The United Republic of Tanzania

STATISTICAL METHODS, STANDARDS AND GUIDELINES

SECOND EDITION

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Ministry of Finance and Planning

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF ACRONYMS

AfDB	African Development Bank
ANA	Annual National Accounts
ANC	Ante Natal Care
ASDP	Agriculture Sector Development Programme
ASIP	Annual Survey of Industrial Production
BOP	Balance of Payments
CPI	Consumer Price Index
CPC	Central Product Classification
SBR	Statistical Business Register
CSPro	Census and Survey Processing System
COICOP	Classification of Individual Consumption by Purpose
DBS	Dried Blood Spots
DDC	Dewel Decimal Classification
DP	Development Partner
e-GDDS	Enhanced General Data Dissemination System
EA	Enumeration Area
ESTID	Establishment's Identification
FDES	Framework for Development of Environment Statistics
FYDP	Five-Year Development Plan
GDP	Gross Domestic Product
GDDS	General Data Dissemination System
GFS	Government Finance Statistics
GFSM	Government Finance Statistics Manual
GIS	Geographical Information
GPS	Global Positioning System
GVA	Gross Value Added
HBS	Household Budget Survey
HBSQF	Household Budget Survey Questionnaire Form
HCPI	Harmonised Consumer Price Index
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
IBS	Integrated Business Survey
ICP	International Comparison Program
ICR	Intelligent Character Recognition

IEC	Information, Education and Communication
ILO	International Labour Organization
ILFS	Integrated Labour Force Survey
IMF	International Monetary Fund
ISIC	International Standard for Industrial Classification
JNIA	Julius Nyerere International Airport
LGA	Local Government Authority
LFS	Labour Force Survey
MAB	Ministerial Advisory Board
MAFS	Ministry of Agriculture and Food Security
MDAs	Ministries, Departments and Agencies
MDG	Millennium Development Goals
MKUKUTA	Mkakati wa Kukuza Uchumi na Kupunguza Umasikini Tanzania
MNRT	Ministry of Natural Resources and Tourism
MTEF	Medium Term Expenditure Framework
NBS	National Bureau of Statistics
NMS	National Master Sample
NPS	National Panel Survey
NPISHs	Non-Profit Institutions Serving Households
NACP	National AIDS Control Programme
NSDP	National Summary Data Page
NSO	National Statistical Office
NSGRP	National Strategy for Growth and Reduction of Poverty
NSS	National Statistical System
NSSF	National Social Security Fund
OCGS	Office of Chief Government Statistician
PAYE	Pay As You Earn
PIMI	Production Index of Manufacturing Industry
PORALG	President's Office – Regional Administration and Local Government
PSU	Primary Sampling Unit
QNA	Quarterly National Accounts
REPOA	Research on Poverty Alleviation
RSM	Regional Statistical Manager
RMSE	Roots Mean Square Error

SADC	Southern Africa Development Community
SDDS	Spatial Data Dissemination System
SDG	Sustainable Development Goals
SMD	Surveys and Mapping Division of Tanzania
SNA	System of National Accounts
SPSS	Statistical Package for Social Scientists
STIs	Sexually Transmitted Infections
STPR	Short Term Price Relative
TCIRS	Table of Common Indicators Required for Surveillance
TASAF	Tanzania Social Action Fund
TASCO	Tanzania Standard Classifications of Occupations
TDHS	Tanzania Demographic and Health Survey
TDS	Tanzania Disability Survey
TISD	Tanzania Integrated Statistical Database
TFNC	Tanzania Food and Nutrition Centre
THMIS	Tanzania HIV/AIDS and Malaria Indicator Survey
TNA	Training Need Analysis
TNADA	Tanzania National Data Archive
TOE	Training of Enumerators
TOT	Training of Trainers
TSED	Tanzania Socio-Economic Database
TSMP	Tanzania Statistical Master Plan
TUS	Time Use Survey
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNFPA	United Nations Fund for Population Activities
UNDP	United Nations Development Program
UNICEF	United Nations Children Fund
UTM	Universal Transverse Mercator
VBA	Visual Basic for Application
VETA	Vocational Education Training Authority
ZCT	Zanzibar Commission for Tourism

PREFACE

This is a comprehensive publication that puts together all Methods, Standards and Guidelines that are used in the collection and compilation of official statistics in Tanzania Mainland. The main objective of the publication is to harmonize and coordinate production of official statistics in the entire National Statistical System (NSS). The publication is a product of collaborative commitments from a number of stakeholders of statistics within our National Statistical System.

According to Statistics Act No. 9 of 2015, among the main functions of the National Bureau of Statistics (NBS) is to establish statistical standards for the collection, analysis and publication of official statistics to ensure uniformity in quality, adequacy of coverage and reliability of Statistical information.

Experience has shown that producers of statistics in Tanzania have been producing statistics that are sometimes conflicting. This situation has, over the years, brought difficulties for planners and decision makers to decide on which statistics to rely on to plan or formulate policies for the development of the country and its people.

In order to rectify this situation, the NBS has been producing a number of guidelines and frameworks and updating them regularly for the purpose of making sure producers of official statistics within the country's NSS are applying standard principals and standards to produce statistics that meet the expected standards for use locally and at the same time to meet the need for international comparisons. On the other hand, the guidelines and frameworks produced aim at enabling the consumers of statistics to objectively determine whether the statistics put forth meet the required quality dimensions before they decide to use them. As earlier stated, this and other guiding documents produced by the National Bureau of Statistics are updated regularly; hence the NBS welcomes constructive feedback, comments and suggestions that will be input into future editions of this publication.

Dr. Albina A. Chuwa
Director General.

BACKGROUND

The Government of Tanzania has been implementing structural and institutional reforms, which aim at improving socio-economic development. Ministries, Departments, and Agencies (MDAs), Local Government Authorities (LGAs), and other stakeholders are implementing interventions as outlined in national development frameworks in order to improve livelihood of the people. Tanzania's National Statistical System (NSS) comprises data producers, users, suppliers, providers, statistical training institutions and research centres in Tanzania Mainland and Tanzania Zanzibar.

The NSS has different actors that includes; MDAs, LGAs, and other stakeholders who collect and process data from primary providers such as individuals, households, communities, institutions, and establishments. Much of this information is used as a basis for policy formulation, planning, programme designing, monitoring and evaluating a number programs that implemented in different sectors of the country's economy. The National Bureau of Statistics (NBS) in Tanzania Mainland and Office of Chief Government Statistician (OCGS) in Tanzania Zanzibar are the central institutions within NSS mandated to coordinate the production process of official statistics in the country.

In order for the MDAs, LGAs and other stakeholders to achieve the desired objectives in producing statistical information and providing services, they must meet agreed standards when conducting Censuses, Surveys, and handling administrative data within their institutions so as to ensure uniformity in quality, adequacy of coverage and reliability of Statistical information.

To serve the need for uniformity in quality, adequacy of coverage and reliability in statistics production process in the country, the NBS as the coordinator, has the role developing and disseminating methods, standards and guidelines, and other frameworks that are regularly updated to meet the desired goal. These methods, standards and guidelines outline the statistical professional principles and practices that MDAs, LGAs and other stakeholders are required to follow step-by-step in the statistical production process. Each standard has supplementary guidelines that present recommended best practices to fulfill the goals of the standards.

These standards and guidelines provide a means to guarantee harmonization, comparability and consistency among and within statistical activities and services conducted in Tanzania. Implementation of standards and guidelines ensures that users of Tanzania statistical information, products and services are provided with details on the principles and methods employed in

planning, collection, processing, analysis, dissemination and preservation of Tanzania statistical information.

The framework for the methods, standards and guidelines includes:

(i) Methods for statistical production

(ii) Main stages of statistical production

(iii) Standards and guidelines for statistical production

(iv) Standard classifications in statistical production

(v) Statistical products and services

The framework outlines 21 standards and their related guidelines for Tanzania Statistical activities that ensure high quality statistical census and survey results. The Standards and guidelines provided, enhances harmonization, comparability and consistency of quality and integrity of statistical information and products disseminated by MDAs, LGAs and other stakeholders in Tanzania.

In conducting Census or Survey, the MDAs, LGAs and other stakeholders should engage personnel with knowledge, well experienced and who is familiar with census or survey methodologies and related techniques to effectively achieve the goals of the statistical standards.

The main objective of this document, therefore, is to ensure that data of high quality are being produced through effective use of statistical methods, concepts and definitions as well as the application of the quality control procedures in all stages of data production.

PART I: STATISTICAL PRODUCTION

A: METHODS AND STAGES OF STATISTICAL PRODUCTION

1.0 Introduction

Statistical production depends on various methods and stages that have an impact on the quality of data, information and indicators produced and used. Therefore, it is imperative that, this process addresses user needs and concerns in the early stages. In some cases, users demand disaggregated data and statistics at the ultimate stages whereas the initial stages did not take into account these needs. Thus, it is likewise essential that various stakeholders including subject matter specialists be involved at initial stages of statistical production process to address the user needs. As a matter of principle, quality measures have to be instituted in all stages of data production.

1.1 Methods of Statistical Production

Statistical Production refers to the activity that is carried out within statistical information ~~system~~ and aimed at coming up with statistics as a final product. In producing Statistics there are various methods used depending on the source as elaborated below;

1.1.1 Administrative Records and Routine Data Systems

(i) The methods are primarily established to manage operational processes. These includes; vital events registration, agriculture, education, health, water, tax, trade social security, etc;

(ii) The data generated can also be used for strategical purposes;

(iii) Have built-in mechanisms in service delivery to collect data for measuring early results; and

(iv) Assist in the production of input, process, output and outcome indicators.

1.1.2 Censuses and Surveys

(a) Census

(i) Collects data from every member of a given population within specified boundaries;

(ii) It aims at providing total coverage of the population;

(iii) Conducted after every specified interval (after every ten years is common for population census in most countries);

(iv) Costly and time consuming;

(v) Basis (frame) for inter-censal sample surveys; and

(vi) Fewer questions are asked and normally produce indicators that measure medium and long term results (outcome and impact) of policies and programmes.

(b) Survey

(i) Involves identifying and collecting data from a randomly selected portion (a sample) of a given population;

(ii) Conducted periodically for different subjects during the inter-censal period;

(iii) Many questions asked that produce indicators for measuring early as well as long term results (outcome and impact) of service delivery; and

(iv) Supplements census and administrative data.

(c) Surveillance and Longitudinal Studies

(i) These are on-going, systematic collection, analysis, interpretation and dissemination of data from a specific area or population; and

(ii) Collects data for vital events (births, deaths and migration), health, education and other demographic, social and economic variables.

1.1.3 Experimental and Case studies

An experimental study involves taking measurements of the system under study, manipulating the system and then taking additional measurements using the same procedure to determine if the manipulation has modified the values of the measurements.

A case study is based on an in-depth investigation of a person, a small group, a single situation, or a specific "case,". It involves extensive research, including documented evidence of a particular issue or situation; symptoms, reactions, effects of certain stimuli, and the conclusion reached following the study. A case study may show a correlation between two factors, whether or not a causal relationship can also be proven. Case studies may be descriptive or explanatory.

1.2 Stages in Statistical Production

In producing statistics, a number of stages have to be considered. These are elaborated below.

1.2.1 Users Demand for Statistical Data

(i) Internal and external users, approach the national statistics offices and statistics units in MDAs requesting data for planning and decision making purposes;

(ii) The statistics experts have to discuss with data users and other stakeholders to identify data needs to be addressed;

(iii) The statistics experts have to translate the data needs into objectives of the statistics production process; and

(iv) There is a need to determine what method to use to generate the required statistical data.

1.2.2 Establishing Technical Committees

(i) Determine the composition of technical committee based on type of data required;

(ii) Involve expertise from different socio-economic fields and disciplines;

(iii) Carry out critical analysis of the subject matter in question during the technical committee meetings; and

(iv) Planning processes for the statistical production.

1.2.3 Formulation of Statistical Problem

(i) Data needs are normally presented in non-statistical language;

(ii) Need to come up with statistical formulations in order to produce the desired data and indicators; and

(iii) Determine appropriate study design and the type of data needed.

1.2.4 Information needs

(i) The technical committee has to determine what type of information has to be collected that will meet objectives and user needs; and

(ii) An overall statement of information needed for socio-economic planning and decision making has to be pointed out.

1.2.5 Tabulation and Analysis Plan

(i) It is a planned way of summarizing and presenting the collected data;

(ii) It includes frequency tables, cross tabulation and graphs;

(iii) It involves computation of indicators and measures of association (correlations) and determining cause-effect relationships (regressions); and

(iv) It needs analysis of variables (sex, age, locality, education, income levels, etc) in cross tabulations and regressions to extract disparities.

1.2.6 Formulation of Statistical Questions

(i) Converting information required and indicators to questions;

(ii) Mock interviews among experts to test the questions;

(iii) Pre-testing which assist in checking how respondents understand the questions, what responses to expect, sensitivity and neutrality of questions, how to improve them, etc; and

(iv) General or specific questions for different respondent or groups.

1.2.7 Data collection instruments/questionnaire design

(i) Combining all questions into a form, questionnaire or checklist;

(ii) Logical flow of questions to be considered;

(iii) Separate or single instrument for different respondent categories to be reflected;

(iv) Develop instruction manuals; and

(v) Develop publicity and advocacy materials.

1.2.8 Sample design

(i) Resources can determine whether to collect data from the whole or part of total population. However, level of accuracy can be determined by the sample size;

(ii) Identifying and selecting respondents to represent others including stratification of sub-groups;

(iii) Adequate sample size from different respondent categories; and

(iv) Sampling weights for estimation of population parameters.

1.2.9 Recruitment and training

(i) Determine number and type of personnel (e.g. supervisors and enumerators) who will be involved in data collection;

(ii) Criteria for recruiting and selecting data collection personnel;

(iii) Training to build the capacity of the personnel for the data collection; and

(iv) Time used for imparting general and specific skills to data collection personnel should be considered depending on the type and nature of the survey.

1.2.10 Pilot testing

(i) Test the feasibility of survey instruments (Questionnaires, Manuals, Forms etc);

(ii) Provide cost and time estimates for the whole survey;

(iii) Tests all logistical procedures before main fieldwork;

(iv) Determine areas of strengths and weaknesses of the data collection procedures; and

(v) Enhance improvement of data production and logistical procedures.

1.2.11 Main fieldwork

(i) Conduct advocacy and publicity campaigns before and during data collection to attain the desired response rates;

(ii) Supply of survey instruments to and from the field;

(iii) Collect data from the earmarked respondents using appropriate questionnaire;

(iv) Strengthen field supervision mechanisms and teamwork to improve data quality; and

(v) Conduct post-enumeration survey (evaluation) immediately after main fieldwork to determine coverage, content and quality aspects of the data collected.

1.2.12 Data processing

Due to emerging of modern technology, the use of electronic divces such as tablets/min laptops (Computer-Aided Personal Interview – CAPI) for the data collection has been adopted. When applying this modern technology, the use of an algorithm during data cleaning procedures to identify the completeness of an interview based on a set of key variables is inevitable.

However, with the use of paper questionnaires, the following should be considered:-

(i) Manual editing of the filled-in questionnaire by editors to ensure all important fields of the questionnaire are completed accordingly;

(ii) Data cleaning of printouts to ensure that all answers were entered as reported in the questionnaires and dairies;

(iii) Institute field procedures for checking quality of data by supervisors and manual editors;

(iv) Transfer data from data collection instruments into computer files (data entry);

(v) Institute office procedures for checking quality of data before, during and after data entry; and

(vi) Build capacity of data entry operators in terms of speed and accuracy.

1.2.13 Tabulation / Analysis

(i) Implementing/produce tables as per tabulation plan/ analysis plan;

(ii) Summarizing the collected data into tables and statistics / indicators;

(iii) Disaggregation of data - presenting data such that socio-economic differentials are clearly seen;

(iv) Analyzing within and among socio-economic categories – column or row totals, sex and geographical location as major analysis variables – analyzing important population characteristics by sex and location such that gender and urban/rural differences are clearly reflected; and

(v) Make statistical inference from sample data to total population.

1.2.14 Interpretation and report writing

(i) This involves extracting main messages from the tabulated / analyzed data;

(ii) Composition of different experts among the authors. An expert eye / lens is very crucial at this stage to pick the critical issues; and

(iii) Write separate chapters or reports on related findings.

1.2.15 Dissemination and Statistical Literacy

(i) Informing users and stakeholders on the results using various means such as reports, media and website;

(ii) Provide general and specific packages for various users;

(iii) Promoting the policy agenda of the produced data; and

(iv) Conducting Statistical literacy to users to understand the data.

1.2.16 Documentation and Archiving

(i) Preparing basic information datasheets describing the data;

(ii) Archiving the raw data and reports; and

(iii) Institute procedures for accessing the raw data including removing identification (anonymization) of census/survey respondents.

B: STANDARDS AND GUIDELINES FOR STATISTICAL PRODUCTION

2.0 Introduction

There are various methods of data production as outlined earlier in this document. This part dwells in detail about these methods by providing relevant standards and guidelines.

2.1 SURVEY METHODOLOGY

2.1.1 Survey Planning

Standard 2.1.1: When starting a completely new survey or a new round of an existing survey; MDAs, LGAs and other stakeholders must develop a written proposal (concept note) that sets forth a justification, including: goals and objectives, potential users, related and previous surveys, key survey estimates, the precision required of the estimates, the tabulation and analytic results that will inform decisions and other uses, steps taken to prevent unnecessary duplication with other sources of information, confidentiality of individual data, when and how frequently users need the data and public access and use of the data.

The guidelines for this standard are:

Guideline 2.1.1.1: Surveys (and related activities such as focus groups, pretesting, pilot studies, field tests, etc.) are collections of information subject to the requirements of an existing Statistics Act. An initial step in planning a new survey or a revision of an ongoing survey should be to contact the financing agency MDA, LGA, Development Partner (DP), and a stakeholder's most senior designated official to ensure the survey work is done in compliance with the law and regulations. NBS approval will be required before the MDAs, LGAs and other stakeholders embark on a data collection exercise from households and establishments.

Guideline 2.1.1.2: Planning is an important prerequisite when designing a new survey or implementing an amendment of an ongoing survey. Key planning activities include the following:

(a) A justification for the survey
   - (i) The rationale for the survey;
   - (ii) Relationship to previous surveys;
   - (iii) Survey goals and objectives;
   - (iv) Hypotheses to be tested;
   - (v) Definitions of key variables; and

(vi) Consultations with potential stakeholders to identify their requirements and expectations.

(b) A review of related studies, surveys, and reports of Tanzania and non-Tanzania sources to ensure that part or all of the survey would not unnecessarily duplicate available data from an existing source, or could not be more appropriately obtained by adding questions to existing Tanzania statistical surveys. The goal here is to minimize unnecessary use of limited resources available for surveys in the country and minimize burden to data producers;

(c) A review of the confidentiality and privacy policy of an existing Statistics Act. on surveys that will collect individually-identifiable data from any survey respondent;

(d) A complete review of all survey data items, the justification for each item, and the means of measurements (e.g., through questionnaires, tests, or administrative records);

(e) A plan for pre-testing or cognitive interviewing, if applicable;

(f) A plan for quality assurance during each phase of the survey process to permit monitoring and assessing performance during implementation;

(i) The plan should include possibility to modify the survey procedures if design parameters appear unlikely to meet expectations (for example, if low response rates are likely);

(ii) Should contain general specifications for an internal project management system that identifies critical activities; and

(iii) Key milestones of the survey that will be monitored, and the timeframes among them.

(g) A plan for evaluating survey procedures and results;

(h) An analysis plan that identifies analysis issues, objectives, key variables and proposed statistical tests;

(i) An estimate of resources and target timeframe needed for completion of the survey cycle;

(j) A dissemination plan that identifies target audiences, proposed major information products, and the timing of their release; and

(k) A data management plan for the preservation of survey data, documentation, and information products as well as the authorized disposition of survey records.

Guideline 2.1.1.3: Include standard elements of project management in the plan, including target completion dates, the resources needed to complete each activity, and risk planning.

Guideline 2.1.1.4: To maintain a consistent data series over time, use consistent data collection procedures for ongoing data collections on core statistics. Continuous improvement efforts sometimes result in a trade-off between the desire for consistency and a need to improve a data collection. If changes are needed in key variables or survey procedures for a data series, consider the justification or rationale for the changes in terms of their usefulness for policymakers, conducting analyses, and addressing information needs. Develop adjustment methods, such as crosswalks and bridge studies that will be used to preserve trend analyses and inform users about the effects of changes.

2.1.2 Survey Designing

Standard 2.1.2: MDAs, LGAs and other stakeholders must develop a survey design, including defining the study frame, target population, sampling plan, identify the data collection instruments and methods, developing a practical timetable, estimating survey cost, and selecting samples using accepted statistical methods (e.g., probabilistic methods that can provide estimates of sampling error). Any use of non-probability sampling methods (e.g., judgmental, Quota and Snowball etc. samples) must be justified statistically and be able to measure estimation error. The size and design of the sample must reflect the level of detail needed in tabulations and other data products, and the precision required of key estimates. Documentation of each of these activities and resulting decisions must be maintained in the project files for use in documentation.

The guidelines for this standard are:

Guideline 2.1.2.1: Include the following in the survey design:

(a) Frame for selection;

(b) Proposed target population;

(c) Stratification levels/domain of study and analysis;

(d) Response rate from previous survey or expected response rate;

(e) Survey frequency;

(f) Timing of data collection;

(g) Data collection modes (such as paper and pencil, mail survey, telephone survey, etc);

(h) Sample design;

(i) Precision requirements;

(j) Effective sample size determination based on power analyses for key variables; and

(k) Overall sample size.

Guideline 2.1.2.2: Ensure the sample design will yield the data required to meet the objectives of the survey. Include the following in the sample design:

(a) Identification of the sampling frame (address, name, location);

(b) Identify the sampling unit used (at each stage if a multistage design);

(c) Identify sampling strata;

(d) Power analyses to determine sample sizes;

(e) Effective sample sizes for key variables by reporting domains (Urban/Rural where appropriate);

(f) Criteria for stratifying or clustering, sample size by stratum, and the known probabilities of selection;

(g) Response rate goals (see Standard 2.1.3); estimation and weighting plan; variance estimation techniques appropriate to the survey design; and

(h) Expected precision of estimates for key variables.

Guideline 2.1.2.3: When a non-probabilistic sampling method is employed, include the following in the survey design documentation:

(a) A discussion of what options were considered and why the final design was chosen;

(b) An estimate of the potential bias in the estimates.

Guideline 2.1.2.4: Include a statement of confidentiality along with instructions required to complete the survey.

Guideline 2.1.2.5: Include the following in the data collection plans:

(a) Frequency and timing of data collection;

(b) Methods of collection for achieving acceptable response rates;

(c) Training of enumerators and persons key to the survey, coding and editing the data;

(d) Cost estimates, including the costs of pretests;

(e) Non-response follow-up; and

(f) Evaluation studies.

2.1.3 Response Rates

Standard 2.1.3: MDAs, LGAs and other stakeholders must design the survey to achieve the highest rates of response to ensure that survey results are representative of the target population so that they can be used with confidence to inform decisions. Non-response bias analyses must be conducted when unit or item response rates or other factors suggest the potential for bias to occur.

The guidelines for this standard are:
Guideline 2.1.3.1: Calculate sample survey unit response rates without substitutions.

Guideline 2.1.3.2: Design data collections that will be used for sample frames for other surveys (e.g., the Population and Housing Census enumeration areas (EAs), and the Statistical Business Register of Establishments) to meet a target unit response rate of at least 80 percent, or provide a justification for a lower anticipated rate.

2.1.4 Focus Group Discussions (for instrument development)

Standard 2.1.4: MDAs, LGAs and other stakeholders must ensure that the survey collects the required information for their intended producers and users. The purpose of this standard is to get key issues regarding the planned survey before developing the survey questionnaire.

The guidelines for this standard are:
Guideline 2.1.4.1: Identify key stakeholders in the subject matter area who will participate in focus group discussion.

Guideline 2.1.4.2: Prepare semi-structured (focused) discussion with members of the target population to expose what they know about the study that the questionnaire will cover, how they think about the study and what terms they use in talking about the study topics/variables.

Guideline 2.1.4.3: Recruit volunteers (10-20 from data collectors, producers and users side) who are at least familiar or are expected to be data producers or users of the study; to participate in a systematic discussion guided by a moderator about the survey topic(s) (questions for discussion

should be prepared prior to convene volunteers). Lessons learned from the discussion will be the basis for questionnaire design.

2.1.5 Designing Survey Instrument(s) (Questionnaire(s))

Standard 2.1.5: Based on the experiences and lessons drawn from the literature review and focus group discussion, but mainly reflecting on the objectives of the proposed study, MDAs, LGAs and other stakeholders should design a questionnaire that will capture the intended information to be collected. The instrument shall probe and systematically record comprehensive information that answers the study questions.

The guidelines for this standard are:

Guideline 2.1.5.1: Identify subject matter specialists (mostly statisticians, researchers, sociologists, economists, etc) who will draft the questionnaire.

Guideline 2.1.5.2: Review literatures and instruments from previous similar studies for comparability purposes.

Guideline 2.1.5.3: Check the identification and demographic variables of the existing instruments if they meet the requirements of the intended study and update accordingly.

Guideline 2.1.5.4: Design the questionnaire using the available questions bank in Tanzania (e.g. TNADA) or outside Tanzania.

