

NATIONAL BUREAU OF STATISTICS

# Basic Information Document

National Panel Survey (NPS 2014-2015)

September, 2016

2014-2015

[UNITED REPUBLIC OF TANZANIA]

## ACRONYMS

CAFE		Computer Assisted Field Entry
DEFF		Design Effect
DFID	-	United Kingdom Department for International Development
DHS		Demographic and Health Survey
EA	-	Enumeration Area
FYDP		Five Year Development Plan
HBS	-	Household Budget Survey
HH	-	Household
HHID	-	Household Identification
ILFS	-	Integrated Labour Force Survey
ILO		International Labour Organization
ISIC	-	International Standard Industry Codes
JICA	-	Japan International Cooperation Agency
LSMS-ISA	-	Living Standards Measurement Study-Integrated Surveys on Agriculture
MCAT	-	Millennium Challenge Account Tanzania
MDG	-	Millennium Development Goal
MKUKUTA	-	National Strategy for Growth and Reduction of Poverty
MMMP	-	MKUKUTA Monitoring Master Plan
NBS	-	National Bureau of Statistics
NPS	-	National Panel Survey
NSCA	-	National Sample Census of Agriculture
PHC	-	Population and Housing Census
PSLE		Primary School Leaving Exam
SACCO	-	Savings and Credit Cooperative Organization
SE		Standard Error
TASCO	-	Tanzania Standard Classification of Occupation
UNFPA	-	United Nations Fund for Population Assistance
UNICEF	-	The United Nations Children's Fund
VEO	-	Village Executive Officer
WHO	-	World Health Organization

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## Background

The 2014/2015 Tanzania National Panel Survey (NPS) is the fourth round in a series of nationally representative household panel surveys that collect information on a wide range of topics including agricultural production, non-farm income generating activities, consumption expenditures, and a wealth of other socioeconomic characteristics. All four rounds of the NPS have been implemented by the Tanzania National Bureau of Statistics (NBS). The first round of the survey was conducted over twelve months, from October 2008 to September 2009. The main fieldwork of the second round of the NPS started in October 2010 and finished in September 2011, with specialized tracking teams remaining in the field until November 2011. Similarly, the duration and timing of the field work for the third round of NPS was from October 2012 to November 2013. Field work for the fourth round started in October 2014 and lasted until January 2016.

The main objective of the NPS is to provide high-quality household-level data to the Tanzanian government and other stakeholders for monitoring poverty dynamics, tracking the progress of the Five Year Development Plan (FYDP) II poverty reduction strategy<sup>1</sup> and its predecessor plans, and evaluating the impact of other major, national-level government policy initiatives. As an integrated survey covering a number of different socioeconomic factors, it compliments other more narrowly focused survey efforts, such as the Demographic and Health Survey (DHS) on health, the Integrated Labour Force Survey (ILFS) on labour markets, the Household Budget Survey (HBS) on expenditure, and the National Sample Census of Agriculture (NSCA). Secondly, as a panel household survey in which the same households are revisited over time, the NPS allows for the study of poverty and welfare transitions and the determinants of living standard changes.

The Tanzania NBS was advised on technical issues related to survey design and implementation by the NPS Technical Committee, which included representatives from line ministries, government agencies and development partners, such as the Ministry of Agriculture, Food Security and Cooperatives, Ministry of Finance, Millennium Challenge Account - Tanzania, World Bank, Department for International Development (DFID), United Nations International Children's Emergency Fund (UNICEF), United Nations Fund for Population Activities (UNFPA), and Japan International Cooperation Agency (JICA). The majority of funding for the fourth round of the NPS was provided by a grant from the European Commission. Additional complementary funding for targeted activities (including data entry, supervision, and tracking) and technical assistance has been provided by the World Bank through the Living Standards Measurement Study - Integrated Surveys on Agriculture [LSMS-ISA<sup>2</sup>] program.

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<sup>1</sup> The FYDP II began in 2016/17 and will finish in 2020/21, and has integrated the frameworks of predecessor strategies, FYDP I and the National Strategy for Growth and Reduction of Poverty (MKUKUTA). The plan is the government strategy to meet the Millennium Development Goals (MDG) and other national development goals, with a current focus on growth and transformation alongside a reduction in poverty.

<sup>2</sup> The LSMS is an ongoing research initiative within the Development Research Group of the World Bank with the goal of promoting and improving the collection of household level data in developing countries around the world. Further information can be found at [www.worldbank.org/lsmis](http://www.worldbank.org/lsmis). The LSMS-ISA project supports governments in eight Sub-Saharan African countries to generate nationally representative, household panel data with a strong focus on agriculture and rural development. Further information can be found at [www.worldbank.org/lsmis-isa](http://www.worldbank.org/lsmis-isa).

This document describes fundamental aspects of the NPS 2014/15, including the set of survey instruments, sample design, survey implementation, and the resulting data files.

## Survey Instruments

The fourth round of the NPS consists of four survey instruments: a Household Questionnaire, Agriculture Questionnaire, Livestock/Fishery Questionnaire, and a Community Questionnaire.

The Household Questionnaire is comprised of thematic sections. A detailed description of the contents of the questionnaire can be found in Table 1. This questionnaire allows for construction of a full consumption-based welfare measure, permitting distributional and incidence analysis. Data within this instrument are primarily structured at the household level, though data on education, health, labour, food consumption outside of household, subjective welfare, and anthropometry are collected at the individual level, lending to greater specificity on the characteristics making up household units. To protect the confidentiality of respondents, sensitive information has been masked in or removed from the public household data files.

### HOUSEHOLD QUESTIONNAIRE:

Section A:	Household Identification / Survey Staff Details
Section B:	Household Member Roster
Section C:	Education
Section D:	Health
Section E:	Labour
Section F:	Food Consumed Outside The Household
Section G:	Subjective Welfare and Crime
Section H:	Food Security
Section I:	Housing, Water, and Sanitation
Section J:	Consumption of Food Over Past One Week
Section K:	Non-Food Expenditures – One Week & One Month
Section L:	Non-Food Expenditures – Twelve Months
Section M:	Household Assets
Section N:	Family / Household Non-Farm Enterprises
Section O:	Assistance and Groups
Section P:	Credit
Section Q:	Finance
Section R:	Recent Shocks to Household
Section S:	Deaths in Household
Section U:	Household Re-contact Information / Filters
Section V:	Anthropometry

The NPS also includes a robust instrument on household agricultural activities. Given the importance of agriculture in the Tanzanian context and the commitment of the Tanzanian government to understanding and improving household agricultural activities, the NPS offers an essential data source to understand the dynamic role of agriculture to household welfare. Agriculture information is collected at both the plot and crop level on inputs, production, and sales,

consistent with key phases in the agricultural value chain. Table 2 provides a detailed description of the content included in the Agriculture Questionnaire.

### AGRICULTURE QUESTIONNAIRE:

Section A:	Household Identification / Survey Staff Details
Section 01:	Household Member Roster
Section 02:	Plot Roster
Section 03:	Plot Details
Section 04:	Annual Crops By Plot
Section 05:	Annual Crop Production and Sales
Section 06:	Permanent Crops By Plot
Section 07:	Permanent Crop Production and Sales
Section 10:	Processed Agricultural Products & By-Products
Section 11:	Farm Implements and Machinery
Section 12:	Extension

The NPS also recognizes the importance of livestock and fishery activities to many households in Tanzania. As with the integrated instrument on agriculture, the NPS contains a robust instrument to capture details on these activities. This questionnaire is administered to all NPS households participating in either of these activities and asks about the inputs, outputs, labour, and sales related to these activities. Table 3 provides a comprehensive list and description of the sections found within the Livestock & Fisheries Questionnaire.

#### **LIVESTOCK & FISHERIES QUESTIONNAIRE:**

Section A:	Household Identification / Survey Staff Details
Section 01:	Household Member Roster
Section 02:	Livestock Stock
Section 03:	Animal Health
Section 04:	Feed, Water, Housing, Breeding
Section 05:	Livestock Labour
Section 06:	Milk
Section 07:	Animal Power & Dung
Section 08:	Other Livestock Products
Section 09:	Fishery – Household Labour
Section 10:	Fishery – Hired Labour
Section 11:	Fishing Inputs
Section 12:	Fisheries Output
Section 13:	Fish Trading

The Community Questionnaire collects information on physical and economic infrastructure and events in surveyed communities<sup>3</sup>. Responses to the community questionnaire are provided through a group discussion among key informants within the community. Table 4 provides a detailed listing of sections found within the Community Questionnaire.

#### **COMMUNITY QUESTIONNAIRE:**

Section CA:	Community Identification/Survey Staff Details
Section CB:	Access to Basic Services
Section CC:	Investment Projects
Section CD:	Land Use
Section CE:	Demographics, Land, and Livestock
Section CF:	Market Prices
Section CG:	Local Units

Each of the NPS questionnaires were developed in collaboration with line ministries and donor partners, including the Technical Committee, over a period of several months. The NBS solicited feedback from various stakeholders in regards to survey content and design paying due consideration to comparability with previous panel rounds.

Piloting of the NPS 2014/2015 survey instruments took place in Morogoro the week prior to the main training, in August 2014. It is important to note that the same question and section numbers were maintained from NPS 2012/2013 for consistency across rounds. Thus, question numbers in the NPS 2014/2015 might be non-sequential at times because the questions in a section were not renumbered when questions were deleted from that section between the third and fourth round. Questions that were added in NPS 2014/2015 were given a letter suffix (i.e. 75a, 75b, etc.).

<sup>3</sup> Note that this is not a “community” in the sociological sense, but rather a mechanism to collect information about the areas where the households selected for the survey are located. In most rural areas, enumeration areas (EA) are defined by village boundaries and therefore community refers to the village. In urban areas the distinction is less clear, and occasionally single community questionnaires were administered to adjoining EAs. Therefore, the number of EAs and community questionnaires will not be identical.

## Sample Design

The NPS sample was refreshed for NPS 2014/2015. Longitudinal surveys tend to suffer from bias introduced by households leaving the survey over time (i.e. attrition). Although the NPS maintains a highly successful recapture rate (roughly 96% retention at the household level), minimizing the escalation of this selection bias, a refresh of longitudinal cohorts is typically done to ensure proper representativeness of estimates while maintaining a sufficient primary sample to maintain cohesion within panel analysis. Additionally, the refreshing of a longitudinal sample realigns the sample with any changes in administrative boundaries, demographic shifts, or updated population information. In the case of Tanzania, a newly completed Population and Housing Census (PHC) in 2012 providing updated population figures, along with changed in administrative boundaries, emboldened an opportunity to realign the NPS sample.

Similar to the sample in NPS 2008/2009, the sample design for the “Refresh Panel” allows analysis at four primary domains of inference, namely: Dar es Salaam, other urban areas on mainland Tanzania, rural mainland Tanzania, and Zanzibar.

The sample design is a stratified two-stage design. The design consists of 51 design strata (identified in the data as ‘strataid’) corresponding to a rural/urban designation for each of the 26 regions; however, Dar es Salaam is pure urban and therefore constitutes only one stratum. The allocation across the design strata was informed by the last round of the NPS and seeks to balance multiple survey objectives and maximize precision given survey parameters. The intended sample design consisted of a new selection of 3,360 households corresponding to 420 EAs from the latest PHC in 2012. During the survey, one selected EA was demolished and subsequently not interviewed. The resulting sample consists of 3,352 households across 419 EAs. This new cohort in NPS 2014/2015 will be maintained and tracked in all future rounds between national censuses.

A nationally representative sub-sample was selected to continue as part of an “Extended Panel”. This “Extended Panel” allowed general comparison of sample groups and monitoring indicator comparability. The “Extended Panel” is not included in the initial NPS 2014/2015 data release.

## Implementation

### *Preparations:*

The field team supervisors were trained for four days prior to the main enumerator training. The field staff was trained in Morogoro in September 2014 over a period of three weeks with enumerator and data entry training done concurrently. During a standard training week, four days were spent in classroom, and one day in field training. On each Saturday of the training month, the field staff was debriefed on the previous day’s field exercise and what they had learned over the previous week. Over the three week training period, the field staff spent one week on the Household Questionnaire, and a week and a half on the Agricultural Questionnaire, Livestock/Fishery Questionnaire, and tracking. The last three days of the training were devoted to field practice. Select households from an MCAT survey conducted in 2010 were revisited to provide the team supervisors practice with conducting tracking during fieldwork. After the pilots,

extensive discussion and revisions were conducted with the participation of all team supervisors.

Over the training period, three tests were administered to the field teams. The goal was to gain feedback from the training sessions and to select the enumerators. Overall, there were 55 enumerator candidates, with 48 being selected. Interviewer manuals were developed with detailed instructions for field staff during training and as the main reference guide for the survey over the course of the fieldwork. At the end of the training, the enumerators were each provided with an interviewer manual in Kiswahili.

#### *Field Work:*

The main data collection began in October 2014 and finished in October 2015, with tracking fieldwork continuing until the end of January 2016. The survey was primarily implemented by eight mobile field teams, each composed of: one supervisor, five or six enumerators, one data entry technician, and one driver. Seven mobile field teams were responsible for different regions on the mainland and one team was responsible for all of Zanzibar.

Field teams visited each cluster for three to four days. The questionnaires were administered to the selected households over the course of that time. This allowed the field team to make return visits to the household to complete the entire Household Questionnaire, Agriculture Questionnaire for farming households, and Livestock & Fisheries Questionnaire for households engaged in livestock or fisheries activities. To ensure the depth and quality of each section of the survey, the questionnaire was administered across multiple respondents to the most knowledgeable about each topic. For all of the sampled households, areas of all owned and/or cultivated agricultural plots were measured via GPS unless the household refused, the terrain was too difficult, or if the plot was more than one hour from the location of the household. Anthropometric measurements were taken for all individuals that were at home, not too ill, and willing to participate.

#### *Listing:*

When the field teams enter a new cluster, they listed all of the households within the boundaries of the EA. This consisted of collecting basic information on the households in the EA, including name of head of household, contact information, and size of household. After all the households in the EA had been listed, the information was then entered into a data entry program in CSPro. Total listing household counts were compared with previous census counts and when significant variation existed, listing accuracy was confirmed. After all the information has been entered, the application would then select with systematic random selection and report eight households in the EA to be interviewed by the team. The application additionally provided three randomly selected replacement households.

#### *Data Processing & Management:*

The NPS 2014/2015 contains a robust, multi-level quality assurance and data management system. Great effort was placed on the development and utilization of this system by the NBS, with technical assistance from the World Bank, to assist in the management of the complex household panel survey and address the growing need for high quality timely data.



The NPS utilizes a concurrent field entry system known as CAFE, or Computer Assisted Field Entry. This system was selected to increase the availability of data for review by managing staff as well as to provide regular and consistent quality assessment of data directly to the field staff. As with the earlier rounds, CSPro was used for data entry and initial quality reporting while STATA was utilized to perform complex aggregated checks. Building off of the work conducted for the NPS 2010/2011 and NPS 2012/2013, the NPS 2014/2015 data entry application further develops the quantity and complexity of data quality checking routines while simplifying reporting. Furthermore, due to the panel nature of the survey, where applicable and appropriate, data was checked against data from previous rounds.

As data entry took place while in the interview area, when data issues were identified and reported the field teams would return to households and clarify and correct inconsistent information prior to the transmission of the data to headquarters. Data files from completed clusters were transmitted to NBS headquarters via syncing to a server using 3G USB modems. Received data files were concatenated at the headquarters, and regular checks were performed to ensure the fieldwork was proceeding according to the schedule and that quality standards were met. During the course of field work, data was routinely checked at the aggregate level to identify any potential issues and, where identified, additional checks were integrated into the CAFE system.

Throughout the course of field work, the field teams regularly sent the paper questionnaires back to the NBS headquarters for further processing. Once the paper questionnaires and data files for completed EAs were received at NBS headquarters, a double-entry procedure was implemented. Six data entry operators were hired by NBS to perform the second data entry for the paper questionnaires into the CSPro-based data entry system for all questionnaires administered. A comparison between the entered values in the field based data entry and headquarters based data entry was conducted and any discrepancies in values between the two were flagged for manual inspection of the physical questionnaire and corrected. The application of the third level of data consistency validation further allowed for the assessment of the quality of the entry work performed by both the field entry staff and the headquarters based entry staff. Regular feedback was supplied to data entry staff resulting in improved quality where needed and overall efficiency.

Additional data cleaning was conducted as the final stage of the data processing. Further adjustment of the data post-entry was conducted under the principle of absolute certainty where adjustments must be evidence-based and correction values true beyond a reasonable doubt. As such, the resulting final data files may still contain some inconsistencies and outliers. Handling of these values is thus left entirely to the data user.

Throughout the data processing system, versions of the data are archived at all key steps and all checking and cleaning syntax documented and archived.<sup>4</sup>

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<sup>4</sup> Due to the presence of confidential information within the data files and the syntax used to process that data, this data and information will not be made available to the public.

## Weighting / Expansion Factors

The NPSY4 “Refresh Panel” sample was a stratified two-stage sample design. The sample was stratified along two dimensions: (i) 26 regions, and (ii) rural/urban designation within each region. The combination of these two dimensions yields 51 independent strata. The first stage of sampling involved the selection of survey clusters with the probability of selection proportional to cluster size within a stratum. Following a listing exercise, eight households were selected with systematic random selection. Additionally, three households were randomly selected within each EA in case of possible household non-response.

The expansion factors are Winsorized for the top 1 percentile and post-stratified to 2015 regional household projections. The NPS 2014/2015 household cluster weight, variable “y4\_weight”, has been integrated into Section A (“HH\_SEC\_A”) of the household data files. Additionally, unique identifiers for the first-stage sampling units, “clusterid”, and for the sampling strata, “strataid” can also be located in Section A of the household data files. The complex sample design must be taken into account to ensure proper calculation of standard errors.

## Data Set

The NPS 2014/2015 consists of several data files. Each data file pertains to a section of the questionnaire or a set of sections that are for the same level of observation. The complete lists of data files collected in the NPS 2014/15, as well as the unique identification variables for each section, are listed in Tables 1-4, with supplemental datasets listed in Table 5.

### *Unique Household Identifiers:*

Households are identified by a seven digit number in the NPS 2014/2015. All households in the new NPS 2014/2015 sample were given a unique four digit household identification number. Unlike previous rounds, the last three digits of the household identifier will be “001” for all households in the “Refresh Panel” as they are part of the new sample.

### *Merging between Round 4 data files:*

The unique household identifier is labeled “y4\_hhid” in the data files. When merging or linking data files, it is necessary to use at minimum the household identification variable (“y4\_hhid”), as well as the other unique identification variables pertinent to the data files being merged. All household level sections have been harmonized, regardless of a household’s or member’s qualification for the section, to provide a consistent number of observations in each data file across like units of observation.

Additional variables required to merge across sections depend on which two sections are being merged. For example, merging sections A and I (basic identification and household characteristics, respectively) require only the “y4\_hhid” variable as it is the single unique identifier in both data files. Merging sections B and C (roster information with education levels, respectively) requires merging on both the household identifier, “y4\_hhid”, and the individual’s ID, “indidy4”, from

round four<sup>5</sup>. This combination of variables will be unique in both the roster information and education data files, as only one person can have a particular roster number. Similar patterns will be found in other combinations of data files, such as the plot number “plotnum” and crop ID “zaocode” variables in the agricultural data files.

