

# Philippines - Census of Population and Housing 2010

**National Statistics Office**

Report generated on: February 16, 2023

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## Overview

### Identification

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ID NUMBER  
PHL-NSO-CPH-2010-v01

### Version

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VERSION DESCRIPTION  
Version 1.1: Edited data, for public distribution.

PRODUCTION DATE  
2013-01

### Overview

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#### ABSTRACT

Census of Population and Housing (CPH) refers to the entire process of collecting, compiling, evaluating, analyzing, publishing, and disseminating data about the population and the living quarters in a country. It entails the listing and recording of the characteristics of each individual and each living quarter as of a specified time and within a specified territory. In other words, the CPH offers a “snapshot” of the entire population on a specific date, that is, how many people reside within the national borders, who they are, and where they live during such specified date. Also, included are the characteristics of the housing units where they reside.

The 2010 CPH is designed to take an inventory of the total population and housing units in the Philippines and collect information about their characteristics. The census of population is the source of information on the size and distribution of the population, as well as their demographic, social, economic, and cultural characteristics. The census of housing, on the other hand, provides information on the stock of housing units and their structural characteristics and facilities which have bearing on the maintenance of privacy and health, and the development of normal family living conditions. These information are vital for making rational plans and programs for local and national development.

Specifically, the 2010 CPH aims to:

- obtain comprehensive data on the size, composition, and distribution of the population of the Philippines;
- gather data on birth registration, literacy, school attendance, place of school, highest grade/year completed, residence 5 years ago, overseas worker, usual occupation, kind of business or industry, class of worker, place of work, fertility, religion, citizenship, ethnic group, disability, and functional difficulty, and determine their geographic distribution;
- take stock of the housing units existing in the country and to get information about their geographic location, structural characteristics, and facilities, among others;
- obtain information on the characteristics of the barangay, which will be used as basis for urban-rural classification; and
- serve as sampling frame for use in household-based surveys.

Data collected in this census were compiled, evaluated, analyzed, published, and disseminated for the use of government, business, industry, social scientists, other research and academic institutions, and the general public. Among the important uses of census data are the following:

In government:

- redistricting and apportionment of congressional seats;
- allocation of resources and revenues;

- creation of political and administrative units;
- formulation of policies concerning population and housing; and
- formulation of programs relative to the delivery of basic services for health, education, housing, and others

In business and industry:

- determination of sites for establishing businesses;
- determination of consumer demands for various goods and services; and
- determination of supply of labor for the production of goods and services

In research and academic institutions:

- conduct of researches on population and other disciplines; and
- study of population growth and distribution as basis in preparing projections

#### KIND OF DATA

Census/enumeration data [cen]

#### UNITS OF ANALYSIS

household questionnaire: individuals (household members), households, housing units

institutional questionnaire: individuals (institutional population), institutional living quarters

barangay questionnaire: barangay

## Scope

#### NOTES

- Individuals: relationship to household head (household population)/residence status (institutional population), sex, age, birth registration, marital status, religious affiliation, citizenship, ethnicity, disability, functional difficulty, residence 5 years ago, literacy, highest educational attainment, school attendance, place of school, overseas worker, usual occupation, kind of business or industry, class of worker, place of work, and fertility indicators
- Households: fuel for lighting, fuel for cooking, source of water supply for drinking, cooking, and laundry/bathing, tenure status of the housing unit, acquisition of the housing unit, source of financing of the housing unit, monthly rental of the housing unit, tenure status of the lot, usual manner of garbage disposal, kind of toilet facility, land ownership, language/dialect generally spoken at home, residence 5 years from now, presence of household conveniences/devices, and internet access
- Housing units: type of building, construction materials of roof and walls, state of repair of the building/house, year building/house was built, and floor area of the housing unit
- Institutional living quarters: type of institutional living quarter
- Barangay: facilities, characteristics, establishments, and travel information

#### TOPICS

Topic	Vocabulary	URI
censuses [14.1]	CESSDA	<a href="http://www.nesstar.org/rdf/common">http://www.nesstar.org/rdf/common</a>

## Coverage

## GEOGRAPHIC COVERAGE

National coverage

Regions

Provinces

Cities and Municipalities

Barangays

## UNIVERSE

Census-taking in the Philippines follows a de-jure concept wherein a person is counted in the usual place of residence or the place where the person usually resides. Information on the count of the population and living quarters were collected with 12:01 a.m. of May 1, 2010 as the census reference time and date.

