    Characteristics of Households .....	9
2.3    Distribution of Households by Sex of Household Head .....	9
2.4    Household Size.....	9
2.5    Marital Status.....	10
2.6    Access to Piped or Protected Water Sources.....	11
2.7    Access to Improved Source of Drinking Water .....	12
2.8    Access to Basic Sanitation Facilities .....	13
2.9    Access to Improved Sanitation Facilities .....	13
2.10    Access to Electricity .....	14
2.11    Energy for Cooking Used by Households .....	15
<b>CHAPTER THREE.....</b>	<b>17</b>
<b>Education.....</b>	<b>17</b>
<b>3.0    Introduction .....</b>	<b>17</b>
3.1    Literacy among Population of Age 7 – 13 Years .....	17
3.2    Literacy among Population of Age 7 – 13 Years Currently Attending School.....	19
3.3    Net Enrollment Rate at Pre-Primary School .....	19
3.4    Primary School Net Enrollment Rate .....	20
3.5    Secondary School Net Enrollment Rate .....	21

3.6	Gross Enrollment Rate in Higher Education .....	22
3.7	Orphans in School .....	23
<b>CHAPTER FOUR</b>	.....	<b>25</b>
<b>Health and Nutrition</b>	.....	<b>25</b>
<b>4.0</b>	<b>Introduction</b> .....	<b>25</b>
4.1	Births Attended by a Skilled Health Worker.....	25
4.2	Registration of Births .....	26
4.3	Satisfaction with Health Services .....	27
4.4	Major Reasons for Client Dissatisfaction Pertaining to Health Services Provision.....	28
4.5	Health Spending .....	29
4.6	Under-fives Moderately or Severely Stunted (Height for Age) .....	29
4.7	Wasting.....	30
<b>CHAPTER FIVE</b>	.....	<b>33</b>
<b>Growth and Reduction of Poverty</b>	.....	<b>33</b>
<b>5.0</b>	<b>Introduction</b> .....	<b>33</b>
5.1	Inflation .....	33
5.2	Wealth Based on Real Consumption .....	35
5.3	Inequality .....	39
5.4	Unemployment .....	42
<b>CHAPTER SIX</b>	.....	<b>47</b>
<b>Agriculture</b>	.....	<b>47</b>
<b>6.0</b>	<b>Introduction</b> .....	<b>47</b>
6.1	Households Involved in the Agricultural Sector .....	47
6.2	Changes in Production and Major Crop Yields over Time .....	47
6.3	Households using Irrigation .....	49
<b>CHAPTER SEVEN</b>	.....	<b>55</b>
<b>Food Security</b>	.....	<b>55</b>
<b>7.0</b>	<b>Introduction</b> .....	<b>55</b>
7.1	Number of Meals .....	58
7.2	Food Shortages .....	60
7.3	Food Security and Poverty .....	63
<b>APPENDICES</b>	.....	<b>65</b>
Appendix A:	Methodology for Consumption Aggregates.....	65
Appendix B:	Standard Errors and Confidence Intervals for Selected Indicators .....	72
Appendix C:	Additional Tables .....	103

## List of Tables

Table 1.1:	Number of Clusters and Households in the Baseline NPS 2008/09 by Area .....	4
Table 1.2:	Number of Clusters and Households in New and Extended Samples of NPS 2014/15 by Area.....	4
Table 1.3:	Distribution of Households for the NPS 2008/09 Sample by Area and Quarter of Interview .....	5
Table 2.1:	Percentage Distribution of Households by Sex of Head of Household, Tanzania .....	9
Table 2.2:	Percentage Distribution of Households by Area and Number of Usual Residents .....	10
Table 2.3:	Percentage Distribution of Population by Marital Status, Tanzania.....	11
Table 2.4:	Percentage Distribution of Households with Access to Clean Drinking Water by Area and Season.....	11
Table 2.5:	Proportion of Households with Access to Improved Source of Drinking Water by Area and Season.....	12
Table 2.6:	Percentage Distribution of Households with Basic Sanitation Facilities by Area....	13
Table 3.1:	Literacy Rate of the Population of Age 7 – 13 Years Currently Attending School by Area and Sex .....	19
Table 3.2:	Net Enrolment Rate in Primary Education by Area and Sex .....	21
Table 3.3:	Net Enrolment in Secondary Education by Area and Sex .....	22
Table 3.4:	Gross Enrollment in Higher Education Institutions by Area and Sex .....	23
Table 4.1:	Percentage of Births Registered among Those Born in the 24 Months Period Prior to the Survey by Area.....	27
Table 4.2:	Percentage of Population Expressing Satisfaction with Health Services by Area and Sex .....	28
Table 4.3:	Percentage of Population Spending on Health Services, Tanzania .....	29
Table 4.4:	Percentage of Stunting (height for age) of Children Under 5 Years by Area and Sex.....	30
Table 4.5:	Percentage of Wasting (weight for height) of Children Under 5 Years by Area and Sex .....	31
Table 5.1:	Spatial and Temporal Food Prices .....	35
Table 5.2:	Gini Coefficient.....	40
Table 5.3:	Labour Force Participation Rate (percent) by Area, Sex and Age Group (age >=15).....	43
Table 5.4:	Unemployment Rates (percent) by Area, Sex and Age Group (age>=15), Tanzania .....	45

Table 6.1:	Average Yields of Maize (kg / area planted in hectares) by Type of Plot, Tanzania .....	48
Table 6.2:	Average Yields of Paddy (kilogram / area planted in hectares) by Type of Plot, Tanzania .....	49
Table 6.3:	Percentage of Households using Irrigation, Tanzania .....	50
Table 6.4:	Percentage of Households using Irrigation by Method, Tanzania .....	50
Table 6.5:	Percentage of Households using Various Sources of Water for Irrigation, Tanzania .....	51
Table 6.6:	Percentage of Households Using Fertilizer, Improved Seeds and Pesticides, Tanzania .....	52
Table 6.7:	Percentage of Households using Farming Technology by Type, Tanzania .....	52
Table 6.8:	Percentage of Farm Households Earning Income from Off-farm Activities by Survey, Source and Area, Tanzania .....	53
Table 7.1:	The Percentage of the Population Experiencing Three Food Security Indicators by Area .....	55
Table 7.2:	Average Number of Meals Taken per Day by Adults and Children by Area .....	58
Table 7.3:	The Percent of Population by the Average Number of Daily Meals and Area, Adults .....	59
Table 7.4:	The Proportion of Population by the Average Number of Daily Meals and Area, Children (6-59 months) .....	59
Table 7.5:	Percentage of the Population Experiencing Food Shortage and Average Number of Months of Food Shortage Experienced in the 12 Months Prior to the Survey by Area .....	60
Table 7.6:	Percentage of Households Reporting Food Shortage by Cause, Area, and Farming Status .....	63

## List of Figures

Figure 2.1:	Population Pyramids for the 4 NPS Rounds (2008/09, 2010/11, 2012/13 and 2013/14), Tanzania.....	8
Figure 2.2:	Percentage of Households with Access to Improved Sanitation Facilities by Area.....	14
Figure 2.3:	Percentage of Households using Electricity for Lighting by Area .....	15
Figure 2.4:	Percentage of Households using Alternative Fuels for Cooking by Area .....	16
Figure 3.1:	Literacy Rate of the Population Aged 7 – 13 Years .....	18
Figure 3.2:	Literacy Rate of the Population of Age 7 – 13 Years .....	18
Figure 3.3:	Net Enrolment Rate in Pre-Primary Education by Area .....	20
Figure 3.4:	Net Enrolment Rate in Pre-Primary Education by Sex.....	20
Figure 3.5:	NER in Primary Education by Area and Sex .....	21
Figure 3.6:	NER in Pre – Primary, Primary and Secondary Education by Orphanhood Status, Tanzania .....	24
Figure 4.1:	Percentage of Births Attended by Skilled Health Worker by Area .....	26
Figure 4.2:	Reasons for Client Dissatisfaction Pertaining to Health Services Provision, Tanzania.....	29
Figure 5.1:	Average Annual Consumption (real) by Quintile and Area, NPS 2014/15 .....	36
Figure 5.2:	Average Annual Consumption (Real) by Quintile and NPS Round, Tanzania .....	37
Figure 5.3:	Average Annual Consumption (Real) by Quintile and NPS Round, Dar es Salaam .....	37
Figure 5.4:	Average Annual Consumption (Real) by Quintile and NPS Round, OtherUrban Mainland .....	38
Figure 5.5:	Average Annual Consumption (Real) by Quintile and NPS Round, Mainland Rural .....	38
Figure 5.6:	Average Annual Consumption (Real) by Quintile and NPS Rounds, Zanzibar .....	39
Figure 5.7:	Lorenz Curves of Consumption – Tanzania, NPS 2, NPS 3 and NPS 4.....	41
Figure 5.8:	Lorenz Curves of Consumption – Dar es Salaam, NPS 2, NPS 3 and NPS 4 .....	41
Figure 5.9:	Lorenz Curves of Consumption – Other Urban Areas in Mainland, NPS 2, NPS 3 and NPS 4 .....	42
Figure 5.10:	Labour Force Participation Rate (Percent) among Different Age Groups, Tanzania.....	43
Figure 6.1:	Full Year (Masika and Vuli) Total Crop Production (Million Metric Tons), Tanzania .....	48
Figure 7.1:	Percent of the Population Experiencing <i>None of the Three</i> Food Security Indicators by Area .....	57

Figure 7.2:	Percent of the Population Experiencing <i>All Three</i> Food Security Indicators by Area.....	57
Figure 7.3:	Percent of the Population Reporting Food Shortages in Tanzania by Month and NPS Round.....	61
Figure 7.4:	Percent of the Population Reporting Food Shortages in Rural Areas by Month and NPS Round.....	61
Figure 7.5:	Percent of the Population Reporting Food Shortages in Urban Areas by Month and NPS Round.....	62
Figure 7.6:	Percent of the Population that is Food Insecure, by Wealth Quintiles, Tanzania.....	64

## **Foreword**

This report presents selected findings from Wave 4 of the Tanzania National Panel Survey (NPS) that was implemented by the National Bureau of Statistics (NBS) in collaboration with the Office of the Chief Government Statistician – Zanzibar from October 2014 to November 2015. The NPS is a national level longitudinal survey designed to provide data from the same households over time in an attempt to better track national and international development agenda, understand poverty dynamics and to evaluate policy impacts in the country. The Fourth Wave of the NPS is a follow up on three previous waves: the first one took place between October 2008 and October 2009; the second wave was conducted between October 2010 and November 2011; and the third wave was conducted between October 2012 and November 2013. The first wave of the NPS had a sample of 3,265 households; the second wave had 3,924 households and the third wave had 5,010 households.

In the first three rounds of the NPS, the sample was based on Enumeration Areas from the Tanzania 2002 Population and Housing Census (PHC). Due to availability of the new sampling frame from the 2012 Population and Housing Census, the sample of the NPS wave 4 was reviewed and realigned with any changes in administrative boundaries, demographic shifts or updated population information. A refresh of longitudinal cohorts is typically done to ensure proper representativeness of estimates while maintaining sufficient primary sample to maintain cohesion within panel analysis. A nationally representative sub-sample was selected to continue as part of the “Extended Panel” while an entirely new sample, “Refresh Panel”, was selected to represent national and sub-national domains, similar to those of the 2008/09 sample, namely Dar es Salaam, Other Urban areas in Mainland Tanzania, rural Mainland Tanzania, and Zanzibar. Therefore, NPS 4 sample consisted of 860 originally selected households from 68 clusters (extended panel) surveyed in the previous rounds and 3,360 new households corresponding to 420 clusters from the latest PHC in 2012. This new cohort in NPS 2014/2015 will be maintained and tracked in all future rounds between national censuses.

However, for convenience, this report is based on data from the new households only. A separate analysis can be done with the extended panel households in order to establish dynamics of different indicators at national level only.

I wish to thank the Government of United Republic of Tanzania and the Ministry of Finance and Planning, the European Commission (EC); World Bank / Gates Foundation and other donors contributing to the Tanzania Statistical Master Plan (TSMP) basket fund for financing both local and international costs of Wave 4 of the NPS.

The NBS appreciates technical contributions by World Bank staff: Gero Carletto, Hyong Nguyen, and Jon Kastelic in implementing the survey. I also wish to thank the NPS Technical Committee as a whole for their valuable contributions in all aspects of the survey.

Furthermore, I wish to convey my appreciation to all permanent and temporary NBS staff for their tireless efforts in designing and implementing the survey. My sincere appreciation should also go to their families for being patient during the long absence of their beloved ones.

Lastly, but not the least, I am even more grateful to the survey respondents who generously contributed part of their valuable time to be interviewed again in order to provide crucial information for the country's planning and policy formulation.



Dr. Albina Chuwa  
Director General  
**National Bureau of Statistics**

## CHAPTER ONE

# Introduction

### 1.0 Introduction

The National Panel Survey is a nationally representative household survey that collects information on the living standards of the population including their socio-economic characteristics, consumption, agricultural production, and non-farm income generating activities. The term “panel” means that the survey will follow the originally sampled population over time to track the evolution of its living conditions. The NPS is scheduled to have several rounds; the first round of the survey (NPS 2008/09) was conducted from October 2008 to October 2009, the second round (NPS 2010/11) was carried out from October 2010 to November 2011, the third round (NPS 2012/13) took place from October 2012 to November 2013 and the fourth wave was conducted from October 2014 to November 2015.

### 1.1 Objectives

The NPS was designed to fulfil three main objectives, all of which benefit from the fact that the NPS 2008/09 can be considered as the baseline and future rounds can be compared against it. The first objective is to track implementation progress across the three clusters of the then National Strategy for Growth and Reduction of Poverty (commonly known by its Kiswahili acronym as MKUKUTA) which include; growth and reduction of poverty; improvement of quality of life and social wellbeing; and good governance and accountability. Assessing progress across the three clusters is possible because the NPS allows the estimation of many of these MKUKUTA II indicators.<sup>1</sup> With the phasing out of the MKUKUTA II, the survey will now be aligned to the Five Years Development Plan, (FYDP) (2016/17 – 2020/21) which integrated frameworks of the first Five Years Development Plan (2011/12 – 2015/16) and MKUKUTA II (2010/11 – 2014/15).

The second objective is to provide a better understanding of the determinants of poverty reduction. The panel feature of the survey implies that information on the poverty status of households is available at different points in time, thus permitting the study of poverty dynamics at the household level. This is a key advantage of NPS over the usual cross-sectional household surveys, which allow the monitoring of poverty at the aggregate level, say, by district or by region, but not at the household level given that they do not follow the same households over time. The third objective of the NPS is to assess the impact of public policy initiatives. The NPS can be a powerful tool in evaluating the impact of development policies and programs implemented by the government or non-governmental institutions. If a person, household or community has been affected by a

---

<sup>1</sup> See *MKUKUTA II Monitoring Master Plan and Indicator Information* for a detailed list of all indicators.

particular policy and has been sampled in the NPS, the survey may allow the estimation of indicators that capture that effect. Hence coordination with those who implement these policies is crucial in order to determine how the impact evaluation can be done and if complementary data are required. The panel feature of the survey is suitable for investigating the dynamics of many topics such as the educational progression of children, the labour mobility of the adult population, or the evolution of agricultural yields.

## 1.2 Sample Design

The NPS is based on a stratified, multi-stage cluster sample design. The original sampling frame was from the 2002 Population and Housing Census (PHC), more specifically, the National Master Sample Frame, which is a list of all populated enumeration areas in the country.

The sample design of the NPS recognizes explicitly four analytical strata: Dar es Salaam, Other Urban areas in Mainland, rural areas in Mainland and Zanzibar. Within each stratum, clusters were randomly selected as primary sampling units, with the probability of selection proportional to their population size. In urban areas, clusters are equivalent to census enumeration areas, while in rural areas, clusters are equivalent to villages. In the last stage, 8 households were randomly chosen in each cluster.

The first round of the NPS was also designed to have a panel component with the 2007 Household Budget Survey (HBS). The panel is only possible in Mainland Tanzania, where 200 of the 350 clusters were drawn from the HBS sample and hence a panel of 1,600 households was expected for the 2008/09 NPS and the HBS.

NPS rounds 2 and 3 followed the same sample design that was used in the first round, therefore households kept on increasing due to tracking of split households. However, in the fourth round the sample design was revisited and the sample was refreshed.

## 1.3 Panel Sample Trim and Refresh

By design, the NPS seeks to re-interview households over time. Longitudinal surveys, such as the NPS, permit the monitoring of households over time and explicitly provide the ability to diagnose potential determinants of any observed changes. This type of survey yields a powerful basis for the analysis of poverty dynamics, which is not possible in pooled cross-sectional survey designs, which interview different households across time. However, longitudinal surveys tend to suffer from bias introduced from households leaving the survey over time; attrition. Although the NPS maintains a highly successful recapture rate (roughly 96 percent retention at the household level), to minimize the escalation of this selection bias, a refresh of longitudinal cohorts is typically done to ensure proper representativeness of estimates while maintaining sufficient primary sample to maintain

cohesion within panel analysis.

The refreshing of a longitudinal sample may also be commissioned to realign the sample with any changes in administrative boundaries, demographic shifts or updated population information. In the case of Tanzania, a newly completed 2012 population and housing census providing updated population figures, along with changed administrative boundaries, emboldens an opportunity to realign the NPS sample and abate collective bias potentially introduced through attrition.

#### 1.4 Revised Sample Design

To streamline the trimming and refreshing of the NPS sample, the sample design dealt with both as independent exercises. From the original NPS sample a nationally representative sub-sample was selected to continue as part of the “Extended Panel” while an entirely new sample, “Refresh Panel”, was selected to represent national and sub-national domains. The retention of the extended panel cohort will provide the opportunity to consistently track national progress and assess any potential differences in the sample group at the national level while additionally offering a robust base for the study of poverty dynamics over a longer period in the Tanzanian context. The “Refresh Panel” design, sample selection took full advantage of the availability of the new population census frame in addition to data previously captured through the NPS. This allowed for optimal sample design, maximizing efficiency while minimizing the overall sample size. This new cohort will be maintained in all future NPS rounds between national censuses.

Altogether the NPS baseline sample comprised of 409 clusters and 3,265 households. Table 1 shows the allocation of clusters and households across strata for the NPS baseline sample. A slight mismatch occurred in some strata between the expected and the actual number of clusters and/or households. The missing rural cluster in Mainland, which accounts for 8 of the 15 missing households, was dropped from the final sample because of the poor quality of the data. The additional 7 missing households refer mostly to panel households between the NPS and the HBS that could not be located and for which no replacement could be found.

A new sample design for NPS 2014/2015 consisted of a combination of the original NPS sample and a new NPS sample. A nationally representative sub-sample was selected to continue as part of the “Extended Panel” while an entirely new sample, “Refresh Panel”, was selected to represent national and sub-national domains. Similar to the sample in NPS 2008/2009, the sample design allows analysis at 4 primary domains of inference, namely Dar es Salaam, Other Urban areas on Mainland Tanzania, rural Mainland Tanzania, and Zanzibar.

**Table 1.1:** Number of Clusters and Households in the Baseline NPS 2008/09 by Area

Area	Clusters		Households	
	Expected	Actual	Expected	Actual
<b>Tanzania</b>	<b>410</b>	<b>409</b>	<b>3,280</b>	<b>3,265</b>
<b>Tanzania Mainland</b>	<b>350</b>	<b>349</b>	<b>2,800</b>	<b>2,786</b>
Dar es Salaam	70	70	560	555
Other Urban	60	60	480	480
Rural	220	219	1,760	1,751
<b>Tanzania Zanzibar</b>	<b>60</b>	<b>60</b>	<b>480</b>	<b>479</b>

The sample design for the “Extended Panel” consisted of 860 households corresponding to 68 clusters from the NPS 2012/2013 sample. Additionally, the sample design for the “Refresh Panel” consisted of a new selection of 3,360 households corresponding to 420 EAs from the latest PHC in 2012. This new cohort in NPS 2014/2015 will be maintained and tracked in all future rounds between national censuses. However, during the data collection activities, it was found that one cluster in Dar es Salaam was no longer there as the houses in it were destroyed to pave the way for expansion of the road and eventually, 3,352 households from 419 clusters were successfully interviewed.

**Table 1.2:** Number of Clusters and Households in New and Extended Samples of NPS 2014/15 by Area

Area	New Sample				Extended Sample			
	Clusters		Households		Clusters		Households	
	Expected	Actual	Expected	Actual	Expected	Actual	Expected	Actual
<b>Tanzania</b>	<b>420</b>	<b>419</b>	<b>3,360</b>	<b>3,352</b>	<b>68</b>	<b>66</b>	<b>860</b>	<b>784</b>
<b>Tanzania Mainland</b>	<b>360</b>	<b>359</b>	<b>2,880</b>	<b>2,872</b>	<b>59</b>	<b>57</b>	<b>759</b>	<b>703</b>
Dar es Salaam	70	69	560	552	13	13	124	108
Other Urban Mainland	68	68	544	544	15	13	212	168
Rural	222	222	1,776	1,776	31	31	423	427
<b>Tanzania Zanzibar</b>	<b>60</b>	<b>60</b>	<b>480</b>	<b>480</b>	<b>9</b>	<b>9</b>	<b>101</b>	<b>81</b>

## 1.5 Fieldwork

The NPS 2008/09, the baseline for the NPS, was carried out from October 2008 to October 2009. The fieldwork was implemented over a 12-months period to address concerns about intra-year seasonality since seasonal fluctuations can affect considerably the living standards of the population. Table 1.3 indicates that the distribution of the sample within each stratum was fairly spread across the year.

**Table 1.3: Distribution of Households for the NPS 2008/09 Sample by Area and Quarter of Interview**

Area	2008	2009			Total
	October-December	January-March	April-June	July-September	
<b>Tanzania</b>	<b>879</b>	<b>742</b>	<b>642</b>	<b>1,002</b>	<b>3,265</b>
<b>Tanzania Mainland</b>	<b>753</b>	<b>628</b>	<b>547</b>	<b>858</b>	<b>2,786</b>
Dar es Salaam	166	112	135	142	555
Other Urban	93	147	96	144	480
Rural	494	369	316	572	1,751
<b>Tanzania Zanzibar</b>	<b>126</b>	<b>114</b>	<b>95</b>	<b>144</b>	<b>479</b>

Another equally important consideration of the fieldwork would have been to spread the urban and rural sample evenly within Dar es Salaam and Zanzibar. This is not a concern in Other Urban areas and rural areas in Mainland given that these two strata are entirely urban and rural respectively. The proportion of rural households in NPS 2008/09 by stratum and by quarter of the interview is presented in Appendix C, Table C1. The share of rural households in Dar es Salaam varies considerably across quarters, but the fact that rural households represent a relatively small proportion of that stratum suggests that this might not be a critical issue. In Zanzibar, however, the first 6 months of the fieldwork were devoted only to rural households and the last 6 months were devoted only to urban households. This oversight did affect not only the precision of the estimations in Zanzibar but also the comparisons with the Mainland strata. The same fieldwork pattern in Zanzibar was kept during the NPS 2010/11, that is, comparability over time in that stratum was considered a preferred alternative than correcting the uneven spread of urban and rural households over the year. However, this was corrected in round three (NPS 2012/13) and four (NPS 2014/15) of the NPS as rural and urban households were spread over the 12 months period of the fieldwork. Subsequent rounds of the NPS will continue to follow this approach.

## 1.6 Tracking and Attrition

The main feature of the NPS is to track all people present in the previous rounds of the survey, that is, the NPS is in practice an individual panel survey. Three scenarios are possible: the person stayed in the same location, the person moved to a nearby location, or the person moved to a distant location. Enumerators were able to keep the previous schedules for households that either stayed in the same location or moved to a nearby location. This was possible for the entire sample in round 1 to 3 of the NPS. While the second round of the NPS tracked 97 percent of the original households, the third round tracked 96 percent of second round. The attrition rate remained low at 3.9 percent in the third round though slightly higher than that of the first and second rounds of the NPS (3 percent).

However, due to refreshing of the sample in the fourth round identification of attrition rate for the entire round three of the NPS in relation to round four is not possible. This is only possible for the extended panel households, that is 860 households. The attrition rate for the extended panel households is 8 percent.

## CHAPTER TWO

# Social and Demographic Characteristics of Households

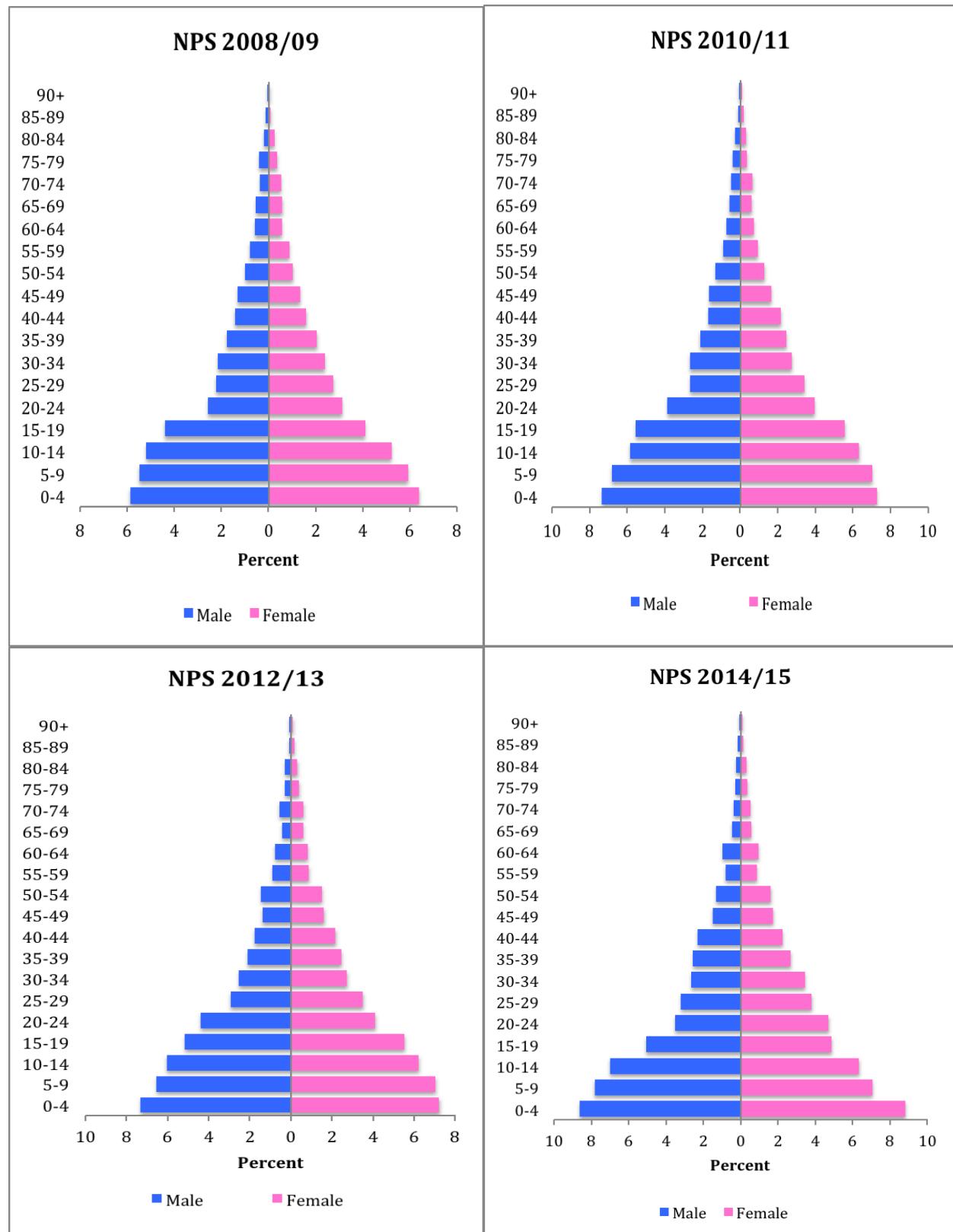
### 2.0 Introduction

This chapter presents information on social and demographic characteristics of households and individuals. The information presented under this chapter includes population distribution by age and sex, characteristics of households, distribution of households by sex of household head, household size, and population distribution by marital status. Social aspects discussed in this chapter are households with access to clean and safe sources of drinking water, percentage of households with access to basic sanitation facilities, and households with access to modern energy for lighting and cooking.

### 2.1 Population Distribution by Age and Sex

Distribution of population by age and sex is the basic way of understanding population change over time. Understanding population's age and sex composition gives insight into changing phenomena and highlights future social and economic challenges. In this regard all four NPS rounds (2008/09, 2010/11, 2012/13 and 2014/15), had questions asking for information on demographic characteristics of individuals within the household.

Figure 2.1 presents population pyramids showing the percentage of males and females by age group in each round of NPS. It is clear that the age and sex composition of the population has largely remained the same across the rounds. All the four population pyramids are bell-shaped indicating that Tanzania population is characterized by young people aged 0 to 19 years and steadily decreases with increasing age. Such a population structure is typical of a developing country like Tanzania.

**Figure 2.1: Population Pyramids for the 4 NPS Rounds (2008/09, 2010/11, 2012/13 and 2014/15), Tanzania**

## 2.2 Characteristics of Households

NPS is a survey based on households, particularly private households. A private household defined as a person or group of persons who reside in the same homestead or compound but not necessarily in the same dwelling unit, having the same cooking arrangements, and are answerable to the same household head. A household head is a person acknowledged as such by other household members. The household characteristics information was collected in all NPS rounds from 2008/09, 2010/11, 2012/13 to 2014/15.

## 2.3 Distribution of Households by Sex of Household Head

The findings from Table 2.1 show that male-headed households in Tanzania decreased consistently from 74.6 percent in NPS 2008/09 to 71.2 percent in NPS 2014/15, while that of female-headed household increased from 25.4 percent to 28.8 percent in the same period. Similarly, households headed by males in rural areas decreased from 75.6 percent in NPS 2008/09 to 72.7 percent in NPS 2014/15 while that of female-headed household kept on increasing. Households headed by males and females in urban areas portrayed similar patterns across the four NPS rounds. Generally, in all NPS rounds, households headed by males are more than households headed by females.

**Table 2.1: Percentage Distribution of Households by Sex of Head of Household, Tanzania**

Sex of Head of Household	NPS 2008/09			NPS 2010/11			NPS 2012/13			NPS 2014/15		
	Rural	Urban	Total									
Male	75.6	71.7	74.6	75.3	69.6	73.6	74.2	71.3	73.3	72.7	68.4	71.2
Female	24.4	28.3	25.4	24.7	30.4	26.4	25.8	28.7	26.7	27.3	31.6	28.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

## 2.4 Household Size

Household size is the average number of persons per private household. This number is obtained by dividing the total number of persons living in private households by the total number of private households.

Table 2.2 shows that the average household size for Tanzania according to the NPS 2014/15 is 4.7 which is slightly lower than 4.8 recorded in NPS 2012/13. The trend shows that the average household size increased from 5.0 persons in NPS 2008/09 to 5.1 persons in NPS 2010/11 thereafter decreased to 4.8 persons in 2012/13 NPS and 4.7 persons in the 2014/15 NPS round. Generally, households in rural areas have relatively larger household sizes compared to urban areas.

**Table 2.2: Percentage Distribution of Households by Area and Number of Usual Residents**

Number Of Usual Residents	NPS 2008/09			NPS 2010/11			NPS 2012/13			NPS 2014/15		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
1	5.4	12.3	7.2	5.5	13.6	8.0	7.3	16.4	10.1	6.7	11.6	8.4
2	8.9	12.9	9.9	9.4	12.1	10.2	10.6	11.4	10.9	9.9	13.7	11.2
3	13.0	18.4	14.4	10.8	17.2	12.7	12.2	16.7	13.6	15.4	21.3	17.4
4	15.6	16.7	15.9	15.7	14.9	15.5	14.5	16.6	15.2	14.8	17.6	15.8
5	15.3	13.9	14.9	15.6	12.4	14.6	15.3	13.9	14.8	14.4	13.4	14.1
6+	41.9	25.9	37.7	43.0	29.9	39.0	40.1	25.1	35.4	38.8	22.4	33.1
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Percent of Households</b>	73.7	26.3	100.0	69.3	30.7	100.0	68.8	31.2	100.0	65.5	34.5	100.0
<b>Average Household Size</b>	5.3	4.2	5.0	5.4	4.3	5.1	5.2	4.1	4.8	5.1	4.0	4.7

## 2.5 Marital Status

Information on marital status is in most cases collected from persons above a certain minimum age, which is the lower limit of age at first marriage in that particular country. Basing on the law of marriage in Tanzania, questions on marital status are asked to persons aged 12 years and above. Seven categories were adopted to describe marital status namely; never married, monogamously married, polygamously married, living together, separated, divorced and widowed. The data on marital status for the NPS rounds are disaggregated by rural and urban areas.

Table 2.3 shows that 38.3 percent of the population in NPS 2014/15 was never married, which is low compared with previous NPS rounds. The trend shows that urban areas have higher proportions of never married persons than rural areas. One-third of the population (34.8 percent) in NPS 2014/15 are monogamously married which is slightly higher compared with 32.3 percent reported in NPS 2012/13. In all four NPS rounds, the proportion of monogamously married persons is slightly higher in rural areas than urban areas. About 2.1 percent of the population in NPS 2014/15 was divorced. The proportion of divorced persons has been increasing over time from 1.1 percent in 2008/09 NPS to 2.1 percent in 2014/15 NPS.

**Table 2.3: Percentage Distribution of Population by Marital Status, Tanzania**

Marital Status	NPS 2008/09			NPS 2010/11			NPS 2012/13			NPS 2014/15		
	Rural	Urban	Total									
Monogamously Married	36.2	31.2	35.0	27.9	27.9	27.9	32.5	31.6	32.3	35.0	34.4	34.8
Polygamous Married	8.5	3.4	7.2	8.5	3.6	7.1	8.3	2.9	6.7	8.4	2.2	6.4
Living Together	5.5	7.8	6.1	13.4	9.6	12.3	8.4	7.5	8.1	8.5	9.7	8.9
Separated	4.0	5.2	4.3	3.8	5.6	4.3	3.7	4.4	3.9	3.5	4.5	3.8
Divorced	1.0	1.4	1.1	1.1	1.7	1.3	1.7	2.1	1.8	2.0	2.4	2.1
Never Married	38.5	45.2	40.2	39.6	46.1	41.4	39.9	46.4	41.8	37.0	40.8	38.3
Widow(er)	6.3	5.8	6.2	5.6	5.6	5.6	5.6	5.1	5.4	5.7	5.8	5.7

## 2.6 Access to Piped or Protected Water Sources

The source of drinking water is used to ascertain the suitability of water for consumption. Piped water inside the dwelling, private or public standpipes (taps) and protected wells are considered as clean sources of drinking water. NPS collects information for this indicator separately for the rainy and dry seasons.

**Table 2.4: Percentage Distribution of Households with Access to Clean Drinking Water by Area and Season**

Area	Rainy Season				Dry Season			
	NPS 2008/09	NPS 2010/11	NPS 2012/13	NPS 2014/15	NPS 2008/09	NPS 2010/11	NPS 2012/13	NPS 2014/15
<b>Tanzania</b>	<b>43.2</b>	<b>42.7</b>	<b>45.9</b>	<b>46.0</b>	<b>43.5</b>	<b>50.2</b>	<b>52.9</b>	<b>57.4</b>
Rural	32.8	32.3	35.4	34.5	32.9	39.8	41.6	46.2
Urban	72.5	66.4	69.1	67.8	73.3	73.5	77.7	78.7
<b>Tanzania Mainland</b>	<b>42.2</b>	<b>41.5</b>	<b>44.8</b>	<b>45.0</b>	<b>42.5</b>	<b>49.2</b>	<b>51.9</b>	<b>56.7</b>
Dar es Salaam	77.8	74.6	73.2	65.7	81.1	77.7	78.5	81.6
Other Urban	67.1	62.3	65.2	68.7	67.0	71.2	76.4	77.3
Rural	31.9	30.5	34.3	33.4	31.9	38.4	40.6	45.4
<b>Tanzania Zanzibar</b>	<b>81.3</b>	<b>85.6</b>	<b>87.0</b>	<b>81.3</b>	<b>80.3</b>	<b>84.3</b>	<b>87.6</b>	<b>81.3</b>

Table 2.4 shows that the percentage distribution of households with access to clean drinking water during the rainy and dry seasons in NPS 2014/15 is 46.0 percent and 57.4 percent respectively. In all strata except Zanzibar, access to clean drinking water is higher in dry season than in rainy season. In Zanzibar access to clean drinking water is the same in both seasons. Population in urban areas is more likely to have access to clean drinking water in both seasons than the population in rural areas. The proportion of households with access to clean drinking water during the dry seasons has been increasing from 43.5 percent in 2008/2009 NPS to 57.4 percent in 2014/15 NPS while during the rainy season it increased slightly from 43.2 percent in NPS 2008/09 to 46.0

percent in NPS 2014/15. However, the proportion of households with access to clean drinking water in Dar es Salaam during the rainy season declined from 77.8 percent in NPS 2008/09 to 65.7 percent in NPS 2014/15.