Merging a household data file with a community data file requires the unique combination of region, district, ward, and village. This geographical cluster combination is unique within the community data files (variables “id\_01”, “id\_02”, “id\_03”, “id\_04”, and “id\_05”), with each community questionnaire corresponding to multiple households in the household data files (variables “hh\_a01\_1”, “hh\_a02\_1”, “hh\_a03\_1”, “hh\_a03\_3a”, and “hh\_a04\_1”, respectively). Note that not all sample clusters have a corresponding community questionnaire. Particularly in urban areas, clusters within the same ward share the same administration and therefore community level information. In the NPS 2014/2015, there are three sample clusters that do not have individual level community information, but it should be considered to be the same as the EA within the same region, district, and ward in the data file.

## Obtaining Data

Data and background documentation for the NPS 2014/2015 is available free of charge on the Tanzania NBS website ([www.nbs.go.tz](http://www.nbs.go.tz)), as well as the World Bank LSMS-ISA website ([www.worldbank.org/lsms-isa](http://www.worldbank.org/lsms-isa)), and the World Bank Microdata Library ([microdata.worldbank.org](http://microdata.worldbank.org)). Inquiries pertaining to the data may be sent to the LSMS team at [lsms@worldbank.org](mailto:lsms@worldbank.org).

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<sup>5</sup> It is important to note that while the y4\_hhid variable is constructed using the NPS 2012/13 individual IDs for extended panel households, a separate individual identification number for each individual (old and new) is provided in round four.

## Table 1: Household Questionnaire

SECTION A: HOUSEHOLD IDENTIFICATION / SURVEY STAFF DETAILS			
<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_A
<b>Unique Identifier:</b>	y4_hhid	<b>Additional Info:</b>	
<p><b>Description:</b> Household location variables, unique within panel round household identification variables, date and time of interview, analytic weights, cluster identification, sampling strata identification, enumerator identification, supervisor identification, and data entry clerk identification.</p> <p><b>Key Notes:</b> All sensitive identifying variables, such as name of the village, the name of the household head, the name of the tracking target, the description of the household location, and the names of the interviewer, supervisor, and data entry operators have been removed from the disseminated version of this data file to preserve the confidentiality of the respondent.</p>			
SECTION B: HOUSEHOLD MEMBER ROSTER			
<b>Level of Observation:</b>	Individual	<b>Data File:</b>	HH_SEC_B
<b>Unique Identifier:</b>	y4_hhid, indidy4	<b>Additional Info:</b>	
<p><b>Description:</b> Roster of household members, individual characteristics including: sex, age, relationship to the household head, panel member identification, presence in household, general occupation, parental status, place of birth, marital status, and spouse identification.</p> <p><b>Key Notes:</b> The unique individual unique identifier is composed of the unique NPSY3 seven-digit household identification, <b>y4_hhid</b>, and the roster row individual identification number, <b>indidy4</b>.</p> <p>New members, previously absent in any panel household, are indicated by “99” in the hh_b06. Members in households belonging to new EAs will all have “99” in their hh_b06 as that household was not part of the NPSY3 sample. Where eligible NPSY2 household members were not located in the third round and subsequently interviewed in the NPSY4, their y3_hhid will be missing and their hh_b06 will indicate their NPSY2 row number plus 100.</p> <p>The respondent’s name (hh_b01) and date of birth (hh_b03_1, hh_b03_2), have been masked to protect respondent confidentiality. Age of children under 5 years in months can be found in the supplemental dataset, “NPSY4.CHILD.ANTHRO”.</p>			

## SECTION C: EDUCATION

<b>Level of Observation:</b>	Individual	<b>Data File:</b>	HH_SEC_C
<b>Unique Identifier:</b>	y4_hhid, indidy4	<b>Additional Info:</b>	(>= 5 years); Appendix C

### Description:

Educational enrollment and attainment; literacy, education history/level attainment, current enrollment, school characteristics, temporary absence, education examination (participation and score) and education expenditures.

### Key Notes:

Section is administered to members 5 years of age or older.

See Appendix D for additional terminology and information on changes to the Tanzanian educational system potentially affecting comparability of educational attainment of household members born before or around 1970.

## SECTION D: HEALTH

<b>Level of Observation:</b>	Individual	<b>Data File:</b>	HH_SEC_D
<b>Unique Identifier:</b>	y4_hhid, indidy4	<b>Additional Info:</b>	

### Description:

General health status and utilization of health services; source and financing of health treatments / hospitalization, disaggregated health expenditures, disability, bednet use, pregnancy, prenatal care and births, child health and ailments / diarrhea.

### Key Notes:

Respondents less than 12 years of age answer for themselves; else an informed respondent provides information.

Questions on disability were included in NPSY2 and NPSY4 but not in NPSY3.

Questions on pregnancy are asked only to women 14 through 49 years of age.

Question on child instance of diarrhea are asked for members less than 5 years of age.

## SECTION E: LABOUR

<b>Level of Observation:</b>	Individual	<b>Data File:</b>	HH_SEC_E
<b>Unique Identifier:</b>	y4_hhid, indidy4	<b>Additional Info:</b>	(>= 5 years); Appendix D; E

### Description:

Labour market participation; activities including unpaid apprenticeship, wage work, non-farm enterprise, and agricultural activity (including livestock and fishery activities) in the last seven days and in the last twelve months. Also includes unemployment and steps taken to find work, secondary activities, industry (TASCO) and occupation (ISIC) codes, wages earned, contract type, employer provide safety nets, and general domestic activities.

### Key Notes:

Section is administered to household members 5 years of age or older.

Recorded written descriptions of industry and occupation have been masked to protect respondent confidentiality. These text fields are removed for confidentiality purposes, as well as the text names of the employing companies.

## SECTION F: FOOD CONSUMED OUTSIDE THE HOUSEHOLD

<b>Level of Observation:</b>	Individual	<b>Data File:</b>	HH_SEC_F
<b>Unique Identifier:</b>	y4_hhid, indidy4	<b>Additional Info:</b>	Last 7 Days

### Description:

Value of food consumed outside the home during the last seven days.

**Key Notes:** None

## SECTION G: SUBJECTIVE WELFARE AND CRIME

<b>Level of Observation:</b>	Individual	<b>Data File:</b>	HH_SEC_G
<b>Unique Identifier:</b>	y4_hhid, indidy4	<b>Additional Info:</b>	(>=15 years)

### Description:

Self-reported level of satisfaction with health, financial status, housing, job, services, and safety. Also includes perceived status at present, and as of 2 years ago. This section also collects information about any crime that the household may have been a victim of in the past 12 months.

**Key Notes:** None

## SECTION H: FOOD SECURITY

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_H
<b>Unique Identifier:</b>	y4_hhid	<b>Additional Info:</b>	

### Description:

Information on the household's diet and food intake patterns, months of food insecurity, and distribution of food within the household.

**Key Notes:** None

## SECTION I: HOUSING, WATER, AND SANITATION

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_I
<b>Unique Identifier:</b>	y4_hhid	<b>Additional Info:</b>	

### Description:

Tenure status, rental expenditure, estimated rental value, dwelling maintenance and improvement expenditures, dwelling characteristics, including size, construction materials, toilet facilities and means of garbage disposal. Also includes, main type of cooking and lighting fuel, access to water /drinking water and time spent collecting water. The questions on water/drinking water are asked separately for the rainy and dry season.

### Key Notes:

Major source for the questions on water and sanitation was the set of harmonized questions on drinking-water and sanitation for household surveys developed by the WHO/UNICEF Joint Monitoring Program for Supply and Sanitation.

## SECTION J1: CONSUMPTION OF FOOD OVER THE PAST ONE WEEK

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_J1
<b>Unique Identifier:</b>	y4_hhid, itemcode	<b>Additional Info:</b>	Last 7 days

### Description:

Consumption of 60 key items/ item groups over the last 7 days. These 59 items/item groups are divided into twelve broader categories; “Cereals and Cereal Products”, “Starches, Sugars and Sweets”, “Pulses, Dry”, “Nuts and Seeds”, “Vegetables”, “Fruits”, “Meat, Meat Products, Fish”, “Milk and Milk Products”, Oils and Fats”, “Spices and Other Foods”, and “Beverages”. Quantity and value of consumed items from purchases, own-production and gifts are recorded. Additionally, an iodine test is performed to detect its presence in salt and corresponding parts per million is recorded.

### Key Notes:

Household data for the iodine may be found in the “HH\_FILTERS” data file.

Previous rounds of NPS had 59 items. In NPSY4, item code 108 (“wheat flour, barley grain and other cereals”) was split into two items: item code 1081 (“wheat flour”) and item code 1082 (“barley grain and other cereals”)

## SECTION J3: FREQUENCY OF CONSUMED ITEMS

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_J3
<b>Unique Identifier:</b>	y4_hhid, itemcode	<b>Additional Info:</b>	

### Description:

Number of days general food categories where consumed by the household in the last 7 days, includes: “Cereals, Grains and Cereal Products”, “Roots, Tubers, and Plantains”, Nuts and Pulses”, Vegetables”, Meat, Fish and Animal Products”, “Fruits” “Milk/Milk Products”, “Fats/Oils”, Sugar/Sugar Products/Honey”, and “Spices/Condiments”.

### Key Notes:

The categories/items composing the food categories in this section may differ from those in Section J1.

## SECTION J4: QUANTITY OF MEALS AND PEOPLE CONSUMING MEALS

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_J4
<b>Unique Identifier:</b>	y4_hhid, agecode	<b>Additional Info:</b>	Last 7 Days

### Description:

Number of people living outside of the household that shared meals within the household and then total number of meals shared over the last 7 days.

### Key Notes: None

## SECTION K: NON-FOOD EXPENDITURES – PAST ONE WEEK & ONE MONTH

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_K
<b>Unique Identifier:</b>	y4_hhid, itemcode	<b>Additional Info:</b>	Last 7 Days / Last 1 Month

### Description:

Total expenditure on non-food items during the last week or last month, including: public transportation, fuels, cellular phone credits, personal hygiene items, etc.

**Key Notes:** None

## SECTION L: NON-FOOD EXPENDITURES – PAST TWELVE MONTHS

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_L
<b>Unique Identifier:</b>	y4_hhid, itemcode	<b>Additional Info:</b>	Last 12 months

### Description:

Total expenditure on non-food items during the last 12 months, including: household items, community contributions, fees and fines, marriage costs, clothing, etc.

### Key Notes:

“Wood poles, bamboo” and “Grass for thatching roof or other use” are commonly consumed by households but not purchased. For these items, estimated total value is also recorded.

## SECTION M: HOUSEHOLD ASSETS

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_M
<b>Unique Identifier:</b>	y4_hhid, itemcode	<b>Additional Info:</b>	

### Description:

Quantity of key items owned by the household, age of item, purchase price, and current estimated value for items including, radio, telephones, appliances, furniture, cookware, vehicles, land, and agricultural tools.

### Key Notes:

Age of item, purchase price, and estimated value are new additions to the NPS assets section beginning in NPSY3.

Age of item, purchase price and estimated value of item were not solicited for all items. Refer to Household Questionnaire Section M for list of items with this restriction.



## SECTION N: FAMILY / HOUSEHOLD NON-FARM ENTERPRISES

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_N
<b>Unique Identifier:</b>	y4_hhid, entid	<b>Additional Info:</b>	

### Description:

Details on non-farm businesses operated by the household during the last 12 months, including type of product or service provided, household members involved with the enterprise, value of current stock, operation location, length of time the enterprise has been operating, income earned, profits, business operating costs etc.

### Key Notes:

Only households operating non-farm enterprises completed this module. Filter questions may be found in the “HH\_FILTERS” data file.

## SECTION 01: ASSISTANCE AND GROUPS

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_O1
<b>Unique Identifier:</b>	y4_hhid, itemcode	<b>Additional Info:</b>	

### Description:

Financial and in-kind assistance provided by both government and non-government institutions, including free food/maize distribution, food for work or cash for work programmes, inputs for work programmes, and school scholarships.

### Key Notes:

The names of the organizations have been masked to protect respondent confidentiality.

## SECTION 02: ASSISTANCE AND GROUPS

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_O2
<b>Unique Identifier:</b>	y4_hhid, personid	<b>Additional Info:</b>	

### Description:

Involvement in cooperative microfinance activities and financial details of membership, including contributions, withdrawal history, and repayment plans.

### Key Notes:

Names of household members have been masked for purposes of confidentiality.

The ‘personid’ identifier distinguishes each occurrence of group membership, but is not a link to other sections. Participating members in assistance groups can be linked to other sections using reported individual IDs (Q6 in HH\_SEC\_O1 and Q9 in HH\_SEC\_O2), which correspond to the “indidy4” variable in individual-level data files.

The filter for the second part can be found in the “Filters” data file.

## SECTION P: CREDIT

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_P
<b>Unique Identifier:</b>	y4_hhid, loancode	<b>Additional Info:</b>	

### Description:

Utilization of credit and loan institutions, including sources, amounts borrowed, and repayment plans.

### Key Notes:

The name of the lending institution is masked due to confidentiality purposes.

Only households that borrowed cash, goods, or services in the last 12 months completed this module. The filter question for this section is included in the “HH\_FILTERS” data file.

Individual characteristics can be linked with household members who utilized loan/credit sources using the reported individual ID in Q4.

## SECTION Q1: FINANCE

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_Q1
<b>Unique Identifier:</b>	y4_hhid	<b>Additional Info:</b>	

### Description:

Use of financial institutions and mobile-phone based money transfer services, income from rent or pensions, supplemental income sources, and banking history.

### Key Notes:

Names of banking institutions where households maintained accounts have been masked to protect respondent confidentiality.

## SECTION Q2: FINANCE

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_Q2
<b>Unique Identifier:</b>	y4_hhid, sourceid	<b>Additional Info:</b>	

### Description:

Remittances or financial assistance received in the last 12 months from sources residing in Tanzania or abroad, including socio-demographic characteristics of source, remittance channels, and use of cash/in-kind items.

### Key Notes:

The names of the sources have been masked to protect respondent confidentiality.

## SECTION R: RECENT SHOCKS TO HOUSEHOLD

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_R
<b>Unique Identifier:</b>	y3_hhid, shockid	<b>Additional Info:</b>	

### Description:

Severity ranking of 16 common shocks, such as “drought or floods”, “severe water shortage”, and “death of member of household”. More detailed information and coping strategies are asked of the three most severe shocks.

### Key Notes:

Shocks that consistently had very low level of occurrence in previous NPS rounds were removed from the list of shocks. Previous rounds of NPS had 19 shocks.

## SECTION S: DEATHS IN HOUSEHOLD

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_S
<b>Unique Identifier:</b>	y4_hhid, personid	<b>Additional Info:</b>	

### Description:

Deaths within the household, cause of death, duration of illness if applicable, and associated land or asset losses due to inheritance traditions.

### Key Notes:

The name of the deceased household member is excluded for confidentiality purposes.

## SECTION U1: HOUSEHOLD RE-CONTACT INFORMATION

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_U1
<b>Unique Identifier:</b>	y4_hhid	<b>Additional Info:</b>	

### Description:

Contact information for household, including GPS coordinates, phone numbers for household members, and two reference persons within and outside the community.

### Key Notes:

This information is not publicly available so as to ensure respondent confidentiality.

## SECTION U2: MODULE FILTER QUESTIONS

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_U2
<b>Unique Identifier:</b>	y4_hhid, itemcode	<b>Additional Info:</b>	

### Description:

Screening questions for the agriculture and livestock/fisheries questionnaires.

**Key Notes:** None

## SECTION V: ANTHROPOMETRY

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_SEC_V
<b>Unique Identifier:</b>	y4_hhid, indidy4	<b>Additional Info:</b>	

### Description:

Anthropometric information of household members under the age of 15 or women of child bearing age (15-49 years old) who were able and willing to participate, including height, weight, and upper arm circumference measurements.

### Key Notes:

Unlike in previous NPS rounds where this section was administered to all members, this section is administered to only members that were under the age of 15 or women of child bearing age (15-49 years old) in NPSY4; Upper arm circumference measurements are only obtained for children less than 5 years of age. An error was resolved during routine checks involving a skip pattern in question 8 ("Is [NAME] 5 years or younger?") - some enumerators incorrectly responded 'yes' only to when the household member was younger than 5 years old (rather than the member being 5 years or younger) and 'no' only to when the household member was 5 years old or older (rather than the member being older than 5 years). In aggregate, approximately 400 out of 8492 observations (4.7%) contained this error. This error, not attributed to any specific enumerator, is random and does not introduce any bias into the dataset.

## SECTION FILTERS: HOUSEHOLD FILTER QUESTIONS

<b>Level of Observation:</b>	Household	<b>Data File:</b>	HH_FILTERS
<b>Unique Identifier:</b>	y4_hhid	<b>Additional Info:</b>	

### Description:

Screening questions for household modules.

### Key Notes:

Includes: hh\_j07, hh\_j09, hh\_n01a, hh\_n01b, hh\_o08, hh\_p01, hh\_s01

## Table 2: Agriculture Questionnaire

All households that answered question 5 in Household Section U2 as “YES” should appear in this module. This means that a household cultivated plots, or owned plots that they did not cultivate in the last 12 months.

Please note that Section 8 for “Input Vouchers” and Section 9 “Outgrower Schemes” have been removed in the Agriculture questionnaire for NPSY4. However, the numbering of the sections in the questionnaire have remained the same for consistency across NPS rounds.

A sizable increase was observed for maize and paddy yields, measured in kilograms per hectare, between the NPS 2012/13 and NPS 2014/15. Investigations into a potential cause for the increase did not reveal any significant differences in plot area, soil quality, and use of improved farming practices (ie fertilizer use, irrigation, using improved seed variety). Additionally, FAOSTAT also note substantially higher yields for these staples crops in Tanzania for 2014 as compared to 2013.

### SECTION A: HOUSEHOLD IDENTIFICATION / SURVEY STAFF DETAILS

<b>Level of Observation:</b>	Household	<b>Data File:</b>	AG_SEC_A
<b>Unique Identifier:</b>	y4_hhid	<b>Additional Info:</b>	

#### Description:

Household location variables, unique within panel round household identification variables, date and time of interview, analytic weights, cluster identification, sampling strata identification, enumerator identification, supervisor identification, and data entry clerk identification.

#### Key Notes:

All sensitive identifying variables, such as name of the of the village, the name of the household head, the name of the tracking target, the description of the household location, and the names of the interviewer, supervisor, and data entry operators have been removed from the disseminated version of this data file to preserve the confidentiality of the respondent.

### SECTION 01: HOUSEHOLD MEMBER ROSTER

<b>Level of Observation:</b>	Individual	<b>Data File:</b>	AG_SEC_01
<b>Unique Identifier:</b>	y4_hhid,indidy4	<b>Additional Info:</b>	

#### Description:

Key roster information only, including name, age, sex of household members as well as which member is the key respondent for the agricultural questionnaire.

#### Key Notes:

The name of the respondent has been masked to protect respondent confidentiality.

## SECTION 2A/2B: PLOT ROSTER

<b>Level of Observation:</b>	Plot	<b>Data File:</b>	AG_SEC_2A/2B
<b>Unique Identifier:</b>	y4_hhid, plotnum	<b>Additional Info:</b>	

### Description:

Roster of all plots owned or cultivated by the household, including measurement information as calculated by GPS and farmer's estimate, GPS coordinates, weather conditions at measurement, and reason for missing GPS.

