

Tanzania - Demographic and Health Survey 2010

National Bureau of Statistics (NBS)

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Sampling

Sampling Procedure

The 2010 TDHS sample was designed to provide estimates for the entire country, for urban and rural areas in the Mainland, and for Zanzibar. For specific indicators such as contraceptive use, the sample design allowed the estimation of indicators for each of the then 26 regions.

To estimate geographic differentials for certain demographic indicators, the regions of mainland Tanzania were collapsed into seven geographic zones. Although these are not official administrative zones, this classification is used by the Reproductive and Child Health Section of the MoHSW. Zones were used in each geographic area in order to have a relatively large number of cases and a reduced sampling error. It should be noted that the zones, which are defined below, differ slightly from the zones used in the 1991-92 and 1996 TDHS reports but are the same as those in the 2004-05 TDHS and the 2007-08 THMIS.

- Western: Tabora, Shinyanga, Kigoma
- Northern: Kilimanjaro, Tanga, Arusha, Manyara
- Central: Dodoma, Singida
- Southern Highlands: Mbeya, Iringa, Rukwa
- Lake: Kagera, Mwanza, Mara
- Eastern: Dar es Salaam, Pwani, Morogoro
- Southern: Lindi, Mtwara, Ruvuma
- Zanzibar: Unguja North, Unguja South, Town West, Pemba North, Pemba South

A representative probability sample of 10,300 households was selected for the 2010 TDHS. The sample was selected in two stages. In the first stage, 475 clusters were selected from a list of enumeration areas in the 2002 Population and Housing Census. Twenty-five sample points were selected in Dar es Salaam, and 18 were selected in each of the other twenty regions in mainland Tanzania. In Zanzibar, 18 clusters were selected in each region for a total of 90 sample points.

In the second stage, a complete household listing was carried out in all selected clusters between July and August 2009. Households were then systematically selected for participation in the survey. Twenty-two households were selected from each of the clusters in all regions, except for Dar es Salaam where 16 households were selected.

All women age 15-49 who were either permanent residents in the households included in the 2010 TDHS sample or visitors present in the household on the night before the survey were eligible to be interviewed. In a subsample of one-third of all the households selected for the survey, all men age 15-49 were eligible to be interviewed if they were either permanent residents or visitors present in the household on the night before the survey.

Note: See detailed sample implementation in the APPENDIX A of the final 2010 Tanzania Demographic and Health Survey report.

Response Rate

Response rates are important because a high rate of nonresponse may affect the results. A total of 10,300 households were selected for the sample, of which 9,741 were found to be occupied during data collection. The shortfall occurred mainly because structures were vacant or destroyed. Of the 9,741 existing households, 9,623 were successfully interviewed, yielding a household response rate of 99 percent.

In the interviewed households, 10,522 women were identified for individual interview; complete interviews were conducted with 10,139 women, yielding a response rate of 96 percent. Of the 2,770 eligible men identified in the subsample of households selected, 91 percent were successfully interviewed.

The principal reason for nonresponse among eligible women and men was the failure to find them at home despite repeated visits to the household. The lower response rate for men reflects the more frequent and longer absences of men from households.

Questionnaires

Overview

Three questionnaires were used for the 2010 TDHS: the Household Questionnaire, the Women's Questionnaire, and the Men's Questionnaire. The content of these questionnaires was based on the model questionnaires developed by the MEASURE DHS programme. To reflect relevant issues in population and health in Tanzania, the questionnaires were adapted. Contributions were solicited from various stakeholders representing government ministries and agencies, nongovernmental organisations, and international donors. The final drafts of the questionnaires were discussed at a stakeholders' meeting organised by the NBS. The adapted questionnaires were translated from English into Kiswahili and pretested from 23 July 2009 to 5 August 2009.

The Household Questionnaire was used to list all the usual members and visitors in the selected households. Some basic information was collected on the characteristics of each person listed, including age, sex, education, and relationship to the head of the household. For children under age 18, survival status of the parents was determined. The main purpose of the Household Questionnaire was to identify women and men who were eligible for the individual interview. The Household Questionnaire also collected information on characteristics of the household's dwelling unit, such as the source of water, type of toilet facilities, materials used for the floor of the house, ownership of various durable goods, and ownership and use of mosquito nets. Another use of the Household Questionnaire was to identify the woman who was eligible to be interviewed with the domestic violence module.

