

Cambodia - Cambodia Demographic Health Survey in 2005

National Institute of Statistics, National Institute of Public Health, ORC Macro

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Overview

Identification

ID NUMBER
KHM-NIS-CDHS-2005-v01

Version

VERSION DESCRIPTION
Version 1.1 - Edited data for internal use only.

PRODUCTION DATE
2006-12

Overview

ABSTRACT

The 2005 Cambodia Demographic and Health Survey (CDHS) is the second nationally representative survey conducted in Cambodia on population and health issues. It uses the same methodology as its predecessor, the 2000 Cambodia Demographic and Health Survey, allowing policymakers to use the two surveys to assess trends over time. The primary objective of the CDHS is to provide the Ministry of Health, Ministry of Planning (MOP), and other relevant institutions and users with updated and reliable data on infant and child mortality, fertility preferences, family planning behavior, maternal mortality, utilization of maternal and child health services, health expenditures, women's status, domestic violence, and knowledge and behavior regarding HIV/AIDS and other sexually transmitted infections. This information contributes to policy decisions, planning, monitoring, and program evaluation for the development of Cambodia at both national- and local-government levels. The long-term objectives of the survey are to technically strengthen the capacity of the National Institute of Public Health (NIPH), Ministry of Health, and the National Institute of Statistics (NIS) of MOP for planning, conducting, and analyzing the results of further surveys.

KIND OF DATA
Sample survey data [ssd]

UNITS OF ANALYSIS
Household, individual (including women and men between the ages of 15 and 49 and children aged 5 and below)

Scope

NOTES
CDHS 2005 covers 20 main areas of social concern:

1. Household Population and Housing Characteristics
2. Utilization of Health Services for Accident, Illness or Injury
3. Respondent Characteristics
4. Fertility
5. Practice of Abortion
6. Family Planning

7. Other Proximate Determinants of Fertility
8. Fertility Preferences
9. Adult and Maternal Mortality
10. Infant and Child Mortality
11. Causes of Death Among Infants and Young Children
12. Maternal Health
13. Child Health
14. Nutrition of Children and Women
15. Malaria
16. HIV/AIDS-Related Knowledge, Attitudes and Behavior
17. HIV Prevalence and Associated Factors
18. Children at Risk
19. Women's Status and Empowerment
20. Domestic Violence

TOPICS

Topic	Vocabulary	URI
health policy [8.6]	CESSDA	http://www.nesstar.org/rdf/common
nutrition [8.7]	CESSDA	http://www.nesstar.org/rdf/common
accidents and injuries [8.1]	CESSDA	http://www.nesstar.org/rdf/common
childbearing, family planning and abortion [8.2]	CESSDA	http://www.nesstar.org/rdf/common
fertility [14.2]	CESSDA	http://www.nesstar.org/rdf/common
migration [14.3]	CESSDA	http://www.nesstar.org/rdf/common
morbidity and mortality [14.4]	CESSDA	http://www.nesstar.org/rdf/common

Coverage

GEOGRAPHIC COVERAGE

The sample was designed to provide estimates of the indicators at the national level, for urban and rural areas, and for 19 domains: 1.Banteay Mean Chey, 2.Kampong Cham, 3.Kampong Chhnang, 4.Kampong Speu, 5.Kampong Thom, 6.Kandal, 7.Pnom Penh, 8.Prey Veng, 9.Pursat, 10.Svay Rieng, 11.Takeo, 12.Kratie, 13.Siem Reap, 14.Otdar Mean Chey, 15. Battambang and Krong Pailin, 16. Kampot and Krong Kep, 17.Krong Preah Sihanouk and Kaoh Kong, 18.Preah Vihear and Steng Treng; and 19.Mondol Kiri and Rattanak Kiri.