Guideline 2.1.5.5: Prepare instruction manuals for data collectors and supervisors.

2.1.6 Pre-testing of Survey Instruments

Standard 2.1.6: MDAs, LGAs and other stakeholders must ensure that the draft questionnaire is pre-tested to randomly chosen participants by interviewers to probe the understanding of the study questions to respondents, time to complete one questionnaire and an attempt to learn how they formulate their answers. Then the recording of the outcome of the interview is done for the purpose of questionnaire improvement. By conducting a pretest of the survey components, measurement error will be controlled.

The guidelines for this standard are:

Guideline 2.1.6.1: Randomly choose participants to participate in pre-test interviews.

Guideline 2.1.6.2: Key researchers and survey desk officers should participate fully in the cognitive interview and if possible recording the interview for quality checking.

Guideline 2.1.6.3: Arrange technical meeting to discuss the experiences learned from the cognitive interviews and use the results to improve the questionnaire.

Guideline 2.1.6.4: Record starting and finishing times for questionnaire interviews to determine the average time spent per questionnaire. The technical committee can then allocate number of questionnaires to be completed per interviewer per day.

2.1.7 Training of Trainers (TOT), Supervisors and Training of Enumerators (TOE)

Standard 2.1.7: MDAs, LGAs and other stakeholders should recruit field staff to participate in TOT and TOE on the basis of their competence and experience in the planned data production exercise such as a census or a survey.

The guidelines for this standard are:

Guideline 2.1.7.1: Identify key staff (trainers) who will train supervisors and enumerators

Guideline 2.1.7.2: If supervisors and enumerators are not enough or available within an organization, consider to hire and recruit them. In addition, recruit reserve supervisors and enumerators for replacement in case of dropouts during main survey.

Guideline 2.1.7.3: Prepare conducive environment for training in terms of geography, conference facilities and accommodation for participants.

Guideline 2.1.7.4: A maximum group of 5 enumerators should be supervised by one supervisor.

Guideline 2.1.7.5: Prepare mock exam to test the understanding of trainees.

Guideline 2.1.7.6: Prepare form for trainers' evaluation. This will help to show relationships of trainers-trainees and understanding of areas for improvement.

2.1.8 Pilot Testing

Standard 2.1.8: MDAs, LGAs and other stakeholders must administer at least a sample covering zonal areas using all field procedures similar to the main census or survey instruments and hold debriefing between interviewers and project team.

The guidelines for this standard are:

Guideline 2.1.8.1: Test all field instruments, logistical procedures and human resource capacity. Items to be tested include frame development, sample selection, questionnaire design, data collection, edit specifications, data processing, estimation, file creation and tabulations. A complete test of all components is desirable for all surveys that cover the whole country.

Guideline 2.1.8.2: Tabulate pilot results to see patterns of missing data values, recording and behavior coding to detect patterns of questions that are difficult to answer.

Guideline 2.1.8.3: Use the lessons learned from the pilot to improve the instruments and the approach to the study.

2.2 DATA COLLECTION

2.2.1 Sampling Frames

Standard 2.2.1: MDAs, LGAs and other stakeholders must ensure that the frames for the planned sample survey or census are suitable for the study design and are assessed against the target population for quality checking.

The guidelines for this standard are:

Guideline 2.2.1.1: Describe target populations and associated survey or sampling frames. Include the following items in this description:

(a) Describe the approach in which the frame was created and the methodology of frame updating;

(b) Describe exclusions that have been applied to frame and target populations;

(c) Describe frame problems (missing units on the frame (under-coverage), and duplicates on the frame (over-coverage);

(d) Describe what was done to improve the coverage of the frame;

(e) Describe how data quality and item non-response on the frame may have affected the coverage of the frame; and

(f) Explain limitations of the frame including the timeliness and accuracy of the frame (e.g., misclassification, eligibility, etc.).

Guideline 2.2.1.2: Conduct regular evaluations of coverage rates and coverage of the target population in survey frames that are used for ongoing surveys every 3 years.

2.2.2 Awareness to Prospective Survey Respondents

Standard 2.2.2: MDAs, LGAs and other stakeholders must ensure that all prospective survey respondents are aware of the study and they understand the purpose of the survey.

The guidelines for this standard are:

Guideline 2.2.2.1: Provide pre-notification letter / survey brochures to respondents

(a) Informs potential respondents that they have been selected to participate in a survey;

(b) Inform potential respondents about the name and nature of the survey; and

(c) Assure them on the confidentiality of information to be collected.

Guideline 2.2.2.2: Intensify Information, Education and Communication (IEC) campaign through media (such as televisions, radios, newspapers, magazines, etc).

Guideline 2.2.2.3: Involve leaders at LGAs (Ward, Village/Mtaa Executive Officers) all the time during data collection in the EA.

2.2.3 Methods of Data Collection

Standard 2.2.3: MDAs, LGAs and other stakeholders must design and administer their data collection instruments and methods in a manner that achieves the best balance between

maximizing data quality and controlling measurement error while minimizing cost, and the burden on respondents.

The guidelines for this standard are:

Guideline 2.2.3.1: Design the data collection instruments in a manner that minimizes respondents' burden, while maximizing data quality. The following strategies may be used to achieve these goals:

(a) Questions should be written clearly;

(b) Observe logical flow of questions and design proper skip patterns;

(c) Don't overload the questionnaire;

(d) The questionnaire should include only items/variables that have been pre/pilot tested.

Guideline 2.2.3.2: Encourage respondents to participate in order to maximize response rates and improve data quality. The following data collection strategies can also be used to achieve high response rates:

(a) Ensure that the data collection reference period is of adequate and reasonable length (at most 12 months);

(b) Allow three interview attempts (call-backs) before declaring unit non-response;

(c) Use competent interviewers and other staff who can learn techniques for obtaining cooperation and building rapport with respondents. Techniques for building rapport include respect for respondents' rights and culture, observing appointments, follow-up skills, knowledge of the goals and objectives of the data collection and uses of the data;

(d) Although incentives are not recommended and used in surveys, MDAs, LGAs and other stakeholders may consider use of respondent incentives if they believe incentives would be necessary to use for a specific survey in order to achieve data of sufficient quality for their intended use(s). Some incentives that can be offered to respondents may include:

(i) Small portable radios;

(ii) T-shirts and caps;

(iii) Hoes;

(iv) Mosquito nets;

(v) Key holders;

(vi) School bags/safari bags;

(vii) Football;

(viii) Exercise books;

(ix) Pens and pencils; and

(x) Survey badges.

Guideline 2.2.3.3: The way data collection is designed and administered contributes to data quality. The following are important to consider:

(a) Collect data at the most appropriate time of the year, when relevant;

(b) Establish the data collection protocol to be followed by the field staff;

(c) Provide training for field staff on survey protocols;

(d) Establish mechanisms to minimize interviewer falsification, such as protocols for monitoring interviewers and re-interviewing respondents;

(e) Establish procedures for field edits of data collected. Enumerators and supervisors should ensure that questionnaires are duly filled before moving to another respondent or cluster.

Guideline 2.2.3.4: Develop supervision for data collection activities, with strategies to correct identified problems. The following are important to consider:

(a) Design control report forms and supervision checklists;

(b) Implement quality by following the process of data collection manuals; and

(c) Use internal reporting systems that provide timely reporting of response rates and the reasons for non-response throughout the data collection.

2.3 DATA PROCESSING

2.3.1 Data Editing

Standard 2.3.1: MDAs, LGAs and other stakeholders must edit data appropriately, based on available information, to correct detectable errors.

The guidelines for this standard are:

Guideline 2.3.1.1: Check and edit data to correct errors during and after data collection. Data editing is an iterative and interactive process that includes procedures for detecting and correcting errors in the data. When electronic data collection methods are used, data are usually edited both during and after data collection. Obtain inputs from subject matter specialists in the development of edit rules and edit parameters (edit specifications). As appropriate, check data for the following and edit if errors are detected:

(a) Responses that fall outside a pre-specified range (e.g., a person with 4 years old and married with 2 children);

(b) Contradictory responses and incorrect flow through prescribed skip patterns;

(c) Missing data that can be directly filled from other portions of the same record (including the sample frame e.g missing location identification);

(d) The omission of records; and

(e) The duplication of records.

Guideline 2.3.1.2: Code the data set to indicate any actions taken during editing, and/or retain the unedited data along with the edited data (e.g. adding a column in the data set to identify the imputed/edited values).

2.3.2 Data Coding

Standard 2.3.2: MDAs, LGAs and other stakeholders must add codes to collected data to identify aspects of data quality from the collection (e.g., missing data) in order to allow users to appropriately analyze the data. Codes added to convert information collected as text into a form that permits immediate analysis must use standardized codes, when available, to enhance comparability.

The guidelines for this standard are:

Guideline 2.3.2.1: Insert codes into the data set that clearly identify missing data and cases where entry is not expected (e.g., skipped over by skip pattern). Do not use blanks and zeros as codes to identify missing data, as they tend to be confused with actual data.

Guideline 2.3.2.2: When converting text data to codes to facilitate easier analysis, use standardized codes, if they exist. Use the Tanzania coding standards listed below, if applicable. Provide cross-referencing tables to the Tanzania standard codes for any coding that does not meet the Tanzania standards. Develop other types of codes using existing Tanzania MDAs, LGAs and a stakeholder practice or standard codes from industry or international organizations, where they exist. Current Tanzania standard codes include the following:

~~(a)~~ Region, District, Ward, EA/Village/Mtaa Codes which are maintained by NBS.

(b) International Standards for Industry Classification (ISIC Codes) - Use the ISIC to classify establishments. The ISIC is UN comparability in statistics about business activities across the globe. The codes can be downloaded from a website link;

(c) Classification of Individual Consumption by Purpose (COICOP);

(d) System of National Accounts (SNA), 1993 and 2008;

(e) Hotels and Tourism – Three plus stars, etc;

(f) Harmonized Commodity Description and Coding System (HS) codes for external trade;

(g) Central Product Classification (CPC) codes for industry;

(h) Geo Information System (GIS);

(i) Government Finance Statistics (GFS); and

(j) Tanzania Standard Classification of Occupation (TASCO).

2.3.3 Data Entry

Standard 2.3.3: MDAs, LGAs and other stakeholders must use acceptable and easy compatible software to allow data transfers to different statistical applications. Some data entry software may include CSPrO, MS Excel and MS Access.

The guidelines for this standard are:

Guideline 2.3.3.1: Data may be entered twice (double entry) to check for consistency.

2.3.4 Data Cleaning – Range, Consistency Checks and Validation

Standard 2.3.4: MDAs, LGAs and other stakeholders must make sure that all data entered into the system are consistent before further analysis. All demographic variables should reflect the data items. For example for demographic enquiries, a male should not have pregnancies in his lifetime.

The guidelines for this standard are:

Guideline 2.3.4.1: Establish rules for range, consistency and validation checks to be applied to the data during and after data entry.

Guideline 2.3.4.2: Prepare list and printout of errors found in data entered and submit to quality control personnel for further action.

Guideline 2.3.4.3: Make appropriate corrections without altering the collected data from the field. Treat the remaining erroneous data as partial non-response.

2.3.5 Data Protection

Standard 2.3.5: MDAs, LGAs and other stakeholders must observe individual data confidentiality throughout the production process to ensure that survey data are handled to avoid disclosure.

The guidelines for this standard are:

Guideline 2.3.5.1: For surveys that include confidential data, establish procedures and mechanisms to ensure the information's protection during the production, use, storage, transmittal, and disposition of the survey data in any format (e.g., completed survey forms, electronic files, and printouts).

Guideline 2.3.5.2: Ensure that

(a) Individually-identifiable survey data are protected;

(b) Data systems and electronic products are protected from unauthorized intervention; and

(c) Data files, network segments, servers, and desktop PCs are electronically secure from malicious software and intrusion using best available information resource security practices that are periodically monitored and updated.

Guideline 2.3.5.3: Controlled access to data sets so that only specific, authorized individuals working on a particular data set can have read only, or write only, or both read and write access to that data set. Data set access rights are to be periodically reviewed by the IT manager responsible for that dataset in order to guard against unauthorized release or alteration.

2.3.6 Quality Evaluations

Standard 2.3.6: MDAs, LGAs and other stakeholders must evaluate the quality of the data and make the evaluation public (through technical notes and documentation included in reports of results or through a separate report) to allow users to interpret results of analyses, and to help designers of future surveys to focus on improvement efforts.

The guidelines for this standard are:

Guideline 2.3.6.1: Include an evaluation component in the survey plan that evaluates survey procedures and results. Review past surveys similar to the one being planned to determine likely sources of error, appropriate evaluation methods, and problems that are likely to be encountered. Address the following areas:

(a) Potential sources of errors, *both sampling and non-sampling* may include:
   (i) Coverage error (including frame errors);
   (ii) Non response error;
   (iii) Measurement error, including sources from the instrument, interviewers, respondents, changes associated with time of the object or phenomenon being measured, type of questions – biased or leading ones and collection process; and
   (iv) Data processing error (e.g., keying, coding, editing, and imputation error);

(b) How sampling error will be measured, including variance estimation and studies to isolate error components; and

(c) Make evaluation studies public to inform data users.

2.4 ESTIMATES AND PROJECTIONS

2.4.1 Developing Estimates and Projections

Standard 2.4.1: MDAs, LGAs and other stakeholders must use accepted theory and methods when deriving direct survey-based estimates, as well as model-based estimates and projections that use survey data. Error estimates must be calculated and disseminated to support assessment of the appropriateness of the uses of the estimates or projections. MDAs, LGAs and other stakeholders must plan and implement evaluations to assess the quality of the estimates and projections.

The guidelines for this standard are:

Guideline 2.4.1.1: Develop direct survey estimates by employing sampling weights appropriate for the sample design to calculate population estimates. However, MDAs, LGAs and stakeholders may employ an alternative method (e.g., ratio estimators) to calculate population estimates if they have evaluated it and determined that it leads to acceptable results.

Guideline 2.4.1.2: Calculate variance estimates by a method appropriate to a survey's sample design taking into account probabilities of selection, stratification, clustering, and the effects of non-response, post-stratification and ranking. The estimates must reflect any design effect resulting from a complex design.

Guideline 2.4.1.3: Document methods used to generate estimates and projections to help ensure objectivity, utility, transparency and reproducibility of the estimates and projections (For details on documentation, see 2.7.2). Also, archive data so the estimates/projections can be reproduced.

For population projections using e.g. exponential method or natural growth method compare advantages and disadvantages of each method.

2.5 DATA ANALYSIS

2.5.1 Analysis and Report Planning

Standard 2.5.1: MDAs, LGAs and other stakeholders must develop a plan for the analysis of survey data prior to the start of a specific analysis to ensure that statistical tests are used appropriately and that adequate resources are available to complete the analysis.

The guidelines for this standard are:

Guideline 2.5.1.1: Include the following in the analysis plan:

(a) An introduction that describes the purpose, the research question, relevant literature, data sources (including a brief description of the survey data and any limitations of the data), key variables to be used in the analysis, type of analysis, and significance level to be used;

(b) Tables and figures that support the analysis; and

(c) A framework for technical notes including;

(i) History of the survey program;

(ii) Data collection methods and procedures;

(iii) Sample design;

(iv) Response rates and the treatment of missing data;

(v) Weighting methods;

(vi) Computation of standard errors;

(vii) Instructions for constructed or derived variables;

(viii) Limitations of the data; and

(ix) Sources of error in the data.

2.5.2 Inference and Comparisons

Standard 2.5.2: MDAs, LGAs and other stakeholders must base statements of comparisons and other statistical conclusions derived from survey data on acceptable statistical practice.

The guidelines for this standard are:

Guideline 2.5.2.1: Specify the criterion for judging statistical significance for tests of hypotheses (Type I error) before conducting the testing.

Guideline 2.5.2.2: If part of an historical series is revised, data for both the old and the new series should be published for a suitable overlap period for the use of analysts.

2.6 REVIEW AND REBASING PROCEDURES

2.6.1 Review of Information Products

Standard 2.6.1: MDAs, LGAs and other stakeholders are responsible for the quality of information that they disseminate and must institute appropriate content/subject matter, statistical, and methodological review procedures to comply with NBS and MDAs, LGAs and other stakeholders.

The guidelines for this standard are:

Guideline 2.6.1.1: Conduct a subject-matter review of all information products that present a description or interpretation of results from the survey, such as analytic reports or "briefs." Select reviewers with appropriate expertise in the subject matter, operation, or statistical program discussed in the document. Among the areas that reviewers should consider are the following:

(a) Subject-matter literature is referenced in the document appropriately;
(b) Information is factually correct; and
(c) Information is presented clearly and logically, conclusions follow from analysis, and no inconsistent findings are ignored.

Guideline 2.6.1.2: Conduct a statistical and methodological review of all information products. Select reviewers with appropriate expertise in the methodology described in the document. Among the tasks that reviewers should consider are the following:

(a) Review assumptions and limitations for accuracy and appropriateness;
(b) Ensure that appropriate statistical methods are used and reported;
(c) Review calculations and formulae for accuracy and statistical soundness;
(d) Review data and presentations of data (e.g., tables) for disclosure risk;
(e) Review contents, conclusions, and technical (statistical and operational areas) recommendations to ensure that they are supported by the methodology used; and

(f) Ensure that data sources and technical documentation, including data limitations, are included or referenced.

Guideline 2.6.1.3: Review all information products that will be disseminated electronically for compliance with existing policies and legislations governing statistical activities in the country for easy accessibility. Ensure that any product that is disseminated via special software is tested for accessibility and interpretability prior to dissemination.

Guideline 2.6.1.4: Rebase and update information products with new and current data produced from survey and routine data.

Guideline 2.6.1.5: Review and harmonize information products using common standards and levels of classification such as ISIC, SNA, etc. Avoid aggregating information products using different standards and classifications before harmonizing them. If it is necessary to customize to local conditions or branch out of main classifications, maintain the link to international standard.

2.7 DISSEMINATION

2.7.1 Information Release

Standard 2.7.1: MDAs, LGAs and other stakeholders must release information intended for the general public according to a dissemination policy that provides for equal and timely access to all users and provide information to the public about the MDAs, LGAs and other stakeholders' dissemination policies and procedures including those related to any planned or unpredicted data revisions.

The guidelines for this standard are:

Guideline 2.7.1.1: Dissemination procedures for major information products may include the following:

(a) Develop release calendar and method for the release of information products and services;

(b) Inform targeted stakeholders; and

(c) Ensure equal and timely access to all users.

Guideline 2.7.1.2: Protect information against any unauthorized pre-release, and release information only according to established release procedures.

Guideline 2.7.1.3: If revisions to estimates are planned, establish a schedule for expected revisions, make it available to users, and identify initial releases as preliminary.

Guideline 2.7.1.4: Establish a policy for handling unscheduled corrections due to previously unrecognized errors. The policy may include threshold criteria (e.g., the correction will change a national level total value by more than one percent or a regional value by more than five percent) identifying conditions under which data will be corrected and re-disseminated.

Guideline 2.7.1.5: When information products are disseminated, provide users with access to the following information:

(a) Definitions of key variables;
(b) Source information, such as a survey form number and description of methodology used to produce the information or links to the methodology;
(c) Quality-related documentation such as conceptual limitations;
(d) Variance estimation documentation;
(e) Time period covered by the information and units of measure;
(f) Point of contact to whom further questions can be directed;
(g) Software or links to software needed to read/access the information and installation/operating instructions, if applicable;
(h) Date the product was last updated; and
(i) Standard dissemination policies and procedures.

2.7.2 Documentation and Archiving

Standard 2.7.2: MDAs, LGAs and other stakeholders must produce survey documentation that includes those materials necessary to understand how to properly analyze data from each survey, as well as the information necessary to replicate and evaluate each survey's results. Survey documentation must be readily accessible to users, unless it is necessary to restrict access to protect confidentiality.

The guidelines for this standard are:

Guideline 2.7.2.1: Survey system documentation (metadata) includes all information necessary to analyze the data properly. It includes the following:

(i) Survey instruments;

(ii) Description of variables used to uniquely identify records in the data file;

(iii) Description of the sample design, and sampling unit identifiers to be used for analysis;

(iv) Definitions of all variables, including all modifications;

(v) Data file layout;

(vi) Descriptions of constructed variables on the data file that are computed from responses to other variables on the file;

(vii) Description of sample weights, including adjustments for non-response and benchmarking and how to apply them;

(viii) Description of how to calculate variance estimates appropriate for the survey design;

(ix) Description of all editing and imputation methods applied to the data (including evaluations of the methods) and how to remove imputed values from the data;

Guideline 2.7.2.2: To ensure that a survey can be replicated and evaluated, the MDAs, LGAs and stakeholders' internal archived portion of the survey system documentation, at a minimum, must include the following:

(i) Survey planning and design decisions, including the NBS Information Collection Request package;

(ii) Field test design and results;

(iii) Selected sample;

(iv) Sampling frame;

(v) Justifications for the items on the survey instrument, including why the final items were selected;

(vi) All instructions to respondents and/or interviewers either about how to properly respond to a survey item or how to properly present a survey item;

(vii) Description of the data collection methodology;

(viii) Sampling plan and justifications, including any deviations from the plan;

(ix) Data processing plan specifications and justifications;

(x) Final weighting plan specifications, including calculations for how the final weights were derived, and justifications;

(xi) Final imputation plan specifications and justifications;

(xii) Data editing plan specifications and justifications;

(xiii) Evaluation reports;

(xiv) Descriptions of models used for indirect estimates and projections;

(xv) Analysis plans;

(xvi) Time schedule for revised data; and

(xvii) Documentation made publicly available in conjunction with the release of data.

Guideline 2.7.2.3: For recurring surveys, produce a periodic evaluation report, such as a methodology report, that itemizes all sources of identified error. Where possible, provide estimates or bounds on the magnitudes of these errors; discuss the total error model for the survey; and assess the survey in terms of this model.

Guideline 2.7.2.4: Retain all survey documentation according to appropriate Tanzania records disposition and archival policy and law.

PART II: STANDARD CLASSIFICATIONS IN STATISTICAL PRODUCTION

Classification systems are used to group statistical data according to criteria that make them more homogeneous and more likely to be used for accurate analysis. The harmonization and adaptation of these reference classifications play a fundamental role in the overall harmonization process of integration statistics.

At the international level, there are several reference classifications, recorded in the classification registry of the United Nations Statistics Division (for the most part, economic classifications). Several categories of economic classifications exist, which are: Classifications of economic activities, e.g. International Standard Industrial Classification (ISIC); Product classifications, e.g. Harmonized commodity description and coding System (HS), Central Product Classification (CPC), Standard International Trade Classification (SITC); Functional classifications, e.g. Classification Of Individual Consumption by Purpose (COICOP), International Classification of Activities for Time – Use Statistics (ICATUS); and Occupational classifications, e.g. Tanzania Standard Classification of Occupations (TASCO).

3.0 THE INTERNATIONAL STANDARD INDUSTRIAL CLASSIFICATION OF ALL ECONOMIC ACTIVITIES (ISIC)

ISIC is the international reference classification of a coherent and consistent structure of economic activities based on a set of internationally agreed concepts, definitions, principles and classification rules.

ISIC structure

The hierarchy in ISIC consists of:

(i) Section (one letter code)
(ii) Division (two digits code)
(iii) Group (three digits code)
(iv) Class (four digits code)

The objective and uses of ISIC

ISIC is intended to be a standard classification of productive activities. Its main purpose is to provide a set of activity categories that can be utilized for the collection and presentation of statistics according to such activities. Therefore, ISIC aims to present this set of activity categories in such a way that entities can be classified according to the economic activity they carry out.

It provides a comprehensive framework within which economic data can be collected and reported in a format that is designed for purposes of economic analysis, decision-taking and policy-making. The classification structure represents a standard format to organize detailed information about the state of an economy according to economic principles and perceptions.

The ISIC has widely being used both nationally and internationally in classifying data according to kind of economic activity in the fields of production, employment, gross domestic product and other statistical areas. ISIC is a basic tool for studying economic phenomena, fostering international comparability of data, providing guidance for the development of national classifications and for promoting the development of sound national statistical systems.

Classification rule

The classification is used to classify statistical units, such as establishments or enterprises, according to the economic activity in which they mainly engage. At each level of ISIC, each statistical unit is assigned to one and only one ISIC code.

The set of statistical units that are classified into the same ISIC category is then often referred to as an industry, such as “the furniture industry”, which would refer to all units classified in ISIC division 31 (Manufacture of furniture)

This standardized categorization or subdivision of the complete set of producing units in an economy makes ISIC an important tool for socio-economic statistics that need to be arranged in accordance with the productive system of the economy.

The individual categories of ISIC have been aggregated into the following 21 sections:

A	01–03	Agriculture, forestry and fishing
B	05–09	Mining and quarrying
C	10–33	Manufacturing

D	35	Electricity, gas, steam and air conditioning supply
E	36–39	Water supply; sewerage, waste management and remediation activities
F	41–43	Construction
G	45–47	Wholesale and retail trade; repair of motor vehicles and motorcycles
H	49–53	Transportation and storage
I	55–56	Accommodation and food service activities
J	58–63	Information and communication
K	64–66	Financial and insurance activities
L	68	Real estate activities
M	69–75	Professional, scientific and technical activities
N	77–82	Administrative and support service activities
O	84	Public administration and defence; compulsory social security
P	85	Educations
Q	86–88	Human health and social work activities
R	90–93	Arts, entertainment and recreation
S	94–96	Other service activities
T	97–98	Activities of households as employers; undifferentiated goods and services producing activities of households for own use
U	99	Activities of extraterritorial organizations and bodies

3.1 THE CLASSIFICATION OF INDIVIDUAL CONSUMPTION BY PURPOSE (COICOP)

COICOP is one of the functional classifications in the UN 1993 System of National Accounts (SNA93). It is used to classify individual consumption expenditures of three institutional sectors, namely households, Non-Profit Institutions Serving Households (NPISHs) and Government. COICOP is described as a "functional" classification because it categorizes consumption expenditures according to their primary "functions" – in the sense of "purposes" or "objectives"; for example, housing, medical, transport, recreation and education.

