Census and Demography Division
(DCD)

2005 GENERAL CENSUS METHODOLOGY

DOCUMENT COLLECTION – 2009 UPDATE NUMBER 86

NATIONAL ADMINISTRATIVE DEPARTMENT OF STATISTICS

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PRESENTATION

The National Administrative Department of Statistics, DANE as the coordinator entity of the National Statistical System (NSS), within the framework of the "Statistical Planning and Harmonization" project, works to strengthen and consolidate the NSS. This is carried out through several processes such as: the production of strategic statistics; the generation, adaptation, adoption and diffusion of standards; the consolidation and harmonization of statistical data, and the connection of instruments, stakeholders, initiatives and products. These actions are carried out in order to improve the quality of strategic statistic data, and its availability and accessibility to respond to users demand.

In this context DANE, aware of the need and obligation to provide better products for its users, developed a standard presentation guide for methodologies. The aim of this guide is to contribute to the visualization and understanding of the statistical processes, allowing further analysis, control, replicability, and evaluation. The documents are presented in a standard and comprehensive manner, thus facilitating the understanding of the main technical characteristics involved in the processes and sub-processes of each research, making them available for both specialized users and the general public.

These series of guides promote the transparency and credibility of the technical expertise of DANE, for a better understanding and use of statistical information. This information is produced according to the principles of coherence, comparability, integrality and quality of the statistics.

INTRODUCTION

The National Administrative Department of Statistics (DANE), as the governing body with respect to the strategic information policies used for decision making in all areas of society, is the official entity responsible for the design, implementation and carrying out of statistical research methodologies that assure that their production and use are done with the highest quality, coverage and timeliness standards in order to satisfy the needs of the final users.

Due to the need the country had with respect to having access to updated socio-demographic information reflecting the national reality, especially in the smaller areas, the decision was made to carry out a population and housing census, so as to generate diagnostic information relating to all the territorial entities enabling their characterization and the ability to go into greater detail in some specific topics.

The methodological proposal for the 2005 General Census aimed at satisfying the country's needs by means of a measuring system that would provide accurate, timely, reliable and integrated information with respect to the volume and composition of the population, households and dwellings at the national level. Also, it was necessary to update the basic census frameworks of the economic establishments and the agricultural units associated with occupied dwellings with persons in place.

The 2005 General Census used the LAW or de JURE criterion; by means of which all of the country's usual residents[1] were counted. The collection of the census information was carried out over an extended period of time with partial immobilization, using as strategies the grouping of municipalities by clusters and an awareness-raising through which a socio-community communication and dissemination process was deployed.

Within the basic processes of the census, progresses were made taking advantage of information technology, especially with respect to the data collection and statistical dissemination processes. For the first time, the collection process used a hand-held computer known as Data Capture Device (DMC) for the capture of data, which was

[1] Usual residents: Refers to the persons who usually reside in a place, and have been there for some time or intend to stay there for some time.

equipped with the census cartography and a Global Positioning System (GPS). On the other hand, for the dissemination process, a data repository known as the Colombian Data Infrastructure (CDI) and a Query system called REDATAM was designed, which facilitated the access to and dissemination of the census data.

For the census information to be used in an efficient and effective way and in order for it to be used as a source to redesign a statistical operation as complex as the Census of Population and Housing, its methodological aspects were required to be properly documented.

In this sense, this document presents in the first chapter, the antecedents of the Population and Housing censuses, analyzing the methodological differences from the 1973 census to the 2005 census. The second chapter contains the conceptual and statistical frameworks of the 2005 General Census, going into greater detail with respect to the reference framework, the census' basic components and the sample design.

The third chapter shows the processes pertaining to awareness-raising, staff management, collection, transmission and data processing that were used during the execution of the census. Chapters four and five contain the analysis of the main results generated from the census as well as its dissemination plan and the different implemented systems the users can use to have access to the census information. Finally, a list containing the pertinent census documentation, the timetable, the glossary and the annexes supporting this document are made available.

1. BACKGROUND

During the 20th century, and throughout the current century, Colombia has conducted 11 national population censuses. Up to 1973, national censuses were planned and conducted using the "*de facto*" criterion, i.e., enumeration of individuals in the site where they were at the time of the census. As of 1985, the decision was made to use the "*de jure*" criterion, which implied the enumeration of individuals according to the usual residence criterion.

The socio-political situation as well as the problems dealing with administration, planning, organization and the technical approaches have been constant in the determination of the non-coverage, and in some instances, of the poor quality of the census. For instance, the 1918 census contained a high degree of population overestimation; and in the 1928 census, the results were not approved by the Congress; the 1985 census was questioned arguing severe under-enumeration or low coverage issues, and even a lack of quality. On the other hand, there have been other censuses, such as that conducted in 1964, where it was considered that the coverage error ranged between 2 and 3 percent.

The recent census history marks great differences and technological breakthroughs; thus, an analysis of the different censuses made since 1973 up to 2005 is given below.

1973 Census

The 1973 census was the last *de facto*[2] census made in Colombia. In this census, a form for general population and another form for indigenous people were designed. The latter form included specific questions so as to record population ethnic and socio-demographic characteristics.

The census was made with immobilization in urban zones. In rural areas, the data collection was conducted 15 days after completing the urban census and during a

[2] The counting of the population was made according to the place where the individual was at the moment when the survey was conducted to them (José Olindo Rueda – 2006).

several-week period. Rural areas in the National Territories were registered in the census one year later[3].

The operation of enumeration whereby the characteristics of individuals are obtained was accomplished with simultaneous nationwide coverage and was conducted by means of direct interviews in individual and collective dwellings.

Its analysis unit was the census household[4]. For the collection of data, universal application questionnaires were used containing questions pertaining to internal migrations, the concentration of the population, the changes in the space distribution and the behavior of economic, social, and cultural variables.

In addition to those variables, questions about fertility were included for the first time, addressed to 15 year-old and older women, in order to measure the changes in the reproductive behavior of Colombian people. The collection, critique, coding, and processing was conducted in a centralized manner, in Bogotá, by means of cards and magnetic tapes.

In order to establish the *non-coverage* of the census, a representative survey was conducted two months following its execution, at the national and departmental levels and in the four major Colombian cities, both in the urban and rural areas.

1985 Census

As of the 1985 census, a methodological change was introduced in the carrying out of the population censuses; the *de facto* census approach used since 1938 was changed to the *de jure* census approach.

Five forms were used for this census: 1. A Basic Form for individual dwellings; 2. An Extended Form for individual dwellings; 3. An Extended Form for collective dwellings; 4. A Form for individual dwellings in areas with indigenous communities; and 5. A

[3] The census in the department of Amazonas was conducted on June 2, 1974 and that of the department of Putumayo on June 12 of the same year.

[4] Census Household: Person or group of persons, whether or not relatives, occupying the whole or part of the housing; meet basic needs under a common budget and usually share the meals.

Basic Form for collective dwellings in areas of indigenous population[5]. Also, the census forms utilized with the Wayúu and Nasa indigenous people were translated into their native language.

No immobilization of population was required to make the enumeration. The urban area took two weeks, whereas the rural area was enumerated over six months. The coverage was nationwide and simultaneous.

The operation of enumeration was made by means of direct interviews in individual dwellings and by means of indirect interviews in collective dwellings. The "focused self-enumeration" collection method was used in some cases for some types of urban areas and dwellings, where the census staff previously provided the residents with the forms in order for them to fill them out. Finally, the census staff picked up the forms in a timely manner.

For this census, the census household traditional concept was not used; the analysis unit was the family, therefore the comparability with other censuses was broken. With respect to the universality, two different investigative procedures were applied; the first was the census itself, conducted to the whole universe, enumerating the total units of dwellings and individuals and asking a minimum of socio-demographic variables that would enable their characterization. The second one was the investigation through the survey sampling[6], which gathered information from a fraction of the total dwellings.

The survey was conducted in a simultaneous manner with the census and the sample size was ten percent (10%) of the individual dwellings. This sample included a larger number of questions related to population and dwellings. The analysis of some variables, included in the extended form, did not achieve the necessary representativeness due to the size of the sample. This was made especially evident for small municipalities.

[5] 1985 Census Methodology - DANE.

[6] This survey, conducted simultaneously with the census, is used to extend the demographic topic included in the Population Census.

Unlike other censuses, the one conducted in 1985 only included questions pertaining to the dwelling, therefore, some questions directly related to household were overlooked. This census also covered basic demographic, economic and educational characteristics, and some issues related to migration, fertility and child mortality.

The data collection, critique and coding of the information contained in the forms was made in a decentralized manner in DANE's regional offices, and saved on magnetic tapes and then sent to the headquarters in Bogotá.

In order to measure the census coverage, a post-census sample was carried out with a delay of several months after completing the enumeration process.

1993 Census

The 1993 census maintained the *de jure* census concept implemented in 1985, by counting the usual residing population in the households. For this census, four different forms were used: 1. A form for persons residing in individual households; 2. A form for population residing in special accommodation sites - SAS; 3. A form for indigenous communities; and 4. A form corresponding to the bi-national population census of the Wayúu indigenous population, which had been conducted on 1992.

The enumeration was conducted with a one-day immobilization for urban areas and over several months in rural areas.

In this census, the census household was taken as the analysis unit again. The form used for individual households kept many of the variables that were applied in the previous censuses. The ethnicity and disability variables were included as new questions.

The data collection and processing activities were carried out in each DANE regional office by outsourcing. The products showed some drawbacks causing trauma to the census; for such reason, it was necessary for DANE to review the whole process and to release the definitive results three years after the enumeration.

In order to measure the coverage, a post-census interview was designed that was conducted 10 days after the census and applied to a sample composed of 142 thousand individual households in 218 selected municipalities.

2005 Census

One of the major innovations in this census was the use of the hand-held computer, known as Data Capture Device (DMC), upon which the electronic form was loaded. This instrument enabled the digital cartography to be integrated with the census questions through the forms generator where the flow of questions and the basic rules of validation and consistency were programmed. In the same way, the geo-referencing by GPS (Global Positioning System) was used thus enabling the obtaining of accurate information regarding the coordinates in the rural areas.

The 2005 general census took the census household as the analysis unit. For the data collection process, three (3) questionnaires were used:

1. **Urban environment questionnaire**: It consisted of seven questions gathering the information about the predominant urban environment at the level of the block[7].

2. **Questionnaire of census units**: It integrated demographic, social, economic, and agricultural subjects. A distinction between a basic questionnaire containing standard questions of the census, and an extended questionnaire containing questions to go into greater detail was made.

3. **Questionnaire of Special Accommodation Sites** (SAS): It was conducted to military barracks, prisons, and in other community dwelling sites, such as convents.

The collection of census data was conducted during an extended period with partial immobilization. The collection period was held from May 22, 2005 to March 6, 2006, and was developed by stages. The classification of municipalities was made by

[7] The following surrounding characteristics were assigned to all dwellings in the same side of block: Access way conditions, parks, lighting, etc.

clusters, as per the features of the population dynamics, which took approximately one month.

The census operation in each one of the census households was completed by means of a direct interview made to a competent respondent, by a trained interviewer and, to the extent possible, who was a resident of the municipality.

A sampling interview[8] was designed and conducted in order to go into greater detail on some variables about dwellings, households, and persons, without incurring in the total cost of a single universal form containing all the questions.

The change introduced by the 2005 census can be summarized, essentially, in two aspects:

- The sample design by relative sizes differentiated for each municipality.
- The in situ selection, at the time of the survey conduction, supported on the DMC software (Bernoulli Method).

With respect to the thematic content, in addition to the traditional variables used in the previous censuses, new topics were included as follows: in the identification module, the ethnic territorial variable was taken into account; in the dwelling and household modules, variables such as water supply, bathroom equipped with shower; vehicles, community participation, household income ranges, deaths during the last twelve months, and in the module of persons; questions about health, social security, causes of migration and school dropout, language, availability and handling of technology, fasting due to reasons other than economic, among others, were included.

Also, new variables that enabled the identification, location, and classification of economic units and the characterization of agricultural, livestock and forestry uses in the sites where the dwelling is located were included.

[8] Survey sampling: Where extension questions of social topics were asked to a representative randomized sample of households in every municipality.

The recording of information was directly made in the DMCs. The transmission and daily consolidation of the census database was carried out via a fiber optic internet channel which provided access between the central headquarters and the territorial agencies, having channels available that enabled the carrying out of the daily transmission of data to the local collection centers.

In the 2005 census, the coverage interview was not conducted. In order to establish the non-coverage, a demographic analysis and census evaluation process (census conciliation) was made, by using a statistical analysis on the consistency of the information in its final phase of consolidation, based on the coherence with the demographic indicators, with respect to the previous censuses: the vital statistics, demography and health interviews, and the country's entry and exit records, among others. According to the 2005 census conciliation, it was determined that this census had a 3.7% omission or non-coverage.

2. DESIGN

2.1. CONCEPTUAL FRAMEWORK

2.1.1. Objectives

General objective

To conduct a census enabling the availability of accurate, timely, reliable and integrated information regarding the volume and composition of the population, households, and dwellings; as well as the development of the basic census frameworks of the economic establishments and the agricultural units.

Specific objectives

- To have updated information available about the number, location and characteristics of the population and the households.
- To have updated information available about the number, location and characteristics of the dwellings.
- To have updated information available about the number, location and characteristics of industrial, commercial and services economic establishments.
- To have updated information in the municipal townships and the population centers of the municipalities for the conformation of environment and indicators homogeneous zones, enabling the improvement of the dwelling characterization.
- To have updated information available that enables the identification, location and basic characterization of the agricultural activity associated with individual dwellings in class 3; which are basic requirements to construct an agricultural statistical framework.
- To produce socio-demographic, specialized, strategic, and representative information at all territorial levels by means of a sampling interview, administered to a fraction of the total households included in the census. Such fraction is representative of each municipality at the municipal township/remaining areas level. And, for the 13 major cities, this enables information at the district/quarter level to be obtained.

- To generate an accurate cartography for the country.

- To contribute to the consolidation and strengthening of the National Statistical System (NSS), by means of the generation of databases that are essential for the development of the municipal, territorial and sector information systems.
- To strengthen the National Statistical System (NSS) by means of updating statistical frameworks and with the improvement and integration of all potential sources of information that are available in the country.

- To contribute to the strengthening of both DANE's technical capacity and that of the other entities that are part of the census project.

2.1.2. Reference framework

Conceptual basis

The 2005 General Census proposal took some concepts of the last two census experiences conducted in Colombia to meet information collection needs in the framework of the population and housing national censuses.

The definitions of the elements giving specificity to the census activity, as well as some variables and categories making part of its topics and content all that in accordance with the decisions made throughout the design of each census process are set forth below.

Accordingly, a summary of some aspects aiming at the foundation of the conceptual and methodological design of the 2005 General Census, is provided below.

One of the most complex statistical operations is the conduction of a population census, since it is a set of operations consisting of compiling, evaluating, analyzing, and releasing or disseminating demographic, economic and social information pertaining to all the inhabitants of any country or any well delimited portion thereof, at a specific time point[9]. On the other hand, the housing or residence census collects

[9] United Nations. Principles and Recommendations for Population and Housing Censuses. Version 1. Series M.N. 67/rev.1,p.3. Department of Economic and Social Affairs, Statistics Division New York, 1998.

statistical data pertaining to all dwellings and their occupants in any country or in a well-delimited portion thereof, during a given time period.

The population and housing census involves three observational units that enable the proper structuring of the census information: dwelling unit, Special Accommodation Sites (SAS) and economic units, all of them collectively referred to as a geographical unit; also, there is a relevant analytical unit for the coherence of the census information, which is the household within individual dwellings. The proper handling of each one of them is the warranty needed to obtain the information with respect to each of the territorial entities.

The principle of universal coverage that was applied in this census took into account all the dwellings, the Special Accommodation Sites (SAS), the households, and persons located in the country. Additionally, some questions were included to construct the context of the economic and agricultural units associated with the dwellings. On the other hand, the topics and the specific demographic and socioeconomic questions were administered to population universes in terms of age and sex.

The census was conducted under the *de jure* criterion, included for the first time in the 1985 census as well as in the 1993 census. With the data gathered under such criterion, there is an advantage in that the actual structure of the family nucleus and the actual population distribution can be rightly established in connection with the several different spatial contexts. This facilitates the coverage evaluation and improves the estimations of the migration indicators.

In order to analyze the main definitions of the census, it is necessary to take into consideration other concepts such as *building* and *unit*.

The *building* refers to any independent and separate *construction* composed of one or more units. It is independent since it has direct access from the public way, roads, paths, or spaces of common and separate circulation, because usually it has walls that delimit and differentiate it from other constructions.

A *building* may include several entrances and is usually covered by a roof, for example, a house, an apartment building, a stadium, a shopping center, a hotel, a barracks, a dwelling constructed with tin cans and waste materials, a walled enclosure intended for parking lot, a ship, a railroad car, a hut, a tent, among others.

On the other hand, *a unit* is an independent and separate space making part or the whole of a building, whose use may be for housing, economic or mixed, or for a SAS, e.g., prisons.

The *unit* is intended for economic use when the space is independent and separate is inhabited or is being used to develop any economic activity. It is intended for dwelling use when the independent and separate space is being inhabited or intended to be inhabited by one or more persons; is mixed, when economic and dwelling uses are combined. The SAS are institutions where, a group of persons, usually not related live (sleep) collectively.

The concept of dwelling, made it possible to establish, list, and classify the sites or places where persons were living. In this way, it was established that the dwelling was an independent and separate space inhabited by one or more persons. Such persons enter and leave their dwelling without passing through areas of exclusive use of other dwellings: such as the living room, dining room, bedrooms, study rooms, sewing and kitchen.

The concept of household for the census is the person or group of persons, whether or not relatives, who occupy the whole or part of a dwelling; meeting basic needs chargeable to a common budget, and usually sharing meals.

The accuracy regarding the management of the *usual resident* concept enables the identification and listing, in the proper manner, of the individuals composing the household. The use of this concept makes possible, in a more accurate manner, the provisioning of information pertaining to the geographic distribution of the population, the persons' characteristics, and their relation to the sites they were living in.

With respect to the 2005 Census, the concept of usual resident referred to those individuals living permanently or most of the time in any dwelling or in a SAS even though at the time of the interview the individual was temporarily absent. The temporal reference was extended to six months so as to establish if the person was a usual resident, even though they were absent for any special reasons, such as vacations, training course, or business travel.

Travel agents, merchant mariners, kidnapped persons; irrespective of the absence time, displaced people, sick persons in hospitals or clinics, persons who were temporarily arrested in police subdivisions, and street dwellers were considered usual residents as well.

By definition, a national census is intended to establish the density, distribution, and characteristics of all residents in the national territory. In order to ensure this scope, it was necessary that, when the census was being conducted, those people who at the time of the census failed to be registered in the individual dwellings for being in Special Accommodation Sites (SAS), could also be enumerated.

Persons live (sleep) collectively in a SAS due to study, work, religious cult, military discipline, administrative tasks, prison rehabilitation processes, lack of a household, among other reasons, therefore, SAS are as follows:

- Prisons or correctional and rehabilitation centers
    - Children's shelters or orphanages
    - Nursing or geriatric homes
    - Convents, seminaries, or monasteries
    - Boarding schools
    - Barracks, garrisons or police stations
    - Work Camps
- Places to lodge street dwellers collected by authorities
    - Brothels
    - Shelters for displaced people
    - Shelters for reintegrated people
    - Rehabilitation centers not correctional

Modules of the form

The form was made up of a structured group of topics organized and designed to gather information on dwellings, households, and each one of the usual resident members. In order to investigate the census topics, an instrument was discussed, structured, and designed for particular households, organized by modules.

Likewise, a form similar to the above was designed to be used for the particular case of the SAS. In this way, 6 modules were established: identification, dwelling, household, persons, economic units, and agricultural units.

The ***identification module*** contained a series of questions so as to geo-reference the unit being registered in the census, and also a question determining the predominant use of the unit, and hence, the module or questionnaire to be used.

This module contained the concept of Municipality, which is the fundamental entity of the Nation's political-administrative division. In the same way, the concepts of municipal township, remaining areas of the municipality and population center were also included.

The *municipal township* corresponds to the most densely populated area of the municipality and the site where the Municipal Mayor's office operates; its area is defined by an urban perimeter, whose boundaries are established by means of City Council Agreements.

The *Remaining Areas of the municipality* correspond to the area outside of the urban perimeter of the municipal township; it may be composed of population centers and of scattered population.

The *Population Center* area is the concentration of buildings composed of 20 or more adjoining or attached dwellings. It corresponds to the parishes, town's subdivisions and "corregimientos"[10] located in the rural area of the municipality.

[10] The "*corregimientos*" of Colombia are a smaller unit than the historical one. The word is used for the population centers that do not reach the level of municipality. They are thus under a municipality or department.

One of the definitions included in the census that enables DANE to analyze the information in a more disaggregated manner, is the Geographic Area (GA); this concept corresponds to a block in the municipal township, or to a section in the rural area. It is identified with a 6-digit code, which is unique at the national level; i.e., there are not two blocks or two rural sections with the same code.

New concepts that made part of the identification module were taken into account. Among such concepts were the *indigenous reservation and the collective territory of Afro-descendant communities.*

An *indigenous reservation* is a territory with boundaries established by Law, occupied by one or more indigenous communities, with their own social organization and collective property titles, non-attachable and non-transferable.

The *Collective territory of Afro-descendant communities* is a set of lands, located in the Pacific region, which have been assigned and titled by the National Institute of Agricultural Reform (Incora) to Afro-descendant communities pursuant to Act 70 of 1983.

The **dwelling *module*** contained a list of questions aimed at obtaining information pertaining to the type and quality of the dwellings, by including variables indicating the material of floors and walls, the garbage disposal, and the coverage of public utilities.

This module included the concepts of type of dwelling and occupancy. The concept of *type of dwelling* takes into account the several different types or construction forms of the dwelling units. The most common are houses, apartments and room-type dwellings[11].

The concept of dwelling *occupancy* takes into account if at the time of the census the dwelling was occupied with household members in place who were usual residents and if they met the conditions needed to provide census information; if that would not have been the case, the dwelling could be classified as occupied with all members absent or as a vacant dwelling.

[11] Dwelling unit part of a major building, lacking of bathroom and kitchen services inside, or at least one single service.

The difference between these two terms is that the occupied dwelling, with absent household members is where all its inhabitants are absent for any reason, or where there is not a competent person to provide the information requested by the census; for example, where there are only children, persons with communication challenges, or only the domestic employees, among others. Whereas a vacant dwelling is one that was empty at the time of the census, i.e. was not being occupied by any household.

The ***household module*** contained a set of questions aiming at obtaining information pertaining to overcrowding conditions of individuals living there, household sanitation conditions, the facilities in the household, community participation, poverty, and international emigration.

Likewise, questions were included, which aimed at identifying the existence of any economic activity developed in the household and/or agricultural activity accomplished inside the land occupied by the dwelling, in order to identify other uses in the unit that was being registered in the census.

The accuracy of the tenure of the *dwelling* concept was important in this module, since it refers to the form of possession of the space occupied by the household. Thus, it enables determining whether it is a dwelling under lease or sublease, or owned and is being paid, or it is fully paid.

Within the module of households and persons there was the list of household residents, whose purpose was to establish the size and composition of the households.

The ***individuals' module*** contained a set of questions aiming at obtaining individuals' socio-demographic information: sex, age, kinship, ethnicity, educational variables, marital status, mobility and fertility. Similarly, there were questions pertaining to poverty, health, and disability conditions. This module was organized by universes according to individuals' sex and age information.

For a population census, some of the most important variables are sex and age; for such reason, it was necessary to clearly establish the concept defining such variables.

For the 2005 General Census, as well as for other statistical operations, sex refers to the biological variable that classifies population into males and females. On the other

hand, the age variable was registered based on two questions: current age, and date of birth. The current age refers to the age the person turned on their last birthday, rather than to the age the person will be, whereas the date of birth is the day, month, and year the interviewee was born, as it appears in their identity document.

Another important concept addressed in the census was that of the head of household. The head of the household (male or female) is a usual resident recognized as head by the other members in the household. Usually it is the father or the mother or the main economic support of the household. A household always must have only one household head (male or female).

The ethnic group for census purposes refers to the group of individuals who are different from the mainstream society due to their sociocultural practices, which can be visible through their own habits and traditions, organizational forms, awareness of a shared history, own language, territory and/or common phenotypic traits.

Thus, the ethnicity is the recognition made by any person of a set of socio-economic and cultural characteristics, such as language, worldview, production methods, and kinship relations, among others, considered typical of the ethnic group with respect to other groups with other specific characteristics.

The belonging to any ethnic group is based on the self-recognition criterion, which enables a better visibility of those population groups.

The census aimed at counting, characterizing and territorially locating indigenous population, raizal people, palenquero de San Basilio, Rom or Gypsy, mulatto, and Afro-Colombian or Afro-descendant, to generate information enabling the decision makers the formulation, implementation, tracking and evaluation of public policies with an ethnic perspective.

Other topics included in the population census were those relating to disability from the standpoint of a permanent limitation[12] to develop an activity, and those pertaining

[12] Permanent limitation: The difficulty of any person to perform any daily activity, as a result of somatic deficiencies. It ranges from a mild to a severe deviation, in terms of quantity or quality.

to migration[13], making the difference between internal migration and international migration.

Internal migration refers to the movements within the territory where the origin and destination places of a migratory movement, which have been made during a defined time period, are located inside the geographic divisions of the same country.

On the other hand, international migration refers to the territorial movement made when persons cross the borders of any country with the intent to permanently reside in another country; this concept involves the change of the country of usual residence.

Additionally, some categories determining the causes for the change of residence of the population were included in this module. Such causes are labor, educational, health and cultural reasons (nomad peoples), family reasons, natural disasters (hurricanes, tornados, floods, and fires) and threat or life-threatening or physical integrity, as a result of violence.

Within the individuals' module, some educational variables were included, such as: literacy, educational level and school attendance. Literacy is the skill to read and understand a text and write a brief exposition. The educational level refers to the highest education degree attained by the interviewee at the time of the census, in accordance with the formal educational system, i.e. preschool education, elementary, high school, middle and higher education.

On the other hand, the concept of *attendance to formal education* was included aiming at identifying individuals who by the time of the census were enrolled in any institution of formal education whether they were or were not on vacations, on strike, etc. Formal education refers to that delivered in approved educational institutions, in a regular sequence of teaching cycles, subject to successive curriculum guidelines and which leads to degrees and diplomas (Article 10, Act 115 of 1994).

For the Colombian population, the marital status includes the following categories: single, separated, divorced, widower, widow, married and common-law partnership.

[13] Migration: Any territorial movement involving a change of the usual residence of the person and resulting in a continued staying in the place of destination, where the migrant fixes their new usual residence.

For the census purposes, the difference between a person whose marital status was common-law partnership and a person whose marital status was married, was that the former lived in marital union and had formed a household without the matrimonial, civil or religious link; whereas the latter had entered into marriage according to civil law (before a judge or notary) or to religious rites of any creed (Catholic, Baptist, Jewish, among others) and that they lived under such status at the time of the census.

Another topic included was the population fertility. Within this topic, the concept of live born child, defined as any product of conception showing any sign of life after birth, such as movement, breath, cry, heartbeats, among others, was very important.

The ***economic units' module*** contained variables of economic nature related to the identification of the establishment, the general characteristics of the economic activity it carried out and the number of employees.

The ***agricultural units' module*** contained variables of the agricultural, livestock and forestry type, related to the identification of the farm, total area occupied, type of uses of the land and the livestock inventory.

Scope of the research

The scope of the 2005 General Census had several different thematic contents:

- ***Population and housing census*:** The population census, given its nature of population and geographic universality, as well as for the diversity and comprehensiveness of the topics to be covered, constitutes the fundamental and irreplaceable basis of knowledge pertaining to the demographic, economic, social and cultural conditions of the country's population.

- ***Economic:*** It is necessary to bear in mind that this topic did not have the scope of an economic census. Its importance lies in the opportunity to be able to update the statistical framework of economic units, through the proper formulation of basic questions, which would enable the identification, localization, and classification of the economic units corresponding to the industry, trade and services, according to the International Standard Industrial Classification of All Economic Activities (ISIC), Revision 3 Adapted for Colombia.

- ***Agricultural:*** As with the economic topic, the scope was not to conduct an agricultural census. This topic was only applied to the scattered rural population, class 3, in those properties with occupied dwellings associated with the former. This enabled the activities related to agricultural, livestock, fish farming and forestry to be identified.

- ***Urban environment:*** The purpose of this module was to outline the urban landscape, under the habitat concept, bearing in mind some variables such as urban development, urban land use, among other more specific aspects related to the environment.

Legal and institutional framework

Pursuant to the provisions set forth under Act 79 of 1993 and Decree 262 of 2004, DANE is responsible for the conduction of the population and housing censuses, on the dates pointed out from the National Government by decree. Likewise, Article 1, of Act 79 of 1993 authorizes the conduction, as part of the census model, of extension surveys.

According to the recommendations of the United Nations Organization (UN), Colombia should have conducted the census in the year 2000; however, restrictions of a budgetary nature generated consecutive delays. Thus, DANE was working since 1997 on the preparatory activities for the 17th National Population Census and the 6th Housing Census, based on the recommendations and decisions approved by the National Council of Economic and Social Policy - CONPES in its documents 2777 of 1995, and 2866 of 1996, 3140 of 2001, 3276 and 3329 of 2004.

The CONPES in its document 3329 of 2004, recommended the conduction of the census for May 22, 2005, by reformulating its strategy without affecting the achievement of its original objectives. Likewise, some modifications were included in the data collection methodology, and its scope was extended.

By means of Decree 1100 of 2005, and DANE Resolutions 658 and 704 of 2005, the dates to start the census operations, as well as the pertinent issues with respect to the census certificate were specified. On the other hand, the economic rewards for

interviewers and supervisors for the time of the census were approved by Decrees 1100 of 2005 and 318 of 2005.

International recommendations

Since 1958, the UN has been publishing a series of international recommendations pertaining to the population and housing censuses, by means of a document known as "Principles and Recommendations for the Population and Housing Censuses", which is updated every 10 years, so as to assist the countries in the planning and conduction of improved and cost-effective census.

The UN recommends that the member countries conduct population and housing censuses every 10 years. It also defines four basic principles to be taken into account by the time of planning and executing a census.

1. ***Data gathering of individuals:*** In each dwelling, in addition to recording the characteristics and services it owns, the basic information of each and every one of the occupants needs to be collected.

2. ***Universality:*** The population census shall include all individuals in place or residing in the previously delimited territory.

3. ***Simultaneity:*** Each person must be enumerated as near as possible to a well-defined moment in time, for the census to be, to the extent possible, an accurate reflection of the population at any given time.

4. ***Periodicity:*** The UN also recommends that the population and housing censuses be conducted at regular intervals, at least every ten (10) years. However, it points out that for some countries, it is necessary to conduct it more frequently due to the speed with which the changes with respect to both the population and the housing conditions currently occur.

By reviewing the "Principles and Recommendations for Population and Housing Censuses" document, so as to prepare the census for the 2010 round, three topics were taken into account: i) thematic aspects related to the census variables and results, ii) operational aspects, that included the planning and design of the

population censuses, as well as the alternative methodologies for their conduction, and iii) dissemination of results.

With respect to the thematic aspects, some recommendations pertaining to the census contents, globally applicable were issued. Thus, two types of variables were established: main and recommended variables.

Main variables include:

- Place of usual residence
- Place of current residence
- Place of birth
- Time of residence in the current dwelling
- Place of previous residence (this variable can be replaced by place of residence at any given time in the past)
- Sex
- Age
- Marital status
- Kinship with the household head
- Number of children they have had
- Number of children alive
- Date of birth of the last child
- Number of deceases in the household in the last 12 months (new main variable)
- Capability to read and write
- Type of schools they attend to
- Type of schools they graduated from

- Status of economic activity
- Type of occupation
- Branch of activity
- Occupational category (recommended variable)
- Country of birth
- Year of entry into the country (for foreigners)
- Disability status

With respect to the operational aspects; the planning, organization and management of the population and housing census, as well as the subcontracting and use of the Information Technology (IT) were studied in greater detail. On this latter subject, both the advantages and disadvantages (its high cost is highlighted) of the Information Technology (IT) application in the census were mentioned. Within IT, the use of both the Optical Mark Reading (OMR) and Optical Characters Recognition (OCR) for the capture had been taken into account, but the topic related to the use of the Data Capture Device (DMC) had not been included, which would be expected to be included in the next updating within the international documents of recommendations.

Functional structure of the 2005 General Census

Diagram 1 shows the functional hierarchic structure that was implemented in the 2005 General Census. It presents the teams participating in the different processes of the project. This diagram shows DANE directly depending on the Presidency of the Republic; from then on, the various divisions and teams participating in each one of the pre-census, census and post-census stages of the 2005 General Census can be observed.

