Sampling

Sampling Procedure

The 2012 TjDHS sample was designed to permit detailed analysis, including the estimation of rates of fertility, infant/child mortality, and abortion at the national level and for total urban and rural areas separately. Many indicators can also be estimated at the regional (oblast) level. In addition, in the Khatlon region, the sample is sufficient to provide separate estimates of the nutritional status of children for the 12 districts included in the Feed the Future Initiative (FTF) pilot areas.

A representative probability sample of 6,674 households was selected for the 2012 TjDHS sample. The sample was selected in two stages. In the first stage, 356 clusters were selected from a list of enumeration areas that were part of a master sample designed from the 2010 Population Census. In the second stage, a complete listing of households was made for each selected cluster. Households were then systematically selected for participation in the survey.

All women age 15-49 who were either permanent residents of the households in the 2012 TjDHS sample or visitors present in the household on the night before the survey were eligible to be interviewed. Interviews were completed with 9,656 women.

Appendix A (in the final report - Tajikistan Demographic and Health Survey 2012) provides additional information on the sample design of the 2012 TjDHS.

Response Rate

A total of 6,674 households were selected in the sample, of which 6,512 were occupied at the time of the fieldwork. The main reason for the difference is that some of the dwelling units that were occupied during the household listing operation were either vacant or the household was away for an extended period at the time of interviewing. The number of occupied households successfully interviewed was 6,432, yielding a household response rate of 99 percent. The household response rate in urban areas (98 percent) was slightly lower than in rural areas (99 percent).

In these households, a total of 9,794 eligible women were identified; interviews were completed with 9,656 of these women, yielding a response rate of 99 percent. Response rates are slightly higher in urban areas (99 percent) than in rural areas (98 percent).

Weighting

Due to the non-proportional allocation of the sample to the different regions and the differences in response rates, analysis of the 2012 TjDHS data requires the data to be weighted to ensure the actual representation of the survey results at the national level as well as at the regional level. Since the 2012 TjDHS sample is a two-stage stratified cluster sample, sampling weights were calculated based on sampling probabilities for each sampling stage and for each cluster.

Refer to Appendix A4 in the final report (Tajikistan Demographic and Health Survey 2012) for details of sampling weights calculation.
Overview

Two questionnaires were used in the TjDHS: a Household Questionnaire and a Woman’s Questionnaire. The Household Questionnaire and the Woman’s Questionnaire were based on model survey instruments developed in the MEASURE DHS program. The DHS model questionnaires were adapted for use in Tajikistan by experts from the Statistical Agency (SA) and the Ministry of Health (MOH). Suggestions were also sought from USAID; a number of the UN agencies, including the United Nations Development Program (UNDP), UNFPA, and UNICEF; and other international and nongovernmental organizations (NGOs). The questionnaires were developed in English and translated into Russian and Tajik. The Household Questionnaire and the Woman’s Questionnaire were pretested in March 2012.

The Household Questionnaire was used to list all usual members of and visitors to the selected households and to collect information on the socioeconomic status of the households. The first part of the Household Questionnaire collected, for each household member or visitor, information on their age, sex, educational attainment, and relationship to the head of household. This information provided basic demographic data for Tajikistan households. It also was used to identify the women who were eligible for the individual interview (i.e., women age 15-49). The first section of the Household Questionnaire also obtained information on other characteristics of household members, including information on each child’s birth registration. Other questions addressed housing characteristics (e.g., the flooring material, the source of water, and the type of toilet facilities), ownership of consumer goods, and other aspects of the socioeconomic status of the household. Results of testing of household salt for the presence of iodine and results of taking height and weight measurements of children under age 5 and of women age 15-49 also were recorded in the Household Questionnaire.

The Woman’s Questionnaire obtained information from women age 15-49 on the following topics:

- Background characteristics
- Pregnancy history
- Antenatal, delivery, and postnatal care
- Knowledge, attitudes, and use of contraception
- Reproductive health
- Childhood mortality
- Health care utilization
- Vaccinations of children under age 5
- Episodes of diarrhea and respiratory illness of children under age 5
- Breastfeeding and weaning practices
- Marriage and recent sexual activity
- Fertility preferences
- Knowledge of and attitudes toward AIDS and other sexually transmitted diseases
- Knowledge of and attitudes toward tuberculosis
- Woman’s work and husband’s background characteristics
- Other women’s health issues
- Domestic violence
Data Collection

Data Collection Dates

<table>
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<tr>
<th>Start</th>
<th>End</th>
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<td>2012-07</td>
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</table>

Data Collection Mode

Face-to-face [f2f]

DATA COLLECTION NOTES

Training of Field Staff

The main survey training, which was conducted by the SA, MOH, and ICF International staff, was held during a three-week period in June and was attended by 100 people (78 females and 22 males), including supervisors, field editors, interviewers, and quality control personnel. The training included lectures, demonstrations, practice interviews, and examinations. All field staff received training in anthropometric measurement and participated in two days of field practice.