The following individuals were enumerated:

- Those who were present at the time of visit and whose usual place of residence is the housing unit where the household lives.
- Those whose usual place of residence is the place where the household lives but are temporarily away at the time of the census.
- Boarders/lodgers of the household or employees of household-operated businesses who do not usually return/go to their respective homes weekly.
- Overseas workers and who have been away at the time of the census for not more than five years from the date of departure and are expected to be back within five years from the date of last departure.
- Filipino "balikbayans" with usual place of residence in a foreign country but have resided or are expected to reside in the Philippines for at least a year from their arrival.
- Citizens of foreign countries who have resided or are expected to reside in the Philippines for at least a year from their arrival, except members of diplomatic missions and non-Filipino members of international organizations.
- Persons temporarily staying with the household who have no usual place of residence or who are not certain to be enumerated elsewhere.

## Producers and Sponsors

## PRIMARY INVESTIGATOR(S)

Name	Affiliation
National Statistics Office	

## FUNDING

Name	Abbreviation	Role
Government of the Philippines	GOP	

## OTHER ACKNOWLEDGEMENTS

Name	Affiliation	Role
Technical Committee on Population and Housing	National Statistical Coordination Board	
Teachers, Principals, Supirentendents	Department of Education	

## Metadata Production

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## DATE OF METADATA PRODUCTION

2013-01-10

## DDI DOCUMENT VERSION

Version 1.1. This is the first documentation of the 2010 Census of Population and Housing.

## DDI DOCUMENT ID

DDI-PHL-NSO-CPH-2010-v01

# Sampling

## Sampling Procedure

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In the 2010 CPH, there are basically two types of questionnaires used for the enumeration of household members. These are CPH Form 2 or the Common Household Questionnaire and CPH Form 3 or the Sample Household Questionnaire. CPH Form 3 contains more questions than CPH Form 2.

The 2010 CPH was carried out through a combination of complete enumeration and sampling. For this census, systematic cluster sampling was adopted. This sampling method is designed in such a way that efficient and accurate estimates will be obtained at the city/municipality level.

The sampling rate or the proportion of households to be selected as samples depends on the size of the city/municipality where the Enumeration Area (EA) is located. For the cities/municipalities with estimated number of households of 500 and below, 100 percent sampling rate was used. While for those cities/municipalities with estimated number of households of 501 and above, a sampling rate of 20 percent was implemented.

In this sampling scheme, each city/municipality was treated as a domain. For city/municipality with 100 percent sampling rate, all households in all the EAs within this city/municipality were selected as samples. For those with a 20 percent sampling rate, systematic cluster sampling was adopted. That is, sample selection of one in five clusters with the first cluster selected at random. Thus in effect, the EAs belonging to the city/municipality with 20 percent sampling rate are divided into clusters of size 5. Random start is pre-determined for each EA.

If the sampling rate applied to a city/municipality is 100 percent, it means that all households in that municipality were administered with CPH Form 3. If it is 20 percent, it means that 20 percent of all households used CPH Form 3 while 80 percent used CPH Form 2.

The random start used by EA is a number from 1 to 5 which was used to select the cluster where the first sample households in an EA, and subsequently the other sample households, were included.

Clusters are formed by grouping together households that have been assigned consecutive serial numbers as they were listed in the Listing Booklet. For a 20 percent sampling rate, clusters were formed by grouping together five households.