The diagram shows the general context of the project, being so determined the system processes required for the achievement of the 2005 General Census products. The main processes of the 2005 General Census were:

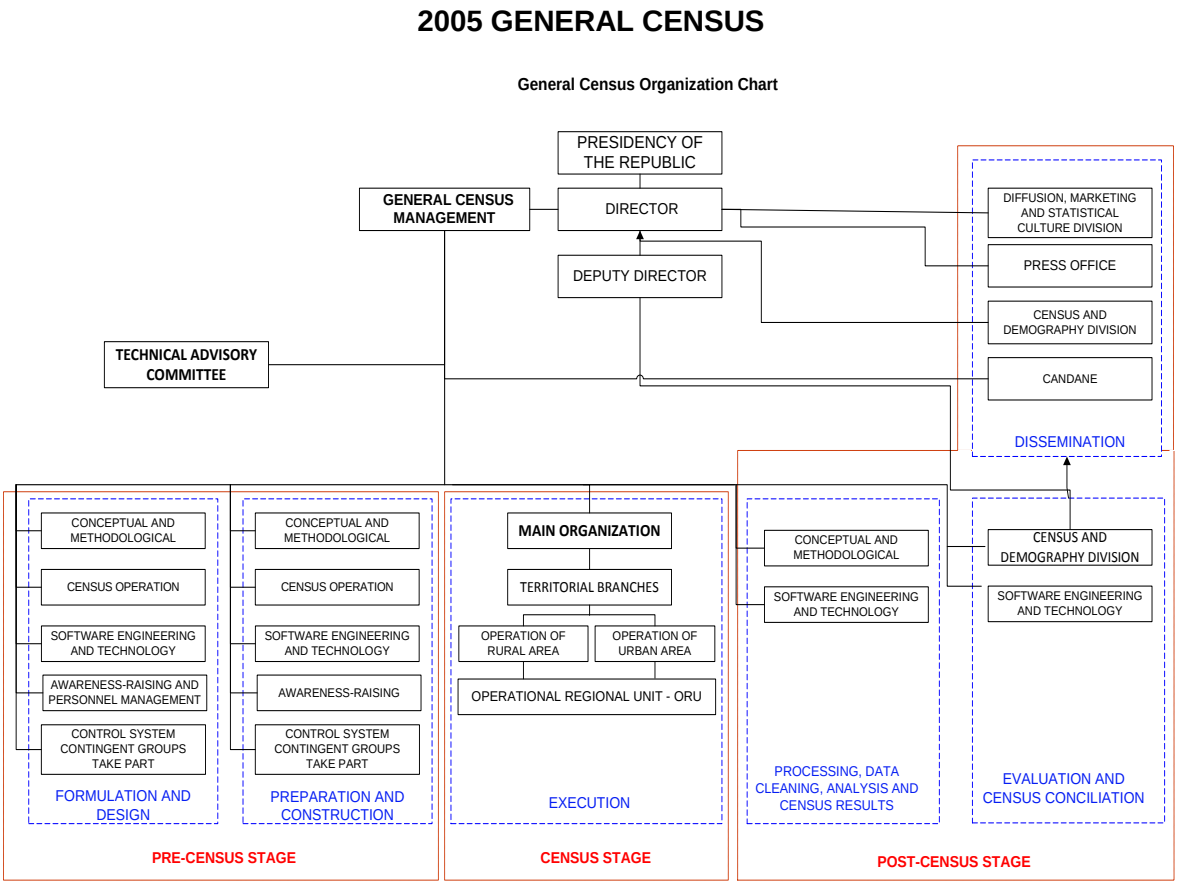
- Formulation and design
- Preparation and construction

- Execution
- Processing, data cleaning, analysis and census results
- Evaluation and census conciliation (demographic analysis in measuring under-coverage)
- Dissemination

The pre-census stage consists of the formulation and design processes as well as the preparation and construction of instruments; the census stage consists of the execution process and, finally, the post-census stage includes the processing, data cleaning, analysis and census results processes, as well as the census evaluation, conciliation and dissemination.

The pre-census stage enables the formulation and design of the set of strategies and processes for the collection of information, taking into account the resources, the planning and programming of the census activities. In this stage, the conceptual and methodological, census operation, awareness-raising and personnel management, software engineering and technology, and the test and control system contingent groups take part.

Diagram 1. General Census Organization Chart



Source: DANE.

The *formulation and design process* was included in the pre-census stage, which starts in DANE Central, where, based on recommendations, methodological, and operational adjustments and updating of geographic database, all thematic, statistic, sampling, systematic and indicators of the project are planned and coordinated. This planning is carried out by means of the preparation of timetables of activities and the designs of the conceptual and methodological frameworks, census operation, s*oftware* and technology, awareness-raising and training and the general system of census tests.

The process of *preparation and construction* of instruments prepares and constructs the documentation necessary to conduct the census operation, such as training manuals, flipchart, interactive CD-ROM, Audio CD, established collection periods,

number of persons per position and municipality, communication pieces, and results of the tests made in both the previous and current processes.

In the census stage all instruments designed to gather field information and consolidate all operative forms are applied. As the collection process is accomplished, the transmission and processing of the information needs to be made simultaneously. The *implementation process is included in this stage*, which starts in each of the municipalities where personnel is trained, the awareness-raising is carried out and the information is gathered.

The process needs to end up in DANE Central, with the processing and consolidation of the information, resulting in the population, housing, and household approximations, as well as results of enumeration and data to verify the census database. The census monitoring and control system needs to be used throughout the whole process, by means of establishing indicators of timeliness, coverage and quality.

Lastly, in the post-census stage, the information compiled during the *implementation process* is consolidated, to be subsequently refined and analyzed in order to generate an expanded database and make an assessment of the census information establishing its coverage, to subsequently prepare the information and make it available to the general public in a reliable, timely and easy manner.

This stage includes the census processing, debugging, analysis and results, which are responsible for the consolidation of the whole information collected in field, by debugging and analyzing the first results. In this process, the census results are presented in a preliminary manner, while the debugging and validation processes are completed, which enable the comprehensiveness of the records.

In a like manner, the imputation *process* needs to be implemented, consisting of the estimation of missing data in the census records. Also, in this process, the expansion of results is made by means of statistical methods that enable the expansion of the census data that is being collected through sample.

The Census and Demography Division in DANE leads the census evaluation and conciliation process, by performing a revision of the coverage levels based on the

information generated by the operative forms[14] In this way, a percentage adjustment of the omission is determined at the Municipal and Departmental levels, which serve as the basis to introduce adjustment and conciliation criteria.

Similarly, the census evaluation process is carried out, which consists of establishing the census quality in terms of coverage and quality indicators. This evaluation was made by using Demographic census conciliation method**.**

Lastly, the Diffusion Division is responsible for the preparation of the information to make it available to the general public and for the dissemination of statistical information to the users of the General Census. In this process, the Census and Demography Division, the Marketing, Diffusion and Statistic Culture Division, CANDANE[15] and the press office take part.

In this way it is intended for the census dissemination process to provide guidance with respect to the manner to access the census information and to enable its delivery to users to be easy and timely. The results of this process are the main input to produce short- and medium-term population projections and post-census studies.

Innovations of the 2005 General Census

There were two key innovations with the 2005 General Census. Firstly, the inclusion of the hand-held computer or DMC (Data Capture Device) for the capture of primary data; secondly, the inclusion of new census units: the economic unit and the urban environment.

In the census, economic information units and agricultural information units were included to the households and Special Accommodation Sites (SAS). With respect to the SAS, for the censuses previously conducted in Colombia, detailed information related to them had never been obtained before; additionally, variables were included to the dwelling, household, and persons information units, whose values were obtained by sampling.

[14] Operative Form: Control instrument required in the collection process of census information.

[15] Centre for Advanced Andean Studies in Statistics, part of DANE.

As a consequence of the inclusion of the DMC in the census data collection process and the collection conducted over an extended time (1 year) the following changes were introduced:

- Grouping of municipalities by clusters[16], population asynchronous immobilization, awareness-raising whereby a great communication and socio-community dissemination process of the census was deployed.
- DMC equipped with GPS and digital cartography for the collection of census data.
- Structuring of a data network for the concentration and transmission of data to DANE Central.
- Selection of the survey sampling *in situ*, at the time of the conduction of the interviews, supported on the DMC's software (Bernoulli Method).

In addition to the foregoing, three new systems were included that featured the census execution:

General System of Census Tests (SGP – *for its acronym in Spanish*). A system with a comprehensive scope was designed, based on both a systemic conception and a verification sequence regarding the products of the main pre-census and census processes.

Census Monitoring and Control System (SMCC – *for its acronym in Spanish*). A monitoring and control system was designed with a comprehensive scope, based on a set of warning indicators to accompany the progress in these three stages: pre-census, census, and post-census.

Personnel management: The organization of the 2005 Census incorporated the diverse management functions of human resource into a single system. The processes for summoning, pre-selection, training, selection, admission, assignment,

[16] Clusters: Set of municipalities grouped according to a demographic dynamic allowing it to be included in homogeneous groups as the basis to establish the strategies to be implemented in the Colombian territory during the data collection process of the 2005 General Census. The aim of these clusters is to minimize the mobility impact of the population residing in the Municipalities.

contracting, payment of fees, travel expenses, and transport expenses were integrated.

Formation of clusters[17]

This item was considered to be one of the most significant methodological aspects for the proper development of the population and housing census. Its significance lay in the fact that it enabled the minimization of potential bias by determining factors with respect to the geographic dynamics of the population residing in each one of the geopolitical units in which the country is divided, as it is the case of the spatial mobility[18] and the vegetative or natural growth[19].

In order to cover all of the municipalities of the country, throughout the scheduled time, six clusters were statistically set-up, integrated by municipalities with similar geographic dynamics, as well as geographic, cultural, socioeconomic, and demographic characteristics.

For each cluster a size was defined in terms of the census sweep unit, as well as a chronological order of collection according to their population dynamics and considering the different census moments defined.

Upon the completion of the census operation in each cluster, an adjustment was made for each municipality included in the cluster.

The conduction of this process was organized in the following stages:

Stage 1: Structuring of the municipal information with the migration, fertility, mortality, forced displacement and population density variables.

[17] Set of adjacent municipalities that make up a homogeneous geographic area in the social and economic, cultural and demographic aspects.

[18] The migration of the population motivated by educational, labor, environmental factors, *inter alia*, as well as by life preservation due to the threats of unlawful armed groups.

[19] Determined by deaths and births in each geopolitical unit.

Stage 2: Development of the statistical processes (main components method[20]), in order to identify those variables properly discriminating the clusters, aiming at minimizing the bias resulting from the mobility at the municipal level.

Stage 3: Development of the multivariate processes (hierarchic factor analysis[21]), for the conformation of homogeneous clusters with respect to mobility. This process included conditioning factors in the municipalities of Orinoquia, Amazonia and those of the Pacific corridor of Chocó.

Valle del Cauca, Cauca and Nariño were not included in the cluster analysis, since they were included in the census by routes (considering it is a scattered population and its topography is of uneasy access). The new municipalities, of which there was insufficient information, were included in the clusters of the municipalities of greater influence, according to the nearness.

The main metropolitan areas or smaller cities remained with their area of influence, which implied the identification of centroids[22]. Bogotá, as city-region was included in the same cluster as the most influential municipalities. The sub-regional classification of the different DANE headquarters and branches was taken into account, which determined a proper dynamic regarding the centroids classification.

Stage 4: Final conformation of the cluster groups, which due to their characteristics determined the chronological order, whereby the census needed to be conducted in each one of the municipalities.

[20] Method of major components: Used to study the relations that occurred between the variables and to reduce its dimension with respect to a set of variables.

[21] Hierarchic factor analysis: It enables the grouping of similar municipalities, starting with as many groups as municipalities, and then grouping the more similar municipalities until ultimately all groups are joined into one single cluster or on the contrary, all municipalities in a single cluster that become subdivisions.

[22] Municipality grouping, where a set of municipalities are combined with others located in their surrounding area.

Statistical model for the definition of the homogeneous cluster groups of municipalities

The purpose of this exercise was to organize groups of municipalities, based on statistical data of a diverse nature, municipality groupings that would present, according to the statistics available for each one of them, similar conditions enabling them to be brought together into homogeneous groups, in order to use such groupings as a part of the strategy to conduct the 2005 General Census in the national territory.

Particularly, two primary purposes were established. Firstly, an approach to the characterization of the socio-demographic situation of Colombian municipalities was intended. In order to complement, a municipality typology was sought to be obtained that would illustrate the analysis and would enable making progress on the establishment of a statistical classification based on socio-demographic aspects for census purposes. The information used to form the clusters came from the following sources:

- Information pertaining to the evolution of the municipal population provided by the 1995 and 2003 population and housing national censuses.
- Statistics of birth and deaths that occurred in the country and which were classified according to the mother's residence or the usual residence of the deceased.
- Figures of municipal population forecasts, produced by DANE.
- Information pertaining to education, specifically elementary and secondary school enrollment.
- Displacement according to information provided by the Solidary Social Network.
- Information pertaining to the number of electors enlisted.
- Amount of municipal tax income.

Clusters analysis

The cluster analysis was supported by a set of techniques (basically algorithms), whose purpose was the search for similar groups of individuals that were included in the more homogeneous clusters as possible. These groups were not known beforehand, they were taken from the information contained in the data.

Throughout the process, the convenience of using a hierarchical method became evident due to the adjustment of the data, the need for controlling the process and because it was intended to use a coherent typology at several levels.

As a classification algorithm, and after the relevant tests, the Ward method was chosen. This method defines the distance between two groups as the Euclidian squared distance with respect to the mean of the observations.

Results of the model

The information relating to these municipalities in all their variables was initially organized into four clusters, as follows:

Group 1: A set including 883 municipalities expelling and receiving a small number of individuals. They are without a doubt the smallest municipalities of the country, and therefore, the volume of information pertaining to symptomatic variables is quite fluctuating and its quality is not very reliable. For this group of municipalities there is not a statistical tool able to measure the expulsion of the population.

Group 2: This set was composed of 55 municipalities showing ambivalent behaviors, that is to say, they present conditions of expulsion and reception of displaced population that were compensated to some extent by a negative final effect of population flow. They are smaller municipalities than those in Group 1 above, whose data of birth, death, and enrollments only reach one-third of Group 1.

Group 3: An additional set composed of 36 medium-sized municipalities, which include the capitals of the departments and their surrounding municipalities. This group was characterized because its municipalities were clearly recipients and little expellers, maybe due to a return of migrants. These municipalities showed high

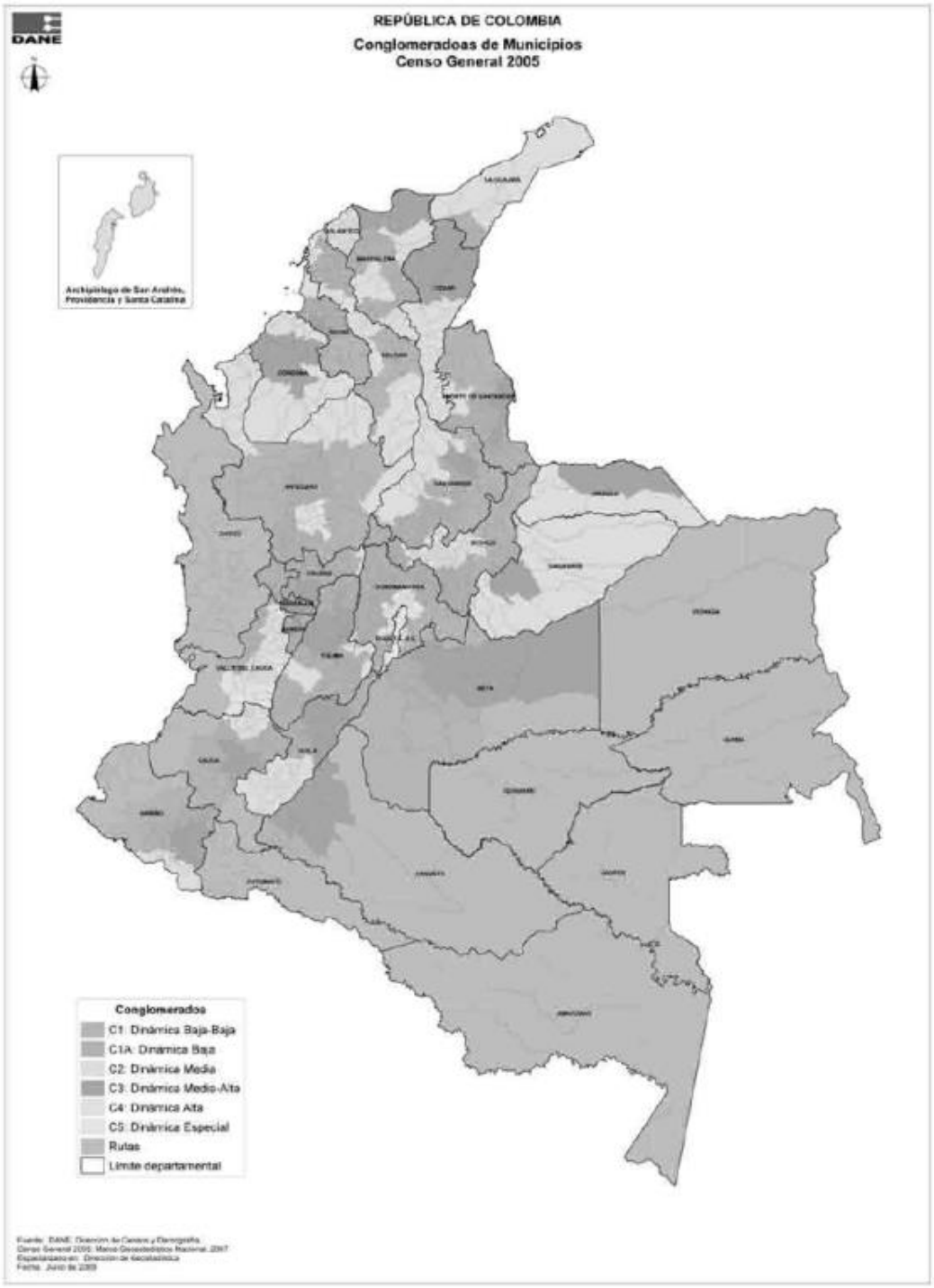
volumes of elementary and secondary school enrollment. This group contained 18,9% of the population.

Group 4: This group was composed of a set of municipalities receiving population, which are the most affected by internal migration and mainly by the impact of displaced population. In this category were some municipalities presenting a clear behavior with respect to their condition as recipient of displaced population, which were centroids[23] of other nearby municipalities known as “bedroom cities”.

The distribution of cluster groups resulting from the model can be observed on the map below, which is consistent with internal migration movements linked to a change of residence due to selective factors such as: work, study, and environmental factors. Similarly, it is consistent with the flows of those areas affected by the armed conflict that determines forced moves toward larger urban areas.

[23] Ibidem.

Map 1. Result of the multivariate statistical analysis



Source: DANE.

Clusters (from the map above)

■ C1 Low-Low Dynamics
■ C1A Low Dynamics
☐ C2 Middle Dynamics
■ C3 Middle-High Dynamics
☐ C4 High Dynamics
☐ C5 Special Dynamics
■ Routes
☐ Departmental Limit

Source: DANE – DCD.

Creation of cluster groups

As from the results obtained by means of multivariate analysis processes with symptomatic variables[24] evidencing a series of "attraction[25]" centroids located at the regional level, a first scenario with respect to the population dynamics of the territorial entities is obtained.

This statistical result determines four cluster groups composed of all the metropolitan areas[26]; another group composed of all of the intermediate cities, most of which are capitals of department and municipalities, which given their regional location, are important centers regarding the trade and service[27] businesses; a group of middle dynamics composed of municipalities with regional touristic characteristics and, finally, a group composed of a large number of municipalities which can be considered as presenting low dynamics form the demographic standpoint.

[24] Births, deaths, school attendance, child population with a prevalence of polio, and MMR vaccine, school attendance by levels, number of voters, users of electrical power, SISBEN beneficiaries, number of properties, population density, 1993 census immigration, displaced.

[25] It is the municipality, which due to its characteristics of population dynamics, is understood as the access to goods and services generating attractions over the population of its nearby municipalities.

[26] It includes Bogotá D. C. They are cities with a high development which determines a high dynamics.

[27] Middle-high dynamics.

In the following phase, a series of procedures was performed that included information pertaining to the distances to such centroids with respect to municipalities in the area of influence, regional characteristics being identified by the DANE headquarters and branches, as well as operational aspects dealing with the performance and the number of interviewers per municipality[28]. This information was used to make a balance among cluster groups, which established the relocation of the municipalities, bearing in mind that they had homogeneous demographic characteristics as those of the group they were moved to. The development of this process established the need to split some of the clusters in order to facilitate the operational process, specially the use of the hand-held computers or DMC, keeping the same homogeneity principles defined in the statistical model, resulting in the classifications shown in the table below:

Table 1. Quantity and percentage as per cluster

Group	Population dynamics	No. of territorial entities
C1	Low-low	181
C1 A	Low	402
C2	Middle	259
C3 *	Middle-high	116
C4 **	High	38
C5 ***	Special	25
Census routes		98
Totals		**1 119**[a]

Source: DANE.
a The territorial entities include: 1,098 municipalities, 20 departmental "corregimientos" and San Andrés, of the Archipelago of San Andrés, Providencia and Santa Catalina which do not have a municipal category, but for the purposes of information collection, are considered as municipalities.
* Intermediate cities.
** Main metropolitan areas.
*** Bogotá and areas of influence.

Considering the above, and in order to assure the basic principles of the model, supported by the clusters, the following parameters in addition to the collection model were defined, to wit:

[28] Urban and rural.

- To conduct the data collection in the whole department of La Guajira and the Reservations of the Sierra Nevada de Santa Marta, on September 2005. This guaranteed the fact of avoiding the rain effect in the Middle and High Guajira, and in turn, to simultaneously conduct the data collection in the area of influence for the regional centroids in Riohacha, Uribia and Maicao, thus minimizing the mobility bias for this sub-region.

- To conduct the data collection of the middle, middle-high and special clusters between October 8 and December 5, 2005. Taking into account these large centroids, data collections were simultaneously conducted in all the municipalities of their areas of influence, as well as in those defining the corridors of population mobility.

In accordance with the foregoing, from the technical standpoint and, considering that the objective is to minimize the bias that may be introduced in the structure and census information levels due to factors of population dynamics, the operational implementation of the Population and Housing census, must take into account the following:

- Data collection shall be conducted simultaneously in all of the clusters located in the different regions of the country that compose each of the different groups.

- Within each cluster, the data collection process shall be conducted simultaneously in all the municipalities thereof. The census time is 00:00 hours of the start day.

- The spatial distribution and execution of the cluster census is made from the group with the lowest dynamics toward the ones with the highest dynamics. However, due to operational needs or the optimization with respect to the use of the DMC, in these clusters the census collection may be made by overlapping them with the other clusters.

This process assures that the census is carried out in the same direction as the population movements, so in any of the attraction centroids the person or group of persons will be registered in the census. A second problem that introduces bias in the population information is that referred to in the "counter-flows", which may determine that a volume of population may not be captured in the census, since when the census is conducted in any particular municipality, those persons may move to other municipalities already registered in the census.

The foregoing may be worked out in two ways: the first one is by means of a strong awareness-raising campaign, encouraging individuals that have not been registered in the census to report it to the census offices in each municipality. The second one, which is the more adequate from a technical standpoint, is to conduct the data collection over a period that is less than 12 months, where the collection between low and middle dynamics clusters can be overlapped, leaving the ones of highest dynamics for the end of the period.

The above means that for the bias - by mobility and natural growth - to be minimized, the census data collection must be conducted in the following order:

First C1; then C1 A; then C2; then C3; then C4; and finally C5.

As far as the time for its execution is concerned, the existence of "idle" months or weeks must be taken into account when the collection in the municipal townships should not be performed, since it would imply high probabilities of bias due to factors of population dynamics, with significant effects upon the structures by age and sex of the territorial entities. The collection periodicity of the census information is presented below.

In order to minimize such bias, the collection strategy must take into account the following aspects:

- It takes at least 15 days to move the devices to the municipalities of the next group of clusters.
- Training should be made well in advance in order to assure the proper training of the interviewers.
- For each municipality, processes must be performed, in order to estimate, with the census information a series of strategic indicators enabling the assessment of the quality of the information (as well as the coverage).
- A baseline must be generated for each municipality with the strategic indicators pertaining to fertility, mortality, structures, mobility, indices such as children, woman, masculinity, and Myers ratio among others, so as to define the necessary adjustments in each municipality and thus to ensure the validity of the information.

In addition, it must be taken into account that between May 22, 2005 and May 22, 2006, there were various "idle" months, where the data collection was risky, because revisits would be increased and, what is most important, the probability that a large number of persons were not to be registered in the census would have increased. These periods can be observed in the diagram below.

General system of census tests

The designed system consisted of four test levels: (1) desk test; (2) simulation test; (3) field test; and (4) actual operation test. It meant to carry out tests from the most basic level until ending up at the nearest level to the reality of the census operation itself.

Desk tests aimed at verifying the design, construction, integrity, compliance with the requirements established for the product and the autonomous use thereof. These tests were made by the builder of one element in each subsystem. They became logic or conceptual tests in a methodical way to present their results as part of the formal delivery of their product[29].

All of the census products, instruments and elements were subjected to desk tests, where the design, construction and integrity were verified, as well as the compliance with the requirements established for the product and the autonomous use thereof. These tests enabled the quality of the product or designed instrument to be validated and to assure its operation.

The simulation tests verified the autonomous use, the functioning and the integrity of the product; they were intended to make representations or simulations as similar as possible to actual situations in the field. They were conducted with individuals who were different from those intervening in the construction of the product. In this way, simulation tests were aimed at verifying both the contents and functioning of the instruments, elements and procedures, as well as their performance.

[29] Product is understood as the census instrument or process prepared or constructed by the different teams to be used in the 2005 General Census and that is subjected to testings, for example: questionnaires, manuals, training, awareness-raising, data collection operation and others. An element or equipment such as DMCs (Data Capture Device) is also considered a test product.

The field tests became trials, field work with actual population, but not a census operation of its own. They verified the autonomous use, the product integrity and the use performance. These tests were carried out in actual scenarios, for example, the households in a block, neighborhood, or rural area of a selected municipality.

The actual operation tests were similar to the traditional ones in the pilot or experimental tests, but in this particular case, they were conducted with the initial census operation, and specially scheduled and performed with populations with small numbers and low complexity. These conditions enabled all the system to be evaluated, both as a whole and by each component, so as to make the pertinent corrections before reaching larger and more complex populations. When the products, instruments and procedures reached the actual operation tests, they already had systematically and successively overcome the desk, simulation and field tests; i.e. they already had been subjected to verifications and adjustments. This test took into account the instruments and aspects described below:

- **Questionnaires (analogous and digital)**, regarding their topics of context and census units (dwellings, households, individuals, economic units, and agricultural units), in aspects related to flows, validations, ease to use, operation, understanding, integrity, inconsistencies, record of responses, time of completion, reception and delivery operation and comprehensiveness of the questionnaire.

- **Equipment (DMC), Data Capture Device** regarding aspects such as ease of use, operation, time of use per interview, security, handle and care; reception, delivery, data transmission operations and possible blockages or other types of difficulties.

- **GPS**, regarding aspects such as operation, accuracy, time of use, and fatigue.

- **Incorporated cartography (analogous and digital)**, regarding aspects such as ease to use, understanding, accuracy, reception and delivery operation.

Diagram 3 shows the structure of the General System of Census Tests (SGPC – *for its abbreviation in Spanish*).

Table 2 shows the products that were subjected to testing within the General System of Census Tests (SGPC).

2.2. STATISTICAL DESIGN

Diagram 2. Census periods

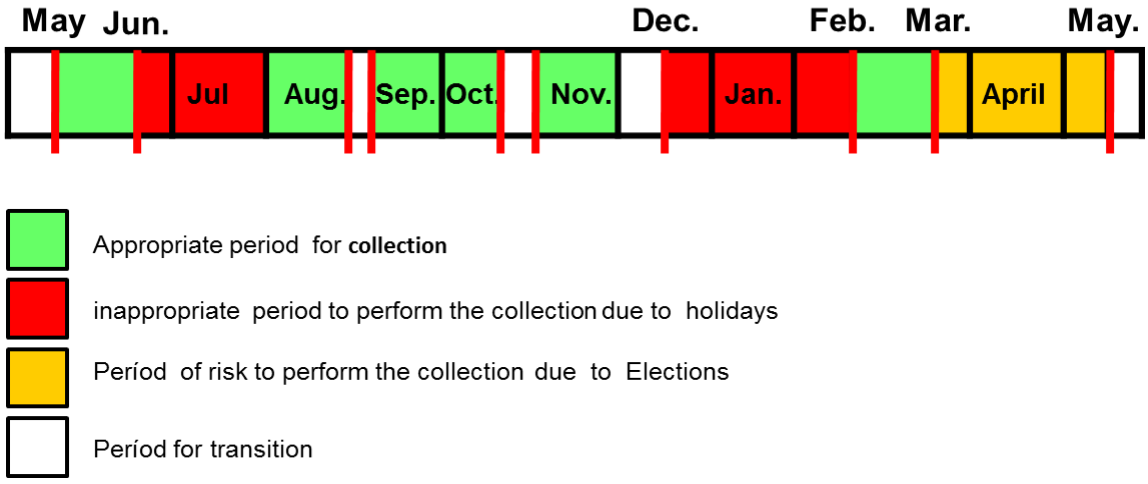


Diagram 3. Structure of the general system of census tests

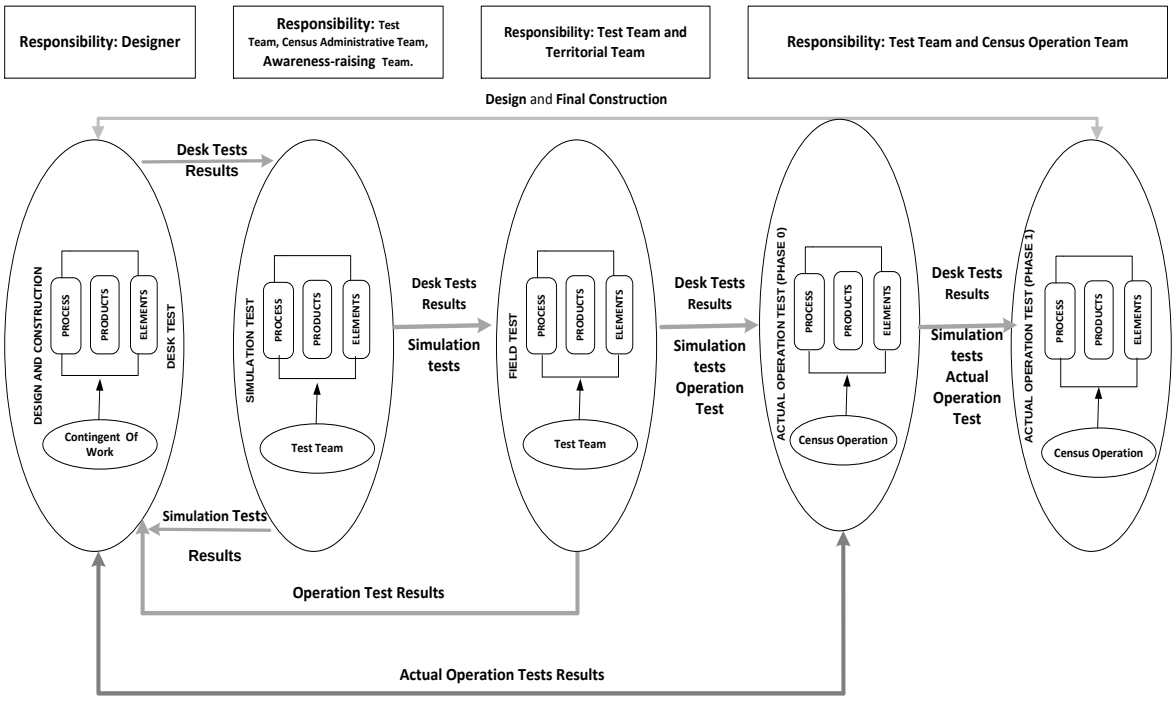


Table 2. Matrix of strategic census products and test levels of responsibility

Component	Strategic Census Products	Desk Test	Simulation Test	Field Test	Operation Test (Phase 0)
CONCEPTUAL	Questionnaires: Census Units, Urban Environment	Design responsible	Test Team	Test Team	Test Team
	Manual for the filling out of the questionnaire				
	Consistency and Validation Manual				
	APRA Rules for consistency Structure of Census Files	design Responsible	Test Team	Test Team	Test Team
	Rules for Imputation of Missing Data	design Responsible	Test Team	Test Team	Test Team
	Specifications for Selection of the survey samplings	design Responsible	Test Team	Test Team	Test Team
Awareness-raising	Methodology of Variable Estimate with the Survey sampling	design Responsible	Test Team	Test Team	Test Team
	Questionnaires in Web and/or Internet	design Responsible	Technology Team	Test Team	Test Team
	Internal Information Guide Book	design Responsible	design Responsible	Test Team, Territorial Team	Actual Operation Team (Phase 0)
	External Information Guide Book plus Database for Distribution				
	Portfolio of Census Products for Mayors				
	Printed Pieces, Publications (Flyers, Posters, Brochures, Agenda, other Guide Books, Banners				
	Scheduling of Informative Workshops Phase-Community or more Database	design Responsible	design Responsible	Test Team, Territorial Team	Actual Operation Team (Phase 0)
	Strategy of Approaching to Community	design Responsible	design Responsible	Test Team, Territorial Team	Actual Operation Team (Phase 0)
Personnel Management	Summons Procedure, Pre-selection and selection of field personnel	NA	Test Team	Territorial Team	Actual Operation Team (Phase 0)
	Module of Functions and Activities for Field Personnel and Assistants	NA	Test Team	Territorial Team	Actual Operation Team (Phase 0)
	Training to Territorial Teams				
	Training the Management of Training Company	NA	Test Team	Territorial Team	Actual Operation Team (Phase 0)
Software and Technology Engineering	Training to Instructors of Training Company	Direct Responsible	Technology Team	Test Team	Actual Operation Team (Phase 0)
	Training to Field Personnel				
	Manual for the filling out of the Smart Questionnaire				
	Smart Questionnaire				
	Loading of Questionnaire and Cartography				
	Handling of the DMC, Transmission and Storage of Information				
	Procedure for the Transmission of information from the DMCs to the Collection Center				
	Personnel management System and Equipment Inventory	Direct Responsible	Technology Team	Test Team	Actual Operation Team (Phase 0)
Material Distribution	Procedures for the Distribution of Census Material	NA	Test Team	Territorial Teaml	Actual Operation Team (Phase 0)
	Procedures for the Distribution of Equipment and DMC	NA	Test Team	Territorial Team	Actual Operation Team (Phase 0)
Field Operation	Field Strategy for the Collection process	design Responsible	Test Team	Test Team	Actual Operation Team (Phase 0)
	Procedures of the Field Personnel (Respondents, Supervisor, jointly responsible, Field Designer, General Designer jointly responsible)				
Follow up and Control	IIndicators of the Pre-census, Census and Post-Collection Subsystem	design Responsible	Test Team	Territorial Team	Test Team
	Loading of Information to the SMCC	design Responsible	Test Team	Territorial Team	Test Team
	Transmission of Information to the SMCC				
	Management and Use of the SMCC				

Source: DANE.