### Key Notes:

Identical questions are asked in sections "AG\_SEC\_2A" and "AG\_SEC\_2B"; however, 2A refers to plots owned or cultivated during the 2014 long rainy season, and 2B refers to the short rainy season (either 2013 or 2014, depending on date of questionnaire). There is a screening question on the bottom of page 4 (and included in the AG\_FILTERS data file) that indicates to which short rainy season the household is referring.

If applicable, the Round 3 plot ID of a Round 4 plot is recorded in question 5, in a similar fashion to the Question 6 in Household Module B which links a Round 4 member to Round 3. However, households have increasingly split and a great deal of movement has occurred between the last two rounds, so as a consequence Round 3 household identification numbers and Round 3 plot numbers are no longer unique identifiers for Round 4 plots. In a small number of "Extended Panel" cases it appears that the household has split in Round 4, but that both resulting households are reporting the same plot from Round 3 (possibly because they remain in close proximity to the original household, such as in the case of a child moving out). Further investigation showed that the cases fell into the following two categories: (1) the actual plot size splitting between the two Round 4 households, so that each household owns a smaller portion of the original plot but as the *entire* plot originated from the Round 3 plot a duplicate will exist, as well as (2) both Round 4 households reporting the entire plot on their plot roster. The amount of occurrences is negligible but should be noted as it will lead to imperfect merges between rounds.

The plot areas were measured using Garmin eTrex HC series GPS devices. The survey protocol indicates that all plots should be measured as long as they were with one hour's transportation (either on foot, by bicycle / motorbike, or, if possible, by vehicle) from the household. The only other acceptable reason for the plot not to be measure would be if the household refused.

The plot names, descriptions, and GPS coordinates are excluded for confidentiality reasons. A separate GIS dataset has been compiled using plot location information.

## SECTION 3A/3B: PLOT DETAILS

<b>Level of Observation:</b>	Plot	<b>Data File:</b>	AG_SEC_3A/3B
<b>Unique Identifier:</b>	y4_hhid, plotnum	<b>Additional Info:</b>	

### Description:

Detailed information on usage of plot, main cultivated crops, decision-makers in household, soil type and quality with a focus on erosion, sources of irrigation, ownership status of plot, rental value, usage patterns of fertilizers, and agricultural inputs obtained on credit. Household and hired labor for farming activities is also reported.

### Key Notes:

Identical questions are asked in "AG\_SEC\_3A" and "AG\_SEC\_3B", with the exception of Q75-85 which gather brief information on their rainy season counterpart's plot usage. Questions in 3A again refer to plots owned or cultivated during the 2014 long rainy season, while 3B refers to the last completed short rainy season.

The data file for 3A contains only those plots cultivated in the long rainy season, while 3B is a comprehensive set of both long and short rainy season plots.

## SECTION 4A/4B: ANNUAL CROPS BY PLOT

<b>Level of Observation:</b>	Plot-crop	<b>Data File:</b>	AG_SEC_4A/4B
<b>Unique Identifier:</b>	y4_hhid, plotnum, zaocode	<b>Additional Info:</b>	

### Description:

Crop planting patterns, intercropping, area and quantity harvested, associated losses, crop seeds purchased along with associated values, source and type of seed for all annual crops.

### Key Notes:

“AG\_SEC\_4A” is asked of the long rainy season in 2014, while “AG\_SEC\_4B” is asked of the most recent short rainy season (dependent on date of interview). This section should only include annual crops, but due to interviewer errors some permanent and fruit crops were also captured.

## SECTION 5A/5B: ANNUAL CROP PRODUCTION AND SALES

<b>Level of Observation:</b>	Crop	<b>Data File:</b>	AG_SEC_5A/5B
<b>Unique Identifier:</b>	y4_hhid, zaocode	<b>Additional Info:</b>	

### Description:

Questions on quantity of crops sold, value of sales, customers crops sold to, average distance that crops were transported to for sale, post-harvest losses, how crop residue was handled, method and duration for which crop was stored.

### Key Notes:

“AG\_SEC\_5A” is asked of the long rainy season in 2014, while “AG\_SEC\_5B” is asked of the most recent short rainy season (dependent on date of interview).

In some cases crops produced by the household were not represented in the list of response codes. In these cases crops were classified as “Other” with a corresponding code.

## SECTION 6A: FRUIT CROPS BY PLOT

<b>Level of Observation:</b>	Plot-crop	<b>Data File:</b>	AG_SEC_6A
<b>Unique Identifier:</b>	y4_hhid, plotnum, zaocode	<b>Additional Info:</b>	

### Description:

Number of fruit trees planted on the plot, when these were planted, presence of intercropping, quantity produced, loss before and after harvest, quantity sold, associated value and location sold, method and quantity of crop stored are asked in this section.

### Key Notes:

This section should include only fruit trees but due to a small number of interviewer errors, some fruits are included in Section 4 instead while some permanent crops are included in this section. Note that in the English version of the questionnaire, both peaches and plums appear twice in the crop listing. This is due to the fact that some fruits common in Tanzania have the same English translation, while the names are different in Swahili.

Note that this section should include only fruits but due to a small number of interviewer errors, some fruits are included in Section 4 instead and some permanent crops are also included in this section.

## SECTION 6B: PERMANENT CROPS BY PLOT

<b>Level of Observation:</b>	Plot-crop	<b>Data File:</b>	AG_SEC_6B
<b>Unique Identifier:</b>	y4_hhid, plotnum, zaocode, zaoname	<b>Additional Info:</b>	

### Description:

Number of permanent crops planted on the plot, when these were planted, how many were planted in the past 12 months, intercropping activities, quantity produced, losses before and after harvest, quantity sold, associated value and location sold, method and quantity of crop stored are asked in this section.

### Key Notes:

Questions in “AG\_SEC\_6A” and “AG\_SEC\_6B” are identical, however 6A is asked only of fruit trees while 6B is asked of permanent trees/crops. In the data, a number of crops within the plot share the following crop category codes (zaocode): “Firewood/fodder”, “Timber”, “Medicinal Plants”, “Fence Tree” and “Other.” Differentiation for these categories is preserved in the data file (zaoname) and the option to collapse on specific variables is left to the end user.

## SECTION 7A: FRUIT CROP PRODUCTION AND SALES

<b>Level of Observation:</b>	Crop	<b>Data File:</b>	AG_SEC_7A
<b>Unique Identifier:</b>	y4_hhid, zaocode	<b>Additional Info:</b>	

### Description:

Quantity of crop sold, associated value and location sold, post production losses and method and quantity of crop stored are included.

**Key Notes:** None

## SECTION 7B: PERMANENT CROP PRODUCTION AND SALES

<b>Level of Observation:</b>	Crop	<b>Data File:</b>	AG_SEC_7B
<b>Unique Identifier:</b>	y4_hhid, zaocode, zaoname	<b>Additional Info:</b>	

### Description:

Quantity of crop sold, associated value and location sold, post production losses and method and quantity of crop stored are included.

### Key Notes:

Similar to Section 5B, crop names are included to assist with the differentiation of duplicate reported crop categories as described above.

Although 7B was intended to be a direct continuation of Section 6B and therefore include all crops listed in 6B, crops that were used specifically for own consumption were often not reported. Consequently, Section 7B has fewer observations than what is reported in Section 6B.



## SECTION 10: PROCESSED AGRICULTURAL PRODUCTS AND BY-PRODUCTS

<b>Level of Observation:</b>	Input	<b>Data File:</b>	AG_SEC_10
<b>Unique Identifier:</b>	y4_hhid, zaocode, ag10_02_3, ag10_03	<b>Additional Info:</b>	

### Description:

Information on crops, by-product names and quantity produced, amount of crop used as input, quantity sold, associated prices and buyers and costs incurred due to labor/other inputs are included in this section.

### Key Notes:

As a household can have more than one by-product associated with the same crop it is necessary to use the following to uniquely identify observations: “y4\_hhid” to identify the household, “zaocode” to identify the crop, “ag10\_02\_3” to identify if the product was deliberately processed or produced as a by-product of another process, and “ag10\_03” to identify the product.

Crops listed in this section should have been harvested by the household, and therefore should also appear in Section 5 and Section 7. However, due to interviewer error, some of the crops found in this section (primarily maize) were most likely purchased instead of harvested, and therefore will not appear in Sections 5 and 7.

Only households processing products harvested on this module. The filter question for this section is included in the “AG\_FILTERS” data file.

## SECTION 11: FARM IMPLEMENTS AND MACHINERY

<b>Level of Observation:</b>	Input	<b>Data File:</b>	AG_SEC_11
<b>Unique Identifier:</b>	y4_hhid, itemid	<b>Additional Info:</b>	

### Description:

Detailed information on the number of farm implements and machinery used or owned by the household in the past 12 months along with associated value if sold, whether the item was used, reasons for no usage, whether any of these items were rented or borrowed for use in the last twelve months and associated rents paid.

**Key Notes:** None

## SECTION 12A: EXTENSION

<b>Level of Observation:</b>	Input	<b>Data File:</b>	AG_SEC_12A
<b>Unique Identifier:</b>	y4_hhid, sourceid	<b>Additional Info:</b>	

### Description:

Any extension services or advice that the household received for agricultural or livestock activities in the past 12 months through government extension, NGOs, Cooperative/Farmer’s Association, or Large Scale Farmers, including what activity advice was sought for, subjective rating for advice received, and price paid for receiving advice.

**Key Notes:** None

## SECTION 12B: EXTENSION

<b>Level of Observation:</b>	Input	<b>Data File:</b>	AG_SEC_12B
<b>Unique Identifier:</b>	y4_hhid, sourceid	<b>Additional Info:</b>	

### Description:

Any extension services or advice that the household received for agricultural or livestock activities in the past 12 months through government extension, NGOs, Cooperative/Farmer's Association, Large Scale Farmers, Radio/television, Publications or Neighbors including what activity advice was sought for, subjective rating for advice received, and price paid for receiving advice.

### Key Notes:

Note that in both data files in Section 12 (A and B), the variables to uniquely identify observations are "y3\_hhid" and "sourceid." However, these two variables are not equivalent and it is not possible to merge the two data files using these variables.

## SECTION NETWORK: NETWORK

<b>Level of Observation:</b>	Household	<b>Data File:</b>	AG_NETWORK
<b>Unique Identifier:</b>	y4_hhid, agnr_id	<b>Additional Info:</b>	

### Description:

Throughout the various sections of the agricultural questionnaire, there are questions that refer to persons outside the household that are involved in the agricultural process. Examples include landlords, suppliers of inputs, harvest purchasers, outgrower partners, etc. The network roster file contains the location and category of each of these persons.

### Key Notes:

The names have been removed for confidentiality reasons.

## SECTION FILTERS: AGRICULTURE FILTER QUESTIONS

<b>Level of Observation:</b>	Household	<b>Data File:</b>	AG_FILTERS
<b>Unique Identifier:</b>	y4_hhid	<b>Additional Info:</b>	

### Description:

Screening questions for agriculture modules.

### Key Notes:

Includes: ag2a\_01, ag2a\_11, ag2a\_12, ag10\_01

## Table 3: Livestock/Fisheries Questionnaire

This questionnaire is divided into two separate parts: Livestock (Section 2-8) and Fisheries (Section 9-13). All households that answered Question 9 in Section U2 as “yes” should appear in this module. Section 2-8 are administered only to households that were reported to have owned any animals in the last 12 months; and Sections 9-13 are administered only to households that have participated in fishing, fish farming or fish trading in the last 12 months. The entirety of this questionnaire would not be administered to a household unless that household participated in both livestock activities and fisheries activities in the last 12 months. Note that the cover page is not included in the dataset because they do not contain any additional information beyond what is included in the household questionnaire cover page.

Note that Section 2 and Sections 3-7 ask for information about a household’s livestock at different levels. Section 2 asks for information at the level of individual animal types (i.e. cows, chickens, etc.) while Sections 3-7 ask information at the broader level of aggregated animal types (i.e. large ruminants, small ruminants, etc.).

SECTION A: HOUSEHOLD IDENTIFICATION / SURVEY STAFF DETAILS			
<b>Level of Observation:</b>	Household	<b>Data File:</b>	LF_SEC_A
<b>Unique Identifier:</b>	y4_hhid	<b>Additional Info:</b>	
<b>Description:</b> Household location variables, unique within panel round household identification variables, date and time of interview, analytic weights, cluster identification, sampling strata identification, enumerator identification, supervisor identification, and data entry clerk identification.			
<b>Key Notes:</b> All sensitive identifying variables, such as name of the of the village, the name of the household head, the name of the tracking target, the description of the household location, and the names of the interviewer, supervisor, and data entry operators have been removed from the disseminated version of this data file to preserve the confidentiality of the respondent.			

  

SECTION 01: HOUSEHOLD MEMBER ROSTER			
<b>Level of Observation:</b>	Individual	<b>Data File:</b>	LF_SEC_01
<b>Unique Identifier:</b>	y4_hhid, indidy4	<b>Additional Info:</b>	
<b>Description:</b> Key roster information only, including name, age, sex of household members as well as which member is the key respondent for the agricultural questionnaire.			
<b>Key Notes:</b> The name of the respondent has been masked to protect respondent confidentiality.			

## SECTION 02: LIVESTOCK STOCK

<b>Level of Observation:</b>	Livestock	<b>Data File:</b>	LF_SEC_02
<b>Unique Identifier:</b>	y4_hhid, lvstckid	<b>Additional Info:</b>	

### Description:

For 16 animal categories, this section asks questions about the last 12 months on topics related to ownership, purchases, gifts received, diseases and animals lost because of them, thefts, sales and associated earnings, slaughtering and associated earning.

**Key Notes:** None

## SECTION 03: ANIMAL HEALTH

<b>Level of Observation:</b>	Livestock group	<b>Data File:</b>	LF_SEC_03
<b>Unique Identifier:</b>	y4_hhid, lvstckcat	<b>Additional Info:</b>	Appendix F

### Description:

Detailed information on the health of animals in the last 12 months related to diseases affecting the animals, vaccinations provided, de-worming treatments, preventative and treatment measures taken against tick borne diseases, and associated spending for any preventative and treatment measures.

### Key Notes:

Questions in this section are only asked of large and small ruminants, pigs and poultry. Additional information on main animal diseases for which vaccination is available in Appendix F.

## SECTION 04: FEED, WATER, HOUSING, BREEDING

<b>Level of Observation:</b>	Livestock group	<b>Data File:</b>	LF_SEC_04
<b>Unique Identifier:</b>	y4_hhid, lvstckcat	<b>Additional Info:</b>	Appendix G

### Description:

This section asks about fodder and water costs for the animals, type of housing used for the animals, and breeding strategies used by the household.

### Key Notes:

Questions in this section are only asked of large and small ruminants, pigs and poultry. Additional information on breeding strategies may be found in Appendix G.

## SECTION 05: LIVESTOCK LABOUR

<b>Level of Observation:</b>	Livestock group	<b>Data File:</b>	LF_SEC_05
<b>Unique Identifier:</b>	y4_hhid, lvstckcat	<b>Additional Info:</b>	

### Description:

This section gathers information about the household members responsible for activities associated with upkeep of animals, the months in which the household hired help (if any) to assist in the upkeep of animals, and any associated costs with hired labor.

### Key Notes:

Questions in this section are only asked of large and small ruminants.

## SECTION 6: MILK

<b>Level of Observation:</b>	Livestock group	<b>Data File:</b>	LF_SEC_06
<b>Unique Identifier:</b>	y4_hhid, lvstckcat	<b>Additional Info:</b>	

### Description:

This section asks about characteristics of milk production by the animals and the amount of milk produced that were consumed by the household, sold, or processed in the last 12 months.

**Key Notes:** None

## SECTION 7: ANIMAL POWER AND DUNG

<b>Level of Observation:</b>	Livestock group	<b>Data File:</b>	LF_SEC_07
<b>Unique Identifier:</b>	y4_hhid, lvstckcat	<b>Additional Info:</b>	

### Description:

Detailed information related to amount of dung produced by the animals, characteristics of the use of the dung, associated earnings from any sales of dung, and use of animals for transport or ploughing.

### Key Notes:

Questions in this section are only asked of large and small ruminants.

## SECTION 8: OTHER LIVESTOCK PRODUCTS

<b>Level of Observation:</b>	Product	<b>Data File:</b>	LF_SEC_08
<b>Unique Identifier:</b>	y4_hhid, itemcode	<b>Additional Info:</b>	

### Description:

Information is collected on livestock by-products, including the quantity produced, the quantity sold, value of sold goods, buyers of by product sold.

**Key Notes:** None

## SECTION 9: FISHERY – HOUSEHOLD LABOUR

<b>Level of Observation:</b>	Individual	<b>Data File:</b>	LF_SEC_09
<b>Unique Identifier:</b>	y4_hhid, indidy4	<b>Additional Info:</b>	

### Description:

For members that are listed as being involved in fishing in the last 12 months, questions on time spent fishing, time spent processing and time spent trading are recorded by number of weeks, days per week and hours per day.

### Key Notes:

The unique identifiers can be used to merge data from this section with the characteristics of the individual fisherman from the household section.

## SECTION 10: FISHERY – HIRED LABOUR

<b>Level of Observation:</b>	Labour input	<b>Data File:</b>	LF_SEC_10
<b>Unique Identifier:</b>	y4_hhid, rowid	<b>Additional Info:</b>	

### Description:

For hired labour, the number of fishing men, women and children and associated time investment is collected in addition to information on wages, share of boat catch and share of boat revenue.

**Key Notes:** None

## SECTION 11A: FISHING INPUTS

<b>Level of Observation:</b>	Gear	<b>Data File:</b>	LF_SEC_11A
<b>Unique Identifier:</b>	y4_hhid, gearid	<b>Additional Info:</b>	Appendix H

### Description:

Focuses on fishing input/gear and boats/engines used by any member of the household in the last 12 months and includes questions on the number of fishing gears operated, owned, purchased, rented and associated rental value for purchase.

### Key Notes:

Additional information on types of gear can be found in Appendix H.

## SECTION 11B: OTHER INPUTS

<b>Level of Observation:</b>	Input Expense	<b>Data File:</b>	LF_SEC_11B
<b>Unique Identifier:</b>	y4_hhid, inputid	<b>Additional Info:</b>	

### Description:

Information on all other costs associated with purchases during the last 12 months such as taxes, licenses, auction fees, wicks, rent for storage, transportation, buoys, thread for net sewing, beeswax/sealant, lubricant and chicken wire. The associated costs and units consumed are also included for each of these categories.

**Key Notes:** None

## SECTION 12: FISHERIES OUTPUT

<b>Level of Observation:</b>	Fish	<b>Data File:</b>	LF_SEC_12
<b>Unique Identifier:</b>	y4_hhid, fishid	<b>Additional Info:</b>	

### Description:

Information on the output of fishing activities in the last 12 months, including questions related to type of fish caught, area fished in, quantity caught, fish processing mechanisms, sales and in-house consumption. Approximately 20% of households indicate having caught another type of fish than those on the list.

### Key Notes:

The filter question for this section can be found in the “LF\_FILTERS” data file. The best effort has been made to categorize fish into groups, but due to the wide variation of local names for fish species across Tanzania, a large number of “others” remain.

### SECTION 13A: FISH TRADING

<b>Level of Observation:</b>	Fish	<b>Data File:</b>	LF_SEC_13A
<b>Unique Identifier:</b>	y4_hhid, fishcode	<b>Additional Info:</b>	

**Description:**

Detailed information on purchases and sales of fish by the household, including questions on type of fish sold, average sales per week, and quantity of fish purchased from other sources.