# Questionnaires

## Overview

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### CPH Form 1 - Listing Booklet

This form is a booklet used to list the buildings, housing units, households, and the Institutional Living Quarters (ILQs) within an EA. This form also records other important information such as the name of household heads and name and type of institutions and their addresses, population totals, and counts of males and females.

### CPH Form 2 - Common Household Questionnaire

This is the basic census questionnaire, which was used to interview and record information about the common or nonsample households. This questionnaire gathered information on the following demographic and socio-economic characteristics of the population: relationship to household head, sex, date of birth, age, birth registration, marital status, religion, ethnicity, citizenship, disability, functional difficulty, highest grade/year completed, residence 5 years ago, and overseas worker. It also contains questions on the type of building/house, construction materials of the roof and outer walls, state of repair of the building/house, year the building/house was built, floor area of the housing unit, and tenure status of the lot.

### CPH Form 3 - Sample Household Questionnaire

This is the basic census questionnaire, which was used to interview and record information about the sample households. This questionnaire contains ALL questions asked in CPH Form 2 PLUS additional population questions: literacy, school attendance, place of school, usual occupation, kind of business or industry, class of worker, place of work, and some items on fertility. Moreover, there are additional questions on household characteristics: fuel for lighting and cooking, source of water supply for drinking and/or cooking and for laundry, and bathing, tenure status of the housing unit, acquisition of the housing unit, source of financing of the housing unit, monthly rental of the housing unit, tenure status of the lot, usual manner of garbage disposal, kind of toilet facility, and land ownership. It also asked questions on the language/dialect generally spoken at home, residence five years from now, and presence of household conveniences/devices, and access to internet.

### CPH Form 4 - Institutional Population Questionnaire

This questionnaire was used to record information about persons who were considered part of the institutional population. It contains questions on residence status, sex, age, date of birth, birth registration, marital status, religious affiliation, citizenship, ethnicity, disability, functional difficulty, and highest grade/year completed.

### CPH Form 5 - Barangay Schedule

This form was used to record the characteristics of each barangay, kinds of establishments and service facilities in the area or within some specified distance from the area, and travel information from town/city proper to the barangay.

# Data Collection

## Data Collection Dates

Start	End	Cycle
2010-05-17	2010-06-14	N/A

## Data Collection Mode

Face-to-face [f2f]

## Data Collection Notes

### PRETEST

The pretest for the 2010 CPH was generally aimed to test the effectiveness of the new operational procedures for data collection as well as to test the appropriateness and effectiveness of the designed questionnaires.

To ensure that these objectives are achieved, the pretest was conducted in order to:

1. To test the operational procedures for conducting the listing and mapping operation before collecting the detailed characteristics of the population and housing unit;
2. To test the appropriateness of the sequence of questions in collecting the data items;
3. To test the correctness and effectiveness of the questions to collect the following data items on population:
  - maternal mortality
  - information and communication technology and internet access
4. Determine problems, issues and concerns that may arise during the actual field operations.

The pretest was conducted in several barangays of San Pablo City, Laguna from August 3 to 5, 2009.

### PILOT CENSUS

In preparation for the actual 2010 CPH, a pilot census was conducted during the last quarter of 2009. A pilot census is a dry run of all the aspects of census operations such as on coordination, recruitment and training of personnel, mapping, field enumeration and supervision, and processing of questionnaires. It was conducted in selected areas a year before the actual census to simulate all the activities in an actual census. A set of criteria based on certain socio-economic and demographic characteristics was used in the selection of pilot areas. In general, the areas had a mixture of a typical urban and rural setting.

The pilot areas selected for 2010 CPH were:

1. Barangay Magallanes, Makati City
2. Kabayan, Benguet
3. Sierra Bullones, Bohol
4. Cagdianao, Dianagat Islands

The enumeration for pilot census was conducted from October 21 to November 17, 2009. The results of the pilot census helped the census planners in evaluating/assessing whether the objectives of the census could be satisfactorily met. It also helped identify and resolve operational problems prior to the actual census.