GEOGRAPHIC UNIT

Village level (by commune, district and province)

UNIVERSE

The survey covered the whole resident population (regular household) , with the exception of homeless in Cambodia

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
National Institute of Statistics	Ministry of Planning
National Institute of Public Health	Ministry of Health
ORC Macro	Calverton, Maryland, USA

OTHER PRODUCER(S)

Name	Affiliation	Role
National Institute of Public Health	MOH	Technical assistance in field work and data processing in office.
World Bank		Technical and financial assistance
World Health Organization		Financial assistance
Deutsche Gesellschaft für Technische Zusammenarbeit		Financial assistance
ORC Macro		Technical assistance

FUNDING

Name	Abbreviation	Role
US Agency for International Development	USAID	Technical support
United Nations Population Fund	UNFPA	Financial support
United Nations Children's Fund	UNICEF	Financial support
Asian Development Bank	ADB	Financial support
Cambodia Development Council	CDC	Financial support
DFID	CDC	Financial support

OTHER ACKNOWLEDGEMENTS

Name	Affiliation	Role
Darith Hor	NIS/MoP	SURVEY COORDINATORS
Sovanratnak Sao	DGH/MoH	SURVEY COORDINATORS
Vonthanak Saphonn	NIPH/MoH	TECHNICAL COMMITTEE
Kia Reinis	ORC Macro	Survey Specialist
Keith Purvis	ORC Macro	Senior Data Processing Specialist
Kaye Mitchell	ORC Macro	Sampling Specialist
Bernard Barrère	ORC Macro	Coordinator
John Chang	ORC Macro	Analysis and preparation of CDHS report
Sidney Moore	ORC Macro	Analysis and preparation of CDHS report
Andrew Inglis	ORC Macro	Analysis and preparation of CDHS report
John Chang	ORC Macro	Analysis and preparation of CDHS report
Erica Nybro	ORC Macro	Analysis and preparation of CDHS report
Monica Kothari	ORC Macro	Analysis and preparation of CDHS report

Sri Poedjastoeti	ORC Macro	Analysis and preparation of CDHS report
Joy Fishel	ORC Macro	Analysis and preparation of CDHS report
Kiersten Johnson	ORC Macro	Analysis and preparation of CDHS report
Noah Bartlett	ORC Macro	Analysis and preparation of CDHS report
Rathavuth Hong	ORC Macro	Analysis and preparation of CDHS report
Ruilin Ren	ORC Macro	Sampling Specialist

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Nguon Sovann	NgS	NIS	Archivist
Fe Vida Dy-Liacco		ADP Asia	Reviewer
Shine Cagas	MATC	ADP Asia	Reviewer
Nguon Sovann	NgS	NIS	Archivist
Khieu Khemarin	Khr	NIS	Archivist
Shine Cagas	MATC	ADP Asia	Reviewer
Saint Lundy	LD	NIS	Archivist

DATE OF METADATA PRODUCTION
2009-09-28

DDI DOCUMENT VERSION

Version 1.3 (July 2010). This version contains edits on version 1.2 of the DDI document.

Version 1.2 (February 2010). This version contains edits on version 1.1 of the DDI document.

Version 1.1 (October 2009). This version contains edits on the original DDI document.

DDI DOCUMENT ID

DDI-KHM-NIS-CDHS-2005-v013

Sampling

Sampling Procedure

The 2005 CDHS sample is a stratified sample selected in two stages. Stratification is achieved by separating every study domain into urban and rural areas. Areas are defined as urban or rural based on the classification in the 1998 GPC, provided by NIS. Therefore the 19 domains are stratified into 38 sampling strata in total. Samples are selected independently in every stratum, by a two-stage selection. This means that 38 independent samples were selected, one from each sampling stratum. Implicit stratifications were achieved at each of the lower geographical or administrative levels by sorting the sampling frame according to the geographical/administrative order and by using a probability proportional to the size selection in the first stage of sampling. The explicit and implicit stratifications together guarantee a better scattering of the sampled points. In the first stage of selection, 557 villages were selected with a probability proportional to the village size. The village size is the number of households in the village. After this selection and before the data collection, an updating operation was conducted over all of the 557 selected villages. The updating operation consisted of visits to every selected village. During the visits, records were made of every structure found on the ground; structures were identified by type (residential or not); number of households in each residential structure were identified; location map and a sketch map were drawn showing the boundaries of the village and the location of each structure. This important operation guaranteed the quality of the fieldwork and prevented nonsampling errors. A household list was set up for each selected village. The resulting lists of households served as the sampling frame for the selection of households in the second stage. Some of the selected villages were big. To minimize the task of household listing, villages with more than 300 households were segmented. A segment corresponds to an enumeration area (EA) that was created for the GPC 1998. Size and boundaries were well-defined and maps were available. Among segmented villages, only one EA was selected from the village with a selection probability proportional to the EA size. Household listing was conducted only in the selected EA. Therefore, a CDHS cluster is either a village or an EA. Detailed information on the sampling methodology is available in Appendix A to the Survey Report.