**Key Notes:**

This section is only administered to those household members that were engaged in fish trading in the last 12 months. The filter question for this section can be found in the “LF\_FILTERS” data file.

### SECTION 13B: FISH TRADING

<b>Level of Observation:</b>	Cost	<b>Data File:</b>	LF_SEC_13B
<b>Unique Identifier:</b>	y4_hhid, costcode	<b>Additional Info:</b>	

**Description:**

Costs associated with the fish trading are collected in this section, including amount spent by household on hired labour, transport, packaging, ice, and taxes.

**Key Notes:**

The screening question for this section can be found in the “LF\_FILTERS” data file.

### SECTION NETWORK: NETWORK

<b>Level of Observation:</b>	Household	<b>Data File:</b>	LF_NETWORK
<b>Unique Identifier:</b>	y4_hhid, lfnr_id	<b>Additional Info:</b>	

**Description:**

This section captures persons outside the household involved in the livestock and/or fisheries related activities of the household.

**Key Notes:**

Note that persons appearing on the agriculture network roster will be identified with the prefix “N” while persons from the livestock/fisheries network roster will be identified by the prefix “LF.” The names have been removed for confidentiality reasons.

### SECTION FILTERS: LIVESTOCK/FISHERIES FILTER QUESTIONS

<b>Level of Observation:</b>	Household	<b>Data File:</b>	LF_FILTERS
<b>Unique Identifier:</b>	y4_hhid	<b>Additional Info:</b>	

**Description:**

Screening questions for livestock/fisheries modules.

**Key Notes:**

Includes: lf08\_09, lf09\_01, lf12\_01, lf12\_15, lf13\_01

## Table 4: Community Questionnaire

For the purposes of this survey, a “community” is defined as the village in rural areas and the mtaa in which the cluster is located in urban areas. The community questionnaire was administered to a group of local leaders determined by the field supervisors. In general, in rural areas this group included the ward executive officer, village chairperson and the village executive officer (VEO), as well as other members from the village council. In urban areas the group included the ward executive officer, mtaa chairperson and possibly other local leaders.

SECTION A1/A2: COMMUNITY IDENTIFICATION / SURVEY STAFF DETAILS			
<b>Level of Observation:</b>	Community	<b>Data File:</b>	COM_SEC_A1A2
<b>Unique Identifier:</b>	id_01, id_02, id_03, id_04	<b>Additional Info:</b>	
<b>Description:</b> Community identification information including region, district, ward, regional capital identifier, location of market price information, and enumeration area, as well as survey staff information such as interviewers ID code, supervisor, and direct observation questions.			
<b>Key Notes:</b> Sensitive identifying variables, such as name of village, GPS coordinates, and the names of the interviewer, supervisor, and data entry operators have been removed from the disseminated version of this data file to preserve confidentiality.			
SECTION CB: ACCESS TO BASIC SERVICES			
<b>Level of Observation:</b>	Community	<b>Data File:</b>	COM_SEC_CB
<b>Unique Identifier:</b>	y4_cluster, cboa	<b>Additional Info:</b>	
<b>Description:</b> Information on access to basic services in terms of distance and associated transportation costs for these services.			
<b>Key Notes:</b> Names of services/institutions have been dropped from the public data file to preserve confidentiality.			
SECTION CC: INVESTMENT PROJECTS			
<b>Level of Observation:</b>	Community	<b>Data File:</b>	COM_SEC_CC
<b>Unique Identifier:</b>	y4_cluster, cc0a	<b>Additional Info:</b>	
<b>Description:</b> Sources of funds and associated amounts for recent construction projects such as road construction/maintenance, market construction/maintenance, water supply such as wells and pumps, school construction and maintenance at pre-primary, primary and secondary levels, health and veterinary services, irrigation schemes and grain storages.			
<b>Key Notes:</b> None			



## SECTION CD: LAND USE

**Level of Observation:** Community  
**Unique Identifier:** y4\_cluster

**Data File:** COM\_SEC\_CD  
**Additional Info:**

### Description:

Land use related issues with estimated percentages of how different types of village land are used (cultivation, forest, pasture, wetland, residential, business), as well as reasons for re-allocation of land (if any), number of households affected, and associated compensation.

### Key Notes:

This section contains a fairly high percentage of missing values as sometimes key informants did not know all the information asked in the questionnaire.

## SECTION CE: DEMOGRAPHICS, LAND, AND LIVESTOCK

**Level of Observation:** Community  
**Unique Identifier:** y4\_cluster

**Data File:** COM\_SEC\_CE  
**Additional Info:**

### Description:

Participants utilizing SACCOs and other farmer cooperative groups, activities undertaken by cooperatives, the timing and quantity of the masika and vuli rainy seasons, detailed information on maize seed suppliers and sales, and the migration patterns of community members due to livestock activities.

### Key Notes:

The name of the nearest supplier of improved maize seeds has been dropped for confidentiality purposes.

## SECTION CF: MARKET PRICES

<b>Level of Observation:</b>	Community	<b>Data File:</b>	COM_SEC_CF
<b>Unique Identifier:</b>	y4_cluster, itemid	<b>Additional Info:</b>	

### Description:

Market prices for the surveyed communities, reported for both the village level and the district capital area.

### Key Notes:

If district prices were already recorded in another community questionnaire, the cluster ID of that questionnaire is entered at the top of the market prices table and district prices are skipped. The regional capital identifier and the location at which the prices were gathered are included in the Section CA data file.

For non-food items kerosene, charcoal and maize grinding costs, the first digits of the item id were replaced with 2 (i.e. 2201 instead of 0201 for kerosene) For matches and cigarettes, the second digits of the itemid were replaced with 1 (i.e. 2102 in lieu of 2002 for matches) Firewood and Batteries were given new item codes 9001 and 9002, respectively.

The name of the item must be included in the unique identifier as food item IDs are taken directly from the consumption module and sometimes group items together (i.e. code 601 is “Onions, tomatoes, carrots, green peppers, other viungo”) while in Section CF each item is individually identified (item\_name) and priced, though it remains under the collective consumption code (itemid). For unique identification of individual items under the same collective consumption code (itemid), an additional digit was added to this code. For example, for Millet (flour) and Sorghum (flour) under the same itemid of 0107, the new itemid’s are 01071 and 01072, respectively.

The GPS coordinates are removed for confidentiality purposes.

## SECTION CG: LOCAL UNITS

<b>Level of Observation:</b>	Community	<b>Data File:</b>	COM_SEC.CG
<b>Unique Identifier:</b>	y4_cluster, item_code, item_name, item_num	<b>Additional Info:</b>	

### Description:

Records the local units used for certain items in the surveyed communities. Similar to Section CF, the information is collected both at the village level and the district capital area. The kilogram or liter equivalent for the local units is collected, in addition to the price of the item in that local unit.

### Key Notes:

The unique identifier is a combination of the community location variables plus the food item code, food item name, and food item number. This is necessary as each food item (item\_code) is allowed up to three separate responses of local units (item\_num), in addition to the combined food items per consumption code similar to the occurrences described above (i.e. cooking bananas and irish potatoes are both code 205).

**Table 5: Supplemental Data Files**

<b>SECTION CONS4: HOUSEHOLD CONSUMPTION AGGREGATE</b>	
<b>Level of Observation:</b>	Household
<b>Unique Identifier:</b>	y4_hhid
<b>Data File:</b>	TZY4.HH.Consumption
<b>Additional Info:</b>	Appendix C
<p><b>Description:</b> Household consumption aggregates from NPS 2014/15.</p> <p><b>Key Notes:</b> None</p>	
<b>SECTION GEO: HOUSEHOLD GEOSPATIAL VARIABLES</b>	
<b>Level of Observation:</b>	Household
<b>Unique Identifier:</b>	y4_hhid
<b>Data File:</b>	NPSY4.EA.OFFSET
<b>Additional Info:</b>	Appendix B
<p><b>Description:</b> Geospatial variables including offset EA latitudes and longitudes for households in the NPS 2014/15.</p> <p><b>Key Notes:</b> Geospatial variables specific to individual households and communities are not publically available to protect the confidentiality of respondents. Users should take into account the offset range when considering different types of spatial analysis or queries with the data, as calculations varied depending on distance.</p>	
<b>SECTION ANTHRO: ANTHROPOMETRIC INDICATORS</b>	
<b>Level of Observation:</b>	Individual
<b>Unique Identifier:</b>	y4_hhid, indidy4
<b>Data File:</b>	NPSY4.CHILD.ANTHRO
<b>Additional Info:</b>	Appendix K
<p><b>Description:</b> A dataset containing Z-scores for the anthropometric indicators “weight-for-age”, “height-for-age”, and “weight-for-height”. A binary variable indicating severity of malnourishment (&lt;-2 SDs) is also provided for each indicator.</p> <p><b>Key Notes:</b> The unique individual identifier is composed of the unique NPSY4 seven-digit household identification, <b>y4_hhid</b>, and the roster row individual identification number, <b>indidy4</b>. This is the same unique individual identifier combination that exists in the individual-level household datas files.</p> <p>While physical body measurements were collected in section “HH_SEC_V” for all household members under 15 and women of child-bearing age (15-49 years), Z-scores for anthropometric indices are only provided for children 0-59 months.</p> <p>See Appendix K for a detailed description of calculation and application of anthropometric indices.</p>	

## Appendix A: Estimates of Sampling Errors

The sample of households selected in the NPS 2014/2015 is only one of many samples that could have been selected from the same population. Each alternative sample would yield slightly different from the results of the selected sample. Sampling errors are a measure of the variability between all possible samples and although the degree of variability cannot be directly observed, it can be estimated from the survey results and statistically evaluated. A sampling error can be measured in terms of the standard error for a particular statistic.

The computer software program STATA used *estat effects* to calculate sampling errors for the NPS 2014/2015. In addition to the standard error, STATA computed the design effect (DEFF) for each estimate, which is defined as the ratio between the standard error using the given sample design and the standard error that would result if a simple random sample had been used. A DEFF value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a value greater than 1.0 indicates the increase in the sampling error is due to the use of a more complex and less statistically efficient (but perhaps more logistically efficient) design. STATA also computed the relative error and confidence limits for the estimates.

Sampling errors for the NPS 2014/2015 are calculated for selected variables considered to be of primary interest at the household and individual levels. The results are presented in this Appendix at the national level and for each of the four primary domains of inference, namely: Dar es Salaam, other urban areas on mainland Tanzania, rural mainland Tanzania, and Zanzibar. For each variable of interest, the value of the statistic (R), its standard error (SE), the number of cases, the design effect (DEFF), the relative standard error (SE/R), and the 95 percent confidence limits ( $R \pm 2SE$ ) are provided in Tables 1-10 below. The DEFF is considered undefined when the standard error in a simple random sample is zero (when the estimate is close to 0 or 1).

Table 1. Sampling errors for **National** sample, Tanzania NPS 2014/15 – Household level

Indicator	Value	Standard Error	Number of Cases	Design Effect	Relative Standard Error	Confidence Limits	
	R	SE	N	DEFF	SE/R	R-2SE	R+2SE
<i>Food Security</i>							
Worried there was not enough food, past 7 days	0.3479	0.0114	3352	1.9093	0.0327	0.3256	0.3701
Number of meals taken per day, by all members	2.7082	0.0126	3352	2.3127	0.0047	2.6834	2.7329
Number of meals taken per day, by children	3.7611	0.0455	1748	1.2318	0.0121	3.6720	3.8502
Not enough food to feed household, 12 months	0.4100	0.0110	3350	1.6795	0.0269	0.3884	0.4316
<i>Housing, Water, and Sanitation</i>							
Monthly rent for dwelling	34149	2212	739	2.2605	0.0648	29814	38485
Wall material - Baked/burnt bricks	0.2507	0.0147	3352	3.8774	0.0588	0.2218	0.2796
Wall material - Concrete, cement, stones	0.2429	0.0098	3352	1.7609	0.0405	0.2236	0.2621
Wall material - Mud bricks	0.2431	0.0138	3352	3.4436	0.0566	0.2161	0.2700
Wall material - Poles and Mud/Mud and Stones	0.1890	0.0120	3352	3.1457	0.0635	0.1655	0.2125
Roof material - Grass, leaves, bamboo	0.2143	0.0124	3352	3.0505	0.0578	0.1901	0.2386
Roof material - Metal sheets (GCI)	0.7415	0.0150	3352	3.9191	0.0202	0.7121	0.7708
Floor material - Concrete, cement, tiles, timber	0.4461	0.0148	3352	2.9505	0.0331	0.4172	0.4750
Floor material - Earth	0.5532	0.0147	3352	2.9347	0.0266	0.5244	0.5820
Toilet - Flush Toilet	0.1694	0.0104	3352	2.5553	0.0611	0.1491	0.1897
Toilet - No Toilet	0.1292	0.0110	3352	3.6296	0.0854	0.1076	0.1509
Toilet - Pit Latrine w/Slab (Not Washable)	0.1073	0.0068	3352	1.6109	0.0632	0.0940	0.1206
Toilet - Pit Latrine w/Slab (Washable)	0.1282	0.0074	3352	1.6589	0.0580	0.1136	0.1428
Toilet - Pit Latrine w/out Slab/Open Pit	0.4134	0.0121	3352	2.0275	0.0293	0.3896	0.4371
Cooking Fuel - Charcoal	0.2810	0.0122	3352	2.4493	0.0432	0.2572	0.3049
Cooking Fuel - Firewood	0.6531	0.0139	3352	2.8585	0.0213	0.6258	0.6803
Cooking Fuel - Other <sup>6</sup>	0.0659	0.0054	3352	1.5781	0.0817	0.0553	0.0764
Lighting Fuel - Electricity	0.2353	0.0135	3352	3.3881	0.0573	0.2089	0.2618
Lighting Fuel - Lamp Oil	0.2670	0.0128	3352	2.8118	0.0480	0.2418	0.2921
Lighting Fuel - Solar	0.1031	0.0073	3352	1.9546	0.0712	0.0887	0.1175
Lighting Fuel - Torch	0.3579	0.0139	3352	2.7976	0.0387	0.3308	0.3851
Lighting Fuel - Lamp Oil	0.2670	0.0128	3352	2.8118	0.0480	0.2418	0.2921
Access to safe drinking water <sup>7</sup> (rainy season)	0.4432	0.0191	3342	4.9202	0.0430	0.4058	0.4805
Access to safe drinking water (dry season)	0.5486	0.0206	3337	5.6931	0.0375	0.5083	0.5889
Basic sanitation facilities (toilet) <sup>8</sup>	0.8636	0.0115	3135	3.5210	0.0133	0.8411	0.8861
Decent household (MMMP standards) <sup>9</sup>	0.4093	0.0142	3281	2.7334	0.0347	0.3815	0.4371
<i>Consumption</i>							
Per capita consumption	93896	1914	3344	1.8555	0.0204	90143	97649
Total consumption, annual, nominal	3953796	83631.74	3344	2.0191	0.0212	3789881	4117711

<sup>6</sup> Other cooking fuel sources include paraffin, electricity, gas, animal residue, and biogas.

<sup>7</sup> Access to safe drinking water in the NPS is defined as the main source of drinking water coming from piped water, turnwell/borehole, protected dug well, or bottled water.

<sup>8</sup> Basic sanitation facilities in the NPS include flush or pour toilets, ventilated pit latrines, or simple pit latrines. The WHO/UNICEF JMP defines an improved sanitation facility as one that hygienically separates human excreta from human contact.

<sup>9</sup> The Monitoring Master Plan (MMMP), the framework for monitoring issues defined by the National Strategy for Growth and Poverty Reduction (MKUKUTA), defines a decent household as one with brick walls, cement floors, and a roof that is timber, tile, or corrugated iron.

Table 2. Sampling errors for **Dar es Salaam** sample, Tanzania NPS 2014/15 – Household level

Indicator	Value	Standard Error	Number of Cases	Design Effect	Relative Standard Error	Confidence Limits	
	R	SE	N	DEFF	SE/R	R-2SE	R+2SE
<i>Food Security</i>							
Worried there was not enough food, past 7 days	0.3348	0.0195	552	0.7258	0.0582	0.2966	0.3730
Number of meals taken per day, by all members	2.8571	0.0191	552	1.0579	0.0067	2.8197	2.8945
Number of meals taken per day, by children	4.1712	0.0995	205	0.8598	0.0239	3.9762	4.3662
Not enough food to feed household, 12 months	0.2895	0.0214	552	0.9470	0.0738	0.2476	0.3314
<i>Housing, Water, and Sanitation</i>							
Monthly rent for dwelling	51007	4625	320	2.0506	0.0907	41942	60073
Wall material - Baked/burnt bricks	0.0012	0.0012	552	0.5007	1.0000	0.0000	0.0034
Wall material - Concrete, cement, stones	0.9739	0.0091	552	1.3753	0.0093	0.9561	0.9916
Wall material - Mud bricks	0.0081	0.0041	552	0.8954	0.5086	0.0000	0.0161
Wall material - Poles and Mud/Mud and Stones	0.0097	0.0043	552	0.8243	0.4438	0.0013	0.0182
Roof material - Grass, leaves, bamboo	0.0035	0.0035	552	1.5057	1.0000	0.0000	0.0103
Roof material - Metal sheets (GCI)	0.9627	0.0132	552	2.0635	0.0137	0.9369	0.9886
Floor material - Concrete, cement, tiles, timber	0.9604	0.0098	552	1.0797	0.0102	0.9412	0.9797
Floor material - Earth	0.0396	0.0098	552	1.0797	0.2479	0.0203	0.0588
Toilet - Flush Toilet	0.3205	0.0209	552	0.8567	0.0653	0.2795	0.3615
Toilet - No Toilet	0.0100	0.0045	552	0.8574	0.4459	0.0013	0.0188
Toilet - Pit Latrine w/Slab (Not Washable)	0.2712	0.0195	552	0.8175	0.0718	0.2331	0.3094
Toilet - Pit Latrine w/Slab (Washable)	0.0564	0.0114	552	1.0482	0.2028	0.0340	0.0788
Toilet - Pit Latrine w/out Slab/Open Pit	0.2111	0.0211	552	1.1367	0.0998	0.1698	0.2524
Cooking Fuel - Charcoal	0.7411	0.0219	552	1.0664	0.0296	0.6982	0.7840
Cooking Fuel - Firewood	0.0456	0.0145	552	2.0703	0.3187	0.0171	0.0741
Cooking Fuel - Other <sup>10</sup>	0.2133	0.0211	552	1.1297	0.0989	0.1719	0.2546
Lighting Fuel - Electricity	0.6142	0.0419	552	3.1659	0.0683	0.5320	0.6964
Lighting Fuel - Lamp Oil	0.1625	0.0219	552	1.5085	0.1350	0.1195	0.2055
Lighting Fuel - Solar	0.0601	0.0172	552	2.2301	0.2860	0.0264	0.0938
Lighting Fuel - Torch	0.1177	0.0168	552	1.1626	0.1429	0.0848	0.1507
Access to safe drinking water <sup>11</sup> (rainy season)	0.6586	0.0374	550	2.6454	0.0568	0.5853	0.7319
Access to safe drinking water (dry season)	0.8178	0.0340	549	3.2952	0.0416	0.7512	0.8845
Basic sanitation facilities (toilet) <sup>12</sup>	0.9885	0.0051	474	0.8373	0.0052	0.9785	0.9985
Decent household (MMMP standards) <sup>13</sup>	0.9528	0.0114	527	1.1897	0.0120	0.9305	0.9752
<i>Consumption</i>							
Per capita consumption	184422	7239	552	1.6394	0.0393	170233	198610
Total consumption, annual, nominal	7038805	338965	552	1.8092	0.0482	6374446	7703164

<sup>10</sup> Other cooking fuel sources include paraffin, electricity, gas, animal residue, and biogas.