The 2005 General Census added methodological innovations that were expected to contribute to the generation and adoption of new methodologies to be used in the censuses of other countries of the world.

Among the methodological innovations already implemented in Colombia, the following can be found:

- Administration of a more detailed theme to a household sample at the municipality, area (municipal township and remaining areas) and district/quarter levels in the large cities, in order to broaden the topics included in the basic census, with respect to population and housing.

- Extension of the theme in addition to the usual topics pertaining to population and housing, the collection of basic information with respect to the economic and agricultural activity associated with dwellings.

The conduction of a survey sampling is not fully considered to be an innovation, since several countries, among them Colombia, had tried it in previous censuses. However, the methodology conceived to carry out the selection of the sample (supported on the use of the data capture devices) and the methodology proposed to perform the generation of estimations, intend to provide a solution to the drawbacks usually found throughout the implementation of these types of samples which, despite their advantages, a good number of countries have decided to discard them in the last round of population and housing censuses.

The survey sampling was a sample of households selected in real time during the operation of the 2005 Census, which provided estimates at the national, departmental and municipal (municipal township and remaining areas), and at the district/quarter levels in thirteen cities of the country.

Also, since this was a probabilistic sample, it did not only provide estimates of the parameters of interest with respect to the above-mentioned national aggregation levels, but it also provided estimated variation coefficients accompanying each one of the generated estimates, as a measure of their quality.

2.2.1. Basic components

Type of statistical operation

The 2005 Census applied and combined different types of statistical operations, to wit: census of dwellings, households and individuals; record of economic units and agricultural activities associated with dwellings occupied with persons in place and an interview by sampling when applying an extended survey sampling for the topics pertaining to population, households and dwellings.

Universe and coverage

The census covered the whole national territory in order to obtain information pertaining to all dwellings, households and individuals, as well as the economic and agricultural units associated with dwellings.

Target population

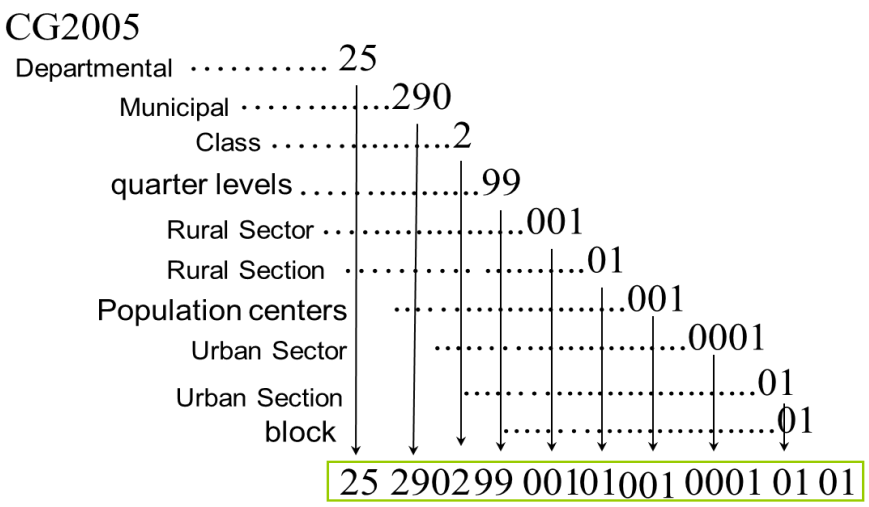
It referred to all dwellings, households, individuals and economic units (trade, services and industry), which were located or operated in the national territory. It also included all the agricultural units associated with dwellings located in the rural areas.

Geographical disaggregation

From the basic census standpoint, the disaggregation level applied included up to the smallest area, i.e. the block (refer to Diagram 4). For the effects of the survey sampling, the disaggregation depended on the sample design, which for this particular case enabled a geographical disaggregation at the departmental, municipal (municipal township and remaining areas) levels. The main cities also had a disaggregation at the district/quarter levels.

The codes assigned to each disaggregation level are shown in Diagram 4 below, and the union of the codes corresponding to each disaggregation level results in the compound census code.

Diagram 4. Structure of the census database



Statistical units

The observational units are:

- Households, dwellings.
- Special Accommodation Sites.
- Dwellings located in the scattered rural population area (class 3) with agricultural activity.
- Economic units: the economic establishments; company, auxiliary unit.

For the case of the survey sampling, the sampling unit was the household.

Statistical framework

In order to locate and identify the census units and those of the survey sampling, the mapping of both the Instituto Geográfico Agustin Codazzi[30] (IGAC[31]) and DANE's Division of Geographical Information (DIG[32]) were used.

Nomenclatures and classifications used

Political-administrative division

The nomenclature and classifications depended on the geographical database, which is a system designed by DANE to reference the statistical information with its corresponding geographical places. In the political-administrative division (departments and municipalities), the municipal township, the population centers and the scattered rural population areas were identified at the municipal level, and the geo-statistical areas established for census purposes, which were mainly delimited by geographical features that could be identified in the terrain. The permanent updating and maintenance of the geographical database were of great importance to ensure the system persistence over time, as well as its functionality.

The geographical base was complemented with basic mapping information for each municipality, both for the urban (municipal township and population centers) and the rural areas. The cartography for the municipal townships and population centers was at a scale of 1: 5000 with information up to the block level, including sites of interest and road nomenclature. Rural areas had basic information such as rivers, roads, toponymy, and contour lines, taken from the IGAC database.

[30] The Geographic Institute Agustín Codazzi; entity of the government responsible for producing the official maps and basic cartography of Colombia and managing the national cadastral infrastructure and the national soil survey.

[31] For its acronym in Spanish.

[32] Idem.

International Standard Industrial Classification of all Economic Activities (ISIC Rev. 3 A.C.)

The ISIC code (United Nations Revision 3, adapted for Colombia) was used in the 2005 General Census; its purpose is to group all the economic activities by productive processes. Furthermore, it classifies the statistical units based on their main economic activity.

This code was incorporated into the census by recommendation of the UN Statistical Commission, who designated these international rules as a supporting guide for the efforts of each country.

Even though the version used in the census followed the same principles, criteria and rules proposed by the Statistical Commission, its main difference lies in the importance given to the different categories defined.

Therefore, it specifically refers to the country's economic structure, giving greater importance to the activities that are carried out the most in Colombia and adding explanatory notes that adjust it to the national reality.

The ISIC code Rev. 3 A.C. has 2 and 4 digits, which enables the performing of classifications within specific activities that facilitate the handling of information for the entrepreneurial, economic and statistical analysis.

Reference period

For most of the variables, the reference period is the census moment. For some specific variables, this period changes as is the case with the migration variables, which have a five-year period before the census date, or the case of the question regarding the activity in the week prior to the census, whose period is one week.

Other variables have a one-year reference period, as is the case of "Were you sick?", whereas the question "Did you have any disease requiring any medical treatment"?, has a five-year period.

Collection period

The period scheduled for data collection was from May 22, 2005 to March 6, 2006. Given the foregoing, the classification of municipalities by clusters[33], as per their similitude in geographical dynamics, was taken into account. For operational purposes, they were classified in groups within each cluster by keeping the simultaneity criterion in data collection according to the area of influence.

Therefore, the following concepts regarding the collection period are important to bear in mind:

Census period: Time required for the data collection for one or several clusters.

Census moment: It is the 00:00:00 hours of the day when starting the data collection operation for each cluster or group of clusters.

2.2.2. Design of indicators (products)

These indicators corresponded to the totals, averages, rates, and ratios for population, households and dwellings. Some of the basic indicators that are traditionally obtained by the population census are listed below:

- Dwellings:
  - Total dwellings
  - Total dwellings as per topologies
  - Total dwellings as per occupation condition
- Households:
  - Total households

[33] Clusters: Set of municipalities grouped according to the demographic dynamics that made it possible to gather them in homogeneous groups, which was the basis for the definition of the strategies implemented in the Colombian territory during the 2005 General Census data collection. The purpose of these clusters was to minimize the impact on the mobility of the resident population in the municipalities.

- Coverage of public utilities
- Number of rooms per household
- Bathrooms per household
- Households classified by the method of garbage disposal

- Individuals:
  - Total number of persons
  - Persons by household and dwelling
  - Population by territorial entities
  - Population by age and sex groups
  - Fertility rates
  - Male to female ratio
  - Children/female ratio
  - Literacy rates
  - School attendance rate
  - Total number of persons by ethnic group
  - Total number of immigrants
  - Demographic dependence ratio
  - Economically Active Population (PEA – for its acronym in Spanish)
  - Working Age Population (PET – for its acronym in Spanish)

The census is used as an input for the construction of mortality tables and population projections; it is a very important tool for the construction of the national statistical framework.

Some of the demographic indicators used are defined below:

- *Male to female ratio:* It refers to the relation between the number of males and females in a given population. Usually expressed as the number of males per each 100 females.

- *Demographic dependence ratio*[34]*:* It refers to the ratio of individuals (whose ages are usually under 15 and over 64 years old) that depend upon other persons who are in the economically productive age group (typically between the ages of 15 and 64 years old) in a population.

- *Children/females ratio:* The children/females ratio refers to the number of children under 5 years old per 1,000 females of childbearing age during a given year.

- *Fertility specific rates (by age):* It refers to the number of live births[35] from females within a specific age range, per 1,000 females in that age group.

- *General fertility rate:* It refers to the number of live births per 1,000 women between 15 and 49 years old in a given year.

- *Infant mortality rate:* It refers to the number of children less than one year of age who died per each 1,000 live births during a given year.

- *Growth rate:* It refers to the increase or decrease with respect to the size of a population due to the effect of the balance between births and deaths plus the net migration. It also can be calculated from the natural growth and net migration rates.

- *Life expectancy:* It is an estimation of the average additional number of life years a person could expect to live, if the mortality rates by specific age for one particular year were to remain constant for the rest of their life.

[34] Ratio: It refers to the relation between a population subgroup and the total population or another subgroup; i.e. a subgroup divided by another.

[35] Live birth: Complete expulsion or extraction from the mother's womb, irrespective of the pregnancy duration, of a conception product which following such separation, breathes or shows any other sign of life (heartbeats, umbilical cord pulse or effective movement of voluntary contraction muscles), whether or not the umbilical cord had been cut off or if the placenta had been detached or not.

- *Population structure (by sex and age):* It is the composition of a population according to the number or proportion of males and females in each age category. This is the cumulative result of the fertility, mortality and migration retrospective trends.

2.2.3. Design of instruments

The thematic content of the census questionnaires was defined according to the institutional and technical requirements with respect to the need for representativeness in small areas of the basic census information, as well as its comparability with previous censuses.

Indeed, it was important to consider a set of conditions that defined the content of the basic form, which was administered to the whole universe. These parameters were as follows:

- The prevalence of many phenomena requires large samples with high cost-benefit rates, which determines its mandatory inclusion in the basic form.

- Aspects of a legal nature, as is the case of the information that is required to be certified by DANE.

- Information, which due to its characteristics becomes strategic information for the establishment of baselines in the planning, monitoring and evaluation processes of the local public management.

Some variables such as sex, age, kinship and topics as ethnicity, migration, education, fertility and infant mortality, etc., were administered to the whole population (universe) in each municipality, whereas other variables were administered by using the extended form.

Under these parameters, the topics for each of the questionnaires were as follows:

Basic questionnaire

It was administered to the whole universe, the municipal township and remaining areas of each one of the Colombian municipalities with a total of 28 questions. The content of the questionnaire was as follows:

- *Identification*: Chapter composed of 8 items, which enabled the census information to be registered with respect to dwellings, households and individuals at the level of each territorial entity (department, municipality and quarters) and zone (municipal township, population center, scattered rural population), as well as the territory portion for indigenous reservations and Afro-descendant communities collective territories.

- *Dwelling and household:* It contained two questions with which the dwelling inventory could be quantified as per the topology being defined for the census (house, apartment, room, tenancy, dwelling and other type of dwelling). At the household level, the international emigration part.

- *List of members in the household:* Under the concept of usual resident[36] and sorted by kinship, it enabled making a previous control on the size of the household. In addition, two more controls were included in order to detect members who were excluded[37], but who were usual residents in the household; and otherwise, to minimize the bias due to the inclusion of non-members of the household, such as students who spent most of their time in the city where they studied. A question about deceases in the previous year was included, which turned out to be very important for the evaluation of the death records.

- *Data of resident population:* Questions were included that aimed at creating controls so as to avoid omissions or duplicity. Questions were also controlled in order for them to be asked according to the sex and age of the interviewee.

[36] Refers to the person living permanently or most of the time in a dwelling, even though they were absent at the time of the census.

[37] Respondents tend to omit as residents the young children, elders, hospitalized persons, abductees or persons who by the time were on vacations.

The topic was as follows: sex, age, kinship relation with the household head, ethnicity[38], disability, migration[39] and its causes for the last five years[40], education[41], fertility and mortality[42], variables which due to their frequencies at the age and sex level, made it necessary to be administered to the whole population.

- *Control questions:* A set of questions that enabled identification as to whether the member was a usual resident of the household registered in the census, or of another household, or if they had already been registered in another place within the same municipality or in another municipality.

In the same way, a question that enabled controlling whether there was an economic activity associated with each household was included, which determined whether the administration of the additional questionnaire with respect to industry, trade or services was necessary; as in the case of the rural areas when in addition to its relevant activity, there was any agricultural activity.

Extended questionnaire

This instrument was administered to a representative sample for each one of the municipalities in the country[43]. In the case of the municipalities presenting a small amount of population, the extended form was administered provided that the sampling fraction was 60% or over.

[38] For the Afro-descendant population, it is measured taking two aspects into account: phenotypic and cultural self-recognition.

[39] It enabled the measurement of domestic and international migration. The former whether it was from the municipal township or rural part of a territorial entity.

[40] It identified year and place of origin.

[41] Literacy, attendance to school and last year passed.

[42] Only applied to women 12 years of age and older.

[43] The municipal township, remaining areas and some cities at the district level.

In the same way, due to reasons of security, communication, difficulty of access, or due to the presence of indigenous reservations and Afro-descendants' collective territories, a hard copy form would be filled out.

It is important to emphasize that there were no hard copy basic forms, nor manual sample selection tables[44]. The extended form was administered in 624 municipalities, both in their municipal townships and their remaining areas, which represented 56% of the total with respect to the country's municipalities.

The thematic content of the extended questionnaire included the variables of the basic questionnaire in addition to the following topics:

- *Dwelling:* This chapter contained a total of ten questions that enabled the dwelling characterization, as well as an estimate of the quantitative and qualitative deficit and the required variables, with respect to the dwelling, for the calculation of the Unsatisfied Basic Needs Index (NBI) and the Quality of Life Index (ICV[45]).

- *Household:* This chapter contained a total of 15 questions, which included variables needed to estimate subjective poverty and international emigration.

- *List of members in the household:* It contained 6 questions; in addition there was a question that asked for the contribution to the household expenses.

- *Data of the resident population:* This chapter included 43 questions, some of which corresponded to new topics such as poverty measured from the perspective of food consumption, health and social security, among others.

  The education section was supplemented by questions such as the cause of school absenteeism, foreign language, computer use and reading habits.

[44] Manual sample selection tables: They refer to tables where the households to be selected are indicated to the interviewer.

[45] For its acronym in Spanish.

In a like manner, with respect to the economic issue, questions were asked pertaining to the place where the work was done, the work address, the occupational category and income.

- *Control questions:* They were identical to those in the basic questionnaire.

Basic questionnaire for the SAS

This questionnaire was important in order to capture the basic information regarding the usual residents of each territorial entity who, due to special characteristics with respect to work, study, religion or reclusion, meet the *de jure* criterion of the population and housing census.

The thematic content for the population living in the SAS did not only need to capture the structures by age and sex in each one of the SAS[46] types, but also the basic characteristics obtained for the population living in private dwellings. Likewise, some variables enabling the characterization of different institutions were included.

Economic and agricultural units

The content of these questionnaires was coordinated with the groups in charge of the relevant topic, where the basic contents were agreed upon and can be seen in detail in Annex A.

Urban environment

This was a new topic within the census process, by means of which the use of the information was significantly extended, since it enabled the population data and their dwelling characteristics to be related to the urban environment surrounding each dwelling unit.

[46] Special Accommodation Sites (SAS): Prisons or correctional and rehabilitation centers, lodges or orphanages, asylums, convents or seminaries, boarding schools, barracks, work camps, shelters for street dwellers and displaced persons, brothels, among others.

From the methodological standpoint, the observational unit was the *side of the block*[47], taking into account, that from the operational perspective, all the information was related to the Geographic Areas (GA). In order to make this process operational, it was necessary to identify whether each GA was for residential[48] or non-residential use; the habitat criteria were only applied to the GAs of residential use.

Annex A -*Thematic Content of the 2005 General Census*-, presents the questionnaires used for the data collection of the 2005 General Census.

2.2.4. Sample design

Considering the characteristics of the conceptual and methodological design of the 2005 General Census, part of the census thematic content was enquired by means of a probabilistic sample with representativeness at the municipal level (municipal township – remaining areas).

Sample framework

One of the criteria taken into account for the selection of the sample design was related to the lack of a reliable and updated sample framework. For this case and as set forth below, the design and methodology used for the sample selection made it possible for the construction of the framework to be performed prior to the enumeration, which enabled the whole process of determining the number of interviews per census taker.

Design of the survey sampling

The sample design of the *survey sampling* was a household probabilistic sample selected in each municipality of the country, in real time (directly in the field) during the operation of the 2005 General Census.

[47] Side of the block: is the portion of the perimeter of the block being directly observed on the whole by the collector. Questionnaire of Urban Environment – 2005 General Census – CGRAL. DANE. 2005.

[48] If there is at least one dwelling in the GA.

The Bernoulli's stratified design was used for the sample selection, taking the household as the selection unit. The stratification criteria were: the municipality (municipal township and remaining areas); and for large cities with a structure of districts or quarters, the district or quarter as applicable.

In the field, the sample selection was carried out by means of the DMCs whereby the census information was captured. For that purpose, the usual Bernoulli selection algorithm was implemented, by indicating in each particular case, the inclusion probability corresponding to the household in question, as per the pertinent stratum (municipality, municipal township or remaining areas, district or quarter, if any).

Considering that for the demographic and dwelling topics, there were three types of respondent units; the dwelling, the household and the person, it is important to point out that even though the selection unit was the household, once a household had been selected, all the household members were selected as well.

As for the dwelling topic, a dwelling was deemed to be selected when at least one of the households that occupy it had been selected. In such terms, the sample was taken under a *Bernoulli stratified design*[49] of elements for households; under a *Bernoulli stratified design of clusters*[50] for individuals, and under a *Poisson design*[51] of elements for dwellings.

For this latter case, the inclusion probability of each dwelling was determined by the pertinent stratum (municipality, municipal township or remaining areas, and quarter, if any), and by the quantity of households that occupied it.

---

[49] Stratified sampling: It refers to the partition of the universe as from the various differences presented between the population groups, for the particular case of the 2005 General Census, these differences are the municipalities and the class (municipal township – remaining areas).

[50] Bernoulli stratified design of clusters: if a household is selected as from a Bernoulli Design, all of the members of the household are interviewed by the survey sampling.

[51] Poisson design: it is the generalization of the Bernoulli design. In the Bernoulli design, the elements are sorted one by one with a fixed probability n; while in Poisson design N independent trials are made, where an independent random number is generated. If any of such numbers is lesser than n, the element is selected. For the 2005 General Census, the N corresponded to each one of the households, hence if any household was selected, the dwelling was also selected.

Size of the sample

For the calculation of sample sizes, population projections at the municipal level for the year 2005 and average sizes of household at the level of municipal township and remaining areas were used.

Formulas of simple random sampling of elements were also used. These formulas supposed the selection of a sample of households and the estimation of parameters of the proportion type (with known denominator) for categories of variables with at least 10% of the population under study and a variation coefficient of 7% or less at the municipal level.

Once these minimum sizes were calculated, they were distributed between the municipal township and the remaining areas of the municipality, trying to obtain similar variation coefficients for both zones. For the case of cities with a structure of district/quarter and availability of both population projections and household average sizes at the quarter level, the calculation of sample size was conducted for each district/quarter individually.

For those cases with a structure of quarters, but without available information with respect to projections, the sample sizes required for the municipality were amplified up to four times, so as to assure a sufficient sample size that would enable the delivery of figures at the disaggregation level of at least quarter groupings with a population of 150,000 inhabitants or over.

By using this information, the sampling fractions were obtained to be applied to each municipal township, remaining areas or quarter, so as to obtain expected sample sizes close to those required.

In the cases where, due to the small quantity of population, the sampling fraction to be applied was 60% or over, the extended form was administered to all the households, individuals and dwellings of the zone.

In the same way, when due to reasons of security, communication, difficulty of access, or due to the presence of population who were mostly indigenous, a hard copy extended form was used. There were no hard copy basic forms or manual sample selection tables.

Once those adjustments were made, out of the 1,240 municipalities, quarters and departmental "corregimientos" combined, extended forms were administered to 625 municipalities covering the entire municipality, 62 municipalities with sample in the remaining areas and the administration of the extended form in the whole municipal township, 177 municipalities with sample in the municipal township and administration of the extended form in the remaining areas. The remaining 376 municipalities were sampled in the municipal township and the remaining areas.

The final sample fractions used, ranged between 1.2% and 60%, which varied depending on both the amount of population of the municipality and its distribution between the municipal township and the remaining areas, as it is summarized in Table 3 below.

Table 3. Sampling fractions used

Sample fraction	Percentage	
Municipal Township		
Households in the municipality	70 or over	less than 70
20 000 or over	up to 5	up to 7
10 000 - 20 000	5 to 12	6 to 30
5 000 - 10 000	10 to 35	12 to 60
less than 5 000	15 to 60	20 to 60
Remaining areas		
Households in the municipality	20 or over	less than 20
20 000 or over	up to 12	5 to 40
10 000 - 20 000	2 to 30	10 to 60
5 000 - 10 000	5 to 40	10 to 60
less than 5 000	10 to 60	20 to 60

Source: DANE.

Accuracy of the results

The estimated variation coefficient (cve[52]) was used in order to measure the sampling error. This coefficient measures the size of the variability with respect to the estimator

[52] For its acronym in Spanish.

sample distribution, i.e., the indicator of the degree of approximation with which the universe characteristics are estimated from the sample. The estimated variation coefficient is given by:

$$cve = \frac{\sqrt{\hat{V}(\hat{\theta})}}{\hat{\theta}} * 100$$

Where:

$\hat{V}(\hat{\theta})$ is the sample variance of the parameter estimation and θ is the estimated parameter; or, in other words, it is defined as the percent variation.

For categories of variables with a presence less than 10% of the population under study, a variation coefficient of 7% or less is expected at the municipal level.

Construction of the basic expansion factors

The basic expansion factors are constructed as the inverse of the probability of inclusion introduced by the design in each case.

For the household and dwelling units, it then deals with the inverse of the sampling fraction used in the municipality – municipal township, remaining areas or quarter the element belongs to.

For the dwellings, there was a Poisson dwelling design with a probability of inclusion depending on the number of households residing in the dwelling; for the construction of the basic expansion factor, in this case it was first required to construct the actual inclusion probability obtained for each dwelling.

The vacant dwellings had no probability of being selected in the sample, whereas the occupied dwellings with persons in place and those occupied with all persons absent (where the direction was to tick at least one household), did have probability of being selected[53].

[53] As a regular practice, for the vacant dwellings, the dwelling typology is the only information to be collected, included within the census basic content; for this reason, such dwellings are not taken into account for the selection of the survey sampling.

Considering **V_comp** as the sampling fraction used to carry out the sample selection in the corresponding geographical area, the following cases are possible:

Case 1. There is just one household in the dwelling; in this case, the probability of inclusion of such dwelling is equal to the sampling fraction used for the household occupying it.

$$\pi_k = V\_comp$$

Case 2. There is more than one household in the dwelling; the probability of inclusion of such dwelling is calculated as follows:

- There are two households in the dwelling:

$$\pi_k = 2*V\_comp - V\_comp^2$$

- There are three households in the dwelling:

$$\pi_k = 3*V\_comp - 3*V\_comp^2 + V\_comp^3$$

- There are four households in the dwelling:

$$\pi_k = 4*V\_comp - 6*V\_comp^2 + 4V\_comp^3 - V\_comp^4$$

In general terms, for a dwelling with *n* households, the probability is constructed as:

$$\pi_k = \sum_{i=1}^{n} (-1)^{i+1} \binom{n}{i} V\_comp^i$$

Where $\binom{n}{i} = \frac{n!}{(n-i)!\,i!}$, is the usual combinatory function.

Note that the first term is positive; the second is negative, and so on. The odd-number powers are positive whereas the even-number powers are negative.

As a particular case, provided that the sampling fraction is equal to one for any household in the dwelling, the probability of inclusion of the dwelling is equal to one.

Calibration of the basic expansion factors. Construction of the calibrated expansion factors

Once the basic expansion factor has been calculated for each one of the sample elements, such factors are then calibrated to make an adjustment of the demographic structure, which is reflected in the sample to the structure observed as from the basic census.

For this task, the calibration procedure proposed by Särndal and Deville (1992) and implemented by the Statistics Institute of Sweden in the CLAN[54] macro, which operates on the Statistical Analysis System (SAS) software was used.

For the structure adjustment, 20 models were designed for the household topic and 6 models for the dwelling topic. A simultaneous calibration was performed regarding the household and person topics in order to maintain the consistency with the type of sample design used, that was of clusters of individuals, so as to guarantee that all the members of a household have the same factor of calibrated expansion.

For the household topic, the age, sex, school attendance, the higher educational level and the activity in the week prior to the census, of each one of the households' members were used as calibration variables; the total number of persons in such household was also used.

For the dwelling topic, the following variables were used: type of dwelling, and whether it had access to indoor water access, sewage system and power utilities and the total number of households in the dwelling.

The groupings of values with respect to the variables pertaining to each thematic content are shown in Annex B. Based on these variables, 20 models were proposed for households and 6 for dwellings. As it can be seen, the models always go from the most complex to the simplest possible.

In order to perform the calibration that would enable the adjustment by structure, the CLAN macro was used, at the level of the municipal township, remaining area or

[54] CLAN is based on the Taylor linearization method for the variance estimation. It enables the calculation of estimates in complex designs.

district/quarter[55], to the models mentioned above and the limits of the expansion factors between 0,5 and 4 times the value of the basic expansion factor, were varied.

The procedure was iterative, initially it was tested with the first calibration model and the established broadest limits; if a solution was not found, the next model with broader limits was then tried, and so on.

Once a solution to the system had been reached, the lowest limit possible was determined by iteration, by decreasing 0.5 each time. Subsequently, the greatest lowest limit possible was to be determined by increasing 0.05 each time, until obtaining the narrowest possible limits within which a convergence was reached.

The error epsilon used to evaluate this convergence is a square difference, between the actual values and those estimated from the sample with calibrated factors, greater than 1. Annex C shows the flow chart of the calibration process.

In the calibration process, only those elements belonging to the sample and having a basic expansion factor other than 1 participate, i.e., those elements that entered in the sample as forced inclusion, did not suffer any modifications in their expansion factor nor were taken into account for the determination of the size of the universe, to which the elements selected with any probability other than 1, must restitute.

This procedure was carried out for all of the municipalities which had sample selection. Calibration was performed in each municipality at the level of each municipal township, remaining areas or quarter, if any. The only particular cases were those of the municipalities of Manizales, Pereira and Dosquebradas, which had too small quarters and where the calibration did not present satisfactory results. For these three cases, the municipal townships were treated as though they had no subdivisions in quarters.

The results of the model and limits with which each one of the municipal townships, remaining areas or quarters were calibrated for the topics related to dwellings and households, are shown in Annex D.

[55] Hereinafter, quarter and district will be understood as the same level of information disaggregation, because some cities have quarters and others districts.

Estimation procedure based on the survey sampling

The CLAN macro used to perform the calibration of the basic expansion factors, and thereby, the adjustment by structure of the survey sampling, also enabled performing the estimation of parameters and their corresponding sampling errors, by using the Taylor's[56] linearization method:

Finally, in order to facilitate the use of the information by non-specialized users, a second approximation method was presented for the sampling errors of the estimators, which used the existing relations between the sampling errors of one π-estimator and one *generalized regression estimator*[57], as that introduced by the calibration.

Estimation of parameters

As it could be inferred from the construction of basic expansion factors and the adjustment process by structure by means of the calibration made to each municipal township or remaining areas, the estimation of parameters performed by using the basic expansion factors, corresponded to the use of a *π-estimator* and which was made by using the calibrated expansion factors, belonged to the use of a generalized regression estimator, where the variables used in the model assisting the estimation corresponded to those used as part of the corresponding calibration model[58].

In order to perform the estimation of a total-type or ratio parameter, which were the most required ones, it would suffice to use indicator variables for each of the categories of the involved variable or indicators for the construction of the output tables, in case there was such a requirement, to multiply such indicators by the

[56] Anderson C., Nordberg L. A user's guide to CLAN97. Statistics Sweden.

[57] An estimate obtained by a generalized regression estimator (GREG) is a sum of observed values weighted by the product of a design factor and an additional factor computed through the use of auxiliary information, where possible, highly related, with the variable, the total of which is to be estimated.

[58] For a better detailed explanation, refer to Jean Claude Deville, Carl Erick Särndal. Calibration Estimators in Survey Sampling*, Journal of the American Statistical Association, 87(418),*1992.

corresponding expansion factor and sum over the sample of elements that corresponded to the domain of interest, which was a domain defined in the thematic (e.g. population over 15) or geographic manner (at the municipality, zone, or department level).

However, this type of estimation has a disadvantage from a practical point of view: with some study domains and depending on the type of calibration model used, it is possible that the estimated marginal means of some of the categories do not match with those corresponding to the universe determined by the census.

Since this was one of the main requirements that it was necessary to satisfy, in order for the different users to get a clearer interpretation of the sample results, it was recommended an estimator to be used wherein the differences between the estimated marginal means and those observed were adjusted for each of the cells of estimation. For the case of a total, the estimator would have had the expression:

$$\hat{t}_{ycorr} = N_{dom} \frac{\hat{t}_y}{\hat{N}_{dom}}$$

Where

$\hat{t}_{ycorr}$ is the estimator of the Y total in the domain for which the calibrated expansion factors are used; $\tilde{N}_{dom}$ is the estimator of the domain size that can be done from the calibrated factors, and N_{dom} is the real size that the census delivers for the domain. The use of this procedure at the level of each one of the cells, assures that, exception being made of those cases of zero sample size in domains with size other than zero, the marginal means will coincide.

In practice, this procedure corresponds to perform the estimation, - not of totals, but of averages - in each one of the cross-referencings within the stratum used for calibration (municipal township, remaining areas or quarter/district) and to multiply such average by the known size of the domain. Once this is made for each one of the strata used for calibration, a total is obtained, with which the aggregations are made by summing as in any stratified design.

For the estimation of proportions over the sample, and when considering that the total estimated of each variable or dummy[59] of ***y*** category, was adjusted to the actual size of the domain, it is proposed to simply use the estimator below:

$$\hat{P}_{ycorr} = \frac{\hat{t}_{ycorr}}{N_{dom}} = \frac{N_{dom}\dfrac{\hat{t}_y}{\hat{N}_{dom}}}{N_{dom}} = \frac{\hat{t}_y}{\hat{N}_{dom}}$$

This estimator simultaneously corresponds to both the estimation of a proportion with fixed-known denominator (with which an additional variance is not introduced) and to the estimation of a ratio over the sample, with no adjustment at all.

In practice, it is only needed to estimate the total of the ***y*** variable, using the corrected estimator. The presentation of the several different ways of this estimator is made because although the third presentation is the simplest to understand, the first is the easiest to calculate.

The scheme of estimation presented for the case of proportions is particularly useful when it comes to making a cross-referencing between variables in the basic and extended forms, hence it is expected for the marginal means to match. For the case where the domain size can only be determined from the sample, no corrections are necessary.

Sampling errors

One of the determining reasons to choose the Bernoulli and Poisson designs for the selection of the elements to be included in the survey sampling, was the simplicity of the processes required to perform the estimation of the variation coefficients for estimators of the different parameters.

[59] *Dummy* are qualitative fictitious variables, also known as indicative, binary, categorical and dichotomous variables.

In order to address this issue in greater detail, it must be remembered that the estimation of the variance, by means of traditional methods (other than resampling) for most of the parameters, is based on the covariance existing between each pair of elements taking part in the design, defined as:

$$\Delta_{kl} = C(I_k, I_l) = \pi_{kl} - \pi_k \pi_l$$

Where

$$I_k \quad I_l$$

are the indicators that elements *k* and *l*, respectively belonged to the sample, π_{kl}, is the probability of joint inclusion of k, l and, π_k and π_l were the first-order probabilities of inclusion of the elements k and l. The existence of covariance other than zero for $k \neq l$ introduces crossed products in the formulas for the estimation of variance, which is translated in the need for performing calculations of variance among the elements that participate in the design.