In the second stage of selection, a fixed number of 24 households were selected in every urban cluster, and 28 households were selected in every rural cluster. They were selected by an equal probability systematic sampling. The decision on number of households selected per cluster is a tradeoff between fieldwork efficiency and precision. All women ages 15-49 in the selected households were eligible for the interview. The advantages of this two-stage selection procedure are: 1. It is simple to implement and reduces possible nonsampling errors. 2. It is easy to locate the selected households, reducing nonsampling errors and nonresponse. 3. The interviewers interview only the households in the preselected dwellings. No allowance for replacement of dwellings prevents survey bias.

Deviations from Sample Design

Creation of the 2005 CDHS sample was based on the objective of collecting a nationally representative sample of completed interviews with women and men between the ages of 15 and 49. To achieve a balance between the ability to provide estimates for all 24 provinces in the country and limiting the sample size, 19 sampling domains were defined, 14 of which correspond to individual

provinces and 5 of which correspond to grouped provinces.

- Fourteen individual provinces: Banteay Mean Chey, Kampong Cham, Kampong Chhnang, Kampong Speu, Kampong Thom, Kandal, Kratie, Phnom Penh, Prey Veng, Pursat, Siem Reap, Svay Rieng, Takeo, and Otdar Mean Chey;
- Five groups of provinces: Battambang and Krong Pailin, Kampot and Krong Kep, Krong Preah Sihanouk and Kaoh Kong, Preah Vihear and Steung Treng, Mondol Kiri, and Rattanak Kiri.

The sample of households was allocated to the sampling domains in such a way that estimates of indicators can be produced with known precision for each of the 19 sampling domains, for all of Cambodia combined, and separately for urban and rural areas of the country.

The sampling frame used for 2005 CDHS is the complete list of all villages enumerated in the 1998 Cambodia General Population Census (GPC) plus 166 villages which were not enumerated during the 1998 GPC, provided by the National Institute of Statistics (NIS). It includes the entire country and consists of 13,505 villages. The GPC also created maps that delimited the boundaries of every village. Of the total villages, 1,312 villages are designated as urban and 12,193 villages are designated as rural, with an average household size of 161 households per village. The survey is based on a stratified sample selected in two stages. Stratification was achieved by separating every reporting domain into urban and rural areas. Thus the 19 domains were stratified into a total of 38 sampling strata. Samples were selected independently in every stratum, by a two

stage selection. Implicit stratifications were achieved at each of the lower geographical or administrative levels by sorting the sampling frame according to the geographical/administrative order and by using a probability proportional to size selection at the first stage of selection.

(Please see the report of external resources)

Response Rate

Response rate:

Households: 98 per cent

Women ages 15-49: 98 per cent

Men ages 15-49: 93 per cent

See Table 1.1 of Section 1.8 (Sample Coverage of external resources) of the Report for details.

Weighting

Several sets of weight are calculated for CDHS 2005 in order to satisfy different users of the dataset:

Household weights: the inverse of the probability of selection, adjusted for nonresponse and normalized at the national level to make the number of weighted cases equal to the number of unweighted cases for all household indicators based on the whole national sample. The resulting weights are called standard weights. Variable hv005 in the household data files (RECH0 - RECHML) is the household weight.