Fieldwork

Fourteen teams collected the survey data; each team consisted of four female interviewers, a field editor, and a team supervisor. Fieldwork began in early July 2012 and concluded in late September 2012. Senior TJDHS technical staff visited teams regularly to review the work and monitor data quality. MEASURE DHS also assisted with field supervision. In addition, UNFPA/Tajikistan representatives visited teams to monitor data collection and to observe the height and weight measurements of women and children under age 5.
Data Processing

Data Editing

The processing of the TjDHS results began shortly after fieldwork commenced. Completed questionnaires were returned regularly from the field to SA headquarters in Dushanbe, where they were entered and edited by data processing personnel specially trained for this task. The data processing personnel included a supervisor, a questionnaire administrator (who ensured that the expected number of questionnaires from all clusters was received), several office editors, 11 data entry operators, and a secondary editor. The concurrent processing of the data was an advantage because the senior DHS technical staff were able to advise field teams of problems detected during the data entry. In particular, tables were generated to check various data quality parameters, and the results were used to provide specific feedback to the teams to improve performance. The data entry and editing phase of the survey was completed in November 2012.
Data Appraisal

Estimates of Sampling Error

The estimates from a sample survey are affected by two types of errors: (1) non-sampling errors and (2) sampling errors. Non-sampling errors are the results from 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 2012 Tajikistan Demographic and Health Survey (TjDHS 2012) 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 TjDHS 2012 is only one of many samples that could have been selected from the same population, using the same design and identical 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 among 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 TjDHS 2012 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 TjDHS 2012 was a SAS program. This program uses the Taylor linearization method for 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.

The Taylor linearization method treats any percentage or average as a ratio estimate, r = y/x, where y represents the total sample value for variable y, and x represents the total number of cases in the group or subgroup under consideration.

Refer to Appendix B in the final report (Tajikistan Demographic and Health Survey 2012) for details of estimates of sampling errors.

Other forms of Data Appraisal

The following data quality tables are produced:
- Household age distribution
- Age distribution of eligible and interviewed women
- Completeness of reporting
- Births by calendar years
- Reporting of age at death in days
- Reporting of age at death in months
- Nutritional status of children based on the NCHS/CDC/WHO International Reference Population

See the tables in Appendix C of the final report (Tajikistan Demographic and Health Survey 2012).
# Related Materials

## Questionnaires

### Demographic and Health Survey 2012, Household Questionnaire

- **Title**: Demographic and Health Survey 2012, Household Questionnaire
- **Author(s)**: Statistical Agency Ministry of Health
- **Country**: Tajikistan
- **Language**: English
- **Filename**: Tajikistan_2012_DHS_household_questionnaire.pdf

### Demographic and Health Survey 2012, Woman's Questionnaire

- **Title**: Demographic and Health Survey 2012, Woman's Questionnaire
- **Author(s)**: Statistical Agency Ministry of Health
- **Country**: Tajikistan
- **Language**: English
- **Filename**: Tajikistan_2012_DHS_woman_questionnaire.pdf

## Reports

### Tajikistan Demographic and Health Survey 2012

- **Title**: Tajikistan Demographic and Health Survey 2012
- **Author(s)**: Statistical Agency under the President of the Republic of Tajikistan, Dushanbe, Tajikistan; Ministry of Health, Dushanbe, Tajikistan; MEASURE DHS, ICF International, Calverton, Maryland, USA
- **Date**: 2013-11-01
- **Country**: Tajikistan
- **Language**: English
- **Description**: This report summarizes the findings of the 2012 Tajikistan Demographic and Health Surveys (TjDHS) conducted by the Statistical Agency under the President of the Republic of Tajikistan in collaboration with the Ministry of Health. Support for the 2012 TjDHS was provided by the United States Agency for International Development (USAID) as part of the MEASURE DHS project. Additional funding was received for the 2012 TjDHS from the United Nations Population Fund (UNFPA).
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<td>Fertility, Family Planning, and Abortion: Results from the 2012 TjDHS</td>
<td>MEASURE DHS</td>
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<td>Tajikistan</td>
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Tajik Households: Results from the 2012 TjDHS

Title: Tajik Households: Results from the 2012 TjDHS  
Author(s): MEASURE DHS  
Date: 2013-11-01  
Country: Tajikistan  
Language: English  

Nutrition: Results from the 2012 TjDHS

Title: Nutrition: Results from the 2012 TjDHS  
Author(s): MEASURE DHS  
Date: 2013-11-01  
Country: Tajikistan  
Language: English  

Maternal and Child Health: Results from the 2012 TjDHS

Title: Maternal and Child Health: Results from the 2012 TjDHS  
Author(s): MEASURE DHS  
Date: 2013-11-01  
Country: Tajikistan  
Language: English  

Other materials

Reading and Understanding DHS Tables

Title: Reading and Understanding DHS Tables  
Author(s): MEASURE DHS  
Date: 2013-11-01  
Country: Tajikistan  
Language: English  