In this sense, it is important to remember that for the Bernoulli and Poisson designs being implemented in the selection of the survey sampling, the second-order probability of inclusion for any pair of elements k and l corresponds to the product of the first-order probabilities of inclusion established for the elements, with which, all values Δ_{kl} are equal to zero for $k \neq l$. For this reason, the estimation of variance for an estimator as the π-estimator or Horvitz-Thompson estimator, does not involve the calculation of variance between the values y_k and y_l of the sample, but the calculation of sums of y^2_k for the elements under study.

This offered a series of advantages in the procedure that enable an evident simplification of the estimation of the variance in a case like this, where the sample design is quite simple, the estimators to be used are relatively complex and an intensive use of the collected information is made; therefore it is not only expected to generate a series of output tables, but also to make microdata or dynamic-inquiry tools, which have to consider the procedures of estimation that were proposed to the sample available to the non-specialized users.

A study of the variance structure introduced by the design, particularly with respect to the nonexistence of Δ_{kl} values other than zero for $K \neq l$, enables concluding that the

estimation of variance for any estimator over a study domain, is restricted to a summation over the corresponding domain. In this case, the creation of *dummy* variables and the inclusion of zero values in the estimation of variance are not required, while this does happen with other simple designs such as the Simple Random Sampling (MAS[60]) or systematic sampling.

The estimators proposed for the survey sampling from the calibrated expansion factors were of generalized regression, with a model where the predictor variables were those used in the calibration model used for each municipal township, remaining areas or quarter. Also, an adjustment had been proposed for the known totals of the marginal means reported by the size of the domain under study.

Under this perspective, the guidelines for estimation of variance were constructed following the four steps shown below:

1. Variance of the estimators under the calibration method.
2. Inclusion of the impact in the estimator of variance of the correction, for the known size of the domain.
3. Estimation of variance for aggregations considering the design used
4. Estimation of variance using a simple method and factors of variance correction.

Variance of the estimators under the calibration method

As it can be seen in Särndal and Deville (1992), the variance of the estimators by means of the use of any of the versions of the calibration method converges[61] to the variance of an estimator of generalized regression, where the assumed population model depends on the characteristics used in the calibration. For the particular case of the survey sampling, a homoscedastic model without intercept, for both the dwelling and the household topics, was used.

[60] For its abbreviation in Spanish.

[61] The convergence of a numerical method is understood as the assurance that in performing a good number of iterations, the approximations obtained end up coming nearer each time to the actual value that is being found.

In this sense, the intuitive manner used to perform an estimation of the variance of any estimator, goes through the regression of the variable under study against the continuous variables, and the indicators of each category for the categorical ones used in the calibration; the finding of residual according to the posed model and the use thereof in the place occupied by the variable under study in the variance estimation formulas, which are to be determined for each estimator according to the established design.

In practice, these calculations are performed by means of the CLAN macro, which is also used to make the calibration, and that enables the construction of π -estimators for different parameters. The approximation made by means of this software considers the design as a Single Random Sampling (MAS) and involves the reductions in the variances that arise due to the use of generalized regression estimators.

In any case, it is important to remember that the coefficients intervening in the regression of the ***y*** variable observed on the sample and the variables acting as predictors as per the calibration model used, are actually the estimations that can be obtained from the sample of the regression super-population model.

This means that, the calibration factors obtained under a same model, vary from sample to sample (even though in practice, only the selected one is used) and that the ***y*** variable is used for all the individuals in the universe and not just in the observed sample, the coefficients of this regression would correspond to a super-populated model to which it is only viable to approach to from the selected sample.

It also must be emphasized that in the process of estimation of variance by this way, those elements entering to the sample from the forced inclusion, with probability of inclusion equal to 1, do not participate. The remaining ones enter the model with equal weight, therefore, this task is performed at the level where the basic expansion factors are equal, i.e., to that of the municipal township, remaining areas or quarter.

Inclusion of the impact in the variance estimator of the correction by the known size of the domain

The foregoing corresponds to the use of a generalized regression estimator, without including the relevant part to the correction of the estimator that is made in order to know the size of the involved domains, i.e., it corresponds to an estimator of the type:

$t_y - \Sigma Y_k * Fcal$

Instead of the proposed estimator:

$$\hat{t}_{ycorr} = N_{dom} \frac{\hat{t}_y}{\hat{N}_{dom}}$$

Now, it is necessary to include this fact within the estimation of variance, for this effect, the Taylor linearization method is used, as in the common case of the estimation of a ratio. It has to be taken into account that the denominator contains the estimation of the size of a domain and that, according to the design definition; it suffices to take into account the observed elements as belonging to the domain for the estimation of the variance. With this, the Z_k variable that defines the denominator is constant and equal to 1 for all elements, and it is found that:

$$\hat{V}(\hat{t}_{ycorr}) = \frac{N_{dom}^2}{\hat{N}_{dom}^2} \hat{V}(\hat{t}_y)$$

At the level of each one of the strata used for the calibration, i.e., at the level of the municipal township, remaining areas or quarter.

Estimation of variance for aggregations considering the design used

As it was mentioned above, the use of Bernoulli or Poisson models, offers some advantages in the estimation of variance for aggregations. In this case, given that the second-order probability of inclusion for any pair of elements, matches with the product of the first-order respective probabilities, the estimation of variance for an estimator of the total of a variable over a specific thematic domain at the departmental level, for example, is reduced to the estimation of the variance corresponding to the thematic domain at the level of the municipal township,

remaining areas or quarter, as a stratum and the subsequent sum of all strata that compose the department.

Estimation of variance by means of a simple method and factors of variance correction

The above-mentioned elements show the process of estimation of variance for a given estimator, although they may not constitute a method simple enough so as to be implemented in dynamic-inquiry applications or to be used by non-specialized users. For such purposes, an alternative solution has been anticipated, providing the user with two elements: a factor at the level of element, which they would use for the estimation of the variance and correction factors at the level of municipal township, remaining areas or quarter and for each one of the variables included in the sample previously calculated.

In this sense, a new variance estimator is defined as follows:

$$V_{alt}(t_{ycorr}) = Fcorr\ \mathrm{var} * \sum_s y_k^2 * Pon\ \mathrm{var}_k$$

With $Pon\ \mathrm{var}_k = fcal_k\left(fcal_k - 1\right)$

$$Fcorr\ \mathrm{var} = \frac{\hat{V}\left(\hat{t}_{ycorr}\right)}{\sum_s y_k^2 * Pon\ \mathrm{var}_k}$$

This factor is used to correct the estimation of the variance at the level of the municipal township, remaining areas or quarter by the simple method; this estimate, is equal to that obtained with the most complex variance estimator, and it facilitates the calculation process to the users.

Once the estimation of the variance is corrected at the lesser level of aggregation (municipal township, remaining areas or quarters), the aggregation of variances, in order to obtain data at the municipalities, departments, zones or nation level, it is performed as it was previously mentioned in the paragraph pertaining to estimation of variance for aggregations, considering the design used.

3. STATISTICAL PRODUCTION

3.1. PREPARATORY ACTIVITIES

3.1.1. Awareness-raising

The experiences of previous censuses illustrate with respect to the determining function of the awareness-raising process for the achievement of the objectives of the census project. In the same way, the fact of taking into account the previous knowledge of the social, economic, political and cultural context of the municipalities during the design and implementation of the awareness-raising, enables the counting on an effective participation of the community in the census processes and activities. These antecedents ratify the convenience for the social communication interventions to be planned and organized since the very beginning of its schedule.

In the 2005 General Census, by means of the awareness-raising process, it was aimed at informing, motivating and guiding all citizens as well as the groups belonging to strategic sectors of society, so as to generate civic identification and ownership with the project in each one of the municipalities. Also, it was intended for the population to recognize the Census as a necessity for the country and, therefore, a commitment shared by all.

Target population groups

In order to achieve this goal, three large groups of target population were identified, which given their nature, were approached with specific modalities of communication. These groups were: 1) the general population, social and community-based organizations, 2) the local and departmental authorities (Mayors, Governors) and 3) the mass communication media.

General population

A communication and a media plan was designed for covering this population, which were aimed at diffusing the material prepared for the awareness-raising, so as to inform, motivate and guide the public opinion with respect to the census. The printed

diffusion material used consisted of: posters, banners, flyers, and stickers; most of which had logotypes of companies of the private sector, which sponsored the project.

Along with the foregoing, a media plan was designed: radio and television advertisements containing information pertaining to the census were scheduled on both the national and municipal radio stations as well as in both the national and regional television channels.

The whole campaign was reinforced with press releases, which were broadcasted on the regional radio stations in those municipalities where the census was about to start. A list of the zones to be registered in the census was released to the public, as well as the census status and its preliminary results. In addition, the whole campaign was reinforced with perifoneo[62], especially in rural areas of the municipalities.

Social and community-based organizations

The strategy used for the community participation was supported by different events, by means of which the different population groups were informed, motivated and guided with respect to the main aspects of the census and pertaining to its importance for the community.

Community-based organizations included: social-control networks, community action boards, local management boards, community mothers, peasant organizations, NGO's leaders and members, civic and community-based organizations, youth groups, religious organizations, ethnic groups and organizations, disabled people, among others.

In order to reach this target group, awareness-raising workshops were carried out with a maximum duration of half day, whose purpose was to generate participation scenarios and ownership on behalf of the community in regard to the census project.

Also two-hour briefings were held, whose purpose was to inform, in general terms, with respect to the importance of the census.

[62] Car equipped with a megaphone and transmitting a pre-recorded message while it traverses the specific area it was contracted for.

On the other hand, forums were held at the territorial level, which would enable the analysis of the issues relating to the population and supporting their solutions by providing them with updated socioeconomic and demographic information, provided by the census. It was established that these forums had a maximum duration of one day. Representatives of academia, guilds, media, experts in social, economic and political matters, and other concerned population attended these events.

With the social and community-based organizations an aggressive strategy of awareness-raising was carried out, within the framework of the *participative democracy*. The census achieved the participation of **22,849,000** social and community-based organizations, with whom **23,079,000** informational meetings were held, in order to:

- Inform the community
- Get their logistical support
- Assure the population immobilization
- Assure the security of the interviewers and equipment
- Validate the whole process with the community

Social and community-based organizations, specially the community action boards, had an active participation in the awareness-raising process in the municipality, by carrying out the following actions:

- General meetings of the social and community-based organizations.
- Meetings of the grassroots communities (neighborhoods, rural areas, parishes and others).
- Formulation and application of the community accompaniment plan.
- Evaluation and monitoring (oversight) of the process on behalf of the communities.

Local and departmental authorities

DANE entered into an inter-administrative cooperation agreement with local authorities and territorial entities, with the purpose of setting responsibilities in the execution of the 2005 General Census. Such agreement set various commitments, both from DANE and each one of the municipalities pertaining to the development of the census, to wit:

- The delegation of an officer serving as connection between the administration and DANE officers in charge of the census operation.
- The conformation of the Census Municipal Civic Board for the monitoring and oversight of the census process, thus guaranteeing a better assurance in the municipality with respect to the census execution process. In the same way, its members would be multipliers of the information in their respective sectors. For this purpose, they were provided with an awareness-raising guide explaining the actions to be taken by the Board and each member thereof, in order to achieve the objectives previously established.

- Facilitation of the development of the socialization and information meetings of the census within their administrative office and especially with the whole community.

- Provision of support to the movement of the census operation staff across the territory of the municipality.

- The schedule and disposition of a security support for the movements of DANE's personnel responsible for the diffusion and training, as well as for the development of the census operation.

Finally, a products portfolio was delivered, which set out one by one, all the products the parties hereto could have access to, as of the execution of the census, based on the questionnaires pertaining to population and housing, and economic and agricultural units.

The awareness-raising process

The awareness-raising plan established at the municipal level involved the following stages:

- The summons to mayors was made two and a half months prior to the start of the census in each municipality.
- The verification of the creation of the census municipal boards was made two months prior to the start of the census.
- The first meeting with the census municipal boards was summoned one and a half month prior to the start of the census.
- The census coordinator and the municipal boards met fifteen days prior to the start of the census.
- The first press release and the start of the massive communication campaign in the municipality mass media, took place eight days prior to the start of the census.
- The notice to households was sent two days prior to the start of the census.
- On the day zero, when the census started, the second press release was issued.
- The third press release was issued eight days after.
- The fourth, sixteen days after.
- The fifth, twenty four days after.
- The sixth, thirty two days after the start.

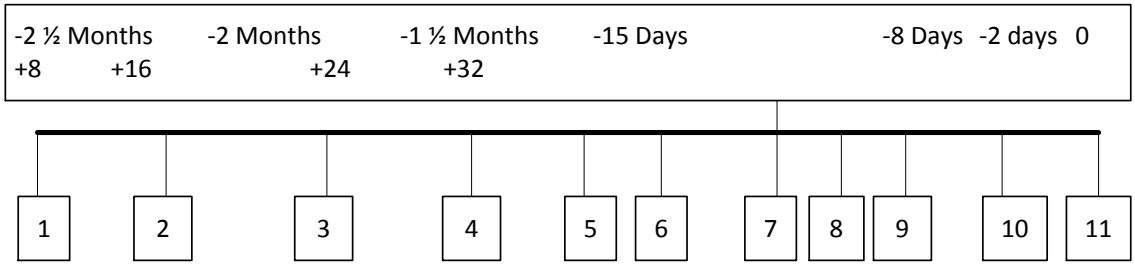
All the foregoing communication modalities were accompanied by the massive campaign at the national level, which included:

- *Public relations campaign,* carried out from March 1st to June 1st, 2005. It was addressed to opinion leaders, organizations committed to the census, potential sponsors (social marketing), among others.
- *Launching of the census,* held on May 22, 2005 and specially addressed to opinion leaders, mass media, mayors and governmental entities.

- *Free press campaign,* which was developed from July 1st to 15th, 2005, and consisted in the preparation of the public opinion with respect to the census.

- *Advertising campaign,* which was carried out from July 15th to November 30th included two phases: firstly, the pre-sale campaign was developed from July 15th to August 3rd, which aimed at the awareness-raising of the population and the provision of information pertaining to the census methodology and the dates the census was going to take place in each one of the major cities. The second phase, a maintenance campaign, was carried out from August 4th to November 30th, 2005, which provided information with respect to the new major cities to be registered in the census. Also, both the contact mechanisms of the census, namely *call center*, web page, citizen helplines, as well as the first results of the census were diffused. The purpose of these campaigns was to motivate persons who had not been registered in the census and also to maintain the interest among the citizenry.
- Finally, the public relations, advertising and free press campaigns, as well as the participation in some events and fairs were included in the strategy.

Diagram 5. Municipal awareness-raising plan



Source: DANE.

3.1.2 Personnel management system

Personnel management is a system composed of a set of interrelated processes, which precede the collection of census information, and that are necessary to have the required operation personnel available in a timely manner, with the highest competence and quality standards, to perform the collection. Additionally, it was aimed at creating and making use of the synergies that could be contributed by other

entities, which due to their expertise and coverage, would assure success in the collection of information.

The processes that made up such system were: summons, registration, selection, training, enrollment and rewards to the staff required for the carrying out of the census tasks. Also, the monitoring and an evaluation of each one of these processes was made.

This system was achieved as follows:

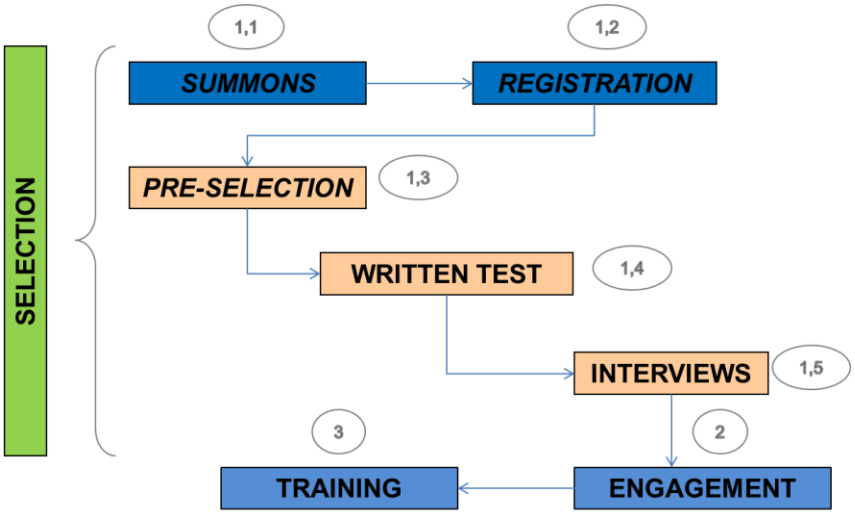
- For the management team (administrative staff: operational assistant, administrative assistant, Head of the Operational Regional Unit (ORU) and Municipal General Coordinator), by means of cooperation agreements with a private-sector specialized company. (Refer to Diagram 6).

- For the core team (operation staff: interviewer, supervisor and enumerator), by means of administrative agreements with public universities, in coordination and with the oversight of both the territorial directorate and the coordination guidelines provided by DANE Central, through the 2005 General Census Project Directorate. (Refer to Diagram 7).

The definitions of each one of the processes making up the Census Personnel management are set forth below:

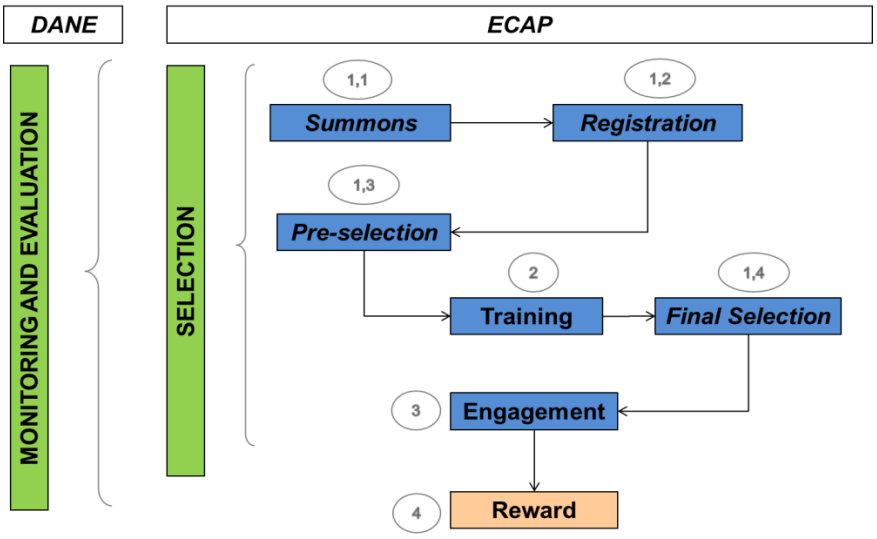
***Selection*:** Process of choosing personnel based on whether they met the profiles and required proficiencies.

Diagram 6. Flowchart of the personnel management process for the management team



Source: DANE.

Diagram 7. Flowchart of the personnel management process for the core team



Source: DANE.

It consisted of the following steps:

Summons: Public invitation made within a limited period of time and with established dates for any person to register and attend in order to take part in the census operation. This was done bearing in mind the profiles required for each position or role.

Registration*:* It refers to the process whereby the interest to participate in the census activities was formalized, bearing in mind the profile established for each role.

Pre-selection:

- For the management team; It consisted of the revision and checking of the documents submitted by the candidates with respect to whether they met the established profiles and requirements of the position for which they were applying.

- For the core team; It consisted of the revision of the documents submitted by the candidates in accordance with the established profiles and the approval of a written test dealing with the pertinent information contained in the manuals released on DANE Website, or in the documents delivered in those municipalities, where Internet access was not possible.

Final selection:

- For the management team: It refers to the competency-based technical selection process (psycho-technical tests and interviews) that was performed, in order to select the suitable staff to engage.

- For the core team, a technical test dealing with both the training provided to them and the compliance with the number of minimum hours they attended the training.

Training: It refers to the process whereby persons acquired, implemented or supplemented the skills required to accomplish the duties under each position defined in the project organization.

The pedagogical process designed for the 2005 General Census, included theoretical and practical elements pertaining to conceptual, methodological, operational and

technological aspects, which provided the required competencies to the persons who were going to carry out the census operation. In addition, the Training Entity (TE) issued a certificate to those who satisfactorily completed the training course.

Engagement: It refers to the formalization of the responsibility undertaken by means of a contract or agreement.

Reward: It refers to the settlement and payment process for the participation in the census operation as per the role performed.

Monitoring and evaluation: It refers to the continuous verification of all processes regarding the progress and periodical analysis of the personnel performance in the 2005 General Census. It was carried out by completing the report forms and the daily information with respect to the activities accomplished.

In order to record in detail the relevant activities of such processes accomplished by the core team and facilitate their monitoring and evaluation, DANE provided the TEs with an MS Excel file containing the forms where the latter should record the data with respect to each of the operators who took part in each process, aiming at monitoring their performance from the moment of their registration until the payment of their reward payment.

Such records were filled out once each process was completed and sent along with the respective consolidations of registered, pre-selected, trained, selected, engaged, and reserve personnel by role and area (urban, rural) to the Personnel Management Team, the Municipal General Coordinator and the Agreement Inspector.

Once the forms were completed, this data was input into the personnel management software, which enabled the record of the whole core team participating in the census operation to be updated.

In a like manner, and according to the terms of the agreements, each TE submitted a final report, which listed the development of all the personnel management processes, and which included the respective supports and consolidated reports.

3.2. COLLECTION OF INFORMATION

Among the different stages of the 2005 General Census project, the operational process was very significant; therefore, its design included the conceptual and methodological aspects, typical of the investigation, in accordance with the technological innovations applied for the collection of information and the obtaining of results.

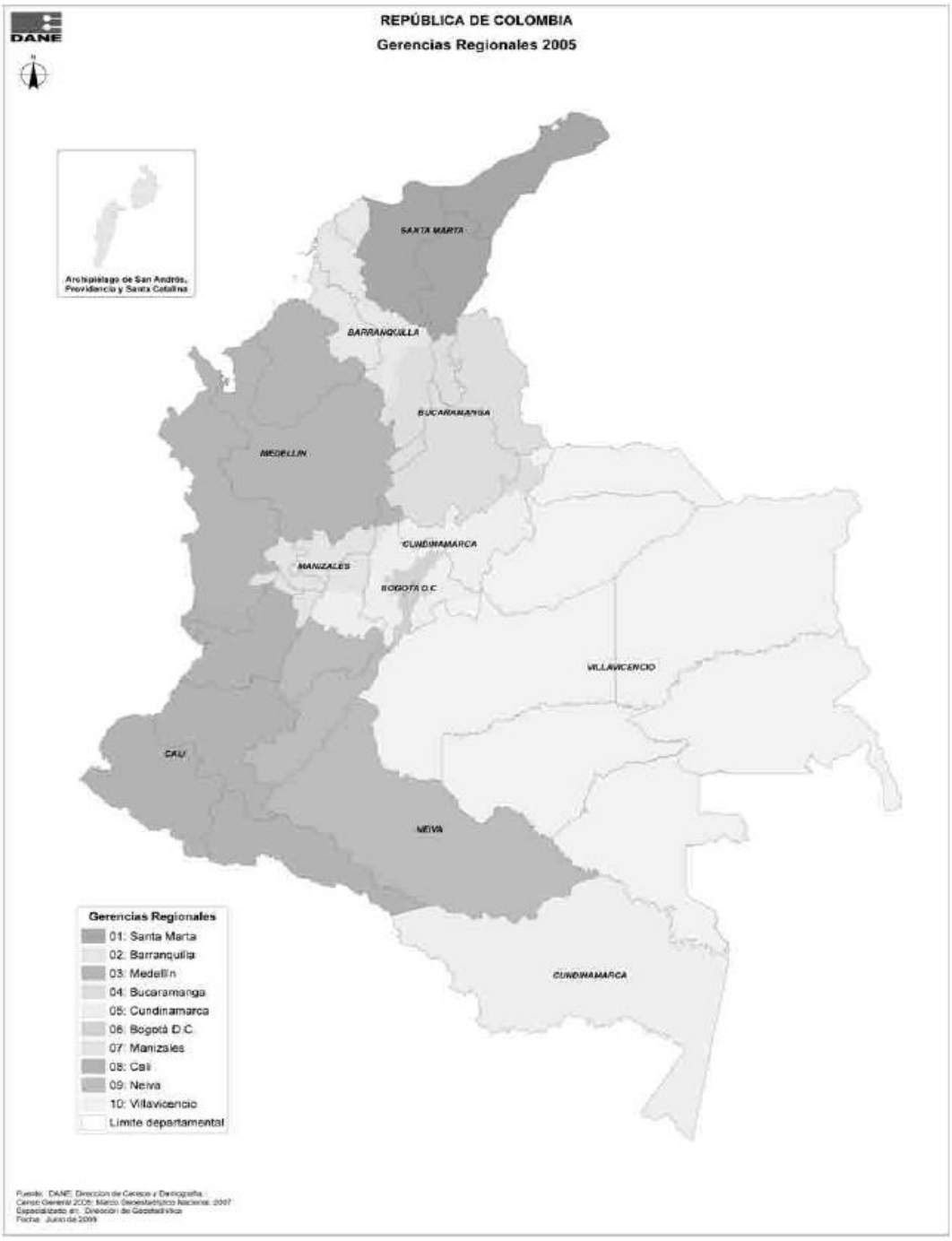
In this sense, the design of the operation was framed within the 2005 General Census methodology, and implied the planning and setting up of a complex organization based on the central level (DANE Central), under the direct responsibility and participation of DANE's Territorial Divisions and the corresponding schedule, which aimed at assuring high-quality information in terms of content and coverage, within the established time frame.

3.2.1. Census organization

The census organization and execution was supported by 10 regional managements, which were responsible for the management and coordination of the census operation in the municipalities they had been assigned.

Map 2 and Table 4 below show the geographical distribution as well as the coverage of each management:

Map 2. Regional managements



Source: DANE.

Table 4. Geographical coverage

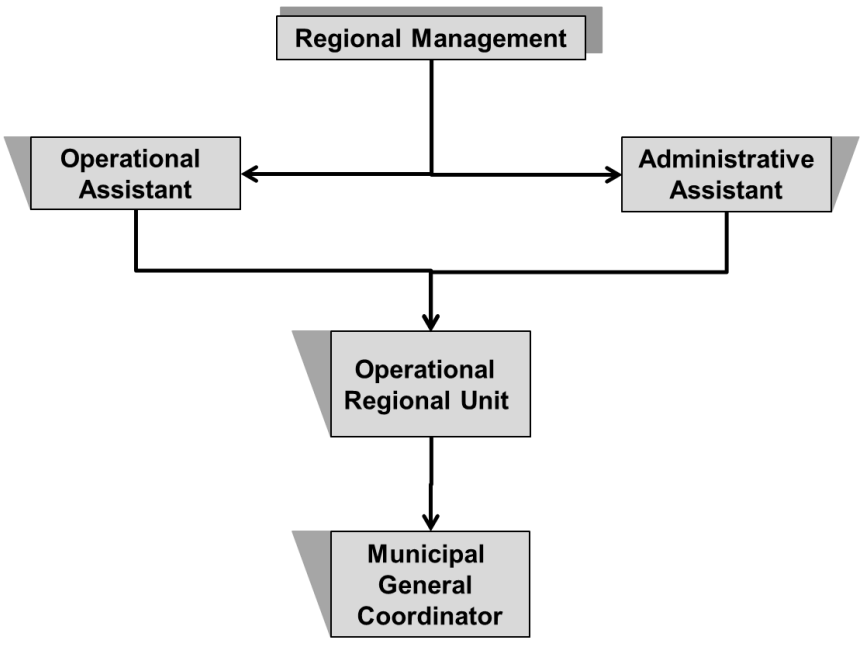
Regional Managements	Branch	Geographical Coverage		
		Municipalities	Territorial Entities	Geographical Area (Km^2)
1	Santa Marta	48		62.164,99
2	Barranquilla	105	1	32.775,62
3	Medellín	180		128.783,56
4	Bucaramanga	152		69.031,93
5	Cundinamarca (Bogotá D.C.)	205	9	152.934,95
6	Bogotá D.C.	35		1.634,71
7	Manizales	78		21.739,98
8	Cali	154		111.707,93
9	Neiva	69		122.280,47
10	Villavicencio	72	11	436.770,84
TOTAL		**1098**	**21**	**1.139.824,98**

Source: DANE.

Regional Census organization

The following functional chart was defined for each one of the territorial managements, working full time for the General Census.

Diagram 8. Functional Chart



The **Regional Manager** was responsible for conducting the census in those municipalities composing the territory of the region assigned. For this purpose, two highly experienced assistants, one in the operational field and one in the administrative field supported the whole process and were responsible for providing the technical guidelines defined in the designs of the different census processes and for tracking and controlling the logistic, personnel management, administrative, awareness-raising and collection processes, with the support of the Operational Regional Units (ORU).

The **ORU**s were groups of adjacent municipalities with easy access between them. Each one consisted of a number not greater than 15 municipalities and with a population in the vicinity of 500,000 inhabitants. A manager was appointed in each ORU, who was responsible for the monitoring, verification, evaluation and control of the operational activities in each one of the municipalities under the corresponding unit. 108 ORUs were created in total.

Municipal census organization

At the municipal level, an organizational structure was defined, which was responsible for the implementation of the different technical processes to be conducted in the municipality such as awareness raising and collection (urban and rural).

In each one of these territorial entities a municipal general coordinator and their respective urban and rural work team were appointed, and who worked under the guidelines provided by both the regional managers and the ORUs managers, and with the support of the civil and military authorities of each municipality.

The **general municipal coordinator** was responsible for the planning, organization, coordination and execution of the operations in the municipality or in the quarters/districts they were assigned.

For large cities several general municipal coordinators were appointed, to wit: Bogotá, 20; Cali 6; Medellín 5; Barranquilla 4, Cartagena 3, Cúcuta 2; and Bucaramanga 2.

The **field coordinator** was responsible for planning, organizing and supervising the collection of the census information in the Coordination Area (CA) assigned. For the

General Census several urban-field coordinators were appointed, one per each 8 urban supervisors; for the rural area, one for each municipality.

The **Supervisor** was responsible for planning and supervising the field work in the Supervision Area (SA) assigned. Their mission was to guarantee the quality of the data collected by the interviewers under them as well as the coverage of all of the study units in the assigned areas. For the urban area, one supervisor on average was appointed per each five interviewers; for the rural area, one per each four interviewers.

The **Enumerator** was responsible for making, prior to the census, the enumeration and record of the dwellings, households, economic units, and SASs associated with each block or Geographical Area (GA). For the General Census, one enumerator was appointed per each urban supervisor.

The **Interviewer** was responsible for the data collection directly from the source, in the GAs assigned, by using the methodology, procedures and set of standards defined in the General Census.

As support for the municipal organization, the **census municipal boards** with representation from the community and the civil, ecclesiastic and military authorities were created.

The aforementioned board participated in the organization and development of the census in each municipality, supporting the municipal general coordinator. Its duties included the preparation of the community awareness-raising plans, and of security plans in order to guarantee both the personnel integrity and the security of the census material.

General aspects of the field operation

The management unit for the General Census was the municipality, and it was at this level where the arrangement of the following management components was guaranteed prior to the data collection in the field: (Refer to Diagram 9):

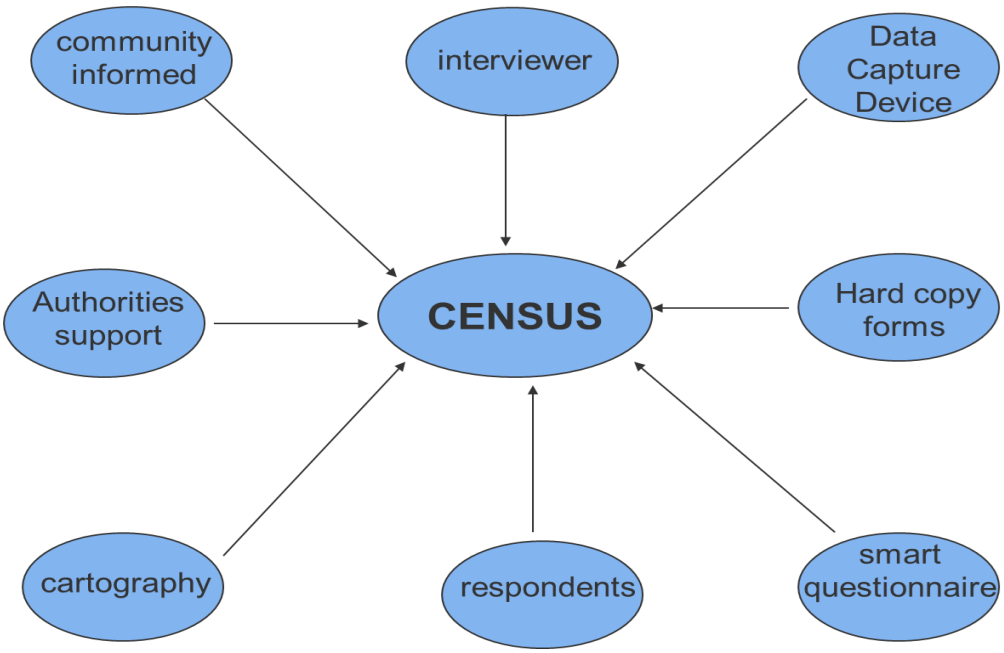
- A trained, certified and engaged interviewer.

- The respondents and the community being informed about the day when the census would take place in their household and community and whose awareness was raised with respect to its importance and scope.

- The municipal authorities being informed and committed with the conduction of the census, and participating with the municipal board created.