<sup>11</sup> Access to safe drinking water in the NPS is defined as the main source of drinking water coming from piped water, turnwell/borehole, protected dug well, or bottled water.

<sup>12</sup> Basic sanitation facilities in the NPS include flush or pour toilets, ventilated pit latrines, or simple pit latrines. The WHO/UNICEF JMP defines an improved sanitation facility as one that hygienically separates human excreta from human contact.

<sup>13</sup> The Monitoring Master Plan (MMMP), the framework for monitoring issues defined by the National Strategy for Growth and Poverty Reduction (MKUKUTA), defines a decent household as one with brick walls, cement floors, and a roof that is timber, tile, or corrugated iron.

Table 3. Sampling errors for **Other Urban** sample, Tanzania NPS 2014/15 – Household level

Indicator	Value	Standard Error	Number of Cases	Design Effect	Relative Standard Error	Confidence Limits	
	R	SE	N	DEFF	SE/R	R-2SE	R+2SE
<i>Food Security</i>							
Worried there was not enough food, past 7 days	0.3328	0.0254	544	1.9610	0.0763	0.2830	0.3826
Number of meals taken per day, by all members	2.7879	0.0264	544	2.3034	0.0095	2.7362	2.8396
Number of meals taken per day, by children	3.8249	0.1008	244	1.5589	0.0264	3.6273	4.0225
Not enough food to feed household, 12 months	0.3779	0.0273	544	2.1330	0.0721	0.3245	0.4313
<i>Housing, Water, and Sanitation</i>							
Monthly rent for dwelling	32336	3725	256	3.5350	0.1152	25034.74	39638
Wall material - Baked/burnt bricks	0.2808	0.0301	544	3.0261	0.1071	0.2219	0.3398
Wall material - Concrete, cement, stones	0.3746	0.0345	544	3.4267	0.0920	0.3070	0.4422
Wall material - Mud bricks	0.2104	0.0289	544	3.4053	0.1376	0.1537	0.2672
Wall material - Poles and Mud/Mud and Stones	0.0923	0.0273	544	6.0099	0.2959	0.0388	0.1458
Roof material - Grass, leaves, bamboo	0.0531	0.0289	544	11.1986	0.5440	0.0000	0.1096
Roof material - Metal sheets (GCI)	0.9120	0.0360	544	10.8925	0.0395	0.8415	0.9825
Floor material - Concrete, cement, tiles, timber	0.7459	0.0381	544	5.1729	0.0511	0.6712	0.8206
Floor material - Earth	0.2518	0.0378	544	5.1285	0.1502	0.1777	0.3260
Toilet - Flush Toilet	0.3875	0.0349	544	3.4596	0.0900	0.3192	0.4559
Toilet - No Toilet	0.0354	0.0266	544	13.9528	0.7502	0.0000	0.0875
Toilet - Pit Latrine w/Slab (Not Washable)	0.1355	0.0217	544	2.7233	0.1604	0.0929	0.1781
Toilet - Pit Latrine w/Slab (Washable)	0.0823	0.0146	544	1.9078	0.1775	0.0537	0.1109
Toilet - Pit Latrine w/out Slab/Open Pit	0.2215	0.0282	544	3.1041	0.1271	0.1663	0.2767
Cooking Fuel - Charcoal	1.7161	0.1545	544	2.4702	0.0900	1.4132	2.0190
Cooking Fuel - Firewood	0.6081	0.0360	544	3.6770	0.0592	0.5375	0.6787
Cooking Fuel - Other <sup>14</sup>	0.2534	0.0431	544	6.6221	0.1700	0.1690	0.3378
Lighting Fuel - Electricity	0.1385	0.0180	544	1.8310	0.1299	0.1032	0.1738
Lighting Fuel - Lamp Oil	0.6146	0.0463	523	5.9021	0.0754	0.5238	0.7053
Lighting Fuel - Solar	0.5358	0.0454	544	5.6009	0.0848	0.4468	0.6248
Lighting Fuel - Torch	0.2531	0.0357	544	4.5399	0.1408	0.1833	0.3230
Access to safe drinking water <sup>15</sup> (rainy season)	0.0552	0.0103	544	1.3846	0.1874	0.0349	0.0755
Access to safe drinking water (dry season)	0.1175	0.0321	544	6.7244	0.2735	0.0545	0.1804
Basic sanitation facilities (toilet) <sup>16</sup>	0.6789	0.0451	543	6.2941	0.0665	0.5905	0.7674
Decent household (MMMP standards) <sup>17</sup>	0.7587	0.0479	543	8.4670	0.0632	0.6648	0.8527
<i>Consumption</i>							
Per capita consumption	125563	5541	542	2.8282	0.0441	114702	136423
Total consumption, annual, nominal	4769807	230898	542	2.9052	0.0484	4317255	5222359

<sup>14</sup> Other cooking fuel sources include paraffin, electricity, gas, animal residue, and biogas.

<sup>15</sup> Access to safe drinking water in the NPS is defined as the main source of drinking water coming from piped water, turnwell/borehole, protected dug well, or bottled water.

<sup>16</sup> Basic sanitation facilities in the NPS include flush or pour toilets, ventilated pit latrines, or simple pit latrines. The WHO/UNICEF JMP defines an improved sanitation facility as one that hygienically separates human excreta from human contact.

<sup>17</sup> The Monitoring Master Plan (MMMP), the framework for monitoring issues defined by the National Strategy for Growth and Poverty Reduction (MKUKUTA), defines a decent household as one with brick walls, cement floors, and a roof that is timber, tile, or corrugated iron.

Table 4. Sampling errors for **Mainland Rural** sample, Tanzania NPS 2014/15 – Household level

Indicator	Value	Standard Error	Number of Cases	Design Effect	Relative Standard Error	Confidence Limits	
	R	SE	N	DEFF	SE/R	R-2SE	R+2SE
<i>Food Security</i>							
Worried there was not enough food, past 7 days	0.3628	0.0152	1776	2.1663	0.0420	0.3329	0.3926
Number of meals taken per day, by all members	2.6573	0.0172	1776	2.5704	0.0065	2.6236	2.6910
Number of meals taken per day, by children	3.6930	0.0577	1025	1.2661	0.0156	3.5798	3.8061
Not enough food to feed household, 12 months	0.4577	0.0141	1774	1.7342	0.0309	0.4300	0.4854
<i>Housing, Water, and Sanitation</i>							
Monthly rent for dwelling	14421	2197	124	4.0876	0.1524	10114	18728
Wall material - Baked/burnt bricks	0.3011	0.0208	1776	4.4195	0.0690	0.2605	0.3418
Wall material - Concrete, cement, stones	0.0410	0.0076	1776	3.1769	0.1855	0.0261	0.0560
Wall material - Mud bricks	0.3094	0.0193	1776	3.7760	0.0625	0.2715	0.3473
Wall material - Poles and Mud/Mud and Stones	0.2510	0.0165	1776	3.1101	0.0656	0.2188	0.2833
Roof material - Grass, leaves, bamboo	0.3089	0.0168	1776	2.8668	0.0545	0.2758	0.3419
Roof material - Metal sheets (GCI)	0.6405	0.0204	1776	3.9072	0.0319	0.6005	0.6805
Floor material - Concrete, cement, tiles, timber	0.2380	0.0186	1776	4.1204	0.0782	0.2015	0.2744
Floor material - Earth	0.7616	0.0186	1776	4.1241	0.0245	0.7251	0.7982
Toilet - Flush Toilet	0.0634	0.0108	1776	4.2540	0.1707	0.0422	0.0846
Toilet - No Toilet	0.1797	0.0148	1776	3.1850	0.0821	0.1508	0.2086
Toilet - Pit Latrine w/Slab (Not Washable)	0.0575	0.0066	1776	1.7525	0.1154	0.0445	0.0705
Toilet - Pit Latrine w/Slab (Washable)	0.1593	0.0105	1776	1.7617	0.0657	0.1388	0.1798
Toilet - Pit Latrine w/out Slab/Open Pit	0.5305	0.0158	1776	2.1611	0.0298	0.4995	0.5614
Cooking Fuel - Charcoal	0.2079	0.0425	1776	3.8645	0.2044	0.1246	0.2911
Cooking Fuel - Firewood	0.0875	0.0130	1776	4.5337	0.1481	0.0621	0.1129
Cooking Fuel - Other <sup>18</sup>	0.8975	0.0150	1776	5.2564	0.0167	0.8681	0.9268
Lighting Fuel - Electricity	0.0150	0.0046	1776	3.0806	0.3057	0.0060	0.0241
Lighting Fuel - Lamp Oil	0.1971	0.0151	1711	3.0209	0.0768	0.1674	0.2267
Lighting Fuel - Solar	0.0596	0.0127	1776	6.2145	0.2131	0.0347	0.0845
Lighting Fuel - Torch	0.2796	0.0157	1776	2.6559	0.0563	0.2487	0.3104
Access to safe drinking water <sup>19</sup> (rainy season)	0.1303	0.0104	1776	2.0625	0.0799	0.1099	0.1507
Access to safe drinking water (dry season)	0.4945	0.0182	1776	2.8564	0.0368	0.4588	0.5302
Basic sanitation facilities (toilet) <sup>20</sup>	0.3108	0.0246	1772	6.0587	0.0790	0.2627	0.3590
Decent household (MMMP standards) <sup>21</sup>	0.4176	0.0273	1768	6.5644	0.0653	0.3642	0.4711
<i>Consumption</i>							
Per capita consumption	66704	1910	1770	3.1402	0.0286	62960	70449
Total consumption, annual, nominal	3093878	79641	1770	2.3839	0.0257	2937785	3249972

<sup>18</sup> Other cooking fuel sources include paraffin, electricity, gas, animal residue, and biogas<sup>19</sup> Access to safe drinking water in the NPS is defined as the main source of drinking water coming from piped water, turnwell/borehole, protected dug well, or bottled water.<sup>20</sup> Basic sanitation facilities in the NPS include flush or pour toilets, ventilated pit latrines, or simple pit latrines. The WHO/UNICEF JMP defines an improved sanitation facility as one that hygienically separates human excreta from human contact.<sup>21</sup> The Monitoring Master Plan (MMMP), the framework for monitoring issues defined by the National Strategy for Growth and Poverty Reduction (MKUKUTA), defines a decent household as one with brick walls, cement floors, and a roof that is timber, tile, or corrugated iron.



Table 5. Sampling errors for **Zanzibar** sample, Tanzania NPS 2014/15 – Household level

Indicator	Value	Standard Error	Number of Cases	Design Effect	Relative Standard Error	<u>Confidence Limits</u>	
	R	SE	N	DEFF	SE/R	R-2SE	R+2SE
<i>Food Security</i>							
Worried there was not enough food, past 7 days	0.1694	0.0245	480	0.3931	0.1446	0.1214	0.2174
Number of meals taken per day, by all members	2.6251	0.0404	480	0.6191	0.0154	2.5459	2.7042
Number of meals taken per day, by children	3.7291	0.1602	274	0.3234	0.0430	3.4152	4.0431
Not enough food to feed household, 12 months	0.0871	0.0156	480	0.2837	0.1796	0.0565	0.1178
<i>Housing, Water, and Sanitation</i>							
Monthly rent for dwelling	31023	5498	39	0.2615	0.1772	20247	41800
Wall material - Baked/burnt bricks	0.0029	0.0029	480	0.2706	1.0000	0.0000	0.0086
Wall material - Concrete, cement, stones	0.6197	0.0549	480	1.1791	0.0886	0.5121	0.7273
Wall material - Mud bricks	0.0160	0.0090	480	0.4758	0.5640	0.0000	0.0336
Wall material - Poles and Mud/Mud and Stones	0.2763	0.0462	480	0.9836	0.1672	0.1858	0.3669
Roof material - Grass, leaves, bamboo	0.1583	0.0400	480	1.1044	0.2524	0.0800	0.2366
Roof material - Metal sheets (GCI)	0.8320	0.0396	480	1.0338	0.0476	0.7544	0.9096
Floor material - Concrete, cement, tiles, timber	0.7415	0.0463	480	1.0325	0.0625	0.6507	0.8323
Floor material - Earth	0.2585	0.0463	480	1.0325	0.1792	0.1677	0.3493
Toilet - Flush Toilet	0.3528	0.0456	480	0.8388	0.1292	0.2634	0.4421
Toilet - No Toilet	0.1878	0.0497	480	1.4906	0.2645	0.0904	0.2851
Toilet - Pit Latrine w/Slab (Not Washable)	0.3069	0.0441	480	0.8412	0.1436	0.2205	0.3932
Toilet - Pit Latrine w/Slab (Washable)	0.0701	0.0184	480	0.4803	0.2628	0.0340	0.1063
Toilet - Pit Latrine w/out Slab/Open Pit	0.0138	0.0062	480	0.2646	0.4529	0.0016	0.0260
Cooking Fuel - Charcoal	0.6209	0.1060	480	0.4027	0.1707	0.4131	0.8287
Cooking Fuel - Firewood	0.2870	0.0449	480	0.9068	0.1563	0.1991	0.3749
Cooking Fuel - Other <sup>22</sup>	0.6712	0.0475	480	0.9443	0.0708	0.5781	0.7644
Lighting Fuel - Electricity	0.0417	0.0114	480	0.2983	0.2725	0.0194	0.0640
Lighting Fuel - Lamp Oil	0.4097	0.0505	479	0.9743	0.1232	0.3107	0.5086
Lighting Fuel - Solar	0.3937	0.0517	480	1.0341	0.1314	0.2923	0.4951
Lighting Fuel - Torch	0.5560	0.0529	480	1.0465	0.0952	0.4522	0.6597
Access to safe drinking water <sup>23</sup> (rainy season)	0.0154	0.0067	480	0.2745	0.4358	0.0022	0.0286
Access to safe drinking water (dry season)	0.0335	0.0130	480	0.4796	0.3874	0.0081	0.0589
Basic sanitation facilities (toilet) <sup>24</sup>	0.8180	0.0454	477	1.2679	0.0555	0.7290	0.9070
Decent household (MMMP standards) <sup>25</sup>	0.8180	0.0454	477	1.2701	0.0555	0.7290	0.9070
<i>Consumption</i>							
Per capita consumption	77902	3486	480	0.5654	0.0448	71067	84736
Total consumption, annual, nominal	3775575	163498	480	0.5356	0.0433	3455125	4096024

<sup>22</sup> Other cooking fuel sources include paraffin, electricity, gas, animal residue, and biogas

<sup>23</sup> Access to safe drinking water in the NPS is defined as the main source of drinking water coming from piped water, turnwell/borehole, protected dug well, or bottled water.

<sup>24</sup> Basic sanitation facilities in the NPS include flush or pour toilets, ventilated pit latrines, or simple pit latrines. The WHO/UNICEF JMP defines an improved sanitation facility as one that hygienically separates human excreta from human contact.

<sup>25</sup> The Monitoring Master Plan (MMMP), the framework for monitoring issues defined by the National Strategy for Growth and Poverty Reduction (MKUKUTA), defines a decent household as one with brick walls, cement floors, and a roof that is timber, tile, or corrugated iron.

Table 6. Sampling errors for **National** sample, Tanzania NPS 2014/15 – Individual level

Indicator	Value	Standard Error	Number of Cases	Design Effect	Relative Standard Error	Confidence Limits	
	R	SE	N	DEFF	SE/R	R-2SE	R+2SE
Sex, % female	0.5109	0.0041	16285	1.1013	0.0080	0.5028	0.5189
Age	21.91	0.18	16285	1.5696	0.0084	21.55	22.27
Never married ( $\geq 12$ yrs)	0.4717	0.0072	10169	2.1028	0.0152	0.4576	0.4858
Females age 12-49 years	0.2712	0.0032	16285	0.8495	0.0118	0.2650	0.2775
Female-headed household	0.2880	0.0107	3352	1.8598	0.0370	0.2671	0.3089
Household size	4.7388	0.0664	3344	1.9266	0.0140	4.6086	4.8689
<u><i>Education (<math>\geq 5</math> years of age)</i></u>							
Literate	0.6833	0.0101	13459	6.3043	0.0147	0.6636	0.7031
No education	0.2141	0.0094	13457	7.0653	0.0439	0.1957	0.2325
No education, female	0.2369	0.0098	6954	3.7000	0.0414	0.2177	0.2561
No education, male	0.1902	0.0105	6503	4.6488	0.0552	0.1696	0.2107
Net primary enrollment rate	0.7472	0.0181	16285	5.0215	0.0243	0.7116	0.7827
Net primary enrollment rate, female	0.7888	0.0195	8389	3.1616	0.0247	0.7506	0.8270
Net primary enrollment rate, male	0.7093	0.0215	7896	3.3454	0.0302	0.6673	0.7514
Total spending on education <sup>26</sup> , per person (TSh)	160861	9746	4457	3.5194	0.0606	141758	179965
<u><i>Health</i></u>							
Bednet used last night	0.5882	0.0153	15594	15.1379	0.0261	0.5581	0.6182
Birth attended by skilled health worker <sup>27</sup>	0.7088	0.0219	1263	2.9440	0.0310	0.6658	0.7518
Child had diarrhea, last 2 weeks ( $< 5$ yrs)	0.1655	0.0099	2760	1.9461	0.0596	0.1462	0.1849
<u><i>Subjective Welfare &amp; Crime</i></u>							
Satisfaction <sup>28</sup> , health	2.6567	0.0352	6896	2.6534	0.0133	2.5876	2.7257
Satisfaction, financial situation	5.0898	0.0331	6896	2.1305	0.0065	5.0249	5.1547
Satisfaction, housing	3.8708	0.0435	6896	3.0015	0.0112	3.7857	3.9560
Satisfaction, job	4.3148	0.0394	6895	1.9637	0.0091	4.2376	4.3921
Satisfaction, health care available	4.5338	0.0430	6896	2.8384	0.0095	4.4496	4.6181
Satisfaction, education available	4.8670	0.0371	6896	2.1333	0.0076	4.7944	4.9396
Satisfaction, protection against crime/your safety	2.6627	0.0417	6896	3.7277	0.0157	2.5810	2.7443
Victim of crime, past 12 months ( $> 12$ yrs)	0.0787	0.0039	10165	2.1039	0.0492	0.0711	0.0863
<u><i>Labour<sup>29</sup></i></u>							
Employed - Wage work, last 12 months ( $\geq 5$ )	0.2099	0.0065	13461	3.4237	0.0309	0.1972	0.2227
Employed - Self-employed, last 12 months ( $\geq 5$ )	0.1787	0.0060	13475	3.3177	0.0336	0.1669	0.1905
<u><i>Type of occupation</i></u>							
Employed Agriculture/Livestock ( $\geq 15$ )	0.5376	0.0115	8958	4.7814	0.0214	0.5150	0.5601
Employed (Non-Ag), unpaid family work ( $\geq 15$ )	0.0664	0.0035	8958	1.7370	0.0522	0.0596	0.0732
Employed (Non-Ag), with employees ( $\geq 15$ )	0.0167	0.0016	8958	1.4164	0.0966	0.0135	0.0198
Employed (Non-Ag), no employees ( $\geq 15$ )	0.1113	0.0056	8958	2.8400	0.0503	0.1003	0.1222
Employed, private sector ( $\geq 15$ )	0.0752	0.0042	8958	2.2327	0.0554	0.0671	0.0834

<sup>26</sup> Spending on an individual's education in the past 12 months by members of the household.