### FIELD OPERATIONS

The actual census-taking for 2010 CPH was conducted from May 17, 2010 to June 14, 2010, except in highly urbanized cities such as the cities in the NCR, and large provinces in CALABARZON and Central Luzon where the enumeration period extended beyond 23 days. About 68,146 public school teachers were employed for the census as enumerators, team supervisors, and census area supervisors. Their number was augmented by 19,579 hired personnel who were assigned to enumerate in large and congested areas where enumeration was expected to go beyond 23 days and thus cannot be handled by teachers who were expected to report for the school opening on June 14. An enumerator was assigned to



enumerate one enumeration area (EA), which has about 350 households. A ratio of one team supervisor to five enumerators was used during the census operations.

In order to prepare the 87,725 census personnel for enumeration work, four levels of training were conducted. The first level training for enumeration was participated in by personnel of NSO central office and officials of NSO regional and selected provincial offices, who, in turn acted as trainers in succeeding levels. The second level training was for NSO provincial and regional office officials and staff who served as trainers for the third and fourth level training. The third level training was participated in by public school teachers who were assigned as census area supervisors. The enumerators and team supervisors were trained during the fourth level training. A standard training program covering the concepts, definitions, procedures, as well as duties and responsibilities of enumerators and supervisors was used.

Census-taking involved going around the whole enumeration area to do the required census procedures, as follows:

1. **Courtesy Call.** As a matter of protocol, the census personnel made a courtesy call to the barangay chairperson. The enumerator informed the official that the census would be undertaken in his/her barangay and the enumerators would go around the entire area to ask questions from the residents.
2. **Mapping and Canvassing.** The enumerator went around the entire EA to familiarize himself with the place and checked the barangay or EA boundaries and landmarks, and reflected these on the barangay/EA map.
3. **Listing using CPH Form 1 or the Listing Booklet.** The enumerator listed buildings with living quarters, housing units, households and number of household members, and institutional living quarters, and number of persons staying in institutions. Structures which are occupied or used as living quarters by households, even though these are not intended for human habitation were also listed. During the listing, the names of the household heads and their addresses, and the names and addresses of institutions were recorded.
4. **Interview and Recording of Answers.** For every household or institution listed, the enumerator administered a questionnaire, that is, CPH Form 2 or Form 3 for a household and CPH Form 4 for an institution. The barangay chairperson or any official was also interviewed by the enumerator or his team supervisor using CPH Form 5 or Barangay Questionnaire.
5. **Plotting.** The enumerator plotted the building with its assigned serial number on the EA map. Standard cartographic symbols were used in plotting the buildings of the households and institutions.
6. **Posting of sticker.** The enumerator posted a sticker on the door, gate or any conspicuous part of the housing unit or institutional living quarter, to indicate that the household or institution has been listed and/or interviewed.

In addition to the count of the household population and institutional population, information about selected demographic and socio-economic characteristics of the population were collected using different census questionnaires. These questionnaires were reviewed for completeness and consistency of entries at various phases of the census operations. During data collection, the census supervisors scrutinized questionnaires for completeness and consistency of entries.

Progress monitoring reports were utilized to track the progress of census and field operations and to evaluate the completeness of census coverage in each EA while enumeration was still ongoing. The provincial, regional and central offices of NSO monitored the progress through the Progress Monitoring System (PMS). The PMS generated reports on number of households, institutions and persons enumerated based on the information sent by area supervisors through SMS (short messaging system or text messaging).

Review of accomplished questionnaires for completeness and consistency of entries was also carried out at the census headquarters where the census teams met weekly and at the provincial offices during manual processing. Machine processing, which includes scanning and interpretation, key-from-image data entry, completeness and consistency checking, and consolidation of data, were done at the various census processing centers (CPC) in the country. Data files were transmitted from the CPCs to the Central Office for the generation of census counts. Population counts by province, city, municipality and barangay as determined from the processed census questionnaires are official for all purposes as proclaimed by the President of the Philippines.