- Some elements were already available in the municipality such as: awareness-raising pieces, training material, Data Capture Device (DMC), GPS, hard copy forms and analogous cartography to be used by the field coordinators, operational forms, kits for the field personnel and office kits.

Diagram 9. Management components



Source: DANE.

Technological component for the collection of information in the field

The collection of the information in field was directly accomplished by means of the Data Capture Devices (DMC). In this sense, each interviewer had available the following elements according to the area:

- For urban areas:
  - One Data Capture Device (DMC)
  - One removable SD memory card for each DMC
  - Capture software for census electronic questionnaires
  - Software for the deployment of cartographic information
- For rural areas:
  - One Data Capture Device (DMC)
  - One removable SD memory card for each DMC
  - Capture software for census electronic questionnaires
  - Software for the deployment of cartographic information and operation of GPS (Global Positioning System by satellite)
  - A geographical localization device

For the General Census, 13,585 DMCs plus 715 for reserve and 7,030 GPS plus 370 for reserve were used.

Operational staff

Operational staffs were chosen from their respective municipalities. In rural areas this staff was summoned from the different parishes and “corregimientos”. The purpose of this was to provide the project with their knowledge with respect to the area and the trust among the inhabitants.

Table 5. Groups of Municipalities

Group	Starting date	Completion date	Municipalities	Departmental "corregimiento"	Department
PHASE 0	May 22, 2005	June 7, 2005	6		
GROUP 1	August 01, 2005	August 23, 2005	6		
GROUP 2	September 1, 2005	September 14, 2005	15		
GROUP 3	October 8, 2005	December 16, 2005	315		1
GROUP 4	January 26, 2006	March 6, 2006	676		
ROUTES	January 26, 2006	March 6, 2006	80	20	
Total			**1098**	**20**	**1**

Source: DANE.

For the census in the indigenous reservations and the collective territories of Afro-descendant communities, previous contacts were made with the national, regional and local organizations (indigenous councils, community councils), for the training and contracting of interviewers and supervisors belonging to such communities.

In those reservations where only the native language was spoken, interviewers and supervisors were bilingual.

3.2.2. Scheduling of the census data collection

For each one of the clusters, a data collection period was established. In each one of these periods, the census was conducted in a simultaneous manner in a group of municipalities –usually belonging to the same cluster and with similar population dynamics and geographical and cultural characteristics. In this sense, the groups established were as follows:

- **Phase 0:** It registered in the census a total of 6 municipalities, one per each DANE's regional division.
- **Group 1:** It included 6 municipalities, one per each DANE's regional division.

- **Group 2:** It was simultaneously conducted in 15 municipalities of the Guajira Department[63] and the indigenous reservations existing in the Sierra Nevada de Santa Marta.
- **Group 3:** It included large (Clusters 4-5) and intermediate cities (Cluster 3) and simultaneously all small-population municipalities (Cluster 1) in their vicinity. These chosen municipalities made up the high and middle mobility corridors in the north-south and east-west direction. In this group, 317 municipalities were registered in the census.
- **Group 4:** Most of the municipalities in this group have a small population (Clusters 1 and 2) and are far from the centroids. A total of 677 municipalities were registered in the census.

In addition, 79 municipalities and 20 departmental "corregimientos" were registered in the census by routes[64]. Also, some municipalities with their area of influence were included, which due to their geographical location, had their own mobility dynamics, only within their sub-region. (Refer to Map 3).

3.2.3. Collection procedures

Census of the municipal townships

It included the collection of information of the urban component (class 1) with respect to all of the municipalities in the country.

Collection methodology

Prior to data collection, a subdivision of the municipal township into Coordination Areas (CA) was conducted. The person in charge of the data collection in each area

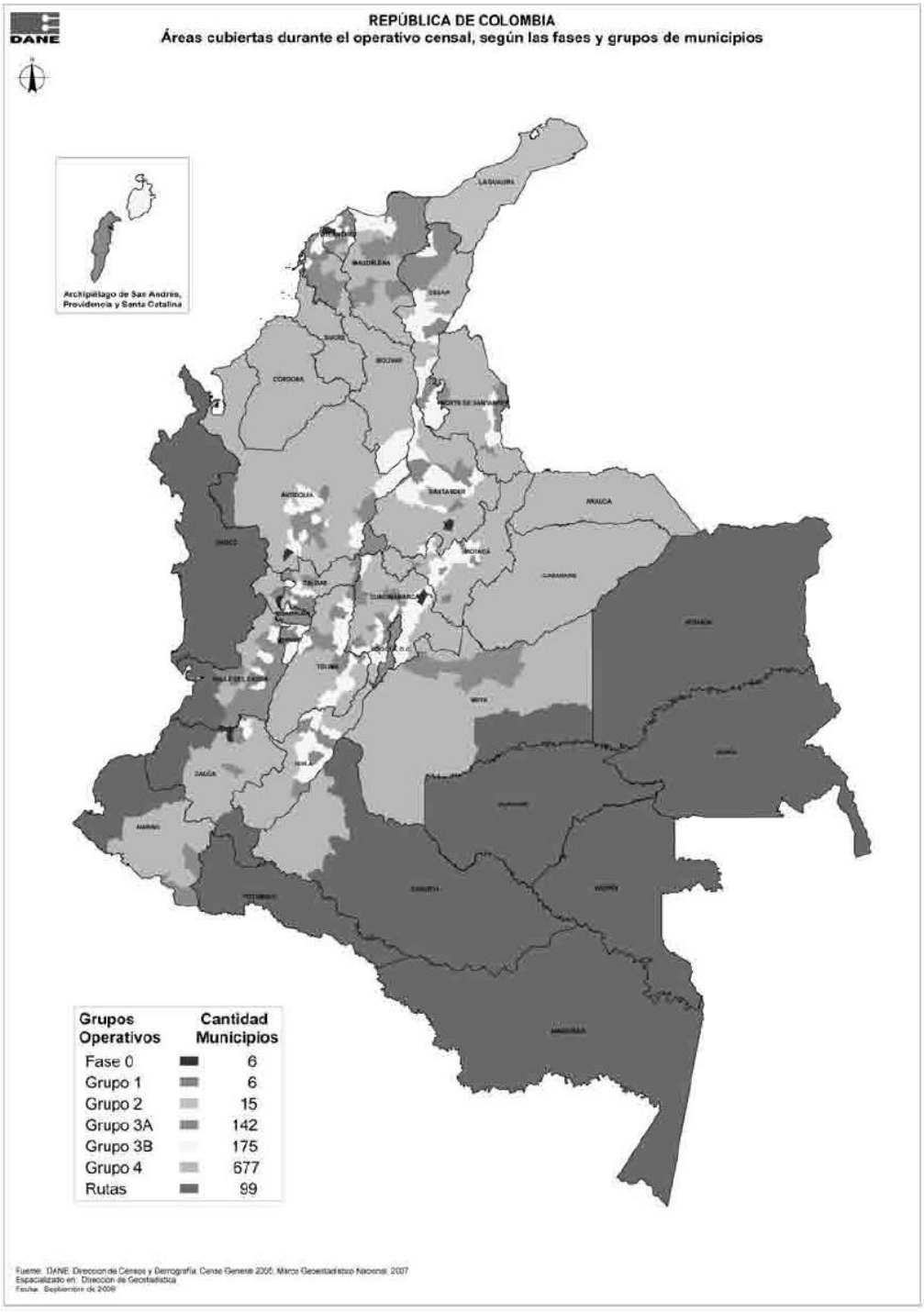
[63] Department: major geopolitical division.

[64] Route Operation: It was an alternative used to collect census data in rural areas of some regions in the country with difficult access, low density of population, large extensions of territory and long distances to travel, among other aspects.

was the field coordinator, who implemented and coordinated the work of 8 supervisors and 40 interviewers in average. Only one Coordination Area was created for small municipalities.

The first field activity implemented in the CAs was the count and the record of the existing dwellings, households, and SAS units and the economic units in each one of the GA. This activity was conducted by the enumerators assigned to each CA, who performed a census sweep in each one of the GAs, simultaneously with the operation, three days prior to the census date and delivered the notification letters in each one of the households and economic units.

Map 3. Scheme of the census collection



Source: DANE.

The units previously notified were subsequently visited by the interviewers, who collected the information associated with each census unit, by means of direct interviews with the persons, and using the Data Capture Device (DMC).

On a daily basis, each interviewer unloaded the data collected in their DMC, synchronized their device and "downloaded" the data to SD memory, which was then submitted to the supervisor, for its subsequent transmission.

Data collection in the Special Accommodation Sites (SAS)

Individuals residing in military garrisons were registered in the census at such sites during the same census period, and by persons residing at such sites, who were previously trained. Data collection was carried out by means of DMCs.

In the other SASs, such as orphanages, nursing homes, monasteries, and boarding schools, among others; interviewers conducted the collection every time they found these institutions in the course of their route. In SASs with a high number of residents (prisons), full groups were assigned for the corresponding data collection.

Revisits

These were simultaneously carried out with the census operation at night time and on weekends. Revisits were carried out to:

- Units with absent individuals
- Units without an appropriate respondent on the day of the census (domestic employee, minors, among others).
- All cases of refusal

Census in rural areas

For the data collection in those areas located out of the urban perimeter, i.e., population centers (class 2) and in the remaining rural areas of the municipality (class 3), it became necessary to use the pertinent questionnaires for each observation unit.

Collection methodology

The collection of census information in the rural areas was conducted either by sweep or routes.

Collection by sweep

Census by sweep was conducted in 1,019 municipalities in the country. It enabled the collection of the census information of the whole rural area, by sweeping all of the parishes present in each municipality. (Refer to Map 4).

For each one of the above municipalities, an approximate location with respect to the dwellings in the rural cartography was previously made. This activity was conducted by the rural field coordinator, based on municipal administrative data, i.e. land-use plan, cadastral cartography, and information provided by community-action boards, among others.

Based upon this information, the collection operation was scheduled in each one of the parishes, with such scheduling having been socialized among the different inhabitants through their leaders, chairmen of community-action boards, and health promoters; in addition, other diffusion media such as radio broadcasting and local *perifoneo* were used.

Each community previously notified was visited by a group of interviewers led by a supervisor. On a daily basis, these interviewers moved from the municipal township to the parishes assigned by the field coordinator.

Similarly to the census in the urban areas, in these areas, information was collected by means of DMCs. In addition, each rural unit was geo-referenced by means of a GPS connected to the DMC.

The data collected on a daily basis by each interviewer was downloaded from their DMC by synchronizing the device, and the data obtained was downloaded to SD memory and submitted to the supervisor for its subsequent transmission.

Collection by routes

Census by routes was conducted in 79 municipalities and 20 departmental "corregimientos" located in the Amazonas, Guainía, Guaviare, Putumayo, Vaupés, and Vichada departments, as well as on the Colombian Pacific Coast, all of them characterized by difficult access, low-density population and large territorial areas. (Refer to Map 5).

Most of routes were by river, some by land and others by a combination thereof, and they were generally delineated by following either the path of a main river with its tributaries or a main road with its branches, generating a large area of influence, where dwellings or human settlements were found.

Routes were designed over cartographic maps prior to data collection. For this purpose, the participation of indigenous organizations in the region at the national level, such as the National Organization of Colombia (INOC) and the Organization of Amazonic Indigenous Peoples (OAIP) among others was critical. With the help of these persons, the different routes were adjusted given their broad knowledge and domain with respect to the different areas.

For each route, the information pertaining to sites, community names, approximate number of families, spots for fuel supply, travelling time and potential inconveniences that needed to be circumvented, climatic factors, river navigation, status of the roads, and public order conditions among others, was obtained.

With the aforementioned information, routes were designed for each department, as shown below:

Table 6. Number of routes per department

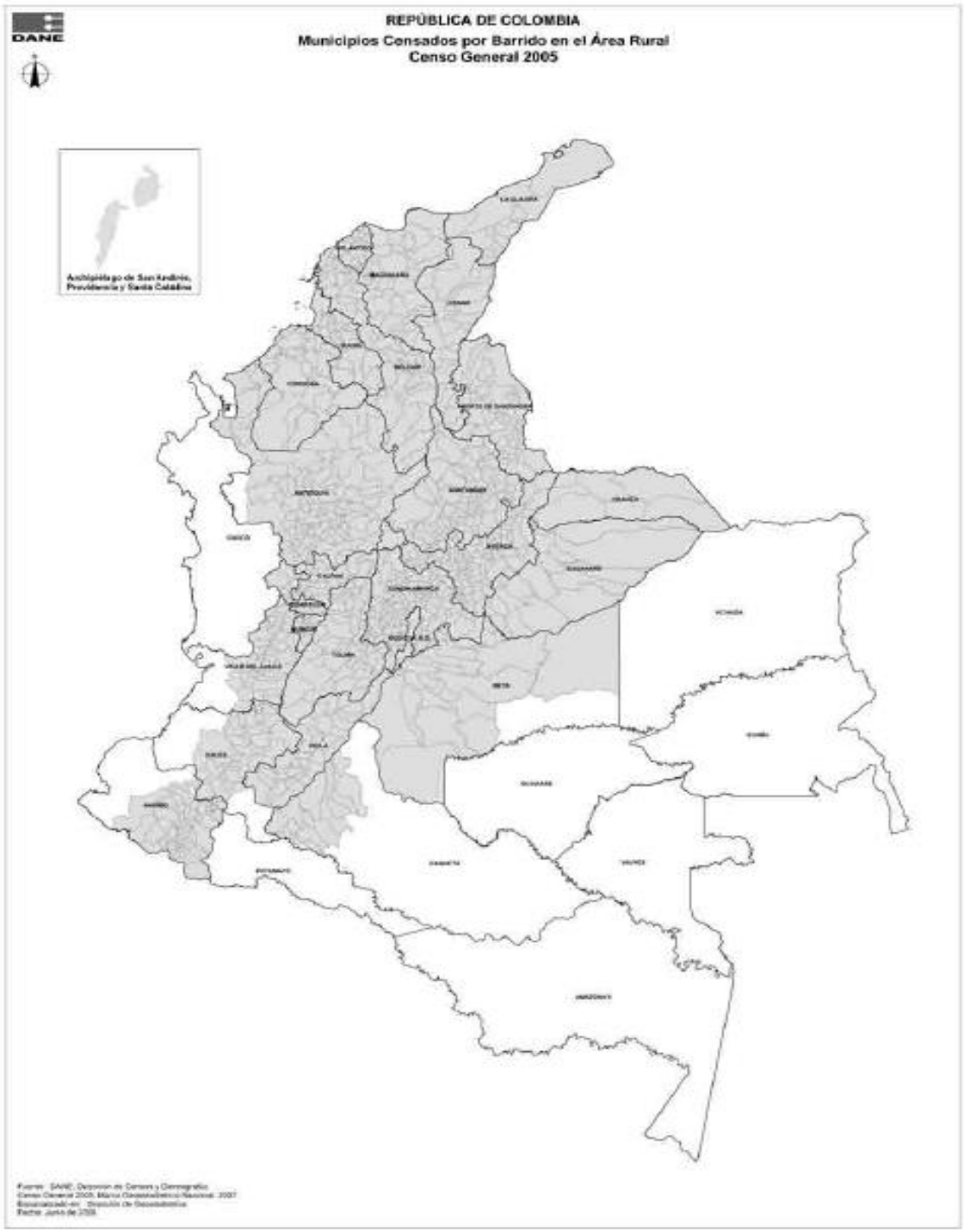
REGION	DEPARTMENT	QUANTITY
AMAZON	AMAZONAS	18
AMAZON	VAUPÉS	15
AMAZON	CAQUETÁ	14
ORINOQUIA	GUAINÍA	10
ORINOQUIA	GUAVIARE	40
ORINOQUIA	META	14
ORINOQUIA	VICHADA	37
PACÍFIC	NARIÑO	12
PACÍFIC	CAUCA	11
AMAZON	PUTUMAYO	13
PACIFIC	VALLE DEL CAUCA	1
PACÍFIC	CHOCÓ	33
TOTAL		**218**

Source: DANE.

One or more operational groups covered the routes in an average term of thirty (30) calendar days, with a performance rate of 6 interviews each day per man. The information was collected by means of analogous questionnaires; in turn, the units were geo-referenced by means of analogous cartography.

The support of the indigenous and the Afro-Colombian communities existing in these areas was critical in order to circumvent the conditions of public order and social conflict in these departments.

Map 4. Municipalities registered in the census by sweep in the rural areas



Source: DANE.

Map 5. Municipalities registered in the census by routes

Source: DANE.

Census in ethnic groups

The indigenous peoples, Afro-Colombian or Afro-descendant population, the Raizals[65] of San Andrés and Providencia Archipelago, as well as Rom people (gypsies) are considered culturally differentiated groups or ethnic groups, according to the National Constitution.

Collection methodology

Each Regional Management made the contacts with the indigenous and Afro-Colombian authorities in each department, and created the Territorial Indigenous Boards (TIMB) and Territorial Afro-Colombian Boards (TAB), which assured the participation of these communities in the 2005 General Census.

Subsequently, each management group carried out the awareness-raising processes to the traditional ethnic authorities of the region, the regional organizations and to the members of the indigenous and Afro-Colombian boards.

In turn, each general municipal coordinator contacted the indigenous authorities and the community councils of Afro-descendant communities in each municipality, and obtained their participation in both the summons of persons belonging to reservations and councils and the support in the planning, route design and awareness-raising processes of the communities at the local level.

Cartography for the collection of information in the field

As a reference framework for the carrying out of the 2005 General Census, the updated digital cartography was a critical tool for the development of the census operation and the geo-referencing of information as well as a tool for localization in the field.

[65] Raizals: Protestant Afro-Caribbean ethnic group, living in the Archipelago of San Andrés, Providencia and Santa Catalina, presently the Colombian San Andrés y Providencia Department, off the Nicaraguan Miskito Coast. They are recognized by the Colombian authorities as one of the Afro-Colombian ethnic groups under the multicultural policy pursued since 1991.

In that sense, the IGAC, in conjunction with DANE, provided the 2005 General Census with the accuracy-required digital cartography of both the urban and rural areas of the country.

This IGAC cartography was supplemented with DANE's Geo-statistical National Framework (GNF). Rural geographic sections, indigenous reservations and Afro-descendant communities and the delimitation of routes designed for the coverage of the municipalities part of the former national territories and the Colombian Pacific Coast were incorporated to this cartography.

The information layers associated with urban digital cartography were the graphical exit, GA, sides of blocks and toponymy[66]. For these areas, a total of 5,535 files were generated, whereas for population centers, the total of files generated for these areas was of 22,122.

The information layers associated with the digital cartography of the rural remaining areas were the municipal geo-statistical framework, municipal limit, polygon of urban areas, hydrography, hydrographic toponymy, hydrographic symbology, road network, road network toponymy, and road network symbology. The total number of files generated for these areas was of 9,271.

Digital cartography was incorporated with the Data Capture Devices aiming at facilitating the association of the census statistical information with the cartographic. In order to collect information in urban areas, the information corresponding to the operational coordination was stored in each interviewer's DMC. In the same way, for the data collection in the rural areas, the digital information at the municipal level was incorporated into each interviewer's device, where the work areas were detailed by rural section.

In addition, both coordinators and supervisors were provided with hard copy cartography at different scales, according to the pertinent work areas. The

[66] Toponymy: It refers to a word or group of words, identifying geographical or cultural characteristics represented in cartography, proper names of sites and road nomenclature, among others. e.g.: churches, museums, community centers.

coordinator was also provided with a municipal map to carry out the monitoring of the field work as well as for the control of the coverage thereof.

3.2.4. Controls for quality assurance and census coverage

The implementation of a several-day collection period enabled an exhaustive supervision with respect to the data collection in the field based on the monitoring, evaluation and control of the interviewers' performance throughout the whole collection period.

The procedures established at the supervision level of the work in the field, in order to guarantee both the quality of the collected data by interviewers and the census coverage of the 2005 General Census included the following activities:

Observation of interviews

Each supervisor accompanied their interviewers in the field to observe the interviews in place, which enabled the supervisor to rate the performance of the interviewers under their care with respect to their conceptual and methodological command as well as the level they reached in the training they received.

The foregoing provided the supervisor with the judgment criteria to make the feedback process in a *personalized* way, which helped improving, day by day, the degree of understanding, conceptual command, familiarization with the DMC and handling of the interviews.

Verification of the units registered in the census

The supervisor visited units already interviewed (households, economic units) so as to verify:

- The actual visit on behalf of the interviewer to such unit
- The full identification of all the households existing in the dwelling unit
- The quality of answers with respect to some questions in the census questionnaire

The supervisor carried out the verification process to the units already interviewed per each interviewer on a daily basis.

Verification of the coverage

In the municipal townships, the information collected by the enumerator for each GA was collated with the information collected by the census interviewer. The field coordinator made the comparison of both sources in order to control the coverage in dwellings, households, economic units and SAS at the level of each block.

For the rural areas, the information previously identified in mapping for each parish, population center, and village was collated against the information collected by the interviewer during the census. The field coordinator made the comparison of both sources in order to control the coverage in dwellings.

Summons to missing units

During the development of the census operation, summons and invitation processes were continuously made and through different media to the heads of the households in those areas already visited but that were not registered in the census, for them to be registered in special spots located in villages or in the municipal township itself, so as to be able to assure a hundred percent coverage.

Certification of coverage per neighborhood

Once the census operation was completed in each neighborhood, a certificate of completion was drawn up with each community action board, pointing out both the coverage reached in the zone and the areas not registered in the census.

Drawing up of the certificate of completion

Once the urban and rural censuses were completed in each municipality, the certificate of completion was signed. This document set forth the areas covered and the zones not registered in the census, and was signed by the mayor and the municipal general coordinator of the census.

Classification and sorting of surveys or records

The process consisted of the reception of the hard copy documents, in the area designated for that purpose, in clearly identified boxes. The content of each box was checked against the list of the documents delivered.

The documents were located in a warehouse where a list checking process and a record containing the location information by departments, municipalities and additional information associated with each of them were carried out. Such information was entered into a database.

Subsequently, the data was entered, a process that consisted of obtaining the documents' images (questionnaires and forms) and storing them in the server for the subsequent capture processes.

Once this process was completed, the information that the interpretation software failed to read or otherwise showed any type of doubt in the field was verified. Moreover, the configuration of some critical fields was checked depending on the process, such as the geographical area and other fields that, according to the definitions initially established, did not meet some of the rules defined; for example, the class field should have a value between 1 and 3.

Moreover, a quality control process was made, which was divided into two stages: analysis of inconsistencies and quality evaluation (error percentage).

Analysis of inconsistencies

This process consisted of the analysis of the information captured according to the validation rules being initially established, such as the ranges of some values, the verification against the database, etc. The inconsistencies found are listed below:

- The municipality does not exist
- The department does not exist
- The municipality does not belong to the department
- There are forms that are not in consecutive order

- There are response values out of the established range
- Inconsistent dates
- Geographical area out of range
- Class does not match.

Evaluation of the recording quality of hard copy forms

The process of quality evaluation consisted of comparing the information captured against the imaging information, aiming at finding the level of quality and the error percentages existing in the process. This information was checked by batches. For this process to be done, a random sample of 10% out of the total of each captured batch was taken and the analysis was made on such sample. *If the percentage of minimum allowed error was exceeded, the full batch was returned for revision.*

3.2.5. Capture and consolidation of data

Based on this process the data taken from the questionnaires were consolidated, critiqued and stored, which were then used for the verification of the census data.

This process consisted of four sub-processes: (1) organization and gathering of operational forms, (2) critique and data entering, (3) operational closure and (4) database storage. (Refer to Diagram 10)

Data capture

For the construction of the 2005 General Census files, both in the data capture and the final consolidation, a series of technical issues needed to be considered in order to guarantee their consistency and subsequent use on behalf of the diverse users. For the implementation of a census project with capture by means of the DMC, an essential phase, where the census data is validated needs to be taken into consideration.

Validation rules at the time of capture need to enable an immediate correction on behalf of the interviewer, whereas the implemented ones have to generate

inconsistency marks[67] once the workday ends. These rules shall serve the supervisor as statistics in the development of the data collection in the field.

These rules should be taken into account both for the capture by means of a questionnaire in DMC, and when the information is collected in a hard copy questionnaire; in which case, there needs to be an automatic process to make the proper cleaning to the census information.

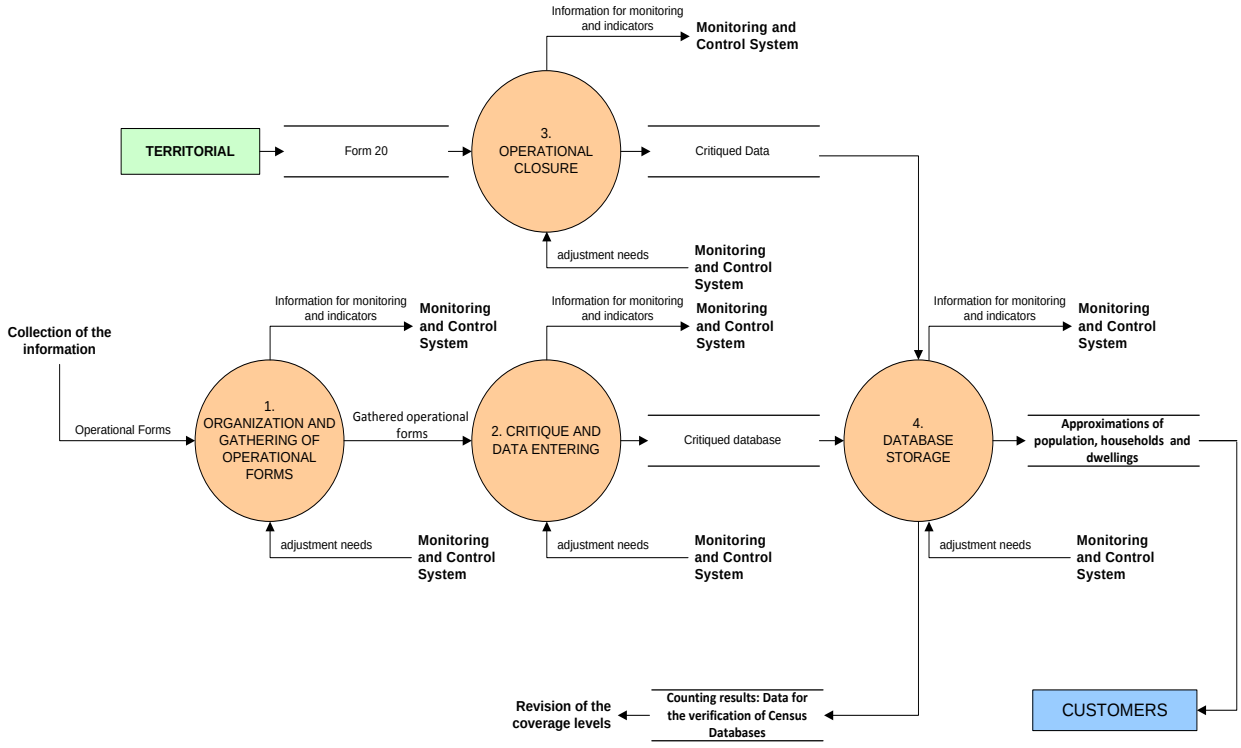
Types of capture

Considering both, the public order situation of the country and its geographical complexity, two collection schemes and three for capture were applied. The use of the DMC (94.6%) enabled the implementation of a smart questionnaire, which improved the quality indicators since this was a tool with all the logical capacity, memory and processing speed of a computer, to control variable ranges and information flows automatically, among other control functions.

The use of hard copy forms in those areas where the DMC technology was not possible, whether due to geographic difficulties or security problems, made it necessary to coexist with processes that were parallel to the traditional schemes, by using capture methods such as data entering in DMC (3%) or by imaging - scanner technology (2.4%).

[67] Inconsistency marks are generated for erroneous data.

Diagram 10. Processing and consolidation of operational census information of the 2005 General Census



The hardware and software resources for the data entering and indexation of the forms of the 2005 Census were as follows:

a. ***Hardware***: Server to store images and for the data processing

- HP DL380 G3
- Intel® Xeon® 3 GHz processors
- 3GB RAM memory
- Six (6) SCSII 300 GB (1.8 TB) hard drives
- 12 Kodak i610 Scanners

b. ***Software***

- Server:
  - MS Windows 2000 server Operating system
  - Microsoft SQL Server 2000 Database
- Data Entering Station:
  - Windows 2000 Professional Operating system
  - Kodak V6.9 Data Entering Software
- Capture Stations:
  - MS Windows 2000 Professional Operating system
  - CharacTell FormStorm Verification Module

3.3. DATA TRANSMISSION AND PROCESSING

3.3.1. File transmission and consolidation

When interviews were conducted with the DMCs, validated information was stored and encrypted in both the DMC memory and in the SD card that each DMC has. By the end of each day, information of each DMC was synchronized with the supervisor's DMC.

Subsequent to this synchronizing, the cards of each one of the supervisors were synchronized in turn with the collection center, onto the PC designated for the gathering of all the information coming from the collection in the field and to transmit it to DANE Central via FTP (File Transfer Protocol), by means of dedicated channels.

These files were received in a server with the proper configuration for this purpose, where information was decrypted, unpackaged, and was subsequently loaded on secondary schemes in the ORACLE database administrator system, and from which the main scheme of equal configuration was fed.

In this way, the information at the national, departmental and municipal levels was consolidated; duplicity checking at the main key[68] level was made along with some identification fields, and the census database was generated with unique data received from the field.

On the other hand, information collected in hard copy forms in the route phase, was captured by means of imaging technology, which generated flat files in ASCII format. It was subsequently loaded on an independent scheme of relational tables in Oracle platform for it to be revised and for subsequent feed to the main scheme; it was then added to the already existing information and subjected to the same duplicity verifications at the main key level and additional identification fields.

At the end of these processes, a full reprocessing of information was made. For this purpose, all the information collected in the field and contained both in the backup copies recorded in CD ROM, and in the SD cards, was loaded again. This process

[68] Main key: unique identification of an observational unit.

enabled to recover the whole information that would have failed to be loaded onto the main base.

Tree structure for file storage

Considering the large quantity of information resources (files, programs, reports and data dictionaries), the processing required an organization and standardization of such resources for their management and control to be effective. For this purpose, the physical structure in which the information used was stored is defined below.

First, the CG2005 folder was created, where the whole folder structure was mounted by process. The /ENT folder contained a subfolder for each process that intervened during the stages of information treatment.

Subsequently, within each sub-process, another subfolder was created by department (DD); in turn, within each department a subfolder was created for each municipality (MMM) and, lastly, within each municipality, a folder for each one of the existing districts or quarters (LO) was created.

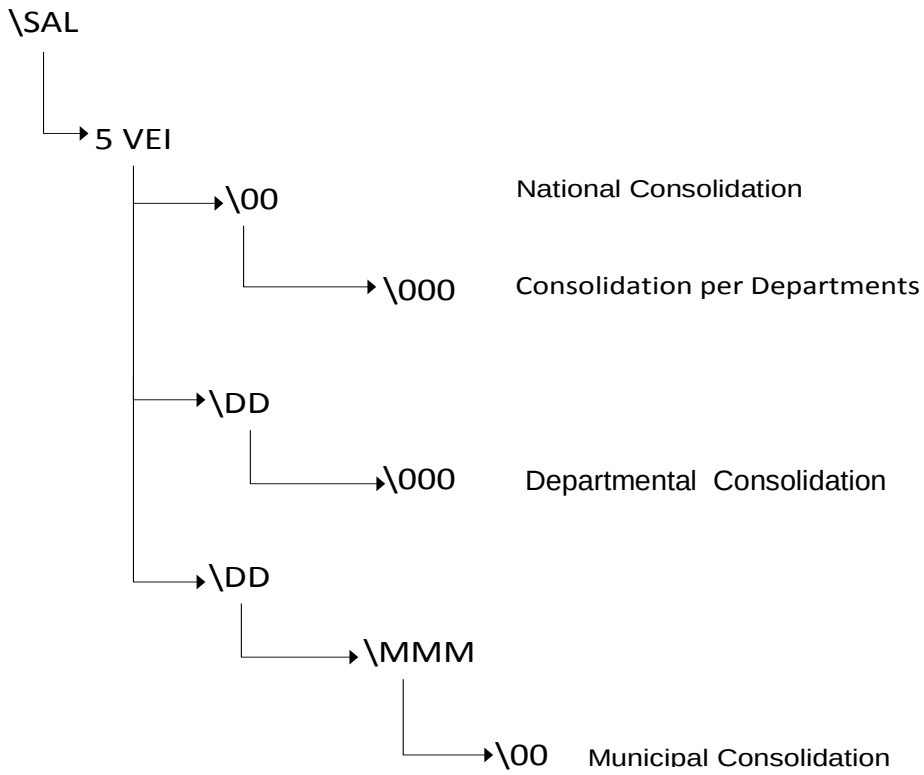
In the event that there were no districts or quarters in place, the district folder was created under the name (99). All data, files, tables, reports and output tables were included within this structure.

In the /PRG directory, there was a subdirectory for each one of the stages intervening in the information processing. In turn, the programs, routines and/or procedures used in the respective process were included within each subdirectory.

The /DOC folder was used to store all kind of documents and their corresponding references that facilitated the understanding of all the processing stages. The documents folder contained two subfolders: the first one named “TECHNICAL”, was used to keep all technical documents related to each process, i.e., user, system, processing, and data dictionaries manuals, the analysis and design documents, formats, etc. Another subfolder named “General”, contained documents such as memorandums, timetables, letters of agreement and other administrative documents.