The COICOP structure is a hierarchical order where the household expenditures are classified from Division level to Class and Sub Class level. The standard COICOP structure has 12 divisions, 47 groups, 117 classes and 197 sub classes.

The objective and uses of COICOP

The purposes defined in COICOP are based on the classifications of consumer expenditures which national statistical offices have developed for their own use to serve a variety of analytic applications. Although COICOP is not strictly linked to any particular model of consumer behaviour, the classification is designed to broadly reflect differences in income elasticity.

COICOP intended for use in three statistical areas: household budget surveys, consumer price indices and international comparisons of gross domestic product (GDP) and its component expenditures. This is to ensure coordination within the statistical systems and international comparability.

3.2 TANZANIA STANDARD CLASSIFICATION OF OCCUPATIONS (TASCO)

Tanzania Standard Classification of Occupations (TASCO) provides a systematic classification and codification structure for the civilian working population of the United Republic of Tanzania. TASCO has been fashioned after the International Standard Classification of Occupations, ISCO-1988, compiled by the International Labour Office, ILO Geneva which is the revised edition of ISCO-68. This adaptation has been done to ensure international and regional comparability of reporting and analysis of statistical data relating to occupations, manpower, population census, etc.

TASCO has been closely aligned with ISCO-88 to ensure international and regional comparability of statistical data. To maintain continuity with the country's past statistical data, based as it is on the ISCO-68, the main text of TASCO for each Major Group gives corresponding ISCO-68 Codes for titles included in the TASCO. The expanded Index, which includes all Base, Alternate and Related Titles of this Classification, will help coders, enumerators, and users of TASCO in the location, classification and codification of all occupations in the country.

The objective and uses of TASCO

TASCO has been designed for the proper classification of the collected data of all civilian occupations in the country's labour force and to ensure its convertibility into the international standard.

TASCO, and ISCO-88, differ from the ISCO-68 in the following aspects:

(a) A new level of aggregation, called Sub-Major Groups, has been created between those represented by Major and Minor Groups in ISCO-68.

(b) The basis of occupational classifications, in the ISCO-68, was according to type of work performed. TASCO and ISCO-88 occupational classifications are based on "Skill requirement" criterion, reflected in the skill level and skill specialisation of various occupations.

(c) As a result of introduction of a new level of aggregation, *viz* sub-major groups, the occupational code structure consists of six (6) digits, instead of five (5) digits of ISCO-68; thus:-

(i) Major Groups are of one (1) digit, the extreme left numeral, at 'thousand' point of the four digits before the decimal point;

(ii) Sub-Major Groups consist of two (2) digits, the left two numerals, at 'thousand' and 'hundred' points, of the four-digit numbers before the decimal point;

(iii) Minor Groups consist of three (3) digits, the left three numerals, at 'thousand' 'hundred' and 'ten' points, of the four-digit numbers before the decimal point;

(iv) Unit Groups consist of four (4) digits, all the four numerals left of the decimal point; and

(v) Occupational Categories consist of six (6) digits, all the four (4) numerals left of the decimal point plus the two (2) numerals right of the decimal point.

Example

2143.40 Instrument Engineer, Electrical;

Major Group is indicated by '2', one digit at the thousand' point;

Sub-Major Group is indicated by '21', two digits at 'thousand' and 'hundred' points; Minor Group is indicated by '214', at 'thousand', 'hundred' and 'ten' points; Unit Group is indicated by '2143', all the four numerals left of the decimal point; and

Occupational category is indicated by 2143.40, i.e. all the four numerals, viz '2143' left of the decimal point plus two numerals, viz.40 on the right side of the decimal point.

Basic Approach and Classification Criteria

(a) TASCO provides a structure for the classification of all civilian occupations in the country's labour force. Occupational categories are, thus, the smallest segment of work which is specifically identified, classified and codified in the TASCO. At this detailed level, an occupation is a set of jobs which involve the performance of a similar or common, but not necessarily identical, set of tasks all over the country.

An occupation, for the purpose of this classification, covers various jobs similar in their main tasks, and held by individual workers, all over the country, and in various establishments and industries, but workers may perform one or more of the different possible combinations or breakdowns of the set of tasks described in the occupational definitions of ISCO-68, shown against TASCO occupational titles, under its Unit Groups. Workers, in a number of establishments and industries, and whose principal tasks are similar, are considered to be sharing the same type of job; and the workers, in a particular establishment, performing identical principal tasks, are considered to be manning the same type of positions. A position, in any given establishment, is a set of tasks performed by one individual. Therefore, in a given establishment, there will be as many positions as are workers employed therein. In practice, positions are normally distinguished from one another by minor differences in duties, level of responsibility for supervision, and other particularities, e.g. wages and division of labour.

(b) ISCO-68 had classified occupations according to the type of work performed which was reflected in different ways, such as occupations occurring in the same field/discipline (e.g. physical sciences, life sciences); those concerned with the same subject-matter (e.g. Chemists, Physicists, Biologists, Agronomists); and those of workers executing similar processes (e.g. metal platers and coaters), operating similar equipment (e.g. motor vehicles), performing similar services (e.g. waiters, bartenders) and fabricating similar articles (e.g. watch, clock and precision instrument makers).

(c) In TASCO, the classification criteria is based on the requirements imposed upon workers by the tasks and duties of their occupations reflected in:

(i) The knowledge and proficiency needed for performing physical and mental activities of the prescribed tasks and duties;

(ii) The knowledge of working principles, methods and techniques and characteristics of materials and equipment used; and

(iii) The ability to react adequately to various work situations and demands.

(d) The above technical requirements depend on the skill requirements of an occupation. Skill may be defined as the ability of an individual worker to perform a set of tasks or to fulfil the technical requirements of an occupation. Thus, for the classification of jobs into occupation and of occupations into Unit Groups, skill requirements provide the similarity criterion for sets of tasks in the group structure of TASCO. The focus is on the skill required to carry out the tasks and duties of an occupation and not on whether a worker, having a particular occupation, is more or less skilled than another worker in the same occupation.

(e) The `skill requirement' criterion, used in TASCO, has two dimensions, *viz* (i) skill level and (ii) skill specialization.

(i) The skill level of an occupation is a function of the complexity and range of the tasks involved. The greater the complexity and wider the range of the set of tasks, the higher the skill level of an occupation. An occupation that involves more complex tasks than another will require a higher skill level. An occupation which requires the performance of a wide range of tasks has a higher skill level than an occupation which requires the performance of a sub-set of those same tasks. But, complexity of task is more important than mere range of tasks in determining the skill level, since complexity of tasks indicates the degree of proficiency, the level of knowledge, and the quality and character of the response required to accomplish such tasks.

(ii) The skill specialization of an occupation is a function of (i) the field of knowledge required (e.g. the subject-matter essential to the performance of tasks), (ii) tools, equipment and work aids used (e.g. plant, machinery, hand-tools); (iii) materials worked on or with (such as extracted, processed, refined or manufactured), and

(iii) Goods produced or services provided in relation to the tasks performed.

From the above, it can be deduced that; the greater the range and complexity of the set of tasks involved, the greater the duration and amount of (i) formal education; (ii) on-the-job training, and (iii) previous experience required for the satisfactory performance of the set of given tasks; but in some case, innate strength, abilities, appropriate work-experience, coupled with thorough on-the-job training, may equip a worker with the needed skills, or a part of them, for the successful performance of the set of tasks. In Tanzania, quite often, skills are acquired through informal training and work-experience.

3.3 INTERNATIONAL CLASSIFICATION ACTIVITIES FOR TIME USE STATISTICS (ICATUS)

ICATUS is intended to be a standard classification of all activities that the general population may spend time on during the 24 hours of a day. Its main purpose is to provide a set of activity categories that can be utilized in producing meaningful statistics on time use. These have to be meaningful in relation to the broad range of objectives of national time-use studies as well as cross-national and cross-temporal comparative studies on time use.

Time-use statistics are defined as quantitative summaries of how individuals "spend" or allocate their time over a specified period, typically over the 24 hours of a day or over the 7 days of a week. They offer a unique tool for exploring a wide range of policy concerns including analysing division of labour between women and men, improving estimates of all forms of work (paid and unpaid) and estimating household production and its contribution to GDP.

The objective and uses of ICATUS

The main objective of ICATUS is to provide a set of activity categories to be utilized in producing meaningful statistics on time use. It also provides indicators of the quality of life or well-being of the nation in terms of time-use patterns of people. Furthermore it intends to improve estimates of the value of goods and services with particular emphasis on increasing visibility of women's work through better statistics on their contribution to the economy.

Many users of Time Use statistics are interested in the amount of time persons spend on both productive and non-productive activities, which could include unpaid childcare and adult care, housework and volunteering. Furthermore the results of the Time Use Survey enable one to

determine what activities are performed, how they are performed and how long it takes to perform such activities.

The time use data can be used in policy analysis in relation to economic and social policies such as those relating to employment and unemployment, services for children, the elderly and people with disabilities, and provision of basic household services such as electricity and water that obviate the need for manual collection of fuel and water for household use.

3.4 HARMONIZED COMMODITY DESCRIPTION AND CODING SYSTEM (HS)

Harmonized commodity description and coding System (HS) was adopted by Customs Cooperation Council in June 1983, it was recommended by the UN Statistical Commission as the commodity classification for Compilation and Dissemination of international merchandise trade statistics (IMTS).

HS contributes to the harmonization of Customs and trade procedures, and the non-documentary trade data interchange in connection with such procedures, thus reducing the costs related to international trade.

The objective and uses of HS

Harmonized commodity description and coding System is extensively used by governments, international organizations and the private sector for many other purposes such as internal taxes, trade policies, monitoring of controlled goods, rules of origin, freight tariffs, transport statistics, price monitoring, quota controls, compilation of national accounts, and economic research and analysis. The HS is thus a universal economic language and code for goods, and an indispensable tool for international trade.

3.5 STANDARD INTERNATIONAL TRADE CLASSIFICATION (SITC)

Standard International Trade Classification (SITC) is a classification of goods used to classify the exports and imports of a country to enable comparing different countries and years. The classification system is maintained by the United Nations.

The commodity groupings of SITC reflect:

(i) The materials used in production;

(ii) The processing stage;

(iii) Market practices and uses of the products;

(iv) The importance of the commodities in terms of world trade; and

(v) Technological changes.

The Objective and uses of SITC

The SITC was developed by the United Nations with the intention of classifying traded products not only on the basis of their material and physical properties, but also according to which stage of processing, as well as their economic functions in order to facilitate economic analysis.

The Economic and Social Council of the UN upon the recommendation of the Statistical Commission urged all governments to make use of the Original SITC. By 1960, many countries were compiling international merchandise trade data according to original SITC or national classifications correlated to it and major international organizations had on adopted SITC as a basis for the reporting of international trade statistics. Some countries also used the Original SITC as the basis of their customs nomenclatures.

3.6 CENTRAL PRODUCT CLASSIFICATION (CPC)

The Central Product Classification (CPC) is a product classification for goods and services promulgated by the United Nations Statistical Commission. It is intended to be an international standard for organizing and analyzing data on industrial production, national accounts, and trade prices.

The objective and uses of CPC

Central Product Classification is intended to provide a framework for international comparison of various kinds of statistics dealing with goods, services and assets. Basically, CPC is intended to be used for different types of statistics, for example, industrial statistics and national accounts, price statistics, foreign trade statistics (including trade in services) and balance-of-payments statistics.

Another main characteristic of CPC is that it contains a description of services. No international classification of services covering the whole spectrum of outputs of heterogeneous service industries and serving the different analytical needs of the various types of statistics has been available until now. Rapid technological progress in many service industries has led to new services and service packages being offered, such as financial services, computer services,

consultancy and advisory services in many fields, technical services and other business services. For data collection and compilation on such outputs, it is essential to attempt to describe these services as accurately as possible to clarify the basic underlying concepts.

3.7 THE SYSTEM OF NATIONAL ACCOUNTS (SNA)

The System of National Accounts (SNA) is the internationally agreed standard set of recommendations on how to compile measures of economic activity in accordance with strict accounting conventions based on economic principles. The SNA describes a coherent, consistent and integrated set of macroeconomic accounts in the context of a set of internationally agreed concepts, definitions, classifications and accounting rules.

The SNA provides an overview of economic processes, recording how production is distributed among consumers, businesses, government and foreign nations. It shows how income originating in production, modified by taxes and transfers, flows to these groups and how they allocate these flows to consumption, saving and investment. Consequently, the national accounts are one of the building blocks of macroeconomic statistics forming a basis for economic analysis and policy formulation.

The objective and uses of SNA

The main objective of the SNA is to provide a comprehensive conceptual and accounting framework, which can be used to create a macroeconomic database suitable for analyzing and evaluating the performance of an economy. The existence of such a database is a prerequisite for informed, rational policy-making and decision taking.

Accounts and their corresponding economic activities

The sequence of accounts

Current accounts

These accounts record the production of goods and services, the generation of incomes by production, the subsequent distribution and redistribution of incomes among institutional units, and the use of incomes for purposes of consumption or saving.

Production account

The production account records the activity of producing goods and services as defined within the System. Its balancing item, gross value added, is defined as the value of output less the value of intermediate consumption and is a measure of the contribution to GDP made by an individual producer, industry or sector. Gross value added is the source from which the primary incomes of the System are generated and is therefore carried forward into the primary distribution of income account. Value added may also be measured net by deducting consumption of fixed capital.

Distribution and use of income accounts

These consist of a set of articulated accounts showing how incomes are:

(i) Generated by production

(ii) Distributed to institutional units with claims on the value added created by production

(iii) Redistributed among institutional units, mainly by government units through social security contributions and benefits and taxes

(iv) Eventually used by households, government units or non-profit institutions serving households (NPISHs) for purposes of final consumption or saving.

Accumulation accounts

These are flow accounts that record the acquisition and disposal of financial and non-financial assets and liabilities by institutional units through transactions or as a result of other events:

(i) The capital account records acquisitions and disposals of non-financial assets as a result of transactions with other units or internal bookkeeping transactions linked to production (changes in inventories and consumption of fixed capital).

(ii) The financial account records acquisitions and disposals of financial assets and liabilities, also through transactions.

(iii) A third account, the other changes in assets account, consists of two sub-accounts. The first, the other changes in volume of assets account, records changes in the amounts of the assets and liabilities held by institutional units or sectors as a result of factors other than transactions; for example, destruction of fixed assets by natural disasters. The second, the revaluation account, records those changes in the values of assets and liabilities that result from changes in their prices.

Balance sheets

The balance sheets show the values of the stocks of assets and liabilities held by institutional units or sectors at the beginning and end of an accounting period. As already noted, the values of the assets and liabilities held at any moment in time vary automatically whenever any transactions, price changes or other changes affecting the volume of assets or liabilities held take place. These are all recorded in one or another of the accumulation accounts so that the difference between the values in the opening and closing balance sheets is entirely accounted for within the System, provided, of course, that the assets and liabilities recorded in the balance sheets are valued consistently with the transactions and other changes - that is, at current prices.

Activities and transactions

The accounts of the System are designed to provide analytically useful information about the behaviour of institutional units and the activities in which they engage, such as production, consumption and the accumulation of assets. They usually do this by recording the values of the goods, services or assets involved in the transactions between institutional units that are associated with these activities rather than by trying to record or measure the physical processes directly. For example, the accounts do not record the physical consumption of goods and services by households - the eating of food or the burning of fuel within a given time period. Instead, they record the expenditures that households make on final consumption goods and services or, more generally, the values of the goods and services they acquire through transactions with other units, whether purchased or not.

Data on transactions provide the basic source material from which the values of the various elements in the accounts are built up or derived. The use of transactions data has important advantages. First, the prices at which goods and services are exchanged in transactions between buyers and sellers on markets provide the information needed for valuing, directly or indirectly, all the items in the accounts. Secondly, a transaction that takes place between two different institutional units has to be recorded for both parties to the transaction and therefore generally appears twice in a system of macroeconomic accounts. This enables important linkages to be established in the System.

3.8 CLASSIFICATION OF THE FUNCTIONS OF GOVERNMENT (COFOG)

The Classification of the Function of Government is a detailed classification of the functions, or socioeconomic objectives, that general government units aim to achieve through various kinds of expenditure. COFOG is integral to the GFS presentation. It is one of a family of four classifications referred to as classification of expenditure according to purpose.

The classification codes of COFOG are somewhat different from the structure of other GFS classification codes. The functions are classified using a three-level scheme. There are 10 first-level, or two-digit, categories, referred to as divisions. Examples are health (Division 07) and social protection (Division10). Within each division, there are several groups, or three-digit categories, such as hospital services (Group 073) and sickness and disability (Group101). Within each group, there are one or more classes, or four-digit categories, such as nursing and convalescent home services (Class 0734) and disability (Class 1012). In the GFS framework, the prefix "7" has been added to align the COFOG codes with other GFS classification codes. All three classification levels and detailed descriptions of the contents of each class are presented below.

The objective and uses of COFOG

COFOG permits trends in government expenditure on particular functions or policy purposes to be examined over time. Conventional government accounts are not usually suitable for this purpose because they reflect the organizational structure of governments. Not only might time series be distorted by organizational changes, but at a specific time some organizations may be responsible for more than one function, and responsibility for one function might be divided among several organizations. For example, if a government establishes a new department that brings together some of the functions previously administered by several departments or at several levels of government, it will not usually be possible to use conventional government accounts to compare expenditure on these purposes over time.

COFOG is also used for making international comparisons of the extent to which governments are involved in particular economic and social functions. Just as COFOG avoids the problems of organizational changes in a single government, so too does it avoid the problems of organizational differences among countries. In one country, for example, all functions connected with water

supply may be undertaken by a single government agency, while in another country they may be distributed among departments dealing with the environment, housing, or industrial development.

For particular kinds of analyses, COFOG provides key aggregates that could be used as indicators or measures of results. For example, in studies of social assistance, information on past expenditure on social protection function could give an indication of changes in the support provided by government for the welfare of the population. Similarly, analyzing the impact of economic growth on the environment may require information on the expenditure on environment protection.

3.9 GOVERNMENT FINANCE STATISTICS (GFS)

Government Finance Statistics (GFS) is the International Monetary Fund standard for publishing financial statistics within the Government system. It is designed to provide statistics that enable policymakers and analysts to study developments in the financial operations, fiscal position, and liquidity situation of the general government sector or the public sector (general government and resident public corporations) in a consistent and systematic manner.

The objective and uses of GFS system

The GFS system is designed to provide statistics that enable policymakers and analysts to study developments in the financial operations, financial position, and liquidity situation of the general government sector or the public sector in a consistent and systematic manner. The GFS analytic framework can be used to analyze the operations of a specific level of government and transactions between levels of government as well as the entire public sector.

Compilation Framework and Data Sources

The GFS 2001 and the GFS 2014 systems extends the cash-based analytical framework (GFS 1986) by emphasizing the recording of data on an accrual basis to give a comprehensive picture of government activities by recording non-cash transactions, internal transactions, other economic flows, and any payment arrears. It provides an integrated framework which can be used to analyze the operations of a specific level of government and transactions between levels of government as well as the entire public sector.

Tanzania's General Government sector is composed of Ministries, Departments and Agencies - Central Government, Regional and Local Government Authorities and extra-budgetary units.

Since financial year 2000/2001, GFS 1986 system has been used for budget preparation and accounting for central government (Tanzania Mainland) and later was extended to other government units (including local government). In 2009/10 the central government prepared its budget in GFSM 2001 system. To date, GFS system is used in all Ministries, Regions and independent governments departments (including Zanzibar government). Also to a large extent most of the extra-budgetary units and Local Government Authorities use this system.

The data categories, sources and responsible institutions are as indicated in the following table:

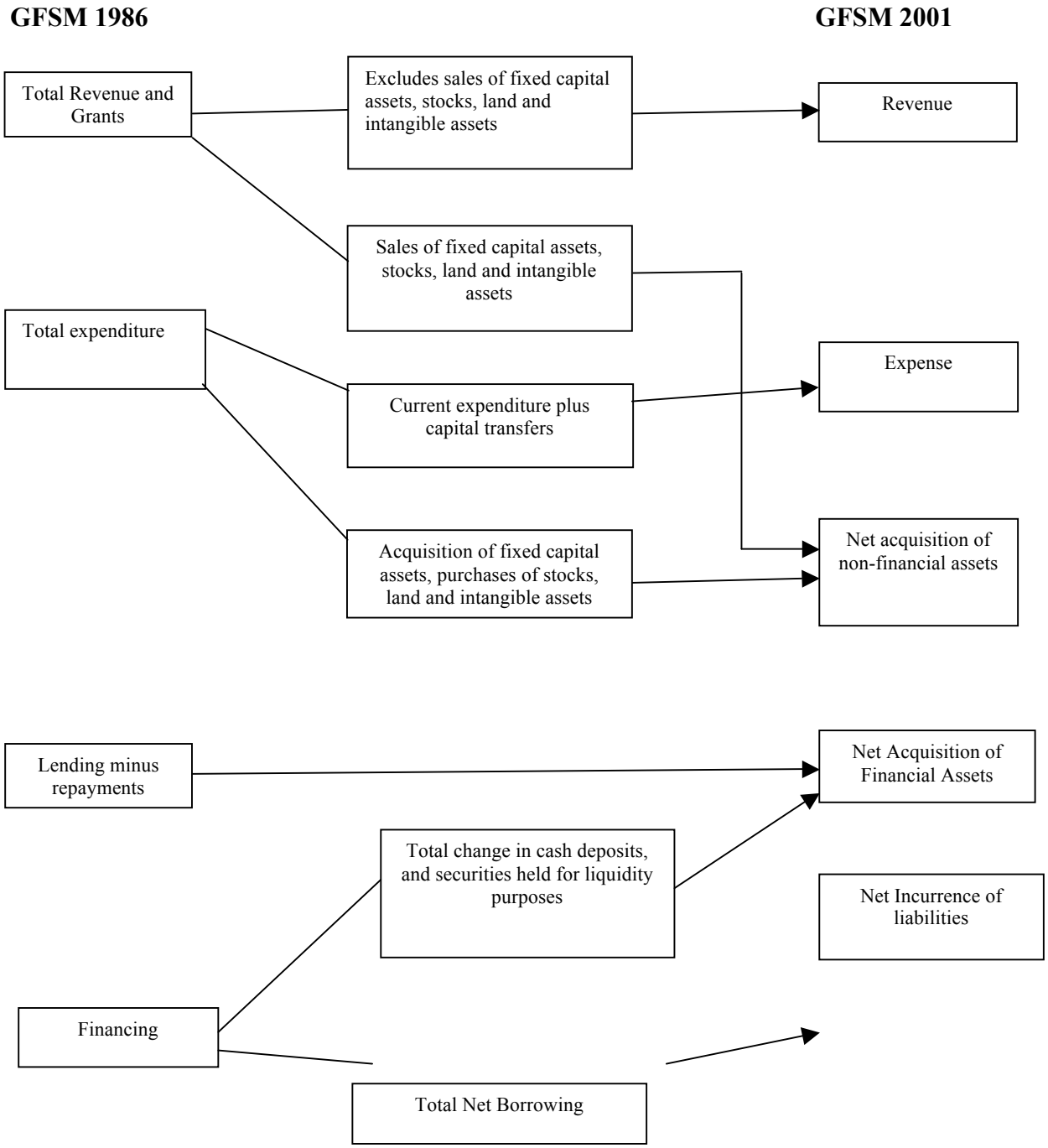
Data Category	Data Source	Responsible
Revenue		
Tax Revenue	Monthly Flash Report, Annual statement of Revenue	CPAD, ACGEN, PMO-RALG
Social Contribution	Payroll Report	CB
Grants	Monthly Reports for Grant	CEF, ACGEN
Other Revenue	Monthly Flash Report, Annual statement of Revenue	CPAD, ACGEN, PMO-RALG
Expenses		
Compensation of Employees (Wages and Salaries)	Payroll Report, Expenditure Flash Report	CB, ACGEN, PMO-RALG
Consumption of Fixed Capital (CFC)	Statement of use of Assets	DGAM, ACGEN
Interest Payments	Amortization Report, Monthly Expenditure Report	ACGEN
Subsidies	TR Statement (PE & OC)	TR, CB, PMO-RALG
Grants	Statement of transfers (e.g to other levels of government, etc)	CB, PMO-RALG
Social Benefits	Statement of transfers (e.g to households)	CB
Other Expenses	Statements of Expenditure	CB, ACGEN, PMO-RALG
Non Financial Assets (NFA)		
Fixed assets		DGAM, ACGEN, PMO-RALG
Inventories		DGAM, ACGEN, PMO-RALG
Valuables		BOT
Non-Produced Assets		
Use of goods and services	Expenditure Flash Report, Consolidated Annual Financial Statements	ACGEN, PMO-RALG BOT, ACGEN
Financial Assets (FA)		
Domestic		
Currency and deposits		
Securities other than share		
Loans		

Shares and other equities		
Insurance Technical Reserves		
Financial derivatives		
Other account receivables		
Foreign		
Currency and deposits		
Securities other than share		
Loans		
Shares and other equities (Public Corporation only)		
Insurance Technical Reserves		
Financial derivatives		
Other account payables		

Classification of GFSM 1986 data to the detailed GFSM 2001 Tables

The reclassification of GFSM 1986 data to the classification categories of the GFSM 2001 framework is seen as a first step in the transition to the new GFS methodology. Broadly, the relationships between the GFSM 1986 and 2001 classification systems are as follows:

Broad overview of relationships between GFSM 1986 and GFSM 2001 Classification Systems



NBS and other MDAs engage in data production. This part describes some surveys and non-surveys in data production.