## 2.7 Access to Improved Source of Drinking Water

According to the World Health Organization (WHO), an International Standard of “Improved” Source of Drinking Water is one that by the nature of its construction and when properly used, adequately protects the source from outside contamination, particularly faecal matter. These sources include piped water into dwelling; piped water to yard/plot; public tap or standpipe; tube-well or borehole; protected dug well; protected spring and rainwater.

Results from NPS 2014/15 show a steady increase in the proportion of households that are accessing water from improved sources during dry season since the first round of NPS (Table 2.5). On the other hand, accessibility of water from improved sources during rainy season was stagnant between NPS 2010/11 and NPS 2012/13 after it had increased sharply from 52.0 percent in NPS 2008/09 to 63.2 percent in NPS 2010/11 and then increased to 68.9 percent in NPS 2014/15. Of all the domains, Zanzibar stands out with higher percentages of its population accessing water from improved sources with a consistent access of over 80 percent of the population in all four rounds of NPS. Within Tanzania Mainland domain, Dar es Salaam has a high access to improved water sources of from 77.7 and 88.4 percent across all rounds of NPS and during both rainy and dry seasons. It is followed by Other Urban areas. The rural stratum has the lowest access of between 32.5 to 59.2 percent across all rounds of NPS.

**Table 2.5: Proportion of Households with Access to Improved Source of Drinking Water by Area and Season**

Area	Rainy Season				Dry Season			
	NPS	NPS	NPS	NPS	NPS	NPS	NPS	NPS
	2008/09	2010/11	2012/13	2014/15	2008/09	2010/11	2012/13	2014/15
<b>Tanzania</b>	<b>52.0</b>	<b>63.2</b>	<b>62.7</b>	<b>68.9</b>	<b>43.9</b>	<b>50.4</b>	<b>53.4</b>	<b>58.5</b>
Rural	41.5	54.2	53.1	59.8	33.3	33.3	42.1	47.4
Urban	81.4	83.5	83.9	86.0	73.6	73.8	78.0	79.6
<b>Tanzania Mainland</b>	<b>51.2</b>	<b>62.5</b>	<b>62.0</b>	<b>68.5</b>	<b>42.9</b>	<b>49.5</b>	<b>52.5</b>	<b>57.9</b>
Dar es Salaam	85.4	81.2	81.7	88.4	81.1	77.7	78.7	82.6
Other Urban	77.5	84.0	84.8	85.6	67.5	71.5	76.8	78.2
Rural	40.7	53.1	52.4	59.2	32.5	38.5	41.2	46.6
<b>Tanzania Zanzibar</b>	<b>81.3</b>	<b>85.6</b>	<b>87.8</b>	<b>81.3</b>	<b>80.3</b>	<b>84.6</b>	<b>87.6</b>	<b>81.3</b>

## 2.8 Access to Basic Sanitation Facilities

Basic sanitation facilities are simply flush or pour toilets, ventilated pit latrines, and simple pit latrines. Poor sanitation is another principal cause of preventable diseases including diarrhoea, dysentery and cholera. Improvements in hygiene are generally associated with better health, which positively affects almost all other activities of the household.

In NPS 2014/15, the findings show that majority of households in Tanzania (87.0 percent) have access to basic sanitation facilities (Table 2.6). There was no remarkable difference in the access to basic sanitation facilities between NPS 2014/15 and NPS 2012/13. Access to basic sanitation facilities in Tanzania is quite high, especially in urban areas. Furthermore, Dar es Salaam reported the largest percentage of households with access to sanitation facilities in all four NPS rounds.

**Table 2.6: Percentage Distribution of Households with Basic Sanitation Facilities by Area**

Area	NPS 2008/09	NPS 2010/11	NPS 2012/13	NPS 2014/15
<b>Tanzania</b>	<b>89.9</b>	<b>87.1</b>	<b>86.6</b>	<b>87.0</b>
Rural	86.6	83.3	81.8	82.2
Urban	99.3	95.6	97.2	96.0
<b>Tanzania Mainland</b>	<b>90.2</b>	<b>87.3</b>	<b>86.7</b>	<b>87.1</b>
Dar es Salaam	99.2	98.9	98.7	99.0
Other Urban	99.1	94.4	96.4	96.3
Rural	86.9	83.5	81.9	81.9
<b>Tanzania Zanzibar</b>	<b>80.6</b>	<b>78.4</b>	<b>83.4</b>	<b>81.2</b>

## 2.9 Access to Improved Sanitation Facilities

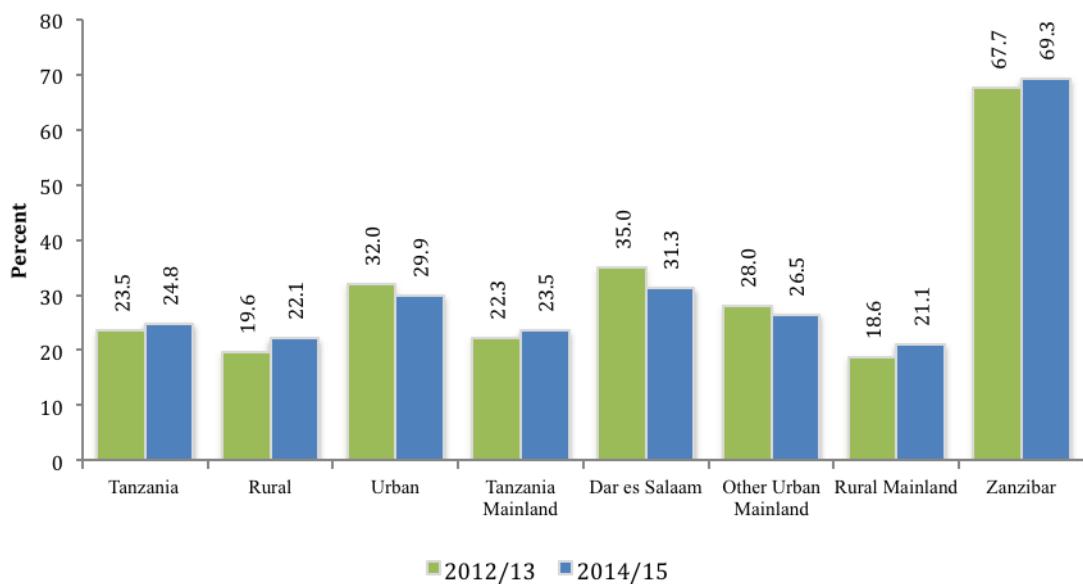
The World Health Organization defines an "Improved" Sanitation Facility as one that hygienically separates human excreta from human contact. Such facilities include piped sewer system; septic tank; flush/pour to pit latrine; ventilated improved pit latrine (VIP); pit latrine with slab; composting toilet and special case. Starting from 2011/12 NPS round, additional details have been added to the questionnaire to facilitate international definitions for "improved" sanitation facilities.

The NPS 2008/09 grouped all pit latrines together, while in the subsequent surveys split pit latrines into those with washable slabs and those with no washable slabs. Any pit latrine qualifies for basic sanitation; only pit latrines with a washable slab qualify as an improved facility. An additional qualification for an improved facility concerns sharing the facility with other households. Sharing the facility disqualifies it from classification as improved.

The difference between access to basic sanitation and improved sanitation is quite apparent. While 87.0 percent of households had access to basic sanitation in NPS 2014/15 (Table 2.6); the

percentage of households with access to improved sanitation in the same period was only 24.2 percent (Figure 2.2). The difference between access to a basic sanitation facility and access to an improved facility is much less stark for Zanzibar.

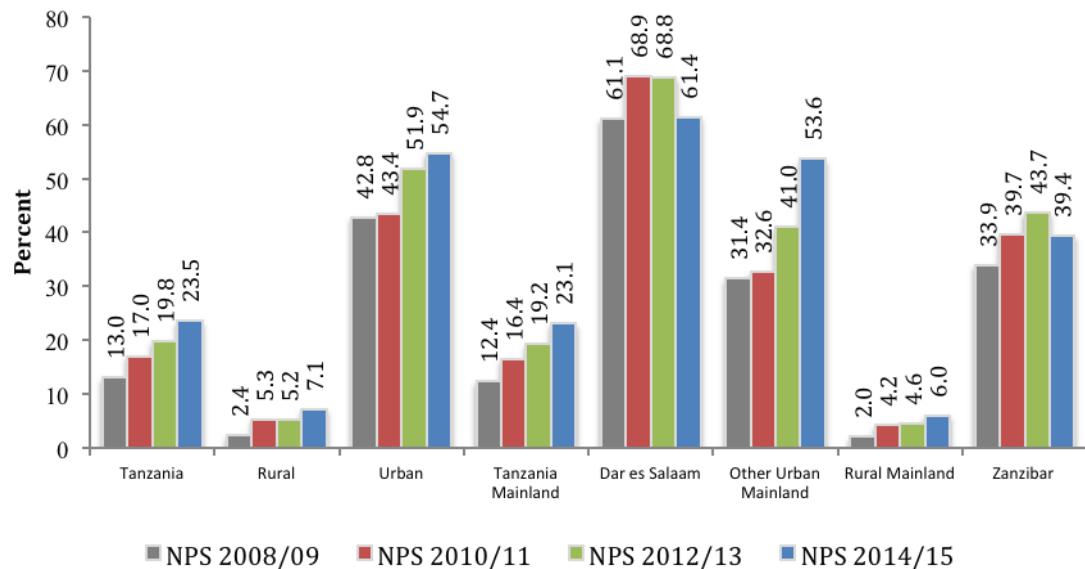
**Figure 2.2: Percentage of Households with Access to Improved Sanitation Facilities by Area**



## 2.10 Access to Electricity

Access to modern energy services is important for economic development and a household's well-being. Having access to electricity for lighting increases the time available for productive work and study/homework, and helps reduce household air pollution caused by kerosene lanterns.

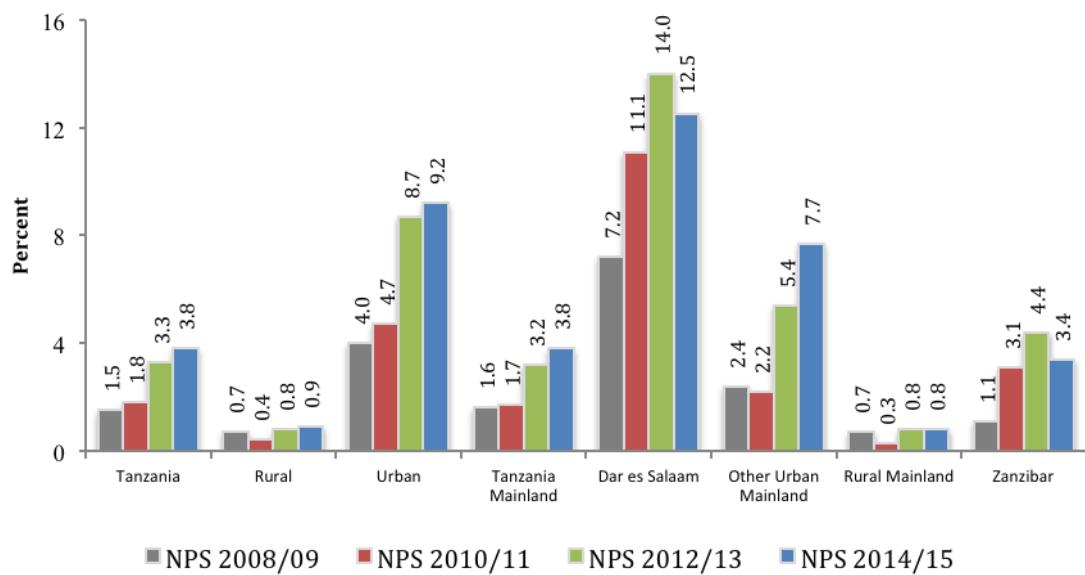
The proportion of households in Tanzania that use electricity for lighting consistently increased from 13.0 percent in NPS 2008/09 to 23.5 percent in NPS 2014/15, (demonstrating that Tanzania has made progress in improving access to electricity. Most of the progress reported in Tanzania Mainland from 2008/09 to 2014/15 NPS round was contributed by Other Urban areas where the percentage of households using electricity for lighting consistently increased from 31.4 percent to 53.6 percent during that period. Although an increase is observed from NPS 2008/09 to NPS 2014/15 in the electrification of rural areas in Tanzania, the percentage of rural households using electricity for lighting is still very low (7.1 percent). Use of electricity for lighting in Zanzibar, increased from 33.9 percent in 2008/19 to 43.7 percent in the NPS 2012/13, thereafter decreased to 39.4 percent in the NPS 2014/15 (Figure 2.3).

**Figure 2.3: Percentage of Households using Electricity for Lighting by Area**

## 2.11 Energy for Cooking Used by Households

Majority of households in Tanzania cook using open fires or stoves that burn solid fuels, such as coal, wood, or animal dung. Using solid fuels for cooking produces high levels of household air pollution that is damaging to the health of household members. Additionally, excessive use of some solid fuels negatively affects the environment through deforestation.

The percentage of households relying on solid fuels in Tanzania remains largely unchanged, especially in rural areas. There is a small increase in the percentage of urban households that are using alternatives to solid fuels as energy for cooking, from 4.0 percent in NPS 2008/09 to 9.2 percent in NPS 2014/15. It is worth noting that, the percentage of households using alternative fuels for cooking has consistently increased in Tanzania Mainland from 1.6 percent in NPS 2008/09 to 3.8 percent in NPS 2014/15. In Zanzibar, the pattern seems to be different, increasing from 1.1 percent in NPS 2008/09 to 4.4 percent in NPS 2012/13 before decreasing to 3.4 percent in the NPS 2014/15 (Figure 2.4).

**Figure 2.4: Percentage of Households using Alternative Fuels for Cooking by Area**

## CHAPTER THREE

### Education

#### 3.0 Introduction

Education is a process through which intellectual, physical and moral capacities of individuals are developed to make them refined members of their society. This chapter presents information on selected education indicators including Literacy Rates; Net Enrollment Rate at Pre-Primary, Primary and Secondary Schools; Gross Enrollment Rate in Higher Education; and Average Household Expenditure on Education.

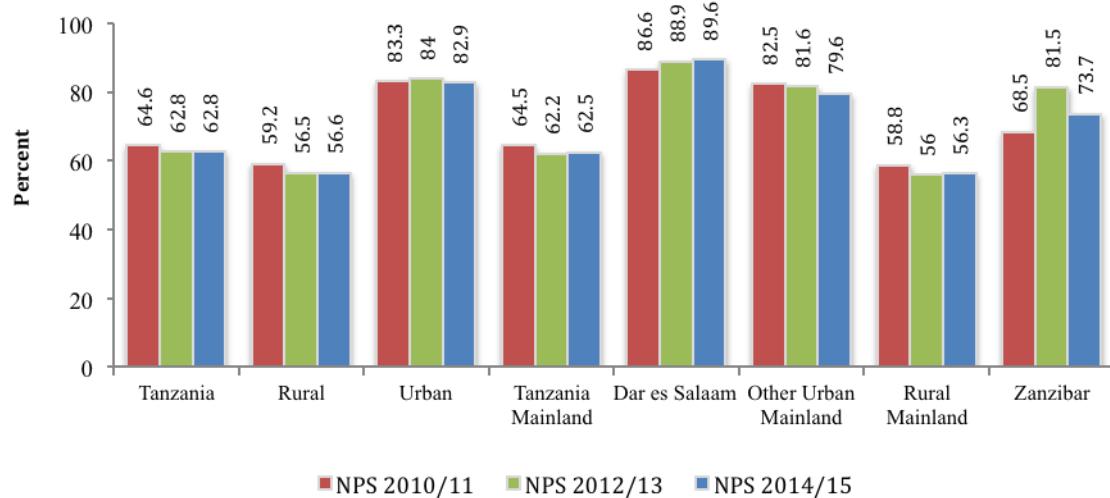
The National Five Year Development Plan (2016/17 – 2020/21) under the section of education interventions has articulated challenges and education interventions from pre-primary education to higher education as well as the expected outcomes during and after the period. In the last three NPSs (NPS 2010/11, NPS 2012/13 and NPS 2014/15) questions regarding education were included in the questionnaires so as to trace the trend of the selected education variables overtime.

#### 3.1 Literacy among Population of Age 7 – 13 Years

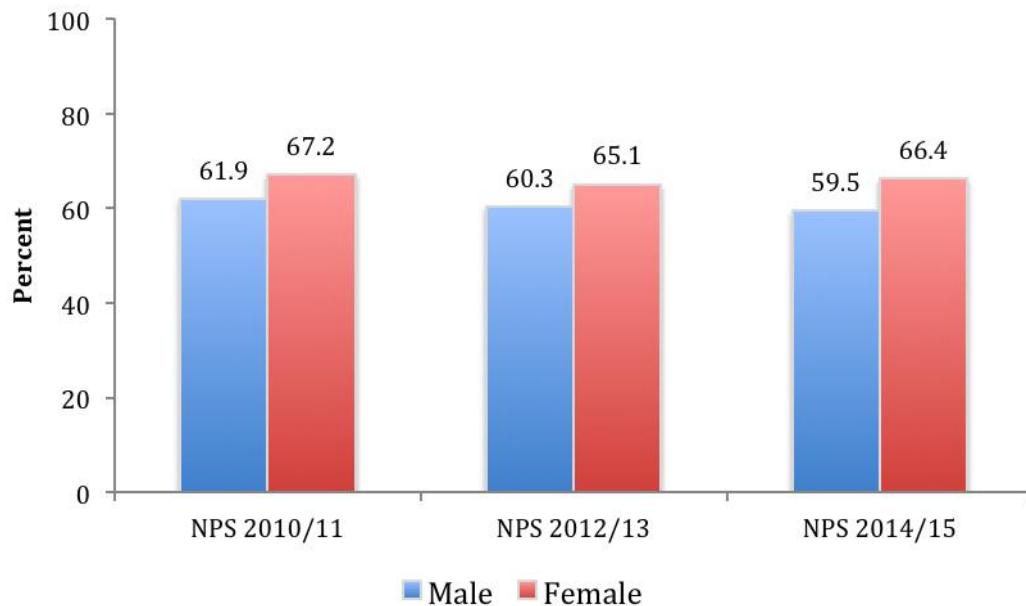
According to the United Nations Educational, Scientific, and Cultural Organization (UNESCO) “literacy rate is the percentage of population who can both read and write with understanding a short simple statement on their everyday lives. Generally, ‘literacy’ also encompasses ‘numeracy’, the ability to make simple arithmetic calculations”. Literacy represents a prospect for further intellectual growth and contribution to economic-socio-cultural development of society. In Tanzania official age for primary school education is 7 to 13 years preceded by two years (5 and 6 years) of pre – primary education.

At the national level literacy rate has remained the same at 62.8 percent since NPS 2012/13 to 2014/15. However, literacy has declined from 64.6 percent in NPS 2010/11 to 62.8 percent in NPS 2012/13. Rural areas continue to lag behind urban areas across all the three NPS rounds, as urban areas have considerably higher literacy rates than that of rural areas (Figure 3.1).

In the last three NPS rounds, there is a relatively large percentage of population aged 7 to 13 years which is literate in Zanzibar compared to Mainland. Furthermore, for all domains, Dar es Salaam has shown an increasing literacy rate (though at a decreasing rate) between NPS 2010/11 and NPS 2014/15.

**Figure 3.1: Literacy Rate of the Population Aged 7 – 13 Years**

Males' literacy rate has shown a decreasing trend over time, whereas females' literacy rates have been fluctuating over time. Consistently, females continued to have a higher literacy rate than males from NPS 2010/11 to NPS 2014/15 (Figure 3.2).

**Figure 3.2: Literacy Rate of the Population of Age 7 – 13 Years**

### 3.2 Literacy among Population of Age 7 – 13 Years Currently Attending School

Table 3.1 portrays that literacy rate in Tanzania slightly increased by 0.6 percent from 60.0 percent recorded in NPS 2012/13 to 60.6 percent recorded in NPS 2014/15. Zanzibar consistently managed to keep high percentages of literate population aged 7 to 13 years attending school compared to Mainland throughout the last three NPS rounds.

Literacy rate in urban areas decreased from 81.7 percent in NPS 2010/11 to 78.9 percent in NPS 2014/15. In the rest of the strata the literacy rate has increased between NPS 2012/13 and NPS 2014/15 although it declined between NPS 2010/11 and NPS 2012/13. Despite this pattern of fluctuation in literacy rate, Dar es Salaam had higher literacy rates in the last three NPS rounds. However, females continue to have higher literacy rates than males across all three NPS rounds.

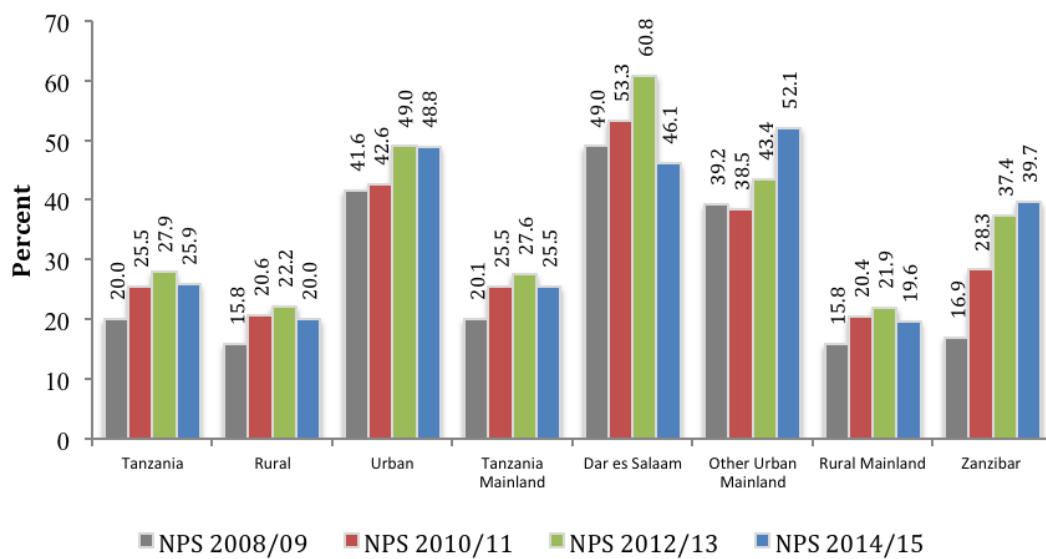
**Table 3.1: Literacy Rate of the Population of Age 7 – 13 Years Currently Attending School by Area and Sex**

Area/Sex	NPS 2010/11	NPS 2012/13	NPS 2014/15
<b>Tanzania</b>	<b>63.2</b>	<b>60.0</b>	<b>60.6</b>
Rural	57.8	54.2	54.9
Urban	81.7	79.5	78.9
<b>Mainland</b>	<b>63.1</b>	<b>59.4</b>	<b>60.2</b>
Dar es Salaam	85.5	84.3	86.2
Other Urban	80.8	77.0	75.1
Rural	57.5	53.7	54.5
<b>Zanzibar</b>	<b>67.9</b>	<b>80.7</b>	<b>72.8</b>
<b>Sex</b>			
Female	65.6	62.1	63.9
Male	60.7	57.8	57.6

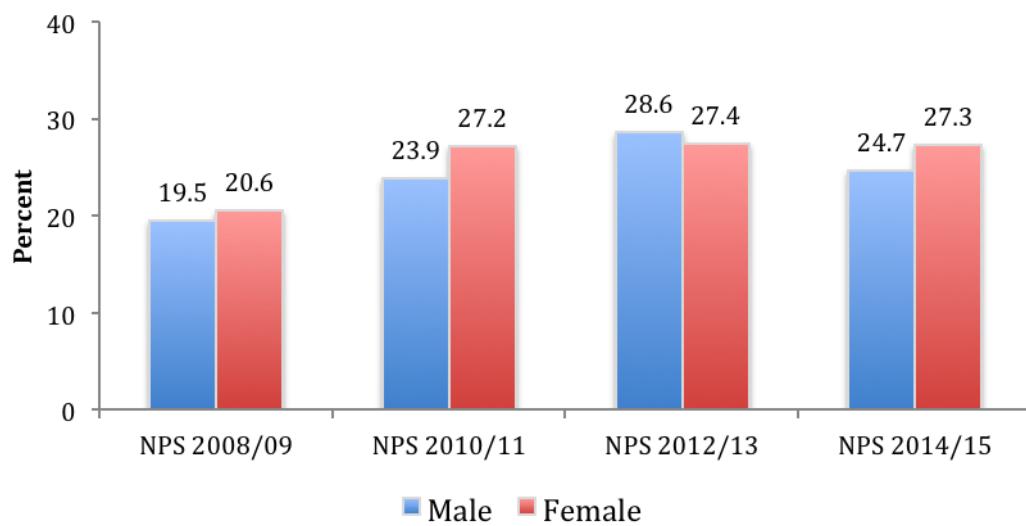
### 3.3 Net Enrollment Rate at Pre-Primary School

The net enrolment rate (NER) in Pre-Primary Education is the proportion of children age 5 to 6 years enrolled in Pre-primary schools to the population of children age 5 to 6 years. NER shows the extent of coverage in a given level of education for children belonging to the official age group corresponding to a given level of education.

The NER in Pre-Primary Education decreased by 2.1 percent in NPS 2014/15 compared to NPS 2012/13. Improvements in enrollment have occurred in the Mainland and Zanzibar since 2008/09, most improvement gains came between the NPS 2008/09 and NPS 2012/13. Urban areas reported higher enrolment rates than rural areas across all NPS rounds. However, in all NPS rounds, except the 2008/09 round, Zanzibar reported higher NER than Mainland. With the exception of the recent NPS 2014/15 round, Dar es Salaam had the highest NER compared with other strata in all NPS rounds (Figure 3.3).

**Figure 3.3: Net Enrolment Rate in Pre-Primary Education by Area**

The NPS 2014/15 findings show that, females have higher Pre-Primary NER (27.3 percent) than males (24.7 percent) in all NPS rounds, except for NPS 2012/13 (Figure 3.4).

**Figure 3.4: Net Enrolment Rate in Pre-Primary Education by Sex**

### 3.4 Primary School Net Enrollment Rate

Net enrollment rate (NER) in Primary Education is the proportion of children aged 7-13 years who are enrolled in primary schools to the population of children who are 7-13 years of age.

Table 3.2 shows that in NPS 2014/15 almost three quarters (73.6 percent) of children of age 7 to 13 years were enrolled in primary schools; which is a decrease of 2.7 percentage points compared with 76.3 percent recorded in the NPS 2012/13. The trend shows that NER for primary education

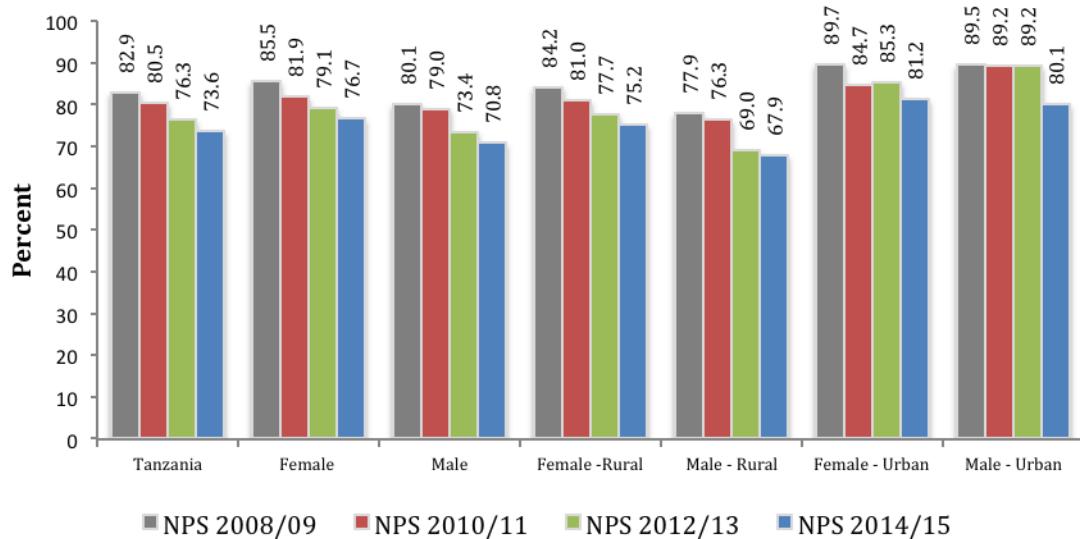
decreased consistently from 82.9 percent in NPS 2008/09 to 73.6 percent in NPS 2014/15. Urban areas consistently displayed higher NER in primary education than rural areas in all NPS rounds.

**Table 3.2: Net Enrolment Rate in Primary Education by Area and Sex**

Area / Sex	NPS 2008/09	NPS 2010/11	NPS 2012/13	NPS 2014/15
<b>Tanzania</b>	<b>82.9</b>	<b>80.5</b>	<b>76.3</b>	<b>73.6</b>
Rural	81.3	78.7	73.2	71.4
Urban	89.6	86.7	86.8	80.6
<b>Mainland</b>	<b>83.1</b>	<b>80.3</b>	<b>76.0</b>	<b>73.4</b>
Dar es Salaam	85.6	87.0	87.4	84.4
Other Urban	91.1	86.7	86.6	79.2
Rural	81.4	78.4	73.0	71.1
<b>Zanzibar</b>	<b>78.8</b>	<b>85.0</b>	<b>86.0</b>	<b>82.4</b>
<b>Sex</b>				
Female	85.5	81.9	79.1	76.7
Male	80.1	79.0	73.4	76.7

Females continue to have a higher NER in primary education than males. Moreover in rural areas female have a higher primary education NER than males in all NPS rounds (Figure 3.5).

**Figure 3.5: NER in Primary Education by Area and Sex**



### 3.5 Secondary School Net Enrollment Rate

The net enrollment rate in Secondary Education is the proportion of children of age 14 to 17 years who are enrolled in forms 1 to 4 in Secondary schools to the population age 14 to 17 years.

**Table 3.3: Net Enrolment in Secondary Education by Area and Sex**

<b>Area/sex</b>	<b>NPS 2008/09</b>	<b>NPS 2010/11</b>	<b>NPS 2012/13</b>	<b>NPS 2014/15</b>
<b>Tanzania</b>	<b>23.3</b>	<b>28.3</b>	<b>30.0</b>	<b>24.7</b>
Rural	15.6	20.4	21.2	18.4
Urban	49.0	52.0	56.6	41.4
<b>Mainland</b>	<b>22.8</b>	<b>28.0</b>	<b>29.5</b>	<b>24.3</b>
Dar es Salaam	44.5	50.1	54.9	41.6
Other Urban	49.3	52.5	57.8	42.8
Rural	15.2	19.9	20.6	17.8
<b>Zanzibar</b>	<b>39.0</b>	<b>37.2</b>	<b>44.8</b>	<b>37.6</b>
<b>Sex</b>				
Female	24.2	29.8	31.7	25.7
Male	22.4	26.7	28.2	23.7

Table 3.3 shows that in NPS 2014/15 almost one-quarter (24.7 percent) of children of age 14 to 17 years were enrolled in secondary schools; which is a decrease of 5.3 percent points compared with the NPS 2012/13. The trend shows that NER for secondary school increased consistently from 23.3 percent to 30.0 percent between NPS 2008/09 and NPS 2012/13 and then decreased to 24.7 percent in NPS 2014/15. Urban areas consistently displayed a higher NER in secondary education than rural areas in all NPS rounds. In all NPS rounds females have a higher NER in secondary school than males.

### 3.6 Gross Enrollment Rate in Higher Education

The gross enrollment rate (GER) in Higher Education is the ratio between those enrolled in higher education institutions with respect to those aged 20 to 24 years. Note that this definition differs from net enrollment rates used in the preceding sections. Table 3.4 presents the gross enrollment rate in higher education for each round of NPS.

The GER in tertiary education is quite low in the country standing at 5.2 percent in NPS 2014/15 although this is a better rate than that of NPS 2008/09 was just 2.5 percent. Gradually, enrolment has increased from 2.5 percent in NPS 2008/09 to 5.2 percent in NPS 2014/15. As in other levels of education, enrollment in tertiary education is higher in urban than in rural areas. Mainland and Zanzibar displayed almost similar rates of enrollment in the first two rounds of the NPS; 2.5 percent and 2.2 percent respectively in NPS 2008/09; 3.9 percent and 3.1 percent respectively in NPS 2010/11. However, tertiary GER increased dramatically in Zanzibar in the NPS 2012/13, while Mainland rates increased at a rate slightly lower than that of Zanzibar (Table 3.4).

**Table 3.4: Gross Enrollment in Higher Education Institutions by Area and Sex**

<b>Area/sex</b>	<b>NPS 2008/09</b>	<b>NPS 2010/11</b>	<b>NPS 2012/13</b>	<b>NPS 2014/15</b>
<b>Tanzania</b>	<b>2.5</b>	<b>3.8</b>	<b>5.1</b>	<b>5.2</b>
Rural	0.6	0.9	3.1	2.0
Urban	7.3	9.6	8.9	10.8
<b>Mainland</b>	<b>2.5</b>	<b>3.9</b>	<b>5.0</b>	<b>5.2</b>
Dar es Salaam	8.8	15.0	13.4	11.3
Other Urban	6.0	6.9	5.7	11.1
Rural	0.6	0.9	3.0	1.9
<b>Zanzibar</b>	<b>2.2</b>	<b>3.1</b>	<b>7.8</b>	<b>4.9</b>
<b>Sex</b>				
Female	1.6	3.0	3.4	3.0
Male	3.7	4.7	6.7	8.0

Across strata, Dar es Salaam consistently shows the largest GER while rural areas in the Mainland show the smallest. A decline in GER was observed in Dar es Salaam from the rate of 13.4 percent in NPS 2012/13 to 11.3 percent in NPS 2014/15. Unlike to pre – primary, primary and secondary school levels where females' enrolment rates were larger than males, in tertiary education males have higher enrollment rates than females.

### 3.7 Orphans in School

The aim of the Government of the United Republic of Tanzania is to ensure that all the country's most vulnerable children are effectively and efficiently provided with community-based support and care. The education sector is recognized as having a critical role to play in these efforts, and access to education is viewed as one of the principal means by which children can be set free from long-term poverty and vulnerability. An orphan is a child who has lost one or both parents.