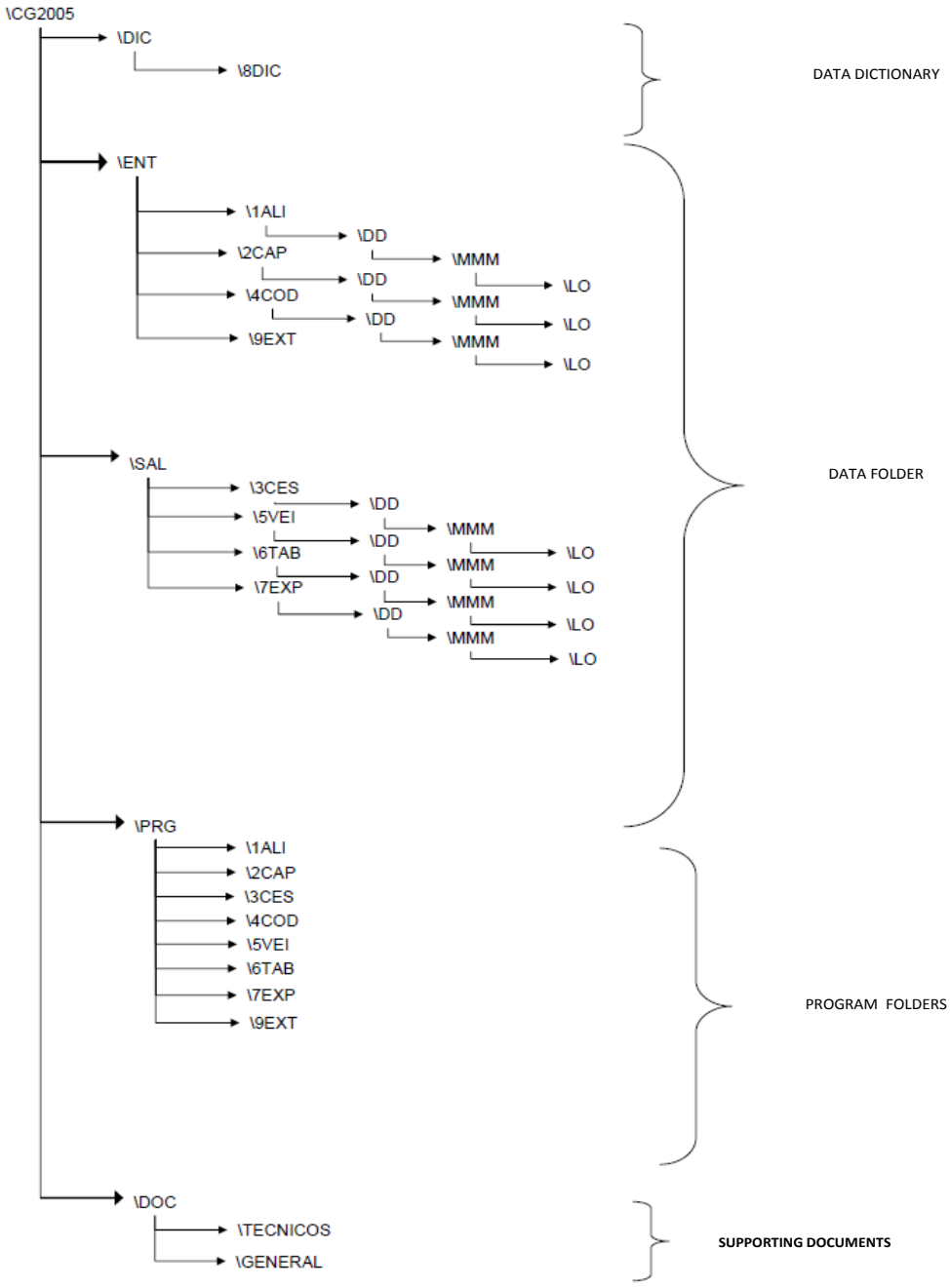
In each folder structure where all departments and municipalities were contained, there were folders for the control of consolidations and added reports, as shown in Diagrams 11 and 12.

Diagram 11. Folder structure for consolidations and reports



Source: DANE.

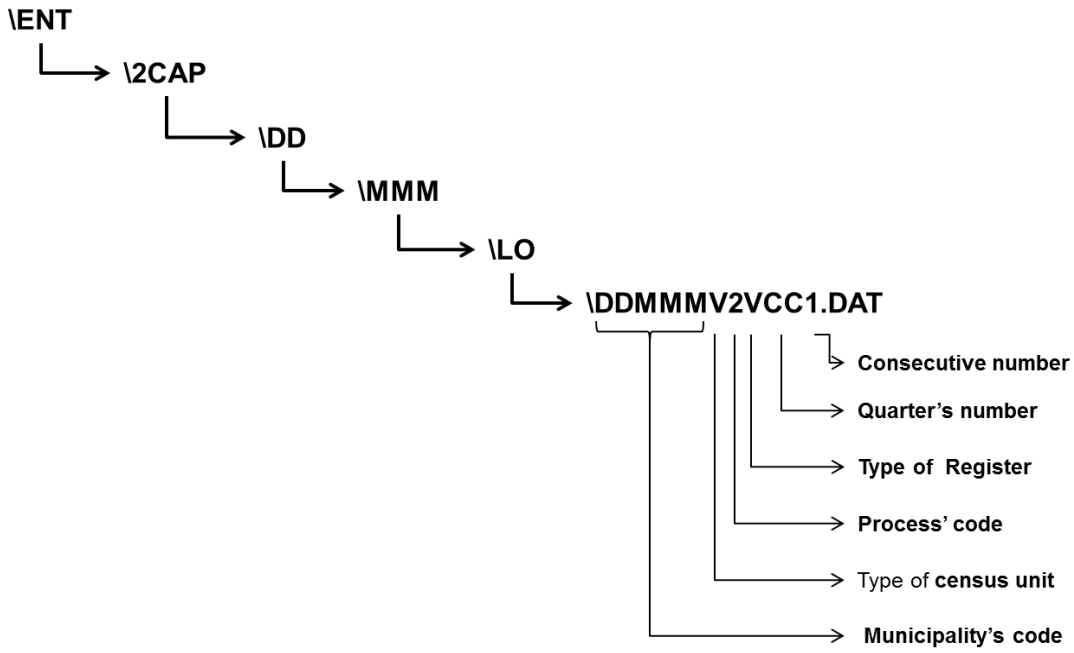
Diagram 12. Folder structure for consolidations and reports



Source: DANE.

The standards for the creation of files with respect to each one of the stages in the treatment of the census data are defined below. The output files of the capture process at the municipal level are of text type and meet the nomenclature and standard location shown in Diagram 13.

Diagram 13. Nomenclature and location of the municipal capture output files



3.3.2. Processing of census data

The data processing that was carried out for the General Census is represented in the data flowchart shown below. It started with the "raw"-database consolidation, which was then subjected to a data cleaning through the data entering and editing sub-processes, thus generating the definitive database, which was the input for the dissemination process. (Refer to Diagram 14).

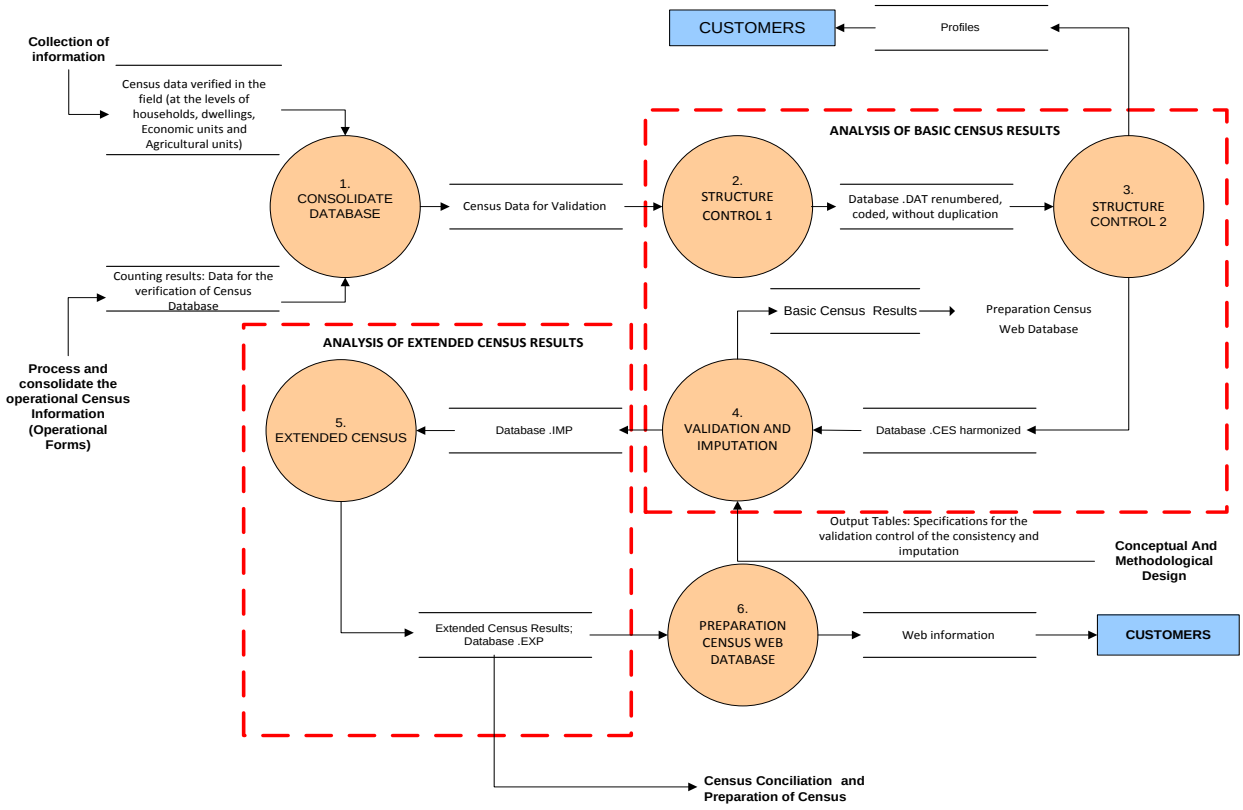
Coding

Coding was performed on the variables of indigenous reservations and indigenous people, according to the classifications received from the Incoder[69]. For the activity branch variable –i.e. the activity of the company where people worked- and for economic activities, the International Standard Industrial Classification of All Economic Activities code adapted for Colombia (ISIC, Rev. 3 A.C.) was used. For agricultural crops, the coding from the Agricultural National Survey (ANS) was used.

The above-mentioned codes were automatically assigned by the time of data collection using the DMCs. The activity branch was subsequently coded by using a coder assisted by computer, which took the information exactly as given in the response of each one of the persons (questions in the survey sampling), crossed it against a master file, which encoded every and all records susceptible to being coded, that were found in the census base, and generated a file with unique answers with those records that failed to be automatically coded. This information went through the assisted coder and this cycle was repeated until the whole census database was completed.

[69] Acronym in Spanish that designates the Colombian Institute of Rural Development.

Diagram 14. Processes for the processing of census information



Structuring of census units

This section describes the way in which the data were structured for their processing, and therefore, for conducting the verification, consistency and imputation processes.

The graph below shows the way in which the identification data were structured; it can be seen, for example, that the interviewer's code "COD_ENC" was part of the identification, which was composed from the 16 codes appearing in the graph's heading. (Refer to Graph 1).

In order to make the data structuring clearer and to identify the census units in an easier way, a new data structure was designed, which facilitated their processing. The configuration of such structure is described below.

The data structure was composed of nine types of records, where each one made an information unit, they were:

- R1. Record of Dwellings
- R2. Record of Households
- R3. Record of Deceased Individuals
- R4. Record of Household Members
- R5. Record of Special Accommodation Sites (SAS)
- R6. Record of Individuals residing in SAS
- R7. Record of Economic Units (EU)
- R8. Record of Agricultural Units (AU)
- R9. Record of Crops

Graph 1. Valid codes for information units

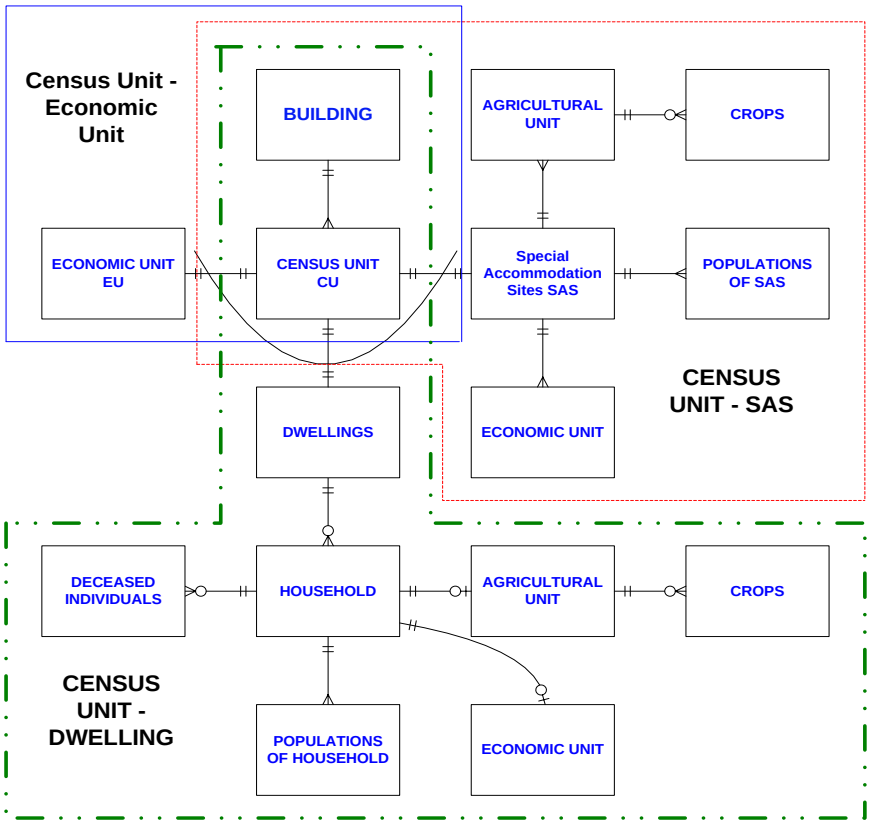
	T_REG	DEP_MUN	CLASE	SECT_RUR	CPOB	SEC_URB	AG	AGAD	COD_EDIF	COD_ENC	COD_UC	COD_VIV	COD_HOG	COD_UE	COD_UA	COD_LEA
1931	1	68081	2	00602	009	00010218	751370	00	0020	0000000BKC08	0001	0001	00	0000	0000	000
1932	2	68081	2	00602	009	00010218	751370	00	0020	0000000BKC08	0001	0001	01	0000	0000	000
1933	4	68081	2	00602	009	00010218	751370	00	0020	0000000BKC08	0001	0001	01	0000	0000	000
1934	4	68081	2	00602	009	00010218	751370	00	0020	0000000BKC08	0001	0001	01	0000	0000	000
1935	4	68081	2	00602	009	00010218	751370	00	0020	0000000BKC08	0001	0001	01	0000	0000	000
1936	4	68081	2	00602	009	00010218	751370	00	0020	0000000BKC08	0001	0001	01	0000	0000	000
1937	1	68081	2	00602	009	00010218	751370	00	0021	0000000BKC08	0001	0001	00	0000	0000	000
1938	2	68081	2	00602	009	00010218	751370	00	0021	0000000BKC08	0001	0001	01	0000	0000	000
1939	4	68081	2	00602	009	00010218	751370	00	0021	0000000BKC08	0001	0001	01	0000	0000	000
1940	4	68081	2	00602	009	00010218	751370	00	0021	0000000BKC08	0001	0001	01	0000	0000	000
1941	1	68081	3	00601	000	00000000	751817	00	0028	0000000BKR04	0001	0001	00	0000	0000	000
1942	2	68081	3	00601	000	00000000	751817	00	0028	0000000BKR04	0001	0001	01	0000	0000	000
1943	4	68081	3	00601	000	00000000	751817	00	0028	0000000BKR04	0001	0001	01	0000	0000	000
1944	4	68081	3	00601	000	00000000	751817	00	0028	0000000BKR04	0001	0001	01	0000	0000	000
1945	4	68081	3	00601	000	00000000	751817	00	0028	0000000BKR04	0001	0001	01	0000	0000	000
1946	4	68081	3	00601	000	00000000	751817	00	0028	0000000BKR04	0001	0001	01	0000	0000	000
1947	4	68081	3	00601	000	00000000	751817	00	0028	0000000BKR04	0001	0001	01	0000	0000	000
1948	4	68081	3	00601	000	00000000	751817	00	0028	0000000BKR04	0001	0001	01	0000	0000	000
1949	5	68081	3	00602	000	00000000	751818	00	0035	0000000BKR10	0001	0001	00	0001	0000	001
1950	8	68081	3	00602	000	00000000	751818	00	0035	0000000BKR10	0001	0001	00	0000	0000	001
1951	8	68081	3	00602	000	00000000	751818	00	0035	0000000BKR10	0001	0001	00	0000	0000	001
1952	9	68081	3	00602	000	00000000	751818	00	0035	0000000BKR10	0001	0001	00	0000	0000	001
1953	9	68081	3	00602	000	00000000	751818	00	0035	0000000BKR10	0001	0001	00	0000	0000	001
1954	9	68081	3	00602	000	00000000	751818	00	0035	0000000BKR10	0001	0001	00	0000	0000	001
1955	9	68081	3	00602	000	00000000	751818	00	0035	0000000BKR10	0001	0001	00	0000	0000	001
1956	9	68081	3	00602	000	00000000	751818	00	0035	0000000BKR10	0001	0001	00	0000	0000	001
1957	9	68081	3	00602	000	00000000	751818	00	0035	0000000BKR10	0001	0001	00	0000	0000	001
1958	9	68081	3	00602	000	00000000	751818	00	0035	0000000BKR10	0001	0001	00	0000	0000	001
1959	9	68081	3	00602	000	00000000	751818	00	0035	0000000BKR10	0001	0001	00	0000	0000	001
1960	9	68081	3	00602	000	00000000	751818	00	0035	0000000BKR10	0001	0001	00	0000	0000	001
1961	9	68081	3	00602	000	00000000	751818	00	0035	0000000BKR10	0001	0001	00	0000	0000	001
1962	9	68081	3	00602	000	00000000	751818	00	0035	0000000BKR10	0001	0001	00	0000	0000	001
1963	9	68081	3	00602	000	00000000	751818	00	0035	0000000BKR10	0001	0001	00	0000	0000	001

With the above records and a proper renumbering and structuring, the three Census Units (CU) were consolidated: CU "DWELLING", CU "Special Accommodation Sites (SAS)" and CU INDEPENDENT ECONOMIC UNIT. (Refer to Diagram 15).

The CU "DWELLING" included 7 types of records:

- R1. Record of Dwellings
- R2. Record of Households
- R3. Record of Deceased Individuals
- R4. Record of Household Members
- R7. Record of Economic Unit associated with the household

Diagram 15. Information units making part of the census units



- Agricultural Activity is associated an inhabited dwelling and in class = 3

- R8. Record of agricultural unit associated with the dwelling
- R9. Record of crops

The "SAS" CU included 5 types of records:

- R5. Record of Special Accommodation Sites (SAS)
- R6. Record of Individuals residing in SAS
- R7. Economic Units associated with SAS
- R8. Record of Agricultural Units associated with SAS
- R9. Record of Crops

The "INDEPENDENT ECONOMIC UNIT" CU included just one type of record, the R7 record.

The unique identification of the three census units within a same census file, set of data or database, is represented in Table 7.

Some of the characteristics of the census units compared with the data structuring can be found below:

- There were independent EUs, EUs associated with households and EUs associated with SASs.
- There were one or more EUs associated with SASs; the first EU was directly related to SAS and the other EUs acted as independent ones.
- A household had to be associated with just one EU.
- A household had to be associated with just one AU when the household was located in the scattered rural area[70] (class=3).

[70] Scattered Rural Area: It is characterized by the scattered layout of dwellings and agricultural exploitations therein. It does not have streets, roads, avenue layouts or nomenclatures. Generally, it also does not have utilities and other type of facilities typical of urban areas. (Methodology for the Coding of the Political-Administrative Division of Colombia (DIVIPOLA); DANE June, 2010).

- A SAS could have just one AU associated, when it was located in the scattered rural area (class=3).

Table 7. Identification fields of the input data file

REGION (1)	DPTM (2)	MPY (3)	CL (4)	UBG (5)	AG (6)	EDIF (7)	CU (8)	USO (9)	HOUSEHOLD (10)
1	Identification fields with their associated records of the dwelling census unit.							1	01
2								1	01
3								1	01
4								1	01
7								1	01
8								1	01
9								1	01
7	Identification fields and associated record of the Census Unit IEU							2	00
5	Identification fields with their associated records of the SAS census unit							3	00
6								3	00
7								3	01
8								3	00
9								3	00

Source: DANE.

Structure control

The “structure control” refers to a process that is related to what traditionally is known as data verification, consistency and editing; it is carried out prior to any type of data imputation.

For the General Census, given its characteristics, the structure control was divided into two modules: one module developed in ORACLE, named Structure Control 1, and another developed in CSPro, named Structure Control 2.

Structure control 1: This sub-process was designated to receive the field files, (raw files) at the municipal level, and as a result, files were generated at that same level with the dwelling, the independent economic and SAS census units well-differentiated.

In order to meet its objectives, this sub-process was divided into two sub-processes that can be seen in the Data Flow Diagram (DFD) (Diagram 16) below.

1. Renumbering of buildings and census units.

2. Preparation of the municipal file for the input of structure control 2.

Diagram 16. Structure control 1

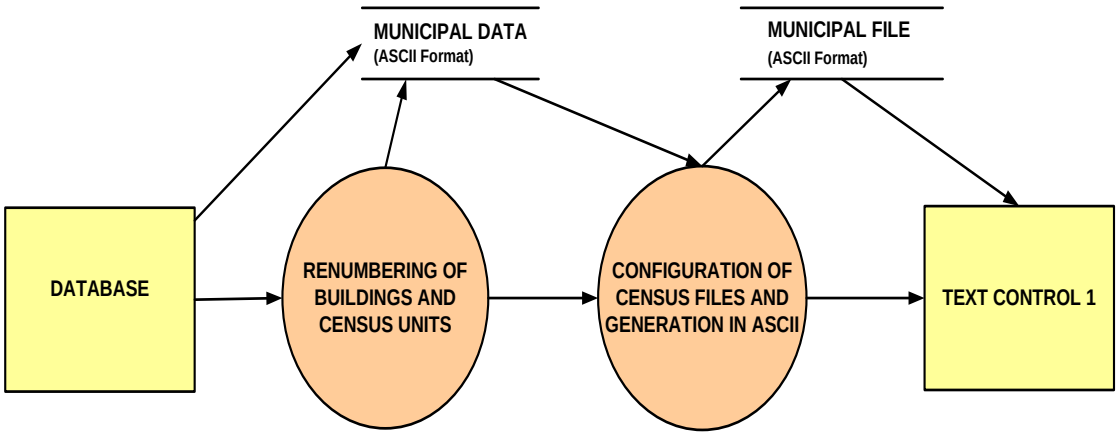


Table 8. Sub-processes of structure control 1

Sub-process	Description
Renumbering of buildings and census units	Corrects the fields of the inconsistent identification variables and renumbers the building code within the GA and census units, i.e., dwelling, EU and SAS in order to obtain a non-redundant identification.
Configuration of census files and generation in ASCII	Adapts the municipal census file according to the requirements of the structure control 2 sub-process by demarcating in a proper way the records belonging to each one of the census units: i.e. dwelling, SAS or independent EU.

Source: DANE.

Table 8 describes the functionality of each one of these sub-processes.

Structure control 2: It was the supplementary sub-process of the structure control 1. It aimed at controlling the integrity of the records of the different census units and the correction of some response-variables, making them an integral part of the structure,

as was the particular case with "DWELLING" CU: kinship, sex, age and marital status, especially for the household head and their spouse.

The processes applied for the structure control 2 of each one of the three census units already determined in structure control 1 are described below.

Structure control 2 of the "DWELLING" CU: The structure control 2 sub-processes of this CU are shown in the data flowchart (Diagram 17) and its functionality is described in Table 9.

Diagram 17. Structure control 2 for the dwelling census unit

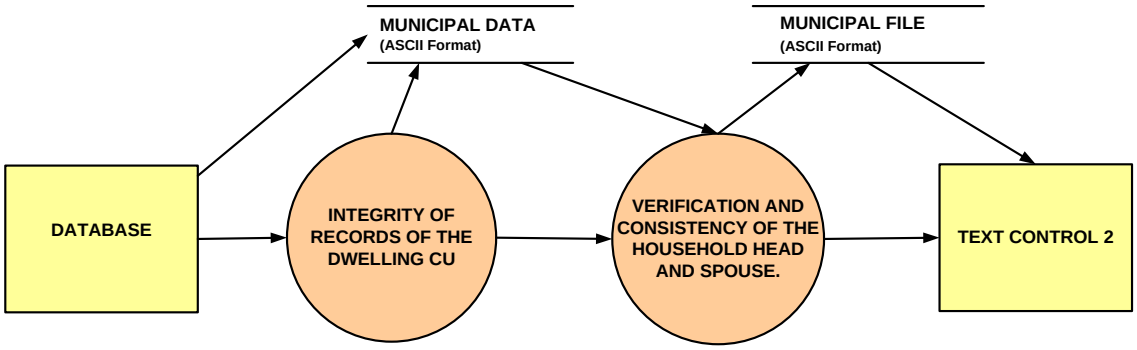


Table 9. **Sub-processes of structure control 2 for the dwelling census unit**

Sub-process	Description
Integrity of records of the dwelling CU	The record integrity of this census unit is adapted, the missing records are inserted and the duplicate ones eliminated.
Verification and consistency of the household head and spouse.	It is verified that the household always has a head and that such head is valid regarding age and the same for the spouse, if any, as well as the relation of these two with respect to the marital status and sex.

Source: DANE.

Structure control 2 of the SAS CU: The essential function of this CU was to prove the integrity of records and verify that there were no blank fields or junk data (information different from the requested one).

Some of the characteristics that structure control 2 had to verify for this SAS CU are as follows:

- That there was a unique record of SAS R5, several records of individuals associated with SAS R6 and one or several R7 records (there had to be at least one). In our particular case, the first R7 was the one actually associated with the SAS, even though all R7 were considered as independent economic CU.
- For the scattered rural area (class=3), in addition to the records above, there could be a unique R8 record (record of the agricultural unit associated with SAS) and, of course, if there was an R8 in place, there could be or not one or several R9 records (record of crops).

Structure control 2 for the "INDEPENDENT ECONOMIC UNIT" CU: It did not exist, since this unit had only one type of record, the R7.

Imputation

Based on the data structure provided by the "structure control" process, the imputation of the missing, invalid and inconsistent data was carried out at the municipality level in an integrated way for each variable of the census units.

The algorithms implemented for the imputation of the variables, firstly verified whether they were subject to imputation or not in order to keep a control over the imputation levels per variable, which for the 2005 General Census did not exceed 10%.

Within census units, there were variables that, due to their characteristics, even if they had missing or inconsistent values, a valid value could not be assigned thereto. For these cases, the "Does not Respond (NR)" category was assigned, as it can be seen in the table included in Annex E.

The methods used to impute the census variables were those traditionally applied for the population and housing censuses, which were operationalized in an effective and efficient manner through the census and surveys processing system, CSpro.

In addition to the assignation type of NR, the methods of logic or static imputation[71] (IL), and dynamic imputation or Hot Deck (HD[72]) methods were used. These three ways of assignation were used in either an independent or combined way for each variable as it can be seen in the table included in Annex 7.

The imputation algorithms were implemented in a unique computer program, based on the imputation rules defined and provided by the thematic experts; such integrity was made possible due to the efficient manner in which the census units were structured within the files per municipality and due to the potentiality of the statistical processing software CSpro.

Weighting and/or expansion factors and adjustments

The basic expansion factors for the survey sampling were built based on the established design mentioned above.

With the procedure exposed by Särndal and Devile in 1992 and implemented by the Statistics Institute of Sweden with the CLAN Macro, which runs over the SAS[73] package, the expansion factors were adjusted for each one of the sample elements, and in such way that the demographic structure was adjusted to the observed structure from the basic census.

In line with the design parameters established for the adjustment by structure, 20 models were designed for the household topic and 6 for the dwelling topic. Likewise, for consistency to be kept with the sample design used, a simultaneous calibration

[71] Logic data imputation: it was used when a datum to be entered, received a unique possible value that "could" be assigned in a way that met the posed critique rules.

[72] Dynamic data imputation or Hot Deck (HD) method: It consists of substituting the datum to be entered by one belonging to another record in the same survey.

[73] SAS (Statistical Analysis System): Software for Statistical Analysis.

was carried out with respect to the household and person topics, assuring thereby that all members of the same household had the same calibrated expansion factor.

For the household topic, the defined calibration variables were used (age, sex, school attendance, maximum educational attainment, activity carried out during the week prior to the census, and total household members). For the dwelling topic, the following variables were used: Type of dwelling, availability of basic public utilities and total number of households in the dwelling.

The calibration procedure was performed for those municipalities with sample selection, and it was made in each municipality, at the level of each municipal township, and remaining areas or quarter, if any.

For the estimation of parameters and of sample errors, the Taylor linearization method was used as well as an approximation method based on the ratio between the sampling errors of a π-estimator and a generalized regression estimator as that introduced by the calibration.

Generation of output tables

The information generated by the 2005 General Census by means of its output tables, is available for consultation in the Data Bank of the entity and on the on-line computer systems. (Refer to Annex G)

3.4. MONITORING AND CONTROL SYSTEM

The main objective of the Census Monitoring and Control System (CMCS) was to build an internal computer tool for the early monitoring, management control and verification of data, which enabled tracking the different census processes and served as a tool for the immediate decision-making during the census. In addition, this tool was used in a marginal way, as a media to inform the general public about the 2005 General Census status and progress.

In this context, a procedure was designed that enabled the processes monitoring in a systematic and permanent way during the execution of the 2005 General Census in its different phases and groups. In order to keep control of the remote sites or sites that were difficult to access due to social reasons, a format was designed and implemented to obtain detailed secondary information at the household, individuals and dwelling level as parameter information.

Specifically, the CMSC, aimed at:

- Knowing with greater accuracy the Census readiness in each municipality in order to guarantee the start of the data collection with the least possible risks.
- Establishing the evolution and daily progress of the census in order to make the decisions that would enable it to be continuously improved and to achieve the quality and coverage curves that were planned and scheduled from the design.
- Having a validation procedure available for the topics under study, supported on a referential database that would enable a daily verification of the consistency with respect to the results obtained in the operation.

Strategy and structure

The CMCS was created as a computer tool to provide efficient and timely access for the persons responsible for the success of the management and execution of the 2005 Census; therefore, it was conceived in a modular way and with several levels for access and control, according to the requirements and roles of each one of the users. The basic unit was the municipality and results were produced for this level with

groupings that enabled their visualization at larger aggregation levels (territorial, cluster, department and country).

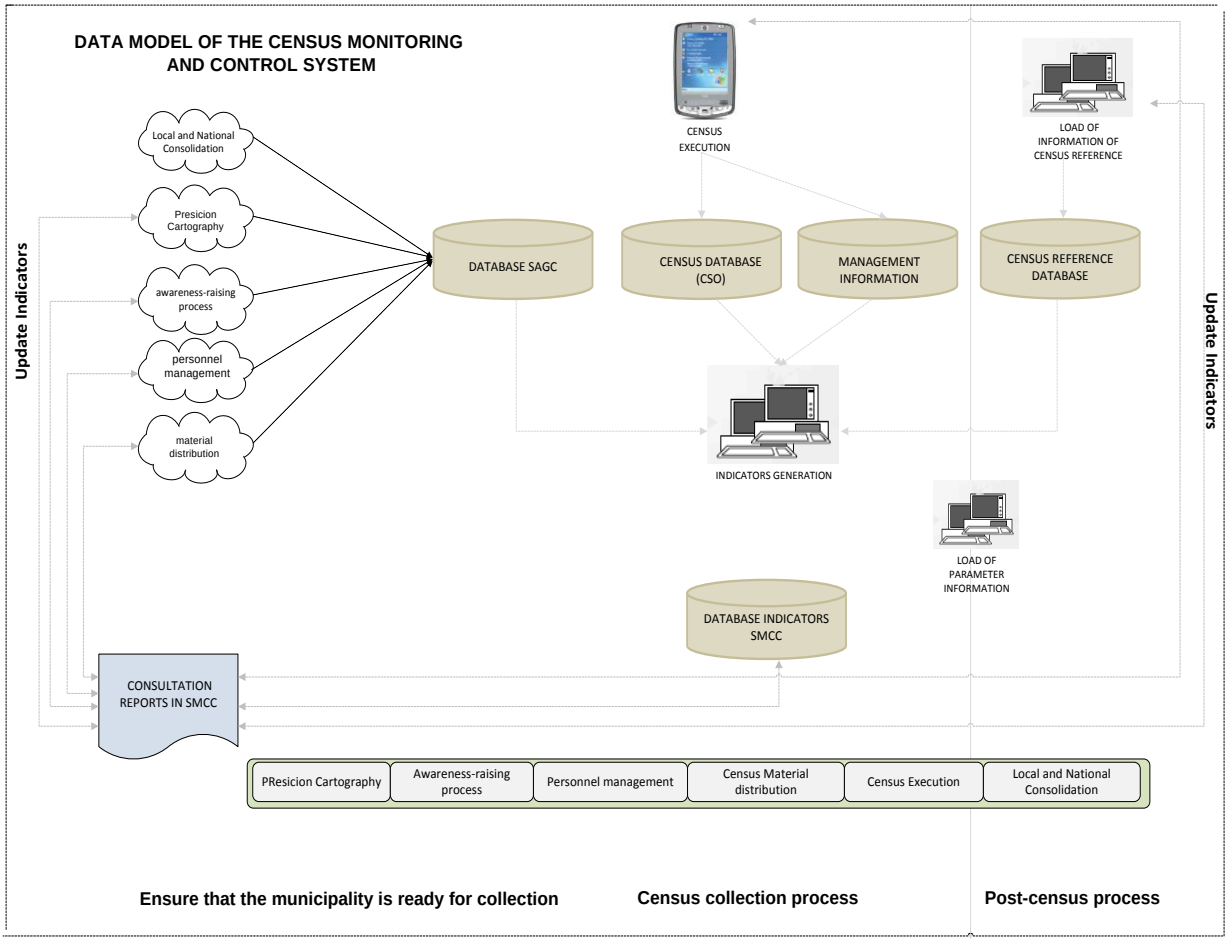
The methodology and strategy defined for the CMSC presented a systems approach composed of three subsystems, to wit: pre-census, census and post-census. The CMCS structure, - whose operation is summarized in Diagram 18 - was obtained by means of this methodology.