4.0 SOCIAL STATISTICS

4.1 TANZANIA HIV IMPACT SURVEY (THIS)

The Tanzania HIV Impact Assessment (THIS) is a national sample survey designed to provide information on population, adult HIV Incidence, viral load suppression, distribution of HIV infection, CD4 counts, HIV-related risk behaviours and uptake of HIV related services, paediatrics HIV prevalence, and the use of HIV-related services such as prevention, care and treatment. The THIS interviews respondents who are between 15 years and above. These respondents are asked questions about their background, marriage, reproduction, background and health of their children of age 0-14 years, male circumcision, their knowledge and attitudes on HIV, HIV status, and other information that will be helpful to policy makers and administrators in health and HIV programs. It also interviews adolescents of age 10-14 and they are asked on their background, HIV knowledge, programs, sexual behavior and testing.

4.1.1 Objectives and uses of the THIS

Tanzania HIV Impact Survey (THIS) designed to fulfill primary and secondary objectives.

Primary Objectives

To estimate National HIV incidence (i.e., prevalence of recent HIV infection), The regional prevalence of suppressed HIV VL National and Regional prevalence of HIV infection of adults, age 15-49 years:

Secondary Objectives

(i) To estimate HIV testing coverage, Prevalence of HIV-related risk behaviors, knowledge, and attitudes, Behavioral and demographic determinants of HIV incidence and prevalence among adults 15 years and above

(ii) To estimate uptake of other HIV-related services (especially PMTCT related services) and exposure to HIV interventions; Distribution of CD4 T-cell counts among HIV+; Prevalence of transmitted drug-resistance; Syphilis prevalence; Hepatitis B and C Prevalence among adults ages 15 and above and children ages 0-14 years

(iii) To estimate National pediatric HIV prevalence among children 0-14 years

Uses of the THIS:

The findings of the survey are used to:

(i) Assess the UNAIDS 90/90/90 treatment targets on a national level.

(ii) Estimate the HIV incidence, Viral Load Suppression among HIV-positive individuals, and pediatric prevalence.

(iii) Evaluate ongoing HIV related programmes and develop new strategies.

(iv) Provides updated estimates of selected basic demographic indicators covered in previous surveys.

(v) Provide information to assist policy makers and programme implementers to monitor and evaluate existing programmes and to design new strategies for combating the HIV/AIDS epidemic in Tanzania.

4.1.2 Methodology of data production

Sampling Frame

The sample for the THIS is designed to provide estimates for the entire country, urban and rural areas. Sampling design is of two stages; in the first stage the Primary Sampling Units (PSU) that are enumeration areas (EA's) are selected from the list of enumeration areas of the Population and Housing Census. In the second stage all households in these EAs are listed then households to be involved in the survey are selected using the systematic sampling.

Questionnaire

Three questionnaires are administered in THIS; Household Questionnaire, Adult Questionnaire and Adolescent Questionnaire. The Household Questionnaire is used to list all the usual members and visitors of selected households and their characteristics including age, sex, education, and their relationship to the head of the household. In addition this questionnaire asks questions regarding orphans and vulnerable children, household deaths, characteristics of the household, economic support and disability.

The Adult Questionnaire is used to collect information from all individuals aged 15 years and above while Adolescent questionnaire is administered to individuals age 10 to 14 in one third of all households selected.

Training of Field Staff

Field staff training includes class presentations, mock interviews using scenarios, quizzes, tests and field practice. Field practice involving interviews and biomarker testing carried out towards the end of the training period.

Biomarkers

Biomarker testing in THIS is done in the field and at central laboratory. Biomarkers done in the field include HIV rapid testing, syphilis rapid testing and CD4 test. At the laboratory, blood from HIV positive participants is tested for Viral Load, ARV metabolites and Drug Resistance. Also Hepatitis B testing is conducted at the laboratory.

Fieldwork:

The fieldwork exercise is conducted in team work where by one team comprises of a team supervisor, six interviewers and a driver. Also for the purpose of supervision and coordination there is a field Coordinator who supervises five teams in the field. Fieldwork takes a period between six to seven months.

Quality Control:

Quality control teams periodically visit teams in the field to check their work and re-interview some households (spot interviews). This is done for monitoring and to ensure collection of quality data.

Data Processing:

Field testing results entered into the tablet and merged with the questionnaire data. Data processing includes editing of tablet identified-errors which is accomplished by ODK software. Blood from the field is transported to National Health Laboratory Quality Assuarence Training Centre (NHLQATC) to be tested. Results from the laboratory are uploaded to the server and merged with the questionnaire and field biomarker data by participant ID number. All data transmitted from the field are stored in a secure database located on the central survey server. Normally, data processing is conducted concurrently with the data collection exercise.

4.2 TANZANIA DEMOGRAPHIC AND HEALTH SURVEY AND MALARIA INDICATOR SURVEY (TDHS-MIS)

The Tanzania Demographic and Health Survey and Malaria Indicator Survey (TDHS-MIS) is the population-based, comprehensive survey in a series of national sample surveys conducted in Tanzania to measure levels, patterns, and trends in demographic and health indicators.

4.2.1 The objective and uses of Product

The principal objective of the Tanzania Demographic and Health Survey and Malaria Indicator Survey (TDHS-MIS) is to collect data on fertility levels, marriage, sexual activity, fertility preferences, awareness and use of family planning methods, breastfeeding practices, nutrition, childhood immunisation, childhood and maternal mortality, maternal and child health, malaria, domestic violence, women's empowerment and other health-related issues. In addition, the survey provide estimates of anaemia prevalence among children age 6-59 months and women age 15-49 years, estimates of malaria prevalence among children age 6-59 months, and estimates of iodine concentration in household salt and women's urine.

Uses of the TDHS-MIS:

The information collected through the TDHS-MIS is intended to assist policy makers and programme managers in evaluating and designing programmes and strategies to improve the health of the country's population.

4.2.2 Methodology of data production

Sample Design

The sample design for the TDHS-MIS is done in two stages and is intended to provide estimates for the entire country, for urban and rural areas in Tanzania Mainland, and for Zanzibar. For specific indicators such as contraceptive use, the sample design allows the estimation of indicators for each of the regions in Tanzania. A representative probability sample is selected in two stages. In the first stage, clusters are selected from a list of enumeration areas from the Population and Housing Census. In the second stage, a complete household listing exercise is carried out within all the selected clusters, then households are systematically selected for participation in the survey.

Questionnaires

Four questionnaires are used for TDHS-MIS: the Household Questionnaire, the Woman's Questionnaire, the Man's Questionnaire and the Biomarker Questionnaire. The Household Questionnaire is used to list all the usual members and visitors in the selected households. Basic demographic information are collected on the characteristics of each person listed, including age, sex, education, and relationship to the head of the household. The Household Questionnaire also collects information on characteristics of the household's dwelling unit, such as source of drinking water, type of toilet facilities, ownership of durable goods and assets and ownership and use of mosquito nets. The Household Questionnaire saves the purpose of identifying women and men who are eligible for the individual interview. The Woman's Questionnaire is used to collect information from all women age 15-49. The Man's Questionnaire is administered to all men age 15-49 living in every third household (subsample) in the TDHS-MIS sample. The Man's Questionnaire collects much of the same information available in the Woman's Questionnaire, but it does not contain a detailed reproductive history or questions on maternal and child health. The Biomarker Questionnaire is used to record anthropometric measurements (height and weight) for children under age 5 and women age 15-49, record anaemia test results for children age 6-59 months and women age 15-49; record malaria rapid test results for children age 6-59 months; document responses to a request for blood samples among children age 6-59 months, to be tested later for malaria using microscopy in the laboratory; and document responses to request for a household salt sample and a urine sample among women age 15-49, to be tested later for iodine in the laboratory.

Biomarker Testing

The TDHS-MIS consists of four biomarker testing; Anthropometry (Height and Weight Measurement), Anaemia Testing, Malaria Testing and Iodine Testing.

Pre-test:

All elements of the survey are to be pretested prior to the main survey.

Training of Field Staff:

The training is conducted following the DHS training procedures, including classroom presentations, mock interviews, tests and field practice (which combine interviews and collection of biomarkers).

Fieldwork:

Field work is done in form of teams, of which each consists of four female interviewers, male interviewer, a supervisor, a field editor, and a driver. The field editor and supervisor are responsible for reviewing all questionnaires for quality and consistency check before the team's departure from the cluster.

Data Processing:

In the TDHS-MIS the data entry is done concurrently with data collection in the field. Filled-in paper questionnaires in the field are edited, and checked by both the field editor and the supervisor; the data is then entered into a tablet equipped with a data entry programme (CSPro Software). Completed questionnaires are then sent to NBS headquarters, where they are entered for the second time and edited by data processing personnel. Processing the data concurrently with data collection allows for regular monitoring of team performance and data quality. Field check tables are generated regularly during data processing to check various data quality parameters. As a result, feedback is given on a regular basis, encouraging teams to continue in areas of good performance and to correct areas in need of improvement.

Quality Control:

Quality control teams periodically visit teams in the field to check their work and re-interview some households (spot checks).

Analysis and Report writing:

After all completed questionnaires have been checked, entered and finalized and analysis completed, at least two reports have to be prepared: Preliminary report and final report. Preliminary report has to be brief and consists primarily of key indicators. The final report is more detailed.

Dissemination and Utilization of Results

A National dissemination seminar is conducted after completion of report writing. A series of zonal and regional level dissemination seminars are also done if funds are available.

4.2.3 Reference to applicable standard classifications

The TDHS-MIS follow the International reference classifications such as Tanzania Standard Classification of Occupations (TASCO).

4.3 TANZANIA SERVICE PROVISION ASSESSMENT (TSPA)

Tanzania Service Provision Assessment (TSPA) survey is a sample survey of health facilities which provides information about the overall service environment, resources, practices and functioning of components of the health system that may affect the quality of health services in Tanzania.

4.3.1 The objectives and uses of TSPA

The general objective of the Tanzania Service Provision Assessment (TSPA) is to collect information on the delivery of health care services in Tanzania and to examine the readiness of facilities for provision of quality health services in the country. These services are in the areas of child health, maternal and new born care, family planning, sexually transmitted infections, HIV and AIDS, tuberculosis, malaria, and chronic diseases.

Uses of TSPA:

The findings of the survey are used to provide snapshot information on overall availability of different health related services. In addition, it assesses the readiness of health facilities to operate effectively and efficiently in order to provide quality services to clients. Findings from this assessment are used to design and improve interventions and services geared at ensuring the population can assess the necessary quality services with minimum delay and maximum satisfaction.

4.3.2 Methodology of data production

Sample Design

The sample for the TSPA is designed to provide nationally representative results by facility type and managing authority and regionally representative results for the regions in Tanzania Mainland and Zanzibar. A sample of health facilities selected to participate in the TSPA survey is drawn from a master list of health facilities that consists of verified (active) health facilities in Tanzania. The master list contains the list of all hospitals, health centres, dispensaries, and clinics. These facilities are managed by the government, private-for-profit, parastatal, and faith-based entities.

The sample design for TSPA is a stratified random sample of health facilities selected with equal probability under systematic sampling. The stratification is achieved by separating the health

facilities by facility type within each region. The sample allocation features a power allocation across regions in order to achieve comparable survey precision across regions.

Questionnaires

Four questionnaires are used for TSPA: the Facility Inventory Questionnaire, the Health Provider Interview Questionnaire, the Observation Protocol Questionnaires for antenatal care (ANC), Family Planning (FP), services for Sick Children (SC) and the Exit Interview Questionnaires for ANC, FP and SC.

Data Collection Approaches

The inventory questionnaires are loaded onto tablet computers, which are used during interviews to ask questions and also record responses (computer assisted personal interviewing–CAPI). All other types of questionnaires are paper based, but responses are entered into computers and edited in the field (computer assisted field entry–CAFE).

Pre-test:

All elements of the survey are to be pretested prior to the main survey.

Training of Field Staff:

The training is conducted following the DHS training procedures, including classroom lectures and discussions, practical demonstrations, mock interviews, role-plays, and field practices.

Fieldwork:

After the training, the data collection personnel are divided into teams. Each team consists of a team leader, 3 interviewers and a driver.

Data Processing and Questionnaire Management:

After completing data collection in each facility, the interviewers review the paper questionnaires (Health Provider Interview, Exit Interview and Observation) and the Inventory data that have been collected directly onto the tablet computer before handing the questionnaires and electronic data over to the team leader, who reviews them a second time. The paper questionnaires are then entered into the second tablet computer. Once data collection and all data entry are completed in a facility, the team leader conducts consistency and structural checks on the data to identify any errors or missing information. When a team is satisfied that data collection and entry are complete

for the facility, the team sends the data to the NBS headquarters via the Internet, using Internet File Streaming System (IFSS). Completed paper questionnaires from the field are periodically picked up by the quality control teams and taken to the NBS headquarters. At the NBS headquarters, the data from the completed paper questionnaires from the field are entered twice (100 percent verification). The concurrent processing of the data has a distinct advantage for data quality.

Quality Control:

Quality control teams periodically visit teams in the field to check their work and re-interview some facilities (spot checks).

Analysis and Report:

After all completed questionnaires have been checked, entered and finalized and analysis completed, at least two reports have to be prepared: Preliminary report and final report. Preliminary report has to be brief and consists primarily of key indicators. The final report is more detailed.

Dissemination and Utilization of Results

A national dissemination seminar is conducted after completion of report writing. A series of zonal and regional level dissemination seminars are also done if funds are available.

4.3.3 Reference to applicable standard classifications

The TSPA follow the International reference classifications such as Tanzania Standard Classification of Occupations (TASCO).

4.4 TANZANIA DISABILITY SURVEY

The Tanzania Disability Survey is the household-based and comprehensive survey of its kind carried out in Tanzania. The survey provides information on the prevalence of disability in Tanzania.

4.4.1 The objective and uses of TDS:

The objective of the Tanzania Disability Survey (TDS) is to determine the prevalence of disability in the country and to determine living conditions among people with activity limitations.

Use of TDS

The findings of the survey are used as a contribution to the improvement of the living conditions among people with activity limitations in Tanzania; the findings also initiate a discussion on the concepts and understanding of "disability" and monitor the impact of government policies, programmes and donor support on the well being of the population with activity limitations.

4.4.2 Methodology of data production

Sampling Design

The survey covers the whole of the United Republic of Tanzania and produces estimates at regional level. Information is collected from all selected households and individuals with and without disability (measured as activity limitations).

The primary sampling unit for the survey is the census enumeration area (EA) and the ultimate sampling unit are the individual household members. Disability survey utilizes a three-stage systematic stratified random sampling design, involving clusters (EAs), households and individual household members.

Sampling Frame

The sampling frame of clusters to be used is the list of all enumeration areas (EAs) generated during the Population and Housing Census. EAs in each region are listed following the census coding system and a target sample is selected using probability proportional to size. The EA maps and other administrative information are used to identify the boundaries and features of the selected EAs. For households, the sampling frame should be the list of households (heads) constructed for each selected EA. To ensure a random scattered sample, the listing of households should be done in a serpentine manner from one end of the EA to another end.

Sample Size Determination

A total number of clusters must be selected. The targeted sample per cluster should be determined. The selection of EAs should follow the Probability Proportional to Size (PPS) sampling while the selection of households and individuals follow a simple random sampling procedure. The random spread of households is necessary for achieving a non-clustered sample.

Questionnaire

Disability survey uses three types of questionnaires. The first questionnaire is Household Questionnaire, which attempts to collect basic socio-economic conditions of usual household members and visitors. The questionnaire also includes screening questions which are used to determine persons with disabilities.

The second questionnaire is Adult Questionnaire which is used to collect information from all person aged 15 years and above who were identified in the household questionnaire as having some form of disability.

The Children Questionnaire is the third instrument which is used to collect information from all children identified as having disabilities but collect more or less the same information in the adult questionnaire.

Training of Field Staff

The training involves both theory and practise. Organisations of People with Disability are represented by participants who have a responsibility of clarifying terms used in the questionnaires. Besides participating in training representatives from Organisations of People with Disabilities is also part of supervisory teams.

Field work

The field work includes map reading and listing exercise, the supervisors and enumerators must be trained on map reading and listing. Supervisors should ensure that all households in the EA are listed according to the given instructions and EA map. Supervisors are also responsible for selecting households to be interviewed.

Data Collection

Data collection is conducted in teams, each team consist of supervisor, enumerators and a driver. Supervisors are responsible for the overall administrative work in the field including checking the quality of the questionnaires before departing from the cluster.

Data Processing

Data processing starts concurrently with the fieldwork. The data processing personnel includes supervisors and a questionnaire administrator, who ensures that the expected numbers of questionnaires from all clusters are received. The CSPro computer package is used for data entry.

4.5 POPULATIONS AND HOUSING CENSUS (PHC)

The United Nations defines a population census as the total process of collecting, compiling, evaluating, analyzing and publishing or otherwise disseminating demographic, economic and social data pertaining, at a specified time, to all persons in a country or in a well delineated part of a country.

In other words, a population census is the complete count of all persons in a country at a given time. It is the primary source of detailed data on the size, distribution and composition of population. It covers all population groups e.g. private households, institutions, homeless, and migratory populations, for all geographic and/or administrative units in the country. The United Nations recommend that countries should conduct at least one population census every 10 years.

4.5.1 The objective and uses of the Population Census

The fundamental objective of conducting Census is to provide the government with information on the size, distribution, composition and other social economic characteristics of the population as well as information on housing conditions. This information is important in providing updated benchmark data for formulation, implementation, monitoring and evaluation of population programmes and policies. The up-to-date information supports, among other things, the evaluation of the implementation of the Tanzania Development Vision 2025, Vision 2020 for Zanzibar as well as health, social and economic reforms in a de-centralized government framework.

Specific objectives of the census include:

(i) Increasing availability and accessibility of accurate, timely and reliable data on demographic and socio-economic characteristics for policy formulation, monitoring and evaluation of development programmes;

(ii) Increasing knowledge of stakeholders on socio-economic and demographic characteristics of Tanzania population as well as patterns and trends of growth;

(iii) Increasing utilization of socio-economic and demographic data for designing, monitoring and evaluating development programmes; and

(iv) Strengthening capacity of the National Bureau of Statistics (NBS) and Office of Chief Government Statistician (OCGS) in carrying out population and housing censuses particularly in the areas of planning, collecting, processing, analysing, disseminating and utilizing census and other data.

Use of Population Census

The population and housing census' data is an important input for the preparation of economic and development policies, monitoring the improvement in the quality of life of the population, as well as developing a system of sustainable development in general.

4.5.2 Methodology of data production

Census Budget

The cost of Census exercise is covered by the Government and development partners**.**

Census Cartographic Work

The main census–related objective of cartographic work is to delineate the entire country into Enumeration Areas (EAs) in order to produce maps required for census operations. The most important principle followed in delineating an EA is to ensure that no EA can cut across the existing administrative boundaries of regions, districts, wards/*shehia* or villages */mitaa*.

The 2012 census cartographic work fully embraced the technological advancements in Geographical Information System (GIS) development. In particular, the census cartography used satellite imagery and aerial photography. Delineation of EA boundaries was done using a Global Positioning Systems (GPS). In addition, coordinates of prominent features existing in each particular EA were also picked and recorded.

Pilot Census

A pilot census is conducted to assess the whole process of census and Post Enumeration Survey (PES) operation. The pilot census determines the workload of enumeration, logistic support, enumeration procedures, data processing and acceptability by the public in general. Administrative control and management issues are also tested through the pilot census.

Staff Recruitment and Training of Field Staff

Recruitment and training of enumerators during enumeration is given a special attention as large number of staff is required. Traditionally, primary school teachers have been involved as

enumerators/supervisors. Supervisors and enumerators are trained at regional level. However, for the 2012 Population and Housing Census, other staff from different government sectors were also involved as enumerators and supervisors. The District Census Committee recruited these staff during enumeration exercise.

Questionnaires

Two main types of questionnaires used in PHC are the Long and Short questionnaires. Other questionnaires that are used include questionnaire for special population groups, questionnaire for diplomats, questionnaire for hotels or lodges, hospitals and travelers as well as a community questionnaire that covers all social amenities, land use pattern and environmental or natural features (e.g. water sources, forest or vegetation cover).

The main topics included in the census questionnaires are demographic characteristics (Relationship, Sex, Age, Disability, Marital Status, Citizenship and Place of Residence); Literacy and Education; Migration; Economic Activity; Fertility; General and Maternal Mortality; Social Security Funds; Tanzanians Living Abroad (Diaspora); Agriculture; Ownership of Assets and Housing Conditions. The 2012 PHC questionnaires were paper-based.

Census Enumeration

Census enumeration is an important operation which determines the success or failure of a census. Quality of census depends on how the exercise is conducted. Enumeration involves house-to-house visit by trained numerators using structured questionnaire with the objective of enumerating all persons in the country.

Data Processing

Data processing exercise is done through scanning technology and computers for manual data entry for questionnaires that for some reasons will be rejected by scanner. The processing of the 2012 PHC data were captured from the questionnaires electronically using the Optical Mark Reader (OMR) scanning technology, and through manual data entry for special questionnaires such as community questionnaires. Data processing started with validation of the EAs, followed by sorting and separation of the questionnaires.

Data Analysis and Dissemination

Data analysis and dissemination is undertaken after completion of data cleaning and data processing. The analysis is undertaken by teams of experts from Government Ministries, Research Institutions and Higher Learning and Training Institutions. A number of experts from within and outside the country provide technical assistance.

Report Writing

Preliminary report is prepared by professionals from NBS and OCGS staff and the main report is prepared by professionals from NBS, OCGS and other ministries.

4.6 EDUCATION AND HEALTH STATISTICS

4.6.1 The objective and uses of Education and Health Statistics:

The health and education statistics are inputs to the Economic Survey Report, which is produced annually by the Ministry of Finance and Planning.

4.6.2 Methodology of data production

Method of Data Collection

The education data from Higher Learning Institutions are collected using paper questionnaires. These questionnaires are sent to the Regional Statistical Offices (RSMs) for distribution to the Higher Learning and Training Institutions existing in each region. These questionnaires are filled-in by a responsible person in the respective institution under the supervision of the Regional Statistical Managers (RSM) and headquarter supervisor for quality assurance. On the other hand, education data from pre-primary, primary, secondary, teacher education, adult and non-formal education, technical and vocational educations are obtained from Ministry of Education and Vocational Training.

Education

The education data and information collected and compiled includes:

(i) The yearly total enrolment according by sex and/or courses,

(ii) The total number of teachers in a given year,

(iii) The total number of students, and

(iv) The number of lecturers in all higher learning institutions.

Health

Health Statistics are collected from the Ministry of Health, Community Development, Gender, Elderly and Children by staff from the Department of Social and Demographic Statistics.

The health data and information that is collected and compiled includes:

(i) The number of health professionals,

(ii) Ownership of health facilities,

(iii) The total health facilities according to ownership (Private, Government, Government agencies and Religious Health Facilities),

(iv) The number of patients attended by different health facilities annually.

These statistics are usually updated every year to facilitate the production of the Economic Survey Report produced annually. As such, these data are collected from the second week of January and submitted to the National Accounts Department at NBS in March for further compilation and submission to the Ministry of Finance and Planning. They are expected to reach the Ministry of Finance not later than mid-April every year.

4.7 HOUSEHOLD BUDGET SURVEY (HBS)

Household Budget Surveys are intended to collect, compile and analyze numerical information on household consumption, expenditure and income. Based on this information it is possible to assess the impact of various policies on people and consequently identify the most vulnerable groups of the population.

4.7.1 The objective and uses of HBS

The main aim of the HBS is to get information from private households on socio-economic activities, household consumption, income and expenditure, housing characteristics as well as ownership of assets.

Use of HBS

The HBS is a useful source of information to planners and policy makers, non-government organizations, academicians and other stakeholders, including regional and international

organizations. The survey findings also facilitate formulation of policies, planning and evidence based decision-making within the government and the business community and stimulate further research and in-depth analyses.

4.7.2 Methodology of data production

Sample design

The sample design for the HBS is usually done in two stages and is intended to provide estimates at the National level (Tanzania Mainland), Dar es Salaam, Other Urban Areas and Rural Areas. The first stage involves selecting sample points (clusters), consisting of enumeration areas (EAs) delineated from the Tanzania Population and Housing Census (PHC). The selection of the sample EAs is based on their probabilities proportional to their sizes (PPS) within each stratum. Following the selection of the sample EAs at the first sampling stage, a complete households listing is carried out in each of the selected EA. At the second sampling stage households are systematically selected from the listed households from each EA.