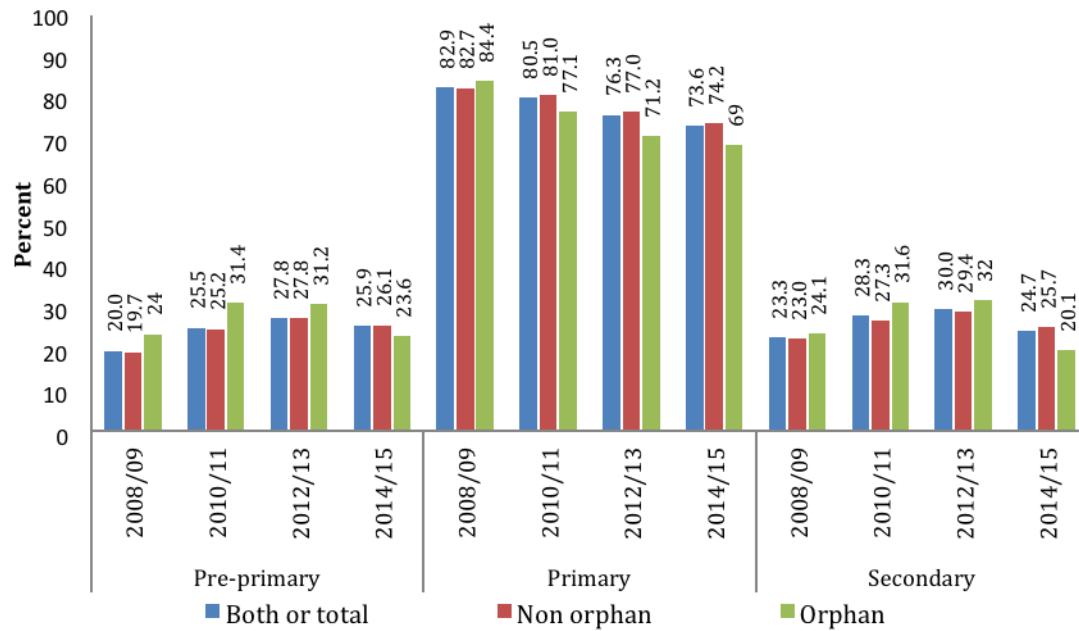
Figure 3.6 shows that in NPS 2014/15 almost one quarter (23.6 percent) of orphans of age 6 and 7 were enrolled in pre – primary schools; which is a decrease of 7.6 percent compared with the NPS 2012/13. The trend shows that pre – primary NER for orphans increased from 24.0 percent in NPS 2008/09 to 31.4 percent in NPS 2010/11, was steady in NPS 2012/13, and then decreased to 23.6 percent in NPS 2014/15.

Findings show that in NPS 2014/15, seven in ten orphans of age 7 to 18 years were enrolled in primary schools. The trend shows that primary NER for orphans had decreased from 84.4 percent in NPS 2008/09 to 69.0 percent in NPS 2014/15.

In NPS 2014/15, almost one fifth (20.1 percent) of orphans of age 14 to 17 years were enrolled in secondary schools; which is a decrease of 11.9 percentage points compared with the NPS 2012/13.

The trend shows that secondary NER for orphans increased from 24.1 percent in NPS 2008/09 to 31.6 percent in NPS 2010/11, was steady in NPS 2012/13 then decreased to 20.1 percent in NPS 2014/15.

**Figure 3.6: NER in Pre – Primary, Primary and Secondary Education by Orphanhood Status, Tanzania**



## CHAPTER FOUR

# Health and Nutrition

### 4.0 Introduction

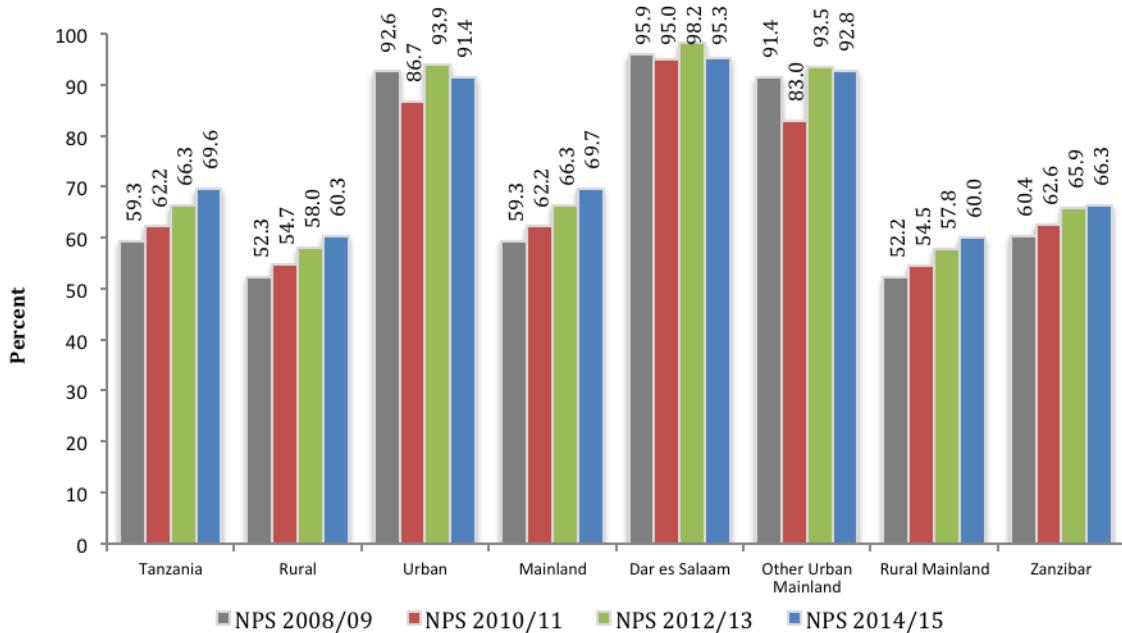
This chapter presents the following health related issues; births attended by skilled health workers, expenditure on health, client satisfaction with health services and birth registration. It is worth noting that, the chapter does not focus on health which according to the World Health Organization (WHO) definition health is referred to as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. However, it also focuses on nutrition particularly problems associated with inadequate nutrition (malnutrition) including stunting and wasting in children under 5 years of age.

### 4.1 Births Attended by a Skilled Health Worker

The proportion of births attended by a skilled health worker is used as a proxy for access to reproductive health care. In this context doctors, clinical officers, nurses and midwives are considered to be skilled health workers as they have been trained to provide the necessary supervision, care and advice to women during pregnancy, labour, and the post-delivery period. Skilled health workers can successfully manage potential complications during childbirth and thereby reduce both maternal and infant mortality. However, traditional birth attendants are not considered skilled personnel, as they have not received the necessary training that can help to reduce maternal and infant mortality.

The NPS asks all women aged 12 to 49 years if they delivered any children in the 24 months prior to the survey. It is worth noting that though women may have given birth to more than one child in the 24 months prior to the survey, the NPS 2015 considered only their most recent births during that period. For simplicity, those deliveries will be referred to as the total number of deliveries in the 24 months prior to the survey.

The proportion of births attended by skilled health workers in Tanzania was 69.6 percent in NPS 2014/15. The proportion has been increasing steadily from 59.3 percent in NPS 2008/09 to 69.6 percent in NPS 2014/15. The progressive increase appears to be driven by improved access to reproductive health care in rural areas, where increases were similarly reported over time. The proportion of birth attended by skilled health workers in urban areas is significantly higher (91.4 percent) than in rural area (60.3 percent) (Figure 4.1).

**Figure 4.1: Percentage of Births Attended by Skilled Health Worker by Area**

Rapid expansion of urban centres accompanied by high rural–urban migration may have accounted for the sharp decline in the proportion of births attended by skilled health workers in urban areas from 2008/09 NPS round (92.6 percent) to 2010/11 round (86.7 percent). In the NPS 2012/13, the urban areas’ proportions appeared to increase slightly to previous levels, but declined again in NPS 2014/15. Almost the same trend is observed in Dar es Salaam where there is a slight decline in the proportion of births attended by skilled health workers between 2008/09 and 2010/11, an increase in 2012/13 and a decline to almost the 2010/11 level in NPS 2014/15.

Noteworthy patterns within all rounds of the NPS show that urban areas have experienced better access to reproductive health care than rural areas. Figure 4.1 further shows that the proportion of births attended by skilled health workers for the Mainland and Zanzibar are almost similar, and as expected, the proportion in Dar es Salaam is the highest among all strata in each round of the NPS.

## 4.2 Registration of Births

Registration of vital events such as births assists in the accurate calculation of birth rates and the associated assessment of infant mortality rates. It can additionally provide information regarding vaccination needs and it is important for tracking progress towards the health-related Millennium Development Goals. The cost of registration, distance to registration facilities, and knowledge gaps regarding the importance of registration can each contribute to low registration rates.

In Table 4.1, the proportion of registered births among those born in the 24 months period prior to the NPS 2014/15 (83.3 percent) and is higher than the proportion recorded in NPS 2012/13 (73.5 percent). No steady trends are apparent over the four rounds of the NPS in any area of the country.

However, the reported proportion of births registered was higher in NPS 2014/15 than in NPS 2008/09 for each area except Zanzibar and Dar es Salaam.

**Table 4.1: Percentage of Births Registered among Those Born in the 24 Months Period Prior to the Survey by Area**

Area	NPS 2008/09	NPS 2010/11	NPS 2012/13	NPS 2014/15
<b>Tanzania</b>	<b>75.4</b>	<b>79.5</b>	<b>73.5</b>	<b>83.3</b>
Rural	71.6	76.0	67.9	78.4
Urban	93.3	91.1	92.2	94.6
<b>Tanzania Mainland</b>	<b>74.8</b>	<b>79.2</b>	<b>82.8</b>	<b>82.8</b>
Dar es Salaam	94.5	95.9	99.4	94.2
Other Urban	92.0	88.6	87.6	94.4
Rural	71.0	75.5	67.4	78.2
<b>Zanzibar</b>	<b>97.1</b>	<b>92.9</b>	<b>96.7</b>	<b>96.8</b>

Urban areas reported a higher proportion of registered births compared to rural areas. Compared to Other Urban areas, Dar es Salaam reported the highest proportions of registered births in all NPS rounds except for the 2014/15 round. Although, the proportion of registered births in Zanzibar and Tanzania Mainland did not follow similar patterns; Zanzibar reported higher proportions of registered births in each NPS round compared with Tanzania Mainland.

### 4.3 Satisfaction with Health Services

The 2010/11, 2012/13 and 2014/15 NPS put emphasis on client satisfaction to the services provided by different health providers in Tanzania (including government, private and religious health providers) by asking a question aiming at knowing if clients were satisfied with health services provided in the four weeks before the survey. The survey considered only two health providers visited by each client by asking the respondent to list up to two visits by order of importance. The analysis presented here considers only responses from the first provider mentioned by the respondents.

In NPS the 2014/15, seven in ten individuals (72.7 percent) who visited health facilities stated that they were satisfied with services provided, which is a slight decrease in satisfaction compared with NPS 2012/13 (73.7 percent). The survey estimates show that the client satisfaction with health service provision declined from 75.9 percent in NPS 2010/11 to 73.7 percent in NPS 2012/13 and then to 72.7 percent in NPS 2014/15 implying that the client dissatisfaction increased over the same period. Unlike other strata, Zanzibar reported the highest level of satisfaction across all three surveys (more than 81 percent of the respondents were reported to be satisfied with the health services provided). The findings also show that rural dwellers in Tanzania are more satisfied with

the health services than urban dwellers. In general, males were more likely to be satisfied with health services provided compared to females.

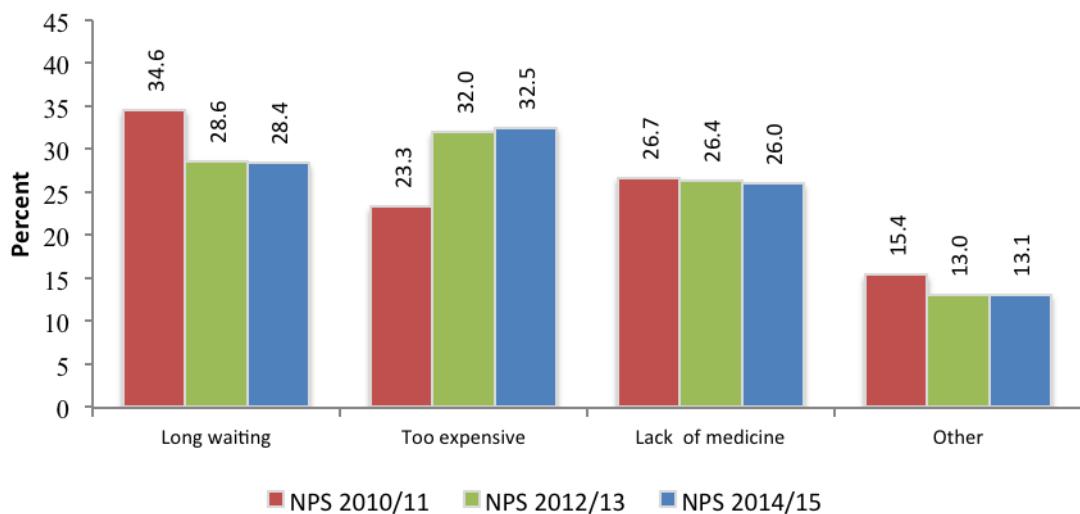
**Table 4.2: Percentage of Population Expressing Satisfaction with Health Services by Area and Sex**

Area / Sex	NPS 2010/11		NPS 2012/13		NPS 2014/15	
	Satisfied	Not Satisfied	Satisfied	Not Satisfied	Satisfied	Not Satisfied
<b>Tanzania</b>	<b>75.9</b>	<b>24.1</b>	<b>73.7</b>	<b>26.3</b>	<b>72.7</b>	<b>27.3</b>
Rural	79.1	20.9	77.1	22.9	73.8	26.2
Urban	69.2	30.8	66.7	33.3	70.6	29.4
<b>Mainland</b>	<b>75.5</b>	<b>24.5</b>	<b>73.5</b>	<b>26.5</b>	<b>72.5</b>	<b>27.5</b>
Dar es Salaam	58.8	41.2	56.5	43.5	62.4	37.6
Other Urban	74.3	25.7	72.5	27.5	74.3	25.7
Rural	78.7	21.3	77.1	22.9	73.8	26.2
<b>Zanzibar</b>	<b>86.1</b>	<b>13.9</b>	<b>81.2</b>	<b>18.8</b>	<b>82.3</b>	<b>17.7</b>
<b>Sex</b>						
Female	76.1	23.9	72.3	27.7	71.4	28.6
Male	75.6	24.4	75.4	24.6	74.5	25.5

#### 4.4 Major Reasons for Client Dissatisfaction Pertaining to Health Services Provision

Clients are not satisfied with the health services provided by different health providers in Tanzania due to a number of reasons. In the 2010/11, 2012/13 and 2014/15 NPS respondents were asked a question which required them to state the reasons for their dissatisfaction with health services provision. The reasons reported were long waiting time, too expensive, lack of medicine, inadequate trained staff, poor tools/building and others but since the first three reasons were the most reported, the remaining reasons were grouped together under “others” as they constitute only a very small fraction of the respondents.

In the NPS 2014/15, one third of the respondents (32.5 percent) stated that the cost of health services is a major reason for their dissatisfaction followed by long waiting time (28.4 percent), lack of medicine (26.0 percent) and others (13.1 percent). In the NPS 2010/11 the main reason for client dissatisfaction with the health service provision was long waiting time (34.6 percent), and in the NPS 2012/13 the reason was too expensive (32.0 percent). In general long waiting time and cost of the health services have been the main causes for dissatisfaction for NPS 2012/13 and NPS 2014/15 whereas for NPS 2010/11 the main causes of client dissatisfaction were long waiting time and lack of medicine.

**Figure 4.2: Reasons for Client Dissatisfaction Pertaining to Health Services Provision, Tanzania**

## 4.5 Health Spending

The NPS asked respondents how much they spent when they visited health providers in the four weeks prior to the survey. Majority of respondents (74.1 percent in NPS 2012/13 and 76.4 percent in NPS 2014/15) spent not more than 10,000 Tanzanian shillings (TZS) on health services in the period of four weeks (in a month). In general, 87.3 percent of respondents in NPS 2012/13 round and 89.7 percent in NPS 2014/15 round did not spend more than 20,000 TZS on health services per month. However, one of the major concerns of the health providers' clients was the high cost of the services; meaning that though most of the respondents spent not more than 20,000 Tanzanian shillings in four weeks, they would like to see these costs being lowered.

**Table 4.3: Percentage of Population Spending on Health Services, Tanzania**

Expenses (TZS)	NPS 2012/13	NPS 2014/15
Less or equal to 10,000	74.1	76.4
10,001-20,000	13.2	13.3
20,001-30,000	4.7	4.1
30,001-40,000	2.3	1.9
40,001-50,000	1.6	1.5
50,001 or above	4.2	2.8

## 4.6 Under-fives Moderately or Severely Stunted (Height for Age)

According to Comprehensive Food Security and Vulnerability Analysis Guidelines (2009) stunting is a measure of chronic malnutrition characterized by a slowing in the growth of a child resulting in a failure of the child to achieve the expected height when compared to a healthy, well nourished child of the same age. Stunting is associated with a number of long-term factors such as

deficiencies in nutrition (chronically inadequate levels of proteins, energy and/or micronutrients), frequent infections, and inappropriate feeding practices over an extended period. It is not an accurate measurement of short-term changes in nutritional status.

Stunting of the children aged less than five years in all rounds of NPS is portrayed in Table 4.4. According to the table, prevalence of under-five children who were stunted was relatively low in NPS 2014/15 (34.2 percent) compared with NPS 2008/09 (43.0 percent), 2010/11 (34.8 percent) and 2012/13 (37.4 percent). Unlike Tanzania Mainland, Zanzibar has recorded smaller proportions of stunted children in all NPS rounds except for the 2014/15 round. The problem of stunting is more prevalent in rural areas compared to Other Urban areas, and Dar es Salaam domains of the Tanzania Mainland. It is worth noting that the male children are more affected by stunting compared to female children as observed in all NPS rounds (Table 4.4).

**Table 4.4: Percentage of Stunting (height for age) of Children Under 5 Years by Area and Sex**

Area/Sex	NPS 2008/09	NPS 2010/11	NPS 2012/13	NPS 2014/15
<b>Tanzania</b>	<b>43.0</b>	<b>34.8</b>	<b>37.4</b>	<b>34.2</b>
Rural	45.6	37.3	39.3	37.3
Urban	30.2	24.1	29.5	25.4
<b>Mainland</b>	<b>43.2</b>	<b>34.9</b>	<b>37.6</b>	<b>34.1</b>
Dar es Salaam	36.5	21.1	23.8	23.8
Other	Urban	27.9	24.9	32.2
Rural		45.9	37.5	39.5
<b>Zanzibar</b>	<b>30.6</b>	<b>30.4</b>	<b>26.9</b>	<b>38.1</b>
<b>Sex</b>				
Female	40.7	34.2	37.8	32.1
Male	45.6	35.3	40.1	36.4

#### 4.7 Wasting

Wasting (low weight for height) is a measurement of acute malnutrition characterized by considerable weight loss or failure to gain weight, resulting in a child having a weight substantially below what would be expected of a healthy child of the same height. Wasting indicates current malnutrition and can change quickly over time; even showing marked seasonal patterns associated with changes in food availability and disease prevalence.

In NPS 2014/15, 5.1 percent of children under-five years of age in Tanzania were wasted, which is an increase of 0.9 percentage point compared to NPS 2012/13. In NPS 2008/09, 2.7 percent of under-five children were found to be wasted. In NPS 2014/15 wasting was more prevalent in urban areas than in rural areas. With exception of NPS 2014/15 Zanzibar had higher wasting rates than Mainland in all other NPS rounds. In addition, the findings across all NPS rounds except for the 2008/09 round show that wasting affects female children more than males.

**Table 4.5: Percentage of Wasting (weight for height) of Children Under 5 Years by Area and Sex**

Area/Sex	NPS 2008/09	NPS 2010/11	NPS 2012/13	NPS 2014/15
<b>Tanzania</b>	<b>2.7</b>	<b>6.6</b>	<b>4.2</b>	<b>5.1</b>
Rural	2.9	6.8	4.2	4.8
Urban	1.5	5.9	4.3	6.0
<b>Mainland</b>	<b>2.6</b>	<b>6.5</b>	<b>4.1</b>	<b>5.2</b>
Dar es Salaam	0.9	5.4	3.5	6.7
Other Urban (Mainla(Mainland)	1.3	6.0	4.3	5.9
Rural	2.9	6.7	4.1	4.8
<b>Zanzibar</b>	<b>7.0</b>	<b>9.8</b>	<b>7.7</b>	<b>3.2</b>
<b>Sex</b>				
Female	2.7	6.8	4.5	5.4
Male	2.7	6.3	3.9	4.9



## CHAPTER FIVE

# Growth and Reduction of Poverty

### **5.0 Introduction**

The chapter presents the analysis of some key indicators in poverty reduction strategies and other socio-economic variables that in general reflect different levels in the country in order to attain national and global targets. Issues covered under this chapter are inflation, wealth based on real consumption, inequality and unemployment. An attempt has been made to compare findings from the NPS 2012/13 with NPS 2014/15. However, it is worth mentioning here that the NPS rounds are similar in terms of methodology employed (i.e. data collection, processing, etc.). However the sample involved in the NPS 2014/15 was re-visited thus bringing in substantial number of new households while some few households were maintained (tracked) from the previous three rounds of NPS (2008/09, 2010/11 and 2012/13). Furthermore, to facilitate comparison across NPS rounds, the base year prices are those of the NPS 2010/11.

### **5.1 Inflation**

Inflation is an important measure that reflects the costs of living in a given country. It reveals the rate at which prices of basket of goods and services are changing from a reference period. Prices of basic goods and services are to be monitored closely, mainly because unstable prices erode real value of wages, profits, and consumption. Uncontrolled prices also pose heavy challenges on the general management of the country's economy and it discourages investments mainly due to high inflation rates. Inflation should, therefore, be maintained at reasonably low and stable levels.

It should be noted that the official reference for inflation figures in Tanzania is the Consumer Price Index (CPI) released monthly. Producing other inflation numbers from the NPS would lead into dilemma as to which one to use. Using any between CPI and NPS inflation numbers would be left to one's self-choice but it is important to make clear the merits and demerits of each.

The first advantage of using the NPS data is that it is possible to produce price indices across urban and rural strata, and across Mainland and Zanzibar. In contrast, the CPI is mainly an urban price index that is produced separately for the Mainland and for Zanzibar. A second advantage is that with the NPS, the weights of the price indices are updated in each round, a feature that might reflect the consumption pattern of the population more accurately than the CPI weights, which uses weights from the Household Budget Survey (HBS) conducted every five years. The third advantage, which is particularly relevant for welfare comparisons, refers to the fact that the NPS allows the construction of price indices that take into account temporal and spatial price

differences, whereas the CPI reflects only temporal price differences.

On the other hand, the differences and disadvantages are related to data collection issues. The first difference is that the NPS interviews households in urban and rural areas, while the CPI visits the same outlets only in urban areas in each region. Another difference is that the CPI collects price data only. For all food items the NPS gathers information from the households on the amount spent and on the quantity purchased. A measure of unit values, rather than a measure of prices, is obtained by dividing the expenditure by the quantity. A major disadvantage is that unit values can only be calculated for food items because the survey does not collect information on quantities for non-food items. Last, the third major disadvantage is unit values, unlike CPI prices; NPS also reflect the mixture of varieties within each commodity. The NPS collects information on 59 food items, and even though the list could be considered detailed, most of these goods are not completely homogeneous. In contrast, the CPI bundle could be fairly specific, and it is not unusual for some items to even refer to a particular brand.

Food price indices based on the NPS are shown in Table 5.1. The left panel of the table displays the spatial price differences in each round of the NPS. The underlying assumption is that if the cost of a food bundle in Tanzania stands at 100, then how does the cost change across the country? Rural areas were less expensive than the National average in NPS 2014/15, while urban areas were more expensive than the National average. When comparing Mainland with Zanzibar, prices in the former are similar to those for the entire country, whereas in the latter prices are lower than the national average. Across strata, Dar es Salaam is the most expensive stratum followed by Other Urban areas in Mainland. Zanzibar and rural areas in Mainland are the two least expensive strata. Overall, spatial price differences have revealed a significant change between the two rounds with an increase in urban areas and a decrease in rural areas. As for Zanzibar prices have almost remained constant.

The right panel of Table 5.1 shows the inflation between both rounds of the NPS. If the cost of a food bundle stood at 100 during the NPS 2012/13 (October 2012 to September 2013), what is the percentage change in the cost of that bundle compared to the NPS 2014/15 (October 2014 to September 2015)? Food prices have increased by 41 percent between the NPS 2012/13 and the NPS 2014/15 compared with a 34 percent increase between the NPS 2010/11 and the NPS 2012/13.

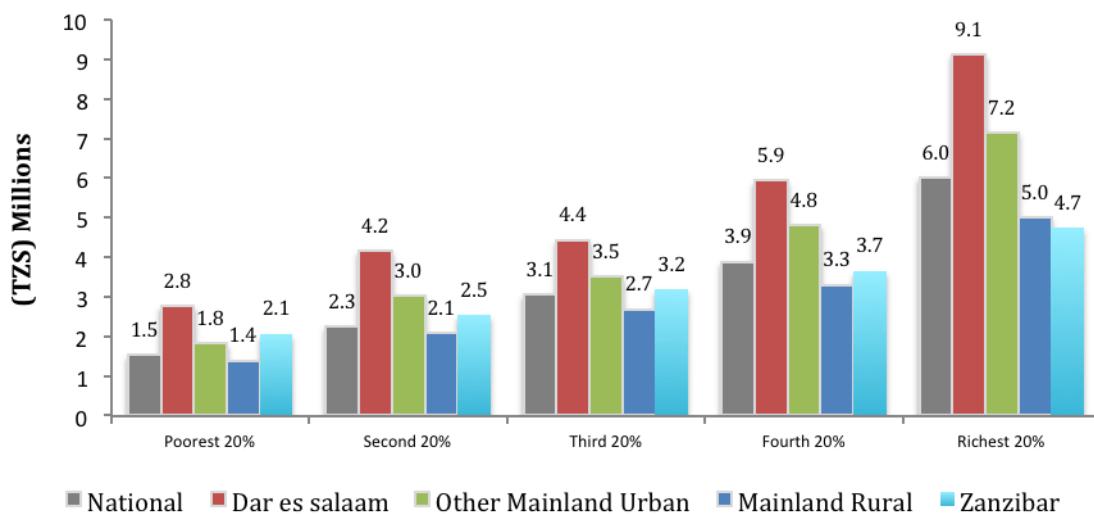
**Table 5.1: Spatial and Temporal Food Prices**

Area	Differences in the cost of living in each round (spatial price indices)		Increase in the cost of living between rounds	
	NPS 2012/13	NPS 2014/15	Inflation between NPS 2010/11 and the NPS 2012/13	Inflation between NPS 2012/13 and the NPS 2014/15
<b>Tanzania</b>	<b>100</b>	<b>100</b>	<b>0.34</b>	<b>0.41</b>
Urban	92	107	0.34	0.38
Rural	108	89	0.30	0.35
<b>Tanzania Mainland</b>	<b>100</b>	<b>100</b>	<b>0.34</b>	<b>0.41</b>
Dar es Salaam	109	113	0.23	0.37
Other Urban	102	100	0.33	0.38
Rural	93	88	0.36	0.37
<b>Zanzibar</b>	<b>90</b>	<b>91</b>	<b>0.12</b>	<b>0.22</b>

## 5.2 Wealth Based on Real Consumption

The following section presents the average annual consumption values in real terms for any given adult equivalent wealth quintile. As nominal consumption in each round of the NPS is adjusted for temporal and spatial price differences, real consumption is thus expressed in Tanzanian prices (TZS) and is used for analysis in this section. To facilitate comparison across NPS rounds, consumption values have been standardized to the base year of NPS 2010/11. Consumption is the preferred measure of welfare as it is a stable and easy concept for respondents to report on, and thus more likely to be an accurate measure of living standards than income would offer.

In NPS 2014/15, the highest average annual consumption was observed in Dar es Salaam for each of the wealth quintiles. The lowest average consumption was typically reported in Mainland rural areas, with the exception of the richest quintile where the lowest average consumption was detected in Zanzibar (Figure 5.1). Additional analyses present consumption over time within areas of Tanzania (Figures 5.2 - 5.6).

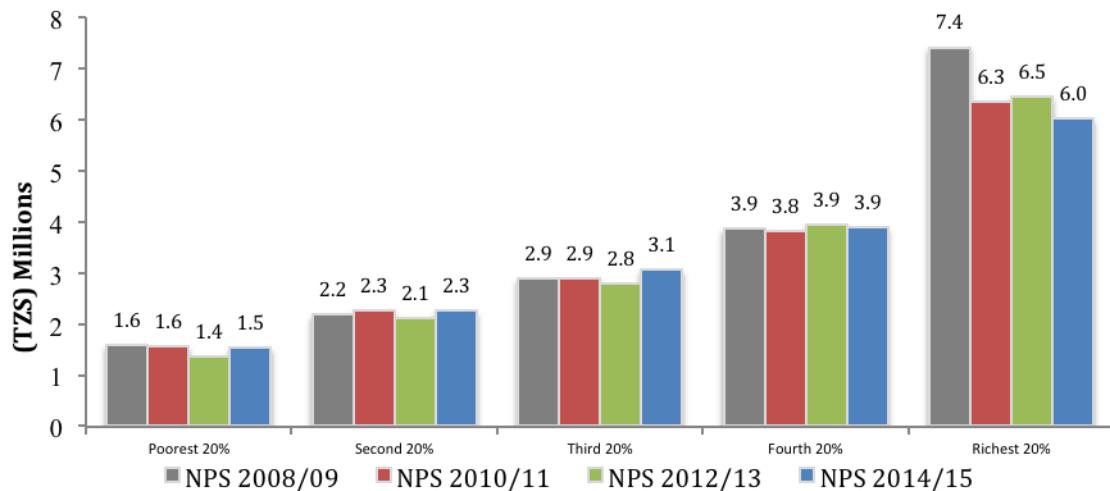
**Figure 5.1: Average Annual Consumption (real) by Quintile and Area, NPS 2014/15**

\* Consumption values are standardized to the base year of NPS 2010/11

Figure 5.2 presents average annual consumption in real terms within adult equivalent wealth quintiles at the national level. Within each quintile, wealth as expressed by total real consumption, varies considerably across the four rounds of the NPS. The two poorest quintiles experienced relatively minimal movement over time, experiencing declines only between NPS 2008/09 and NPS 2012/13 in the poorest quintile and between NPS 2010/11 and NPS 2012/13 in the second quintile. The third and fourth quintiles again observed relatively minimal movement over time, with no significant increases or decreases in wealth detected. Considerably larger declines were observed in the richest quintile, with significant decreases between NPS 2008/09 and each subsequent NPS round, despite a slight increase in NPS 2012/13. When considering overall changes between NPS 2008/09 and NPS 2014/15, declines in consumption were only observed in the poorest and richest quintiles, while increases were detected in the remaining quintiles.

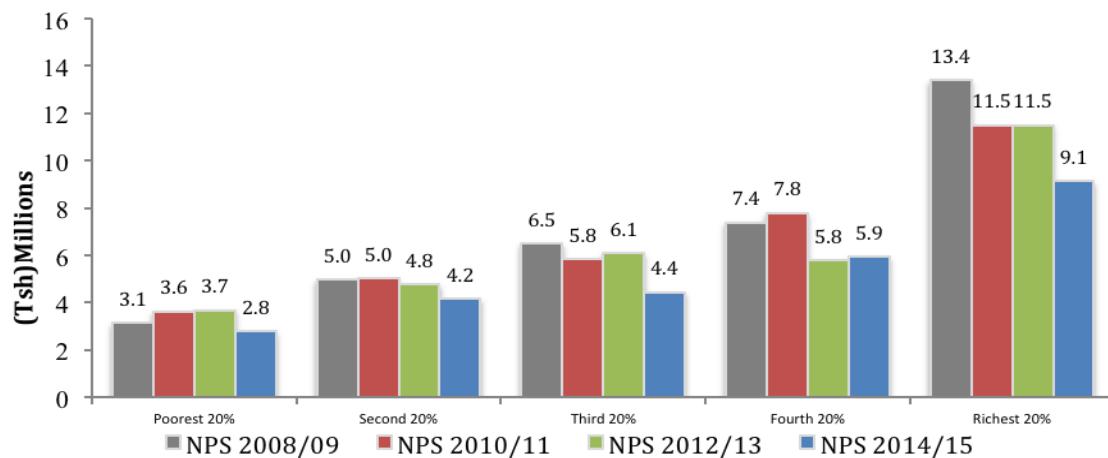
Within each round of the NPS, the largest proportional changes in consumption were observed between the fourth and fifth (richest) quintiles. Substantially smaller increases within each round were observed between the two poorest quintiles as well as between the second and third quintiles.

An expansion, upon analysis at the national level, presents the average annual consumption value in real terms within adult equivalent wealth quantiles for each of the four geographical domains of inference in Tanzania (Dar es Salaam, Other Urban areas, rural, and Zanzibar) (Figures 5.3 - 5.6).

**Figure 5.2: Average Annual Consumption (Real) by Quintile and NPS Round, Tanzania**

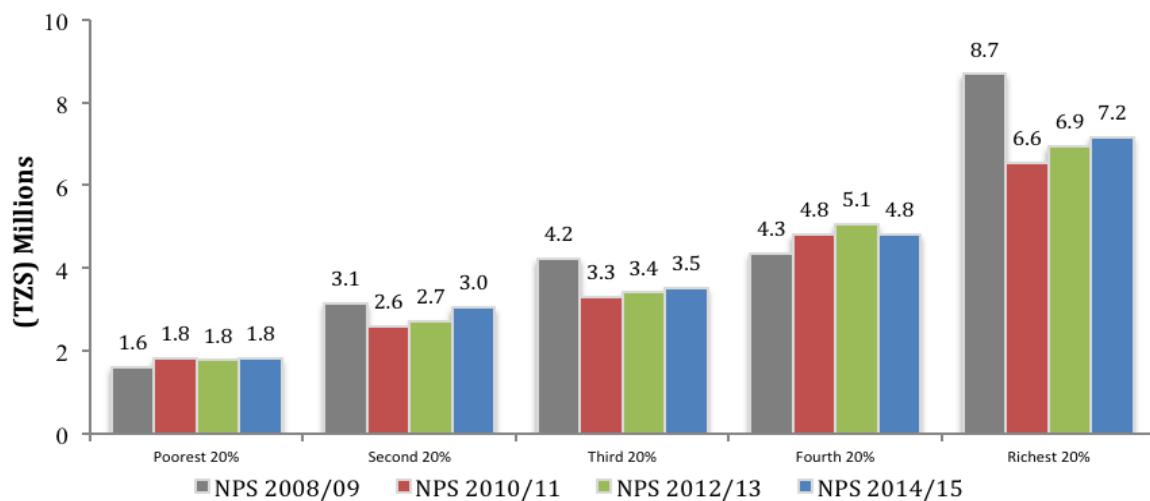
\* Consumption values are standardized to the base year of NPS 2010/11

Unlike the national level, overall decreases in consumption (between NPS 2008/09 and NPS 2014/15) were observed in each wealth quintile in Dar es Salaam, though these decreases were only significant in the two richest quintiles. In addition, the decrease in consumption between NPS 2012/13 and NPS 2014/15 in the richest quintile is more pronounced in Dar es Salaam than at the national level (Figure 5.3).

**Figure 5.3: Average Annual Consumption (Real) by Quintile and NPS Round, Dar es Salaam**

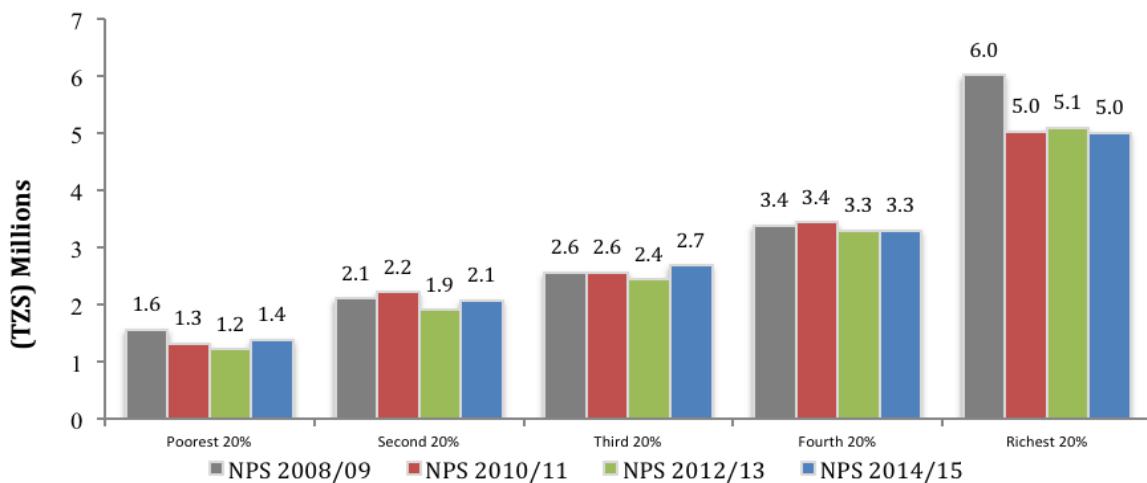
\* Consumption values are standardized to the base year of NPS 2010/11

Figure 5.4 presents the average annual consumption in real terms within adult equivalent wealth quintiles for urban areas of Mainland other than Dar es Salaam. The poorest quintile again experienced relatively minimal movement over time, with no significant changes detected. A substantial overall decrease between NPS 2008/09 and other NPS rounds was observed in the richest quintile, similar to those noted in Dar es Salaam and at the national level.