Pre-census subsystem: It had 44 indicators, which determined whether the census preparations of each municipality were completed in order to start the collection process, i.e. if all the pre-census elements (awareness-raising, technology, material distribution, and personnel management, among others) were ready to start the process as planned.

Therefore, this subsystem aimed at assuring whether:

- The cartography was ready and in optimal condition to start the data collection process.
- The civil population's awareness was duly raised and local authorities were ready to undertake their responsibilities, and were active participants in such process.
- Interviewers and supervisors were duly summoned, selected and trained and were competent to carry out their duties.
- All the materials and technological equipment were distributed under the proper conditions pertaining to quality and timeliness as scheduled and required in order to successfully achieve the collection process.

Diagram 18. Structure of the census monitoring and control system



Census subsystem: Its purpose was to accurately identify the progress of the operations in terms of quality and coverage Therefore, this subsystem had 37 indicators, which aimed at assuring:

- A strict control over the interviewers' performance.
- The identification of the procedures where the performance of the field staff was poor, so as to make the pertinent corrective actions and reach the respective quality curves.

- The identification of the actual status of the field operation by means of the supervision reports.

Field post-collection subsystem: Once the collection process started and the respective adjustments were made, the consolidation process of census data started at the local level, which consisted of the progressive aggregation of the results for the respective municipality.

In this aggregation stage, the system had 25 indicators that were used to make the final validations and the data cleansing in order to analyze their consistency against the existing reality as per the available external statistics and to verify their coherence against what was expected.

For this to be done, the system had four referential bases according to the specific topic, to wit: demographic, economic, agricultural and dwelling surroundings, which were used as analysis parameters for the final debug on behalf of the team highly specialized in demographics.

4. ANALYSIS AND DISCUSSION OF RESULTS

4.1. DESCRIPTIVE ANALYSIS

DANE performed the general descriptive analysis of the information collected in the 2005 General Census by means of the development and publication of Municipal Profiles. These publications contain a general analysis of the information captured and processed by the census at the municipal level, which was divided into four modules: dwellings, households, persons and economic units.

With respect to the dwelling module, an analysis of the participation of the dwellings was performed by type, from the percentage of which it pertains to house, indigenous dwelling, apartment and room or other type of dwelling. Also the dwellings were tabulated according to the public utilities they had available.

Within the household module, the following analyses were made:

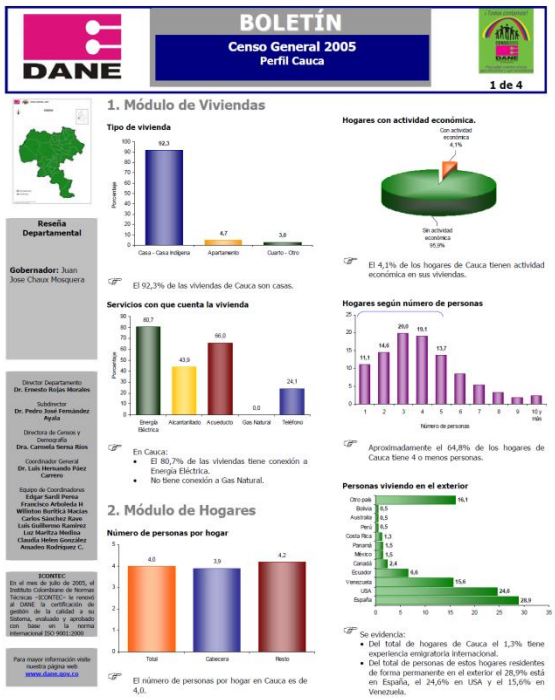
- Number of persons per household
- Households with economic activity
- Households according to the number of persons
- Persons living abroad

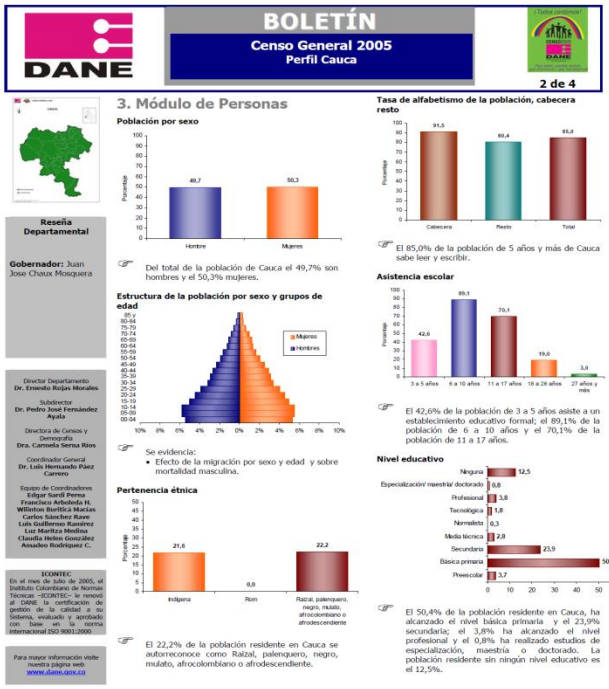
Within the persons module, the population structure was analyzed based on the construction of pyramids by sex and age groups, ethnicity, literacy rate in the municipal township and the remaining areas, school attendance, educational attainment, marital status, prevalence of permanent limitations by sex and age groups, distribution of the population by place of birth, residences in the last 5 years and reasons for changing residence.

Within the module of economic units, the analyses were made according to the activity performed by the establishments, scale of people employed the month prior to the census and scale of personnel by economic activity.

Graph No. 2 below presents the model of the municipal profile for the Cauca department, where the above-mentioned results are described.

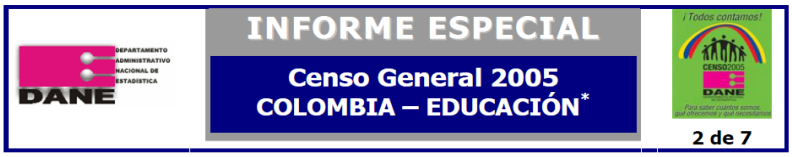
Graph 2. Municipal profile



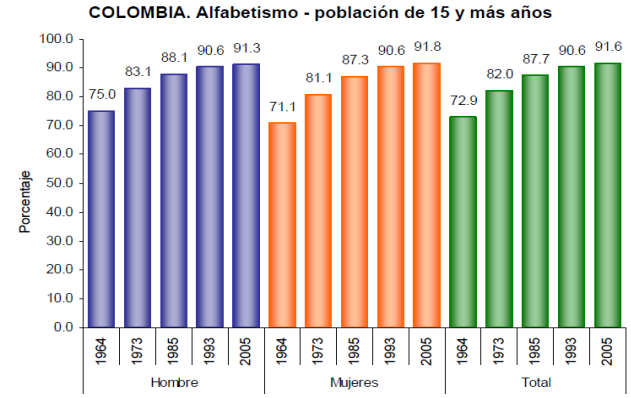


In addition to the descriptive analysis with the main variables, and as part of the task of information evaluation, a frequency analysis was performed, and a comparison of trends of socio-demographic information with respect to previous censuses and other sources. This guaranteed the internal consistency and coherence in their behavior. Also reports on specific subjects were prepared: child labor, gender, disability and education. Graph 3 below presents the first page of the special report on education:

Graph 3. Special report on Education

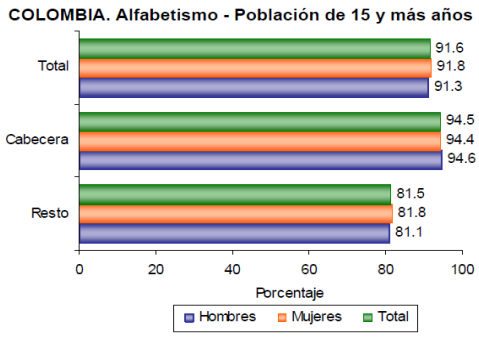


1.1. ALFABETISMO - Población de 15 y más años



Fuente: Censos de población y vivienda

☞ Los niveles de analfabetismo han disminuido en los últimos 41 años en la población de 15 años y más. De una tasa de 27,1% en 1964 disminuye a una tasa de 8,4% en el 2005, según los resultados del Censo General.



Fuente: Censo General 2005

☞ El 91,6% de la población de 15 y más años sabe leer y escribir. Para las cabeceras municipales este porcentaje es 94,5% y en el resto es de 81,5%.

Source: DANE.

4.2. VERISIMILITUDE ANALYSIS

The coefficient of variation is a rating that enables users to assess the statistical quality of the estimations obtained from a sample. For the particular case of the survey sampling results in the assessment of such estimations, an estimate with a coefficient of variation is considered:

- To be accurate up to 7%.
- To have an acceptable accuracy between 8% and 14%.
- To have an average accuracy between 15% and 20%, in which case it needs to be used with caution.
- Not to be very accurate, when it is greater than 20%, therefore, it is recommended that it be used for descriptive purposes only (trends, not levels).

  However, it is important to specify that in some cases, high sample errors occur for certain variables; the territorial reality is consistent with both the conditions and the geographical and socioeconomic characteristics of the environment for these estimations.

In line with the design, the survey sampling enables obtaining estimations with good accuracy for events with a prevalence equal to or greater than 10%; however, this accuracy may vary at different disaggregation levels (the greater the disaggregation level, the lesser the accuracy level). It is therefore critical that the researcher taking the estimated results from the survey sampling bears their respective estimated coefficient of variation (cve) in mind, in order to evaluate the accuracy level of such estimation.

Table 10 shows an example of the manner in which the *cve* should be interpreted, where the quantity of households with electric shower in the departments of Caquetá and Cundinamarca by area can be observed. Caquetá's coefficients of variation were greater than 20% (this is due to the low frequency of occurrence of the phenomenon in the department), therefore, these estimations were not very accurate, and consequently this information needed to be used for descriptive purposes only.

On the other hand, the *cve* of this variable for the department of Cundinamarca were lesser than 2%, therefore, they represented the high precision of the estimations obtained.

Table 10. Cundinamarca and Caquetá. Estimation and CVE of households with electric shower by area. 2005 General Census.

Department's name	Households with electric shower					
	Total		Municipal Township		Remaining areas	
	Estimation	cve (%)	Estimation	cve (%)	Estimation	cve (%)
Cundinamarca	133.705	0,99	109.240	1,19	24.465	1,02
Caquetá	471	19,13	409	21,63	62	28,16

Source: DANE, 2005 General Census, Survey Sampling.

Due to the above, an alternative methodology that facilitated the reading and interpretation of the coefficients of variation through the *confidence intervals* was presented. The *confidence interval* for an estimator refers to a range where the values cannot be statistically considered different from each other and are subjected to a reliability level (usually this level is 95%).

The way to calculate the interval is as follows:

- The specific value of the $\hat{\theta}$ estimation is taken
- The standard error of the estimator is calculated, which is defined as:

  $error\ std = cve * \hat{\theta}$

- The value corresponding to:

  $\pm\ 1{,}96 * error\ std$ is added to the estimation value

- And the Confidence Interval (CI) is calculated as:

  $IC = \hat{\theta} \pm 1{,}96 * error\ std$

The 1,96 value corresponds to the critical value, to two tails of the normal distribution with 0 mean and 1 variance and a confidence level of 95%.

For example, the CI in the municipal townships of the department of Caquetá was calculated as follows:

1. $\hat{\theta} = 409$
2. *error std* = 0,2163 * 409 = 88,46
3. $CI = 409 \pm 1{,}96 * 88{,}46$

The foregoing indicates that the actual value of the parameter (the total number of households with electric shower) is between 235,61 and 582,38 with a confidence level of 95%.

The user may proceed in the same way to construct the confidence interval for any type of parameter and confidence level (the wider the interval, the less accurate the estimation of the parameter).

Based upon the above, an analysis at the municipal level was made of the variables belonging to the survey sampling based on the coefficients of variation, and it was found that most studies of the municipalities presented phenomena with a presence higher than 10% and a coefficient of variation lesser than 7%, which indicates that the sample sizes are sufficient to represent the whole municipal population.

The estimations at the national, departmental and municipal levels with their respective *cve* are available for the general public in DANE Website.

The same procedure needs to be followed with indicators such as the UBN (Unsatisfied Basic Needs) and dwelling shortage, which are calculated from information of the survey sampling.

4.3. COHERENCE ANALYSIS

It refers to the revision, evaluation and adjustment process of the 2005 General Census, within which, four stages have been established at different times with respect to the census exercise.

Firstly, a coherence assessment was performed between the baseline data and the operation records for the control and coverage assurance. Subsequently, the consistency, edition and imputation process was performed; in the same way, the evaluation of levels and trends was made with respect to previous censuses and other secondary sources, as well as the adjustment of the population at the national and departmental levels by demographic analysis. Finally, the evaluation and adjustment was made at the municipal level by municipal township-remaining areas by means of a model of symptomatic variables.

Evaluation of the databases

It corresponds to the first exercise of evaluation of the 2005 General Census. Such evaluation guarantees that the information contained in the DANE Central databases contained the whole information generated in the census operation.

Firstly, the different forms implemented in the data collection process were evaluated so as to assure the coverage.

- ***Count of dwellings and households***

It corresponds to the counting of the dwellings' and households' records taken during the census operation before being subjected to the general processing. Such counting was made by means of a form that was identified with the number 15, which enabled the control and monitoring of the collection of the census information.

The filling out of the forms was made by the regional operation assistant, who recorded the total number of households, dwellings, economic units and agricultural units found in the urban area, population centers, and in the rural area of each municipality visited. Based on the foregoing data, the number of individuals in the municipality was estimated by using the average number of individuals per household.

The information registered in Form 15 in turn, came from the data collected by the enumerator in Form 8, when they made the route prior to the interviewer's visit.

- ***Information pertaining to individuals, households and dwellings provided by local representatives***

It addresses the estimation of population, households and dwellings based on the information directly provided by persons with deep knowledge with respect to those areas where the access was not possible during the census operation; such information was collected in a Contingency Form, which was assigned the number 20.

This information represents the main evidence of those areas that failed to be registered in the census and it is assumed as reliable information, since it is provided by local representatives with deep knowledge about both the areas and the peasant communities, precisely where the largest problems for access were experienced.

The design and implementation of the form that enabled the collection of information in these cases (Form 20), was not originated from the census planning stage, but arose as a contingency instrument given the impossibility of access to the observational units (individuals, households and dwellings) due to geographical or public order problems.

Those areas where no access limitations arose, and which consequently did not require contingency plans are assumed to have a geographical coverage of 100%.

For the filling out of Form 20, different community and administrative leaders who knew the conditions of the families settled in areas with difficult access were contacted in order to obtain evidences of population, households and missing dwellings. Also diverse available sources in the municipalities were used, such as: the land use planning schemes, municipal development plans, SISBEN[74], township counselors, health promoters and other sources used to determine the population missing both in urban and rural areas.

[74] SISBEN: System enabling the Identification of the Beneficiaries of Social Programs.

- ***Information pertaining to individuals, households and dwellings obtained from scanned forms***

It addresses census information which was not initially included in the processing base. This information was collected by means of census forms, but due to different reasons, it was recorded subsequently to both the data cleaning process and the obtaining of the first results.

Indirect estimations

This exercise was fundamentally supported by the use of primary-source information. However, in those cases where there was not direct information available collected during or after the census operation such as dwellings or households, estimations were performed considering the demographic nearness criterion. In addition, indicators enabling the identification of the municipalities' geographical dynamics were analyzed. In this case, taking into account the characteristics of the demographic behavior of the municipalities belonging to clusters created for the development of the census.

Census reprocessing

Considering that 95% of the information was obtained through the DMCs, a process that created a new census base with all DMCs, hard disks, and SD was implemented, so as to compare it against the original base and to be able to identify the possible missing records in any of the territorial entities.

Demographic analysis

The inter-census demographic analysis method is an indirect method that has been used to evaluate the census information with respect to the volume and composition. It is based on the behavior analysis of the demographic components; fertility, mortality and migration from the census information and it identifies the trends of the demographic dynamics.

The main objective pursued with a demographic analysis process is to evaluate and correct the levels and structures of the population registered in the census, and consequently, to estimate the census omissions.

In its simplest version, this analysis consists of obtaining coherence between the information of two censuses and the demographic events; births, deaths, and migration in such a way that it meets the balancing equation:

$$N^{t+a} = N^{t} + B^{t,t+a} - D^{t,t+a} + M^{t,t+a} \quad (1)$$

Where N^t is the population in instant *t*, *a,* is the time elapsed between two censuses; $B^{t,t+a}$ are the births that occurred during the inter-census period; $D^{t,t+a}$ are the deaths that occurred during the inter-census period and $M^{t,t+a}$ are the net migrants (immigrants less emigrants) that arrived to the country during the inter-census period.

In general terms, none of these magnitudes were known with certitude, therefore, it can be said that the demographic analysis process consists of obtaining the "actual" values from the information available in the country.

According to the methodology, the first stage consisted of performing the estimations of the demographic parameters, specific fertility rates, mortality abbreviated tables and net migratory balances for the 2005[75] census moment following the posed methodology.

As a comparison element, the results obtained in the last two conciliation exercises with the 1985 and 1993[76] censuses respectively, and other studies conducted during the inter-census period were used.

As a second step, interpolations were made for the four five-year periods. For mortality, an interpolation of life expectancy was made for males and females by means of a logistic curve. Once the value of life expectancy was established, an interpolation was made of the mortality abbreviated tables. In order to facilitate the interpolation process, an adaptation of an MS Excel workbook was made, which was developed by the United States Census Office. For fertility, an interpolation of the fertility global tables was made through a logistics and the interpolation for the specific fertility rates by means of the Gompertz relational model.

[75] Procedures are set forth in detail in the mortality, fertility and migration census studies.

[76] These scenarios performed by DANE are shown with the national projections of population (1987 and 1999).

The net migratory balances were adopted once the interpolation processes were made from the results obtained by each one of the censuses, which were subsequently adjusted taking as a reference the information pertaining to international travelers, the Colombian population residing abroad calculated from the question of children residing abroad in the 1985 and 1993 censuses, the information of the International Migration in Latin America and the Caribbean (IMILA) research and of the Colombian citizens registered in the censuses of other countries.

Based on this information and by means of the software that creates the input information to the PRODEM[77] program, the inputs were generated where three scenarios were run (Scenario 1 1985-2005, Scenario 2 1995-2005, and Scenario 3 2005-1985).

With the text files from the results of the exercise, an MS Excel workbook is generated, where, in addition to the information produced by PRODEM, a set of various pyramids describing the population by ages, both in absolute and relative terms, and graphs of the male to female ratio[78] are included.

Once the diagnosis of the first results is made, the parameters are adjusted and the procedure is performed again; the fertility rates are adjusted in order to achieve the coherence between the births recorded and the births calculated by PRODEM.

The specific mortality rates are adjusted so as to achieve coherence between the deaths recorded and the deaths calculated by PRODEM. The population levels for 1985 and 1995 are adjusted so as to make the values obtained in scenario 1 for 1995 match with the baseline of the projection of scenario 2.

This iterative process is repeated until the three scenarios match both in level and structure by age and sex. Thus, a coherent demographic record is obtained for the 1985-2005 period, irrespective of the starting point (baseline), 1985, 1995 or 2005. This scenario is used as a benchmark of the departmental Demographic exercise.

[77] PRODEM: Statistical package for demographic proyections, developed by CELADE - Population Division of ECLAC.

[78] Male to female ratio: Ratio between the number of males with respect to the number of females in a population or in a specific-age group.

However this is not the final result of the exercise, since it is possible that the departmental Demographic analysis process and the municipal adjustment produce additional information leading to a review of the estimation of the demographic parameters.

The Demographic analysis process is also useful for improving the estimation of the demographic parameters. For example, the estimation of births obtained by retro-projection may be less than that obtained by indirect methods; which would indicate that the fertility rates may be under- or overestimated.

Migration selectivity may result in male to female ratios very different from those expected, therefore in this case it would be better to redefine the migration selectivity in order to obtain more appropriate male to female ratios. In some cases, the Demographic analysis process may lead to the conclusion that it is necessary to make an adjustment with respect to the conciliated population in previous censuses.

Table 11. Colombia. Population registered in the census, balanced and conciliated. 2005 General Census

Population concepts	Population June 30, 2005	Adjustment factor
Registered[1]	41.298.706	
Balanced	107.401	0,25%
Balanced (difficult access)	511.584	1,19%
Conciliated by census units	970.901	2,26%
Total	**42.888.592**	**3,71%**

Source: DANE.

[1] Corresponded to population registered in the census taken to June 30, 2005

According to the results of the national Demographic analysis, the 2005 General Census had a non-coverage of 3.7%; out of this, 1.4% was mainly due to the difficulty of access to households due to violence. However, this gap was controlled in the field; therefore the source of information with respect to its estimation process was the direct records in the field. In turn, the remaining 2.3% corresponded to the final non-coverage of census units. These results are summarized in Table 11. In Graph 4, the coverage indicator of the last four (4) population national censuses is compared. The departmental Demographic analysis process may be considered as a repetition of the national Demographic analysis process, applied *n* times for each department.

However, there are a number of considerations to be taken into account and which require special care.

Firstly, DANE had not conducted a Demographic analysis process at the departmental level. Even though DANE has made estimations of the parameters at the departmental level, as part of the process of census studies, it has never established coherence between the censuses levels and the growth rates, nor has it made a compatibility of structures by age and sex for two censuses with the demographic parameters.

In the census studies corresponding to the 1993 census, departmental projections for the 1990-2025 period were made without performing the retro-projection up to year 1985[79].

Secondly, departmental projections require estimations of domestic and international migrations at the departmental level. Since this calculation is complex and affected by issues pertaining to no answer and coverage differentials, the reliable estimations require a considerable effort.

Thirdly, not all departments have information of similar quality and, therefore, in some of them, it is necessary to perform a very detailed work in each of the censuses to be conciliated. On the other hand, not all departments enable estimations that are equally reliable. Small departments with higher omission rates do not enable a reliable estimation of the demographic parameters, even when the question included in the census had been made to all individuals, specially, if as was the case with the 1985 census, such parameters had been collected in the survey sampling.

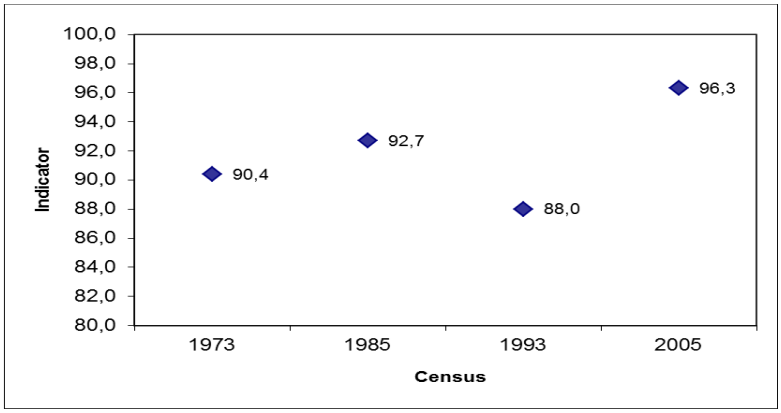
Finally but not any less important, a set of departmental figures must keep coherence with the national figures, i.e. the population sum by age and sex of the departments has to be equal to the national total, as well as the sum of births, deaths and the migratory net balances of all departments has to be equal to that obtained in the national conciliation.

[79] Refer to DANE (2000).

The departmental Demographic analysis process starts with the estimation of the fertility, mortality and migration parameters, and with the information collected in the operation of the 2005 General Census; it continues with the revision of the parameters for the 1985 and 1993 censuses, subsequently, interpolations are made for the four five-year periods 1985-1990, 1990-1995, 1995-2000 and 2000-2005; finally, the results are validated against other estimations made by DANE, the DANE departmental projections and the Colombia XXI Century Project.

Once the demographic parameters have been calculated for the departments, it is necessary to determine the base population for 1985; for such purpose, the adjusted population for 1985 stored in the magnetic files of the Census and Demography Division (DANE) is taken; the base population for 1995 is taken from the departmental projections book based on the 1993 Census and adjusted to the totals obtained in the National Demographic analysis Process.

Graph 4. Colombia. Coverage indicator. 1973-2005 Population Censuses



Source: DANE.

Municipal Adjustment - Municipal Township / Remaining Areas - by Symptomatic Variables

Taking into account that the information at the municipal level, is precarious so as to be able to conduct a demographic exercise as is the Census Demographic analysis, nor can the development of a Post-census Survey be considered to estimate

adjustment factors due to omissions or non-coverage, DCD[80] developed an independent exercise that would enable it to validate conciliation in each department. Therefore, at the national level, an external consultancy was contracted in order to perform the estimation of adjustment factors for municipal township – remaining areas of the population registered in the census with respect to each one of the municipalities and departmental "corregimientos".

This procedure, which is independent of the National Census Demographic analysis, was performed by means of symptomatic variables from external sources for each one of the 1,119 territorial entities.

The bibliographic reference with respect to the efficacy of the use of symptomatic variables as a methodology for the evaluation of census data, deduces that it is as a function of the town planning, mobility, and geographical segregation percentage, among other variables that must be applied with flexibility as per both the availability of information and the way each case is approached.

The methodology defined to estimate the differential adjustment factors of the municipal township – remaining areas of each municipality, initially implied the implementation of two diagnosis phases with the purpose of identifying in the first one those presenting atypical behaviors due to abrupt changes in their trend or composition by area and, in a subsequent phase, to evaluate such cases by using symptomatic variables and trend contrast[81].

The main aspects of the methodology used are described in detail below:

Initially the methodology is based on the theoretical assumption that the growth of the municipalities is harmonic, without abrupt changes in either their municipal townships or their rural areas and with a trend to improve their degree of urban development throughout time, as is in the case with the evidences detected by various researchers with respect to the Colombian municipal dynamics (Chackiel and Villa, 1993).

[80] DCD: Census and Demography Division (DANE).

[81] DANE-DCD. Municipal Evaluation and Adjustment of the 2005 Census by means of symptomatic variables. May, 2007 *(the translation of this title is for reference purposes only).*

If for any reason, the empirical evidence of urban development could not be met and an abnormal behavior was observed in the municipal township and/or the remaining areas, the argumentative justification that would validate the municipal distribution process, had to be found. This was performed by using symptomatic variables from auxiliary sources and, finally, with evidences found in other media pertaining to economic, social or demographic aspects referring to the municipalities, which served as support to explain the atypical behavior.

The indispensable input for the application of the first phase of the diagnosis, is related to the trend of the census results from the year 1951 to the year 2005. In addition, the requirements sent to DANE pertaining to the concerns of the general public related to population aspects or municipal boundaries were considered. For this first diagnosis to be performed, the following criteria were established:

- There is an acceptable behavior when the municipality does not present an exaggerated variation on its trend and its gradient is constant.

- Where the area presents an accelerated increase or decrease, but the gradient remains constant.

- Where the area presents an accelerated increase or decrease, but the gradient changes.

- Where the area presents a gradient change, but not in an accelerated manner.

- Where there are behaviors wherein the municipal township that seem like the remaining areas and vice versa.

  Where it is required to look at other sources either by the trend of the information or due to the fact that the municipality does not have all of the census points and trends and they need to be confirmed by symptomatic variables.

- Municipalities whose behavior is explained because part of their territory gave rise to another, or was part of another one, in the past.

As a result of the above processes, municipalities were obtained that, in the light of procedures, resulted with atypical features, which are grouped in a table whose definitive criteria are:

- Change in gradient: That is, those municipalities which presented an abrupt change in either their municipal townships or their rural areas.

- Change in gradient in the remaining areas: That is, those municipalities that presented changes in gradient but only in their rural areas.

- There is a complaint: That is, those municipalities, which despite of not presenting an atypical behavior, were taken into account for the analysis, since DANE received a complaint on behalf of a citizen regarding some aspect related to the municipal distribution, municipal boundaries or under-enumeration of its population.

- New municipalities: When the only information available was that of the previous census, it was decided to assume that they were municipalities worthy of being analyzed in greater detail.

- Other criteria: It corresponds to those municipalities where, due to the lack of information available, it is needed to compare it with other sources.

- High gradient: It corresponds to those municipalities where there is an exaggerated growth either in their urban areas or in the remaining areas, with no apparent reason.

The second phase of the diagnosis is characterized by the use of symptomatic variables, in order to compare and validate the level obtained by the 2005 Census against to what the symptomatic variables included in the exercise for each municipality indicate.

Symptomatic variables are those statistical records kept by some public or private entities. They are characterized for having a wide coverage whether it is at the municipal, departmental or national levels.

For the purpose of this exercise, the following variables are used in the process: residential subscribers connected to the electric power service, total number of school

enrolments from the Ministry of National Education, total of individuals who are beneficiary of the SISBEN and the Electoral Census - all of which are at the municipal level, the area of illicit crops, and public order.

In addition to the use of symptomatic variables, auxiliary sources that use information from the same studies performed by DANE were taken into account, as well as other alternative variables. Included in these sources were the series of census data, information from the field operation in the 2005 General Census such as: the list of those municipalities with access problems due to public order during the collection of census data, the rate of natural growth, and the municipal mobility (school or work). The Migratory Net Balance, in regard to question 30 in the Census form "Where did you live five years ago?".

Additionally, It was necessary to use an alternative methodology that would enable the validation of the results with respect to the distribution in the municipal township – remaining areas with direct (symptomatic variables) and indirect sources (auxiliary variables), so that the veracity of the municipal levels and trends per area are confirmed by means of such sources.

In order to use these variables, certain sensitivity parameters or thresholds were used, which measured the census datum deviation with respect to the symptomatic variable. An oscillation range measured in percentages was taken into account; if the census varied within such range, the level of the census datum of the municipality with respect to the same datum for the symptomatic variable, the census figure was determined as acceptable and did not require any revision. In turn, if it was higher or lower than the threshold, the evaluation of the census figure was required.

Sensitivity parameters are different for each symptomatic variable and are governed by the following equation:

$$Parámetro\ de\ Sensibilidad \quad = \quad MAX\left(ABS\left({S_{T,05} - p_{T,05}} \Big/ {p_{T,05}} \right); 10\% \right)$$ [82],

[82] In the equation, "*Parámetro de sensibilidad*" refers to "sensitivity parameter".

This threshold represents the highest value of difference, in absolute terms, of the figures of the symptomatic variable chosen, compared against the population registered in the census in 2005, where:

$S_{T,05}$: Corresponds to the value recorded for year 2005, out of the national total of the symptomatic variable.

$p_{T,05}$: Represents the subset of population, comparable with the symptomatic variable taken from the 2005 census process.

Finally, the municipal adjustment factor was determined by the symptomatic variables by following essentially the ratio of the population with the "best" symptomatic variable. In some few cases, the municipal township – remaining areas ratio was used as an adjustment factor of the symptomatic variable[83], It was made by means of the following expression:

$$FACTOR\ R_{S\text{-}C} = IF\ \{MIN(R_{S\text{-}C}(MEN), R_{S\text{-}C}(ENERGIA)) < 1,$$

$$IF(\ O[PROMEDIO(R_{S\text{-}C}(MEN), R_{S\text{-}C}(ENERGIA)) < 1, R_{S\text{-}C}(MEN) * R_{S\text{-}C}(ENERGIA) = 0], MAX(R_{S\text{-}C}(MEN), R_{S\text{-}C}(ENERGIA)), PROMEDIO(R_{S\text{-}C}(MEN), R_{S\text{-}C}(ENERGIA))),$$

$$MIN(R_{S\text{-}C}(MEN), R_{S\text{-}C}(ENERGIA))\}$$[84]

Where:

$R_{S\text{-}C}$: Refers to the Symptomatic Ratio to the Census (an independent factor for the municipal township and the remaining areas).

In general, the more stable and the nearest symptomatic to the unit is chosen, otherwise the average of the township – remaining areas ratio of the Power and Enrolment symptomatic is chosen. If none of the above provides a reasonable or

[83] In only one case (Rio Quito-Chocó) it was decided to change the composition of the municipal township – remaining areas given by the Census and to adopt the one suggested by the symptomatic variable.

[84] In the formula, "Energia" refers to "Electric Power" and "Promedio" to "Average".

proper adjustment, the municipal township – remaining areas ratio of SISBEN is introduced as the symptomatic variable.