Survey Instruments

Just like other surveys/censuses, the HBS data are collected through questionnaires. The survey questionnaires are designed to fulfill the main objectives of the survey. During the recent (2011/12) HBS, apart from the listing form, there were five types of questionnaires/forms. Household questionnaires Form I to Form V were used during the main survey; Form I was used to collect socio-economic and demographic information of household members. It has sections on demographic information, immigration, education, health, disability, and time use. Data on non-food consumption were recorded in Form II. It contains sections on dwelling, utilities, water, sanitation and household expenditure. Form III collected data on the labour status of household members, household businesses and individual income. Form IV was concerned with land; agriculture, crops and livestock. Form V which is also known as household diary was used to record daily transactions on consumption and expenditure of the household.

On the other hand, there was an instruction manual explaining all survey details and questionnaire contents. An attempt was made to give explanation on each question existed in the questionnaires. Also codes for various items or transactions that were anticipated to be found in households were provided in this document. Each enumerator and supervisor was provided with this manual for reference each time they undertake the filling-in or reviewing the already filled-in questionnaires.

Training

Training is usually in two phases; the first one is the training of trainers (TOT) where all anticipated trainers gather and discuss the details of the training, the methods of training and the training schedule. The second phase of the training is the Training of Enumerators and Supervisors. Due to a large number of enumerators and supervisors that are usually involved in the HBS, the training of enumerators and supervisors is conducted in zones to ensure that all participants are properly trained. The training is consisted of classroom lectures, mock interviews and field practices which involve interviewing households in both rural and urban areas.

Data Collection

Each enumerator is assigned a cluster for the whole year. Before beginning of enumeration, each enumerator is provided with the necessary information in hard copies to deliver to the local leaders and a letter of introduction to every selected household. Up to the recent HBS, each enumerator has been interviewing two household for either 28 or all days in the respective calendar month. The two households of each month may have different days of starting interviews depending on the decisions made by the technical teams for a number of reasons. Details of these variations are usually an important part of the survey report so as to assist users of the statistics understand methods used during the entire process of the survey.

Quality Control during Fieldwork

As part of the entire process of HBS data collection, a quality control team is usually formed. The team ensures that the data being collected meet expected quality and standards. The team is mainly composed of NBS staff from the head office and the HBS Quality Assurance Consultant when necessary.

Processing

Editing of filled-in questionnaires is a two stages exercise. The primary editing is done at the respective regional statistical office. This ensures that all problems that require going back to the specific household are solved before the questionnaires are sent to the main office where it may take time to rectify the problems. The second stage is at the main office where the editing is conducted in two ways, namely the manual editing and computer editing. The manual phase involves manual editing of the questionnaires. This starts as soon as the first bunches of completed questionnaires are received at the headquarters. Computer editing is for data that have been entered, consistence checks are run to detect any inconsistencies and mistakes either committed in

the field and were not seen at both stages of editing or committed at the data entry stage, and if any error found are fixed.

Analysis and Report Writing

This is an important stage of processing the survey results. This is done by NBS and other organizations or individuals with competence in specific areas such as poverty analysis, consumer price index and national accounts. Both national and international consultants are usually recruited to support local staff in the analysis.

Dissemination and Utilization of Results

A National dissemination seminar is conducted after completion of report writing. The seminar involves key stakeholders to the survey.

4.7.3 Reference to applicable standard classifications

The HBS follow the International reference classifications such as International Standard for Industrial Classification (ISIC), Tanzania Standard Classification of Occupations (TASCO) and Classification of Individual Consumption by Purpose (COICOP).

4.8 CONSUMER PRICE INDEX (CPI)

Consumer Price Index (CPI) measures changes over time in the general level of prices of goods and services that households purchase for the purpose of final consumption. For this reason, CPI has increasingly become a key macro-economic indicator for monitoring price movements and how these movement impact on policy decisions.

4.8.1 Objectives and uses of CPI

The purpose of a price index includes the following:-

(i) To measure changes in the purchasing power of monetary incomes;

(ii) To measure changes in living standards; and

(iii) To measure price inflation experienced by households.

CPI has been used in various fields such as: -

(i) To assist government economists in conducting general economic policy, especially monetary policy: and

(ii) It is widely used in indexation arrangements in both the private and public sectors. These include indexing pension and superannuation payments, taxes and charges, some governmental bonds, and business contracts.

4.8.2 It's Methodology

(i) The application uses the Modified Laspeyre's Approach to compute CPI statistics based on monthly price quotations (or monthly average price quotations) and annual expenditure information using a combination of manual and computer tabulation procedures.

$$I_{t\rightarrow 0} = \sum_{i=1}^{n} w_{0,i} * \left(\frac{p_{t,i}}{p_{t-1,i}}\right) * \left(\frac{p_{t-1,i}}{p_{0,i}}\right)$$

which can be re-written as:

$$I_{t\rightarrow 0} = \sum_{i=1}^{n} w_{0,i} * STPR_{t\rightarrow t-1,i} * LTPR_{t-1\rightarrow 0,i}$$

where $W_{0,i}$ is base period weight for item i, $STPR_{t\rightarrow t-1,i}$ is the short-term price relative of item i for current period ($= p_{t,i}/p_{t-1,i}$) and $LTPR_{t-1\rightarrow 0,i}$ is the long-term price relative of item i for previous period ($= p_{t-1,i}/p_{0,i}$).

(ii) CPI is calculated using the equivalent of a recursive procedure, in which previous period's base-weighted long-term price relatives, p_{t-1}, q_0 are updated by the current period's price relatives.

(iii) The geometric mean method is used in computing the price level at aggregate level in view of its multiple advantages.

(iv) The program adopts the Matching Price Observation method in imputing the areas' average prices, in which the price averages are calculated on the basis of "matched observations". Whenever a particular price observation is missing from either the previous month or the current month, the corresponding price observations will be dropped from the other period. This is to ensure consistent sample of price quotations in each period.

(v) The program calculates missing variety prices based on Short Term Price Relative (STPR) (actual or imputed) and previous period price, and stores them in the database with a flag. These calculated price data can be retrieved into spreadsheets for the next period imputation process.

4.9 INTERNATIONAL COMPARISON PROGRAM (ICP)

The International Comparison Programs is a global project, managed centrally by the World Bank, with an organized hierarchy of regional management structure. The responsibility of managing its African component ICP-Africa lies with the African Development Bank (AfDB). The main objective of the ICP is to compare the economic aggregate and the volumes of gross domestic product (GDP) between the countries.

The targeted population is the set of all goods and services that are consumed by household from outlets during the benchmark year, covering the whole country (including rural and urban areas), except expenditure of housing rent on residential (building), education and health services which are subsidized in most of the countries.

The ICP price project is integrated with the existing system of price collection for the CPI except to some items which are not available in CPI but are needed in ICP according to the agreement of country members.

The ICP price collections are carried out in urban and rural areas (weekly market) of the sampled centres. Stratification allocation and purpose are the methods used to select the region for ICP price collection activity. In Tanzania, there are seven zones including Zanzibar which constitute Unguja and Pemba.

The country members capture and validate ICP price collection using the same method as used in CPI but further analysis is done by African Development Bank (AFDB).

4.9.1 Objectives and uses of ICP

As a global program, the ICP will produce Purchasing Power Parity (PPP) estimates, with the objective of facilitating cross-country comparison of GDP and its components, such as expenditures on food items, health, education and capital goods.

Under the Poverty Reduction related Objectives, the ICP are to provide a reliable information base for national, regional and global policy making and for monitoring of progress.

The ICP data is widely used by international and regional agencies:

(i) To establish international poverty threshold and to monitor progress towards achieving the SDGs poverty reduction target of the World Bank;
(ii) To construct the Human Development Index of the UNDP;
(iii) To compare health expenditure per capita of the World Health Organization;
(iv) To assess per capita expenditures in education for UNESCO;
(v) To monitor the welfare of children for UNICEF; and
(vi) To compare the relative sizes of economies and to estimate weighted averages of regional growth rates of IMF/ADB.

4.9.2 It's Methodology

The country members capture and validate ICP price collection using the same method as used in CPI but further analysis is done by African Development Bank (AfDB).

4.10 HARMONISED CONSUMER PRICE INDEX (HCPI)

The Harmonised Consumer Price Index (HCPI) Compilation Model is an Excel add-in based Visual Basic for Application (VBA) program developed for providing technical assistance to fund member countries of SADC for consumer price statistics compilation. The package is a prototype model that could also be used for teaching, training, and research purposes. It can likewise serve as a framework from which price collection formats and product classification systems can be integrated to fit country-specific practices.

Its main function is to compile the HCPI for multiple areas at multiple levels of product items to obtain aggregate national level price statistics.

4.10.1 Objectives and uses of HCPI

The purpose of the harmonized consumer price indices is to estimate the development in the countries' consumer prices on a comparable basis.

HCPI's main use is for monetary policy, and is used as one of the convergence criteria to assess compliance of member states to economic unions and to monitor progress towards integration.

4.10.2 Methodology of compiling HCPI.

(i) The modified Laspeyres formula is used to compute HCPI statistics based on monthly price quotations (or monthly average price quotations) and annual expenditure information using a combination of manual and computer tabulation procedures.

$$I^{t/0} = \sum_i p_i^t q^b_i \ / \sum_i p_i^0 q^b_i$$

which can be written

$$I^{t/0} = \sum_i w_i \, . \, I_i^t / I_i^0$$

where

w_i is the weight used for product *i*,

$I^{t/0}$ is the price index for product *i* between the price reference period 0 and period *t*;

p_i^t is the price of product *i* in period *t*;

p_i^0 is the price of the same product *i* in period 0;

q^b_i is the base-period quantity of product *i* expressed as a proportion of the expenditure on product *i* to total expenditures covered in the HCPI.

(ii) HCPI is calculated using the equivalent of a recursive procedure, in which previous period's base-weighted long-term price relatives, p_{t-1}, q_0 are updated by the current period's price relatives.

(iii) The geometric mean method is used in computing the price level at aggregate level in view of its multiple advantages.

(iv) The program adopts the Matching Price Observation method in imputing the areas' average prices, in which the price averages are calculated on the basis of "matched observations". Whenever a particular price observation is missing from either the previous month or the current month, the corresponding price observations will be

dropped from the other period. This is to ensure consistent sample of price quotations in each period.

(v) The program calculates missing variety prices based on Short Term Price Relative (STPR) (actual or imputed) and previous period price, and stores them in the database with a flag. These calculated price data can be retrieved into spreadsheets for the next period imputation process.

4.11 INTEGRATED LABOUR FORCE SURVEY.

Integrated Labour Force Survey (ILFS) is the survey conducted by National Bureau of Statistics with the aim of providing a benchmark data of both qualitative and quantitative on some characteristics of the labour force. The survey is conducted after every five-years.

4.11.1 Objectives and uses of the ILFS

The broad objective of the Integrated Labour Force Survey is to obtain comprehensive data on the current status of National Labour Market prevailing in Tanzania. The specific objectives of the survey includes obtaining information on Labour Force Participation Rates (LFPR); employment to population ratios; employed population; unemployed population; hours of work; employment in the informal economy; inactivity rates; education attainment and illiteracy; number of child labourers; income from employment and time use in economic and non-economic activities.

Uses of ILFS

The survey provides indicators, which are very important in monitoring and assessing economic growth of the country. This information can also be used to assess the impact of various policies on social and economic activities of the people and consequently identify the disadvantaged groups of the population which will be used by policy makers to design relevant policy that address the situation.

4.11.2 Methodology of data production

Frame of the Sample

The ILFS, just like other surveys uses the sampling frame derived from Population and Housing Census (PHC).

Design of the Sample

The sample selection methodology for the ILFS is based on a stratified three-stage sample design.

The first stage involves systematic sampling of EAs within each stratum with Probability Proportion to Size (PPS) from the ordered list of EAs in the sampling frame. An optimal number of EAs is selected at the first stage distributed by both urban and rural areas. The second stage involves systematic sampling procedure for selecting households from each selected EA. At this stage an optimal number of households is selected from each sampled EA.

The third stage involves selection of respondents for Time Use Module. During data collection, interviewer developes a household register for persons aged 5 years or above in accordance to their sex and age. One household member is selected from the register using KISH grid approach and the time use questionnaire is therefore administered to the selected member of the household in each selected household.

Sample Size Determination

The selections of EAs follow the systematic sampling procedure within each stratum with Probability Proportion to Size (PPS), likewise the selection of households also follow the systematic sampling procedure, while the selection of individuals within household the KISH grid approach is usually employed.

Estimation Procedure

In order for the sample estimates to be representative of the population, it is necessary to multiply the data by a sampling weight, or expansion factor. Principally the basic weight for each sample household is equal to the inverse of its probability of selection (calculated by multiplying the probabilities at each sampling stage). The sampling probabilities at each stage of selection are usually maintained in an Excel spreadsheet with information from the sampling frame for each sampled EA so that the overall probability and corresponding weight is easily calculated.

The basic sampling weight, or expansion factor, is calculated as the inverse of the probability of selection. The weight can be expressed as follows:

$$W_{hi} = \frac{M_h \times M'_{hi}}{n_h \times M_{hi} \times m_{hi}},$$

Where:

W_{hi} = basic weight for the sample households in the *i*-th sample EA in stratum *h*

M_h = total number of households in the sampling frame of EAs for stratum *h*

M'_{hi} = total number of households listed in the *i*-th sample EA in stratum *h*

n_h = number of sample EAs selected in stratum *h*

M_{hi} = total number of households in the frame for the *i*-th sample EA in stratum *h*

m_{hi} = number of sample households selected in the *i*-th sample EA in stratum *h*

If m_{hi} is constant for each stratum (24, for example), the sample will be approximately self-weighting within each stratum. These weights will actually vary slightly based on the difference between the number of households listed in each sample EA and the corresponding number from the sampling frame.

Data Collection

Labour force survey questionnaire consists of four modules. First, Labour Force module which consists of two forms namely; Labour Force Survey Form 1 (LFS1) and Labour Force Survey Form 2 (LFS2). The first form (LFS1) is administered to the head of the household or his/her representative intending to collect household particulars. The second form (LFS2) aims to collect the information of labour force details for individuals. Second, Informal Sector module (IS) and its data is being collected using LFS2. Third, Working Children module (WC) which aims to collect information of children age 5 to 17 years is also being collected using LFS2. The fourth module is Time Use Survey module (TUS), it is designed to collect the information on the routine activities of the respondents and administered on seven consecutive days to each member aged 5 years and above of the selected households.

Data collection is conducted in teams, each team consist of a supervisor, enumerators and a driver. Supervisors are responsible for the overall administrative work in the field including checking the quality of the questionnaires before departing from the cluster.

Field work

The fieldwork is usually conducted on quarterly basis of three months intervals to capture seasonal variations of economic activities. Regular field visits for quality assurance is made by national and regional supervisors to ensure that the quality of work is maintained at all stages of

data production. This is intended to minimise errors made by enumerators who are instructed to make field edits at the household level as soon as they finish interviews.

Data Processing

Data processing activities involve various stages which includes; reception of questionnaire from the field, questionnaire editing and coding, data entry using Census and Survey Processing system (CSPro), development of editing specifications lists, computer data editing using batch-edit application, data analysis and tabulation using Statistical Packages for Social Scientists (SPSS) or other packages.

4.11.3 Reference to applicable standard classifications

Intergrated labour force survey follows the International reference classifications such as the Tanzania Standard Classification of Occupations (TASCO) and International Classification Activities for Time Use Statistics (ICATUS).

4.12 EMPLOYMENT AND EARNINGS SURVEY

The Employment and Earnings Survey (EES) is an establishment-based survey conducted annually in Tanzania Mainland by the National Bureau of Statistics (NBS). The survey covers formal establishments with employees in both private and public sectors. The establishments are divided into three main categories which are all public sector establishments, all registered private establishments employing at least 50 persons and a sample of all registered private establishments whose number of employees are from 5 to 49 persons. The survey does not include domestic servants in Private households, non-salaried working proprietors and non-salaried family workers.

4.12.1 Objectives and uses of the EES

The main objective of Employment and Earnings is to obtain a comprehensive data on the annual status of employment and earnings as well as data on socio-economic characteristics of the labour market.

Uses of the EES

The findings of employment and earnings survey are used for estimating the labour market indicators that could be used for planning, policy formulation and examining the contribution to Gross Domestic Product (GDP) of different categories of employment.

4.12.2 Methodology of data production

The Selection of Establishments

The Employment and Earnings Survey uses the existing Statistical Business Register of Establishment (SBR) frame that was developed on the basis of International Standard Industrial Classification Revision 4 (ISIC Rev.4) and maintained by NBS. The selection of establishments from the SBR frame falls under the following groups: -

(i) All establishments of public sectors found in the current SBR frame are taken;

(ii) All establishments of private sector with at least 50 employees found in the current SBR frame are taken;

(iii) The list of surveyed establishments of private sector employing persons in the range of 5 to 49 is based on a sample.

The Sample Design

The survey is covering all public sector establishments and private sector establishments with at least 50 employees. Furthermore, the survey covers a sample of private establishments employing 5 to 49 persons. The sampling for this group involves stratifying establishments into those with 5 to 9 employees and those with 10 to 49 persons. Establishments in these strata are further stratified on the basis of their economic activities and ultimately a single stage sampling technique is used to derive representative establishments from each activity using the probability proportion to size (PPS).

Survey instruments

The most used survey instruments in EES are Questionnaire, instruction manual for data editors and coders.

Structure of the Questionnaire

Employment and Earnings Survey Questionnaire is divided into six main parts;

(a) Identification
  (i) Name and address of establishment.
  (ii) Description of the main and secondary economic activities for the establishment.

(b) Regular employees
  (i) Employment and Earnings
    - Total regular employees by sex, citizenship, age group (adult and youth) and disability.
    - Benefits for regular employees

- Gross Earnings and Basic salary for Regular Employees by sex, age group and citizenship.

(ii) Wage rates of citizens
- Groups of wage rates with number of employees in each group by sex

(c) Casual workers
(d) Number of new workers recruited during the last 12 months.
(e) Current Job Vacancies.
(f) Future Job vacancies in the next three years.

Training of Enumerators, data editors and data entrants.

After completion preparations of survey instruments, training of enumerators and data coder follows. The minimum conditions in order for enumerators and data coders to qualify for the training is secondary education (O level) and have at least done one survey of Employment and Earnings.

Data collection

Printed questionnaires accompanied with a list of selected establishments are usually sent to the Regional statistical offices in 26 regions of Tanzania Mainland. Each Regional Statistical Manager coordinates all the activities of distributing the questionnaires to the selected establishment, supervision of the fieldwork and mailing filled questionnaires back to NBS head office. Field visit for quality assurance are made by supervisors from head office. Data collection begins on 1st July up to 31st December of each year. The reference period for EES is at 30th June of each year.

Data are being collected by means of questionnaires delivered to the selected establishments through regional statistical offices. The data collected include; identification of establishments, regular employees, casual workers, number of new workers recruited and the current job vacancies. The Survey do not include the following:-

(i) Wage earners in seasonal small-holder agriculture
(ii) Employees in households
(iii) Members of the foreign diplomatic missions, corporation and international aid organizations stationed in Tanzania
(iv) Members of armed forces

Data Processing report writing and dissemination

Data processing for EES had several stages including; receiving and recording filled-in questionnaires from the regions, manual data cleaning, editing and validation, manual data coding, data entry using Census and Survey Processing system (CSPro), data cleaning, editing and validation using CSPro, table generation using SPSS or any other relevant software, and finally report writing and dissemination.

4.12.3 Reference to applicable standard classifications

The Employment and Earnings Survey (EES) follow the International reference classifications such as the International Standard of Industrial Classifications (ISIC) and the Tanzania Standard Classification of Occupations (TASCO).

4.13 NATIONAL PANEL SURVEY

The National Panel Survey (NPS) is a nationally representative household survey designed to collect information on the living standards of the population including socioeconomic characteristics, consumption, agricultural production, and non-farm income generating activities. The term "panel" means that the survey follows the original sampled population over time to track the evolution of its living conditions. The NPS is scheduled to have several rounds, since its inception 2008 there are four rounds that had been conducted. The first round of the survey (NPS 2008/09) was conducted from October 2008 to September 2009, the second round (NPS 2010/11) was carried out from October 2010 to September 2011, the third round (NPS 2012/13) took place from October 2012 to September 2013 and fourth round of the survey (NPS 2014/15) was conducted from October 2014 to September 2015.

4.13.1 Objectives and uses of the NPS

The National Panel Survey (NPS) is intended to achieve multiple objectives. These objectives are:

The first objective is to track implementation progress across the three clusters of the National Strategy for Growth and Reduction of Poverty (commonly known by its Kiswahili acronym as MKUKUTA) which includes: Growth, reduction of poverty, improvement of quality of life and social wellbeing and governance and accountability. Assessing progress across the three clusters is possible because the NPS allows the estimation of many of these MKUKUTA II indicators by then although from 2016 poverty will be tracked by the indicators from SUSTAINABLE DEVELOPMENT GOALS (SDG 2030) and FIVE-YEAR DEVELOPMENT PLAN (FYDP

2016-2021).

The second objective is to provide a better understanding of the determinants of poverty reduction. The panel feature of the survey implies that information on the poverty status of households is available at different points in time, thus permitting the study of poverty dynamics at the household level. This is a key advantage with respect to the usual cross-sectional household surveys, which allow the monitoring of poverty at the aggregate level, say, by district or by region, but not at the household level given that they do not follow the same households over time.

The third objective of the NPS is to assess the impact of public policy initiatives. The NPS can be a powerful tool to evaluate the impact of development policies and programs implemented by the government or non-governmental institutions. If a person, household or community has been affected by a particular policy and has been sampled in the NPS, the survey may allow the estimation of indicators that capture that effect. Hence coordination with those who implemented these policies is crucial in order to determine both how the impact evaluation can be done and if complementary data are required.

Uses of NPS

Apart from NPS to be a powerful tool to evaluate the impact of development policies and programs implemented by the government or non-governmental institutions, also the available data can be used for further analysis by researchers, students, higher learning institutions etc.

Some analysis done through NPS data were:

i. Child Poverty Analysis – NBS and UNICEF,
ii. Tanzania Smallholder Livestock Sector – NBS and Ministry of Agriculture, Livestock and Fishery Development,
iii. NPS data is being used in the Livestock Sector Analysis (LSA) in order to develop the Tanzanian Livestock Master Plan (TLMP),
iv. Multidimensional Child Poverty Mapping - by NBS, REPOA and UNICEF

4.13.2 Methodology of data production

Frame of the Sample

The sampling frame for NPS rounds is the recent available Population and Housing Census whereas, each time there is a new frame resulting from the Population and Housing Census, becomes an opportunity for refreshing the sample so as to utilize a new frame. For example, while the first three rounds of the NPS used the 2002 PHC frame, the fourth round's sample (i.e. 2014/15) was refreshed and used the sampling frame of 2012 Population and Housing Census.

Sample Design

The NPS is based on a stratified, multi-stage cluster sample design. The sample design of the NPS recognizes explicitly four analytical strata: Dar es Salaam, other urban areas in Mainland, rural areas in Mainland, and Zanzibar. Within each stratum, clusters are randomly selected as the primary sampling units, with the probability of selection proportional to size. In urban areas, clusters match census enumeration areas, while in rural areas, clusters match villages. In the last stage, 8 households are randomly chosen in each cluster.

Questionnaires

The survey is made up of four questionnaires: Household questionnaire, Agricultural questionnaire, Livestock/Fisheries questionnaire and Community Questionnaire that is administered by the team supervisor capturing community level information.

Training of Field Staff:

The training is usually conducted in two stages: Training of Trainers (ToT) which involves quality control personnel and supervisors, followed by training of interviewers which involve the understanding of questionnaires in the classroom settings, mock interview, test for the interviewers and field practice

Fieldwork

The NPS fieldwork is implemented over a 12-month period to address concerns about intra-year seasonality since seasonal fluctuations can affect considerably the living standards of the population. The field team consists of a supervisor, data entry personnel, enumerators and a driver.

After data have been collected, the first data entry done in the field and run consistency before the team departing from the cluster.

Tracking and Attrition

Tracking implies that enumerators visit again all households, following the same schedule of the previous round. The objective is to track all people present in all the previous rounds of the survey. Three scenarios are possible: the person stayed in the same location or the person has moved to a nearby location, or the person has moved to a distant location. Enumerators are able to keep the previous schedules for households that either stayed in the same location or moved to a nearby location. For households that move to a distant location, their contacts that they provided previously or from the information collected to the neighbors are used to trace the household in its new location and interviews are conducted.

Although the NPS tracks individuals, it is relatively common in panel surveys to report tracking and attrition rates in terms of households. A household will be considered successfully tracked if across two consecutive rounds at least one person considered a household member in the previous round is considered a household member in the current round too. The most likely reason for household attrition is the inability to find any person of that household rather than the refusal to participate in subsequent rounds of the survey.

Data Processing

The first data entry and editing is done in the field, this ensures that all problems that require going back to the field are solved before the questionnaires are sent to the main office where it may take time to rectify the problems. The second data entry and editing is done at the office to ensure good quality of the data, then data cleaning and validation follow by running the consistence checks to detect any inconsistencies and mistakes either committed in the field and were not seen at both stages of editing or committed at the data entry stage, and if any errors found are fixed.

Analysis, Report writing, and Dissemination of Results

After all completed questionnaires have been checked, entered, finalized and analysis completed, the final report have to be prepared. The report has to be detailed and prepared by considering the objectives of the NPS.

The final report is disseminated through NBS website and the hard copies are found at NBS library for public access.