**Figure 5.4: Average Annual Consumption (Real) by Quintile and NPS Round, Other Urban Mainland**

\* Consumption values are standardized to the base year of NPS 2010/11

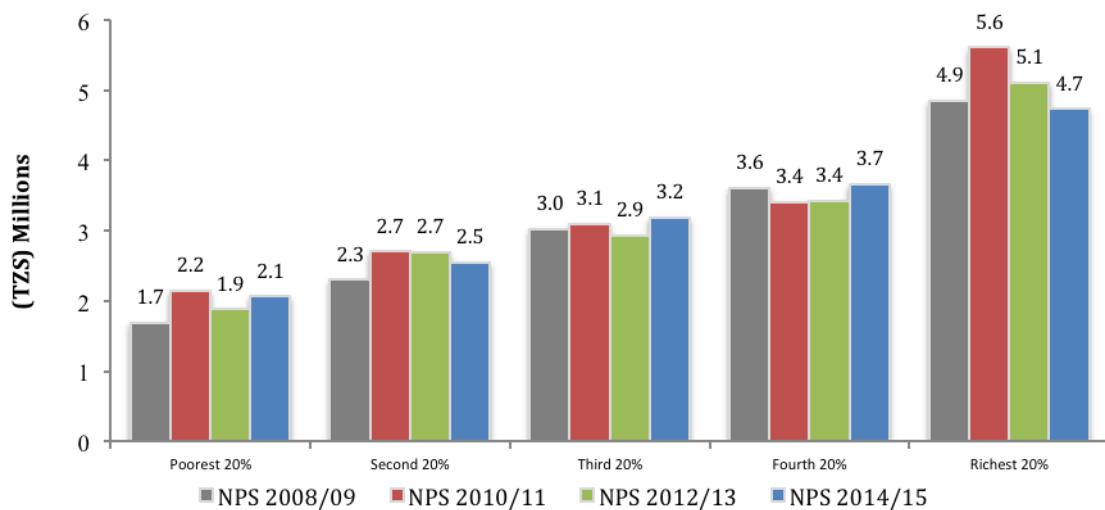
Relatively minimal, insignificant movements were observed over time in the third and fourth quintiles in rural areas of Mainland Tanzania while other quintiles experienced greater fluctuation. The only significant changes were all observed in the poorest quintile, between NPS 2012/13 and NPS 2014/15, NPS 2008/09 and NPS 2012/13, and NPS 2008/09 and NPS 2010/11. Overall decreases between NPS 2008/09 and NPS 2014/15 were observed in each quintile except the third. Within each NPS round, the largest proportional changes in consumption were observed between the fourth and fifth (richest) quintiles (Figure 5.5).

**Figure 5.5: Average Annual Consumption (Real) by Quintile and NPS Round, Mainland Rural**

\* Consumption values are standardized to the base year of NPS 2010/11

Figure 5.6 presents average total annual consumption as reported by households in real terms within adult equivalent wealth quintiles for Zanzibar. The richest quintile presents the greatest contrast to the other areas of Tanzania. Though the overall movement between NPS 2008/09 and NPS 2014/15 was negative, a significant increase in consumption was observed between the first two NPS rounds in the richest quintile. In addition, Zanzibar reported slight increases in consumption in each of the quintiles.

**Figure 5.6: Average Annual Consumption (Real) by Quintile and NPS Rounds, Zanzibar**



\* Consumption values are standardized to the base year of NPS 2010/11

### 5.3 Inequality

Inequality is a measure that reflects how the income is distributed among members of a given community. In many cases information on one's income has, for a number of reasons proved to be of unreliable. For this reason, information on consumption and expenditure is used as a proxy to income. Consumption is an ideal proxy to income due to the fact that one's consumption is a proportion of his/her income. Hence low inequality implies that consumption is equally distributed among the population, whereas high inequality indicates that consumption is concentrated in a relatively small group of the population.

The Gini coefficient is the most commonly used single measure of inequality of a population. It ranges from 0 (meaning that every person has the same consumption) to 1 (meaning that one person has all the consumption in the country).

The Gini coefficient was 0.39 in the NPS 2012/13 and was 0.37 in the NPS 2014/15 suggesting that consumption inequality has declined slightly indicating a more equal consumption distribution than it was in NPS 2012/13. This decline in inequality between the NPS 2012/13 and NPS 2014/15 was

observed in all strata whereby the decline is more apparent in Zanzibar than in the rest of the strata. The decline in inequality was the smallest in Other Urban areas of the Mainland from 0.35 in NPS 2012/13 to 0.34 in NPS 2014/15. Zanzibar's consumption inequality declined from 0.33 in NPS 2012/13 to 0.28 in NPS 2014/15. Out of the Mainland strata, in NPS 2014/15 Dar es Salaam had the lowest consumption inequality (0.29) followed by rural areas (0.32), while Other Urban areas had the highest inequality of 0.34 (Table 5.2).

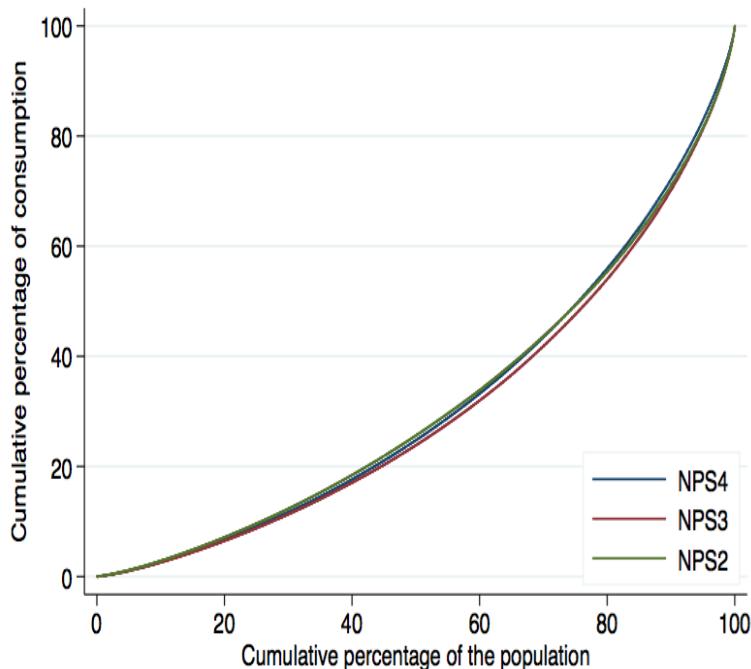
**Table 5.2: Gini Coefficient**

Area	NPS 2010/11	NPS 2012/13	NPS 2014/15
<b>Tanzania</b>	<b>0.37</b>	<b>0.39</b>	<b>0.37</b>
Urban	0.31	0.36	0.33
Rural	0.37	0.34	0.32
<b>Tanzania Mainland</b>	<b>0.37</b>	<b>0.39</b>	<b>0.37</b>
Dar es Salaam	0.32	0.32	0.29
Other Urban	0.35	0.35	0.34
Rural	0.31	0.34	0.32
<b>Zanzibar</b>	<b>0.31</b>	<b>0.33</b>	<b>0.28</b>

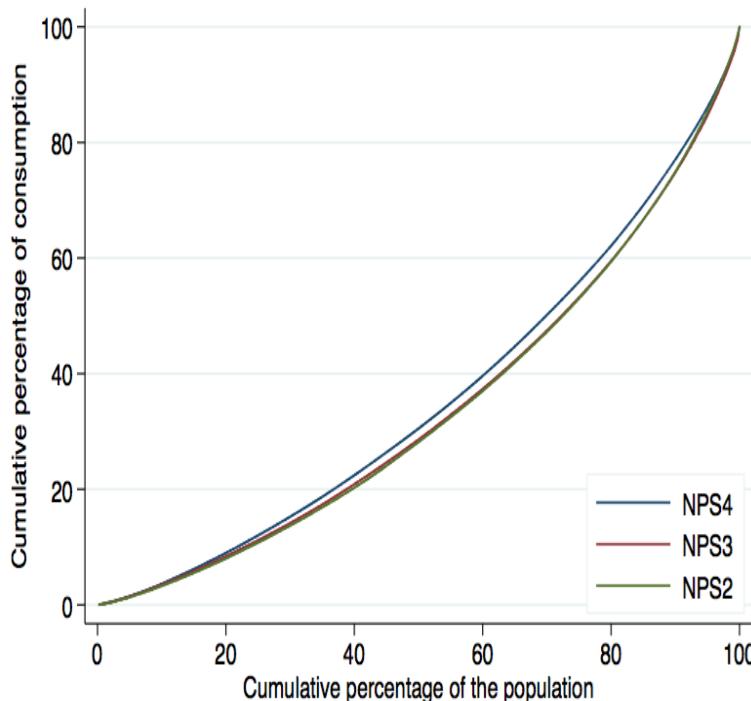
The Gini coefficient is based on the Lorenz curve, which is a graphical method of assessing inequality for the same population over time or across different groups of the population at one point in time.

The Lorenz curve plots the cumulative percentage of the population in the horizontal axis (ranked in ascending order of consumption) against the cumulative percentage of consumption in the vertical axis. The closer the Lorenz curve is to a 45-degree line, the lower the level of inequality is, while the closer the Lorenz curve is to the horizontal axis, the higher the level of inequality. Figure 5.7 presents Lorenz curves for the NPS 2010/11, NPS 2012/13 and the NPS 2014/15.

From the figure 5.7, the curves portrays a similar pattern to the findings of the Gini coefficients with the curve for the NPS 2014/15 being closer to the 45-degree line than the curve for NPS 2010/11 and NPS 2012/13 which are relatively closer to the horizontal axis. This suggests that inequality has declined over time.

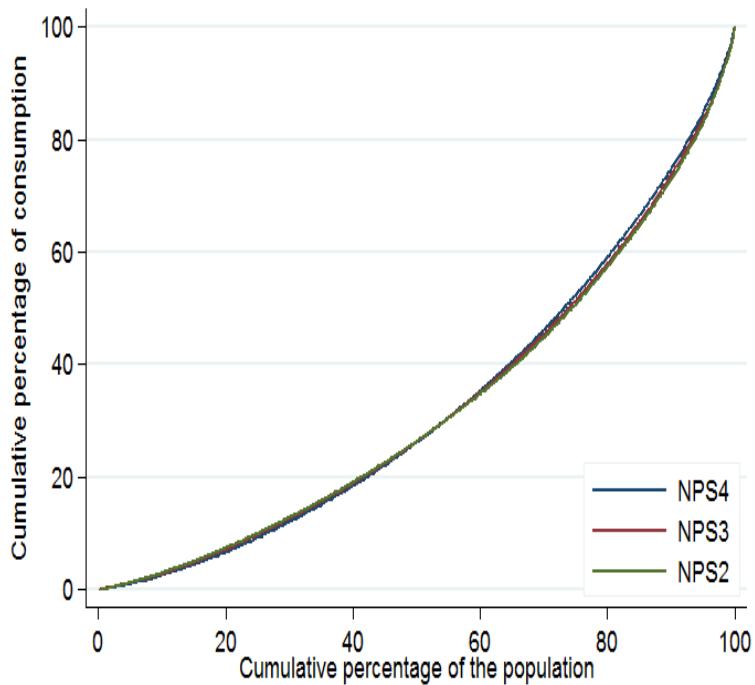
**Figure 5.7: Lorenz Curves of Consumption – Tanzania, NPS 2, NPS 3 and NPS 4**

The Lorenz curves for Dar es Salaam reveal a decline in the inequality between NPS 2012/13 and NPS 2014/15. The curve for NPS 2014/15 is closer to the 45-degree line than the one for NPS 2012/13.

**Figure 5.8: Lorenz Curves of Consumption – Dar es Salaam, NPS 2, NPS 3 and NPS 4**

In Other Urban areas, both curves (NPS 2012/13 and NPS 2014/15) are more aligned with the horizontal axis implying more unequal consumption among Other Urban households compared to the households in Dar es Salaam.

**Figure 5.9: Lorenz Curves of Consumption – Other Urban Areas in Mainland, NPS 2, NPS 3 and NPS 4**



#### 5.4 Unemployment

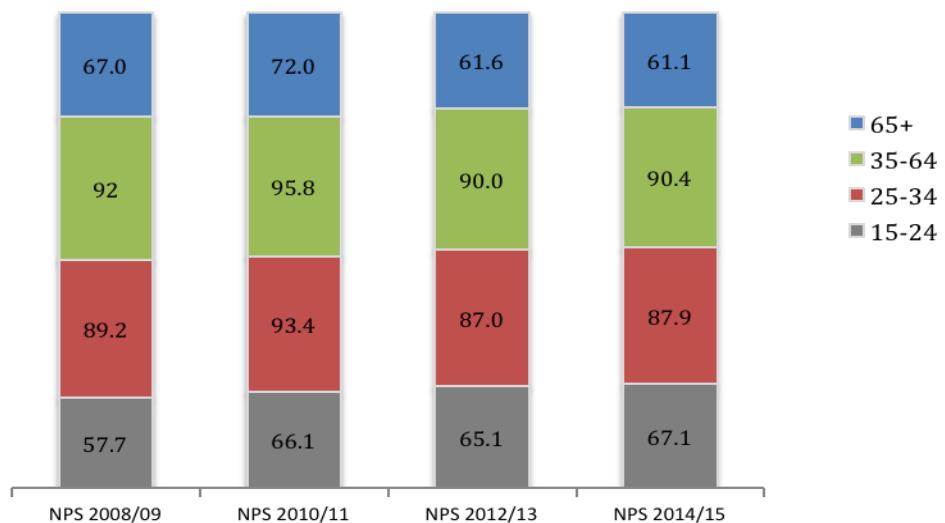
The International Labour Organization's standards that guide the gathering of information about labour force participation rate involve individuals whose minimum age is 15 years old. The reference period for these individuals' economic activities is 7 days prior to the day of contacting the targeted individual. Labour force comprises all economically active people, that is, people who are employed or unemployed. The employed comprises people who worked for at least one hour in the last seven days for wages, profits, barter, or in the family business for free. In addition it includes those who did not work at all during the last seven days but have a job to which they will definitely return to.

Labour force participation rate between the NPS 2012/13 and NPS 2014/15 has increased throughout all strata as well as most age groups. Labour force participation rate is higher in rural areas compared with urban areas. The Mainland labour force participation rate is likely to influence the national average; the Zanzibar part of the United Republic of Tanzania has participation rates below the national averages across all the rounds of the NPS.

**Table 5.3: Labour Force Participation Rate (percent) by Area, Sex and Age Group (age >=15)**

Area / Sex / Age Groups	NPS 2008/09	NPS 2010/11	NPS 2012/13	NPS 2014/15
<b>Tanzania</b>	<b>77.6</b>	<b>82.6</b>	<b>78.2</b>	<b>80.1</b>
Rural	81.2	86.2	81.0	83.1
Urban	67.1	73.9	71.7	74.0
<b>Mainland</b>	<b>78.0</b>	<b>83.1</b>	<b>78.7</b>	<b>80.5</b>
Dar es Salaam	68.0	72.1	72.4	74.5
Other Urban	68.3	75.0	72.0	73.8
Rural	81.4	87.0	81.4	83.6
<b>Zanzibar</b>	<b>64.1</b>	<b>65.2</b>	<b>62.5</b>	<b>67.3</b>
<b>Sex</b>				
Female	75.3	81.3	74.1	76.6
Male	80.1	84.0	82.6	84.0
<b>Age Groups</b>				
15-24	57.7	66.1	65.1	67.1
25-34	89.2	93.4	87.0	87.9
35-64	92.1	95.8	90.0	90.4
65+	67.0	72.0	61.6	61.1

On the other hand, labour force participation rates of youths (age 15 – 24 years), is unsurprisingly lower than the rest of the age groups except for age group 65+ in NPS 2012/13 and NPS 2014/15. This is mainly due to the fact that majority of the people in this age category, are students; very few of them are in the labour market. For all the four NPSs, the participation rate kept increasing with age until age 65 or above when, as expected, participation in the economic activities by this group of people becomes lower mainly due old age (Figure 5.10).

**Figure 5.10: Labour Force Participation Rate (Percent) among Different Age Groups, Tanzania**

Labour force participation rate among persons aged 35 to 64 year was the highest (95.8 percent) in NPS 2010/11 compared with the other three rounds. Participation rates were generally higher in the

NPS 2010/11 than the rest of the rounds across all the age groups except age group 15 to 24 years where the highest participation rate was 67.1 percent for NPS 2014/15. On the contrary, NPS 2012/13 recorded the lowest labour force participation rates in all age categories and across all rounds of NPSs except the age category of 15 to 24 years that recorded the lowest participation rate of 57.7 percent in NPS 2008/09.

Unemployment is internationally defined as state whereby people fulfill three conditions: (a) did not work in the last seven days and did not have a job to which they will return to, (b) were available to work, and (c) were looking for a job. The ILO's recommendations allow the relaxation of the condition (c), i.e. looking for a job, especially in countries where a large proportion of the population is engaged in subsistence agriculture and informal activities and generally have little knowledge of labour market developments in the rest of the economy. Tanzania is characterized by these conditions, and therefore uses a relaxed standard definition of unemployment. This approach will be used in estimation of labour market indicators based on the NPS.

With exception of the NPS 2008/09, unemployment rate was highest in Zanzibar in the subsequent rounds of NPS, followed by Dar es Salaam. In all rounds of NPS, unemployment rate has persistently remained above 12 percent in Dar es Salaam and above 16 percent in Zanzibar in the second, third and fourth rounds of NPS. In the first round of NPS, Zanzibar unemployment rate was around 8 percent. As in the case of labour force participation rate, the rural stratum has the lowest unemployment rates (not exceeding 2 percent) in each of the four rounds of NPS.

Concerning unemployment rates by age category, the youth age category (15 – 24 years) has higher unemployment rates (not less than 5 percent) compared to the rest of the age categories. In the rest of the age categories (25 to 34, 35 to 64, and 65+ years) and across all rounds of the NPS, the highest unemployment rate (4.6 percent) was observed during NPS 2014/15 within the age group of 25 to 34 years (Table 5.4).

**Table 5.4: Unemployment Rates (percent) by Area, Sex and Age Group (age>=15), Tanzania**

Area	2008/09	2010/11	2012/13	2014/15
<b>Tanzania</b>	<b>2.5</b>	<b>3.5</b>	<b>2.9</b>	<b>3.6</b>
Rural	0.8	2.0	1.0	1.3
Urban	8.5	7.7	7.9	8.9
<b>Mainland</b>	<b>2.3</b>	<b>3.2</b>	<b>2.6</b>	<b>3.2</b>
Dar es Salaam	16.0	13.7	12.9	14.7
Other Urban	4.1	5.0	4.1	4.7
Rural	0.6	1.5	0.7	0.9
<b>Zanzibar</b>	<b>7.9</b>	<b>17.8</b>	<b>16.5</b>	<b>16.9</b>
<b>Sex</b>				
Female	2.7	4.2	3.8	4.8
Male	2.2	2.7	2.1	2.3
<b>Age Groups</b>				
15-24	5.3	7.1	5.7	7.3
25-34	2.8	3.5	3.5	4.6
35-64	0.8	1.2	0.8	0.8
65+	0.4	1.4	0.8	0.0



## CHAPTER SIX

# Agriculture

### 6.0 Introduction

This chapter presents information on agriculture. The country's economy is to a great extent dependent on agriculture. The agricultural sector encompasses crop production, livestock keeping, fisheries and forestry. According to the Economic Survey 2015, the agricultural sector contributed 29.0 percent of the National Gross Domestic Product (GDP) of which crop production contributed 15.6 percentage points, livestock 7.9 percentage points, forestry 3.5 percentage points and fisheries 2.1 percentage points. Agriculture is the leading sector in employment. In 2014 it accounted for 66.3 percent of persons with employment in the country (Integrated Labour Force Survey, 2014).

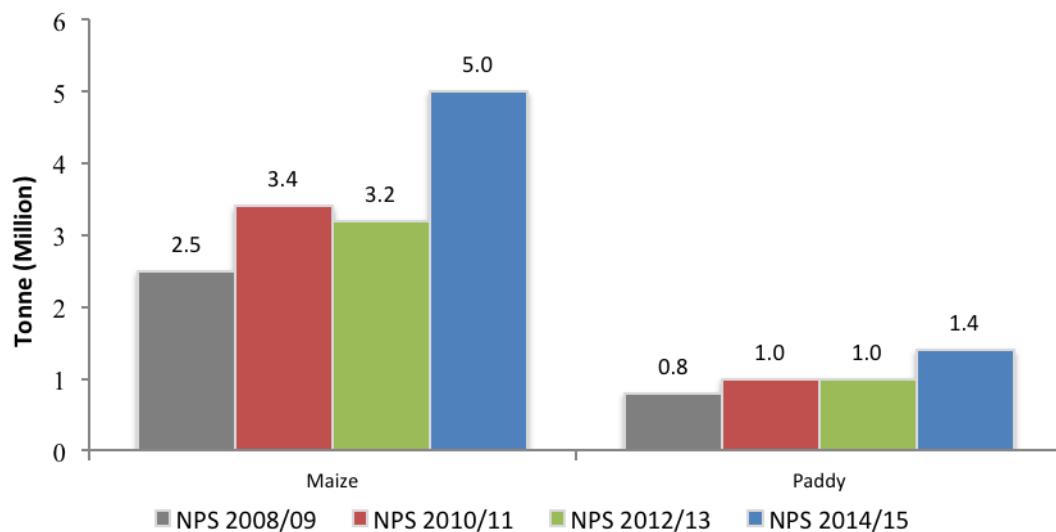
### 6.1 Households Involved in the Agricultural Sector

Almost seven in 10 households (69 percent) in NPS 2014/15 were cultivating some land (whether owned or rented). In the NPS 2012/13, 71 percent of households cultivated some land.

Despite the abundance of unutilized land, small-scale subsistence farmers still dominate the agricultural sector in Tanzania. They cultivate farm plots of 3 hectares on average, and 84 percent of the farmers own less than 4 hectares of land. The majority are engaged in subsistence farming with just one-third of the farmers selling some of their crops.

### 6.2 Changes in Production and Major Crop Yields over Time

Different agro-climatic areas and socio-economic conditions lead to significant differences in cropping patterns and farming systems. The agriculture sector in Tanzania is dominated by few main staple crops including maize, paddy, beans, cassava, Irish potatoes, sweet potatoes and sorghum. However, maize and paddy are the only crops discussed in this chapter because they were mentioned in the then MKUKUTA Monitoring Master Plan (MMMP).

**Figure 6.1: Full Year (Masika and Vuli) Total Crop Production (Million Metric Tons), Tanzania**

Findings presented in Figure 6.1 show that 5 million metric tons of maize and 1.4 million metric tons of paddy were produced in NPS 2014/15. Compared to NPS 2012/13 maize production in NPS 2014/15 increased by 1.8 million metric tons while that of paddy increased by 0.4 million metric tons. Production of both crops was the highest in NPS 2014/15 compared with previous rounds. Generally, findings from all rounds of NPS show that the production of maize is higher than that of paddy.

**Table 6.1: Average Yields of Maize (kg / area planted in hectares) by Type of Plot, Tanzania**

Type of Plot	Using Farmer Reported Plot Areas (Mean)				Using GPS-Based Plot Areas (Mean)		
	NPS 2008/09	NPS 2010/11	NPS 2012/13	NPS 2014/15	NPS 2010/11	NPS 2012/13	NPS 2014/15
	782	794	779	1,064	930	858	1,207
Pure Stand Plots	907	878	893	1,297	1,048	962	1,419
Intercropped Plots	715	742	711	944	858	800	1,103
Plots with Organic Fertilizer	1,012	927	785	1,217	1,014	955	1,272
Plots with Inorganic Fertilizer	1,160	1,179	1,181	1,658	1,349	1,309	2,042
Plots with Any Fertilizer	1,066	1,058	982	1,433	1,170	1,101	1,590

In regards to farmers reported plot areas, average yield of maize in all plots was 1,064 kg/ha in NPS 2014/15 compared with 779 kg/ha in NPS 2012/13, which is an increase of 285 kg/ha. For GPS-based plot area, average yield of maize in all plots was 1,207 kg/ha in NPS 2014/15 compared with 858 kg/ha in NPS 2012/13, which is an increase of 349 kg/ha. Moreover, the average yield of maize regardless of the type of plot was the highest in NPS 2014/15 compared with previous rounds (Table 6.1).

**Table 6.2: Average Yields of Paddy (kilogram / area planted in hectares) by Type of Plot, Tanzania**

Type of Plot	Using Farmer Reported Plot Areas (mean)				Using GPS-Based Plot Areas (mean)		
	NPS 2008/09	NPS 2010/11	NPS 2012/13	NPS 2014/15	NPS 2010/11	NPS 2012/13	NPS 2014/15
	1,313	1,340	1,277	1,742	1,594	1,379	1,672
Pure Stand Plots	1,438	1,431	1,381	1,832	1,721	1,527	1,809
Intercropped Plots	805	773	684	1,215	944	648	953
Plots with Organic Fertilizer	1,967	2,412	2,229	1,811	2,733	1,951	1,712
Plots with Inorganic Fertilizer	1,803	1,894	1,706	2,684	1,873	2,093	2,771
Plots with Any Fertilizer	1,793	1,908	1,763	2,326	1,893	1,843	2,296

For farmers reported plot areas, the average yield of paddy in all plots was 1,742 kg/ha in NPS 2014/15 compared with 1,277 kg/ha in NPS 2012/13, which is an increase of 465 kg/ha. Likewise, for GPS-based plot areas, average yield of paddy in all plots was 1,672 kg/ha in NPS 2014/15 compared with 1,379 kg/ha in NPS 2012/13, which is an increase of 293 kg/ha. Additionally, for famers reported plot areas, it is observed that plots with organic fertilizer have higher average yields than those with inorganic fertilizer in all NPS rounds except in the 2014/15 round. However, using GPS-based plot areas, it is observed that plots with inorganic fertilizers reported higher average yields than those with organic fertilizer in NPS 2012/13 and NPS 2014/15 (Table 6.2).

### 6.3 Households using Irrigation

According to the National Irrigation Master Plan (NIMP), the irrigation potential in Tanzania is 29.4 million hectares out of which 2.3 million hectares are high potential, 4.8 million hectares are medium potential and 22.3 million hectares are low potential. Despite this potential, Tanzania's agriculture remains largely dependent on rainfall which is not reliable, resulting in low agricultural performance. Irrigation helps to diversify income and reduce risk as it mitigates vulnerability from unpredictable rainfall.

Finding presented in Table 6.3 show that in NPS 2014/15 only 3.1 percent of farming households used irrigation in at least one of their fields, which is slightly lower than that reported in the NPS 2012/13 (3.4 percent). Across all NPS rounds it is observed that paddy fields are more likely to use irrigation than maize fields. It is clear that in Tanzania, cultivation of crops, using irrigation is still very low.

**Table 6.3: Percentage of Households using Irrigation, Tanzania**

Item	NPS 2008/09	NPS 2010/11	NPS 2012/13	NPS 2014/15
Share of households using irrigation	4.2	3.4	3.4	3.1
Share of fields using irrigation (surface)	2.0	1.7	1.7	2.0
◆ share of maize fields using irrigation (surface)	1.7	1.5	1.7	1.4
◆ share of paddy fields using irrigation (surface)	4.3	3.6	5.6	2.1

Farming households use different methods of irrigation including flooding, sprinkler, drip irrigation, bucket/watering can and water hose. Findings in Table 6.4 show that more than half of farming households (51.0 percent) in NPS 2014/15 used flooding to irrigate crops while one third (34.0 percent) of them used buckets/watering cans. The proportion of farming households that used flooding as a means of irrigation decreased by 8 percentage points in NPS 2014/15 compared with NPS 2012/13, while households that used buckets/watering cans increased by 11 percentage points in the same period. The proportion of farming households that used flooding as a means of irrigation decreased steadily between NPS 2010/11 and NPS 2014/15. No farming household used drip irrigation to irrigate crops in NPS 2012/13 and NPS 2014/15. However, the usage of sprinkler, drip irrigation and water hose was minimal compared to the usage of flooding and watering cans.

**Table 6.4: Percentage of Households using Irrigation by Method, Tanzania**

Method of Irrigation	NPS 2008/09	NPS 2010/11	NPS 2012/13	NPS 2014/15
Flooding	66.0	69.0	59.0	51.0
Sprinkler	5.0	4.0	2.0	1.0
Drip irrigation	3.0	4.0	0.0	0.0
Bucket/watering can	25.0	16.0	23.0	34.0
Water hose	4.0	4.0	9.0	8.0
Other	-	3.0	7.0	6.0

Different sources of water used by farming households for irrigation include wells, boreholes, pond/tanks, and riverstreams. Table 6.5 shows that 64.0 percent of farming households in NPS 2014/15 used riversstreams as sources of water for irrigation compared with 78.0 percent in NPS 2012/13, which is a decrease of 12.0 percentages points. The proportion of households that used wells as a source of water for irrigation increased by 2.0 percentages points in NPS 2014/5 compared with NPS 2012/13 (from 11.0 to 13.0 percent).

**Table 6.5: Percentage of Households using Various Sources of Water for Irrigation, Tanzania**

Source of Water	NPS 2008/09	NPS 2010/11	NPS 2012/13	NPS 2014/15
Well	12.0	16.0	11.0	12.0
Borehole	2.0	5.0	1.0	3.0
Pond/tank	1.0	2.0	9.0	12.0
River/stream	79.0	76.0	76.0	66.0
Other source	6.0	4.0	4.0	8.0

### Households using Fertilizers and Improved Seeds

Table 6.6 presents the proportion of households using different agricultural inputs (fertilizers, pesticides and improved seeds) in crop production. The proportion of households using any type of fertilizer slightly decreased to 31.8 percent in NPS 2014/15 from 35.4 percent reported in NPS 2012/13. The trend shows that the proportion of households using any type of fertilizer has been increasing from the first round (NPS 2008/09) to the third round (NPS 2012/13) but decreased in NPS 2014/15. The proportion of households using organic fertilizers decreased to 21.2 percent in NPS 2014/15 from 25.3 percent in NPS 2012/13 while the proportion of households using non-organic fertilizers increased slightly to 15.9 percent in NPS 2014/15 from 15.3 percent in NPS 2012/13. Generally, the proportions of households using organic and non-organic fertilizers have been fluctuating from first NPS round to fourth NPS round. The findings further reveal that, one in ten (11.1 percent) agricultural households were using voucher for non-organic fertilizers in NPS 2014/15 compared to three in every ten (30.1 percent) in NPS 2012/13. The trend shows that the proportion of households using voucher decreased from 50.0 percent in the second round (NPS 2010/11) to 11.1 percent in the fourth round (NPS 2014/15). A large decrease of households receiving fertilizers through vouchers which was observed in NPS 2014/15 is due to the change in modalities of providing subsidized inputs to farming households. The change was for households to receive fertilizers on loan through farmers groups which however was not easy for them to get fertilizers.

The proportion of farming households using pesticides/insecticides decreased sharply to 5.0 percent in NPS 2014/15 from 13.7 percent in NPS 2012/13. There were no significant changes during the first three rounds of the NPS.

Findings from Table 6.6 further show that the proportion of households using improved seeds increased to 44.0 percent in NPS 2014/15 from 43.2 percent in NPS 2012/13. The proportion of households using improved seeds fluctuated in the first three rounds and then increased in NPS 2014/15.

**Table 6.6: Percentage of Households Using Fertilizer, Improved Seeds and Pesticides, Tanzania**

Item	NPS 2008/09	NPS 2010/11	NPS 2012/13	NPS 2014/15
Any fertilizer	30.1	32.6	35.4	31.8
Using organic fertilizers	22.1	21.8	25.3	21.2
Using non-organic fertilizers	12.9	16.8	15.3	15.9
Using vouchers for non-organic fertilizers	-	49.5	30.1	11.1
Using pesticides/insecticides	14.7	13.2	13.7	5.0
Improved seeds	21.4	18.0	43.2	44.0

**Households using Mechanization and Labour-Saving Technologies**

Majority of farming households in Tanzania are small farmers using hand hoes for cultivation. The low level of mechanization among smallholder farmers leads to low expansion of agricultural land. Given the abundant land supply, households' ability to increase production through land expansion depends on the extent to which they can hire labour or use mechanization (e.g. animal traction, tractors, power tillers).

**Table 6.7: Percentage of Households using Farming Technology by Type, Tanzania**

Type of Technology	NPS 2008/09		NPS 2010/11		NPS 2012/13		NPS 2014/15	
	Own item	Used item						
Hand hoe	98.0	95.8	96.6	91.6	97.9	95.7	97.8	97.9
Hand powered sprayer	7.0	12.8	5.9	8.5	6.3	9.7	8.3	13.6
Ox plough	8.7	18.2	9.4	17.9	10.3	22.8	12.9	33.3
Ox seed planter	9.9	19.4	10.5	18.7	11.1	23.3	14.4	32.2
Ox cart	0.1	0.4	0.0	0.1	0.0	0.0	0.1	0.0
Tractor	2.4	7.7	2.4	5.1	2.5	6.3	3.3	8.9
Tractor plough	0.1	2.8	0.2	2.9	0.1	5.0	0.4	6.8
Tractor harrow	0.3	1.4	0.1	2.3	0.1	3.9	0.3	4.7
Sheller/thresher	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.3
Hand mill	0.5	1.1	0.1	0.1	0.1	0.2	0.2	0.8
Watering can	2.0	1.8	1.2	1.1	0.8	0.9	1.0	0.8
Farm buildings	7.5	7.2	6.8	6.6	5.6	5.1	6.1	5.8
Geri cans/drums	12.7	10.8	3.8	2.3	2.4	2.1	4.6	4.0
Power tiller	-	-	-	-	0.2	0.4	0.1	0.5
Other	-	-	31.7	10.0	31.7	31.3	55.7	53.8

One of the major drawbacks to farmers' production and average yield is the reliance on hand hoe in land cultivation. Table 6.7 reveals that the proportion of households owning tractors increased to 3.3 percent in NPS 2014/15 from 2.5 percent reported in NPS 2012/13. The use of tractors in land cultivation also increased to 8.9 percent in NPS 2014/15 from 6.3 percent in NPS 2012/13. All NPS rounds reported that more than 96 percent of households owned hand hoes and

more than 91 percent used them for land cultivation. It may further be observed that NPS 2014/15 reported a higher proportion of households using hand hoes than all previous rounds. The proportion of households that possess animal traction (ox plough, ox seed planter) increased in NPS 2014/15 compared with NPS 2012/13. Similarly, in the NPS 2014/15, the use of animal traction increased compared to NPS 2012/13. There is also minimal usage of other farming technologies including tractor plough, tractor harrow, thresher, watering cans and power tillers. In general, findings reveal that the majority of households used hand hoes for land cultivation, which limits cultivated land expansion, leading to low productivity.

### Off-farm Income Generating Activities

Income from nonfarm sources increases the level of income in a farming household and therefore makes the household more secure. Table 6.8 presents the proportion of households with income from nonfarm sources. More than half (54.0 percent) of farming households earning income from off-farm activities in NPS 2014/15 earn their income from wages. About a half (49.8 percent) of farming households earning income from off-farm activities receive their income from self-employment while four-fifth (80.8 percent) of them receive their income from either sources. Generally, trends show that the proportion of farming households earning income from nonfarm sources, have been increasing from the first round (NPS 2008/09). The findings in NPS 2014/15 reveal that farming households in urban areas are more likely to earn income from non-farming sources than those in rural areas. The same trend is observed in other NPS rounds.