The 2010 CPH adopted innovations to make the census operations efficient.

1. **GPS technology for mapping.** For this census round, the use of GPS (Global Positioning System) was used for mapping selected barangays in five regions of Caraga, Bicol region, Cordillera, Ilocos region except Pangasinan, and in Eastern Visayas. This activity provided the enumerators with more accurate maps with exact boundary information. The use of the GPS technology will be continued by NSO as part of the rolling program for mapping activities.

2. SMS technology for Progress Monitoring. The NSO made use of the SMS technology in monitoring the progress of enumeration nationwide. Started in the 2007 census, the enhanced version of the Progress Monitoring System or PMS was adopted for the current census round. The Philippines is the first country in the Asia and Pacific to have adopted the SMS technology for progress monitoring.

3. Satellite images for validating census coverage. The Central Office downloaded satellite images and identified structures (buildings) in specific cities and municipalities. Counts of households were estimated based on identified structures. These estimates were used to validate the completeness of census coverage in these areas.

The NSO implemented strategies to enumerate areas which were hard to reach, remote, upland, with Indigenous Peoples (IP) communities, under military control or with peace and order problem, Chinese communities or exclusive villages with low response rate because of security or other reasons, and areas with boundary disputes. These strategies included the recruitment of enumerators who are from the area; assignment of IP teachers in IP areas; seeking the assistance of IP guides; coordination with the AFP and PNP for transport and escorts; coordination with local officials; and coordination with homeowners associations in exclusive villages, high-rise condominiums and Filipino-Chinese communities.

## Questionnaires

### CPH Form 1 - Listing Booklet

This form is a booklet used to list the buildings, housing units, households, and the Institutional Living Quarters (ILQs) within an EA. This form also records other important information such as the name of household heads and name and type of institutions and their addresses, population totals, and counts of males and females.

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### CPH Form 3 - Sample Household Questionnaire

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### CPH Form 4 - Institutional Population Questionnaire

This questionnaire was used to record information about persons who were considered part of the institutional population. It contains questions on residence status, sex, age, date of birth, birth registration, marital status, religious affiliation, citizenship, ethnicity, disability, functional difficulty, and highest grade/year completed.

### CPH Form 5 - Barangay Schedule

This form was used to record the characteristics of each barangay, kinds of establishments and service facilities in the area or within some specified distance from the area, and travel information from town/city proper to the barangay.

## Data Collectors

Name	Abbreviation	Affiliation
Enumerators	EN	DepEd and NSO
Team Supervisors	TS	DepEd and NSO

## Supervision

## I. SUPERVISION

The NSO Central and Field Office personnel directly supervised the conduct of enumeration. In the region, the Regional Director and his/her staff were responsible for field visits in their respective provinces. At the provincial level, the Provincial Statistics Officer and his/her staff were responsible for supervision in cities/municipalities and barangays in their respective jurisdiction.

Aside from the NSO personnel, hired personnel were also tapped to augment supervisory functions. In a city/municipality, close field supervision was the responsibility of the Census Area Supervisor assigned in the area. On the average, the Census Area Supervisor (CAS) was required to supervise seven Team Supervisor (TS). Aside from CAS, the Assistant Census Area Supervisor (ACAS) was also assigned to assist the CAS in checking for the completeness of the enumeration area. On the other hand, as a general rule, a TS was assigned to supervise five ENs. For a city/municipality with less than five enumerators (ENs), the CAS/ACAS shall act as the TS.