4.13.3 Reference to applicable standard classifications

NPS follow the International reference classifications such as the International Standard of Industrial Classification (ISIC) Revision 4, and the Tanzania Standard Classification of Occupations (TASCO).

5.0 ECONOMIC STATISTICS

5.1 ANNUAL SURVEY OF INDUSTRIAL PRODUCTION (ASIP)

Industrial statistics play a very crucial role in determining the growth of industrial sector and its contribution to the GDP. Annual surveys of industrial production data are basic industrial statistics according to UN International Recommendations for Industrial Statistics. Indicators from industrial statistics are directed towards policy concerns and successful outcomes and conclusions for policy.

5.1.1 The objective and uses of the ASIP

The survey aims at producing basic industrial statistics in accordance with the UN International Recommendations for Industrial Statistics so as to ensure national and international comparability. The survey is designed to:

(i) Collect statistics on the characteristics and structure of the industrial sector in the country;
(ii) Assess the contribution of industrial sector to the overall economy;
(iii) Obtain data for computing national accounts estimates;
(iv) Obtain data for the construction of Input-Output tables
(v) Assess the current status of the industrial sector in the country;
(vi) Identify challenges that affect firm-level productivity and competitiveness;
(vii) Secure inputs for reviewing economic policies, programmes and strategies that support sector-productivity and growth;
(viii) Provide facts to support dialogue with the Government and other development partners so as to enhance public-private sector partnership; and
(ix) Update the existing data for Monitoring and Evaluation at the level of industrial sub-sectors.

5.1.2 Methodology of data production

Reference period

Data are requested for and in many cases supplied on a calendar year basis. Those units of enquiry that could not supply data according to calendar year due to allocation problems are advised to supply the data according to the financial years that cover larger part of the reference calendar year.

Unit of enquiry

The statistical unit is an establishment, which is defined as an economic unit, under a single ownership or control, engaging one or predominantly one kind of economic activity at a single physical location (i.e. an individual firm, mining, factory or workshop). However, due to record keeping practices, it is not always possible to strictly follow the definition of an establishment as stated above. In some cases, the restrictions especially on location are relaxed.

Scope and coverage

Scope

The survey covers all industrial establishments with ten or more workers as per International Standard Industrial Classification (ISIC) Revision 4. The industrial sector is comprised of establishments engaged in, "Mining and quarrying" (ISIC Revision 4, Section B), "Manufacturing" (Section C), "electricity, gas, steam and air conditioning supply" (Section D) and "water supply, sewerage, waste management and remediation activities" (Section E).

Coverage

Due to budget constraint, the survey covers all industrial establishments with ten or more workers (persons engaged). For small establishments with 1-9 workers are covered during the census of industrial production which is supposed to be carried out after every ten years depending on the availability of financial resources.

The questionnaire

The questionnaires conform to the International Recommendations for Industrial Statistics of the United Nations and incorporates the stakeholders' requirements. The questionnaires are designed to ensure that the information to be collected satisfy the needs of national accounts, the Government, researchers and the business community.

The information collected through the questionnaires includes; general information, employment, labour and production costs, output, value of inventory and value of fixed assets.

Data collection

Data collection is undertaken by a trained team of enumerators under the supervision of supervisors from NBS headquarters. Training of field-staff takes place after the Training of

Trainers (ToT). The NBS is responsible for the training of supervisors. The supervisors are then responsible for the training of enumerators in the regions.

Fieldwork is conducted by total enumeration to the establishments. The field-staff visit all the establishments and assist them in filling-in the questionnaires. Respondents are asked to provide the data from their accounting records for the reference calendar year.

Data processing

Completed questionnaires are sent to the NBS headquarters where they are edited and coded by NBS staff. The data entry system used is CSPro after which the data are transferred to Microsoft Access for generation of tables. Estimates are made by means of substitutions using the secondary data of previous ASIP. A cleaned dataset is then used to generate preliminary tables as per approved tabulation plan.

Organisation of the Report

The report presents the industrial statistics according to the latest UN recommendations (2008). The tables are grouped separately at the end of the report and refer to establishments with 10 or more workers.

The report also presents the main results relating to both quantitative and qualitative information that were also collected through the survey. Tables referring to such information are integrated within the section giving the major findings. The tables therefore refer to the respondents only as indicated therein.

5.1.3 Reference to applicable standard classifications

Establishments are classified into industries on the basis of major activity in conformity with the International Standard Industrial Classification (ISIC) Revision 4. Each industry is basically defined in terms of its principal products or services, these being similar in nature or commonly associated in production

5.2 THE INDEX OF INDUSTRIAL PRODUCTION (IIP)

Index of Industrial Production describes changes of the volume of goods and services produced over time. Its main purpose is to provide a measure of the short-term changes of value added in volume measures over a given reference period.

5.2.1 Objective and uses of the Product

The survey aims at producing basic quarterly statistics on major commodities according to UN International Recommendations for Industrial Statistics. The survey is intended to:

(i) Collect quarterly commodity statistics on the operating characteristics and structure of industrial sector in the country;
(ii) To identify the turning points of industrial production at early stage;
(iii) Assess the contribution of industrial sector to the overall economy;
(iv) Obtain data for computing National Accounts estimates;
(v) Assess the current status of the industrial sector in the country;
(vi) Obtain data for the construction of Input-Output tables;
(vii) Indices are used in economic policy making and forecasting future economic performance in the industrial sector;
(viii) Identify conditions that affect firm-level productivity and competitiveness; and
(ix) Update existing Monitoring and Evaluation data at the level of industrial establishments.

Uses of IIP

The IIP is an important short-term economic indicator in official statistics; the turning points in economic activity can be identified as early as possible and reflects the volume developments in value added over time. Also, IIP is a key input for calculating volume measures as part of the compilation of the quarterly national accounts.

5.2.2 Methodology of Data Production

Scope and Coverage

The Index of Industrial Production (IIP) measures the changes in the quantities (volume of goods and services) of a constant basket of goods produced by different industrial sectors. The IIP follows the recommended International Standards Industrial Classification of all economic activities (ISIC) Revision 4 to enhance international comparability. IIP covers five economic

zones in Tanzania Mainland and four sub sectors of the economy, namely; mining and quarrying, manufacturing; electricity, gas, steam and air conditioning supply; and water supply (sewerage, waste management and remediation activities).

Data Collection

Data for the Quarterly Survey of Industrial Production is collected through questionnaires which are sent the regional statistical offices at the end of the reference period and later distributed to the respective establishments. Questionnaires are collected in the first month after the end of the reference period. Follow-ups are made by physical visits and telephone calls. Where necessary, a team of supervisors is sent to the regions to speed-up the process.

The survey collects quarterly data (for three monthly) on quantities produced with standard units for all major commodities produced by the establishment, together representing at least 70% of value added. Both the establishments and the commodities are classified according to International Standard Industrial Classification of All Economic Activities (ISIC) Revision 4. In addition, the questionnaire asks for the establishment's number of employees, total labour cost and the turnover during the quarter. The accuracy of the responses is verified both at the regional offices and at NBS headquarters.

Data Processing and Analysis

Data processing takes place centrally at the main office. The basket weights refer to base weight of value added obtained from the 2008 ASIP for each establishment. Indices are calculated at the item level by comparing the volume of production in the current period with that in reference (base) period. The result at first stage is a set of volume ratios for the elementary items in the index series. The elementary indices are subsequently aggregated as weighted averages to obtain the indices at higher levels. The base weighted Laspeyres index is used for production index series.

Periodicity

The IIP is compiled and disseminated on a quarterly basis.

Timeliness

The IIP is released six weeks after the reference period

5.3 CENSUS OF INDUSTRIAL PRODUCTION

Census of Industrial Production provides comprehensive information that can be used to assess the impact and outcome of the implemented industrial policies and programmes.

5.3.1 Objectives and uses of the Census

The main objective of the Census of Industrial Production is to provide information on economic characteristics of the industrial sector. The information gathered can be used to facilitate the improvement of industrial performance, designing policy, planning, monitoring and evaluation of programmes and providing advice to the sector so as to achieve sustained products quality and productivity.

Specific Objectives aimed at up-dating:

(i) The structure, composition and activities of the industrial sector in the economy;

(ii) The contribution of the sector to GDP;

(iii) The list of commodities to be used in the construction of Indices of Industrial Production (IIP), Producer Price Index (PPI) and National Accounts;

(iv) Information for evidence-based formulation of the sector policies;

(v) Factors influencing the growth and structural changes in the sector;

(vi) Marketing information; and

(vii) The list of establishments or a sampling frame for establishment based surveys.

5.3.2 Methodology of Data Production

Scope and Coverage

The Census of Industrial Production follows the International Standard Industrial Classification (ISIC) Revision 4 to capture all economic activities. The census covers all establishments that engage ten or more persons (referred to as large establishments) disaggregated into 10 to 99 persons (referred to as medium) and those with 100 or more persons (referred to as large), and a sample of establishments which engage less than ten persons (referred to as small establishments). Generally, the census includes establishments engaging in any of the following four industrial sub-sectors; mining and quarrying, manufacturing, electricity, gas, steam and air conditioning supply, and water supply, sewerage, waste management and remediation activities.

Organization

After the decision to carry out a census, it becomes essential to socialize it as a project. As such, a number of committees have to be formed namely:

(i) The **Central Census Committee** whose role is to steer the operation. It consists of knowledgeable members who have authority to take decisions. They normally come from government institutions, data producers and data users.

(ii) The **Technical Committee** whose role is to deal with all technical aspects. It is responsible for decisions on recruitment and training of census staff, questionnaire design, sampling procedure, tabulation plan, field work, data processing, analysis and publication of reports.

(iii) **Inter- Institutional Team** comprising subject-matter specialists who are able to coordinate census logistics with crucial role of determining the demand structure of consumers.

Sampling

Sampling is done for those establishments engaging 1 – 9 persons as indicated above.

Census Instruments

Two kinds of questionnaires are used for data collection, long and short questionnaires. The long or the detailed questionnaire is used for establishments engaging ten or more persons and the short questionnaire is used for establishments engaging one to nine persons.

Data collection

Data collection is done through interview. An enumerator is supposed to visit all establishments involved in Industrial Census dealing with mining and quarrying, manufacturing, electricity, gas, steam and air conditioning supply, and water supply, sewerage, waste management and remediation activities. When the completed questionnaires are received from the regions, each questionnaire is registered by recording the establishment's Identification number, ISIC Code, Region Code, district code and size code. Then the questionnaires are filed region-wise ready for data entry.

Manual editing, coding, data entry, validation and tabulation

Editing and coding is done immediately after the arrival of questionnaires at the NBS headquarters. Data entry is done using personal computers to the designed data entry system. Data

validation is done to detect outliers' figures and miss-keying in of data by data entry operators. Tabulation is done using statistical packages.

5.3.3 Reference to applicable standard classifications

All establishments are classified by ISIC Revision 4 codes by considering the main activity of the establishment.

5.4 PRODUCER PRICE INDEX (PPI)

Producer Price Index measures the average change over time in the prices received by selected domestic producers for the production of their goods. A basket includes a list of selected commodities of goods that are being priced on quarterly basis. The producer prices are collected as at 15th of the mid-month of every quarter that is February, May, August and November for Quarters (January-March), (April-June), (July-September) and (October-December) respectively

Weights and a Reference Period

The index weights are based on gross output derived from the 2008 Annual Survey of Industrial Production. Currently, the PPI release reports the price indices with reference to March 2013, as the base period. It shows the producer price changes since March 2013 on three major sub-sectors of industry (Mining, Manufacturing, and Utilities).

5.4.1 Objectives and uses of the PPI

The survey aims at producing basic quarterly statistics on prices of major or selected commodities according to International Monetary Fund Recommendations for Producer Price Index compilation. The survey is intended to:

(i) Collect quarterly producer price statistics on the industrial sector in the country;

(ii) To identify the turning points of prices on industrial commodities at early stage;

(iii) Obtain data for computing National Accounts estimates;

(iv) Assess the current status of the industrial sector in the country;

(v) Indices are used in economic policy making and forecasting future economic performance in the industrial sector;

(vi) Identify conditions that affect firm-level productivity and competitiveness; and

5.4.2 Methodology of data production

In the process of deriving the structure and weights, a top-down approach is adopted, the basket is selected and currently 2008 is used as a base in weights calculation. A top-down approach is adopted for the calculation of the weights in order to maximize the indirect representation of industries and items. A sample of establishments for inclusion in the price survey is then selected using cut-off sampling procedures.

The price relatives of the selected commodities on each four digit level of ISIC is computed. The first level of aggregation is the class 4-digit ISIC; these indices are the un-weighted Elementary Aggregate (EA) and are being compiled using the Jevons geometric mean aggregation formula which refers to Geometric Mean of the price relatives. The Elementary Aggregates indices are then being progressively combined to higher levels within the index structure (i.e. Group 3-digit, 2-digit division and 1-digit Section levels of the ISIC, and then the all groups level) using the standard base-weighted Laspeyres formula.

5.4.3 Reference to applicable standard classifications

Commodities Classification follows the International Standard Industrial Classification of All Economic Activities (ISIC) Rev.4.

5.5 CONSTRUCTION INDUSTRY SURVEY (CIS)

The construction industry is a sector of the economy that uses various resources to construct physical, economic and social infrastructure necessary for socio-economic development. Construction includes general construction and specialized construction activities for buildings and civil engineering works, (UN, 2008). It includes new work, repair, additions and alterations, the erection of pre-fabricated buildings or structures on the site and also construction of a temporary nature.

General construction is the construction of entire dwellings, office buildings, stores and other public and utility buildings, farm buildings etc, or the construction of civil engineering works such as motorways, streets, bridges, tunnels, railways, airfields, harbours and other water projects, irrigation systems, sewerage systems, industrial facilities, pipelines and electric lines, sports facilities, etc. This work can be carried out on own account or on a fee or contract basis. Portions of the work and sometimes even the whole practical work can be sub-contracted out. A unit that

carries the overall responsibility for a construction project is classified here. Also, included is the repair of buildings and engineering works.

Construction Industry is classified into the following divisions, (UN, 2008): Construction of Buildings (Division 41), Construction of Civil Engineering Works (Division 42), and Specialized Construction Activities (Division 43).

5.5.1 Objectives and uses of the CIS

General objective

The main objective of the Construction Industry Survey (CIS) is to measure the performance of Construction and Distributive Trade Sectors

Specific Objectives

(i) To obtain information on the number and geographic distribution of construction establishments;
(ii) To estimate the number of persons engaged in this sector;
(iii) To get estimates of the contribution of the construction activities to Gross Domestic Product (GDP); and
(iv) To obtain data that could be helpful in formulating socio-economic plans and programmes.

Uses of CIS

Construction Industry Survey measures the performance of key indicators of the construction sectors of the economy. The information collected is used in the compilation of National Accounts aggregates such as Gross Domestic Product (GDP)

5.5.2 Methodology of Data Production

Methods and approaches

The main research methods and approaches include organization; planning, design and concept paper preparation; piloting; refinement of survey instruments; up-dating sampling frame; sample design; recruitment and training of trainers (TOT); training of supervisors and enumerators; field survey; data processing and management; data editing and coding, data entry, validation,

tabulation and analysis; main investigation variables and statistical indicators; statistical packages (CSPro, MS access, MS excel and MS word); data files and backup systems; report writing; national stakeholders workshop and dissemination/ publication.

Questionnaire Design

The construction industry survey uses two questionnaires (small and large) for data collection. The small questionnaire (CIS 1 FORM A) covers establishments of contractors in classes 5 to 7 (with an average investment cost of less than 500 million shillings) and the large questionnaire (CIS 2 FORM B) covers establishments of contractors in classes 1 to 4 (with an average investment cost of more than 500 million shillings)

Sample design

The classification of activities is based on the International Standard Industrial Classification (ISIC) Revision 4. In practice, complete coverage is impossible due to limited financial resources, hence the survey is done on a sample basis. In construction survey, all establishments in classes 1 – 4 are fully covered while those establishments in classes 5 – 7 are sampled. The sampling strategy ensures representation by class, size and classification of the economic activities at national level. The stratification in construction is based on the activity and class of the establishment.

Field Work

Data is collected from the establishments through interviews. Managers of the respective establishments are visited by enumerators and asked to supply the required information.

Data Processing and Management

Data processing centralized at NBS Head Office, starts one month after the commencement of fieldwork and continues concurrently with the field enumeration exercise. The data capture system is developed using CSPro and tables are produced through MS Access. Data processing is accomplished in two months.

Data editors are supposed to edit the questionnaires received from the regions by checking the correctness and fill-in the respective codes. Edited questionnaires are entered into the computer by data entry operators. On completion of data entry, the data are cleaned by the subject matter staff assisted by the IT staff and data verifiers for validation checks of the data variables.

The main investigation variables used for checking consistence of data entered in the database are employment, labour cost, expenditures and receipts.

5.6 TANZANIA TOURISM SECTOR SURVEY

Tanzania Tourism Sector Survey is managed and implemented by five participating institutions namely, the Bank of Tanzania (BOT), the National Bureau of Statistics (NBS), the Ministry of Natural Resources and Tourism (MNRT), Immigration Department and Zanzibar Commission for Tourism (ZCT). These institutions have been carrying out the International Visitors' Exit Surveys since 2001.

5.6.1 Objectives and uses of the Tourism Sector Survey

Tanzania Tourism Sector Survey intends to collect up-to-date tourist expenditure information for use in the ''Tourist Expenditure Model" developed in 2001. The Model was developed as a tool for estimation of international tourism receipts required in the compilation of National Accounts (NA) and Balance of Payments (BOP) statistics.

Use of the Tourism Sector Statistics

These statistics are used by the public and the private sector for policy formulation and strategic business planning, respectively.

5.6.2 Methodology of data production

Scope of the Survey

The survey targets international visitors to Tanzania. A person is considered as an international visitor if he/she travels to a country other than that of his/her usual residence, and outside his/her usual environment for a period not exceeding twelve months and whose main purpose of visit is other than an activity remunerated from within the country visited.

Sample size

The survey sample size is normally designed to capture about one percent of Tourists arrivals annually. In order to allow comparability, the sample size has remained constant over years.

Survey period

The survey is usually conducted during the tourist peak season (July -September), in order to be able to capture most of Tourists' characteristics. In that regard, a two-week survey is normally done during this peak season.

Coverage

Since the survey aims at obtaining data on inter alia, expenditure and length of stay, it is necessary that it is carried out at departure points. The survey is normally conducted at eight major departure points, namely Julius Nyerere International Airport (JNIA), Kilimanjaro International Airport (KIA), Abeid Amani Karume International Airport (AAKIA), Namanga (NAM), Tunduma (TUN), Mtukula (MTK), Horohoro (HOR) and Manyovu (MANY) border points.

The Questionnaire

The questionnaire is designed to ensure that, the questions asked are in line with users' data needs. The information collected is useful for tourism promotion and macroeconomic policy formulation. A single questionnaire is used to gather information on International Visitors` Exit Survey.

The content of the questionnaire is based on the previous years' questionnaires with slight modifications. The questionnaire comprises of four main parts, namely:-

(i) **Visitor profiles -** (nationality, country of residence, age group, purposes of visit, type of tourism activity and source of information about Tanzania),

(ii) **Travel behavior** - tour arrangement (package/non-package), items in the package and number of nights spent.

(iii) **Expenditure patterns** - tourists' earnings ascribed to Tanzania. In addition, the questions probed for details on the amount of money spent in Tanzania, mode of payment as well as comparison of cost with other African countries.

(iv) **Visitor comments** - whether the visit is the first time or not and; information about areas that impressed the visitors and those which need improvement.

Data Processing

The processing of the International Visitors` Exit Survey data begins after completion of the fieldwork. Data processing involves manual editing, coding of open-ended questions, data entry and editing of computer-identified errors. Data entry and editing are accomplished using the ORACLE11g database and web-based application.

Tourist Expenditure Estimation

Tourists' expenditure in the country is estimated using Tourist Expenditure Model that was developed during the comprehensive International Visitors' Exit Survey conducted in 2001. The model uses the following variables in estimating tourists' expenditure: average expenditure by travel arrangement by purpose of visit, proportion of international tourist arrivals by travel arrangement and average length of stay. Data on average expenditure by travel arrangement by purpose of visit, proportion of international tourist arrivals by travel arrangement and average length of stay were obtained from the survey, while the number of international tourist arrivals is obtained from the Immigration Department.

The model is depicted in the following equation:

$Ev = (E\ p\chi\ V\ p\chi T) + (E\ np\chi\ V\ np\chi T)$

Whereby:

Ev=Total tourist expenditure in Tanzania.

Ep= Average package tour expenditure per visitor per night, derived from the survey.

Enp = Average Non-package tour expenditure per visitor per night, derived from the survey.

Vp = Number of international tourist arrivals under package travel arrangement (The number of international tourist arrivals as recorded by the Immigration Department, adjusted into package 48 visitors by using package tour arrangement ratio derived from the survey).

Vnp = Number of international tourist arrivals under Non-package travel arrangement (The number of international tourist arrivals as recorded by the Immigration Department, proportionately adjusted into non-package visitors using the non-package tour arrangement ratio derived from the survey).

T = Average length of stay, derived from the survey.

The Simplified Model

Country of Residence	Purpose of Visit	Total number of International Tourist Arrivals (sourced from Immigration Dept)	Number of International Tourist Arrivals by Travel arrangement		Average length of Stay	Average Expenditure per Visitor per Night		Total Expenditure
						Package	Non Package	
			Package (V_P)	Non-package (V_{NP})	(T)	(E_P)	(E_{NP})	(E_V)
	Business							
	Holiday							
	VFR							
	Other							

Procedure and assumptions used for the estimation of tourist expenditure:

(i) Calculation of average package tour expenditure involved deduction of estimated cost for international fare to Tanzania and the commission accruing to an international tour wholesaler. Information on cost of international transport from source markets was updated using current information gathered from international carriers that bring visitors to Tanzania;

(ii) It is assumed that 10 percent of the value of the package is retained by the international tour wholesaler to meet overhead costs and commission. The assumption based on a study on Tourism Earnings in Tanzania that was conducted in 2000;

(iii) Immigration data on the number of international tourist arrivals by purpose of visit are distributed according to the package and non-package arrangements using the travel arrangement ratios, as established in the survey;

(iv) In order to be able to estimate annual tourists' expenditure, the survey's results is applied to the total number of international tourist arrivals, as recorded by the Immigration Department. It is worth mentioning that given the homogeneity nature of the visitors' characteristics, the information collected during the two weeks survey is justifiable to represent the total population;

(v) The Immigration Department also provided the number of international tourist arrivals for Zanzibar that enabled the estimation of tourists' expenditure for Zanzibar; and

(vi) The average length of stay used is between one and twenty-eight nights.

5.7 EXPORT AND IMPORT PRICE INDICES (XMPI)

The Export and Import Price Indices (XMPI) are measures of price changes of goods imported into or exported outside the country. The XMPI are used to analyse Terms of Trade (ToT) which is the ratio of Export Price Index (XPI) to the Import Price Index (MPI).

The Import and Export Prices (XMPI) is managed in collaboration with three institutions, that's namely as National Bureau of Statistics (NBS), Bank of Tanzania (BOT) and Tanzania Revenue Authority (TRA).

Weights and a reference period

The XMPI weights are based on values of imported and exported commodities for the years 2006 to 2010. A top-down approach is taken in the determination of the index structure and composition and the allocation of the weights. The aim is to maximize the indirect representation of un-priced commodities in the index, through a chain of representation.

Export Price Indices (XPI)

The XPI covers 8 chapters out 99 chapters, namely; (i) Fish and crustacean, mollusk and other aquatic invertebrate, (ii) Edible vegetables and certain roots and tubers, (iii) Edible fruits or melons, (iv) Coffee, tea, mate and spices, (v) Tobacco and manufactured tobacco substitutes, (vi) Ores, slag and ash, (vii) cotton and (viii) Natural/cultured pearls, precious stones and metals, coin, etc. The sampled eight chapters constitute 80 percent of total exports.

Import Price Index (MPI)

The MPI covers 12 chapters out of 99 chapters, namely; (i) Cereals, (ii) Animal fats & oil & their cleavage product, (iii) Mineral fuels, oils & product of their distillation, (iv) Pharmaceutical products, (v) Fertilizers, (vi) Plastics and articles thereof, (vii) Rubber and articles thereof, (viii) Iron and steel, (ix) Articles of iron and steel, (x) Nuclear reactors, boilers, machinery and machinery appliance, parts, (xi) Electrical machinery equipments parts thereof; sound recorder

etc, and (xii) Vehicles other than railway/transport way rool-stock, parts and accessories. The sampled twelve chapters constitute 80 percent of total imports for the years 2006 - 2010.

Terms of Trade (TOT)

The term of trade index is the ratio of export price index to import price index. A rise in this ratio indicates that the terms of trade have moved in favour of Tanzania and vice versa.

5.7.1 Objectives and uses of the XMPI

(i) The Export Price Index (XPI) aims at providing an overall measure of pure price changes (in TShs) of domestically produced goods exported to other countries;

(ii) The Import Price Index (MPI) intends to measure price changes (in TShs) of goods purchased from other countries; and

(iii) The XMPI are for analyzing Terms of Trade (ToT) which is the ratio of Export Price Index (XPI) to the Import Price Index (MPI).

Uses of XMPI

(i) They are used to analyze the terms of trade and changes in traded volumes;

(ii) Government economic policy; and

(iii) Analysis of competitiveness, conclusion of trade contracts, measurement and forecasting of inflation, analysis of exchange rate, and the compilation of national accounts.