**Table 6.8: Percentage of Farm Households Earning Income from Off-farm Activities by Survey, Source and Area, Tanzania**

Survey	Source of income	Rural	Urban	All
NPS 2008/9	Wage	34.1	45.0	35.4
	Self-employment	34.6	54.7	36.9
	Both Wage and Self-employment	55.0	78.1	57.7
NPS 2010/11	Wage	43.8	50.7	44.8
	Self-employment	38.9	60.5	42.1
	Both Wage and Self-employment	65.4	85.6	68.4
NPS 2012/13	Wage	46.4	52.8	47.2
	Self-employment	37.2	55.8	39.7
	Both Wage and Self-employment	65.9	83.3	68.2
2014/15	Wage	50.7	60.3	54.0
	Self-employment	42.3	64.1	49.8
	Both Wage and Self-employment	74.2	93.2	80.8



## CHAPTER SEVEN

# Food Security

### 7.0 Introduction

This section presents information on three food security indicators namely; the proportions of the population worried about not having enough food, those with diet negatively affected, and individuals reducing their actual food intake. Food security is the state at which all people, at all times, have both physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

The information used to analyse these three indicators refer to the seven days prior to the survey interview. Only information from NPS 2010/11, NPS 2012/13, and NPS 2014/15 is presented. The NPS 2008/09 did not cover the food security module.

Table 7.1 shows that from NPS 2012/13 to NPS 2014/15, each of the three indicators increased at national level by from 1.6 to 3.0 percentage points. However, there was a decline of about 3 percentage points for each of the three indicators between NPS 2010/11 and NPS 2012/13.

**Table 7.1: The Percentage of the Population Experiencing Three Food Security Indicators by Area**

Area	Worried about not having enough food			Negative changes in diet			Reduced food intake		
	NPS	NPS	NPS	NPS	NPS	NPS	NPS	NPS	NPS
	2010/11	2012/13	2014/15	2010/11	2012/13	2014/15	2010/11	2012/13	2014/15
<b>Tanzania</b>	<b>36.0</b>	<b>33.0</b>	<b>34.6</b>	<b>34.0</b>	<b>31.1</b>	<b>34.1</b>	<b>32.2</b>	<b>28.9</b>	<b>31.2</b>
Rural	37.1	33.5	35.3	34.7	32.0	35.0	33.1	29.6	31.8
Urban	32.7	31.7	32.8	31.9	28.7	32.0	29.9	26.9	29.9
<b>Mainland</b>	<b>36.3</b>	<b>33.5</b>	<b>35.0</b>	<b>34.4</b>	<b>31.8</b>	<b>34.9</b>	<b>32.5</b>	<b>29.3</b>	<b>31.6</b>
Dar es Salaam	38.0	34.8	32.9	35.5	35.6	31.4	34.8	30.2	27.5
Other Urban	31.3	31.1	33.8	31.2	26.0	34.7	28.7	26.0	32.1
Rural	37.4	33.9	35.7	35.0	32.5	35.5	33.2	29.9	32.1
<b>Zanzibar</b>	<b>24.8</b>	<b>14.8</b>	<b>18.9</b>	<b>22.3</b>	<b>8.6</b>	<b>7.7</b>	<b>24.1</b>	<b>14.5</b>	<b>18.5</b>

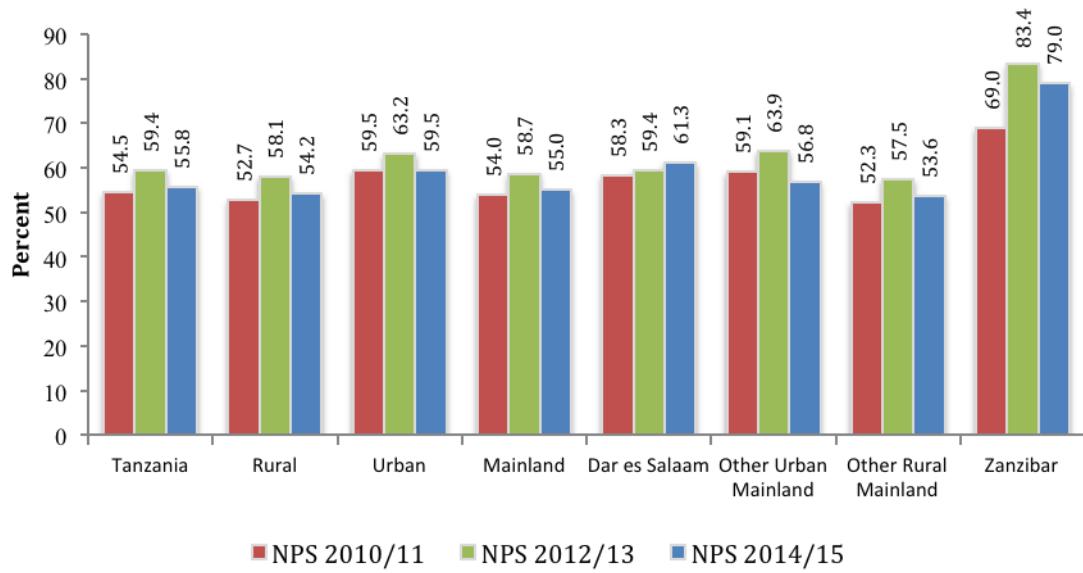
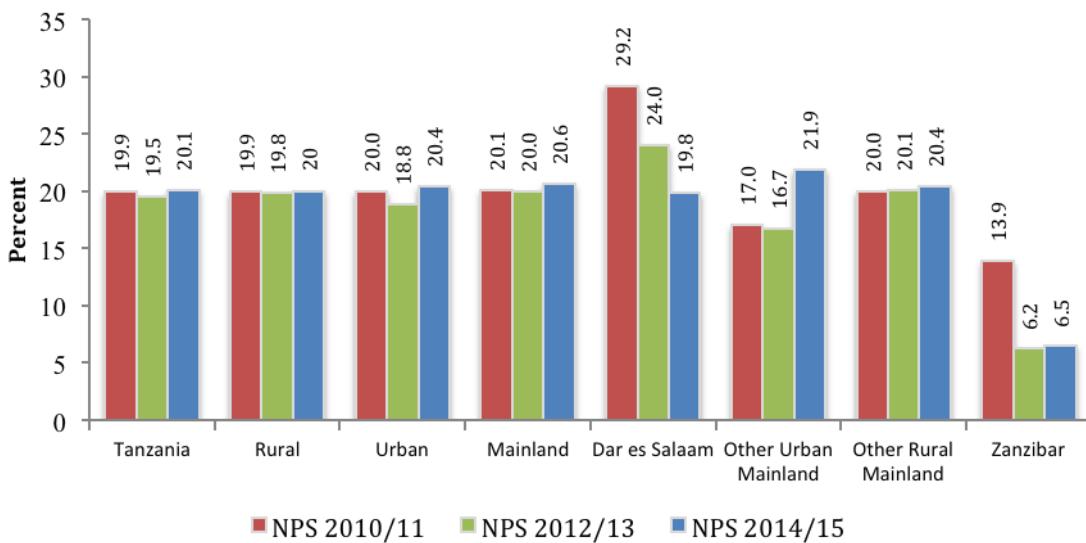
The proportion of the population that worried about not having enough food in the last seven days prior to the survey increased from 32.9 percent in NPS 2012/13 to 34.5 percent in NPS 2014/15. Previously, the proportion of the population that felt food insecure had declined from 35.9 percent in NPS 2010/11 to 32.9 percent in NPS 2012/13, before increasing in NPS 2014/15. Rural populations are more likely to be worried about food security than those residing in urban areas, although the gap seems to decrease over time. Relatively lower proportions of the population in

Zanzibar worry about not having enough food than in the Mainland or any of the Mainland strata. In Dar es Salaam, there was a steady decrease over time in the proportion of the population worried about food, while an increase was observed in the Other Urban Mainland areas in NPS 2014/15 compared with NPS 2012/13.

At the national level, a notable decrease was observed in the proportion of the population reporting negative changes in their diet, from 34.0 percent in NPS 2010/11 to 31.1 percent in NPS 2012/13, followed by an increase in NPS 2014/15(34.1 percent). Zanzibar and Dar es Salaam were the only domains where this indicator decreased over time; all other areas experienced fluctuations similar to the national level. Proportions of population reporting negative changes in diet were smaller in urban than in rural areas. Similarly, they were smaller in Zanzibar than in the Mainland.

The proportion of the population that reduced their food intake decreased from 32.2 percent in NPS 2010/11 to 28.8 percent in NPS 2012/13, then increased to 31.2 percent in NPS 2014/15. In all three NPS rounds, a noticeable decrease in the proportion of the population reducing their food intake was observed only in Dar es Salaam. As is the case with each of the previous two indicators, proportions of population reporting reduced food intake were consistently smaller in urban than rural areas. Similarly, proportions of the population reporting reduced food intake were smaller in Zanzibar than in the Mainland (Table 7.1).

While Table 7.1 presents independent estimates of the three primary food security indicators, Figure 7.1 displays proportions of the population experiencing *none* of the three indicators and Figure 7.2 presents proportions of the population experiencing *all* three indicators. Figure 7.1 shows that at the national level, the proportion of the population experiencing *none* of the three food security indicators increased from 54.5 percent in NPS 2010/11 to 59.4 percent in NPS 2012/13, followed by a decrease of 3.6 percentage points to 55.8 percent in NPS 2014/15. There were no significant movements in either direction for any stratum between NPS 2010/11 and NPS 2012/13 or between NPS 2012/13 and NPS 2014/15. Dar es Salaam was the only stratum that experienced a steady increase over time in the proportion of the population experiencing *none* of the three indicators. Notably, the largest proportions of the population experiencing none of the indicators were found in Zanzibar in each round of NPS.

**Figure 7.1: Percent of the Population Experiencing *None of the Three* Food Security Indicators by Area****Figure 7.2: Percent of the Population Experiencing *All Three* Food Security Indicators by Area**

Changes over time in the proportion of the population experiencing all three indicators were less notable than those experiencing none, with the exception of Zanzibar and Dar es Salaam. In both Zanzibar and Dar es Salaam each of the three indicators decreased significantly between NPS 2010/11 and NPS 2014/15. However, in urban areas other than Dar es Salaam, the proportion of the population experiencing all three-food security indicators increased over the same period (Figures 7.2).

## 7.1 Number of Meals

The number of meals taken in a day is an additional indicator of food security. Table 7.2 portrays the average number of meals taken by adults and children for the three rounds of NPS (NPS 2010/11, NPS 2012/13 and NPS 2014/15). In NPS 2014/15, the average number of meals taken by children remained the same as that of NPS 2012/13. However, a slight increase was observed in number of meals taken by children from 2.8 in NPS 2010/11 to 2.9 in NPS 2012/13. The average number of daily meals taken by adults was 2.7 in both NPS 2014/15 and NPS 2012/13. In NPS 2010/11, the average number of meals taken by adult per day was 2.6 (Table 7.2).

**Table 7.2: Average Number of Meals Taken per Day by Adults and Children by Area**

Area	Adult			Children		
	NPS 2010/11	NPS 2012/13	NPS 2014/15	NPS 2010/11	NPS 2012/13	NPS 2014/15
<b>Tanzania</b>	<b>2.6</b>	<b>2.7</b>	<b>2.7</b>	<b>2.8</b>	<b>2.9</b>	<b>2.9</b>
Rural	2.6	2.6	2.7	2.8	2.8	2.9
Urban	2.8	2.9	2.8	2.9	2.9	2.9
<b>Mainland</b>	<b>2.6</b>	<b>2.7</b>	<b>2.7</b>	<b>2.8</b>	<b>2.9</b>	<b>2.9</b>
Dar es Salaam	2.9	2.9	2.9	2.9	2.9	3.0
Other Urban	2.8	2.8	2.8	2.9	2.9	2.9
Rural	2.6	2.6	2.7	2.8	2.9	2.9
<b>Zanzibar</b>	<b>2.6</b>	<b>2.6</b>	<b>2.6</b>	<b>2.7</b>	<b>2.8</b>	<b>2.9</b>

Table 7.3 shows the population distribution by number of meals taken by adults. Food insecurity in terms of daily meals taken by adults is low and almost similar across the country. In NPS 2014/15, the proportion of adults taking only one meal was less than one percent (0.6 percent), at two meals it was 28.2 percent and at three or more meals it was 71.2 percent. The decrease over time in the proportion of adults taking one or two meals was complimented by the increase in the proportion of adult taking three or more meals. The proportion of adults eating three or more meals a day increased significantly at the national level, in rural areas, in the Mainland and in Other Urban Mainland.

**Table 7.3: The Percent of Population by the Average Number of Daily Meals and Area, Adults**

Area	1 meal			2 meals			3 or more meals		
	NPS	NPS	NPS	NPS	NPS	NPS	NPS	NPS	NPS
	2010/11	2012/13	2014/15	2010/11	2012/13	2014/15	2010/11	2012/13	2014/15
<b>Tanzania</b>	<b>1.3</b>	<b>1.1</b>	<b>0.6</b>	<b>34.1</b>	<b>32.0</b>	<b>28.2</b>	<b>64.6</b>	<b>66.7</b>	<b>71.2</b>
Rural	1.3	1.5	0.5	41.4	40.2	33.3	57.2	58.3	66.1
Urban	1.1	0.3	0.7	17.6	14.2	18.4	81.3	85.5	80.9
<b>Mainland</b>	<b>1.3</b>	<b>1.1</b>	<b>0.6</b>	<b>34.0</b>	<b>31.9</b>	<b>27.9</b>	<b>64.8</b>	<b>66.9</b>	<b>71.5</b>
Dar es Salaam	0.4	0.1	0.5	12.1	9.6	12.9	87.6	90.3	86.5
Other Urban	1.4	0.5	0.9	19.7	16.2	19.5	78.9	83.3	79.7
Rural	1.3	1.5	0.5	41.5	40.0	33.5	57.2	58.5	65.9
<b>Zanzibar</b>	<b>1.7</b>	<b>0.1</b>	<b>0.0</b>	<b>39.6</b>	<b>40.9</b>	<b>37.9</b>	<b>58.6</b>	<b>59.0</b>	<b>62.1</b>

In each round, the proportion of adult staking at least three meals per day was considerably larger in urban than in rural areas. Across strata, the proportion of adults eating three or more meals per day was substantially larger in Dar es Salaam and Other Urban Mainland higher than in rural Mainland and Zanzibar (Table 7.3).

**Table 7.4: The Proportion of Population by the Average Number of Daily Meals and Area, Children (6-59 months)**

Area	1 meal			2 meals			3 or more meals		
	NPS	NPS	NPS	NPS	NPS	NPS	NPS	NPS	NPS
	2010/11	2012/13	2014/15	2010/11	2012/13	2014/15	2010/11	2012/13	2014/15
<b>Tanzania</b>	<b>1.5</b>	<b>1.4</b>	<b>0.7</b>	<b>13.4</b>	<b>11.6</b>	<b>7.9</b>	<b>85.1</b>	<b>87.1</b>	<b>91.3</b>
Rural	1.4	1.1	0.6	15.8	13.4	9.4	82.8	85.5	90.0
Urban	1.8	2.3	1.0	5.7	5.6	4.1	92.5	92.1	94.9
<b>Mainland</b>	<b>1.5</b>	<b>1.4</b>	<b>0.7</b>	<b>13.2</b>	<b>11.4</b>	<b>7.8</b>	<b>85.4</b>	<b>87.2</b>	<b>91.5</b>
Dar es Salaam	3.2	2.4	0.7	5.2	3.5	2.5	91.7	94.0	96.8
Other Urban									
Mainland	1.3	2.4	1.2	6.0	6.5	3.6	92.8	91.1	95.1
Rural	1.4	1.1	0.6	15.6	13.2	9.5	83.1	85.7	89.9
<b>Zanzibar</b>	<b>2.8</b>	<b>0.1</b>	<b>0.0</b>	<b>22.1</b>	<b>19.4</b>	<b>13.7</b>	<b>75.0</b>	<b>80.5</b>	<b>86.3</b>

In NPS 2014/15, nine in ten children (91.3 percent) of age 6-59 months took three or more meals a day, while only one in every ten (8.6 percent) children aged 6-59 months took one or two meals a day (Table 7.4). The proportion of children who ate three or more meals a day increased significantly at the national level, in rural areas and in Other Urban and rural Mainland. In each NPS round, the proportion of children taking at least three meals a day is larger in urban than rural areas. However, the difference between urban and rural areas was substantially smaller for children than adults. Generally, it is apparent that children were taking a larger number of daily meals than adults, and that less disparities are observed across geographical domains for children than for adults (Tables 7.3 and 7.4).

## 7.2 Food Shortages

An additional food security indicator focuses on food shortages reported at any time in the 12 months period prior to the survey. This indicator presents the frequency of such events, and not the duration or severity, i.e. a reported shortage may have lasted one day or forty days.

Table 7.5 displays the proportion of the population that did not have enough food to eat some times in the 12 months prior to the survey. The proportion of the population experiencing food shortages in the 12 months prior to the survey, increased significantly from 20.6 percent in NPS 2010/11 to 42.6 percent in NPS 2012/13. It remained at about the same level (42.1 percent) in NPS 2014/15.

**Table 7.5: Percentage of the Population Experiencing Food Shortage and Average Number of Months of Food Shortage Experienced in the 12 Months Prior to the Survey by Area**

Area	Not enough to eat			Average number of months with food shortage		
	NPS 2010/11	NPS 2012/13	NPS 2014/15	NPS 2010/11	NPS 2012/13	NPS 2014/15
<b>Tanzania</b>	<b>20.6</b>	<b>42.6</b>	<b>42.1</b>	<b>3.4</b>	<b>3.7</b>	<b>3.4</b>
Rural	21.4	45.8	45.2	3.3	3.6	3.4
Urban	18.3	33.8	34.6	3.7	4.0	3.6
<b>Mainland</b>	<b>20.9</b>	<b>43.7</b>	<b>43.1</b>	<b>3.4</b>	<b>3.7</b>	<b>3.4</b>
Dar es Salaam	18.6	36.4	30.1	4.6	4.8	3.9
Other Urban	18.8	34.3	39.5	3.4	3.4	3.5
Rural	21.7	46.7	46.0	3.2	3.6	3.4
<b>Zanzibar</b>	<b>8.5</b>	<b>6.9</b>	<b>9.8</b>	<b>2.9</b>	<b>4.5</b>	<b>2.5</b>

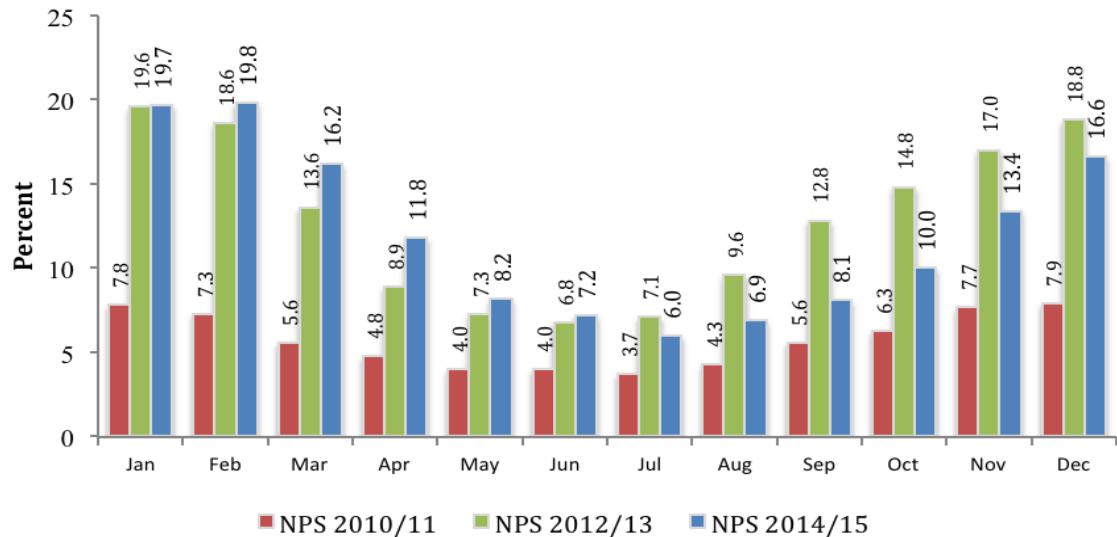
The proportion of population experiencing food shortages increased significantly in NPS 2012/13 in each area of Tanzania except in Zanzibar. The proportion remained at almost the NPS 2012/13 level in NPS 2014/15 in all areas except Dar es Salaam where it decreased and Other Urban Mainland and Zanzibar, where it increased. Compared with NPS 2012/13, Zanzibar reported the smallest proportions of population experiencing food shortages while Rural Mainland reported the largest proportions in all three rounds.

The average number of months in which household experienced food shortages increased significantly from 3.4 months in NPS 2010/11 to 3.7 months in NPS 2012/13 and then decreased to 3.4 months in NPS 2014/15. The largest average number of months of food shortages (4.8 months) was reported in Dar es Salaam in NPS 2012/13. In NPS 2014/15, Zanzibar reported the smallest number of months of food shortage (2.5 months).

Figure 7.3 displays the proportion of the population reporting food shortage by month for each NPS round. Each round illustrates a similar cyclical pattern across months of the year; it may be noted

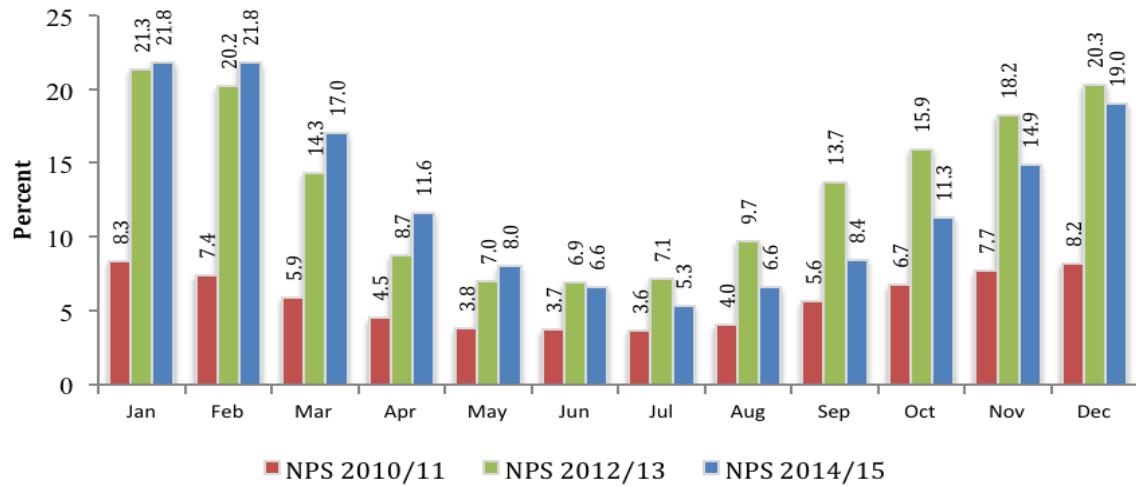
that the proportion of the population reporting food shortages for each month increased over three rounds for the first six months of the year while there was fluctuation in the remaining six months.

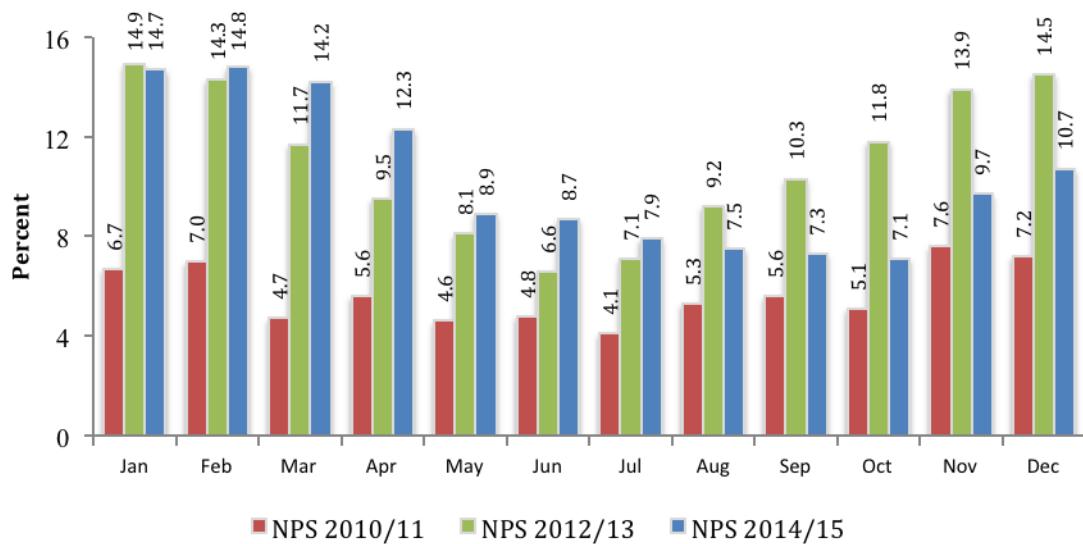
**Figure 7.3: Percent of the Population Reporting Food Shortages in Tanzania by Month and NPS Round**



Figures 7.4 and 7.5 display similar information for urban and rural areas. In rural areas the proportions of the population reporting food shortages from January to May was higher in NPS 2014/15 than in NPS 2012/13 but from June to December the situation reversed and the proportions were higher in NPS 2012/13 than in NPS 2014/15. In urban areas the proportions of population reporting food shortages from February to July were larger in NPS 2014/15 than in NPS 2012/13 but in January and from August to December the situation reversed and the proportion were larger in NPS 2012/13 than in NPS 2014/15.

**Figure 7.4: Percent of the Population Reporting Food Shortages in Rural Areas by Month and NPS Round**



**Figure 7.5: Percent of the Population Reporting Food Shortages in Urban Areas by Month and NPS Round**

### Causes of Food Shortages

Table 7.6 illustrates the main causes of food shortages in Tanzania. In NPS 2010/11 and NPS 2012/13, drought/poor rain was the main cause of food shortages at the national level. However for NPS 2014/15 the main cause of food shortages was lack of money, the proportion of the population reporting drought and poor rains as a cause of food shortages decreased from 40.2 percent in NPS 2010/11 to 25.1 percent in NPS 2014/15. In terms of farming status of household the main cause of food shortages for non-farming households was lack of money whereas for farming households the main cause was drought/poor rain. Lack of money was also reported as cause of food shortages by urban households while drought/poor rain was the main cause of food shortages reported by rural households.

**Table 7.6: Percentage of Households Reporting Food Shortage by Cause, Area, and Farming Status**

Cause		Tanzania	Rural	Urban	Mainland	Dar es Salaam	Other	Urban	Other rural	Zanzibar	Non-farm Household	Farm Household
Drought, poor rains	NPS 2010/11	40.2	45.4	21.0	39.9	2.8	27.2	45.3	65.4		15.4	44.7
	NPS 2012/13	37.8	43.0	16.9	37.8	2.4	26.5	43.1	19.7		8.4	43.5
	NPS 2014/15	25.1	29.4	9.1	25.2	1.3	12.6	29.5	3.2		5.1	28.9
Crop pest	NPS 2010/11	4.5	5.2	2.1	4.5	0.3	2.7	5.1	7.1		0.0	5.3
	NPS 2012/13	2.2	2.5	0.7	2.2	0.0	1.1	2.5	3.0		0.0	2.6
	NPS 2014/15	2.2	2.8	0.0	2.3	0.0	0.0	2.9	0.0		0.0	2.7
Small land size	NPS 2010/11	8.3	9.3	4.4	8.3	0.5	5.8	9.3	10.3		2.6	9.3
	NPS 2012/13	5.2	6.3	1.2	5.3	0.2	1.8	6.3	1.2		0.8	6.1
	NPS 2014/15	8.5	9.9	3.6	8.6	0.0	5.1	9.9	0.0		1.7	9.8
Lack of farm inputs	NPS 2010/11	10.9	12.1	6.5	11	1.7	8.1	12.3	1.7		1.0	12.7
	NPS 2012/13	6.7	7.6	3.0	6.7	0.1	5.0	7.6	0		0.5	7.9
	NPS 2014/15	10.5	11.1	8.3	10.5	0.5	11.5	11.1	6.8		0.3	12.4
Expensive food	NPS 2010/11	12.1	9.4	21.9	12.2	26.2	20.3	9.5	0.4		27.2	9.3
	NPS 2012/13	10.5	8.0	20.6	10.5	24.8	17.8	8.0	6.5		23.3	8.0
	NPS 2014/15	8.1	5.9	16.2	8.1	17.7	16.1	5.9	1.0		17.3	6.3
No money	NPS 2010/11	11.3	7.6	25.0	11.3	44.5	18.3	7.5	12.5		27.8	8.3
	NPS 2012/13	28.1	23.4	46.6	27.9	58.2	38.7	23.3	63.8		52.3	23.4
	NPS 2014/15	35.7	30.1	56.3	35.5	78.1	46.6	30.1	76.8		67.1	29.8
Other	NPS 2010/11	12.7	11	19.2	12.9	24.0	17.5	11.1	2.6		26.0	10.3
	NPS 2012/13	9.6	9.2	11.1	9.6	14.3	9.1	9.2	5.8		14.9	8.6
	NPS 2014/15	9.8	10.8	6.4	9.8	2.4	8.1	10.7	12.2		8.5	10.1

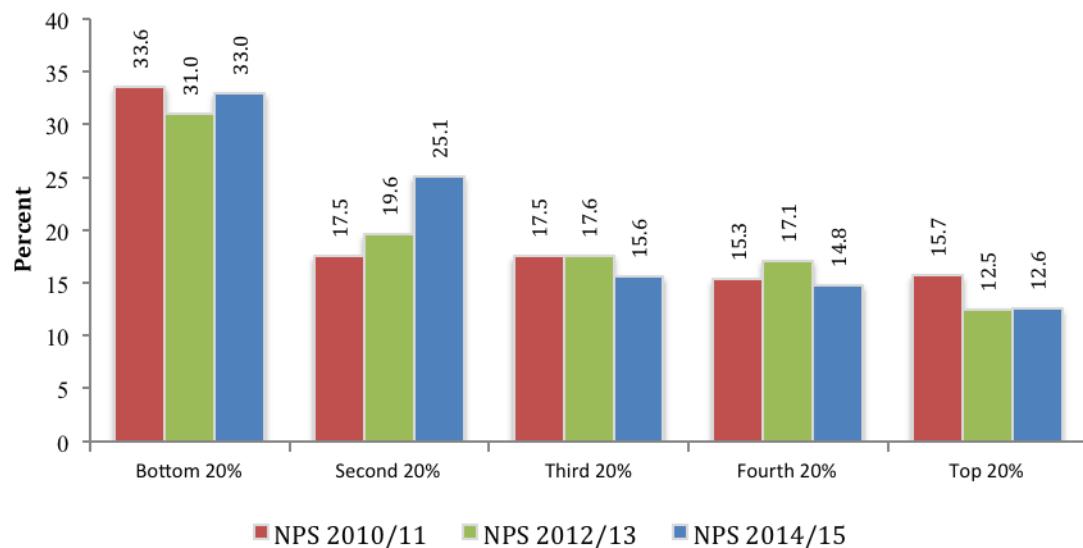
Lack of money was not a major cause of food shortages in NPS 2010/11 and NPS 2012/13, though it appears that in the latest round (NPS 2014/15) the limited monetary resources is considered to be a major cause of for food shortages for all domains, farming and non-farming households.

### 7.3 Food Security and Poverty

Figure 7.6 shows the proportion of the population that is food insecure within adult equivalent wealth quintiles. Food insecure is defined as experiencing *all three* indicators (i.e. *Worried about not having enough food, Negative changes in diet and Reduced food intake*) in the past seven days prior to the survey. In NPS 2010/11, 33.6 percent of the population in the lowest quintile was food insecure, decreasing to nearly 31.0 percent in NPS 2012/13, before increasing to 33.0 percent in NPS 2014/15. A noticeable decrease in the proportion of population that was food insecure was observed in the highest wealth quintile from 15.7 percent in NPS 2010/11 to 12.5 percent in NPS 2012/13 before stabilizing at around 12.6 percent in NPS 2014/15.

A significant increase over time was observed in the second wealth quintile of the population, whereby just 19.6 percent of the population was food insecure in NPS 2012/13 compared with 25.1 percent in NPS 2014/15.

**Figure 7.6: Percent of the Population that is Food Insecure, by Wealth Quintiles, Tanzania**



## APPENDICES

### **Appendix A: Methodology for Consumption Aggregates**

This Appendix explains the steps involved in the construction of the consumption measure and describes the estimation of the nominal household consumption. The methodology used for the NPS2014/2015 is identical to the methodology used in all three of the previous rounds so that the aggregates are comparable over time. Section 1 describes the estimation of the nominal household consumption. Section 2 is concerned with the spatial and temporal price adjustment and Section 3 deals with the household composition adjustment.

#### **1. The Construction of the Consumption Aggregate**

Creating the consumption aggregate is guided by theoretical and practical considerations. First, it must be as comprehensive as possible given the available information. Omitting some components assumes that they do not contribute to people's welfare or that they do not affect the ranking of the population. Second, market and non-market transactions are to be included, which means that purchases are not the sole component of the indicator. Third, expenditure is not consumption. For perishable goods, mostly food, it is usual to assume that all purchases are consumed. However, for other goods and services, such as housing or durable goods, corrections have to be made. Fourth, a common reference period should be chosen. Typically each consumption module in a survey has a different reference period, for instance, education could refer to the last 12 months, food could refer to the last week, and health could refer to the last month. Following common practice in Tanzania, consumption will be reported per 28 days.

##### **1.1 Food Component**

A few general principles are applied in the construction of this component. First, all possible sources of consumption are included. This means that the food component comprises not only consumption from purchases in the market or from meals eaten away from home but also food that was produced by the household or received as a gift. Second, only food that was actually consumed, as opposed to total food purchases or total home-produced food, enters into the consumption aggregate. Third, non-purchased consumed food needs to be valued and included in the welfare measure. The NPS gathers information on the amount spent on purchases and on the quantity purchased for all food items. A measure of prices, or rather a measure of unit values, can be obtained by dividing the expenditure by the quantity and can be used to value own-consumption or food received as a gift.

##### **1.2 Non-food Component**

Data on an extensive range of non-food items are available: utilities such as water, kerosene, electricity, health, transportation, communications, recreation, education, furnishings, personal care, etc. Unlike food, the NPS only collects data on purchases of non-food items, that is, the survey assumes that the consumption of non-food goods and services coming from own-production, from gifts or from other sources is negligible and can be ignored. In addition, the NPS does not gather information on quantities purchased because most non-food items are too heterogeneous to try to calculate prices.

Each non-food component is associated with a particular reference period, which reflects the frequency of that purchase or consumption. For instance, expenses on public transportation are collected for the last seven

days, expenses on mobile phones and personal care are collected for the last month, and expenses on furnishings and small appliances for the last twelve months.

The information about some non-food goods and services needs to be excluded from the consumption aggregate because those items are not consumption. Payments of mortgages or debts are financial transactions and not consumption. Losses to theft are neither expenditure nor consumption. Remittances to other households are expenditures but not consumption. Expenditures on marriages, dowries, births and funerals are consumption but given their sporadic nature and the fact that the reported amounts are typically rather large, this consumption is left out to avoid overestimating the true level of welfare of the household.

### **1.3 Durable Goods**

Ownership of durable goods could be an important component of the welfare of the households. Given that these goods last for many years, the expenditure on purchases is not the proper indicator to consider. The right measure to estimate, for consumption purposes, is the stream of services that households derive from all durable goods in their possession over the relevant reference period. This flow of utility is unobservable but it can be assumed to be proportional to the value of the good. Information on the number of durable goods owned, their age, and their value (current or original) is required to estimate this component of consumption. Unfortunately, the NPS only provides data on the number of durable goods owned by the household. Calculating this consumption component would have involved making assumptions about their age, their current value and their lifespan. This might have resulted in an extremely imprecise estimation, thus it was decided to exclude this component from the consumption aggregate.