## II. PROGRESS MONITORING SYSTEM

The Progress Monitoring System (PMS) is designed to provide the required information for monitoring the progress of enumeration and for evaluating the completeness/quality of census results. Preparation of reports and documents comprising the PM operation started with the enumerators (ENs) through their accomplishment of CPH Form 10 (EN's Accomplishment/Progress Monitoring Report), which was based on the information from CPH Form 1 that were already consistently checked with CPH Forms 2 and 3. The accomplished CPH Forms 10 were submitted from EN to team supervisor (TS), then to Assistant Census Area Supervisor (ACAS). From ACAS, the data from CPH Form 10 were sent to the CO through Short Message Service (SMS) or text messaging. The CO compiled the PM text messages received for generation of PMS reports. These reports were used by PO and RO to monitor the progress of enumeration.

## III. RE-INTERVIEW AND SPOTCHECKING

NSO Central and Field Office Personnel were required to carry out re-interview of households and conduct spotchecking. CAS, ACAS, TS were likewise required to carry out re-interview and spotchecking. The CPH Form 12 - Re-interview/Spot-check Record was used in checking whether the interview was done properly and that the data gathered met the standards set by the office. The first page of CPH Form 12 consists of data items to be accomplished during re-interview while the second page consists observation checklist and evaluation based on entire observation.

The purpose of re-interview was to ensure that no household nor household member was missed on the enumeration. The households selected for re-interview were those with CPH Form 6 - Notice of Listing and in hidden structures or areas which are likely to have been missed. Using CPH Form 12, all household members were listed and the following data items were also asked: relationship to household head, sex, age, birth registration, and marital status. The information on accomplished CPH Forms 12 were compared against those of the EN's accomplished CPH Form 2 or 3. Any inconsistencies found by the supervisors were discussed with the concern EN for correction.

Through spot-checking, ENs were observed if they did the procedures on the following activities correctly:

- canvassing
- mapping
- listing
- interviewing
- closing of interview (reviewing completed questionnaire, thanking the respondent, posting of CPH Form 6)

## IV. WEEKLY MEETINGS OF ENUMERATORS AND SUPERVISORS

In order to ensure that the ENs performed their functions well, a weekly meeting with their supervisors was done to discuss problems encountered in the conduct of census and for the supervisors to review the accomplished questionnaires before submitting these questionnaires to the NSO Field Office.

# Data Processing

## Data Editing

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Data editing was done at the following stages:

- 1) Scrutiny of questionnaires by the Field Supervisors during data collection
- 2) Editing and verification during Manual Processing at the Provincial Offices
- 4) Geo-ID validation and data consistency checking during Machine Processing at the Census Processing Centers
- 5) Geo-ID validation, data consistency checking, and automated editing at the Central Office

## Other Processing

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All accomplished census forms underwent processing, which consists of manual and machine data processing.

Manual Processing at Provincial Offices involves:

- receipt and control of forms and maps;
- verification of geographic identification and completeness of forms and maps;
- review of entries for completeness, consistency, and acceptability of responses;
- coding of selected items; document preparation; and bundling/packaging of forms.

Machine Processing at Census Processing Centers involves:

- receipt and control of forms,
- scanning of forms and maps to provide digital copies (images),
- interpretation of OMR (Optical Mark Recognition) fields
- data entry of non-OMR fields (numeric entries)
- key verification
- geo-ID validation
- completeness checking
- computer editing of entries for completeness and consistency of data items within and between records
- preliminary tabulation of data for consistency checking

Further Processing at Central Office involves:

- certification pass (geo-ID validation, data consistency check, completeness check)
- machine editing and imputation
- tabulation for consistency checking
- generation of weights to the sample items
- generation of statistical tables and analysis

# Data Appraisal

## Other forms of Data Appraisal

### EVALUATION OF POPULATION COUNTS FROM THE 2010 CPH

Progress monitoring reports were utilized to track the progress of census field operations and to evaluate the completeness of census coverage in each enumeration area while the enumeration was still ongoing. The provincial, regional, and central offices of NSO monitored the progress through the Progress Monitoring System (PMS). It used as inputs the Enumerator's Accomplishment/PM Reports (CPH Form 10). The evaluation continued after the enumeration period using counts from processed questionnaires from the twelve Census Processing Centers 2010 (CPC 2010) across the country.