Weights for Women and men ages 15-49: women/men individual standard weights were calculated based on the household standard weights. Similarly, the women/men weights were adjusted for non-response and normalization. The reason for normalization is the same as for the normalization of the household weights. In the women data files (REC01 - REC99), the

weight variable is v005. In the men data files (MREC01 - MREC91), the weight variable is mv005. In the household data files (RECH0 - RECHML), the men weight variable is hv028.

Weights for domestic violence module: Weights were calculated in the same manner and the women and men individual weights. The weight was adjusted for the selection of only one woman in the household for the module and is thus related to the number of eligible women in the household.

HIV weights: Due to budgetary considerations, HIV samples which include both men and women were taken from the men's subsample and a special weight was given to this individuals for the calculaton of HIV prevalence. The women's and men's indiviual weights were calculated from the household standard weights for the men's subsample and standardized. Variable ha69 is the HIV weight in data file RECH5.

Details of the weighting procedure are provided in Appendix A (A.7 Weighting and The Representativeness) of the CDHS 2005 Final Report.

Questionnaires

Overview

There are three types of questionnaires used in the CDHS: the Household Questionnaire, the Individual Woman's Questionnaire, and the Individual Man's Questionnaire.

The households that have been scientifically selected to be included in the CDHS sample were visited and interviewed using a Household Questionnaire. The Household Questionnaire consisted of a cover sheet to identify the household and a form on which all members of the household and visitors were listed. Data collected about each household member were name, sex, age, education, and survival of parents for children under age 18 years, etc. The Household Questionnaire was used to collect information on housing characteristics such as type of water, sanitation facilities, quality of flooring, and ownership of durable goods.

The Household Questionnaire permitted the interviewer to identify women and men who were eligible for the Individual Questionnaire. Women ages 15-49 years in every selected household who are members of the household (those that usually live in the household) and visitors (those who do not usually live in the household but who slept there the previous night) were eligible to be interviewed with the individual Woman's Questionnaire.

After all of the eligible women in a household have been identified, female interviewers used the Woman's Questionnaire to interview the women. The Woman's Questionnaire collected information on the following topics:

- socio-demographic characteristics
- reproduction
- birth spacing
- maternal health care and breastfeeding
- immunization and health of children
- cause of death of children
- marriage and sexual activity
- fertility preferences
- characteristics of the husband and employment activity of the woman
- HIV/AIDS and other sexually transmitted infections
- maternal mortality
- women's status
- household relations

In one-half of the households, men were identified as eligible for individual interview, and the male interviewer of each team used the Man's Questionnaire to interview the eligible men. Team leaders informed their teams which households in the sample have been selected for including interviews with men. The Man's Questionnaire collected information on the following topics:

- socio-demographic characteristics
- reproduction
- birth spacing
- marriage and sexual activity
- HIV/AIDS and other sexually transmitted infections

Biomarker data collection were conducted in the same one-half of the households which were selected to include men for interview. The biomarker data collection included: measuring the height and weight of women and children (under age 6 years), anemia testing of women and children, and drawing blood samples from women and men for laboratory testing of HIV. Biomarker data collection were recorded in the Household Questionnaire.

Data Collection

Data Collection Dates

Start	End	Cycle
2005-09-09	2006-03-07	N/A

Data Collection Mode

Face-to-face [f2f]

Data Collection Notes

Training were conducted to form 19 field teams to be responsible for data collection in one of the 19 survey domains (comprised of the 24 provinces). Field teams were each composed of 6 people: team leader, field editor, three female interviewers, and one male interviewer.