### **1.4 Housing**

Housing conditions are considered to be an essential part of people's living standards. Nonetheless, in most developing countries limited or non-existent housing rental markets pose a difficult challenge for the estimation and inclusion of this component in the consumption aggregate. As in the case of durable goods, the objective is to measure the flow of services received by the household from occupying its dwelling. When a household lives in a rented dwelling, and provided rental markets function well, that value would be the actual rent paid. If enough families rent dwellings, imputations can be made for those families that own their dwelling. It is common to include a question for homeowners asking them to provide the hypothetical rent they would pay for renting their dwelling. These self-reported rents can in principle be used to value the consumption the household gets from occupying its dwelling, but these amounts are not always credible or usable, particularly in rural areas where very few households rent. If imputed rents cannot be estimated, actual rents must be excluded from the consumption aggregate for the sake of consistency. The NPS does not collect information on imputed rents and given that the number of households living in rented dwellings is fairly small, this component is excluded from the consumption aggregate.

## **2. Price Adjustment**

Nominal consumption of the household must be adjusted for cost-of-living differences. Temporal and spatial price adjustments are required to adjust consumption to real terms. Temporal differences are associated with the duration of the fieldwork (TSh 1,000 in October 2012 may not have the same value as in August 2013) as well as with the different recall periods (TSh 1,000 spent in the last month may not have the same value as in the last quarter or in the last year). Spatial differences are associated with the location of households interviewed in the survey (TSh 1,000 in Dar es Salaam may not have the same value as in Ruvuma).

The price index required to adjust nominal consumption could come partly or fully from the NPS. A price index is a combination of prices and budget shares in a base and a comparison period. The budget shares are the weights that each commodity has in the index and are equivalent to their share in the cost of the bundle being analysed. The NPS can provide information on budget shares for all items, but information on prices (unit values) only for food items. Two possible price indices could be constructed: a price index based only on food items (the assumption would be that non-food items show the same temporal and spatial differences than food items) or a price index that takes into account both food and non-food by combining information from the survey (food prices, food weights and non-food weights) and the official consumer price index (non-food prices).

Fisher price indices based only on food items are employed to adjust the nominal consumption aggregate for spatial and temporal price differences. Fisher price indices do a better job than Laspeyres or Paasche price indices at capturing differences in consumption patterns across domains as a consequence of differences in relative prices. They also avoid overstating or understating the true inflation (as would be the case with Laspeyres and Paasche respectively).<sup>2</sup> Price indices are estimated by stratum and quarter (a period of three consecutive months) and the base period comprises the entire period of each round of the NPS – that is, price indices were calculated separately for each round. A price index by stratum and month would have been ideal, but complications arose with the sample size because in some combinations of stratum and month few households are interviewed. Price indices by stratum and quarter might not be as precise as price indices by stratum and month but they provide more robust results. Fisher price indices by stratum and quarter are constructed using the following formula:

$$F_i = \sqrt{L_i P_i}$$

Where  $i$  is a combination of stratum and quarter,  $L$  refers to a Laspeyres price index and  $P$  refers to a Paasche price index. The Laspeyres and Paasche price indices are defined as

$$L_i = \frac{\sum_{k=1}^n w_{0k} p_{ik}}{\sum_{k=1}^n p_{0k}}, P_i = \frac{\sum_{k=1}^n w_{ik} p_{ik}}{\sum_{k=1}^n p_{0k}}$$

Where  $w_{0k}$  is the average household budget share of item  $k$  in the country,  $w_{ik}$  is the average household budget share of item  $k$  in stratum and quarter  $i$ ,  $p_{0k}$  is the national median price of item  $k$  and  $p_{ik}$  is the median price of item  $k$  in stratum and quarter  $i$ .

Food items purchased by at least 10 households by stratum and quarter are included in the construction of the price indices. Residual or catch-all food categories are also excluded because their unit values effectively mix several items. The share of the bundle considered for the price indices with respect to total food consumption is similar in both rounds of the NPS: it stands at around 67% at the national level and goes from 63% in rural Mainland to more than 80% in Dar es Salaam and Zanzibar. Median unit values are estimated for the price indices because the median is less sensitive to outliers than the mean.

---

<sup>2</sup>See Deaton and Tarozzi (2000).

**Table A1: Fisher Food Price Indices by Stratum and Quarter, NPS 2008/08, NPS 2010/11, NPS 2012/13 and NPS 2014/15**

Area / NPS 2008-09	Oct-Dec 2008	Jan-Mar 2009	Apr-Jun 2009	Jul-Sep 2009
Dar es Salaam	1.08	1.18	1.20	1.15
Other Urban Mainland	1.00	1.04	1.04	1.04
Rural Mainland	0.92	0.86	0.92	0.96
Zanzibar	1.03	1.06	1.07	1.07
Area / NPS 2010-11	Oct-Dec 2010	Jan-Mar 2011	Apr-Jun 2011	Jul-Sep 2011
Dar es Salaam	1.05	1.11	1.17	1.18
Other Urban Mainland	0.90	0.97	1.06	1.08
Rural Mainland	0.87	0.86	0.98	1.02
Zanzibar	0.89	0.98	1.06	1.07
Area / NPS 2012-13	Oct-Dec 2012	Jan-Mar 2013	Apr-Jun 2013	Jul-Sep 2013
Dar es Salaam	1.12	1.17	1.13	1.07
Other Urban Mainland	0.99	1.04	1.02	0.93
Rural Mainland	0.95	0.94	1.00	0.93
Zanzibar	0.88	0.91	0.93	0.99
Area / NPS 2014-15	Oct-Dec 2014	Jan-Mar 2014	Apr-Jun 2015	Jul-Sep 2015
Dar es Salaam	1.00	1.09	1.17	1.20
Other Urban Mainland	0.93	0.98	1.00	1.04
Rural Mainland	0.93	0.85	0.99	0.90
Zanzibar	0.90	0.88	0.88	1.01

Note: The base period for the NPS 2008/09 is Tanzania October 2008 - September 2009, for the NPS 2010/11 it is Tanzania October 2010 – September 2011 and for the NPS 2012/13 it is Tanzania October 2012 – September 2013.

## 2.1 Updating Monetary Figures across Rounds of the NPS

Price indices will also be required to update monetary figures across both rounds of the NPS. The price indices from Table A1 are used to adjust nominal consumption for cost of living differences within each round of the NPS. Yet it would not be correct to compare real consumption at NPS 2008/09 prices with real consumption at NPS 2010/11 prices or NPS 2012/13 prices or NPS 2014/15 prices.

Fisher price indices based only on food items are employed to adjust consumption for spatial and temporal price differences across rounds of the NPS. It is assumed that non-food goods and services show the same temporal and spatial price differences across rounds than food items. Price indices are estimated for the entire country and for the full extent of each round: in the case of the NPS 2014/15, the base period is the 12 months of the NPS 2010/11 and the comparison period is the 12 months of the NPS 2014/15.

Food items purchased by at least 50 households in the country are included in the construction of the price indices. As with the previous price indices, residual food categories are also excluded and median rather than mean unit values are used. The share of the bundle considered for the price indices with respect to total food consumption is similar in both rounds of the NPS: it stands at around 98 percent. The Fisher food price index between the NPS 2010/11 and the NPS 2014/15 is estimated at 1.41, that is, the cost of an average food bundle consumed in the country increased by 1.41% between those two rounds of the NPS. This inflation will be employed to adjust the consumption aggregate and the poverty lines across the NPS 2010/11 and the NPS 2014/15.

## 3. Household Composition Adjustment

The final step in constructing the welfare indicator involves going from a measure of standard of living defined at the household level to another at the individual level. Ultimately, the concern is to make comparisons across individuals and not across households. Two types of adjustments have to be made to correct for differences in composition and size. The first relates to demographic composition. Household members have different needs based mainly on their age and sex, although other characteristics can also be considered. Equivalence scales are the factors that reflect those differences and are used to convert all household members into “equivalent adults”. For instance, children are thought to need a fraction of what adults require, thus if a comparison is made between two households with the same total consumption and equal number of members, but one of them has children while the other comprises only adults, it could be expected that the former will have a higher individual welfare than the latter. Unfortunately there is no agreement on a consistent methodology to calculate these scales. Some are based on nutritional grounds, but while a child may need only 50percentof the food requirements of an adult, it is not clear why the same scale should be carried over non-food items. It may very well be the case that the same child requires a larger proportion than the adult in education or clothing.<sup>3</sup>

The second adjustment focuses on the economies of scale in consumption within the household. The motivation for this is the fact that some of the goods and services consumed by the household have characteristics of “public goods”. A good is said to be public when its consumption by a member of the household does not necessarily prevent another member from consuming it as well. Examples of these goods could be housing and durable goods. For example, one member watching television does not preclude another from watching too. Larger households may need to spend less to be as well-off as smaller ones.

---

<sup>3</sup>See Deaton and Muellbauer (1986) or Deaton (1997).

Hence, the bigger the share of public goods in total consumption is, the larger the scope for economies of scale is. On the other hand, private goods cannot be shared among members – once one household member has consumed them, no other member can. Food is the classic example of a private good and, for instance, in poor economies, where food represents a sizeable share of the household budget, little room exists for economies of scale.

Consumption analysis in Tanzania employs an adult-equivalent scale to implement these two adjustments (see Table A2). In general, children are thought to consume less than adults and women less than men. An alternative and common practice would have been to use a per capita adjustment for household composition. This is a special case of both adjustments and implies that children consume as much as adults and there is no room for economies of scale. In other words, all members within the household consume equal shares of the total consumption and costs increase in proportion to the number of people in the household. In general, per capita measures will underestimate the welfare of households with children with respect to families with no children, and the welfare of large households with respect to families with a small number of members.

**Table A2: Adult-equivalent Scale by Gender and Age**

Age (years)	Male	Female
0-2	0.40	0.40
3-4	0.48	0.48
5-6	0.56	0.56
7-8	0.64	0.64
9-10	0.76	0.76
11-12	0.80	0.88
13-14	1.00	1.00
15-18	1.20	1.00
19-59	1.00	0.88
60 or more	0.80	0.72

**Table A3: Food Bundle per Adult Equivalent per Day, Tanzania NPS 2014/15**

		Kilocalories per kg.	Quantity per kg.	Kilocalories provided	Price per kg.	Value per day (TZS)
	Total per adult equivalent per day		2200			940.0
1	Rice (paddy)	3,610	0.0058	21	304	1.8
2	Rice (husked)	3,640	0.0413	150	1,611	66.6
3	Maize (green, cob)	1,650	0.0160	26	470	7.5
4	Maize (grain)	3,680	0.0258	95	592	15.3
5	Maize (flour)	3,680	0.2624	966	894	234.5
6	Millet and sorghum (grain)	3,450	0.0009	3	588	0.5
7	Millet and sorghum (flour)	3,450	0.0171	59	1,074	18.3
8	Bread	2,610	0.0016	4	2,106	3.5
9	Buns, cakes and biscuits	4,500	0.0057	26	2,040	11.6
10	Macaroni, spaghetti	3,420	0.0004	1	2,030	0.7
11	Other cereal products	3,700	0.0003	1	1,915	0.5
12	Cassava fresh	1,490	0.0290	43	616	17.8
13	Cassava dry/flour	3,440	0.0480	165	537	25.8
14	Sweet potatoes	1,050	0.0596	63	564	33.6
15	Yams/cocoyams	1,180	0.0034	4	346	1.2
16	Irish potatoes	790	0.0077	6	1,020	7.8
17	Cooking bananas, plantains	1,350	0.0315	42	739	23.3
18	Sugar	4,000	0.0135	54	2,147	29.0
19	Sweets	3,750	0.0000	0	12,285	0.4
20	Honey, syrups, jams, marmalade, jellies, canned fruits	4,000	0.0005	2	1,339	0.6
21	Peas, beans, lentils and other pulses	3,330	0.0366	122	1,928	70.6
22	Groundnuts in shell/shelled	5,670	0.0104	59	1,915	20.0
23	Coconuts (mature/immature)	3,760	0.0063	24	1,052	6.7
24	Cashew, almonds and other nuts	5,740	0.0003	2	5,368	1.6
25	Seeds and products from nuts/seeds (excl. Cooking oil)	5,920	0.0001	1	0	0.0
26	Onions, tomatoes, carrots and green pepper, other viungo	240	0.0354	9	1,319	46.7
27	Spinach, cabbage and other green vegetables	170	0.0452	8	827	37.4
28	Canned, dried and wild vegetables	130	0.0098	1	1,108	10.9
29	Ripe bananas	920	0.0060	6	1,072	6.5
30	Citrus fruits (oranges, lemon, tangerines, etc.)	390	0.0030	1	1,015	3.0
31	Mangoes, avocadoes and other fruits	550	0.0204	11	792	16.1
32	Sugarcane	4,000	0.0095	38	369	3.5
33	Goat meat	1,220	0.0037	4	4,703	17.3
34	Beef including minced sausage	1,150	0.0049	6	5,074	25.1
35	Pork including sausages and bacon	1,140	0.0005	1	5,368	2.7
36	Chicken and other poultry	1,390	0.0042	6	3,759	15.9
37	Wild birds and insects	1,390	0.0001	0	5,357	0.6
38	Other domestic/wild meat products	1,370	0.0005	1	2,771	1.4
39	Eggs	1,580	0.0005	1	4,618	2.5
40	Fresh fish and seafood (including dagaa)	820	0.0109	9	3,866	42.3
41	Dried/salted/canned fish and seafood (incl. Dagaa)	2,250	0.0045	10	4,229	18.8
42	Fresh milk	610	0.0218	13	901	19.7
43	Milk products (like cream, cheese, yoghurt etc)	2,170	0.0142	31	1,015	14.4
44	Cooking oil	8,840	0.0101	89	3,501	35.4
45	Butter, margarine, ghee and other fat products	7,190	0.0004	3	6,095	2.4
46	Salt	0	0.0067	0	1,015	6.7
47	Wheat flour	3,400	0.0028	10	1,396	4.0
48	Wheat, barley grain and other cereals	3,400	0.0007	2	2,147	1.6
49	Tea dry	2,970	0.0003	1	11,082	3.4
50	Coffee and cocoa	3,370	0.0001	0	5,879	0.4
51	Bottled/canned soft drinks (soda, juice, water)	450	0.0013	1	1,691	2.3
52	Prepared tea, coffee	20	0.0000	0	846	0.0

## Appendix B: Standard Errors and Confidence Intervals for Selected Indicators

### GINI COEFFICIENT, CONFIDENCE INTERVALS

	Estimate	Std. Error	[95% Confidence Interval]	No. of Observations.
<b>NPS1</b>				
Tanzania	0.36	0.01	0.35 - 0.37	3,265
Rural	0.31	0.01	0.30 - 0.32	2,063
Urban	0.37	0.01	0.36 - 0.39	1,202
Mainland	0.37	0.01	0.35 - 0.38	2,786
Dar es Salaam	0.34	0.01	0.32 - 0.37	555
Other Urban	0.35	0.01	0.33 - 0.38	480
Rural	0.31	0.01	0.29 - 0.32	1,751
Zanzibar	0.32	0.01	0.30 - 0.34	479
<b>NPS2</b>				
Tanzania	0.37	0.01	0.36 - 0.38	3,844
Rural	0.31	0.01	0.30 - 0.33	2,583
Urban	0.37	0.01	0.35 - 0.38	1,261
Mainland	0.37	0.01	0.36 - 0.38	3,311
Dar es Salaam	0.32	0.01	0.30 - 0.34	624
Other Urban	0.35	0.01	0.33 - 0.37	634
Rural	0.31	0.01	0.30 - 0.33	2,053
Zanzibar	0.31	0.01	0.29 - 0.33	533
<b>NPS3</b>				
Tanzania	0.39	0.01	0.38 - 0.40	4,883
Rural	0.34	0.01	0.33 - 0.35	3,154
Urban	0.36	0.01	0.34 - 0.37	1,729
Mainland	0.39	0.01	0.38 - 0.40	4,294
Dar es Salaam	0.32	0.01	0.30 - 0.34	742
Other Urban	0.35	0.01	0.33 - 0.37	850
Rural	0.34	0.01	0.33 - 0.35	2,702
Zanzibar	0.33	0.02	0.30 - 0.36	589
<b>NPS 4</b>				
Tanzania	0.37	0.01	0.36 - 0.38	3,344
Rural	0.33	0.01	0.31 - 0.34	2,090
Urban	0.34	0.01	0.32 - 0.35	1,254
Mainland	0.37	0.01	0.36 - 0.38	2,864
Dar es Salaam	0.29	0.01	0.27 - 0.31	552
Other Urban	0.34	0.01	0.32 - 0.37	542
Rural	0.33	0.01	0.31 - 0.34	1,770
Zanzibar	0.28	0.01	0.26 - 0.31	480
Tanzania	0.37	0.01	0.36 - 0.38	3,344

## LABOUR FORCE PARTICIPATION RATE, CONFIDENCE INTERVALS

	Estimate	Std. Error	[95% Confidence Interval]	No. of Observations
<b>NPS 1</b>				
Tanzania	77.57	0.79	76.01 - 79.13	9,184
Rural	81.17	0.92	79.35 - 82.98	5,728
Urban	67.12	1.42	64.34 - 69.91	3,456
Mainland	77.99	0.82	76.39 - 79.60	7,659
Dar es Salaam	67.97	1.35	65.32 - 70.61	1,567
Other Urban	68.29	2.10	64.16 - 72.42	1,249
Rural	81.39	0.95	79.52 - 83.25	4,843
Zanzibar	64.09	2.16	59.84 - 68.34	1,525
Female	75.32	0.92	73.51 - 77.13	4,876
Male	80.06	0.92	78.25 - 81.88	4,308
15-24	57.67	1.64	54.44 - 60.89	3,147
25-34	89.24	0.90	87.47 - 91.01	2,094
35-64	92.08	0.64	90.82 - 93.35	3,213
65+	67.05	2.25	62.63 - 71.47	729
<b>NPS 2</b>				
Tanzania	82.61	0.63	81.38 - 83.84	11,695
Rural	86.21	0.66	84.91 - 87.51	7,962
Urban	73.92	1.21	71.55 - 76.29	3,733
Mainland	83.15	0.64	81.88 - 84.41	9,928
Dar es Salaam	72.11	1.33	69.50 - 74.71	1,880
Other Urban	75.02	1.66	71.76 - 78.27	1,810
Rural	87.00	0.68	85.66 - 88.34	6,238
Zanzibar	65.23	1.55	62.19 - 68.28	1,767
Female	81.36	0.78	79.82 - 82.90	6,139
Male	83.98	0.75	82.51 - 85.44	5,556
15-24	66.12	1.38	63.40 - 68.83	4,380
25-34	93.38	0.65	92.10 - 94.66	2,573
35-64	95.82	0.35	95.13 - 96.52	3,860
65+	71.98	1.81	68.41 - 75.54	879
<b>NPS 3</b>				
Tanzania	78.18	0.60	77.00 - 79.36	14,532
Rural	80.95	0.72	79.54 - 82.36	9,587
Urban	71.74	1.00	69.78 - 73.70	4,945
Mainland	78.66	0.61	77.46 - 79.87	12,555
Dar es Salaam	72.36	1.27	69.85 - 74.86	2,187
Other Urban	71.96	1.48	69.06 - 74.86	2,329
Rural	81.44	0.73	80.00 - 82.88	8,039
Zanzibar	62.54	1.80	59.01 - 66.07	1,977
Female	74.13	0.76	72.63 - 75.62	7,602
Male	82.63	0.70	81.26 - 84.00	6,930
15-24	65.13	1.11	62.94 - 67.31	5,534
25-34	87.03	0.78	85.50 - 88.56	3,241
35-64	90.04	0.60	88.86 - 91.22	4,694
65+	61.57	2.08	57.48 - 65.66	1,060
<b>NPS 4</b>				
Tanzania	80.08	0.59	78.91 - 81.25	16,246
Rural	83.11	0.77	81.60 - 84.62	5,837
Urban	73.97	0.89	72.22 - 75.72	3,123
Mainland	80.49	0.61	79.29 - 81.69	7,480
Dar es Salaam	74.47	1.15	72.21 - 76.73	1,383
Other Urban	73.79	1.35	71.13 - 76.45	1,300
Rural	83.59	0.78	82.05 - 85.12	4,797
Zanzibar	67.26	1.34	64.63 - 69.88	1,480
Female	76.58	0.74	75.13 - 78.04	4,764
Male	84.04	0.84	82.40 - 85.69	4,196
15-24	67.07	1.23	64.64 - 69.50	3,048
25-34	87.85	0.84	86.19 - 89.51	2,152
35-64	90.37	0.64	89.12 - 91.63	3,191
65+	61.12	2.59	56.04 - 66.20	569

## UNEMPLOYMENT RATE, CONFIDENCE INTERVALS

	<b>Estimate</b>	<b>Std. Error</b>	<b>[95% Confidence Interval]</b>		<b>No. of Observations</b>
<b>NPS 1</b>					
Tanzania	2.46	0.22	2.03	2.88	6,729
Rural	0.75	0.16	0.43	1.06	4,552
Urban	8.47	0.75	6.99	9.95	2,177
Mainland	2.32	0.22	1.88	2.75	5,813
Dar es Salaam	16.04	1.30	13.48	18.60	1,069
Other Urban	4.13	0.92	2.31	5.94	846
Rural	0.61	0.16	0.29	0.92	3,898
Zanzibar	7.89	1.29	5.34	10.43	916
Female	2.74	0.28	2.19	3.29	3,358
Male	2.16	0.30	1.58	2.75	3,371
15-24	5.34	0.60	4.16	6.52	1,615
25-34	2.84	0.41	2.04	3.63	1,784
35-64	0.80	0.15	0.51	1.10	2,849
65+	0.35	0.19	-0.03	0.73	481
<b>NPS 2</b>					
Tanzania	3.49	0.31	2.88	4.11	9,295
Rural	1.99	0.26	1.48	2.50	6,586
Urban	7.73	0.88	5.99	9.47	2,709
Mainland	3.15	0.32	2.52	3.77	8,170
Dar es Salaam	13.65	1.49	10.73	16.58	1,365
Other Urban	5.01	1.11	2.83	7.19	1,360
Rural	1.54	0.26	1.03	2.05	5,445
Zanzibar	17.79	1.92	14.01	21.57	1,125
Female	4.25	0.45	3.36	5.13	4,734
Male	2.69	0.29	2.12	3.27	4,561
15-24	7.08	0.84	5.43	8.73	2,753
25-34	3.54	0.47	2.61	4.46	2,344
35-64	1.17	0.22	0.74	1.61	3,604
65+	1.43	0.58	0.28	2.57	594
<b>NPS 3</b>					
Tanzania	2.91	0.23	2.45	3.37	10,991
Rural	1.00	0.16	0.67	1.32	7,508
Urban	7.93	0.66	6.63	9.22	3,483
Mainland	2.58	0.23	2.11	3.04	9,763
Dar es Salaam	12.88	1.21	10.51	15.26	1,575
Other Urban	4.13	0.64	2.88	5.38	1,643
Rural	0.70	0.16	0.38	1.02	6,545
Zanzibar	16.45	1.70	13.12	19.79	1,228
Female	3.75	0.38	3.01	4.49	5,339
Male	2.08	0.21	1.66	2.50	5,652
15-24	5.69	0.53	4.65	6.73	3,475
25-34	3.47	0.49	2.52	4.43	2,751
35-64	0.81	0.14	0.54	1.09	4,152
65+	0.08	0.07	-0.06	0.22	612
<b>NPS 4</b>					
Tanzania	3.59	0.32	2.96	4.23	6,922
Rural	1.26	0.24	0.78	1.73	4,626
Urban	8.89	0.81	7.30	10.48	2,296
Mainland	3.24	0.33	2.60	3.87	5,986
Dar es Salaam	14.71	1.31	12.14	17.28	1,033
Other Urban	4.73	0.90	2.97	6.50	947
Rural	0.92	0.24	0.45	1.39	4,006
Zanzibar	16.95	1.52	13.93	19.97	936
Female	4.82	0.51	3.82	5.83	3,412
Male	2.32	0.32	1.69	2.96	3,510
15-24	7.34	0.81	5.74	8.94	1,966
25-34	4.62	0.62	3.41	5.84	1,832
35-64	0.78	0.19	0.41	1.16	2,792
65+	3.59	0.32	2.96	4.23	6,922

## PERCENTAGE OF HOUSEHOLDS WITH ACCESS TO ELECTRICITY, CONFIDENCE INTERVALS

	<b>Estimate</b>	<b>Std. Error</b>	<b>[95% Confidence Interval]</b>	<b>No. of Observations</b>
<b>NPS 1</b>				
Tanzania	13.00	0.94	11.16 - 14.85	3,265
Rural	2.35	0.54	1.28 - 3.42	2,063
Urban	42.80	2.83	37.23 - 48.36	1,202
Mainland	12.42	0.96	10.53 - 14.31	2,786
Dar es Salaam	61.06	3.23	54.71 - 67.40	555
Other Urban	31.39	4.06	23.40 - 39.37	480
Rural	2.03	0.55	0.94 - 3.11	1,751
Zanzibar	33.89	4.01	26.00 - 41.79	479
<b>NPS 2</b>				
Tanzania	17.02	1.06	14.94 - 19.11	3,846
Rural	5.34	0.80	3.77 - 6.91	2,583
Urban	43.36	2.66	38.12 - 48.59	1,263
Mainland	16.39	1.09	14.25 - 18.53	3,313
Dar es Salaam	68.90	2.71	63.57 - 74.23	626
Other Urban	32.57	3.41	25.87 - 39.27	634
Rural	4.19	0.81	2.6 - 5.79	2,053
Zanzibar	39.74	3.99	31.9 - 47.59	533
<b>NPS 3</b>				
Tanzania	19.82	1.04	17.79 - 21.86	4,881
Rural	5.23	0.75	3.76 - 6.71	3,152
Urban	51.92	2.40	47.21 - 56.64	1,729
Mainland	19.19	1.06	17.11 - 21.26	4,292
Dar es Salaam	68.82	2.61	63.69 - 73.95	742
Other Urban	40.95	3.39	34.29 - 47.61	850
Rural	4.64	0.76	3.14 - 6.14	2,700
Zanzibar	43.68	4.49	34.85 - 52.51	589
<b>NPS 4</b>				
Tanzania	23.53	1.41	20.77 - 26.30	3,352
Rural	7.14	1.31	4.56 - 9.71	2,096
Urban	54.67	2.99	48.79 - 60.54	1,256
Mainland	23.08	1.44	20.25 - 25.92	2,872
Dar es Salaam	61.42	4.19	53.17 - 69.66	552
Other Urban	53.58	4.36	45.01 - 62.15	544
Rural	5.96	1.32	3.36 - 8.57	1,776
Zanzibar	39.37	5.44	28.67 - 50.07	480

**PERCENTAGE OF HOUSEHOLDS USING ALTERNATIVE SOURCES OF ENERGY TO WOOD FUEL AS THEIR MAIN SOURCE OF ENERGY FOR COOKING, CONFIDENCE INTERVALS**

	Estimate	Std. Error	[95% Confidence Interval]	No. of Observations
<b>NPS 1</b>				
Tanzania	1.55	0.26	1.04	2.05
Rural	0.66	0.23	0.22	1.11
Urban	4.02	0.74	2.55	5.48
Mainland	1.56	0.26	1.04	2.08
Dar es Salaam	7.23	1.55	4.19	10.27
Other Urban	2.40	0.84	0.75	4.04
Rural	0.69	0.23	0.23	1.14
Zanzibar	1.09	0.48	0.14	2.03
<b>NPS 2</b>				
Tanzania	1.76	0.25	1.27	2.24
Rural	0.44	0.14	0.17	0.72
Urban	4.73	0.73	3.29	6.17
Mainland	1.72	0.25	1.23	2.21
Dar es Salaam	11.11	1.88	7.43	14.8
Other Urban	2.17	0.67	0.86	3.48
Rural	0.33	0.14	0.07	0.6
Zanzibar	3.07	1.22	0.68	5.46
<b>NPS 3</b>				
Tanzania	3.28	0.40	2.49	4.07
Rural	0.83	0.23	0.38	1.29
Urban	8.67	1.12	6.46	10.88
Mainland	3.25	0.41	2.45	4.05
Dar es Salaam	13.95	2.16	9.70	18.20
Other Urban	5.37	1.06	3.29	7.45
Rural	0.83	0.24	0.36	1.30
Zanzibar	4.38	1.93	0.59	8.17
<b>NPS 4</b>				
Tanzania	3.77	0.47	2.84	4.70
Rural	0.92	0.25	0.43	1.41
Urban	9.17	1.26	6.69	11.65
Mainland	3.78	0.49	2.82	4.73
Dar es Salaam	12.49	1.79	8.97	16.01
Other Urban	7.68	1.86	4.03	11.33
Rural	0.83	0.25	0.34	1.32
Zanzibar	3.44	1.07	1.34	5.54

**NET ENROLLMENT RATE AT PRE-PRIMARY SCHOOL, CONFIDENCE INTERVALS**

	<b>Estimate</b>	<b>Std. Error</b>	<b>[95% Confidence Interval]</b>	<b>No. of Observations</b>
<b>NPS 1</b>				
Tanzania	20.04	1.59	16.91 - 23.18	982
Rural	15.81	1.68	12.51 - 19.12	725
Urban	41.62	4.39	33.00 - 50.25	257
Mainland	20.13	1.64	16.92 - 23.35	828
Dar es Salaam	49.01	5.23	38.74 - 59.29	100
Other Urban	39.24	5.93	27.58 - 50.89	105
Rural	15.81	1.73	12.42 - 19.21	623
Zanzibar	16.89	4.00	9.04 - 24.75	154
Female	20.58	2.31	16.03 - 25.13	497
Male	19.48	2.00	15.55 - 23.42	485
<b>NPS 2</b>				
Tanzania	25.54	1.78	22.04 - 29.05	1,203
Rural	20.56	1.95	16.73 - 24.38	895
Urban	42.59	4.1	34.53 - 50.64	308
Mainland	25.47	1.83	21.88 - 29.06	1,040
Dar es Salaam	53.28	4.57	44.3 - 62.26	152
Other Urban	38.48	5.43	27.81 - 49.15	148
Rural	20.35	2.00	16.41 - 24.29	740
Zanzibar	28.28	4.38	19.68 - 36.88	163
Female	27.18	2.48	22.31 - 32.05	607
Male	23.85	2.23	19.46 - 28.24	596
<b>NPS 3</b>				
Tanzania	27.89	1.72	24.50 - 31.27	1,329
Rural	22.20	1.81	18.63 - 25.76	981
Urban	48.95	3.34	42.39 - 55.51	348
Mainland	27.62	1.77	24.15 - 31.09	1,161
Dar es Salaam	60.77	5.04	50.87 - 70.67	143
Other Urban	43.43	4.66	34.27 - 52.60	174
Rural	21.87	1.85	18.24 - 25.51	844
Zanzibar	37.39	5.10	27.36 - 47.41	168
Female	27.19	2.03	23.20 - 31.19	679
Male	28.63	2.42	23.87 - 33.39	650
<b>NPS 4</b>				
Tanzania	25.92	1.92	22.14 - 29.69	972
Rural	19.95	2.01	16.00 - 23.89	736
Urban	48.75	4.03	40.83 - 56.67	236
Mainland	25.48	1.97	21.61 - 29.36	823
Dar es Salaam	46.05	5.30	35.62 - 56.47	70
Other Urban	52.08	5.80	40.68 - 63.49	108
Rural	19.55	2.03	15.55 - 23.54	645
Zanzibar	39.65	5.47	28.89 - 50.41	149
Female	27.27	1.95	22.23 - 29.88	461
Male	24.71	8.15	7.55 - 39.60	511

**PRIMARY SCHOOL NET ENROLLMENT RATE, CONFIDENCE INTERVALS**

	<b>Estimate</b>	<b>Std. Error</b>	<b>[95% Confidence Interval]</b>	<b>No. of Observations</b>
<b>NPS 1</b>				
Tanzania	82.92	0.98	81.00 - 84.84	3,138
Rural	81.30	1.17	79.00 - 83.61	2,208
Urban	89.60	1.24	87.15 - 92.04	930
Mainland	83.05	1.00	81.08 - 85.03	2,594
Dar es Salaam	85.62	1.81	82.05 - 89.19	344
Other Urban	91.07	1.61	87.90 - 94.24	393
Rural	81.44	1.20	79.08 - 83.81	1,857
Zanzibar	78.78	3.20	72.49 - 85.07	544
Female	85.52	1.14	83.28 - 87.76	1,599
Male	80.13	1.31	77.56 - 82.71	1,539
<b>NPS 2</b>				
Tanzania	80.47	0.97	78.55 - 82.38	3,665
Rural	78.66	1.16	76.37 - 80.95	2,756
Urban	86.69	1.47	83.79 - 89.58	909
Mainland	80.33	1.00	78.35 - 82.30	3,109
Dar es Salaam	86.95	1.73	83.56 - 90.34	408
Other Urban	86.65	1.89	82.94 - 90.36	495
Rural	78.42	1.20	76.06 - 80.79	2,206
Zanzibar	85.01	1.93	81.21 - 88.81	556
Female	81.88	1.26	79.40 - 84.35	1,860
Male	78.96	1.19	76.62 - 81.30	1,805
<b>NPS 3</b>				
Tanzania	76.31	1.19	73.97 - 78.65	4,415
Rural	73.22	1.44	70.38 - 76.06	3,234
Urban	86.84	1.24	84.40 - 89.27	1,181
Mainland	76.03	1.22	73.62 - 78.43	3,849
Dar es Salaam	87.38	2.16	83.13 - 91.63	475
Other Urban	86.55	1.54	83.53 - 89.57	586
Rural	72.94	1.47	70.05 - 75.84	2,788
Zanzibar	86.04	2.19	81.73 - 90.35	566
Female	79.08	1.34	76.44 - 81.73	2,242
Male	73.39	1.54	70.37 - 76.42	2,173
<b>NPS 4</b>				
Tanzania	73.63	1.74	70.21 - 77.05	3,114
Rural	71.37	1.98	67.48 - 75.26	2,290
Urban	80.60	3.71	73.30 - 87.90	824
Mainland	73.36	1.79	69.85 - 76.88	2,612
Dar es Salaam	84.37	1.98	80.48 - 88.25	283
Other Urban	79.21	5.82	67.78 - 90.65	362
Rural	71.06	2.01	67.12 - 75.01	1,967
Zanzibar	82.41	3.72	75.11 - 89.72	502
Female	76.72	2.00	71.79 - 80.65	1,528
Male	70.82	2.03	66.83 - 74.82	1,586

**SECONDARY SCHOOL NET ENROLLMENT RATE, CONFIDENCE INTERVALS**

	<b>Estimate</b>	<b>Std. Error</b>	<b>[95% Confidence Interval]</b>	<b>No. of Observations</b>
<b>NPS 1</b>				
Tanzania	23.29	1.42	20.50 - 26.07	1,631
Rural	15.58	1.39	12.85 - 18.31	1,084
Urban	48.95	3.27	42.53 - 55.37	547
Mainland	22.80	1.46	19.93 - 25.66	1,351
Dar es Salaam	44.53	4.04	36.58 - 52.48	207
Other Urban	49.33	4.32	40.83 - 57.83	236
Rural	15.15	1.43	12.35 - 17.96	908
Zanzibar	39.01	3.80	31.54 - 46.49	280
Female	24.25	1.96	20.40 - 28.09	802
Male	22.42	1.72	19.05 - 25.79	829
<b>NPS 2</b>				
Tanzania	28.26	1.55	25.22 - 31.30	1,980
Rural	20.44	1.64	17.21 - 23.66	1,449
Urban	52.00	2.81	46.48 - 57.53	531
Mainland	27.98	1.59	24.85 - 31.11	1,665
Dar es Salaam	50.08	4.52	41.19 - 58.97	223
Other Urban	52.47	3.5	45.58 - 59.36	304
Rural	19.86	1.7	16.52 - 23.20	1,138
Zanzibar	37.20	4.2	28.94 - 45.46	315
Female	29.77	2.06	25.71 - 33.83	989
Male	26.69	1.94	22.87 - 30.51	991
<b>NPS 3</b>				
Tanzania	29.95	1.44	27.11 - 32.78	2,305
Rural	21.16	1.55	18.11 - 24.20	1,637
Urban	56.44	2.54	51.44 - 61.43	668
Mainland	29.46	1.48	26.55 - 32.38	1,963
Dar es Salaam	54.32	4.50	45.47 - 63.18	251
Other Urban	57.82	3.24	51.46 - 64.18	354
Rural	20.56	1.58	17.45 - 23.68	1,358
Zanzibar	44.56	4.18	36.34 - 52.78	342
Female	31.64	1.76	28.19 - 35.09	1,179
Male	28.18	1.95	24.35 - 32.02	1,126
<b>NPS 4</b>				
Tanzania	24.67	1.54	21.63 - 27.70	1,437
Rural	18.40	1.74	14.97 - 21.83	1,028
Urban	41.41	2.94	35.64 - 47.18	409
Mainland	24.30	1.58	21.19 - 27.41	1,207
Dar es Salaam	41.64	4.45	32.89 - 50.39	162
Other Urban	42.82	4.11	34.74 - 50.91	182
Rural	17.77	1.77	14.29 - 21.25	863
Zanzibar	37.61	4.88	28.03 - 47.20	230
Female	25.72	2.18	21.43 - 30.00	705
Male	23.70	1.96	19.85 - 27.55	732