5.7.2 Methodology of data production

Selection of Items

In the selection of Items, a top – down procedure is applied in three steps. First, the major 2 digit HS chapters contributing to the total value of imports in terms of the sum of values of the year 2006 and 2010 were selected for direct inclusion in the indices. Twelve (12) chapters (2 digit HS codes) are selected for imports and 8 chapters for exports out of 99 chapters representing 80 percent or more depending on the degree of concentration. Secondly, the process is repeated at 4 digit level of HS; 56 items are selected for imports and 10 items are selected for exports. Finally the procedure is repeated at 8 digit level of the HS by selecting 170 items for imports and 18 items for exports. The result of these procedures is the derivation of the structure and composition of the indices.

The XMPI has incorporated a number of methodological improvements including the use of geometric means for compiling elementary index aggregates, the use of an improved index compilation system, and improved procedures for collecting and processing prices. The Laspeyres index formula is used to compute higher level aggregates for the XMPI.

5.7.3 Reference to Standard Classifications

The products are classified according to the United Nations Harmonized Commodity Description and Coding System (HS). The HS is an international nomenclature for the classification of products.

5.8 DISTRIBUTIVE TRADE SURVEY IN TANZANIA

Distributive Trade constitute a subject area of economic statistics concerned with provision of data on economic units whose main activity is wholesaling and retailing (that is to say, sale without transformation) of any types of goods together with performing services incidental to sales such as motor vehicle and motorcycle, repair, installation and delivery. The last known comprehensive distributive trade survey was conducted by the then Central Bureau of Statistics in 1994

5.8.1 Objectives and uses of the DTS

The main objective of the Distributive Trade Survey (DTS), is to measure performance of key indicators of the Distributive Trade, Accommodation and Food Services in the economy. The information collected is used in the compilation of National Accounts aggregates such as Gross Domestic Product (GDP).

Other specific survey objectives are as follows:

(i) Provide up to date statistical information for the improvement of the compilation of National Accounts (GDP);

(ii) Ensuring effective compilation, analysis and dissemination of acceptable distributive trade statistics (including hotels, restaurants and tourist service providers);

(iii) Set benchmarks for distributive trade statistics in Tanzania; and

(iv) Collect information for planning and macro-economic policy formulation such as employment, marketing and financial services.

5.8.2 Methodology of data production

The survey collects distributive trade statistics using questionnaires designed to obtain basic information from distributive trade outlets. The survey is done on the sample basis covering municipalities, cities, districts headquarters and towns, so only selected wholesale and retail outlets throughout the country are covered. The classifications of commodities are based on the International Standard Industrial Classification (ISIC) Revision 4.

The assumption is that, in practice, complete coverage of retail, wholesale is not possible taking into account financial constraints. Also many of the establishments doing business in those kinds of activities operate in a manner that makes it very difficult to find them, even during the time of field work.

The sources of data are wholesale and retail trade outlets selected throughout the country. Questionnaires are administered by teams of trained enumerators with close supervision from NBS offices throughout the country. The enumerators do the data collection exercise by using the structured questionnaires.

Neither the mailing system nor the uses of telephones are considered practical for data collection in Tanzania. Therefore the collection medium chosen are personal delivery and recovery of documents by a small group of well-trained enumerators who visit all selected Regions.

5.9 AGRICULTURE SAMPLE CENSUS

The Agriculture Sample Census is designed to meet the data needs of a wide range of users down to district level including policy makers at local, regional and national levels, rural development agencies, funding institutions, researchers, NGOs, farmer organizations, etc. The census is important as the majority of Tanzanians depends on agriculture as their main method of livelihood. As a result, the dataset is both more numerous in its sample and detailed in its scope compared to surveys.

5.9.1 Objectives and uses of the Agriculture Census

The census is normally carried out in order to:

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

(ii) Provide benchmark data on productivity, production and agricultural practices in relation to policies and interventions promoted by the Ministry of Agriculture, Livestock and Fisheries and other stakeholders;

(iii) Establish baseline data for the measurement of the impact of high level objectives of the Agriculture Sector Development Programme (ASDP), Second Five Year Development Plan (2016/17 – 2020/21) and other rural development programmes and projects; and

(iv) Obtain a benchmark data that will be used to address specific issues such as: food security, rural poverty, gender, agro-processing, marketing, service delivery, etc.

5.9.2 Methodology of data production

Census Organisation

The Census is conducted by the National Bureau of Statistics (NBS) in collaboration with the sector Ministries of Agriculture, and the Office of the Chief Government Statistician (OCGS) in Zanzibar. At the National level, the Census is headed by the Director General of the National Bureau of Statistics with assistance from the Director of Economic Statistics. The Planning Group oversee the operational aspects of the Census and this consists of staff from the Department of Agriculture Statistics from NBS and representatives of the Department of Policy and Planning of the Ministry of Agriculture, Livestock and Fisheries. At the regional level, implementation of census activities is overseen by the Regional Statistical Office of NBS and the Regional Agriculture Supervisor from the Ministry of Agriculture, Livestock and Fisheries. At the District level, the Census activities are managed by two Supervisors from the President's Office, Regional Administration and Local Government (PORALG). The supervisors manage the enumerators who also come from PORALG.

Tabulation Plan Preparation

The tabulation plan is developed following user group workshops and thus reflects the information needs of the end users. Also the improvements on the tabulation plan will be made following the lessons learned from the previous Agriculture Sample Census. It takes into consideration the tabulations from previous censuses and surveys to allow trend analysis and comparisons.

Sample Design

The National Master Sample (NMS) was developed from the 2012 Population and Housing Census. It was developed by the National Bureau of Statistics to serve as a national framework for the conduct of household based surveys in the country.

The sample design is a stratified two-stage sample, where the rural part of Tanzania is stratified into districts. The first stage (Primary Stage) units are the villages in the case of Tanzania Mainland and rural enumeration areas (EAs) for Zanzibar. In the first stage, villages/EAs are selected in each rural part of the district and in total an optimum sample size of villages and EAs is selected for Tanzania Mainland and Zanzibar respectively. In the second stage, agricultural households are selected in each of the selected village/EA. The villages/EAs in the first stage are selected with probability proportional to the number of households (PPS) in the village/EA. The cumulative total method is used to achieve the PPS selection of villages/EAs. In the second stage (Secondary Stage), agricultural households are selected using systematic random sampling procedure. A list of agricultural households is compiled from each of the selected village/EA and a systematic random sample is drawn.

Questionnaire Design and Other Census Instruments

The questionnaires are designed following user meetings to ensure that the questions asked are in line with users' data needs. Several features are incorporated into the design of the questionnaires to increase the accuracy of the data:

(i) Where feasible all variables are extensively coded to reduce post enumeration coding error;

(ii) The definitions for each section are printed on the opposite page so that the enumerator could easily refer to the instructions whilst interviewing the farmer;

(iii) The responses to all questions are placed in boxes printed on the questionnaire, with one box per character. This feature makes it possible to use scanning and Intelligent Character Recognition (ICR) technologies for data entry;

(iv) Skip patterns are used to reduce unnecessary and incorrect coding of sections which do not apply to the respondent; and

(v) Each section is clearly numbered, which facilitate the use of skip patterns and provide a reference for data type coding for the programming of CSPro, SPSS and the dissemination applications.

Three other instruments used:

(i) Village Listing Forms are used for listing of households in the village and from this list a systematic sample of agricultural households is selected;

(ii) A Training Manual which is used by the trainers for the cascade/pyramid training of supervisors and enumerators; and

(iii) Enumerator Instruction Manual which is used as reference material for enumerators.

Field Pre-testing of the Census Instruments

The Questionnaire should be pre-tested in areas where different characteristics of farming and livestock keepers are found. This is conducted in order to test the wording, flow and relevance of the questions and to finalize crop lists, questionnaire coding and manuals. In addition to this, after pre-testing, several data collection methodologies can be finalized, namely, livestock numbers in pastoralist communities, cut flower production, mixed cropping, use of percentages in the questionnaire and finalizing skip patterns and documenting consistency checks.

Training of Trainers, Supervisors and Enumerators

During training, cascade/pyramid training techniques are employed to maintain statistical standards. The top level of training is provided to national and regional supervisors. The trainers are members of the Planning Group from the National Bureau of Statistics and the sector Ministries of Agriculture. In each region, two training sessions are conducted for the district supervisors and enumerators. In addition to training them in field level Census methodology and definitions, emphasis is placed on training the enumerators and supervisors in consistency checking. Tests are given to the supervisors and enumerators and the best 50 percent of the

trainees are selected for the enumeration of the smallholder questionnaire and the community level questionnaire. The household listing exercise is carried out by all trained enumerators.

Information, Education and Communication (IEC) Campaign

Radio*s*, television*s*, newspapers, leaflets, t-shirts and caps are used to publicize the Agriculture Sample Census. This help*s* in sensitizing the public for the field level activities. The t-shirts and caps are given to the field staff and the village chairpersons. The village chairpersons help to locate the selected households.

Data Collection

The data collection methods used during the census is by interview and no physical measurements, e.g., crop cutting and field area measurement is taken. Field work is monitored by a hierarchical system of supervisors at the top of which is the Mobile Response Team followed by the Regional Supervisors and District Supervisors. The Mobile Response Team consists of Principal Supervisors who provide overall direction to the field operations and responded to queries arising outside the scope of the training exercise. The mobile response team consist*s* of the Manager of Agriculture Statistics Department, the Desk Officer for the Census and senior officers. Decisions made on definitions and procedures are then communicated back to all enumerators via the Regional and District Supervisors.

Field Supervision and Consistency Checks

Enumerators are trained to probe the respondents until they are satisfied with the response given before they record them in the questionnaire. The first check of the questionnaires is done by enumerators in the field during enumeration. The second check is done by the district supervisors followed by Regional and National Supervisors. Supervisory visits at all levels of supervision focus on consistency checking of the questionnaires. Inconsistencies encountered are corrected, and where necessary call-backs are made by the enumerator to obtain the correct information. Further quality control checks are made through a major post enumeration checking exercise where all questionnaires are checked for consistencies by supervisors in the district offices.

Data Processing and Analysis

Data processing consists the following processes:

(i) Data entry

(ii) Data structure formatting

(iii) Batch validation

(iv) Tabulation

Data Entry

Scanning and ICR data capture technology for the small holder questionnaire are used. This not only increases the speed of data entry, it also increases the accuracy due to the reduction of keystroke errors. Interactive validation routines are incorporated into the ICR software to trap errors during the verification process.

Prior to scanning, all questionnaires undergo a manual cleaning exercise. This involves checking that the questionnaires have a full set of pages, correct identification and good handwriting.

CSPro is used for data entry of all Large Scale Farm and Community based questionnaires due to the relatively small number of questionnaires. It is also used to enter small holder questionnaires that are rejected by the ICR extraction application.

Data Structure Formatting

A program is developed in visual basic to automatically alter the structure of the output from the scanning or extraction process in order to harmonise it with the manually entered data. The programmes automatically checks and change the number of digits for each variable, the record type code, the number of questionnaires in the village, the consistency of the Village ID Code and saves the data of one village in a file named after the village code.

Batch Validation

A batch validation program is developed in CSPro in order to identify inconsistencies within a questionnaire. This is in addition to the interactive validation during the ICR extraction process. The procedure varies from simple range checking within each variable to more complexes checking between variables. After the long process of data cleaning, the tabulations are prepared based on a pre-designed tabulation plan.

Tabulations

Statistical Package for Social Scientists (SPSS) is used to produce the Census tabulations and Microsoft Excel is used to organize the tables and compute additional indicators. Excel is also used to produce charts while ArcView and Freehand are used for the maps.

Analysis and Report Preparation

The analysis in the reports focuses on regional comparisons, time series and national production estimates. Microsoft Excel is used to produce charts; ArcView and Freehand are used for maps, whereas Microsoft Word is used to compile the report.

Data Quality

A great deal of emphasis is placed on data quality throughout the whole exercise from planning, questionnaire design, training, supervision, data entry, validation and cleaning/editing. As a result of this, it is believed that the census is highly accurate and representative of what is experienced at field level during the Census year. With very few exceptions, the variables in the questionnaire are within the norms for Tanzania and they follow expected time series trends when compared to historical data.

5.10 LARGE SCALE FARMS SURVEY

The survey covers all Large Scale Farms in Tanzania Mainland. It is based on a complete enumeration. The survey is intended to generate information on agriculture that would serve the needs of a wide range of people and institutions down to regional level. These include policy makers at regional and national levels, rural development agencies, funding institutions, researchers, NGOs and farmers' organizations.

5.10.1 Objectives and uses of the Large Scale farms statistics

The survey is normally conducted in order to:

(i) Identify the structural changes in the size of farms, crop and livestock production, livestock population etc;

(ii) Provide trend analysis data on productivity, production and agricultural practices in relation to policies and interventions promoted by the Ministry of Agriculture, Livestock and Fisheries and other stakeholders;

(iii) Establish data that can be used to measure the impact of high level objectives of the Second Five Year Development Plan (2016/17 – 2020/21), other rural development programmes and projects; and

(iv) Obtain data that will be used to address specific issues such as: food security, poverty, agro-processing, marketing, service delivery etc.

5.10.2 Methodology of data production

The designed questionnaires that are used in the Agriculture Sample Census for large scale farms have been reviewed based on the census results and are posted to the Regional Statistical Managers who collect the data from all large scale farms. The reference period is the agriculture year. An agriculture year in Tanzania commences on 1st October and ends on 30th of September of the following year. A list of large scale farms is updated annually by the Regional Statistical Managers. The questionnaires are edited by the Regional Statistical Managers before they are posted to NBS headquarters for data entry and analysis.

Data entry

The data is being entered manually using CSPro. Prior to data entry, data cleaning is done manually in order to maintain the quality of data. It includes questionnaire checking to see if it has a full set of pages, correct identifications and correctly filled-in information.

Tabulation Plan

Tables are prepared based on a predesigned tabulation plan. Statistical Package for Social Scientists (SPSS), Census and Survey Program (CSPro) and STATA can be used to produce the tables while Microsoft Excel is used to organize tables.

Analysis

The analysis focuses on regional and trend comparisons, time series and national production estimates.

5.11 AGRICULTURE ROUTINE DATA COLLECTION SYSTEM

Quarterly agricultural production and producer unit prices are *normally* collected by the Extension Officers from the Villages.

5.11.1 Objectives and uses of the Agriculture Routine Data

Agriculture Routine data is used as an input in the compilation of the national Gross Domestic Product.

5.11.2 Methodology of data production

The data is collected at the village level by the extension officers who estimate production of various crops grown in the respective villages. They *then* send the data to the Districts who compile them to give District estimates of production and produce unit price of each crop. The Regional Statistical Managers collect the returns and send the data to the *NBS* head office.

Data Entry

The Regional Statistical Managers enter the data in the e-excel spread sheet and send them to the NBS head office.

Data Cleaning

The Regional Statistical Managers check the data for consistency before entering them in the spread sheet.

Analysis

The Department of Agriculture does not produce any report on the data collected but compile*s* them to give Regional Production and unit price of each crop and submit to the National Accounts Department for the calculation of GDP.

5.12 ANNUAL AGRICULTURE SAMPLE SURVEY

The Annual Agriculture Sample Survey (AASS) is conducted on annual basis. The main purpose of this survey is to provide more timely and accurate estimates of area and production of major crops and livestock. The quantity of the crops and numbers of animals are crucial information needed by many people involved in agriculture. Estimates derived from this survey provide basic information needed by farmers, agribusinesses and government policy makers to make decisions for both short and long term planning.

5.12.1 Objectives and uses of the product

The overall objectives of AASS are:

(i) To obtain basic data to be utilized in the preparation, formulation of policies and implementation of agricultural plans at national and regional levels in between the agricultural census years;

(ii) To obtain time series data on agricultural production & productivity at national and regional levels; and

(iii) To obtain basic statistics for comparison on the development of the agriculture sector in the country.

5.12.2 Methodology of data production

Survey Organization

The Annual Agriculture Sample Survey is conducted by the National Bureau of Statistics (NBS) and the Office of Chief Government Statistician (OCGS) in collaboration with the Ministries responsible for Agricultural activities for both Mainland and Tanzania Zanzibar. At the National level, the implementation of the survey is headed by the National Bureau of Statistics.

The National Team had the responsibility of overseeing the operational aspects of the survey and the team was comprised of staff from the Department of Agriculture Statistics, in the NBS, staff from the Department of Agricultural Statistics, in the OCGS and representatives the Ministries responsible for Agricultural activities for both Mainland and Tanzania Zanzibar. At the regional level, the implementations of the survey activities were supervised by the Regional Statistical Officers of NBS, OCGS, and the Regional Agricultural Statistics Supervisors from the Ministry of Agriculture, Livestock and Fisheries.

The field organization structure of this Survey consists of a Mobile Response Team, supervisors and enumerators. The Mobile Response Team is responsible for providing overall direction to the field operations and to respond to queries arising outside the scope of the training exercise.
Supervisors are the members of the National Team and other staff from NBS-Department of Agriculture Statistics. Their responsibilities are; to supervise the enumerators during data collection activities, to communicate with the mobile team on the queries arising in the field which were outside the scope of the training and to communicate back to all enumerators on the decisions made.

Tabulation Plan

The Tabulation Plan is developed based on the user's workshop. The developed tables reflect the information needs of end users. It took into consideration the tabulations from previous agriculture sample censuses and surveys to allow trend analysis and comparisons.

Sample Design

The area frame approach in conducting AASS is a new methodology to be used in Tanzania. Sample points are selected from the pool of points. For the selected sample points, farm operators are interviewed to provide estimates of crop areas, yields and potential inventories of livestock based on probability of sampled points falling on their respective farm.

Land is classified by category and intensity of agriculture called strata into homogeneous blocks. Satellite imagery/area photo of high resolution are analysed and homogeneous blocks are drawn off in GIS. The completed blocks together form an Area Sampling Frame, the process of stratification is the delineation of land into homogeneous areas that share the same amount of agricultural intensity. The purpose of stratification is to reduce sampling variability in the survey results to maintain the uniformity in the population of interest.

Questionnaire Design and Other Survey Instruments

The questionnaires are designed following user meetings to ensure that the questions that will be asked were in line with user data needs. Several features are incorporated into the design of questionnaire to increase the accuracy of the data. Variables are coded to reduce post enumeration coding errors. The definitions for each section are included in the enumerators manual so that the enumerator could easily refer to the instructions while interviewing the respondent. Skip patterns are used to reduce unnecessary and incorrect coding of sections which do not apply to the respondent. Both Enumerator and Supervisor Instructions Manuals are used as reference material for supervisors and enumerators.

Pre-testing of the Survey Instruments

The pre-testing of questionnaire is done to test the wording, flow and relevance of the questions. Several points are created in different areas in order for the enumerators to locate the points (farms) and the farming operators at those points for interview.

Field Supervision and Consistency Checks

Supervision focuses on the completeness of the questionnaires and data consistency. Necessary

call backs to the respective respondents are made by the enumerators to obtain the correct information. The supervisors adhere to guidelines for control checks.

Data Processing and Analysis

Data processing involves the following activities: manual editing, data entry, data structure formatting, batch validation and tabulation.

(i) **Manual Editing**

Prior to data entry, all questionnaires undergo a manual cleaning exercise. This involves checking if the questionnaire has a full set of pages, correct identification and completeness;

(ii) **Data Entry**

Normally CSPro software is used for data entry. A team of well-trained data entrants is involved in this process under a close supervision; and

(iii) **Batch Validation**

A batch validation program was developed in CSPro in order to identify inconsistencies within a questionnaire. The procedures varied from simple range checking within each variable to more complexes checking between variables.

Data Quality Control

A great deal of emphasis is always placed on data quality throughout the whole exercise from planning, questionnaire design, training, supervision, data entry, validation and cleaning/editing.

Report Preparation

Report writing focuses on all activities undertaken during the survey planning, implementation and processing of the field results.

5.13 ANNUAL GROSS DOMESTIC PRODUCT

Gross Domestic Product (GDP) is the sum of values added of all domestic producers in the economy. It represents the money value of all goods and services produced within a country out of economic activity during a specified period usually a year, before the provision of the consumption of fixed capital.

The basic formula for calculating the GDP is:

Y= C+ I + E + G

Where

Y = GDP

C = Consumer Spending

I = Investment made by Industry

E = Excess of Export over Imports (X – M)

G = Government Spending

5.13.1 Objectives of the Gross Domestic Products;

(i) To measure the performance of each economic activity in the country.

(ii) To measure the contribution of each economic activity in the economy.

(iii) To compare economic performance among different economic territories.

5.13.2 Methodology of data production

Annual Gross Domestic Product of Tanzania is mainly compiled using production and expenditure approaches.

(i) Production Approach

In this approach, GDP estimates at market prices are derived by summing up the gross value added at basic prices of each industry and adding taxes less subsidies on products. This approach is used for the compilation of all sectors except the government and the Central Bank whose output is measured at cost.

(ii) Expenditure Approach

Expenditure approach considers the income expenditure for the purpose of consumption or capital formation. Not all products purchased by domestic buyer come from domestic production; some come from outside the country. Therefore, the GDP at market prices by this approach is derived by adding up the purchases that are made for final consumption, capital formation, and imports less export (net export).

5.13.3 Reference to applicable Standard Classifications

Annual Gross Domestic Product uses the International Standards of Industrial Classification (ISIC Revision 4)

5.14 QUARTERLY GROSS DOMESTIC PRODUCTS

Quarterly National Accounts (QNA) provides up-to-date information for monitoring economic cycles and short-term changes in the economy. It is also a requirement for Tanzania to graduate from GDDS to SDDS.

5.14.1 Objectives of Quarterly Gross Domestic Product

(i) The main purpose of QGDP is to provide a picture of current economic development *which* is more timely than that provided by *Annual National Accounts (ANA),* and *is* more comprehensive and coherent than that provided by individual short-term indicators.

(ii) Therefore, QGDP should be timely, coherent, accurate, comprehensive, and reasonably detailed

5.14.2 Methodology of data production

The compilation procedures adopt the same principles, definitions, and structure as the Annual Gross Domestic product (GDP). Currently in Tanzania, only the production approach is compiled in the quarterly estimations. However, compilation of GDP by expenditure approach is still in the work-in-progress stage.

5.14.3 Reference to applicable Standard Classifications

Quarterly Gross Domestic Product uses the International Standard Industrial Classification (ISIC Revision 4)

5.15 REGIONAL GROSS DOMESTIC PRODUCT/REGIONAL GDP

Refers to coherent, consistent and integrated sets of macroeconomic accounts and tables designed for a variety of analytical and policy purposes but compiled at regional level. In Tanzania Mainland, there are 26 regions and each region constitutes an economic territory used for the compilation of Regional National Accounts.

5.15.1 Objectives of regional gross domestic product

(i) To measure the performance of each economic activity in the region.

(ii) To measure the contribution of each economic activity in the economy.

(iii) To compare economic performance among different regions in the country.

5.15.2 Methodology of data production

Regional National Accounts are compiled in accordance with International Standards (United National System of National Accounts *(SNA)*. The following two approaches have been recommended for National Accounts Statistics.

(i) Production Approach

In this approach, GDP estimates at market prices are derived by summing up the gross value added at basic prices of each industry and adding taxes less subsidies on products. This approach is used for the compilation of all sectors except the government and the Central Bank whose output is estimated at cost.

(ii) Expenditure Approach

Expenditure approach; considers the income expenditure for the purpose of consumption or capital formation. Not all products purchased by domestic buyer come from domestic production; some come from outside the country. Therefore, the GDP at market prices by this approach is derived by adding up the purchases that are made for final consumption, capital formation, and imports less export (net export)**.**

5.15.3 Reference to applicable Standard Classifications

Regional National Accounts are compiled in accordance with International Standards (United National System of National Accounts (SNA*)*.

5.16 NATIONAL ACCOUNTS PUBLICATION

The publication of National Accounts of Tanzania Mainland 2007 - 2015 is the first in the series of publications with GDP at constant 2007 prices which provides an overview of the Tanzania Mainland economy. It contains time series of main aggregates such as economic growth, disposable income, final consumption expenditures, imports and exports and regional GDP estimates at current and constant prices for the period of 2007 to 2015.

The main data sources used in the compilation of the National Accounts estimates include, Household Budget Survey (HBS); Agriculture Sample Census; Integrated Labour

Force Survey (ILFS); Non-Profit Institutions Serving Household Survey; Annual Survey of Industrial Production; Foreign Direct Investment Survey and the Population and Housing Census. Secondary information was extracted from administrative records, which include information on import and export of goods and services, Government Finance Statistics (GFS) and Value Added Tax (VAT) collections. Data from specific studies such as Trade and Transport Margins were also used.

5.16.1 Objectives and uses of the National Accounts Statistics

The National Accounts of Tanzania Mainland publication gives consolidated estimates of Gross Domestic Product (GDP) and other allied aggregates of Tanzania Mainland.
GDP figures are also available in the "Economic Survey" published by the Ministry of Finance.

The adoption of the United Nations System of National Accounts - SNA 1993 and partly SNA 2008 makes it possible to compare the Tanzania national accounts aggregates with those of other Countries. The concepts and definitions conform to the United Nations recommendations on the subject as given in the United Nations System of National Accounts (SNA 1993).

5.16.2 Methodology of data production

The methodologies used are based on the SNA. The following two approaches are recommended for National Accounts Statistics.