The Household Questionnaire was also used to record height, weight, and haemoglobin measurements of women age 15-49 and children under age 5, household use of cooking salt fortified with iodine, response to requests for blood samples to measure vitamin A and iron in women and children, and whether salt and urine samples were provided.

The Women's Questionnaire was used to collect information from all women age 15-49. These women were asked questions on the following topics:

- Background characteristics (e.g., education, residential history, media exposure)
- Birth history and childhood mortality
- Pregnancy, delivery, and postnatal care
- Knowledge and use of family planning methods
- Infant feeding practices, including patterns of breastfeeding
- Fertility preferences
- Episodes of childhood illness and responses to illness, with a focus on treatment of fevers in the two weeks prior to the survey
- Vaccinations and childhood illnesses
- Marriage and sexual activity
- Husband's background and women's work status
- Knowledge, attitudes, and behaviour related to HIV/AIDS and other sexually transmitted infections (STIs)
- Domestic violence
- Female genital cutting
- Adult mortality, including maternal mortality
- Fistula of the reproductive and urinary tracts
- Other health issues, including knowledge of tuberculosis and medical injections

The Men's Questionnaire was administered to all men age 15-49 living in every third household in the 2010 TDHS sample. The Men's Questionnaire collected much of the same information as the Women's Questionnaire, but it was shorter because it did not contain a detailed reproductive history, questions on maternal and child health or nutrition, questions about fistula, or questions about siblings for the calculation of maternal mortality.

Data Collection

Data Collection Dates

Start	End	Cycle
2009-12	2010-05	N/A

Data Collection Mode

Face-to-face

DATA COLLECTION NOTES

Training of Field Staff

Field staff training took place between 9 November 2009 and 5 December 2009. A total of 59 female nurses, 15 male nurses, 17 field editors, and 14 supervisors were trained. Supervisors and editors were also given specialized training to enable them to perform their duties. Trainers were from the NBS, the MoHSW, the Ministry of Community Development, Gender, and Children, the Tanzania Food and Nutrition Centre, and ICF Macro. Staff from the Methods, Standards, and Coordination Department and the Information Technology and Marketing Department of the NBS also participated in the training.

The training was conducted following the DHS training procedures, including classroom presentations, mock interviews, field practice, and tests. Towards the end of the classroom training, the trainees were assigned to 14 teams, as if for the main data collection. The teams visited two health clinics in Hedaru (rural) and Same (urban) to practice the procedures learned in the classroom. Permission to test women and children at the clinics was granted by the medical officer in charge of the facility as well as by the women themselves.

Field practice in interviews, anthropometric measurements, and biomarkers was also carried out at this time. During this period, field editors and team supervisors took additional training in methods of field editing, data quality control procedures, and fieldwork coordination.

Fieldwork

Data collection began on 19 December 2009 and was completed on 23 May 2010. Data were collected by 14 teams, 11 in Mainland and 3 in Zanzibar. Each team consists of four female interviewers, one male interviewer, a supervisor, a field editor, and a driver. The field editor and supervisor were responsible for reviewing all questionnaires for completeness, quality, and consistency before the team's departure from the cluster. Fieldwork supervision was also coordinated at NBS headquarters and at the Office of the Chief Government Statistician—Zanzibar. Seven NBS senior staff formed the Quality Control team. They periodically visited teams to review their work and monitor data quality. Quality control personnel also independently re-interviewed certain households after the team had left a cluster. Close contact between NBS headquarters and the data collection teams was maintained using cell phones. ICF Macro staff participated in field supervision of interviews and biomarker collection.

Data Collectors

Name	Abbreviation	Affiliation
National Bureau of Statistics	NBS	

Data Processing

Other Processing

The processing of the 2010 TDHS data began shortly after the fieldwork commenced. Completed questionnaires were returned to the NBS head office in Dar es Salaam, where they were entered and edited by data processing personnel who were specially trained for this task. Data processing included office editing, coding of open-ended questions, data entry, and editing of computer-identified errors. The data were processed by a team of 10 data entry clerks, 3 data editors, 2 data entry supervisors, and 2 programmers. One staff member was assigned to receive and check the blood samples received from the field. Data entry and editing were accomplished using the CPro software. Field teams were advised of problems detected during the data entry to improve performance with the use of field check tables. The process of office editing and data processing was initiated on 25 January 2010 and completed on 15 June 2010.