**GROSS ENROLLMENT RATE IN HIGHER EDUCATION, CONFIDENCE INTERVALS**

	Estimate	Std. Error	[95% Confidence Interval]	No. of Observations
<b>NPS 1</b>				
Tanzania	2.52	0.49	1.55 - 3.49	16,217
Rural	0.61	0.31	0.00 - 1.21	10,781
Urban	7.30	1.49	4.36 - 10.23	5,436
Mainland	2.53	0.51	1.53 - 3.53	13,545
Dar es Salaam	8.81	2.19	4.5 - 13.13	2,336
Other Urban	6.04	2.10	1.90 - 10.17	2,061
Rural	0.63	0.32	0.0 - 1.25	9,148
Zanzibar	2.15	0.95	0.28 - 4.03	2,672
Female	1.57	0.47	0.64 - 2.50	8,451
Male	3.68	0.85	2.02 - 5.35	7,766
<b>NPS 2</b>				
Tanzania	3.83	0.57	2.70 - 4.95	20,062
Rural	0.92	0.33	0.28 - 1.56	14,309
Urban	9.64	1.53	6.65 - 12.64	5,753
Mainland	3.86	0.59	2.69 - 5.02	17,067
Dar es Salaam	14.95	3.14	8.79 - 21.12	2,821
Other Urban	6.86	1.67	3.58 - 10.14	2,869
Rural	0.86	0.34	0.20 - 1.53	11,377
Zanzibar	3.05	1.08	0.92 - 5.19	2,995
Female	2.97	0.64	1.70 - 4.24	10,344
Male	4.71	0.85	3.05 - 6.38	9,718
<b>NPS 3</b>				
Tanzania	5.11	0.80	3.54 - 6.68	24,664
Rural	3.08	0.91	1.30 - 4.87	17,061
Urban	8.91	1.33	6.29 - 11.53	7,603
Mainland	5.03	0.82	3.42 - 6.63	21,425
Dar es Salaam	13.43	2.32	8.87 - 18.00	3,265
Other Urban	5.66	1.52	2.67 - 8.64	3,652
Rural	3.03	0.94	1.19 - 4.87	14,508
Zanzibar	7.74	3.05	1.75 - 13.73	3,239
Female	3.43	0.76	1.94 - 4.92	12,700
Male	6.68	1.08	4.57 - 8.80	11,964
<b>NPS 4</b>				
Tanzania	5.16	0.92	3.35 - 6.97	16,246
Rural	2.02	0.59	0.87 - 3.18	11,143
Urban	10.77	2.22	6.40 - 15.15	5,103
Mainland	5.17	0.95	3.30 - 7.03	13,622
Dar es Salaam	11.29	2.92	5.56 - 17.03	2,092
Other Urban	11.05	3.32	4.52 - 17.58	2,163
Rural	1.89	0.60	0.71 - 3.06	9,367
Zanzibar	4.90	1.59	1.78 - 8.03	2,624
Female	3.03	0.72	1.62 - 4.45	8,370
Male	8.01	1.54	4.99 - 11.04	7,876

**PROPORTION OF BIRTHS ATTENDED BY SKILLED HEALTH WORKER,  
CONFIDENCE INTERVALS**

	Estimate	Std. Error	[95% Confidence Interval]	No. of Observations
<b>NPS 1</b>				
Tanzania	59.33	2.09	55.23 - 63.43	1,119
Rural	52.28	2.35	47.67 - 56.90	807
Urban	92.63	1.92	88.85 - 96.42	312
Mainland	59.30	2.14	55.10 - 63.50	955
Dar es Salaam	95.85	1.75	92.42 - 99.28	136
Other Urban	91.38	2.76	85.96 - 96.81	120
Rural	52.17	2.41	47.44 - 56.90	699
Zanzibar	60.42	4.65	51.29 - 69.55	164
<b>NPS 2</b>				
Tanzania	62.17	1.95	58.35 - 66.00	1,342
Rural	54.73	2.24	50.33 - 59.12	990
Urban	86.66	2.30	82.14 - 91.19	352
Mainland	62.16	1.99	58.25 - 66.08	1,171
Dar es Salaam	95.00	1.71	91.64 - 98.37	198
Other Urban	83.01	3.16	76.78 - 89.23	163
Rural	54.48	2.30	49.95 - 59.00	810
Zanzibar	62.59	4.68	53.38 - 71.80	171
<b>NPS 3</b>				
Tanzania	66.31	1.86	62.64 - 69.98	1,782
Rural	57.85	2.21	53.51 - 62.18	1,282
Urban	93.77	1.30	91.21 - 96.33	500
Mainland	66.32	1.91	62.57 - 70.07	1,589
Dar es Salaam	98.26	0.78	96.72 - 99.80	202
Other Urban	93.29	1.80	89.76 - 96.82	250
Rural	57.72	2.24	53.31 - 62.13	1,137
Zanzibar	65.94	5.49	55.14 - 76.73	193
<b>NPS 4</b>				
Tanzania	69.59	2.24	65.19 - 73.99	1,283
Rural	60.33	2.84	54.75 - 65.91	871
Urban	91.42	1.91	87.67 - 95.17	412
Mainland	69.69	2.30	65.17 - 74.22	1,078
Dar es Salaam	95.32	1.70	91.98 - 98.66	169
Other Urban	92.82	2.80	87.32 - 98.33	169
Rural	59.99	2.88	54.33 - 65.65	740
Zanzibar	66.32	5.46	55.58 - 77.05	205

**PERCENTAGE OF CHILDREN UNDER 5 YEARS WITH LOW HEIGHT-FOR-AGE (STUNTED), CONFIDENCE INTERVALS**

	Estimate	Std. Error	[95% Confidence Interval]	No. of Observations
<b>NPS 1</b>				
Tanzania	43.02	1.57	39.93	46.11
Rural	45.59	1.82	42.02	49.16
Urban	30.16	2.55	25.15	35.18
Mainland	43.24	1.6	40.09	46.38
Dar es Salaam	36.46	3.47	29.64	43.27
Other Urban	27.9	3.28	21.45	34.35
Rural	45.85	1.85	42.21	49.49
Zanzibar	30.55	3.67	23.33	37.76
Female	40.72	1.88	37.02	44.41
Male	45.56	2.02	41.59	49.52
0-5 months	27.86	4.97	18.09	37.62
6-11	31.17	4.10	23.11	39.23
12-23	48.27	3.08	42.22	54.32
24-35	52.86	2.91	47.14	58.59
36-47	40.86	2.9	35.16	46.56
48-59 months	38.85	2.88	33.18	44.52
<b>NPS 2</b>				
Tanzania	34.76	1.38	32.04	37.47
Rural	37.25	1.58	34.13	40.36
Urban	24.11	2.63	18.93	29.29
Mainland	34.85	1.41	32.08	37.62
Dar es Salaam	21.07	2.98	15.21	26.93
Other Urban	24.90	3.42	18.17	31.62
Rural	37.45	1.62	34.26	40.64
Zanzibar	30.36	3.34	23.80	36.92
Female	34.21	1.78	30.72	37.70
Male	35.32	1.68	32.01	38.62
0-5 months	12.92	2.41	8.18	17.66
6-11	19.91	2.84	14.32	25.50
12-23	41.85	2.73	36.48	47.22
24-35	46.53	2.53	41.55	51.51
36-47	35.99	2.76	30.55	41.42
48-59 months	33.02	2.67	27.77	38.28
<b>NPS 3</b>				
Tanzania	37.40	1.17	35.09	39.71
Rural	39.30	1.38	36.60	42.01
Urban	29.51	2.23	25.13	33.90
Mainland	37.60	1.20	35.25	39.95
Dar es Salaam	23.77	3.08	17.72	29.83
Other Urban	32.20	3.00	26.30	38.10
Rural	39.48	1.40	36.74	42.22
Zanzibar	26.93	3.35	20.34	33.52
Female	34.75	1.48	31.85	37.66
Male	40.08	1.65	36.85	43.31
0-5 months	12.98	2.51	8.04	17.91
6-11	27.73	3.46	20.93	34.53
12-23	47.66	2.33	43.07	52.25
24-35	47.79	2.48	42.91	52.67
36-47	38.56	2.46	33.73	43.39
48-59 months	30.81	2.23	26.42	35.19
<b>NPS 4</b>				
Tanzania	34.22	1.39	31.48	36.95
Rural	37.34	1.65	34.09	40.59
Urban	25.38	2.46	20.56	30.21
Mainland	34.14	1.42	31.36	36.93
Dar es Salaam	23.80	2.74	18.42	29.17
Other Urban	25.01	3.69	17.76	32.25
Rural	37.41	1.67	34.14	40.69
Zanzibar	38.12	3.49	31.26	44.98
Female	32.07	1.75	28.64	35.51
Male	36.39	1.89	32.68	40.10
0-5 months	10.97	2.18	6.69	15.25
6-11	26.54	3.47	19.72	33.36
12-23	42.93	3.02	37.01	48.86
24-35	43.34	2.83	37.77	48.91
36-47	33.36	2.78	27.90	38.81
48-59 months	31.33	2.99	25.46	37.20

**PERCENTAGE OF CHILDREN UNDER 5 YEARS WITH LOW WEIGHT-FOR-HEIGHT (WASTED), CONFIDENCE INTERVALS**

	Estimate	Std. Error	[95% Confidence Interval]	No. of Observation
<b>NPS 1</b>				
Tanzania	2.70	0.42	1.86 - 3.54	1,992
Rural	2.95	0.50	1.97 - 3.93	1,480
Urban	1.46	0.58	0.32 - 2.61	512
Mainland	2.63	0.43	1.78 - 3.47	1,780
Dar es Salaam	0.91	0.64	-0.35 - 2.17	229
Other Urban	1.32	0.77	-0.18 - 2.83	225
Rural	2.92	0.51	1.92 - 3.91	1,326
Zanzibar	6.96	2.41	2.22 - 11.70	212
Female	2.72	0.55	1.64 - 3.79	1,035
Male	2.68	0.59	1.53 - 3.83	957
0-5 months	3.29	2.73	2.08 - 8.65	98
6-11	5.88	2.03	1.90 - 9.87	194
12-23	2.52	1.03	0.50 - 4.54	411
24-35	1.62	0.64	0.36 - 2.87	431
36-47	2.65	0.81	1.06 - 4.24	448
48-59 months	2.51	0.80	0.94 - 4.08	410
<b>NPS 2</b>				
Tanzania	6.59	0.65	5.31 - 7.86	2,579
Rural	6.76	0.74	5.30 - 8.22	2,007
Urban	5.87	1.20	3.52 - 8.22	572
Mainland	6.52	0.66	5.22 - 7.82	2,290
Dar es Salaam	5.38	1.55	2.33 - 8.42	262
Other Urban	6.00	1.52	3.01 - 8.99	306
Rural	6.68	0.76	5.19 - 8.17	1,722
Zanzibar	9.84	1.98	5.95 - 13.73	289
Female	6.83	0.88	5.10 - 8.56	1,297
Male	6.34	0.83	4.72 - 7.96	1,282
0-5 months	12.71	2.43	7.93 - 17.48	257
6-11	11.92	2.50	7.00 - 16.84	288
12-23	7.67	1.69	4.35 - 10.99	547
24-35	4.14	0.96	2.25 - 6.03	521
36-47	3.63	0.89	1.87 - 5.38	487
48-59 months	4.92	1.18	2.60 - 7.23	479
<b>NPS 3</b>				
Tanzania	4.20	0.40	3.42 - 4.98	3,139
Rural	4.17	0.45	3.28 - 5.07	2,385
Urban	4.29	0.76	2.80 - 5.79	754
Mainland	4.13	0.40	3.34 - 4.92	2,867
Dar es Salaam	3.47	1.16	1.19 - 5.75	288
Other Urban	4.28	0.97	2.38 - 6.18	408
Rural	4.15	0.46	3.25 - 5.06	2,171
Zanzibar	7.68	2.61	2.55 - 12.81	272
Female	4.47	0.60	3.29 - 5.66	1,570
Male	3.92	0.49	2.96 - 4.87	1,569
0-5 months	10.99	1.92	7.22 - 14.75	308
6-11	11.26	1.94	7.44 - 15.07	331
12-23	4.65	0.99	2.70 - 6.59	628
24-35	2.27	0.70	0.90 - 3.65	683
36-47	0.99	0.42	0.16 - 1.81	589
48-59 months	2.44	0.76	0.96 - 3.93	600
<b>NPS 4</b>				
Tanzania	5.14	0.55	4.06 - 6.22	2,295
Rural	4.83	0.62	3.61 - 6.05	1,637
Urban	6.00	1.15	3.74 - 8.26	658
Mainland	5.17	0.56	4.07 - 6.27	2,069
Dar es Salaam	6.68	1.63	3.47 - 9.90	276
Other Urban	5.93	1.64	2.71 - 9.15	299
Rural	4.82	0.63	3.59 - 6.05	1,494
Zanzibar	3.17	1.22	0.77 - 5.56	226
Female	5.36	0.78	3.82 - 6.89	1,148
Male	4.92	0.78	3.38 - 6.46	1,147
0-5 months	11.68	2.63	6.51 - 16.85	213
6-11	8.27	1.94	4.45 - 12.09	268
12-23	5.70	1.26	3.22 - 8.18	507
24-35	3.21	0.96	1.32 - 5.09	471
36-47	2.36	0.77	0.85 - 3.88	419
48-59 months	4.16	1.26	1.67 - 6.64	417

**PERCENTAGE OF CHILDREN UNDER 5 YEARS WITH WEIGHT-FOR-AGE (UNDERWEIGHT), CONFIDENCE INTERVALS**

	Estimate	Std. Error	[95% Confidence Interval]	No. of Observations
<b>NPS 1</b>				
Tanzania	15.92	1.06	13.83 - 18.01	1,999
Rural	17.13	1.23	14.71 - 19.56	1,485
Urban	9.82	1.69	6.50 - 13.15	514
Mainland	15.87	1.08	13.74 - 17.99	1,786
Dar es Salaam	9.08	2.17	4.81 - 13.35	230
Other Urban	9.44	2.22	5.07 - 13.82	225
Rural	17.19	1.26	14.72 - 19.66	1,331
Zanzibar	18.80	2.85	13.20 - 24.40	213
Female	15.08	1.32	12.48 - 17.68	1,037
Male	16.84	1.45	13.98 - 19.69	962
0-5 months	6.49	3.17	0.26 - 12.73	101
6-11	15.15	3.08	9.08 - 21.21	194
12-23	14.70	2.24	10.29 - 19.11	414
24-35	16.24	2.22	11.87 - 20.60	432
36-47	19.08	2.14	14.88 - 23.28	448
48-59 months	16.36	2.16	12.12 - 20.60	410
<b>NPS 2</b>				
Tanzania	13.56	0.9	11.78 - 15.34	2,602
Rural	14.59	1.04	12.53 - 16.64	2,026
Urban	9.19	1.58	6.09 - 12.30	576
Mainland	13.46	0.92	11.65 - 15.27	2,307
Dar es Salaam	10.04	2.41	5.29 - 14.78	265
Other Urban	8.73	1.98	4.83 - 12.63	307
Rural	14.51	1.07	12.41 - 16.61	1,735
Zanzibar	18.50	2.34	13.90 - 23.10	295
Female	12.94	1.16	10.66 - 15.21	1,311
Male	14.20	1.20	11.84 - 16.55	1,291
0-5 months	4.68	1.53	1.68 - 7.68	271
6-11	13.36	2.48	8.49 - 18.22	291
12-23	14.99	2.01	11.03 - 18.94	549
24-35	14.63	1.70	11.29 - 17.98	521
36-47	15.32	1.91	11.56 - 19.07	491
48-59 months	14.04	1.73	10.63 - 17.45	479
<b>NPS 3</b>				
Tanzania	12.52	0.83	10.89 - 14.15	3,152
Rural	13.30	0.97	11.40 - 15.21	2,394
Urban	9.28	1.29	6.74 - 11.82	758
Mainland	14.94	3.09	8.87 - 21.02	2,880
Dar es Salaam	6.73	1.80	3.19 - 10.27	292
Other Urban	10.11	1.72	6.72 - 13.49	408
Rural	13.28	0.98	11.35 - 15.20	2,180
Zanzibar	14.94	3.09	8.87 - 21.02	272
Female	12.52	1.16	10.23 - 14.81	1,575
Male	12.52	0.98	10.60 - 14.44	1,577
0-5 months	5.90	1.67	2.62 - 9.18	312
6-11	11.37	2.05	7.35 - 15.39	334
12-23	14.84	1.71	11.48 - 18.20	629
24-35	16.34	1.84	12.73 - 19.95	685
36-47	10.37	1.48	7.46 - 13.28	591
48-59 months	11.79	1.66	8.54 - 15.05	601
<b>NPS 4</b>				
Tanzania	13.42	0.93	11.59 - 15.25	2,304
Rural	13.81	1.12	11.61 - 16.01	1,643
Urban	12.33	1.63	9.13 - 15.53	661
Mainland	13.36	0.95	11.50 - 15.22	2,078
Dar es Salaam	11.82	2.44	7.01 - 16.62	278
Other Urban	12.19	2.25	7.77 - 16.62	300
Rural	13.81	1.13	11.59 - 16.03	1,500
Zanzibar	16.68	3.59	9.63 - 23.73	226
Female	11.62	1.13	9.39 - 13.85	1,151
Male	15.25	1.35	12.59 - 17.90	1,153
0-5 months	6.35	1.79	2.83 - 9.87	219
6-11	11.19	2.17	6.92 - 15.46	269
12-23	15.41	2.22	11.05 - 19.77	507
24-35	15.12	2.11	10.96 - 19.27	472
36-47	12.25	2.07	8.18 - 16.32	419
48-59 months	15.49	2.13	11.31 - 19.67	418

**HOUSEHOLDS WITH ACCESS TO SAFE DRINKING WATER – RAINY SEASON, CONFIDENCE INTERVALS**

	<b>Estimate</b>	<b>Std. Error</b>	<b>[95% Confidence Interval]</b>	<b>No. of Observations</b>
<b>NPS 1</b>				
Tanzania	43.26	1.88	39.56	46.96
Rural	32.80	2.26	28.36	37.24
Urban	72.54	3.11	66.43	78.66
Mainland	42.20	1.93	38.41	46.00
Dar es Salaam	77.79	3.33	71.24	84.34
Other Urban	67.14	4.42	58.46	75.83
Rural	31.89	2.32	27.33	36.45
Zanzibar	81.27	4.37	72.69	89.85
<b>NPS 2</b>				
Tanzania	42.74	1.71	39.38	46.09
Rural	32.25	1.91	28.49	36.02
Urban	66.42	3.11	60.31	72.53
Mainland	41.54	1.75	38.10	44.98
Dar es Salaam	74.64	2.68	69.37	79.91
Other Urban	62.25	4.16	54.07	70.44
Rural	30.46	1.98	26.57	34.35
Zanzibar	85.58	3.36	78.98	92.18
<b>NPS 3</b>				
Tanzania	45.91	1.68	42.61	49.21
Rural	35.37	2.03	31.38	39.36
Urban	69.11	2.52	64.16	74.05
Mainland	44.81	1.72	41.43	48.19
Dar es Salaam	73.20	2.55	68.18	78.22
Other Urban	65.18	3.83	57.65	72.71
Rural	34.31	2.07	30.25	38.37
Zanzibar	87.02	3.46	80.21	93.82
<b>NPS 4</b>				
Tanzania	45.97	1.94	42.16	49.78
Rural	34.47	2.43	29.69	39.26
Urban	67.80	3.05	61.80	73.79
Mainland	44.97	1.99	41.06	48.88
Dar es Salaam	65.70	3.72	58.38	73.02
Other Urban	68.72	4.62	59.64	77.79
Rural	33.44	2.47	28.58	38.30
Zanzibar	81.28	4.50	72.42	90.13

**HOUSEHOLDS WITH ACCESS TO SAFE DRINKING WATER – DRY SEASON, CONFIDENCE INTERVALS**

	<b>Estimate</b>	<b>Std. Error</b>	<b>[95% Confidence Interval]</b>	<b>No. of Observations</b>
<b>NPS 1</b>				
Tanzania	43.53	1.87	39.85	47.21
Rural	32.89	2.23	28.50	37.27
Urban	73.31	3.14	67.14	79.48
Mainland	42.51	1.92	38.74	46.28
Dar es Salaam	81.11	2.99	75.24	86.99
Other Urban	67.03	4.54	58.11	75.95
Rural	31.93	2.29	27.43	36.44
Zanzibar	80.26	4.42	71.56	88.95
<b>NPS 2</b>				
Tanzania	50.19	1.81	46.63	53.74
Rural	39.84	2.12	35.68	44.01
Urban	73.54	2.76	68.11	78.98
Mainland	49.23	1.85	45.59	52.88
Dar es Salaam	77.71	2.40	73.00	82.42
Other Urban	71.16	3.73	63.83	78.49
Rural	38.36	2.19	34.05	42.68
Zanzibar	84.30	3.46	77.50	91.11
<b>NPS 3</b>				
Tanzania	52.85	1.60	49.71	56.00
Rural	41.55	1.99	37.64	45.46
Urban	77.72	1.85	74.09	81.35
Mainland	51.92	1.64	48.70	55.15
Dar es Salaam	78.46	2.48	73.59	83.34
Other Urban	76.39	2.71	71.07	81.72
Rural	40.60	2.03	36.61	44.58
Zanzibar	87.65	3.38	81.01	94.28
<b>NPS 4</b>				
Tanzania	57.39	2.08	53.29	61.49
Rural	46.18	2.72	40.83	51.54
Urban	78.67	3.03	72.73	84.62
Mainland	56.72	2.14	52.51	60.92
Dar es Salaam	81.57	3.42	74.84	88.30
Other Urban	77.31	4.67	68.13	86.49
Rural	45.36	2.77	39.91	50.80
Zanzibar	81.28	4.50	72.42	90.13

**PERCENTAGE OF HOUSEHOLDS WITH BASIC SANITATION FACILITIES, CONFIDENCE INTERVALS**

	<b>Estimate</b>	<b>Std. Error</b>	<b>[95% Confidence Interval]</b>		<b>No. of Observations</b>
<b>NPS 1</b>					
Tanzania	89.93	1.02	87.92	91.94	3,265
Rural	86.57	1.38	83.87	89.28	2,063
Urban	99.33	0.30	98.73	99.92	1,202
Mainland	90.19	1.04	88.14	92.24	2,786
Dar es Salaam	99.20	0.38	98.45	99.95	555
Other Urban	99.14	0.45	98.26	100.02	480
Rural	86.93	1.41	84.16	89.71	1,751
Zanzibar	80.59	4.00	72.73	88.45	479
<b>NPS 2</b>					
Tanzania	87.06	0.98	85.14	88.98	3,844
Rural	83.27	1.33	80.67	85.88	2,583
Urban	95.62	0.90	93.85	97.39	1,261
Mainland	87.30	1.00	85.34	89.26	3,311
Dar es Salaam	98.93	0.45	98.05	99.82	625
Other Urban	94.40	1.23	91.99	96.82	633
Rural	83.47	1.37	80.77	86.16	2,053
Zanzibar	78.45	3.80	70.98	85.91	533
<b>NPS 3</b>					
Tanzania	86.59	1.03	84.56	88.62	4,881
Rural	81.79	1.41	79.02	84.56	3,152
Urban	97.16	0.54	96.10	98.22	1,729
Mainland	86.68	1.05	84.60	88.75	4,292
Dar es Salaam	98.73	0.46	97.82	99.64	742
Other Urban	96.42	0.83	94.79	98.05	850
Rural	81.91	1.44	79.09	84.74	2,700
Zanzibar	83.39	3.52	76.46	90.32	589
<b>NPS 4</b>					
Tanzania	86.97	1.19	84.64	89.31	3,352
Rural	82.21	1.64	78.99	85.42	2,096
Urban	96.03	1.58	92.92	99.13	1,256
Mainland	87.14	1.21	84.75	89.52	2,872
Dar es Salaam	99.00	0.45	98.12	99.88	552
Other Urban	96.30	2.59	91.20	101.39	544
Rural	81.93	1.67	78.65	85.20	1,776
Zanzibar	81.22	5.04	71.32	91.12	480

**PERCENTAGE OF HOUSEHOLDS WITH IMPROVED SANITATION FACILITIES, CONFIDENCE INTERVALS**

	<b>Estimate</b>	<b>Std. Error</b>	<b>[95% Confidence Interval]</b>	<b>No. of Observations</b>
<b>NPS 1</b>				
Tanzania	21.91	1.07	19.79 - 24.02	3,265
Rural	8.79	0.99	6.85 - 10.72	2,063
Urban	58.62	2.84	53.03 - 64.21	1,202
Mainland	21.32	1.10	19.16 - 23.48	2,786
Dar es Salaam	92.29	1.54	89.26 - 95.32	555
Other Urban	41.09	4.01	33.20 - 48.98	480
Rural	8.10	1.00	6.12 - 10.07	1,751
Zanzibar	42.84	4.21	34.56 - 51.12	479
<b>NPS 2</b>				
Tanzania	25.36	1.08	23.24 - 27.49	3,844
Rural	11.84	1.03	9.81 - 13.87	2,583
Urban	55.91	2.60	50.81 - 61.02	1,261
Mainland	24.67	1.10	22.50 - 26.85	3,311
Dar es Salaam	90.38	1.40	87.64 - 93.12	625
Other Urban	41.83	3.17	35.60 - 48.06	633
Rural	10.45	1.05	8.38 - 12.52	2,053
Zanzibar	50.06	4.33	41.54 - 58.58	533
<b>NPS 3</b>				
Tanzania	29.54	1.23	27.13 - 31.95	4,881
Rural	14.23	1.17	11.94 - 16.53	3,152
Urban	63.22	2.58	58.14 - 68.30	1,729
Mainland	28.78	1.25	26.32 - 31.24	4,292
Dar es Salaam	90.83	1.26	88.36 - 93.30	742
Other Urban	45.14	3.60	38.07 - 52.21	850
Rural	13.59	1.19	11.25 - 15.92	2,700
Zanzibar	58.18	4.28	49.76 - 66.59	589
<b>NPS 4</b>				
Tanzania	24.77	1.25	22.33 - 27.22	3,352
Rural	22.05	1.36	19.38 - 24.73	2,096
Urban	29.94	2.50	25.03 - 34.85	1,256
Mainland	23.51	1.27	21.03 - 26.00	2,872
Dar es Salaam	31.30	3.69	24.05 - 38.55	552
Other Urban	26.46	3.47	19.65 - 33.28	544
Rural	21.05	1.37	18.35 - 23.75	1,776
Zanzibar	69.31	4.90	59.69 - 78.94	480

**AVERAGE YIELDS OF MAIZE (KG / AREA PLANTED IN HECTARES), CONFIDENCE INTERVALS**

	Estimate	Std. Error	[95% Confidence Interval]	No. of Observations
<b>NPS1</b>				
<b>FARMER REPORTED PLOT AREA</b>				
All Plots	782.46	18.28	746.61 - 818.30	1,816
Pure Stand Plots	906.80	34.37	839.31 - 974.30	600
Intercropped Plots	714.70	21.05	673.40 - 755.99	1,216
Plots with Organic Fertilizer	1,011.61	59.02	895.38 - 1,127.85	256
Plots with Inorganic Fertilizer	1,159.77	53.87	1,053.73 - 1,265.80	283
Plots with Any Fertilizer	1,066.49	42.61	982.76 - 1,150.22	476
<b>NPS2</b>				
<b>FARMER REPORTED PLOT AREA</b>				
All Plots	794.35	15.83	763.32 - 825.39	2,189
Pure Stand Plots	877.97	28.04	822.94 - 933.01	775
Intercropped Plots	742.34	17.77	705.31 - 779.37	1,414
Plots with Organic Fertilizer	927.34	46.71	835.39 - 1,019.29	287
Plots with Inorganic Fertilizer	1,178.58	46.57	1,087.03 - 1,270.13	413
Plots with Any Fertilizer	1,058.37	34.74	990.16 - 1,126.59	627
<b>GPS-BASED PLOT AREA</b>				
All Plots	929.94	21.32	888.14 - 971.75	1,879
Pure Stand Plots	1,047.66	37.59	973.85 - 1,121.47	663
Intercropped Plots	858.00	25.49	807.00 - 908.01	1,216
Plots with Organic Fertilizer	1,014.26	58.14	899.80 - 1,128.73	274
Plots with Inorganic Fertilizer	1,349.23	58.74	1,233.72 - 1,464.75	363
Plots with Any Fertilizer	1,170.39	43.86	1,084.23 - 1,256.54	569
<b>NPS3</b>				
<b>FARMER REPORTED PLOT AREA</b>				
All Plots	779.10	15.09	749.51 - 808.69	2,734
Pure Stand Plots	893.29	27.73	838.87 - 947.71	955
Intercropped Plots	710.99	17.49	676.69 - 745.28	1,779
Plots with Organic Fertilizer	785.24	38.11	710.33 - 860.15	426
Plots with Inorganic Fertilizer	1,180.97	47.15	1,088.29 - 1,273.64	448
Plots with Any Fertilizer	982.04	32.99	917.28 - 1,046.79	795
<b>GPS-BASED PLOT AREA</b>				
All Plots	858.28	18.92	821.18 - 895.38	2,276
Pure Stand Plots	961.50	33.58	895.58 - 1,027.43	769
Intercropped Plots	799.63	22.69	755.12 - 844.14	1,507
Plots with Organic Fertilizer	955.49	50.59	856.03 - 1,054.94	395
Plots with Inorganic Fertilizer	1,308.53	62.10	1,186.44 - 1,430.63	380
Plots with Any Fertilizer	1,101.10	41.81	1,019.01 - 1,183.20	701
<b>NPS4</b>				
<b>FARMER REPORTED PLOT AREA</b>				
All Plots	1,063.88	24.05	1,016.71 - 1,111.05	1,976
Pure Stand Plots	1,297.09	46.74	1,205.30 - 1,388.88	621
Intercropped Plots	9,43.58	27.05	8,90.52 - 9,96.65	1,355
Plots with Organic Fertilizer	1,216.71	64.52	1,089.76 - 1,343.65	315
Plots with Inorganic Fertilizer	1,658.18	78.69	1,503.37 - 1,812.98	322
Plots with Any Fertilizer	1,432.76	53.09	1,328.49 - 1,537.03	582
<b>GPS-BASED PLOT AREA</b>				
All Plots	1,206.57	33.62	1,140.62 - 1,272.53	1,480
Pure Stand Plots	1,418.95	68.60	1,284.12 - 1,553.78	444
Intercropped Plots	1,103.38	37.28	1,030.21 - 1,176.54	1,036
Plots with Organic Fertilizer	1,271.98	76.98	1,120.45 - 1,423.51	283
Plots with Inorganic Fertilizer	2,041.82	111.13	1,822.92 - 2,260.73	244
Plots with Any Fertilizer	1,589.94	69.94	1,452.51 - 1,727.37	477

**AVERAGE YIELDS OF PADDY (KG / AREA PLANTED IN HECTARES), CONFIDENCE INTERVALS**

	<b>Estimate</b>	<b>Std. Error</b>	<b>[95% Confidence Interval]</b>	<b>No. of Observations</b>
<b>NPS1</b>				
<b>FARMER REPORTED PLOT AREA</b>				
All Plots	1,313.15	57.60	1,199.99 - 1,426.32	490
Pure Stand Plots	1,438.07	65.95	1,308.42 - 1,567.73	409
Intercropped Plots	804.92	92.17	621.49 - 988.35	81
Plots with Organic Fertilizer	1,967.47	245.84	1,457.62 - 2,477.32	23
Plots with Inorganic Fertilizer	1,803.40	185.24	1,432.59 - 2,174.21	59
Plots with Any Fertilizer	1,792.99	155.46	1,482.86 - 2,103.12	70
<b>NPS2</b>				
<b>FARMER REPORTED PLOT AREA</b>				
All Plots	1,339.54	46.14	1,248.94 - 1,430.15	620
Pure Stand Plots	1,431.29	50.89	1,331.33 - 1,531.26	529
Intercropped Plots	772.69	84.18	605.44 - 939.93	91
Plots with Organic Fertilizer	2,411.71	336.79	1,725.69 - 3,097.73	33
Plots with Inorganic Fertilizer	1,893.59	182.28	1,530.13 - 2,257.05	72
Plots with Any Fertilizer	1,908.48	157.71	1,595.42 - 2,221.53	97
<b>GPS-BASED PLOT AREA</b>				
All Plots	1,594.01	69.53	1,457.36 - 1,730.65	457
Pure Stand Plots	1,720.89	77.97	1,567.59 - 1,874.20	382
Intercropped Plots	944.30	123.56	698.10 - 1,190.50	75
Plots with Organic Fertilizer	2,732.73	369.50	1,968.36 - 3,497.11	24
Plots with Inorganic Fertilizer	1,873.49	218.75	1,434.12 - 2,312.86	51
Plots with Any Fertilizer	1,892.73	184.06	1,525.35 - 2,260.11	68
<b>NPS3</b>				
<b>FARMER REPORTED PLOT AREA</b>				
All Plots	1,276.87	44.96	1,188.60 - 1,365.14	722
Pure Stand Plots	1,381.42	50.15	1,282.93 - 1,479.92	607
Intercropped Plots	684.28	76.41	532.91 - 835.66	115
Plots with Organic Fertilizer	2,228.57	309.96	1,599.33 - 2,857.82	36
Plots with Inorganic Fertilizer	1,706.18	150.76	1,406.96 - 2,005.41	98
Plots with Any Fertilizer	1,762.52	141.52	1,482.42 - 2,042.62	125
<b>GPS-BASED PLOT AREA</b>				
All Plots	1,379.40	67.23	1,247.20 - 1,511.60	376
Pure Stand Plots	1,527.24	76.80	1,376.09 - 1,678.38	294
Intercropped Plots	648.28	104.77	439.83 - 856.73	82
Plots with Organic Fertilizer	1,951.37	367.72	1,184.32 - 2,718.42	21
Plots with Inorganic Fertilizer	2,092.90	229.70	1,631.15 - 2,554.84	49
Plots with Any Fertilizer	1,842.95	193.74	1,455.67 - 2,230.24	63
<b>NPS4</b>				
<b>FARMER REPORTED PLOT AREA</b>				
All Plots	1,741.59	71.44	1,601.18 - 1,882.00	446
Pure Stand Plots	1,831.91	80.13	1,674.36 - 1,989.47	384
Intercropped Plots	1,215.48	118.19	979.14 - 1,451.81	62
Plots with Organic Fertilizer	1,810.89	338.62	1,114.84 - 2,506.94	27
Plots with Inorganic Fertilizer	2,684.42	217.71	2,246.93 - 3,121.92	50
Plots with Any Fertilizer	2,325.53	193.88	1,939.21 - 2,711.85	75
<b>GPS-BASED PLOT AREA</b>				
All Plots	1,672.34	100.49	1,474.33 - 1,870.34	229
Pure Stand Plots	1,809.45	115.62	1,581.37 - 2,037.52	189
Intercropped Plots	952.87	122.02	7,06.05 - 1,199.68	40
Plots with Organic Fertilizer	1,711.96	307.86	1,065.16 - 2,358.76	19
Plots with Inorganic Fertilizer	2,770.90	445.07	1,839.37 - 3,702.44	20
Plots with Any Fertilizer	2,295.80	303.42	1,680.44 - 2,911.16	37