<sup>27</sup> Of births in the past 24 months, the proportion attended by a skilled health worker (doctor, nurse, or midwife).

<sup>28</sup> Values shown are derived from scaled responses where 1 = very satisfied and 7 = very dissatisfied.

<sup>29</sup> The International Labour Organization (ILO) defines an employed person as one who for at least one hour in the last seven days did any work for wages, profits, barter, or in a family business for free or has a job to which they will return to for work. An unemployed person is one who did not work in last seven days, does not have a job to which they will return, were available to work, and were looking for a job.

Table 7. Sampling errors for **Dar es Salaam** sample, Tanzania NPS 2014/15 – Individual level

Indicator	Value	Standard Error	Number of Cases	Design Effect	Relative Standard Error	Confidence Limits	
	R	SE	N	DEFF	SE/R	R-2SE	R+2SE
Sex, % female	0.5406	0.0090	2094	0.5428	0.0166	0.5231	0.5582
Age	23.34	0.34	2094	0.6767	0.0145	22.67	24.00
Never married ( $\geq 12$ years of age)	0.5229	0.0184	1497	1.6262	0.0352	0.4869	0.5590
Females age 12-49 years	0.3592	0.0083	2094	0.4989	0.0230	0.3430	0.3754
Female-headed household	0.2999	0.0196	552	0.7763	0.0652	0.2616	0.3382
Household size	3.8464	0.1053	552	1.1694	0.0274	3.6399	4.0528
<i><u>Education (<math>\geq 5</math> years of age)</u></i>							
Literate	0.9060	0.0085	1781	1.2077	0.0094	0.8894	0.9226
No education	0.0528	0.0050	1780	0.7047	0.0940	0.0431	0.0626
No education, female	0.0621	0.0073	981	0.7320	0.1179	0.0478	0.0765
No education, male	0.0414	0.0081	799	1.0527	0.1958	0.0255	0.0573
Net primary enrollment rate	0.9284	0.0195	2094	1.2027	0.0210	0.8902	0.9666
Net primary enrollment rate, female	0.9200	0.0258	1133	0.9736	0.0281	0.8694	0.9706
Net primary enrollment rate, male	0.9370	0.0269	961	1.2658	0.0287	0.8842	0.9898
Total spending on education <sup>30</sup> , per person (TSh)	692100	259008	585	1.8197	0.3742	184453	1199747
<i><u>Health</u></i>							
Bednet used last night	0.8499	0.0201	1986	5.0455	0.0236	0.8105	0.8892
Birth attended by skilled health worker <sup>31</sup>	0.9603	0.0156	168	0.8580	0.0162	0.9297	0.9908
Child had diarrhea, last 2 weeks ( $< 5$ yrs)	0.2017	0.0255	310	1.0028	0.1266	0.1517	0.2518
<i><u>Subjective Welfare &amp; Crime</u></i>							
Satisfaction <sup>32</sup> , health	2.5506	0.0548	1058	0.8246	0.0215	2.4432	2.6581
Satisfaction, financial situation	5.3467	0.0672	1058	1.1841	0.0126	5.2151	5.4783
Satisfaction, housing	4.1897	0.0924	1058	1.6075	0.0220	4.0086	4.3707
Satisfaction, job	5.5190	0.0770	1057	0.9269	0.0140	5.3680	5.6699
Satisfaction, health care available	5.0543	0.0650	1058	0.8567	0.0129	4.9270	5.1816
Satisfaction, education available	5.2808	0.0855	1058	1.4720	0.0162	5.1133	5.4483
Satisfaction, protection against crime/your safety	3.3477	0.1048	1058	2.1685	0.0313	3.1423	3.5530
Victim of crime, past 12 months ( $> 12$ yrs)	0.1249	0.0101	1496	1.1304	0.0813	0.1050	0.1448
<i><u>Labour<sup>33</sup></u></i>							
Employed - Wage work, last 12 months ( $\geq 5$ )	0.2626	0.0147	1779	1.6005	0.0561	0.2337	0.2914
Employed - Self-employed, last 12 months ( $\geq 5$ )	0.2742	0.0117	1783	0.9807	0.0426	0.2514	0.2971
<i><u>Type of occupation</u></i>							
Employed Agriculture/Livestock ( $\geq 15$ )	0.0277	0.0074	1383	2.2281	0.2660	0.0133	0.0421
Employed (Non-Ag), unpaid family work ( $\geq 15$ )	0.2523	0.0142	1383	1.1864	0.0564	0.2244	0.2802
Employed (Non-Ag), with employees ( $\geq 15$ )	0.1734	0.0115	1383	1.0268	0.0665	0.1508	0.1960
Employed (Non-Ag), no employees ( $\geq 15$ )	0.0600	0.0071	1383	0.9973	0.1189	0.0460	0.0739
Employed, private sector ( $\geq 15$ )	0.2194	0.0131	1383	1.1077	0.0597	0.1937	0.2450

<sup>30</sup> Spending on an individual's education in the past 12 months by members of the household.

<sup>31</sup> Of births in the past 24 months, the proportion attended by a skilled health worker (doctor, nurse, or midwife).

<sup>32</sup> Values shown are derived from scaled responses where 1 = very satisfied and 7 = very dissatisfied.

<sup>33</sup> The International Labour Organization (ILO) defines an employed person as one who for at least one hour in the last seven days did any work for wages, profits, barter, or in a family business for free or has a job to which they will return to for work. An unemployed person is one who did not work in last seven days, does not have a job to which they will return, were available to work, and were looking for a job.

Table 8. Sampling errors for **Other Urban** sample, Tanzania NPS 2014/15 – Individual level

Indicator	Value	Standard Error	Number of Cases	Design Effect	Relative Standard Error	Confidence Limits	
	R	SE	N	DEFF	SE/R	R-2SE	R+2SE
Sex, % female	0.5085	0.0118	2166	1.5838	0.0233	0.4853	0.5317
Age	23.0419	0.3921	2166	1.2968	0.0170	22.2734	23.8104
Never married ( $\geq 12$ year of age)	0.5061	0.0120	1447	1.1036	0.0238	0.4825	0.5297
Females age 12-49 years	0.2952	0.0086	2166	0.9980	0.0290	0.2784	0.3120
Female-headed household	0.3332	0.0271	544	2.2338	0.0814	0.2801	0.3864
Household size	4.0806	0.1261	542	1.9761	0.0309	3.8334	4.3278
<u><i>Education (<math>\geq 5</math> years of age)</i></u>							
Literate	0.8274	0.0249	1821	10.2730	0.0300	0.7787	0.8762
No education	0.1027	0.0249	1821	15.9184	0.2421	0.0540	0.1514
No education, female	0.1227	0.0243	953	6.7545	0.1980	0.0751	0.1703
No education, male	0.0815	0.0277	868	11.6837	0.3399	0.0272	0.1358
Net primary enrollment rate	0.8898	0.0577	2166	13.9493	0.0649	0.7766	1.0029
Net primary enrollment rate, female	0.8934	0.0630	1122	7.8865	0.0706	0.7698	1.0170
Net primary enrollment rate, male	0.8867	0.0567	1044	7.0722	0.0639	0.7756	0.9978
Total spending on education <sup>34</sup> , per person (TSh)	288544	36197	674	3.8229	0.1254	217599	359490
<u><i>Health</i></u>							
Bednet used last night	0.7825	0.0360	2067	20.5238	0.0460	0.7119	0.8530
Birth attended by skilled health worker <sup>35</sup>	0.9309	0.0292	168	2.9388	0.0314	0.8737	0.9882
Child had diarrhea in last 2 weeks ( $< 5$ yrs)	0.1969	0.0313	340	2.7274	0.1592	0.1354	0.2583
<u><i>Subjective Welfare &amp; Crime</i></u>							
Satisfaction <sup>36</sup> , health	2.5058	0.0720	1034	2.3232	0.0287	2.3647	2.6468
Satisfaction, financial situation	5.1718	0.0774	1034	2.2238	0.0150	5.0201	5.3236
Satisfaction, housing	3.8915	0.1065	1034	3.3971	0.0274	3.6828	4.1002
Satisfaction, job	4.5038	0.1033	1034	2.4298	0.0229	4.3014	4.7062
Satisfaction, health care available	4.3445	0.0903	1034	2.3326	0.0208	4.1675	4.5215
Satisfaction, education available	4.7554	0.0895	1034	2.4618	0.0188	4.5800	4.9308
Satisfaction, protection against crime/your safety	2.7196	0.0814	1034	2.7100	0.0299	2.5600	2.8792
Victim of crime, past 12 months ( $> 12$ yrs)	0.0921	0.0083	1438	1.5610	0.0900	0.0758	0.1083
<u><i>Labour<sup>37</sup></i></u>							
Employed - Wage work, last 12 months ( $\geq 5$ )	0.2373	0.0158	1819	3.2544	0.0664	0.2064	0.2682
Employed - Self-employed, last 12 months ( $\geq 5$ )	0.2679	0.0148	1819	2.6613	0.0554	0.2389	0.2970
<u><i>Type of occupation</i></u>							
Employed Agriculture/Livestock ( $\geq 15$ )	0.2153	0.0301	1300	9.1594	0.1396	0.1564	0.2742
Employed (Non-Ag), unpaid family work ( $\geq 15$ )	0.2317	0.0166	1300	2.6584	0.0717	0.1991	0.2643
Employed (Non-Ag), with employees ( $\geq 15$ )	0.1010	0.0115	1300	2.4734	0.1134	0.0785	0.1234
Employed (Non-Ag), no employees ( $\geq 15$ )	0.0253	0.0048	1300	1.6155	0.1907	0.0158	0.0347
Employed, private sector ( $\geq 15$ )	0.1379	0.0133	1300	2.5558	0.0966	0.1118	0.1640

<sup>34</sup> Spending on an individual's education in the past 12 months by members of the household.<sup>35</sup> Of births in the past 24 months, the proportion attended by a skilled health worker (doctor, nurse, or midwife).<sup>36</sup> Values shown are derived from scaled responses where 1 = very satisfied and 7 = very dissatisfied.<sup>37</sup> The International Labour Organization (ILO) defines an employed person as one who for at least one hour in the last seven days did any work for wages, profits, barter, or in a family business for free or has a job to which they will return to for work. An unemployed person is one who did not work in last seven days, does not have a job to which they will return, were available to work, and were looking for a job.

Table 9. Sampling errors for **Mainland Rural** sample, Tanzania NPS 2014/15

Indicator	Value	Standard Error	Number of Cases	Design Effect	Relative Standard Error	Confidence Limits	
	R	SE	N	DEFF	SE/R	R-2SE	R+2SE
Sex, % female	0.5072	0.0049	9371	1.1016	0.0097	0.4975	0.5169
Age	21.3879	0.2366	9371	1.7077	0.0111	20.9241	21.8516
Never married ( $\geq 12$ years of age)	0.4561	0.0098	5529	2.6197	0.0215	0.4369	0.4754
Females age 12-49 years	0.2521	0.0040	9371	0.9331	0.0157	0.2444	0.2599
Female-headed household	0.2740	0.0136	1776	2.0111	0.0497	0.2473	0.3007
Household size	5.1004	0.0936	1770	2.1701	0.0184	4.9169	5.2838
<u><i>Education (<math>\geq 5</math> years of age)</i></u>							
Literate	0.6092	0.0128	7656	6.3343	0.0210	0.5842	0.6343
No education	0.2679	0.0117	7656	6.5022	0.0438	0.2449	0.2909
No education, female	0.2965	0.0125	3874	3.5407	0.0422	0.2720	0.3211
No education, male	0.2387	0.0130	3782	4.2229	0.0545	0.2132	0.2643
Net primary enrollment rate	0.7009	0.0210	9371	4.5804	0.0299	0.6598	0.7420
Net primary enrollment rate, female	0.7571	0.0227	4768	2.9340	0.0300	0.7126	0.8017
Net primary enrollment rate, male	0.6500	0.0250	4603	3.1053	0.0384	0.6011	0.6989
Total spending on education <sup>38</sup> , per person (TSh)	100878	9207	2391	2.9287	0.0913	82832	118924
<u><i>Health</i></u>							
Bednet used last night	0.5002	0.0190	9010	15.5751	0.0379	0.4631	0.5374
Birth attended by skilled health worker <sup>39</sup>	0.6149	0.0289	722	3.0557	0.0470	0.5582	0.6715
Child had diarrhea in last 2 weeks ( $< 5$ yrs)	0.1564	0.0111	1695	1.8605	0.0710	0.1347	0.1782
<u><i>Subjective Welfare &amp; Crime</i></u>							
Satisfaction <sup>40</sup> , health	2.7293	0.0482	3769	3.1482	0.0177	2.6347	2.8238
Satisfaction, financial situation	5.0308	0.0430	3769	2.3226	0.0085	4.9466	5.1150
Satisfaction, housing	3.8237	0.0555	3769	3.2427	0.0145	3.7150	3.9324
Satisfaction, job	3.9994	0.0484	3769	2.1636	0.0121	3.9046	4.0943
Satisfaction, health care available	4.5258	0.0582	3769	3.4337	0.0129	4.4118	4.6398
Satisfaction, education available	4.8239	0.0468	3769	2.1942	0.0097	4.7323	4.9156
Satisfaction, protection against crime/your safety	2.5289	0.0550	3769	4.6495	0.0218	2.4210	2.6368
Victim of crime, past 12 months ( $> 12$ yrs)	0.0685	0.0049	5532	2.5782	0.0721	0.0588	0.0782
<u><i>Labour<sup>41</sup></i></u>							
Employed - Wage work, last 12 months ( $\geq 5$ )	0.1976	0.0082	7662	3.9351	0.0416	0.1815	0.2137
Employed - Self-employed, last 12 months ( $\geq 5$ )	0.1433	0.0075	7671	4.2364	0.0523	0.1286	0.1580
<u><i>Type of occupation</i></u>							
Employed Agriculture/Livestock ( $\geq 15$ )	0.7446	0.0139	4797	5.9792	0.0187	0.7173	0.7719
Employed (Non-Ag), unpaid family work ( $\geq 15$ )	0.0476	0.0060	4797	4.6963	0.1266	0.0358	0.0594
Employed (Non-Ag), with employees ( $\geq 15$ )	0.0315	0.0034	4797	2.1626	0.1065	0.0249	0.0381
Employed (Non-Ag), no employees ( $\geq 15$ )	0.0065	0.0014	4797	1.7321	0.2128	0.0038	0.0092
Employed, private sector ( $\geq 15$ )	0.0281	0.0042	4797	3.7083	0.1481	0.0199	0.0362

<sup>38</sup> Spending on an individual's education in the past 12 months by members of the household<sup>39</sup> Of births in the past 24 months, the proportion attended by a skilled health worker (doctor, nurse, or midwife)<sup>40</sup> Values shown are derived from scaled responses where 1 = very satisfied and 7 = very dissatisfied<sup>41</sup> The International Labour Organization (ILO) defines an employed person as one who for at least one hour in the last seven days did any work for wages, profits, barter, or in a family business for free or has a job to which they will return to for work. An unemployed person is one who did not work in last seven days, does not have a job to which they will return, were available to work, and were looking for a job.

Table 10. Sampling errors for **Zanzibar** sample, Tanzania NPS 2014/15

Indicator	Value	Standard Error	Number of Cases	Design Effect	Relative Standard Error	Confidence Limits	
	R	SE	N	DEFF	SE/R	R-2SE	R+2SE
Sex, % female	0.5080	0.0118	2654	0.2789	0.0232	0.4849	0.5311
Age	22.5666	0.5881	2654	0.4807	0.0261	21.4139	23.7194
Never married ( $\geq 12$ years of age)	0.4023	0.0168	1696	0.3715	0.0417	0.3694	0.4351
Females age 12-49 years	0.2714	0.0086	2654	0.1854	0.0315	0.2546	0.2882
Female-headed household	0.2305	0.0277	480	0.3984	0.1201	0.1763	0.2848
Household size	5.2433	0.1805	480	0.4736	0.0344	4.8896	5.5970
<u>Education (<math>\geq 5</math> years of age)</u>							
Literate	0.7432	0.0289	2201	1.8132	0.0389	0.6865	0.7999
No education	0.2072	0.0295	2200	2.1878	0.1423	0.1494	0.2650
No education, female	0.2313	0.0298	1146	1.0814	0.1291	0.1728	0.2898
No education, male	0.1814	0.0319	1054	1.3563	0.1761	0.1188	0.2440
Net primary enrollment rate	0.7974	0.0333	2654	0.5769	0.0418	0.7320	0.8627
Net primary enrollment rate, female	0.7712	0.0421	1366	0.4400	0.0546	0.6887	0.8537
Net primary enrollment rate, male	0.8256	0.0415	1288	0.4784	0.0503	0.7442	0.9069
Total spending on education <sup>42</sup> , per person (TSh)	86429	12622	807	0.4393	0.1460	61690	111168
<u>Health</u>							
Bednet used last night	0.6105	0.0393	2531	3.0983	0.0643	0.5335	0.6875
Birth attended by skilled health worker <sup>43</sup>	0.6632	0.0549	205	0.5303	0.0828	0.5556	0.7707
Child had diarrhea in last 2 weeks ( $< 5$ yrs)	0.1067	0.0204	415	0.3491	0.1914	0.0667	0.1468
<u>Subjective Welfare &amp; Crime</u>							
Satisfaction <sup>44</sup> , health	2.4523	0.0696	1035	0.4061	0.0284	2.3158	2.5888
Satisfaction, financial situation	4.7958	0.0867	1035	0.4869	0.0181	4.6260	4.9656
Satisfaction, housing	3.4588	0.0816	1035	0.3841	0.0236	3.2989	3.6187
Satisfaction, job	5.2538	0.0831	1035	0.2166	0.0158	5.0909	5.4167
Satisfaction, health care available	3.7885	0.0722	1035	0.3122	0.0191	3.6470	3.9300
Satisfaction, education available	4.8763	0.1388	1035	1.0292	0.0285	4.6042	5.1484
Satisfaction, protection against crime/your safety	2.4625	0.1116	1035	1.1723	0.0453	2.2438	2.6813
Victim of crime, past 12 months ( $> 12$ yrs)	0.0398	0.0074	1699	0.4528	0.1855	0.0253	0.0542
<u>Labour<sup>45</sup></u>							
Employed - Wage work, last 12 months ( $\geq 5$ )	0.1465	0.0127	2201	0.5324	0.0866	0.1217	0.1714
Employed - Self-employed, last 12 months ( $\geq 5$ )	0.1278	0.0117	2202	0.5115	0.0919	0.1048	0.1509
<u>Type of occupation</u>							
Employed Agriculture/Livestock ( $\geq 15$ )	0.1874	0.0272	1478	1.3527	0.1451	0.1341	0.2407
Employed (Non-Ag), unpaid family work ( $\geq 15$ )	0.1500	0.0160	1478	0.5591	0.1067	0.1187	0.1814
Employed (Non-Ag), with employees ( $\geq 15$ )	0.1620	0.0165	1478	0.5595	0.1020	0.1296	0.1944
Employed (Non-Ag), no employees ( $\geq 15$ )	0.0054	0.0019	1478	0.1830	0.3472	0.0017	0.0091
Employed, private sector ( $\geq 15$ )	0.1097	0.0119	1478	0.4008	0.1081	0.0865	0.1330

<sup>42</sup> Spending on an individual's education in the past 12 months by members of the household<sup>43</sup> Of births in the past 24 months, the proportion attended by a skilled health worker (doctor, nurse, or midwife)<sup>44</sup> Values shown are derived from scaled responses where 1 = very satisfied and 7 = very dissatisfied<sup>45</sup> The International Labour Organization (ILO) defines an employed person as one who for at least one hour in the last seven days did any work for wages, profits, barter, or in a family business for free or has a job to which they will return to for work. An unemployed person is one who did not work in last seven days, does not have a job to which they will return, were available to work, and were looking for a job.