#### Evaluation of Counts at the NSO Field Offices

The Regional Office (RO) was responsible for the evaluation of the 2010 CPH counts for the region while the Provincial Office (PO) was responsible for the province. The computerized reporting through the PMS facilitated the evaluation at the PO and the RO. The PMS generated various reports which include the Enumeration Area (EA) Progress Enumeration Report (PMS Report 3). This report shows the counts of population of males and females and number of households by EA and the status of enumeration in each EA or barangay based on the information from CPH Form 10. Another PMS report generated at the PO is the Barangay Coverage Report (PMS Report 4). This report was used to evaluate the acceptability of the reported counts for the following indicators, computed up to the barangay level:

- a. Household and population counts
- b. Demographic indicators
  - Annual population growth rate
  - Percent change in the number of households
  - Average household size
- c. Difference between 2010 and 2007 institutional population
- d. Number and percent of EAs completed

The field offices investigated areas with demographically implausible growth rates and questionable values in any of the cited indicators.

#### Evaluation at the Central Office

Parallel monitoring and evaluation were done at the Central Office particularly at the Household Statistics Department (HSD). The information used for the evaluation by HSD were:

- a. 2010 CPH counts up to the barangay level generated through PMS;
- b. 2010 CPH counts up to the barangay level from the Enumeration Area Reference File (EARF) filled up with population counts by the Provincial Offices after matching and completeness checking of census questionnaires during the manual processing;
- c. 2010 CPH counts up to the barangay level generated by CPCs;
- d. average annual population growth rates for the provinces and cities/municipalities for the periods 1990-1995, 1995-2000, 2000-2007, 1990-2000, 1995-2007, 2000-2010 and for all geographic levels, that is, including barangay level, for the period 2007-2010;
- e. sex ratio for the provinces and cities/municipalities for the year 2007, and for all geographic levels for the year 2010;
- f. average household size for all geographic levels for the years 2000, 2007, and 2010;
- g. percent change of population between census years 2000 and 2007, 2000 and 2010, and 2007 and 2010 for all geographic levels; and
- h. difference in the total population, household population, and number of households between census years 2000 and 2007, 2000 and 2010, and 2007 and 2010 for all geographic levels.

Below are other sources of information used as inputs for the extrapolation of population for 2010. Results of extrapolation were compared with the population counts from 2010 CPH.

- a. vital registration data on annual births and deaths and estimates of levels of registration based on 2000 CPH and POPCEN 2007, for the provinces and cities/municipalities;
- b. number of housing units based on satellite images, for selected provinces and cities/municipalities; and
- c. administrative records on membership of households in the community water or electric cooperatives, for selected provinces and cities/municipalities.

Acceptable or demographically plausible values for the abovementioned indicators, as well as the expected direction of their changes over time are specified in the Field Operations Manual of 2010 CPH (pages 133-134). The demographic indicators for each geographic area were evaluated using the procedures also contained in the Field Operations Manual. Explanations were sought if a particular indicator fell outside the acceptable range of values, or if the observed change in the indicator deviates from the expected demographic trend. The RO submitted to the CO the explanations of the POs in his/her region for areas with census results that were considered questionable by the CO based on its independent evaluation.

A more thorough procedure of evaluation was employed for barangays suspected of having census under-coverage or over-coverage. Careful scrutiny of questionnaires for these barangays was carried out following the procedures discussed in pages 135-136 of the Field Operations Manual. In extreme cases wherein the result of the scrutiny of questionnaires confirmed that under-enumeration or padding or fabrication of population was committed, field verification became necessary. Teams composed of Statisticians from the CO, the PSOs and Statisticians of concerned provinces conducted field verification in areas suspected of having been under-enumerated or over-enumerated.