**PERCENTAGE OF HOUSEHOLDS AND FIELDS USING IRRIGATION, CONFIDENCE INTERVALS**

	Estimate	Std. Error	[95% Confidence Interval]	No. of Observations
<b>NPS1</b>				
Share of households using irrigation	4.15	0.42	3.33 – 5.00	2,214
Share of fields using irrigation (surface)	2.03	0.19	1.66 – 2.40	5,582
◆ share of maize fields using irrigation (surface)	1.67	0.26	1.18 – 2.18	2,535
◆ share of paddy fields using irrigation (surface)	4.28	0.84	2.64 – 5.92	586
<b>NPS2</b>				
Share of households using irrigation	3.43	0.37	2.72 – 4.15	2,479
Share of fields using irrigation (surface)	1.74	0.17	1.42 – 2.08	6,133
◆ share of maize fields using irrigation (surface)	1.54	0.23	1.10 – 1.99	2,965
◆ share of paddy fields using irrigation (surface)	3.62	0.70	2.25 – 5.00	710
<b>NPS3</b>				
Share of households using irrigation	3.43	0.33	2.78 – 4.07	3,090
Share of fields using irrigation (surface)	1.68	0.15	1.39 – 1.96	7,697
◆ share of maize fields using irrigation (surface)	1.70	0.21	1.29 – 2.12	3,687
◆ share of paddy fields using irrigation (surface)	5.61	0.78	4.07 – 7.15	861
<b>NPS4</b>				
Share of households using irrigation	3.08	0.39	2.33 – 3.84	2,012
Share of fields using irrigation (surface)	2.02	0.22	1.58 – 2.46	3,912
◆ share of maize fields using irrigation (surface)	1.35	0.25	0.86 – 1.85	2,085
◆ share of paddy fields using irrigation (surface)	2.05	0.64	0.79 – 3.31	491

**PERCENTAGE OF HOUSEHOLDS USING IRRIGATION BY METHOD, CONFIDENCE INTERVALS**

<b>Method of Irrigation</b>	<b>Estimate</b>	<b>Std. Error</b>	<b>[95% Confidence Interval]</b>		<b>No. of Observations</b>
<b>NPS1</b>					
Flooding	0.66	0.05	0.56	0.76	89
Sprinkler	0.05	0.02	0.01	0.01	89
Drip irrigation	0.03	0.02	0.00	0.06	89
Bucket/watering can	0.25	0.05	0.16	0.34	89
Water hose	0.04	0.02	0.00	0.08	89
Other	-	-	-	-	89
<b>NPS2</b>					
Flooding	0.69	0.05	0.59	0.80	80
Sprinkler	0.04	0.02	0.00	0.09	80
Drip irrigation	0.04	0.02	0.00	0.89	80
Bucket/watering can	0.16	0.04	0.08	0.24	80
Water hose	0.04	0.02	0.00	0.09	80
Other	0.03	0.02	0.00	0.75	80
<b>NPS3</b>					
Flooding	0.59	0.05	0.49	0.69	95
Sprinkler	0.03	0.02	0.00	0.07	95
Drip irrigation	-	-	-	-	95
Bucket/watering can	0.23	0.04	0.14	0.31	95
Water hose	0.09	0.03	0.03	0.15	95
Other	0.07	0.03	0.01	0.12	95
<b>NPS4</b>					
Flooding	0.51	0.06	0.38	0.64	61
Sprinkler	0.01	0.01	-0.02	0.04	61
Drip irrigation	0.00	-	-	-	61
Bucket/watering can	0.34	0.06	0.22	0.47	61
Water hose	0.08	0.03	0.01	0.15	61
Other	0.06	0.03	0.00	0.12	61

**PROPORTION OF HOUSEHOLDS USING VARIOUS SOURCES OF WATER FOR IRRIGATION, CONFIDENCE INTERVALS**

Source of Water	Estimate	Std. Error	[95% Confidence Interval]	No. of Observations	
<b>NPS1</b>					
Well	0.12	0.03	0.05	0.19	89
Borehole	0.02	0.01	-0.01	0.04	89
Pond/tank	0.01	0.01	-0.01	0.04	89
River/stream	0.79	0.04	0.71	0.88	89
Other source	0.06	0.02	0.01	0.11	89
<b>NPS2</b>					
Well	0.16	0.04	0.08	0.24	80
Borehole	0.05	0.02	0	0.09	80
Pond/tank	0.02	0.02	-0.01	0.06	80
River/stream	0.76	0.05	0.66	0.85	80
Other source	0.04	0.02	-0.01	0.09	80
<b>NPS3</b>					
Well	0.11	0.03	0.04	0.17	95
Borehole	0.01	0.01	-0.01	0.03	95
Pond/tank	0.09	0.03	0.03	0.14	95
River/stream	0.76	0.04	0.67	0.84	95
Other source	0.04	0.02	0.00	0.08	95
<b>NPS4</b>					
Well	0.12	0.04	0.04	0.21	61
Borehole	0.03	0.02	-0.01	0.08	61
Pond/tank	0.12	0.04	0.04	0.21	61
River/stream	0.66	0.06	0.54	0.78	61
Other source	0.08	0.04	0.01	0.15	61

**PROPORTION OF HOUSEHOLDS USING FERTILIZERS, SEEDS AND PESTICIDES, CONFIDENCE INTERVALS**

Percentage of households using at least:	Estimate	Std. Error	[95% Confidence Interval]	No. of Observations
Any fertilizer	30.06	0.97	28.16 - 31.98	2,214
Using organic fertilizers	22.11	0.88	20.38 - 23.84	2,214
Using non-organic fertilizers	12.86	0.71	11.46 - 14.25	2,214
Using vouchers for non-organic fertilizers	-	-	-	304
Using pesticides/insecticides	14.68	0.75	13.21 - 16.16	2,214
Improved seeds	21.37	0.89	19.63 - 23.10	2,137
<b>NPS2</b>				
Any fertilizer	32.58	0.94	30.73 - 34.42	2,479
Using organic fertilizers	21.75	0.83	20.13 - 23.38	2,479
Using non-organic fertilizers	16.80	0.75	15.33 - 18.28	2,479
Using vouchers for non-organic fertilizers	49.51	2.48	44.63 - 54.38	408
Using pesticides/insecticides	13.16	0.67	11.83 - 14.50	2,479
Improved seeds	17.96	0.79	16.41 - 19.51	2,356
<b>NPS3</b>				
Any fertilizer	35.44	0.86	33.75 - 37.12	3,090
Using organic fertilizers	25.30	0.78	23.77 - 26.84	3,090
Using non-organic fertilizers	15.32	0.65	14.05 - 16.59	3,090
Using vouchers for non-organic fertilizers	30.13	2.13	25.94 - 34.32	464
Using pesticides/insecticides	13.68	0.62	12.47 - 14.89	3,090
Improved seeds	43.25	0.92	41.45 - 45.05	2,904
<b>NPS4</b>				
Any fertilizer	0.32	0.01	0.30 - 0.34	2,012
Using organic fertilizers	0.21	0.01	0.19 - 0.23	2,012
Using non-organic fertilizers	0.16	0.01	0.14 - 0.18	2,012
Using vouchers for non-organic fertilizers	0.11	0.02	0.08 - 0.15	303
Using pesticides/insecticides	0.05	0.00	0.04 - 0.06	2,012
Improved seeds	0.44	0.01	0.42 - 0.46	1,812

**PERCENTAGE OF HOUSEHOLDS EXPERIENCING EROSION, CONFIDENCE INTERVALS**

	<b>Estimate</b>	<b>Std. Error</b>	<b>[95% Confidence Interval]</b>		<b>No. of Observations</b>
<b>NPS1</b>					
Proportion of households with at least one field subject to erosion	24.46	0.91	22.66	26.25	2214
<b>Cause of erosion</b>					
Wind	2.34	0.69	0.97	3.70	476
Rain	93.66	1.11	91.46	95.86	476
Animals	3.48	0.84	1.83	5.13	476
Cultivation that does not comply with soil conservation	1.07	0.47	0.14	2.00	476
Others	0.25	0.23	-0.20	0.71	476
<b>NPS2</b>					
Proportion of households with at least one field subject to erosion	22.74	0.84	21.09	24.39	2479
<b>Cause of erosion</b>					
Wind	1.30	0.50	0.31	2.29	509
Rain	97.14	0.74	95.69	98.60	509
Animals	1.28	0.50	0.30	2.26	509
Cultivation that does not comply with soil conservation	0.35	0.26	-0.17	0.86	509
Others	0.39	0.27	-0.15	0.93	509
<b>NPS3</b>					
Proportion of households with at least one field subject to erosion	18.76	0.70	17.38	20.13	3090
<b>Cause of erosion</b>					
Wind	1.39	0.53	0.36	2.42	499
Rain	96.62	0.81	95.04	98.22	499
Animals	0.68	0.37	-0.04	1.41	499
Cultivation that does not comply with soil conservation	-				
Others	0.90	0.43	0.09	1.79	499
<b>NPS4</b>					
Proportion of households with at least one field subject to erosion	0.22	0.01	0.21	0.24	2,012
Cause of erosion					
Wind	0.02	0.01	0.00	0.03	425
Rain	0.98	0.01	0.96	0.99	425
Animals	0.01	0.00	0.00	0.02	425
Cultivation that does not comply with soil conservation	0.00	-	-	-	425
Others	0.00	0.00	0.00	0.01	425

## PROPORTION OF HOUSEHOLDS USING EROSION CONTROL METHODS, CONFIDENCE INTERVALS

	Estimate	Std. Error	[95% Confidence Interval]	No. of Observations	
<b>NPS1</b>					
Households using erosion control	0.26	0.01	0.24	0.27	2,214
<b>Type of erosion control</b>					
Terraces	0.43	0.02	0.39	0.48	477
Erosion Control Bunds	0.30	0.02	0.26	0.35	477
Gabions/sandbags	0.03	0.01	0.01	0.04	477
Vetiver grass	0.06	0.01	0.04	0.08	477
Tree belts	0.09	0.01	0.06	0.11	477
Water harvest bunds	0.19	0.02	0.15	0.22	477
Drainage ditch	0.30	0.02	0.26	0.35	477
Dam	0.01	0.00	0.00	0.02	477
<b>NPS2</b>					
Households using erosion control	0.16	0.01	0.15	0.18	2,479
<b>Type of erosion control</b>					
Terraces	0.60	0.03	0.55	0.66	351
Erosion Control Bunds	0.02	0.01	0.00	0.03	351
Gabions/sandbags	0.02	0.01	0.01	0.04	351
Vetiver grass	0.05	0.01	0.03	0.08	351
Tree belts	0.09	0.02	0.06	0.12	351
Water harvest bunds	0.14	0.02	0.11	0.18	351
Drainage ditch	0.22	0.02	0.18	0.26	351
Dam	0.00	0.00	0.00	0.01	351
<b>NPS3</b>					
Households using erosion control	0.12	0.01	0.11	0.14	3,090
<b>Type of erosion control</b>					
Terraces	0.39	0.03	0.34	0.45	329
Erosion Control Bunds	0.30	0.03	0.25	0.35	329
Gabions/sandbags	0.01	0.00	0.00	0.01	329
Vetiver grass	0.03	0.01	0.01	0.05	329
Tree belts	0.05	0.01	0.03	0.08	329
Water harvest bunds	0.13	0.02	0.09	0.17	329
Drainage ditch	0.22	0.02	0.18	0.27	329
Dam	0.00	0.00	0.00	0.00	329
<b>NPS4</b>					
Households using erosion control	0.18	0.01	0.16	0.20	2,012
<b>Type of erosion control</b>					
Terraces	0.41	0.03	0.36	0.47	336
Erosion Control Bunds	0.21	0.02	0.17	0.26	336
Gabions/sandbags	0.00	0.00	0.00	0.01	336
Vetiver grass	0.03	0.01	0.01	0.05	336
Tree belts	0.06	0.01	0.04	0.09	336
Water harvest bunds	0.22	0.02	0.18	0.27	336
Drainage ditch	0.15	0.02	0.11	0.18	336
Dam	0.00	-	-	-	336

**PERCENTAGE OF HOUSEHOLDS USING FARMING TECHNOLOGY – OWN ITEM, CONFIDENCE INTERVALS**

	<b>Estimate</b>	<b>Std. Error</b>	<b>[95% Confidence Interval]</b>	<b>No. of Observations</b>
<b>NPS1</b>				
Hand hoe	98.04	0.29	97.48	98.61
Hand powered sprayer	6.99	0.53	5.94	8.02
Ox plough	8.68	0.59	7.53	9.83
Ox seed planter	9.94	0.52	8.72	11.16
Ox cart	0.11	0.07	-0.03	0.02
Tractor	2.43	0.32	1.80	3.06
Tractor plough	0.14	0.08	-0.01	0.29
Tractor harrow	0.27	0.11	0.06	0.48
Sheller/thresher	0.05	0.05	-0.04	0.15
Hand mill	0.48	0.14	0.20	0.76
Watering can	1.97	0.29	1.40	2.53
Farm buildings	7.50	0.55	6.42	8.58
Geri cans/drums	12.71	0.69	11.35	14.07
Power tiller	-	-	-	-
Other	-	-	-	2,312
<b>NPS2</b>				
Hand hoe	96.61	0.35	95.93	97.29
Hand powered sprayer	5.88	0.45	5.00	6.76
Ox plough	9.36	0.56	8.27	10.46
Ox seed planter	10.50	0.59	9.35	11.66
Ox cart	0.02	0.03	-0.03	0.07
Tractor	2.36	0.29	1.79	2.93
Tractor plough	0.21	0.09	0.03	0.38
Tractor harrow	0.13	0.07	-0.07	0.26
Sheller/thresher	0.02	0.03	-0.03	0.07
Hand mill	0.14	0.07	0.00	0.28
Watering can	1.21	0.21	0.80	1.62
Farm buildings	6.85	0.48	4.90	7.79
Geri cans/drums	3.79	0.37	3.07	4.50
Power tiller	-	-	-	-
Other	10.55	0.59	9.39	11.70
<b>NPS3</b>				
Hand hoe	97.87	0.25	93.38	98.37
Hand powered sprayer	6.26	0.42	5.42	7.09
Ox plough	10.26	0.53	9.22	11.31
Ox seed planter	11.14	0.55	10.06	12.22
Ox cart	0.03	0.03	-0.03	0.10
Tractor	2.54	0.28	2.00	3.01
Tractor plough	0.08	0.05	-0.02	0.17
Tractor harrow	0.06	0.04	-0.02	0.14
Sheller/thresher	0.08	0.04	-0.01	0.01
Hand mill	0.05	0.04	0.00	0.13
Watering can	0.79	0.15	0.48	1.09
Farm buildings	5.61	0.40	0.48	0.64
Geri cans/drums	2.44	0.27	0.19	0.30
Power tiller	0.21	0.08	0.06	0.37
Other	31.68	0.81	30.08	33.27
<b>NPS4</b>				
Hand hoe	97.75	0.32	97.12	98.39
Hand powered sprayer	8.32	0.60	7.14	9.51
Ox plough	12.92	0.73	11.48	14.36
Ox seed planter	14.39	0.77	12.88	15.89
Ox cart	0.05	0.05	-0.05	0.15
Tractor	3.28	0.39	2.52	4.04
Tractor plough	0.35	0.13	0.10	0.61
Tractor harrow	0.30	0.12	0.07	0.54
Sheller/thresher	0.08	0.06	-0.04	0.19
Hand mill	0.21	0.10	0.01	0.41
Watering can	0.95	0.21	0.54	1.37
Farm buildings	6.09	0.52	5.07	7.12
Geri cans/drums	4.64	0.46	3.73	5.54
Power tiller	0.05	0.11	0.17	0.60
Other	55.67	1.09	53.54	57.80

**PERCENTAGE OF HOUSEHOLDS USING FARMING TECHNOLOGY – USED ITEM, CONFIDENCE INTERVALS**

	<b>Estimate</b>	<b>Std. Error</b>	<b>[95% Confidence Interval]</b>	<b>No. of Observations</b>
<b>NPS1</b>				
Hand hoe	95.76	0.42	94.93	96.58
Hand powered sprayer	12.83	0.70	11.47	14.20
Ox plough	18.17	0.80	16.59	19.74
Ox seed planter	19.36	0.82	17.75	20.97
Ox cart	0.40	0.12	0.13	0.62
Tractor	7.66	0.66	6.57	8.75
Tractor plough	2.81	0.34	2.13	3.48
Tractor harrow	1.40	0.24	0.94	1.90
Sheller/thresher	0.11	0.07	-0.03	0.24
Hand mill	1.09	0.22	0.67	1.52
Watering can	1.81	0.28	1.27	2.36
Farm buildings	7.21	0.54	6.16	8.27
Geri cans/drums	10.80	0.65	9.53	12.07
Power tiller	-	-	-	-
Other	-	-	-	-
<b>NPS2</b>				
Hand hoe	91.62	0.53	90.58	92.66
Hand powered sprayer	8.53	0.53	7.48	9.58
Ox plough	17.85	0.73	16.41	19.29
Ox seed planter	18.65	0.75	17.19	20.11
Ox cart	0.05	0.04	-0.04	0.14
Tractor	5.11	0.42	4.31	5.97
Tractor plough	2.92	0.32	2.28	3.55
Tractor harrow	2.32	0.29	1.76	2.89
Sheller/thresher	0.01	0.02	-0.03	0.05
Hand mill	0.12	0.07	-0.01	0.25
Watering can	1.11	0.20	0.71	1.50
Farm buildings	6.59	0.48	4.55	7.43
Geri cans/drums	2.31	0.29	1.75	2.88
Power tiller	-	-	-	-
Other	9.97	0.57	8.85	11.10
<b>NPS3</b>				
Hand hoe	95.68	0.36	94.98	96.38
Hand powered sprayer	9.72	0.52	8.70	10.73
Ox plough	22.78	0.73	21.33	24.22
Ox seed planter	23.30	0.74	21.85	24.76
Ox cart	0.03	0.03	-0.02	0.09
Tractor	6.31	0.43	5.48	7.15
Tractor plough	5.03	0.38	4.28	5.78
Tractor harrow	3.90	0.34	0.32	0.46
Sheller/thresher	0.15	0.07	0.02	0.29
Hand mill	0.16	0.07	0.02	0.30
Watering can	0.87	0.16	0.55	1.19
Farm buildings	5.12	0.39	4.36	5.88
Geri cans/drums	2.06	0.25	1.57	2.55
Power tiller	0.39	0.11	0.17	0.60
Other	31.30	0.81	29.71	32.89
<b>NPS4</b>				
Hand hoe	97.94	0.31	97.33	98.55
Hand powered sprayer	13.63	0.75	12.16	15.10
Ox plough	33.33	1.03	31.31	35.35
Ox seed planter	32.23	1.02	30.22	34.23
Ox cart	0.00	-	-	-
Tractor	8.93	0.62	7.71	10.15
Tractor plough	6.79	0.55	5.71	7.87
Tractor harrow	4.75	0.47	3.84	5.66
Sheller/thresher	0.30	0.12	0.06	0.53
Hand mill	0.76	0.19	0.38	1.13
Watering can	0.84	0.20	0.45	1.23
Farm buildings	5.80	0.51	4.79	6.80
Geri cans/drums	3.98	0.43	3.14	4.82
Power tiller	0.51	0.05	-0.05	0.15
Other	53.84	1.09	51.70	55.98

**PERCENTAGE OF FARM HOUSEHOLDS EARNING INCOME FROM OFF-FARM ACTIVITIES, CONFIDENCE INTERVALS**

Percentage of Households Earning Income From:	Estimate	Std. Error	[95% Confidence Interval]	No. of Observations
<b>NPS1</b>				
<b>Rural</b>				
Wage	24.14	1.07	32.05	32.25
Self-Employment	34.56	1.07	32.46	36.67
Either	54.99	1.12	52.79	57.19
<b>Urban</b>				
Wage	45.04	2.65	39.83	50.26
Self-Employment	54.73	2.65	49.52	59.95
Either	78.09	2.20	73.76	82.43
<b>All</b>				
Wage	35.40	0.99	33.45	37.35
Self-Employment	36.89	1.00	34.92	38.86
Either	57.66	1.02	55.64	59.67
<b>NPS2</b>				
<b>Rural</b>				
Wage	43.79	1.07	41.69	45.88
Self-Employment	38.94	1.05	36.89	41.01
Either	65.43	1.02	63.42	67.43
<b>Urban</b>				
Wage	50.74	2.55	45.73	55.76
Self-Employment	60.51	2.49	55.61	65.42
Either	85.62	1.79	82.09	89.14
<b>All</b>				
Wage	44.82	0.99	42.88	46.75
Self-Employment	42.14	0.98	40.22	44.06
Either	68.41	0.92	66.61	70.22
<b>NPS3</b>				
<b>Rural</b>				
Wage	46.37	0.97	44.46	48.27
Self-Employment	37.20	0.94	35.35	39.04
Either	65.87	0.92	64.06	67.68
<b>Urban</b>				
Wage	52.80	2.17	58.53	57.06
Self-Employment	55.81	2.16	51.57	60.05
Either	83.26	1.62	80.07	86.45
<b>All</b>				
Wage	47.24	0.88	45.50	48.98
Self-Employment	39.72	0.87	38.02	41.43
Either	68.23	0.83	66.61	69.85
<b>NPS4</b>				
<b>Rural</b>				
Wage	50.68	1.09	48.54	52.83
Self-Employment	42.32	1.08	40.21	44.44
Either	74.25	0.96	72.37	76.12
<b>Urban</b>				
Wage	60.28	1.38	57.57	62.99
Self-Employment	64.09	1.35	61.43	66.77
Either	93.18	0.71	91.78	94.57
<b>All</b>				
Wage	53.99	0.86	52.31	55.68
Self-Employment	49.83	0.86	48.14	51.53
Either	80.78	0.68	79.44	82.11

**PROPORTION OF HOUSEHOLDS THAT SOLD THEIR HARVEST, EXPERIENCED LOSSES AND STORED CROPS,  
CONFIDENCE INTERVALS**

	Estimate	Std. Error	[95% Confidence Interval]	No. of Observations
<b>NPS1</b>				
Proportion of households who sell at least part of their harvest	0.59	0.11	0.57 - 0.61	2,061
Proportion of households selling maize	0.27	0.01	0.25 - 0.29	1,536
Proportion of households selling paddy	0.51	0.23	0.46 - 0.55	459
Proportion of households who experienced loss of crops	0.20	0.01	0.18 - 0.21	2,061
Proportion of households who stored at least part of harvest	0.40	0.01	0.38 - 0.42	2,061
<b>NPS2</b>				
Proportion of households who sell at least part of their harvest	0.61	0.01	0.59 - 0.63	2,350
Proportion of households selling maize	0.33	0.01	0.31 - 0.35	1,901
Proportion of households selling paddy	0.57	0.02	0.53 - 0.61	584
Proportion of households who experienced loss of crops	0.11	0.01	0.10 - 0.12	2,350
Proportion of households who stored at least part of harvest	0.30	0.01	0.28 - 0.32	2,350
<b>NPS3</b>				
Proportion of households who sell at least part of their harvest	0.61	0.01	0.59 - 0.63	2,888
Proportion of households selling maize	0.29	0.01	0.27 - 0.31	2,368
Proportion of households selling paddy	0.54	0.18	0.51 - 0.58	726
Proportion of households who experienced loss of crops	0.07	0.00	0.06 - 0.08	2,888
Proportion of households who stored at least part of harvest	0.30	0.01	0.28 - 0.31	2,888
<b>NPS4</b>				
Proportion of households who sell at least part of their harvest	0.65	0.01	0.63 - 0.67	1,912
Proportion of households selling maize	0.36	0.01	0.34 - 0.38	1,658
Proportion of households selling paddy	0.55	0.02	0.50 - 0.59	433
Proportion of households who experienced loss of crops	0.07	0.01	0.06 - 0.08	1,912
Proportion of households who stored at least part of harvest	0.44	0.01	0.42 - 0.46	1,912

**FOOD SECURITY DURING THE LAST SEVEN DAYS, NPS2 AND NPS 3, CONFIDENCE INTERVALS**

	Estimate	Std. Error	[95% Confidence Interval]	No. of Observations
<b>NPS 2</b>				
<b>Worried about not having enough food</b>				
Tanzania	35.97	1.50	33.03 - 38.90	3,844
Rural	37.12	1.80	33.58 - 40.66	2,583
Urban	32.66	2.22	28.29 - 37.02	1,261
Mainland	36.30	1.54	33.28 - 39.32	3,311
Dar es Salaam	37.99	3.19	31.73 - 44.26	625
Other Urban	31.35	2.84	25.76 - 36.93	633
Rural	37.41	1.86	33.74 - 41.07	2,053
Zanzibar	24.81	3.04	18.83 - 30.79	533
<b>Negative changes in diet</b>				
Tanzania	34.01	1.35	31.35 - 36.67	3,843
Rural	34.73	1.60	31.58 - 37.88	2,583
Urban	31.94	2.08	27.85 - 36.04	1,260
Mainland	34.36	1.39	31.63 - 37.09	3,310
Dar es Salaam	35.48	2.84	29.90 - 41.06	624
Other Urban	31.25	2.65	26.04 - 36.45	633
Rural	35.05	1.66	31.79 - 38.31	2,053
Zanzibar	22.31	2.60	17.20 - 27.43	533
<b>Reduced food intake</b>				
Tanzania	32.23	1.35	29.57 - 34.88	3,844
Rural	33.06	1.62	29.86 - 36.25	2,583
Urban	29.85	1.96	25.99 - 33.71	1,261
Mainland	32.47	1.39	29.75 - 35.20	3,311
Dar es Salaam	34.76	2.88	29.09 - 40.43	625
Other Urban	28.69	2.51	23.75 - 33.63	633
Rural	33.21	1.68	29.91 - 36.52	2,053
Zanzibar	24.09	2.95	18.28 - 29.89	533
<b>NPS 3</b>				
<b>Worried about not having enough food</b>				
Tanzania	33.01	1.20	30.52 - 35.49	4,879
Rural	33.46	1.58	30.52 - 5.49	3,151
Urban	31.74	1.65	28.51 - 34.98	1,728
Mainland	33.54	1.30	30.99 - 36.09	4,290
Dar es Salaam	34.79	2.66	29.57 - 40.02	741
Other Urban	31.10	2.14	26.89 - 35.31	850
Rural	33.93	1.61	30.75 - 37.10	2,699
Zanzibar	14.78	2.77	9.33 - 20.24	589
<b>Negative changes in diet</b>				
Tanzania	31.09	1.21	28.71 - 33.47	4,881
Rural	31.96	1.47	29.06 - 34.86	3,152
Urban	28.69	1.61	25.53 - 31.85	1,729
Mainland	31.75	1.24	29.31 - 34.20	4,292
Dar es Salaam	35.56	2.66	30.32 - 40.80	742
Other Urban	26.00	2.07	21.92 - 30.06	850
Rural	32.54	1.51	29.58 - 35.50	2,700
Zanzibar	8.63	2.38	3.96 - 13.30	533
<b>Reduced food intake</b>				
Tanzania	28.88	1.16	26.60 - 31.16	4,881
Rural	29.61	1.45	26.77 - 32.46	3,152
Urban	26.86	1.60	23.71 - 30.00	1,729
Mainland	29.31	1.19	26.97 - 31.65	4,292
Dar es Salaam	30.20	2.56	25.17 - 35.24	742
Other Urban	26.02	2.13	21.84 - 30.21	850
Rural	29.92	1.48	27.01 - 32.83	2,700
Zanzibar	14.48	2.44	9.68 - 19.27	589
<b>Worried about not having enough food</b>				
Tanzania	34.55	1.33	31.93 - 37.16	3352
Rural	35.26	1.7	31.91 - 38.61	2096
Urban	32.83	1.94	29.01 - 36.65	1256
Mainland	35.04	1.37	32.35 - 37.73	2872
Dar es Salaam	32.93	2.49	28.02 - 37.83	552
Other Urban	33.76	2.9	28.05 - 39.46	544
Rural	35.67	1.74	32.26 - 39.09	1776
Zanzibar	18.91	2.96	13.09 - 24.74	480
<b>Negative changes in die</b>				
Tanzania	34.11	1.26	31.64 - 36.59	3350
Rural	34.98	1.59	31.85 - 38.11	2094
Urban	32.04	1.98	28.15 - 35.93	1257
Mainland	34.94	1.3	32.39 - 37.49	2870
Dar es Salaam	31.38	2.65	26.17 - 36.6	552
Other Urban	34.68	2.89	29 - 40.36	544
Rural	35.54	1.62	32.35 - 38.73	1774
Zanzibar	7.65	1.94	3.84 - 11.46	480
<b>Reduced food intake</b>				
Tanzania	31.23	1.34	28.6 - 33.86	3351
Rural	31.77	1.72	28.39 - 35.14	2095
Urban	29.94	1.95	26.11 - 33.78	1256
Mainland	31.63	1.38	28.92 - 34.34	2872
Dar es Salaam	27.55	2.36	22.9 - 32.2	552
Other Urban	32.06	2.96	26.24 - 37.89	544
Rural	32.13	1.75	28.69 - 35.57	1776
Rural	32.13	1.75	28.69 - 35.57	1776
Zanzibar	18.47	2.98	12.61 - 24.33	479

**FOOD SHORTAGES IN THE LAST 12 MONTHS, NPS2 AND NPS 3, CONFIDENCE INTERVALS**

	Estimate	Std. Error	[95% Confidence Interval]	No. of Observations
<b>NPS 2</b>				
Not enough food to eat (% population)				
Tanzania	20.57	0.81	18.99 - 22.16	3,846
Rural	21.36	0.98	19.44 - 23.28	2,583
Urban	18.32	1.49	15.39 - 21.25	1,263
Mainland	20.94	0.83	19.31 - 22.57	3,313
Dar es Salaam	18.64	1.90	14.91 - 22.37	626
Other Urban	18.77	1.92	14.99 - 22.55	634
Rural	21.73	1.01	19.75 - 23.72	2,053
Zanzibar	8.48	1.56	5.42 - 11.55	533
Months with food shortages (among those suffering from food shortages)				
Tanzania	3.37	0.10	3.16 - 3.57	710
Rural	3.25	0.11	3.04 - 3.47	499
Urban	3.74	0.23	3.27 - 4.20	211
Mainland	3.37	0.10	3.17 - 3.58	675
Dar es Salaam	4.57	0.36	3.87 - 5.28	118
Other Urban	3.44	0.28	2.89 - 3.99	116
Rural	3.25	0.11	3.03 - 3.47	441
Zanzibar	2.94	0.23	2.48 - 3.4	35
<b>NPS 3</b>				
Not enough food to eat (% population)				
Tanzania	42.59	1.29	40.05 - 45.13	4,878
Rural	45.76	1.56	42.70 - 48.82	3,151
Urban	33.81	1.88	30.11 - 37.50	1,727
Mainland	43.65	1.32	41.05 - 46.25	4,289
Dar es Salaam	36.32	2.49	31.42 - 31.42	741
Other Urban	34.42	2.73	29.06 - 39.77	849
Rural	46.66	1.58	43.55 - 49.78	2,699
Zanzibar	6.83	1.57	3.74 - 9.93	589
Months with food shortages (among those suffering from food shortages)				
Tanzania	3.70	0.08	3.54 - 3.85	1,744
Rural	3.63	0.94	3.45 - 3.81	1,197
Urban	3.95	0.14	3.67 - 4.23	547
Mainland	3.69	0.08	3.54 - 3.85	1,706
Dar es Salaam	4.80	0.24	4.33 - 5.27	258
Other Urban	3.45	0.16	3.13 - 3.76	283
Rural	3.62	0.94	3.44 - 3.81	1,165
Zanzibar	4.54	0.83	2.92 - 6.16	38
<b>NPS 4</b>				
Not enough food to eat (% population)				
Tanzania	42.10	1.33	39.48 - 44.71	3,350
Rural	45.23	1.70	41.87 - 48.58	2,094
Urban	34.59	2.01	30.65 - 38.54	1,256
Mainland	43.11	1.37	40.42 - 45.81	2,870
Dar es Salaam	30.11	2.72	24.77 - 35.45	552
Other Urban	39.50	2.92	33.76 - 45.23	544
Rural	45.96	1.74	42.54 - 49.37	1,774
Zanzibar	9.76	1.71	6.41 - 13.11	480
Months with food shortages (among those suffering from food shortages)				
Tanzania	3.42	0.08	3.26 - 3.59	1,235
Rural	3.37	0.10	3.18 - 3.55	848
Urban	3.61	0.18	3.26 - 3.96	387
Mainland	3.43	0.08	3.26 - 3.60	1,194
Dar es Salaam	3.89	0.28	3.33 - 4.44	156
Other Urban	3.51	0.23	3.06 - 3.96	211
Rural	3.37	0.10	3.18 - 3.56	827
Zanzibar	2.51	0.33	1.85 - 3.17	41

## Appendix C: Additional Tables

**Table C1: Proportion of Rural Households by Stratum According to Quarter of Interview**

	October-December 2008	January-March 2009	April-June 2009	July-September 2009	Total
Tanzania	71	69	53	59	63
Dar es Salaam	0	29	18	11	13
Other Urban	0	0	0	0	0
Rural	100	100	100	100	100
Zanzibar	100	100	0	0	50

**Table C2: NPS Sample Size by Round**

		NPS1	NPS2	NPS3	NPS4
Total	(a)	3,265	3,924	5,010	3,360
Excess NPS2 with respect to NPS1	(b1)	-	78	89	-
Excess NPS3 with respect to NPS2	(b2)	-	-	38	-
Sample for analysis	(c) = (a) - (b1) - (b2)	3,265	3,846	4,883	3,352

Note: Excess households refer to households excluded from the analysis because their current members do not include any household member from the previous round, that is, only non-household members were tracked.

## Persons involved in the 2014/15 National Panel Survey (NPS)

Survey Managers:	Dr. Albina Chuwa / Aldegunda Komba		
Survey Coordinator:	Emilian Karugendo		
Field Coordinator:	Mlemba Abassy		
Tracking Coordinator:	David Danda		
Assistant Data Manager:	George Mwiza		
Quality Control:	Jociline Rwehumbiza / Hellen Mtove / Sylvia Meku		
Supervisors	<b>North Team</b>		
Enumerators	Joseph Meela	<b>Central Team</b>	
	August Elias	Gideon Mokiwa	
	Grace Muta	Doris Kalumuna	
	Frank Mhando	Edes Mbelano	
	Hellen Hilary	Grace Wella	
	Rashid Kamwe	Wignus Mwangosi	
	Esmail Naftali	Peter Kapinga	
Data entrant	Done Jones	<b>South Team</b>	
Driver	Zuberi	Manfred Mlimanyika	
		Godfrey Mtoni	
Supervisors	<b>Lake Team</b>		
Enumerators	Sylvester Zenobius	<b>East Team</b>	
	Emmanuel Getorare	Peter Idana	
	Erick Kaoka	Colman Nyaki	
	Thomas Dennis	Humphrey Mwakajila	
	Muhsin Katabaro	Jamila Maumba	
	Piara John	Benjamin Tesha	
Data Entrant	David Ngirwa	<b>Dar es Salaam</b>	
Driver	Michael Madembwe	Augustino Mathew	
		Hamdani Mosha	
		Mary Nyinda	
		Amina Zidiheri	
		Judith Honest	
Enumerators		Albina Gabriel	
		Wende Safari	
		Rajab Kinanda	
Data Entrant	<b>Zanzibar</b>		
Driver	Joseph Mgongwa	<b>Tracking I</b>	
	Baraka Nyambelwa	Mariam Edmund	
Supervisor		Thomas Lukindo	
Enumerators		RukiaRajabu	
Data Entrant	<b>Tracking II</b>		
Driver	Ramadhan Ali Hassan	Robert Christian	
		Shomari Matewele	
Supervisor	Eliaranya Lema		
Enumerators	Samuel Mande		
Data Entrant	Judith Jacob		
Driver	Daniel Jimbuka		
	Maloba Kisanga		



## **National Bureau of Statistics**

18 Kivukoni Road

P.O. Box 796,

11992 Dar es Salaam.

Tel: +255 22 2122722/3

Fax: +255 22 2130852

Email: [dg@nbs.go.tz](mailto:dg@nbs.go.tz)

Website: [www.nbs.go.tz](http://www.nbs.go.tz)

Tanzania