The field teams were subjected to 6 weeks of training which included:

- 1 week on the Household Questionnaire
- 2 weeks on 13 sections of the Woman Questionnaire, review of the Household Questionnaire, including the selection of women for the Household Relations Module, Consent Statements for blood collection, and conversion of ages and dates of birth between the Khmer and Gregorian calendar
- 1 week on the Man Questionnaire, measuring height and weight of women and children, sample implementation and household selection, collection of Geographic Positioning System data, testing of household salt for iodine, organization of documents and materials for return to the head office
- 1 week on collection of blood samples (all interviewers wer designated to collect blood samples in the field)
- 1 week of full field practice

A total of 122 field personnel attended the 6 weeks training. The first 3 weeks were also attended by data entry staff.

The progression of fieldwork by geographic location had to take into account weather conditions during rainy season. A fieldwork supervision plan was created for the six CDHS survey coordinators from NIS and NIPH and ORC Macro to conduct regular field supervision visits. Supervision visits were conducted throughout the six months of data collection and included the retrieval of questionnaires and blood samples from the field. In addition, a quality control program was run by the data processing team to detect key data collections errors for each team. Based on these data checks, regular feedback was given to each team based on their specific performance.

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Data Collectors

Name	Abbreviation	Affiliation
National Institute of Statistics	NIS	Ministry of Planning
National Institute of Public Health	NIPH	Ministry of Health

Supervision

Supervision of Interviewers

The team supervisor was tasked to:

- Oversee the work of the team.
- Assign households to interviewers.
- Help interviewers locate households.
- Spot-check some of the addresses selected for interviewing to be sure that you interviewed the correct households and the correct women and men.
- Review all non-interviews.
- Observe some of your interviews to ensure that you are asking the questions in the right manner and recording the answers correctly.
- Handle funds and manage equipment.
- Supervise anthropometric measurement, anemia testing, and blood sample collection.
- Meet with you on a daily basis to discuss performance and give out future work assignments.
- Help you resolve any problems that you might have with finding the assigned households, understanding the questionnaire, or dealing with difficult respondents.

The field editor was tasked to:

- Oversee the work of the team.
- Assign households to interviewers.
- Help interviewers locate households.
- Review all non-interviews.
- Review all questionnaires before the team leaves the cluster.
- Review completed questionnaires with interviewers and observe interviews.

Full details of the responsibilities of the Supervisors and Field Editors are discussed in the Interviewer's Manual.

Data Processing

Data Editing

Data editing was done in the following data processing stages:

- a. Office editing and coding - minimal since CSPro has been designed to be an intelligent data entry program
- b. Data entry
- c. Completeness of data file
- d. Verification of Data - prior to this stage, data are again entered and tagged as V to indicate that the dataset is a verification data
- e. Secondary editing

Other Processing

The data processing activities of the survey involved manual and automatic processes that had a direct impact on the quality of the data.

The data entry for the DHS survey was carried out using the software package CSPro. The DHS questionnaires were entered by cluster, with each cluster being assigned to one data entry operator. The data for each cluster were entered into a separate data file for that cluster to protect against a major loss of data due to hardware or software failure. Below is a list of the main processes involved in data processing:

1. Reception and verification of questionnaires
2. Office editing and coding of open-ended questions
3. Data entry
4. Secondary editing

Data Appraisal

Estimates of Sampling Error

The computer software used to calculate sampling errors for the 2005 CDHS is a Macro SAS procedure. This procedure used 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. ISSA also computes the design effect (DEFT) for each estimate.

Sampling errors for the 2005 CDHS are calculated for selected variables considered to be of primary interest for woman's survey and for man's surveys, respectively for the country as a whole, for urban and rural areas, and for each of the 19 study domains. Sampling errors along with other statistics and the DEFT are presented in Tables B.1 to B.23 of Appendix B of the CDHS 2005 Final Report.

Other forms of Data Appraisal

Appendix C of the CDHS 2005 final report contains all data quality tables generation for the dataset. These tables include

- Table C.1 Household age distribution
- Table C.2.1 Age distribution of eligible and interviewed women
- Table C.2.2 Age distribution of eligible and interviewed men
- Table C.3 Completeness of reporting
- Table C.4 Births by calendar year
- Table C.5 Reporting of age at death in days
- Table C.6 Reporting of age at death in months