## Appendix B: Confidential Information, Geospatial Variables

To maintain the confidentiality of respondents, certain parts of the NPS database have not been made publicly available. The confidential variables pertain to (i) names of the respondents in the household and community questionnaires, (ii) village and constituency names, (iii) descriptions of household dwelling and agricultural plot locations, (iv) phone numbers of household members and their reference contacts, (v) GPS-based household and agricultural plot locations, (vi) names of the children of the head/spouse living elsewhere, (vii) names of the deceased household members, (viii) names of individuals listed in the network roster, and (ix) names of field staff.

To partially satisfy the demand for georeferenced household and community locations, while preserving the confidentiality of sample households and communities, we have computed the average of household GPS coordinates in each EA, applied a random offset within a specified range of the average EA location (following the MeasureDHS methodology)<sup>46</sup> and provided the offset EA latitudes and longitudes in the data file **NPSY4.EA.OFFSET.dta**. For households that have moved or split-off and are more than 5 km from their baseline location, the offset is with respect to the new household location.

More specifically, the coordinate modification strategy relies on random offset of cluster center-point coordinates (or average of household GPS locations by EA) within a specified range determined by an urban/rural classification. For urban areas, a range of 0-2 km is used. In rural areas, where communities are more dispersed and risk of disclosure may be higher, a range of 0-5 km offset is used. An additional 0-10 km offset for 1 percent of rural clusters effectively increases the known range for all rural points to 10 km while introducing only a small amount of noise. Offset points are constrained at the district level, so that they still fall within the correct district for spatial joins, or point-in-polygon overlays. The result is a set of coordinates, representative at the EA level, that fall within known limits of accuracy. Users should take into account the offset range when considering different types of spatial analysis or queries with the data. Analysis of the spatial relationships between locations in close proximity would not be reliable. However, spatial queries using medium or low resolution data files should be minimally affected by the offsets.

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<sup>46</sup> Information on the MeasureDHS methodology can be found at <http://spatialdata.dhsprogram.com/methodology/>

## Appendix C: Consumption Aggregate

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 NPS 2014/2015 is identical to the methodology used in all three of the previous rounds so that the aggregates are comparable over time.

### 1.0 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 usually 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, NPS 2008/2009 and NPS 2010/2011 only provide data on the number of durable goods owned by the household, while NPS 2012/2013 asks for the number owned, age, and value. Calculating this consumption component in previous rounds 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 in NPS 2008/2009 and NPS 2010/2011, and as this is a panel survey, the durables component was likewise excluded from NPS 2012/2013 and NPS 2014/2015 to maintain comparability.

### **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 that 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 2010/2011 did not collect information on imputed rents and given that the number of households living in rented dwellings is fairly small, this component was excluded from the consumption aggregate for that round. In NPS 2012/2013 and NPS 2014/2015, both

actual and estimated rents are reported; however, this component was again excluded in order to maintain comparability between rounds.

## 2.0 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 (the purchasing power of TSh 1,000 in Dar es Salaam may be different than 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 and weights for food and non-food items) and the official consumer price index (non-food prices).

Fisher price indices based only on food items were 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>47</sup> Price indices were 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 were 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 were 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

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<sup>47</sup> See Deaton and Tarozzi (2000).

$$L_i = \sum_{k=1}^n w_{0k} \left( \frac{p_{ik}}{p_{0k}} \right), P_i = \left[ \sum_{k=1}^n w_{ik} \left( \frac{p_{ik}}{p_{0k}} \right)^{-1} \right]^{-1}$$

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 that had been purchased by at least 10 households by stratum and quarter were included in the construction of the price indices. Residual or catch-all food categories were 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 percent at the national level and goes from 63 percent in rural mainland to more than 80 percent in Dar es Salaam and Zanzibar. Median unit values were estimated for the price indices because the median is less sensitive to outliers than the mean.

Table 1 shows the Fisher food price indices for each round of the NPS. Spatial price differences across strata remain fairly constant over time. The most expensive stratum is Dar es Salaam whereas the cheapest is rural areas in mainland. The cost of living in other urban areas in mainland and Zanzibar is relatively similar. Temporal price differences across quarters are noticeably larger during the NPS 2010/2011, thus reflecting a higher inflation in the second round compared to the first round.

**Table 1: Fisher food price indices by stratum and quarter, NPS 2008/2009, NPS 2010/2011, NPS 2012/2013, NPS 2014/15**

NPS 2008/2009	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	1.00	1.04	1.04	1.04
Rural	0.92	0.86	0.92	0.96
Zanzibar	1.03	1.06	1.07	1.07
NPS 2010/2011	Oct-Dec 2010	Jan-Mar 2011	Apr-Jun 2011	Jul-Sep 2011
Dar es Salaam	1.05	1.14	1.17	1.18
Other urban	0.90	0.97	1.06	1.08
Rural	0.87	0.86	0.98	1.02
Zanzibar	0.89	0.98	1.06	1.07
NPS 2012/2013	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	0.99	1.04	1.02	0.93
Rural	0.95	0.94	1.00	0.93
Zanzibar	0.88	0.91	0.93	0.99
<hr/>				
NPS 2014/2015	Oct-Dec 2014	Jan-Mar 2015	Apr-Jun 2015	Jul-Sep 2015
<hr/>				
Dar es Salaam	1.12	1.17	1.13	1.07
Other urban	0.99	1.04	1.02	0.93
Rural	0.95	0.94	1.00	0.93
Zanzibar	0.88	0.91	0.93	0.99

### Updating monetary figures across rounds of the NPS

Price indices will also be required to update monetary figures across rounds of the NPS. The price indices from Table 1 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 or NPS 2012/2013 prices.

Fisher price indices based only on food items were employed to adjust consumption for spatial and temporal price differences across rounds of the NPS. It was assumed that non-food goods and services show the same temporal and spatial price differences across rounds as food items. Price indices were estimated for the entire country and for the full extent of each round: in the case of the NPS 2012/2013, the base period is the 12 months of the NPS 2010/2011 and the comparison period is the 12 months of the NPS 2012/2013.

Food items that had been purchased by at least 50 households in the country were included in the construction of the price indices. As with the previous price indices, residual food categories were also excluded and median rather than mean unit values were 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 across the NPS 2010/2011 and the NPS 2012/2013 is estimated at 1.34, that is, the cost of an average food bundle consumed in the country increased by 34 percent between rounds of the NPS. This inflation will be employed to adjust the consumption aggregate and the poverty lines across the NPS 2010/2011 and the NPS 2012/2013.

### 3.0 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 gender, 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 is comprised of 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 50 percent of 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>48</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. Hence, the bigger the share of public goods in total consumption, the larger the scope for economies of scale. 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.

Poverty analysis in Tanzania employs an adult-equivalent scale to implement these two adjustments (see Table 2). 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 2: 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 and more	0.80	0.72

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<sup>48</sup> See Deaton and Muellbauer (1986) or Deaton (1997).

## Appendix D: Tanzanian Educational System

Tanzania has 13 years of formal schooling – D1 to D7 and F1 to F6.

D1 - Standard I (1<sup>st</sup> year)  
D2 - Standard II (2<sup>nd</sup> year)  
D3 - Standard III (3<sup>rd</sup> year)  
D4 - Standard IV (4<sup>th</sup> year)  
D5 - Standard V (5<sup>th</sup> year)  
D6 - Standard VI (6<sup>th</sup> year)  
D7 - Standard VII (7<sup>th</sup> year)

F1 - Form I (8<sup>th</sup> year)  
F2 - Form II (9<sup>th</sup> year)  
F3 - Form III (10<sup>th</sup> year)  
F4 - Form IV (11<sup>th</sup> year)  
F5 - Form V (12<sup>th</sup> year)  
F6 - Form VI (13<sup>th</sup> year)

Prior to independence, there was a D8 – Grade 8. Additionally, all classes used to be taught in English, but following independence the Tanzanian primary education system switched to being based in Swahili. Until the early 1970s, a student was required to take an exam after Standard IV in order to proceed to Standard V.

For a student to proceed to a government secondary school, the student has to receive a passing grade on the Primary School Leaving Exam (PSLE), which is taken after Standard VII. Otherwise, the student can continue education in a private secondary school.

If an individual does not proceed to Form I (F1), they can take the MS+ Course. This is a vocational course – for jobs such as carpentry - that ranges from three months to a year. For a student to proceed to Form V (F5), they must take the Form IV (F4) national level exam, which is also known as O+. It is important to note that the O+ does not constitute an extra year school. It is simply a required final exam an individual must take to advance educationally. So an individual could have finished Form IV (F4) but have failed the O+, thus not proceeding to Form V (F5). Students must also take a national level exam, A+, after completing Form VI (F6). If they pass the A+ exam with a certain grade, they go directly to University (U1 through U5).

If one does not pass the O+ exam, one can take a certificate course at a technical school.

If one does not pass the A+ exam, one can do the Diploma course or choose to not pursue further education. If the individual completes the Diploma course, they can then enroll into University.

U1 – 14<sup>th</sup> year  
U2 – 15<sup>th</sup> year  
U3 – 16<sup>th</sup> year  
U4 – 17<sup>th</sup> year

U5 – 18<sup>th</sup> year

U5+ – 18<sup>th</sup> plus year

The Diploma course can range from one to three years. Acquiring a Diploma degree in Tanzania can qualify an individual to be a primary school teacher. However, participating in the Diploma course does not technically add additional years of education to an individual's record. This is because universities treat A+ certification and Diploma's equally for admission. Therefore, to calculate the number of educational years an individual, who attended the Diploma course, has is to add one year to their current university level (U1 through U5+). For example, a student with a Diploma who is in U2 would have 16 years of schooling.

## **Appendix E: Description of the Tanzania Standard Classification of Occupation (TASCO)**

In Section E of the Household Questionnaire (HH\_SEC\_E.dta), the TASCO codes are used for questions 10a, 20, and 38. Respondents were asked to describe what kind of job/work they did, and based off the respondent's description, a TASCO code was assigned. Depending on the specificity of the job/work description affects if there is a two or three digit TASCO code. Respondents were asked to be specific as possible but in some cases, their responses did not allow for a three digit TASCO code to be assigned. The following list is all of the potential TASCO codes and those used within the survey.

### **MAJOR GROUP 1: LEGISLATORS, ADMINISTRATORS, AND MANAGERS**

#### **11 Legislators and Administrators**

- 111 Legislators
- 112 Senior Government Executive
- 113 Village Leaders
- 114 Senior Administrators of Special-Interest Organizations

#### **12 Company Directors and Corporate Managers**

- 121 Company Directors and Non-Government Chief Executives
- 122 Specialised Managers and Senior Administrators
- 123 Production and Operations Managers and Senior Administrators

#### **13 Small Business Managers and Managing Supervisors**

- 131 Small Business Managers and Managing Supervisors

### **MAJOR GROUP 2: PROFESSIONALS**

#### **21 Physical, Mathematical, and Engineering Science Professionals**

- 211 Physical Scientists and Related Professionals
- 212 Mathematicians, Statisticians, and Related Professionals
- 213 Computing Professionals
- 214 Architects, Engineers, and Related Professionals

#### **22 Life Science and Health Professionals**

- 221 Life Science Professionals
- 222 Medical and Health Professionals (Except Nurses)
- 223 Nursing Professionals

#### **23 Teaching Professionals**

- 231 College, University, and Higher Education Teaching Professionals
- 232 Secondary Education Teaching Professionals
- 239 Other Teaching and Related Professionals

#### **24 Other Professionals**

- 241 Business and Administrative Professionals
- 242 Legal Professionals
- 243 Archivists, Librarians, and Related Information Professionals
- 244 Social and Related Science Professionals
- 245 Artistic Professionals
- 246 Religious Professionals



### **MAJOR GROUP 3: TECHNICIANS AND RELATED PROFESSIONALS**

- 31 Physical, Mathematical, and Engineering Science Associate Professionals
  - 311 Physical, Science, and Engineering Technicians
  - 312 Computer Assistants and Equipment Controllers
  - 313 Optical and Electronic Equipment Controllers
  - 314 Ship and Aircraft Controllers and Technicians
  - 315 Building, Safety, Health, and Quality Inspectors
- 32 Life Science and Health Associate Professionals
  - 321 Life Science Technicians and Related Workers
  - 322 Modern Medicine and Health Associate Professionals (Except Nurses)
  - 323 Nursing and Midwifery Associate Professionals
  - 324 Traditional Medicine Practitioners and Faith Healers
- 33 Teaching Associate Professionals
  - 331 Secondary Education Teachers, Associate Professionals
  - 332 Technical/Vocational Education Teachers
  - 333 Primary Education Teachers
  - 334 Pre-Primary Education Teachers
  - 335 Special Education Teachers, Associate Professionals
  - 339 Other Teaching Associate Professionals
- 34 Other Associate Professionals
  - 341 Finance and Sales Associate Professionals
  - 342 Trade Brokers and Business Services Agents
  - 343 Administrative Associate Professionals
  - 344 Government Associate Professionals
  - 345 Social Work Associate Professionals
  - 346 Creative and Performing Art, and Artistic Entertainment, and Sports Associate Professionals
  - 347 Religious Associate Professionals
  - 348 Other Associate Professionals

### **MAJOR GROUP 4: CLERKS**

- 41 Office Clerks
  - 411 Secretaries, Keyboard Operators, and Registry Assistants
  - 412 Numerical Clerks
  - 413 Material Recording and Transport Clerks
  - 414 Library, Mail, and Related Clerks
  - 415 Other Office Clerks
- 42 Customer Service Clerks
  - 421 Cashiers, Tellers, and Related Clerks
  - 422 Client Information Clerks and Telephone Operators

### **MAJOR GROUP 5: SERVICE WORKERS AND SHOP SALES WORKERS**

- 51 Personal Service Workers
  - 511 Travel Attendants and Guides
  - 512 Housekeeping and Restaurant Services Workers, Institutional
  - 513 Housekeeping and Restaurant Services Workers, Domestic

- 514 Personal Care Workers
- 515 Astrologers, Fortune-Tellers, and Related Workers
- 516 Other Personal Service Workers
- 52 Protective Service Workers
  - 520 Protective Service Workers
  - 53 Salespersons, Demonstrators, and Models
  - 531 Salespersons and Demonstrators
  - 532 Stall and Market Salespersons
  - 533 Fashion and Other Models

## **MAJOR GROUP 6: SKILLED AGRICULTURAL AND FISHERY WORKERS**

- 61 Skilled Agricultural and Fishery Workers
  - 611 Farmers and Crop Skilled Workers
  - 612 Animal Producers and Skilled Workers
  - 613 Forestry and Related Skilled Workers
  - 614 Fishery Workers, Hunters, and Trappers
- 62 Subsistence, Agricultural, Forestry, Fishery, and Related Workers
  - 621 Subsistence Agricultural, Forestry, Fishery, and Related Workers

## **MAJOR GROUP 7: CRAFT AND RELATED WORKERS**

- 71 Extraction and Building Trades Workers
  - 711 Miners and Blasters Stone Cutters and Carvers
  - 712 Building Frame and Related Trades Workers
  - 713 Building Finishers and Related Trades Workers
  - 714 Painters, Structural Cleaners, and Related Workers
- 72 Metal and Machinery Trades Workers
  - 721 Metal Moulders, Welders, Sheet-Metal Workers, Structural Metal Preparers, and Related Workers
  - 722 Blacksmiths, Toolmakers, and Related Workers
  - 723 Machinery Mechanics and Fitters
  - 724 Electrical and Electronic Equipment Fitters, Installers, and Repairers
- 73 Precision, Handicraft, Printing, and Related Trades Workers
  - 731 Precision Workers in Metal, Diamonds, Plastics, Rubber, Paper, and Other Related Materials
  - 732 Potters, Glass Formers, and Related Workers
  - 734 Handicraft Workers in Wood, Textile, Leather, and Related Materials
  - 735 Printing and Related Trades Workers
- 74 Other Crafts and Related Trades Workers
  - 741 Food and Related Products Procession Trades Workers
  - 742 Cabinet Makers, Wood Treaters, and Related Trades Workers
  - 743 Textile and Garment Trades Workers
  - 744Pelt, Leather, and Shoemaking Trades Workers
  - 749 Other Craft and Related Trades Workers, NEC

## **MAJOR GROUP 8: PLANT AND MACHINE OPERATORS AND ASSEMBLERS**

- 81 Industrial Plant Operators

- 811 Mining and Mineral-Processing Plant Operators
- 812 Metal-Processing Plant Operators
- 813 Glass and Ceramics Kiln and Related Plant Operators
- 814 Wood-Processing and Papermaking Plant Operators
- 815 Chemical-Processing Plant Operators
- 816 Power-Generating and Related Plant Operators
- 82 Stationary Machine Operators and Assemblers
  - 821 Metal and Mineral Products Processing Machine Operators
  - 822 Chemical Products Machine Operators
  - 823 Rubber, Plastics, and Leather Products Machine Operators
  - 824 Wood Products Machine Operators
  - 825 Printing, Binding, and Paper Products Machine Operators
  - 826 Textile Products Machine Operators
  - 827 Food and Related Products Processing Machine Operators
  - 828 Assemblers
  - 829 Other Stationary Machine Operators and Assemblers
- 83 Drivers and Mobile Machinery Operators
  - 831 Railway Engine Drivers and Related Workers
  - 832 Motor Vehicle Drivers and Riders
  - 833 Agricultural, Earthmoving, Lifting, and Other Mobile Material-Handling Equipment Operators
  - 834 Ships Deck Crew and Related Workers

## **MAJOR GROUP 9: ELEMENTARY OCCUPATIONS**

- 91 Sales and Services Elementary Occupations
  - 911 Street Vendors and Related Workers
  - 912 Shoe Cleaning and Other Street Services Elementary Occupations
  - 913 Domestic Helpers and Cleaners and Related Workers
  - 914 Building Caretakers and Window Cleaners
  - 915 Messengers, Watchers, and Related Workers
  - 916 Garbage Collectors and Related Labourers
  - 919 Other Sales and Services Elementary Occupations
- 92 Agricultural, Forestry, Fishery, and Related Labourers
  - 921 Agricultural, Forestry, and Fishery Labourers
  - 93 Labourers in Mining, Construction, Manufacturing, and Transport
    - 931 Mining and Construction Labourer
    - 932 Manufacturing Labourers
    - 933 Transport Labourers
    - 934 Hand Packers, Weighers, and Related Elementary Workers

## **MAJOR GROUP 0: DEFENCE FORCES**

- 01 Defense Forces
  - 011 Tanzania People's Defense Forces
  - 012 National Service (JKT)

## **MAJOR GROUP X: WORKERS NOT CLASSIFIED BY OCCUPATIONS**

XI New Workers Seeking Employment

X11 Fresh Graduates and Under-Graduates Seeking Employment

X12 Fresh Secondary School Leavers and Dropouts Seeking Employment

X13 Fresh Primary School Leavers and Dropouts Seeking Employment

X14 Fresh Literates Seeking Employment

X2 Workers Reporting Occupations Unidentifiable or Inadequately Described

X21 Workers Reporting Occupations Unidentifiable or Inadequately Described

X3 Workers Not Reporting Any Occupation

X31 Workers Not Reporting Any Occupation

## Appendix F: List of International Standard Industry Codes (ISIC)

In Section E of the Household Questionnaire (HH\_SEC\_E.dta), the ISIC codes are used for questions 10b, 21, and 39. Respondents were asked to describe their association to different trades and businesses. Based off the respondent's description, the ISIC codes were assigned. Depending on the specificity of trade/business description affects if there is a two, three, or four digit ISIC code. Respondents were asked to be specific as possible but in some cases, their responses did not allow for a three or four digit ISIC code to be assigned. The following list is all of the potential ISIC codes and those used within the survey.