(i) Production Approach

In this approach, GDP estimates at market prices are derived by summing up the gross value added at basic prices of each industry and adding taxes less subsidies on products. This approach is used for the compilation of all sectors except the government and the Central Bank whose output is estimated at cost.

(ii) Expenditure Approach

Expenditure approach; considers the income expenditure for the purpose of consumption or capital formation. Not all products purchased by domestic buyer come from domestic production; some come from outside the country. Therefore, the GDP at market prices by this approach is derived by adding up the purchases that are made for final consumption, capital formation, and imports less export (net export).

5.16.3 Reference to applicable Standard Classifications

Tanzania Mainland uses the International Standards of Industrial Classification (ISIC Revision 4)

6.0 STATISTICAL SERVICES

6.1 STATISTICAL BUSINESS REGISTER (SBR)

The Statistical Business Register is a comprehensive list of all formal enterprises and establishments operating in the country at a specified time. It is used as frame for establishment based surveys. At the National Bureau of Statistics, the Register provides an updated list of establishments covering all sectors of the economy as per International Standard Industrial Classifications (ISIC) Revision 4.

The register covers existing formal sectors from administrative sources with fixed premises that fall under the International Standard Industrial Classification of all economic activities revision 4 (ISIC Rev 4), in Tanzania Mainland. Also, includes important information like, name of establishment, telephone number, ownership, number of persons engaged, capital investment and turnover.

6.1.1 Objectives and uses of the SBR

(i) SBR is used as sampling frame for different establishments based surveys;

(ii) The register is used to show statistical information on distribution of all economic units, employment by sector and geographical areas. This is very useful to planners and decision makers of the economy;

(iii) It provides a comprehensive list of all enterprises and other units together with their characteristics that are active in a national economy and thus will enhance Government's policy formulations, forecasting and planning purposes;

(iv) It also used as a guide to investors, other business communities and the general public at large by providing relevant information on name and number of establishments existing to the region and district by Location, industrial activities, ownership and size group;

(v) Used as an input for computing GDP, PPI and other Industrial Indicators; and

(vi) It also used by several public institutions dealing with enforcement of employment laws and regulations e.g. VETA, NSSF, etc.

Outside NBS the following institutions are the major users of the register: Ministry of Labour for factory and industry inspection. Income Tax Department uses for income tax administration and verification. NSSF uses SBR for the administration of worker's social security.

6.1.2 Methodology of Data Production

The main source of the register is through Administrative data sources. Data produced as by-products of Ministries, Departments and Agencies (MDAs) when carrying out their administrative functions.

Another source is through census and surveys carried out by National Bureau of Statistics, such as Industrial Census, Employment and Earnings Survey, Agricultural Census, Hotel Statistics, Education Statistics, Health Statistics, etc.

Since the register is mostly nourished by administrative data and through various census and surveys, NBS conducts Statistical Business Register Survey in order to supplement existing information and update the register, the survey is conducted after every three years.

Survey Designing

The survey is designed to gather information from establishments with fixed premises. The SBR survey design addresses the following issues: classification standards, statistical unit and survey coverage.

Statistical Unit

This is an entity from which the required data are collected. The basic unit of enquiry for the SBR is an establishment.

Survey Coverage

The survey is designed to cover regional and district headquarters, urban wards and urban part of the mixed wards or township areas in Tanzania Mainland. In addition to that, coverage is for those legal establishments with minimum of one employee.

Sample Design

According to the nature of the survey, all urban wards together with urban part of mixed wards in the district are involved in the survey. The list of establishments from National Bureau of Statistics (NBS), Business Registrations and Licensing Agency - (BRELA), Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC), Ministry of Education and Vocational Training (MoEVT) and Tanzania Revenue Authority (TRA) are used as the sampling frame. The list are used as control sheet during fieldwork.

Survey Instruments

The structured questionnaire serves as the main instrument, it is designed to provide the required information. The main variables on which data is collected are: name of the establishment; mailing address e.g. postal box, telephone, fax number and e-mail address; physical location of the establishment; date of its first operation; main activity and auxiliary activities of the establishment; type of ownership; ownership by nationality, volume of sales or value of output (turnover); initial capital investment and sources; registration status; size of the business and number of persons engaged by sex and Education. Other instruments are Instruction Manual and ISIC Rev.4.

Recruitment and Training

Interviewers are recruited by Regional Statistical Managers (RSMs) from their respective region. The number varies for each region depending on the size of the sample for the region. Training is normally conducted in two stages: Training of Trainers (ToT) which involved senior and regional supervisors; followed by training of interviewers and supervisors. The aim of training is to:

(i) Pre-test the survey instruments;

(ii) Administer questionnaires in the form of a mock interview in order to identify shortfalls in terms of the structure and language of questions used; and

(iii) Train supervisors and interviewers on the objectives and instruments of the survey.

Fieldwork

The face-to-face or direct interviewing techniques are deployed as the method of data collection. Interviewers are assigned according to the expected total number of establishments and geographical area of the region.

Data Processing

Data processing and analysis is one among the important components of SBR which involved mainly data entry, cleaning, transformation and analysis.

At an earlier stage of the processing, data are keyed in a computer using Census and Survey Processing (CSPro) Software. The final output is produced using Microsoft Excel and Statistical Package for Social Scientists (SPSS) Softwares considering the tabulation plan. The final data set are submitted to the Tanzania National Data Archives (TNADA).

6.1.3 Reference of Applicable Standard Classifications

The SBR use the four digit industrial codes to describe the main economic activity of the establishment. The codes are according to the United Nations International Standards of Industrial Classification of activities (ISIC Revision 4) to capture all economic activities in Tanzania Mainland.

6.2 REGIONAL AND DISTRICT SOCIAL ECONOMIC PROFILES

Regional and District Authorities are responsible for preparing Social Economic Profiles within their respective areas with technical support from the National Bureau of Statistics. The process of preparing such profiles includes compilation of social economic activities in the Region and Districts.

The profiles cover the region and/or district area and all social economic development activities undertaken in the respective region or district. In social activities the profiles cover sectors like education, health, water and sanitation. In economic activities there are sectors like agriculture, industry, trade, transport and tourism.

6.2.1 Objectives and uses of the Regional/District Profiles

The main objective of Regional and District Social Economic Profiles is to provide regions and districts with useful information for planning, policy formulation and appropriate decision making. The information enables regions and districts to identify areas for improvement and also to identify investment opportunities, available in the regions and districts.

6.2.2 Methodology of data production

Regional and District socio-economic profiles use secondary data from all sectors or departments of the district councils. Templates which cover all these sectors are prepared and distributed to all heads of departments to be filled in. The filled-in templates are then collected for compilation, processing, analysis and production of the report for the respective region or district.

6.3 TANZANIA SOCIO-ECONOMIC DATABASE (TSED)

The Tanzania Socio-Economic Database (TSED) is a comprehensive and up-to-date socio-economic database system. It is a powerful tool for organizing, storing and presenting data in a uniform way, allowing data to be easily and quickly shared across Government Departments, UN agencies and other development organizations. The database is compliant with International Statistical Standards and operates both as a desktop application (on CDs) as well as on the website (www.tsed.go.tz) locally hosted and www.devinfo.org/tanzania.

6.3.1 Objectives of TSED

The main objectives of TSED is to democratize access, use and dissemination of accurate data on a wide range of socio-economic indicators in a user-friendly manner, and thus:

(i) Facilitates the systemization, storage and analysis of performance indicators in different thematic areas that are defined by users;

(ii) Allows for user-friendly analysis of data through tables, graphs and maps for inclusion in reports, presentation and advocacy materials

(iii) The system allows the creation of global, regional, national and local maps, with allowances up to 10 geographic levels;

(iv) Allows the grouping of indicators in different frameworks, sectors and sub-sectors, by themes (poverty disparities etc), by institutions, by sources, by international commitments and goals;

(v) Provides updated time series data as well as multiple estimates from various sources, disaggregated data to village level, by sex and urban/rural strata whenever these are available; and

(vi) Allows the creation, modification and merging of indicator databases without the need for specialized programs or technical support. The system contains the wizard that provides step-by-step orientation for these tasks.

6.3.2 Methodology of Data Production

TSED is an indicator Database that stores data from various statistical reports published by NBS and other MDAs. Indicators available in TSED developed in collaboration with all MDAs within Tanzania Mainland and the data uploaded into TSED are from recognized official sources.

6.4 CENSUS INFO

Census info database is designed to disseminate Population and Housing Census data. It includes recommended census topics, data and Indicators with accompanying metadata and dashboard. The outputs are produced by Table, Map and Graph. Currently Census info database has Volume 1, 2, 3 of Census report and regional profile data from National to District Level.

Accessing Census Info

The Database is available under http://www.devinfo.org/CensusInfoTanzania/ or link from National Bureau of Statistics Website by clicking “Data Portal” tab.

6.4.1 Objectives of Census Info

To disseminate the main tables and indicators of population and housing characteristics as a whole and geographical areas/administrative unit that can be used for planning, management and evaluation of development program.

6.4.2 Methodology of Data Production

Census Info is an indicator Database that stores data from various censuses conducted by the National Bureau of Statistics from census periodical phases since 1967, 1978 1988, 2002 and 2012 within Tanzania Mainland and Zanzibar. Census data is uploaded into Census Info database as soon as reports are published.

6.5 TANZANIA NATIONAL DATA ARCHIVE (TNADA)

Tanzania National Data Archive (TNADA) is a web-based cataloging system that serves as a portal for users of statistics to browse, search, compare and download census or survey information.

It provides a powerful instrument that facilitates the process of releasing study metadata and micro-data to the user community. It allows for:

(i) Increasing quality and diversity of research;
(ii) Improving reliability and relevance of data;
(iii) Reducing duplication of data collection activities;
(iv) Improving visibility of the institution as their data becomes more frequently used and is more readily accessible;
(v) Increasing donor and public confidence in the institution;
(vi) Improvement of publishing and dissemination efficiency of the National Bureau of Statistics. (NBS); and
(vii) Access to survey information such as reports, tables, and micro data.

Thirty-four studies have already been uploaded into TNADA, studies are uploaded when they are ready for uploads.

TNADA is a portal comprises of statistical data and metadata of census and surveys. Information available in TNADA is obtained from censuses and surveys conducted by the NBS.

Accessing TNADA

TNADA is accessed through the NBS website by clicking the tab Data Portal. From the TNADA web page, customers are able to view studies' metadata and download the related reports. To have access on microdata the customer needs to be a member of the TNADA by filling the embedded form expressing his/her interest on the datasets and the customer has to agree to the attached terms of use of the datasets.

6.6 COUNTRYSTAT

CountrySTAT is a statistical framework and applied information system designed for analysis, organize, integrate and disseminate statistical data and metadata primarily on food security, nutrition and agriculture to ensure harmonization of national data and metadata.

6.6.1 Objectives of Country-Stat

The objectives of Country-STAT database are;

(i) To provide easy access to quality statistics on food and agriculture at sub-national, national and regional levels,

(ii) To support data analysis and evidence-based decision making,

(iii) To facilitate informed policy making and monitoring with the goal of eradicating extreme poverty and hunger.

6.6.2 Methodology of Data Production

Country-STAT indicators are obtained from agricultural censuses (crops, livestock and area harvested), Trade (import and export of crops and livestock), routine data from Ministry of Agriculture Livestock and Fisheries, Tanzania Revenue Authority (TRA), Ministry of Industry and Ministry of Natural Resources and Tourism.

Accessing Country-STAT;
Is a web-based database, accessed through the address **www.countrystat.org/TZA**

6.7 ENHANCED GENERAL DATA DISSEMINATION SYSTEM (E-GDDS)

e-GDDS is the Enhanced General Data Dissemination System tool which enhances the availability of timely and comprehensive statistics and contributes to sound macroeconomic policies and the efficient functioning of financial markets.

It focuses to 15 data categories aligned to the IMF Article IV's Table of Common Indicators Required for Surveillance (TCIRS).

Enhanced General Data Dissemination System will be implemented through Open Data Platform (ODP) and the National Summary Data Page (NSDP).

The Enhanced General Data Dissemination System enables Tanzania to improve data dissemination practice, enhance transparency, timeliness and facilitate evidence based policy decisions. In addition, implementation of the e-GDDS will provide opportunity for Tanzania to advance to the Special Data Dissemination Standard (SDDS). Dissemination of macroeconomic and socio-economic data through the NSDP will provide easy access to information and act as one stop Centre for national and international data users.

The Ministry of Finance and Planning, Bank of Tanzania and National Bureau of Statistics made the NSDP public in November, 2016 through the National Bureau of Statistics website (www.nbs.go.tz)

6.8 NBS WEBSITE

This is the main dissemination tool at NBS. It is used to inform the Public (Government, MDAs, Researchers, Media, Private Sectors, etc.) about what is happening at NBS including statistical Publications, Releases, Events, advertisements and other services.

The development of the NBS website has made it possible for staff and stakeholders to benefit from the shared global information resources and knowledge. The availability of NBS Website (www.nbs.go.tz) has also increased the opportunity to collaborate and share information with other countries and development partners.

6.8.1 Objectives of the NBS Website

The main objective of the NBS website is to inform the Public on all existing statistical products and services and the ongoing activities at NBS. These include but not limited to the release of;

(i) Periodical Publications on the Population and Housing Census Reports, Agriculture Sample Census Survey, Households Budget Surveys, Demographic and Health Surveys, HIV and malaria Surveys, Economic Statistics, the National Accounts Statistics, Panel Survey, Labor Statistics Survey, Industrial Statists Survey, etc;

(ii) Statistical Releases including the Quarterly release of the Gross Domestic Product (GDP), Monthly releases of the Consumer Price Index (CPI), Product Price Index (PPI), Trade Price Indices (TPI) and the Hotel Statistics;

(iii) GIS shape files; and

(iv) Journals including the TSMP bulletin and the NBS monthly Newsletter.

The focused target groups are; - The Government of Tanzania officials mostly the; Planners, Policy Makers; Analysts, members of the Parliament, Researchers, NGOs, Media and the Public at large.

6.8.2 Methodology

The document format used to display and deliver different types of documents on a website is PDF. The end use needs to have Acrobat Reader for PDF to open the document and the internet connection would be necessary for downloading.

6.9 SAMPLING

Sampling refers to selecting a subset of elements from a population or a full set of element. The usual goal in sampling is to produce a representative sample. A sample is similar to the population on all characteristics, except that it includes fewer elements because it is a sample rather than the complete population. A perfect representative sample would be a "mirror image" of the population from which it was selected, except it would include fewer elements. The selection of a sample can either be through probability or non – probability mechanism.

6.9.1 Objectives of Sampling

To design a representative sample that is cost-effective within the agreed timeframe.

6.9.2 Methodology

NBS maintains two types of frames, the Population and Housing Census Frame is used to design households based surveys while the Statistical Business Register (SBR) is used for designing establishment based surveys. Normally, household based surveys design use multi-stage cluster sampling and elements are selected systematically or a complete coverage is done within the selected cluster. In establishments survey, establishments are stratified on the basis of the desired details of the published output by region, ISIC activity and employment size, and establishments may be selected using probability proportional to size sampling or systematic sampling.

Before enumeration updating of selected clusters is done to reflect the current situation.

6.9.3 Reference to applicable standards

All sampling procedures and methods follow international standards using L. Kish (1966) and W. Cochran.

6.10 ENVIRONMENT STATISTICS

Environment statistics cut across several disciplines and draw data from a wide range of sources. Apart from the National Bureau of Statistics, Ministries, Departments and Agencies, several other institutions are key players in producing data used in environment statistics. Environment statistics provide information about the state and changes of environmental conditions, the quality and availability of environmental resources, the impact of human activities and natural events on the environment and the impact of changing environmental conditions. They also provide information about the social actions and economic measures that societies take to avoid or mitigate these impacts and to restore and maintain the capacity of the environment to provide the services that are essential for life and human well-being

6.10.1 Objectives of Environment Statistics

The objectives of environment statistics is to provide information about the environment, its most important changes over time and across locations and the main factors that influence them. Environment statistics seek to provide high quality statistical information to improve knowledge of the environment, support evidence-based policy and decision-making and provide information for the general public and specific user groups.

6.10.2 Methodology of data production

Environment Statistics are compiled and disseminated basing on the International recommended Framework for Development of Environment Statistics (FDES 2013) after every two years. FDES is a flexible, multi-purpose conceptual and statistical framework that is comprehensive and integrative in nature. It marks out the scope of environment statistics and provides an organizing structure to guide their collection and compilation and to synthesize data from various subject areas and sources, covering the issues and aspects of the environment that are relevant for analysis, policy and decision making.

The FDES 2013 organizes environment statistics into six components and each of them is broken down into sub-components and statistical topics. The six components include: environmental conditions and quality; the availability and use of environmental resources and related human activities; the use of the environment as a sink for residuals and related human activities; extreme events and disasters; human settlements and environmental health; and social and economic measures to protect and manage the environment. The statistical topics represent the quantifiable

aspects of the components and are grouped into sub-components, taking into account the types and sources of the statistics needed to describe them.

6.11 TAX STATISTICS

Tax Statistics include all major tax revenue statistics collected by the government. It also includes non-tax revenues collected by Local Government Authorities (LGAs) as part of their own sources. The government has categorized all revenues to be collected by LGA's. Taxes are broadly categorized as Direct and Indirect taxes.

Direct taxes

These are taxes levied directly on people's income from employment, business, ownership of property or investment. They include income tax, corporate tax, property tax, Pay as You Earn (PAYE), skills and development levy, individual tax, withholding tax, rental and gaming tax.

Indirect Taxes

These are taxes based on consumption. Categorically, they are divided into consumption taxes, other domestic taxes and international trade taxes. Examples of such taxes are Import Duty, Excise Duty and Value Added Tax (VAT). By definition, the legal incidence of the tax falls on the trader who act as a collecting agent of the Government while the effective incidence falls on the final consumer of goods or service who eventually pays the tax.

6.11.1 Objectives and uses of Tax Statistics:

Tax and other aligned statistics are disseminated to researchers, the business community and other interested users are mainly for the following purposes:

(i) To provide information to the stakeholders and interested readers to be aware of their government's tax and non-tax revenue collection;

(ii) To illustrate the Government's economic performance in terms of tax collections from various sources in the economy; and

(iii) To improve and stimulate voluntary compliance of tax payers.

Uses of tax statistics

(i) To monitor the economy, especially in formulating tax related policies;

(ii) Inform the general public on the importance of tax compliance; and

(iii) Used by researchers and scholars for research purposes.

6.11.2 Methodology of data production

The collection of Tax statistics depends on secondary data from Tanzania Revenue Authority (TRA). The obtained secondary data are being analyzed and come up with the report on Tax and Government Finance Statistics.

6.11.3 Reference to applicable Standards and Classifications

Tax statistics use the Government Finance Statistics (GFS) classification.

6.12 NBS LIBRARY

Is a room in which hard copy and soft copy materials special for dissemination and retrieval of information are kept. These materials include but not limited to; books, journals, periodicals, newspapers, CDs/DVDs for studying, reference and reading.

NBS Library also stores statistical information from other African Countries, Asia, China (Republic) India, Indonesia, and Korea (Republic) Mongolia, Bangladesh, Norway, Latin America, Mexico, United Nations and Others.

6.12.1 Library Objectives are:

i. To provide Statistical information to various users, e.g.; Researchers, Academicians, Universities, Government institutions, NGOs, and other stakeholders.

ii. To support research activities, conducted by different stakeholders.

Classification of NBS library materials

Classification of NBS Library materials is Subject to International classifications by Dewel Decimal Classification (DDC) document. According to DCC library materials are categorized into 10 groups as follows:-

0: General – Represents the first class as far as Library Classification is concerned, these are Publications which contain all statistical information;

1: Population, Labour and Housing;

2: Agriculture, Forest and Fisheries;

3: Mining, Manufacturing, Electricity, Gas, Water supply and Construction;

4: Transport, Communications, Commerce and Expenditure;

5: External trade;

6: Wage, Price, Family Income and Expenditure;

7: Enterprise and Establishments;

8: Banking, public Finance and National Accounts;

9: Education, Health and Social Statistics;

X: Others;

XX: Thesis.

Description of Statistical Materials

Entries on statistical materials include the following information in the following order:

i Organization published the report or publication;

ii Title of the publication;

iii Volume or serial number of the publication and Code number. Code numbers are used to reveal duration of publication issued (A – annually, I – irregular, M – monthly, Q – quarterly, S - semiannual).

6.13 FINANCE

6.13.1 Financial Resources

Financial resources are one of the key elements for successful implementation of any institutional goal. In this respect, the NBS strives for availability of adequate financial resources from the government and other sources including commissioned work, loans, and grants from development partners. Government subvention is mainly for paying staff salaries, production of core statistics and other administrative costs.

Budget process

The NBS's Budgets are prepared in accordance with Medium Term Expenditure Framework (MTEF) and budget guidelines as issued by the Treasury. The Heads of Departments have overall responsibilities for ensuring that departmental budgets are produced and submitted to the Financial Manager in accordance with agreed timeframe.

The budget committee is formed to facilitate and consolidate budget inputs from all departments and submit to NBS management and later on scrutinized by the Directorate of Finance. The drafted budget is thereafter shared to all staff through Workers Council before submitting to the Ministerial Advisory Board (MAB) for approval and later on to the responsible ministry for funding.

Commissioned Work

Apart from Government subvention, the NBS generates its own revenue from commissioned work which forms an important source of internal revenue for NBS.

6.14 GEOGRAPHICAL INFORMATION SYSTEM (GIS)

A Geographical Information System (GIS) is a computer system for capturing, storing, checking, and displaying data related to positions on Earth's surface and the events that take place on it. A GIS is an information system designed to work by combining database functions with computer mapping to map and analyze geographic data. It uses a "layering" technique to combine various types of data. GIS can show many different kinds of data on one map. This enables people to more easily see, analyze, and understand patterns and relationships. It may also be considered as a higher order map.

6.14.1 Objectives and uses of GIS

The main objective of NBS GIS section is to produce accurate and reliable digitized maps that can be used to facilitate census and survey operations, information dissemination, spatial analysis and Master Sample frame development.

6.14.2 Methodology used in GIS

The Census maps which refer as an enumeration area (EAs) are created by the National Bureau of Statistics (NBS) in collaboration with other sectors through provisional of supportive material such as base maps being used by the GIS personnel for creation of enumeration areas. Base maps are produced by the Surveys and Mapping Division of the Ministry of Lands, Housing and Human Settlements Developments that plays great roles during demarcation of EAs maps. Also, other supportive document during the demarcation process is the government notes that describe the National Administrative boundaries at different levels from hamlet to National. The President’s

Office, Regional Administration and Local Government (PORALG) provide this important information.

The implementation of the whole process of map creation activities involve the following procedures:-

Data capture

All spatial are captured by means of GPS device while non-spatial data are recorded using developed special form. Additionally, other information including; households, prominent features such as rivers, mountains, roads, communication towers, etc are important landmarks and their respective geographical location are captured using GPS as well as to be used in defining the boundary of created EA. These collected features and other information are used as a guides to help the enumerator to identify it respective enumeration area during Census/Survey operations.

The demarcation of EAs should satisfy the following requirements in order to conform to the standards set by the office:

(i) Boundaries and starting points are clearly identifiable;

(ii) Boundaries of EAs should not cut across Village Boundaries which is a smallest administrative level in the country;

(iii) EAs should not overlap with one another;

(iv) Each EA should be of a reasonable size (between 60 to 100 Households).

Data Processing

This is a series of operations on data, to retrieve, transform, or classify information. It involves Scanning, Geo referencing, Digitization and Enumeration area (EA's). The map coordinate system of the Census Library is Universal Transverse Mercator (UTM). Most of the data are stored in zone 35 to 37s (Southern Hemisphere). Units are metric (meters). The datum is Arc 960.

Data Output

(a) Enumeration area (EAs) and Supervision area (SA), generally refer to the smallest geographical area from which Census/Survey data are collected. Development of sets of EAs and SAs are stored in PDF format, sized to fit A3 with special layout/templates.

(b) Statistical Maps refer to maps showing the spatial distribution of statistical data. The purpose is to present significant statistical results in terms of their geographic distribution.

Thus interest in the current pattern of distribution and also in changes in the patterns that have occurred over time, particularly since the last census/similar survey is considered.

(c) Thematic maps,; A map that focuses on a particular theme or special topic. GIS section Using the census statistics and boundaries in a Geographical Information System (GIS) allows for spatial analysis of the census data and its combination with other non -census geographically referenced data sets. Digitized boundary datasets can be used for:

(i) Administrative boundaries maps;
(ii) Map production for Population distribution at different level of administration;
(iii) Tanzania inter-censual growth rate by Regions;
(iv) Tanzania population density by regions;
(v) Tanzania Sex ratio by Regions;
(vi) Map production for sanitation;
(vii) School enrollment maps;
(viii) Geo statistical analysis of demographic;
(ix) Small area analysis and deprivation studies;
(x) Health care research – incidence mapping and analysis;
(xi) Provides consultancy when needs arises; and
(xii) Historical demographic research and etc.

6.14.3 Reference to applicable standards

All procedures and methods for data collection, processing and map production follow international standards of map making elements and cartographic aspects.

Datum used: Arc 1960; Geographical Coordinate Systems and/or Projected Coordinate Systems (UTM).

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Vision

"To become a one-stop centre for official statistics in Tanzania."

Mission

"To produce quality official statistics and services that meet needs of national and international stakeholders for evidence-based planning and decision making."