The DBS, urine, and salt samples received from the field were logged in at NBS, checked, and delivered to TFNC to be tested. The processing of DBS samples for the vitamin A testing was handled by three laboratory technicians, while anaemia testing was handled by three laboratory technicians, and iodine testing was done by four laboratory technicians. The samples were logged into the CPro Test Tracking System (CHTS) database, and each was given a laboratory number.

Data Appraisal

Estimates of Sampling Error

The estimates from a sample survey are affected by two types of errors: (1) nonsampling errors, and (2) sampling errors. Nonsampling errors are the results of mistakes made in implementing data collection and data processing, such as failure to locate and interview the correct household, misunderstanding of the questions on the part of either the interviewer or the respondent, and data entry errors. Although numerous efforts were made during the implementation of the 2010 Tanzania Demographic and Health Survey (TDHS) to minimize this type of error, nonsampling errors are impossible to avoid and difficult to evaluate statistically.

Sampling errors, on the other hand, can be evaluated statistically. The sample of respondents selected in the 2010 TDHS is only one of many samples that could have been selected from the same population, using the same design and expected size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability between all possible samples. Although the degree of variability is not known exactly, it can be estimated from the survey results.

A sampling error is usually measured in terms of the standard error for a particular statistic (mean, percentage, etc.), which is the square root of the variance. The standard error can be used to calculate confidence intervals within which the true value for the population can reasonably be assumed to fall. For example, for any given statistic calculated from a sample survey, the value of that statistic will fall within a range of plus or minus two times the standard error of that statistic in 95 percent of all possible samples of identical size and design.

If the sample of respondents had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the 2010 TDHS sample is the result of a multi-stage stratified design, and, consequently, it was necessary to use more complex formulas. The computer software used to calculate sampling errors for the 2010 TDHS is the ISSA Sampling Error Module. This module used the Taylor linearization method of variance estimation for survey estimates that are means or proportions. The Jackknife repeated replication method is used for variance estimation of more complex statistics, such as fertility and mortality rates.

Note: See detailed sampling error calculation in the APPENDIX B of the final report.

Other forms of Data Appraisal

Data Quality Tables

- Household age distribution
- Age distribution of eligible and interviewed women
- Completeness of reporting
- Birth by calendar years
- Reporting of age at death in days
- Reporting of age at death in months
- Nutritional status of children

Note: See these data quality tables in APPENDIX C of the final report.

Related Materials

Questionnaires

Demographic and Health Survey 2004-2005 - Questionnaire

Title Demographic and Health Survey 2004-2005 - Questionnaire
 Author(s) National Bureau of Statistics
 Date 2010-06-01
 Country Tanzania
 Language English
 Filename TZA_2010_DHS_questionnaire.pdf

Reports

Demographic and Health Survey 2010 - Report

Title Demographic and Health Survey 2010 - Report
 Author(s) National Bureau of Statistics, Dares Salaam, Tanzania and ICF Macro, Calverton, Maryland, USA
 Date 2011-04-01
 Country Tanzania
 Language English
 Filename [http://www.dhsprogram.com/pubs/pdf/FR243/FR243\[24\]June2011\].pdf](http://www.dhsprogram.com/pubs/pdf/FR243/FR243[24]June2011].pdf)

Demographic and Health Survey 2010 - Key Findings

Title Demographic and Health Survey 2010 - Key Findings
 Author(s) MEASURE DHS
 Date 2011-04-01
 Country Tanzania
 Language English
 Filename <http://www.dhsprogram.com/pubs/pdf/SR183/SR183.pdf>

Demographic and Health Survey 2010 - Cender Based Fact Sheet

Title Demographic and Health Survey 2010 - Cender Based Fact Sheet
 Author(s) MEASURE DHS
 Date 2011-04-01
 Country Tanzania
 Language English
 Filename <http://www.dhsprogram.com/pubs/pdf/OF15/OF15.pdf>

Other materials

Demographic and Health Survey 2010 - Malaria Mini Poster

Title Demographic and Health Survey 2010 - Malaria Mini Poster

Author(s) MEASURE DHS
Date 2011-04-01
Country Tanzania
Language English
Filename <http://www.dhsprogram.com/pubs/pdf/DM18/DM18.pdf>

Demographic and Health Survey 2010 - Presentations (Powerpoint)

Title Demographic and Health Survey 2010 - Presentations (Powerpoint)
Author(s) MEASURE DHS
Date 2011-04-01
Country Tanzania
Language English
Filename <http://www.dhsprogram.com/pubs/pdf/PPT23/PPT23.zip>