### *A - Agriculture, forestry and fishing*

- 01 - Crop and animal production, hunting and related service activities
- 02 - Forestry and logging
- 03 - Fishing and aquaculture

### *B - Mining and quarrying*

- 05 - Mining of coal and lignite
- 06 - Extraction of crude petroleum and natural gas
- 07 - Mining of metal ores
- 08 - Other mining and quarrying
- 09 - Mining support service activities

### *C - Manufacturing*

- 10 - Manufacture of food products
  - 101 - Processing and preserving of meat
  - 102 - Processing and preserving of fish, crustaceans and mollusks
  - 103 - Processing and preserving of fruit and vegetables
  - 104 - Manufacture of vegetable and animal oils and fats
  - 105 - Manufacture of dairy products
  - 106 - Manufacture of grain mill products, starches and starch products
  - 107 - Manufacture of other food products
  - 108 - Manufacture of prepared animal feeds
- 11 - Manufacture of beverages
- 12 - Manufacture of tobacco products
- 13 - Manufacture of textiles
- 14 - Manufacture of wearing apparel
- 15 - Manufacture of leather and related products
- 16 - Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
- 17 - Manufacture of paper and paper products
- 18 - Printing and reproduction of recorded media
- 19 - Manufacture of coke and refined petroleum products
- 20 - Manufacture of chemicals and chemical products
- 21 - Manufacture of basic pharmaceutical products and pharmaceutical preparations
- 22 - Manufacture of rubber and plastics products
- 23 - Manufacture of other non-metallic mineral products
- 24 - Manufacture of basic metals
- 25 - Manufacture of fabricated metal products, except machinery and equipment

- 26 - Manufacture of computer, electronic and optical products
- 27 - Manufacture of electrical equipment
- 28 - Manufacture of machinery and equipment n.e.c.
- 29 - Manufacture of motor vehicles, trailers and semi-trailers
- 30 - Manufacture of other transport equipment
- 31 - Manufacture of furniture
- 32 - Other manufacturing
- 33 - Repair and installation of machinery and equipment
- D - *Electricity, gas, steam and air conditioning supply*
  - 35 - Electricity, gas, steam and air conditioning supply
- E - *Water supply; sewerage, waste management and remediation activities*
  - 36 - Water collection, treatment and supply
  - 37 - Sewerage
  - 38 - Waste collection, treatment and disposal activities; materials recovery
  - 39 - Remediation activities and other waste management services
- F - *Construction*
  - 41 - Construction of buildings
  - 42 - Civil engineering
  - 43 - Specialized construction activities
- G - *Wholesale and retail trade; repair of motor vehicles and motorcycles*
  - 45 - Wholesale and retail trade and repair of motor vehicles and motorcycles
  - 46 - Wholesale trade, except of motor vehicles and motorcycles
  - 47 - Retail trade, except of motor vehicles and motorcycles
    - 471 - Retail sale in non-specialized stores
    - 472 - Retail sale of food, beverages and tobacco in specialized stores
    - 473 - Retail sale of automotive fuel in specialized stores
    - 474 - Retail sale of information and communications equipment in specialized stores
    - 475 - Retail sale of other household equipment in specialized stores
    - 476 - Retail sale of cultural and recreation goods in specialized stores
    - 477 - Retail sale of other goods in specialized stores
    - 478 - Retail sale via stalls and markets
    - 479 - Retail trade not in stores, stalls or markets
- H - *Transportation and storage*
  - 49 - Land transport and transport via pipelines
    - 491 - Transport via railways
    - 492 - Other land transport
      - 4921 - Urban and suburban passenger land transport
      - 4922 - Other passenger land transport
      - 4923 - Freight transport by road
    - 493 - Transport via pipeline
  - 50 - Water transport
  - 51 - Air transport
  - 52 - Warehousing and support activities for transportation
  - 53 - Postal and courier activities
- I - *Accommodation and food service activities*
  - 55 - Accommodation

- 56 - Food and beverage service activities
  - 561 - Restaurants and mobile food service activities
  - 562 - Event catering and other food service activities
  - 563 - Beverage serving activities
- J - *Information and communication*
  - 58 - Publishing activities
  - 59 - Motion picture, video and television programme production, sound recording and music publishing activities
  - 60 - Programming and broadcasting activities
  - 61 - Telecommunications
  - 62 - Computer programming, consultancy and related activities
  - 63 - Information service activities
- K - *Financial and insurance activities*
  - 64 - Financial service activities, except insurance and pension funding
  - 65 - Insurance, reinsurance and pension funding, except compulsory social security
  - 66 - Activities auxiliary to financial service and insurance activities
- L - *Real estate activities*
  - 68 - Real estate activities
- M - *Professional, scientific and technical activities*
  - 69 - Legal and accounting activities
  - 70 - Activities of head offices; management consultancy activities
  - 71 - Architectural and engineering activities; technical testing and analysis
  - 72 - Scientific research and development
  - 73 - Advertising and market research
  - 74 - Other professional, scientific and technical activities
  - 75 - Veterinary activities
- N - *Administrative and support service activities*
  - 77 - Rental and leasing activities
  - 78 - Employment activities
  - 79 - Travel agency, tour operator, reservation service and related activities
  - 80 - Security and investigation activities
  - 81 - Services to buildings and landscape activities
  - 82 - Office administrative, office support and other business support activities
- O - *Public administration and defense; compulsory social security*
  - 84 - Public administration and defense; compulsory social security
- P - *Education*
  - 85 - Education
- Q - *Human health and social work activities*
  - 86 - Human health activities
  - 87 - Residential care activities
  - 88 - Social work activities without accommodation
- R - *Arts, entertainment and recreation*
  - 90 - Creative, arts and entertainment activities
  - 91 - Libraries, archives, museums and other cultural activities
  - 92 - Gambling and betting activities
  - 93 - Sports activities and amusement and recreation activities

S - *Other service activities*

94 - Activities of membership organizations

95 - Repair of computers and personal and household goods

96 - Other personal service activities

T - *Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use*

97 - Activities of households as employers of domestic personnel

98 - Undifferentiated goods- and services-producing activities of private households for own use

U - *Activities of extraterritorial organizations and bodies*

99 - Activities of extraterritorial organizations and bodies



## Appendix G: Main Animal Diseases & Key Terms

<b>DISEASE NAME</b>	<b>DEFINITION</b>	<b>HOSTS AFFECTS</b>	<b>CLINICAL SIGNS / SYMPTOMS</b>
FMD Foot and Mouth Disease	A highly contagious viral disease	Cattle, sheep, goats, pigs and water buffalos	Fever, ulcerations in the mouth, nose, muzzle, feet, teats. Drooling of saliva can also be observed
CBPP (Contagious Bovine Pleuro-pneumonia)	A highly infectious acute/sub-acute/chronic disease affecting lungs and occasionally joints	Cattle	Fever, cough, increased respiratory rate (in sequence)
CCPP (Contagious Caprine Pleuro-pneumonia)	An acute highly contagious disease	Goats	Fatal weeping pneumonia, labored breathing, death within 7-10 days after onset of clinical signs
LSD Lumpy Skin Disease	It is a viral disease transmitted by insects	Cattle	Persistent fever, generalized skin nodules, edema of corresponding lymph nodes, hair loss
Anthrax	It is infectious but non-contagious	All domestic animals and buffalo	Sudden death, fever, severe diarrhea with blood, bloody nasal discharge
Blackleg	Blackleg is a highly fatal disease of young cattle	Young cattle	Lameness, loss of appetite, rapid breathing and the animal is usually depressed and has a high fever. Characteristic swellings develop in the hip, shoulder, chest, back, neck or elsewhere
PPR (Peste des petits ruminants)	An acute viral Rinderpest like disease of sheep and goats	Goats and sheep	Similar to those of rinderpest in cattle: Respiratory difficulty with cough, high fever, weakness, dull coat, nasal discharge, severe bloody diarrhea
Sheep and goat pox	Contagious viral disease of small ruminants, There is a high mortality rate in susceptible populations	Small ruminants (sheep and goats)	Onset of fever followed by erythematous macules that develop into papules. Lesions may also develop on the mucous membrane and on internal organs, causing systemic signs (respiratory signs, diarrhea, depression, emaciation, abortion and sometimes death)
Newcastle disease	A highly contagious zoonotic poultry disease	Chicken and other domestics fowls and wild avian species	High mortality above 30%, characterized by respiratory and nervous symptoms
Fowl pox	Fowlpox is a relatively low-spreading viral disease of poultry	Chicken and other domestics fowls and wild avian species	Skin lesions and/or plaques in the pharynx
Avian flu	Avian influenza is a highly-contagious flu infection in birds. It is a zoonotic disease	Chicken and other domestics fowls and wild avian species	Decrease in bird's activities, decline in egg production, swelling of the face with blue colored combs and wattles, breathing problems, diarrhoea, muscle paralysis and sudden death
IBD (Infectious Bursal Disease) / Gumboro	A highly contagious disease of young chicks	Chicken	Mortality at 3-6 weeks and can rise up to 75%. Birds are depressed, watery diarrhea

<b>KEY TERMS</b>	
Contagious	Spread by means of contact
Infectious	Spread by means of virus, bacteria or a parasite
Fatal	Leads to death
Zoonotic disease	An infectious disease that can be transmitted to humans and vice versa
Curative	Care provided to improve a situation (especially medical procedures or applications that are intended to relieve illness or injury)

## Appendix H: Animal Breeding Types

<b>CODE</b>	<b>BREEDING TYPE</b>	<b>DESCRIPTION</b>
1	<b>None</b>	No particular strategy is adopted for the breeding of animals. Animals are allowed to mate
2	<b>Natural mating, sire selected from within herd</b>	Animals mate naturally, but specific male(s) are selected from within the herds for mating/reproduction.
3	<b>Natural mating, sire purchased</b>	Animals mate naturally, but specific male(s) are purchased specifically for mating/reproduction.
4	<b>Natural mating, sire exchanged</b>	Animals mate naturally, but male(s) are exchanged with other households specifically for mating/reproduction.
5	<b>Artificial insemination</b>	The technique of placing semen from the male into the reproductive tract of the female by means other than natural service.
6	<b>Dam purchased</b>	Animals mate naturally, but specific female(s) are purchased specifically for mating/reproduction.
7	<b>Dam exchanged</b>	Animals mate naturally, but specific female(s) are exchanged with other households specifically for mating/reproduction.
8	<b>Non-breeding males castrated</b>	Males that are not preferred for breeding/reproduction are castrated to prevent them from mating.

## Appendix I: Fishing Gear

GEAR ID	GEAR	DESCRIPTION
1 & 2	<b>Beach Seines</b>	These include Mosquito net, Chambo seine, Kambuzi seine, and Matemba seine. Similar in construction except for headline length and mesh size.
3	<b>Long-lines:</b>	Passive gear consists of a strong length of cord with mono-filament traces and hooks attached at intervals. The hooks are baited with pieces of fish. The long-line is then weighted to the bottom and is generally set overnight and lifted following morning. Long-line hooks are generally larger than those on handlines. <b>Handlines:</b> Consist of mono-filament nylon with hooks attached and at the bottom of the line a weight is attached. The hooks are baited with earthworms or Usipa depending on fish being targeted.
4	<b>Gill Traps</b>	Rectangular gear usually surface set or bottom set and used normally as passive gear. Set in the morning and retrieved the following morning. But at times this net may be used as active gear in open-water operated like chilimira net; slowly dragged behind two boats; set in shallow water and fish chased into it by pounding the water-chiombera.
5	<b>Fish Traps Mono</b>	Generally funnel-valve made of bamboo set in shallow river or lake areas to catch <i>chambo</i> and predators like <i>Mlamba</i> overnight. The fish trap may be used with a weir or fence, which serves to guide the fish into the trap.
6	<b>Cast Net</b>	Conical shape with footrope weighted with small stones. Generally used by two people, one paddles the other casts while standing in front of the canoe indicating to the paddler in which direction he wishes to be propelled. Immediately prior to the net being cast, the paddling ceases. As soon as the thrown net sinks to the bottom, the canoe is propelled forward so that the cast net is retrieved almost vertically.
7	<b>Large Fish Trap</b>	Wooden box with a lattice construction that allows water to pass through. The box has one entry point in the middle that allows fish to enter, but prevents them from leaving. A weight is attached to the box and food is kept inside to attract the fish.
8	<b>Night boat fishing</b>	One large boat is surrounded by smaller boats. The smaller boats put out lanterns to attract the fish toward the larger boat to be caught.

## **Appendix J: List of Definitions**

### GULIO (local market)

Gulio is a local market mostly at the Village level which can occur at any frequency – once a week, twice etc. One can get any sort of goods at a Gulio and it mostly operates in rural areas. Farmers get together at a certain place once a week and sell their produce. Note that these sellers travel across the country – it could be that every Monday they operate in Village A, every Tuesday in Village B, every Wednesday in Village C and so on.

### SOKO KUU (main market)

Soko kuu is the main market that people go to that usually operates daily and they operate at the village or ward level. Soko Kuu is the primary market for all goods. The difference between Soko Kuu and Gulio is that Soko Kuu operates daily while Gulio operates on a fixed schedule basis, which is why they are referred to as the Main Market.

### SOKO (market)

Soko is a small market located at street corner that sells few items like vegetables, and some other household goods. Soko's are frequently found in Dar for example. Usually these markets do not carry high value goods and have fewer items than a Soko Kuu.

### MNADA (auction)

Mnanda is an English auction for a very specific good – like a cow for example. A minimum price is set, beyond which the bidders can go up to any amount. The highest bidder wins. It is an open auction in the sense that all the bidders find out how much each is bidding and can competitively bid more.

### M/BIASHARA BINAFSI (private business person)

This is usually a vendor or a hawker who sells goods by walking door to door – like cigarette/water sellers or vegetable vendors in Dar.

### DUKANI/MCHUZI (grocery local merchant)

This is a small shop owner around street corners that sell very specific items. This could be a shop for stationery, shop for buying everyday essentials like bread, toothpaste, etc... or even a medical shop. Dukani/Mchuzi sell very specific goods and are fixed shops owned by merchants unlike the Biasharas who are travelers.

## Appendix K: Anthropometry

One approach to studying nutrition is to assess nutritional status on the basis of anthropometric indicators. By comparing these indicators with the distribution of the same indicator for a “healthy” reference group, and identifying “extreme” or “abnormal” departures from this distribution, it is possible to assess the adequacy of growth and diet, in particular in infants and children.

While a number of anthropometric indicators exist based on various physical body measurements, the assessment of nutritional status is presented in the NPS 2014/15 in terms of height and weight, as these are widely applied measurements and allow highly-specific and broadly-accepted interpretations. In the NPS 2014/15, the height and weight of respondents are collected in “HH\_SEC\_V” for all household members under the age of 15 and women of child-bearing age (15-49 years), while upper arm circumference is additionally collected for children under 5 years of age.

Using height and weight, objective measurements of body dimensions and composition are generated as proxy indicators of nutritional status. The supplemental dataset “NPSY4.CHILD.ANTHRO” presents the most frequently used anthropometric indices used to assess nutritional status in infants and children — height-for-age, weight-for-age, and weight-for-height — for all household members ages 0-59 months. While the latter indicator requires only physical measurements, the former two rely on the accurate and credible reporting of age.

### *Height-for-age*

Height-for-age is a measure of cumulative linear growth, and deficits typically indicate chronic malnutrition and/or chronic or frequent illness. Moderate to severe cases of low height-for-age ( $<-2$  SDs) are referred to as “stunting”. The height-for-age index is primarily used as a population indicator rather than for individual growth monitoring.

### *Weight-for-height*

Weight-for-height reflects an individual’s body weight relative to height, and has the advantage of not requiring sensitive and often unreliable age data. Weight-for-height is a useful index for assessing *current* nutritional status, and since it is particularly sensitive to acute growth disturbances can be useful for screening children at risk and for measuring short-term changes in nutritional status. Moderate to severe cases of low weight-for-height ( $<-2$  SDs) are referred to as “wasting”. Wasting may be the consequence of starvation or severe disease (i.e. diarrhea), but can also be due to chronic conditions.

### *Weight-for-age*

Weight-for-age measures body mass relative to age and, in effect, is a composite measure of height-for-age and weight-for-height. Moderate to severe low weight-for-age ( $<-2$  SDs), relative to a child of the same sex and age in the reference population, is referred to as “underweight”. Weight-for-age is commonly used for monitoring growth and to assess changes in the magnitude of undernutrition over time; however, the weight-for-age index confounds the effects of short- and long-term health and nutrition problems.

Anthropometric indices for the NPS 2014/15 were constructed by comparing relevant measures with those of comparable individuals (in regard to age and sex) in the reference population of “healthy” infants and children. This was done for infants and children ages 0-59 months. The preferred and most common way of expressing anthropometric indices is in the form of Z-scores, a dimensionless quantity derived by dividing the difference between the value for an individual and the mean value of the reference population for the same sex and age (or height) by the standard deviation of the reference population.

The general malnutrition classification proposed by the WHO distinguishes between mild (Z-score  $<-1$  SDs), moderate (Z-score  $<-2$  SDs), and severe malnutrition (Z-score  $<-3$  SDs). Assessments of nutritional status are also commonly characterized by each indices’ respective binary indicator, defined by the severity of the anthropometric deficit as measured by Z-scores. Using this method on a normalized distribution curve, the most appropriate cut-off point to define abnormal anthropometry is -2 SDs, regardless of the indicator. For example, a child with a height-for-age Z-score  $<-2$  SDs would be considered stunted, while a child with a height-for-age Z-score  $<-1$  SDs would not be considered stunted.

The supplemental dataset “NPSY4.CHILD.ANTHRO” provides Z-scores for each of the anthropometric indices identified above, as well as a binary variable indicating severity of the anthropometric deficit ( $<-2$  SDs or not). For many purposes, anthropometric data should be presented according age and sex groups. As such, the age in months of each respondent has also been provided in the supplemental dataset “NPSY4.CHILD.ANTHRO”, as well as “y4\_hhid” and “indidy4”, which together serve as the unique identifier for the supplemental dataset as well as other individual-level household data file.