The following expression was used for the selection of the symptomatic variable of the municipal township – remaining areas ratio:

$$FACTOR\ CAB\_RES = SI(VSS = "MEN"; R_{SCR}(MEN); SI(VSS = "ENERGIA"; R_{SCR}(ENERGIA); SI(VSS = "SISBEN"; R_{SCR}(SISBEN); 0)))$$

Where:

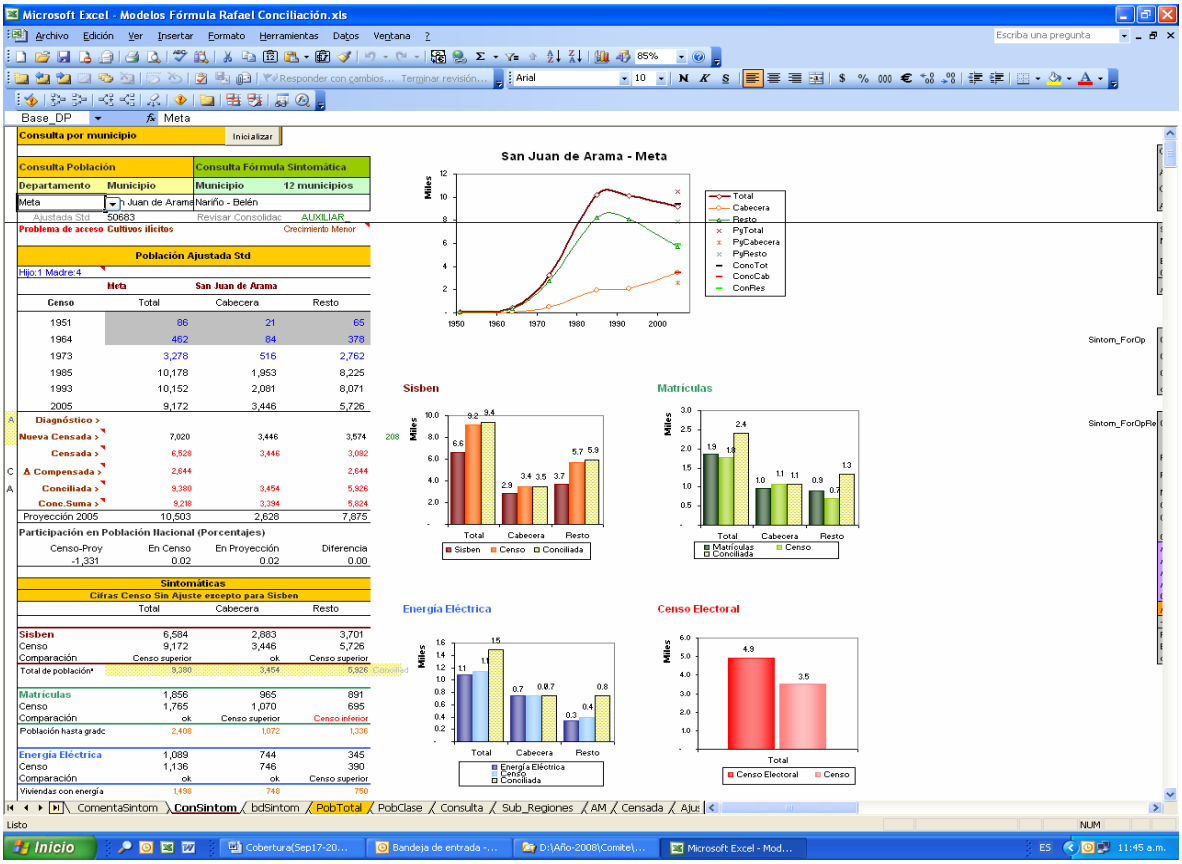
VSS refers to the Selected Symptomatic Variable, which in most of the cases was automatically determined.

RSCR (Symptomatic) refers to the municipal township – remaining areas ratio for the symptomatic variable.

The latter option (municipal township – remaining areas factor) was used only for four municipalities, where it was deemed that only the adjustment of the population in the remaining areas was required.

For the above process to be performed, the model was implemented by means of an MS Excel macro, which is presented in Graph 5 below:

Graph 5. Template of the Municipal Adjustment Model with Symptomatic Variables



4.4. ANALYSIS OF THE STATISTICS PRODUCED

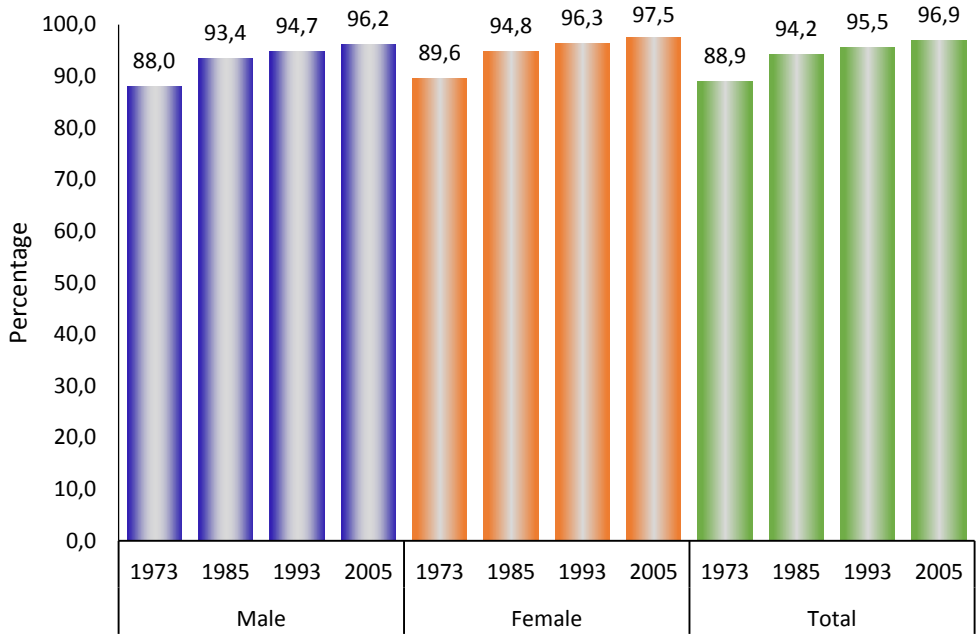
With the information available generated by the Population and Housing Census conducted in 2005 in Colombia, several types of analyses were made.

Among the main ones were the comparisons of literacy of the population of 15 to 24 years old from 1973 to 2005, for males, females and total; the school attendance, by age groups in Colombia, the household head – population ratio, the households – population ratio and the male to female ratio in Colombia.

The main results obtained from the analysis of the information generated by the different population and housing censuses are presented below.

The illiteracy levels have decreased in the last 32 years in the population aged between 15 to 24 years old. From a rate of 11.1% in 1973, it fell to a rate of 3.1% in 2005, according to the results of the General Census. (Refer to Graph 6)

Graph 6. Colombia. 15 to 24 years old population, by literacy per sex. 1973-2005 Population Censuses



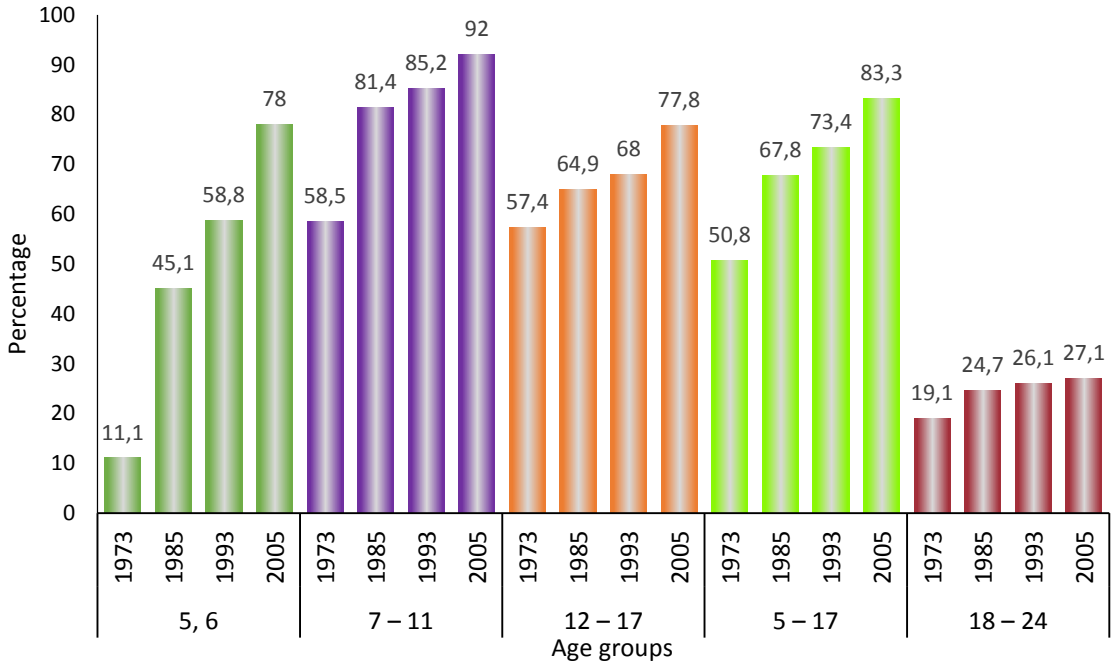
Source: DANE.

The first results of the General Census show a significant increase in the levels of school attendance at formal institutions:

In effect, whereas in 1973, the attendance rate for the age range from 5 to 6 years old was 11,1%, in 2005 the rate was 78,09%. For the age range 7 to 11, the attendance rate increased from 58,5% in 1973 to 91,9% in 2005.

For the population between 12 and 17 years of age, the attendance rate increased from 57,4% in 1973 to 77,89% in 2005. For the 5 to 17 age range, the attendance rate increased from 50,8% in 1973 to 83,3% in 2005. For the population between 18 and 24 years of age, the attendance rate increased from 19,1% in 1973 to 27,1% in 2005. (Refer to Graph 7)

Graph 7. Colombia. School attendance by special age groups. 1973-2005 Population Censuses



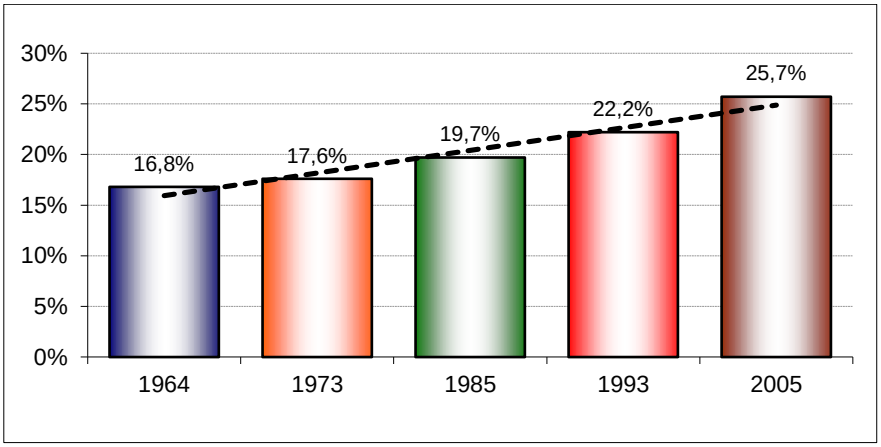
Source: DANE.

Headship rates

The household headship rate is an indicator used to determine the number of Colombian citizens who are household heads and its opposite determines the sizes of the household. The behavior of this indicator since the 1964 Census is shown in Graphs 8 and 9.

Table 12 shows the proportion of household headships by sex and the respective male to female ratio in the 1985 and 2005 Population Censuses, an increase in female headship was observed.

Graph 8. Colombia. Ratio of household heads.
1964-2005 Population Censuses



Graph 9. Colombia. Number of persons per household.
1964-2005 Population Censuses.

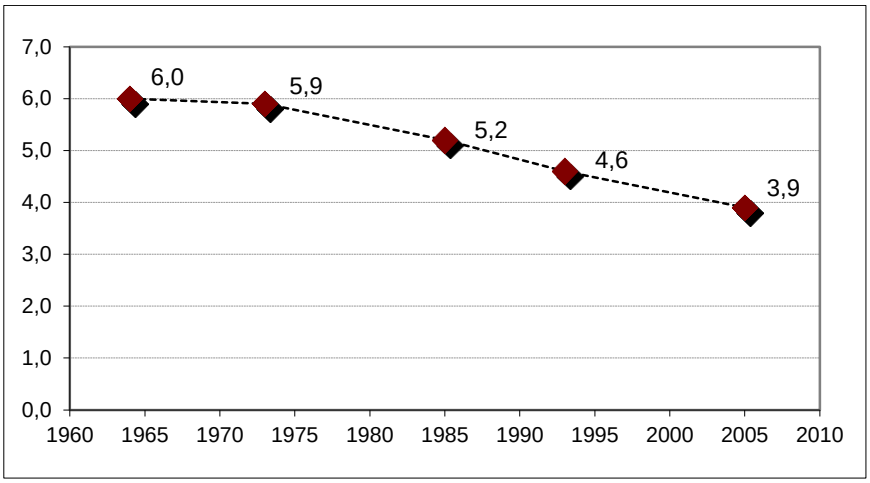


Table 12. Colombia. Proportion by sex and male to female ratio of the household heads.
1985-2005 Population Censuses

Years	Percentage (%)			Male to female ratio[1]
	Total	Household head men	Household head women	
1985	100	78	22	356
1993	100	76	24	309
2005	100	70	30	234

[1] MFR: Refers to the ratio between the number of males and females.

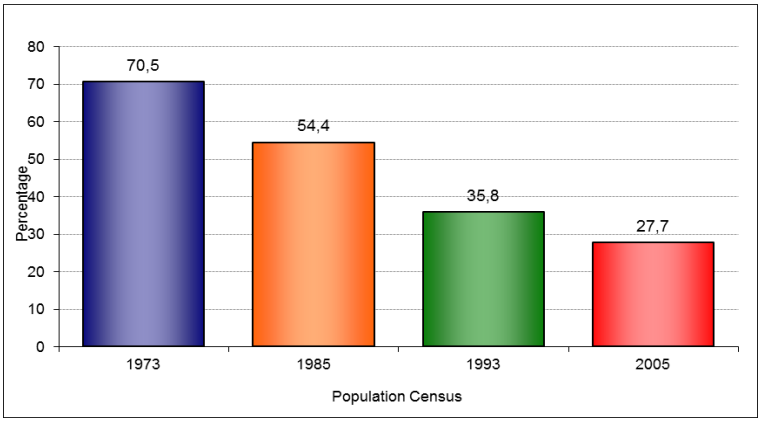
Unsatisfied Basic needs (UBN)

Another analysis performed was the UBN methodology, which aims at determining, with the assistance of some simple indicators, whether the population basic needs are being covered.

The chosen simple indicators were: inadequate dwellings, households with critical overcrowding, dwellings with poor services, households with high economic dependence, and households with school-age children not attending school.

According to the results of the 2005 Census, 27.7% of the country's population showed unsatisfied basic needs, and it decreased 8.1 points against the 1993 census (35.8%). (Refer to Graph 10)

Graph 10. Colombia. Percentage of individuals living with UBN. 1973-2005 Population censuses



Source: DANE.

4.5. QUALITY ANALYSIS OF THE STATEMENT OF AGE IN THE CENSUS

The two types of most common errors in population and housing censuses are related to those affecting the quality of the census basic information. They are classified as coverage and content errors; the latter refer to those cases where the person had been registered in the census, but for any reason, the attributes did not match; the most common was age, since there is a trend on behalf of the respondent to round it off, usually to a digit that ends in 0 or 5.

By checking the quality of the statement of age in population censuses, three types of errors can be found: ignored age, misreporting and differential omission by age. The last two were the most frequent, mainly in children and seniors.

In general, the senior population tends to state higher ages than the actual, and the children age tends to be misreported or in some cases mistakenly recorded.

Ignored age or without information: It corresponds to the records of individuals who did not state their age. For these cases, international recommendations are to

prorate[85] data by sex in each one of the ages, even though in practice, some researchers often eliminate such quantity.

The misreporting of age: It means that the respondent stated a wrong age, whether voluntarily or involuntarily. This phenomenon occurs to a greater or lesser degree in all of the countries in the world, although in the so-called developing countries, such situation is accentuated, which prevents the direct use of information. In order for this situation to be studied, it is classified in three categories: preference of digits, move of ages and preference or rejection of a specific age.

The preference of digits is a phenomenon linked to cultural aspects, and it refers to the systematic rounding in final digit that persons make to state their age. The general trend is to state ages that end in zero and five, although this latter case is a bit less frequent, which causes an important increase of individuals with ages that end in such figures.

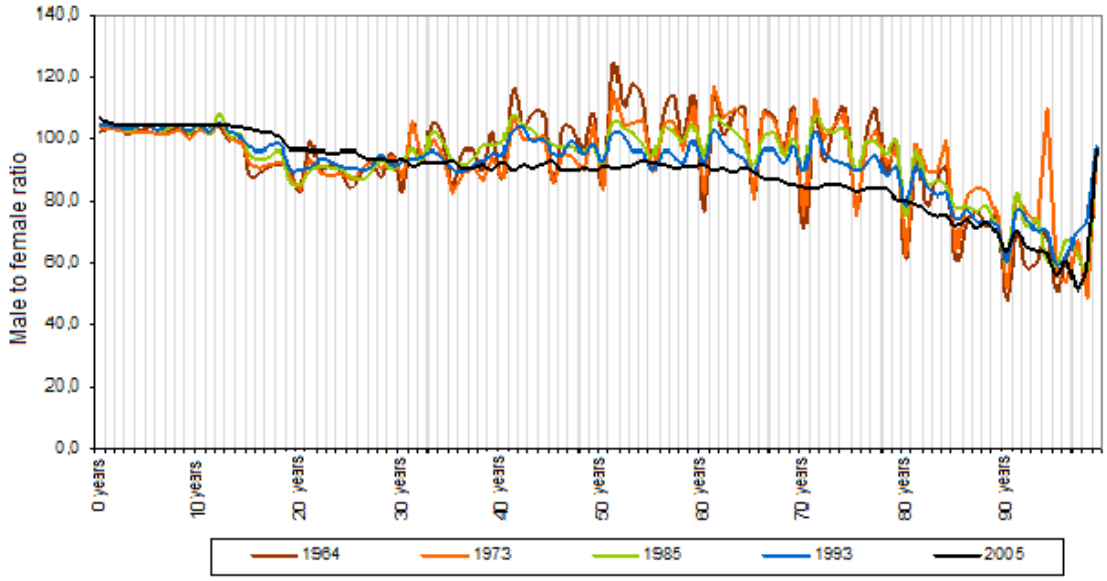
The attraction of the rounded ages, may often be determined by drawing the graph of the male to female ratios by age, bearing in mind the migration selectivity by sex and age which could have an influence upon this.

In the age move, it is systematically stated below or above the actual age; for example, women after a certain age state to be younger than their actual age; seniors and adolescent females, mainly when the latter are married and have several children, tend to express a higher age than they are.

The effects of either a misreporting of age or the preference of digits can be seen in Graph 11.

[85] Prorate: To proportionally apportion a quantity.

Graph 11. Colombia. Male to female ratio by simple ages.
1964-2005 Population censuses



Source: DANE- 1964, 1973, 1985, 1993 and 2005 population censuses.

Differential omission by age: It is a coverage error which is difficult to be detected and it is related, in part, to the above mentioned errors. Such errors occur when one or more persons of the units under investigation, failed to be enumerated due to different reasons. A frequent case of this type of error is the serious problems of omission, as a consequence of the sub-record, shown in the range of 0-4 years old.

There are a number of indices enabling the measurement of the degree of statement of age, considering that this is the variable that determines the measurement of the main indicators characterizing a population from the socio-demographic standpoint. The United Nations Index, Myers and Whipple are among the most widely used.

Myers Index: It enables assessing the attraction or rejection that occurred in the statement of age in final digits. An index is obtained where, if there is no attraction, the value is zero. On the contrary, if all individuals state their age with the same final digit (i.e. 0, 10, 20, 60 etc.), the index reaches a value of 180.

The foregoing means that the low values indicate low attraction of digits, implying that the statement of age is approximately correct and information in general, is interpreted as being of good quality.

Table 13 shows the rating ranges of this index.

Table 13. Myers Index - Classification ranges

Index value	Attraction level
0,0 to 5,0	Low
5,1 to 15,0	Middle
15,1 to 30,0	High
30,1 and up	Very High

Source: DANE.

Whipple Index: It measures the statement of age with respect to the preference of digits 0 and 5. Its variation range stretches from a minimum of 100 to a maximum of 500; the lower value indicates that there is no attraction for digits and that there is a good statement of age. The range of values adopted for this index, is shown in Table 14.

Table 14. Whipple Index - Scale of values

Index value	Data quality
100 to 105	Very toccurate
105 to 110	Relatively accurate
110 to 125	Datos aproximados
125 to 175	Wrong data
175 and up	Very wrong data

Source: DANE.

United nations index: In addition to showing the misreported age and the preference of digits, it presents the individuals' differential omission that occurs in certain ages and the irregularities of data by sex and age.

Since the indicator does not have accurate limits, its interpretation is based on experience, for which effect it is established that indices greater than 40 indicate poor information; between 20 and 40, of intermediate quality and less than 20, satisfactory.

Estimations of these indicators were calculated for the 1964, 1973, 1985, 1993 and 2005 Population Censuses, and the aggregated results are shown in Table 15 and Graphs 12, 13 and 14.

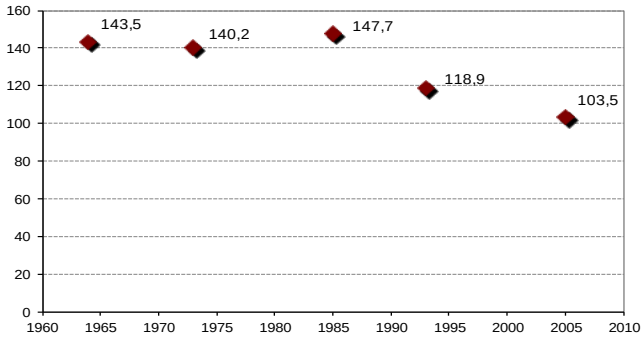
Table 15. Colombia. Myers, Whipple and United Nations Indices. 1964-2005 Population Censuses

Index	1964 Census	1973 Census	1985 Census	1993 Census	2005 Census
Myers	16,68	15,64	18,61	11,22	1,93
Whipple	143,49	140,21	147,66	118,89	103,49
United Nations	31,81	31,35	19,87	18,80	10,30

Source: DANE – 1964 – 2005 Population Censuses.

According to the results obtained from the Whipple Index for the censuses conducted in Colombia, the 1964, 1973 and 1985 censuses can be described as of very poor quality; the 1993 census as of approximated data and the 2005 census was considered to be very accurate.

Graph 12. Colombia. Whipple Index. 1964-2005 Population Censuses

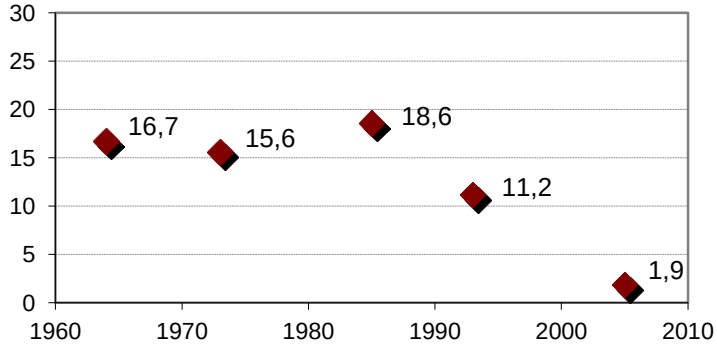


Sample the misreporting of age, with regard to preference of digits 0 y 5
qualification General Census 2005: **Very accurate**

Source: DANE.

By analyzing the *Myers Indicator* for the same censuses, an improvement could be observed (with the exception of the 1985 Census) in the statement of age at the national level of the mentioned censuses, where the 2005 Census shows exceptional results. In effect, the 1964 and 1973 censuses are classified as with "high attraction" and a slight increase was observed in the 1985 census. The 1993 census showed a "middle attraction" and the 2005 census a "very low attraction" with an optimal result.

Graph 13. Colombia. Myers Index. 1964-2005 Population Censuses

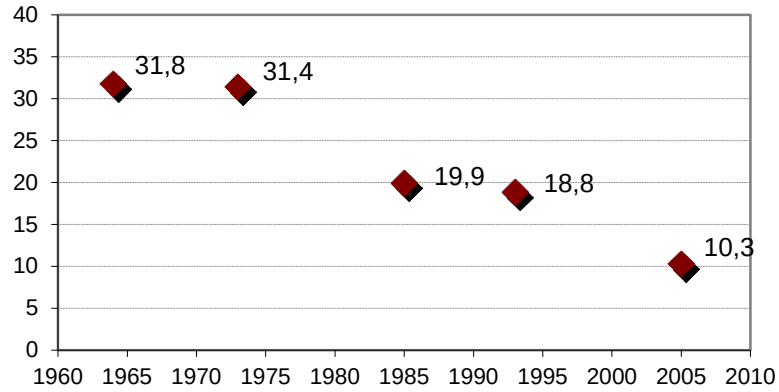


Evaluates attraction or rejection that occurred in age reporting in the final digits qualification General Census 2005: very low rejection of a specific age

Source: DANE.

With respect to the United Nations Index, as shown in the graph below, all of them presented a systematic decrease for the 1964-2005 period under study. 1964 and 1973 showed the highest indicator, where the information was classified as being of intermediate quality; in 1985, 1993 and 2005 as being of satisfactory quality, out of which, an 8-point difference for 2005 stands out.

Graph 14. Colombia. United Nations Index. 1964-2005 Population Censuses



Sample the misreporting of age and the preference of digits qualification General Census 2005: Satisfactory
Source: DANE.

Table 16. Colombia. Myers, Whipple and United Nations Indices for the population registered in the census and captured by means of DMC. 2005 General Census.

Index	Value
Myers	1,77
Whipple	103,03
United Nations	10,4

Source: DANE.

The data in Table 16 show that when the capture process was directly made by means of the DMC, indices were below the total national average, which shows the important effect upon the quality of the information.

Table 17. Colombia. Myers, Whipple and United Nations Indices for the population registered in the census with hard copy questionnaires and recorded in DMC. 2005 General Census

Index	Value
Myers	4,45
Whipple	110,85
United Nations	11,7

Source: DANE.

For the case of the population registered in the census by means of hard copy questionnaires and recorded in DMC (Table 18), indices had an important increase, which shows the effect produced by the filling out of the hard copy questionnaire; however, the quality level is accurate.

Table 18. Colombia. Myers, Whipple and United Nations Indices for the population registered in the census with hard copy questionnaires and captured by scanner[86]. 2005 General Census.

Index	Value
Myers	6,28
Whipple	116,67
United Nations	20

Source: DANE.

For the case of data collection in those areas with difficult access (collection supported on a route strategy), where the hard copy questionnaire was implemented and subsequently scanned, a reduction in the quality of the statement of age was observed, although in no case, at unacceptable levels.

In this category, census data, according to the United Nations Index are of intermediate quality; according to Whipple, of approximated data, and according to Myers, of middle attraction level. Given the proportion of households registered in the census, it did not have an important effect upon the national consolidated, but it must be taken into account when analyses are made at the level of the affected municipalities. (Refer to Table 19)

[86] Approximately 300.000 households.

With the purpose of obtaining an approximation with respect to the quality of the census information, DANE has developed a series of post-census studies, which have been performed by domestic experts. These studies present a detailed analysis with respect to the quality of the variables used in each of the studies, which will be released by DANE.

Table 19. Colombia. Synthesis of the evaluation of the statement of age. 2005 General Census

Quality Indicator	Indicator definition	Comparison parameter	Total National	Captured in DMC	Hard copy questionnaire and recorded in DMC	Hard copy and scanner (routes)
United Nations	Shows the misreported age and preference of digits	<20,0 Satisfactory 20 - 40 Intermediate Quality >40 Poor information	10,3	10,4	11,7	20,0
Myers	Assesses attraction or rejection given in the statement of age in final digits	0,0 to 5,0 Low 5,1 to 15,0 Medium 15,1 to 30,0 High 30,1 and up, very high	1,93	1,77	4,45	6,28
Whipple	Shows the misreporting of age, regarding the preference of digits 0 and 5	100 to 105 Very accurate 105 to 110 Relatively accurate 110 to 125 Approximated data 125 to 175 wrong data 175 and up, very wrong data	103,49	103,03	110,85	116,67

Source: DANE.

5. DISSEMINATION

The user's needs

The modern user of information requires knowing not only where the census data are, but also how to get access thereto and, in many cases, to learn how to use them. These are needs that should be considered when building a good dissemination process.

The strategic objectives

The overall purpose of the dissemination process of the information of the 2005 General Census was to make available to the Colombian citizens, or any other interested party, the data and the topics covered in this census, in a reliable, timely and easy way.

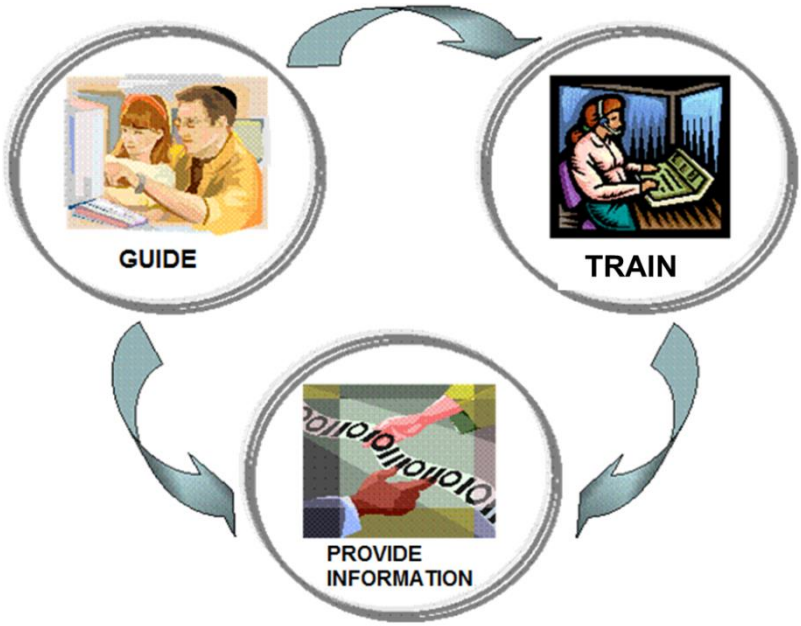
Considering the foregoing, it was specially necessary to guide the user with respect to the process, provide them with training on how to use it and provide them with the data as best as possible. Specifically, the dissemination process aimed at:

1. Guiding the user on how to access the census information they required, providing them with metadata to show the available data, where they could be found or how to access them and also, how to obtain the data for their personal use.

2. Presenting the census data in an easy and timely way for the user to reach and understand them in an accurate way. In that sense, metadata became a critical tool in the dissemination of the census data.

3. Training, whenever necessary, with respect to the structure of the census information, and the way to understand and use it based on their interests or needs.

Diagram 19. Dissemination processes of the 2005 General Census



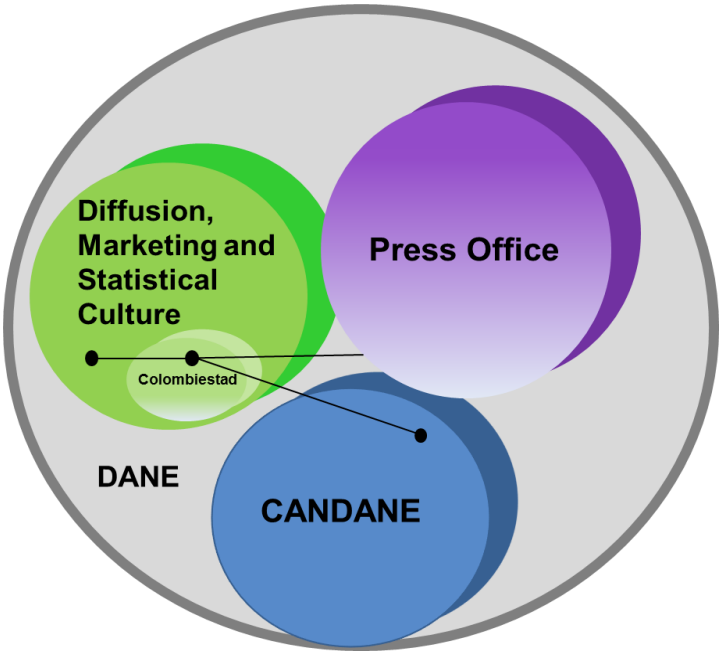
Source: DANE.

The strategy: system approach

The dissemination process of the information of the 2005 General Census, with its multiple target groups and many components, was constructed with a systemic approach, aiming at meetiing a great general objective: an easier way for the general public to have access to the census results.

This information was disseminated by DANE's Diffusion, Marketing and Statistical Culture Division and, also through its Colombiestad (Colombia Statistics) program supported by DANE's and Candane's Press Office. (Diagram 20)

Diagram 20. Interaction of DANE's Divisions responsible for the dissemination process



Source: DANE.

Customer helplines

Based on the structure of the census information system, helplines could be proposed and built, depending upon the different types of users that required the census data and topics. In that sense, each target group had a dedicated customer helpline according to their profile, and in turn, each line had its own procedures based on the communication media established for them. However, the same media could be used by different helplines.

The target groups

Responding to the challenge of constructing a knowledge-based society, all citizens must have access to information for them to know the country and its reality through the data that a population and housing census could collect. However, it needed to be considered that not all citizens had interest in the same data and also that not all were equally trained to use them.

Due to the foregoing, users were grouped into several categories in order to better serve their needs and interests. Therefore, it was indispensable for each group to be provided with a dedicated helpline.

Consequently, the groups of users were identified as shown below:

- Statistical culture: Basic selection of levels and characteristics of the population, economic units and agricultural units.

  - Mass media
  - Ordinary citizens
  - Schools

- Decision-makers at the national level: This group required strategic indicators and metadata susceptible of being processed by themselves.

  - National Government
  - National Congress

- Decision-makers at the territorial level: This group required strategic indicators and metadata capable of being processed by themselves.

  - Sectional governments
  - Corporate private-sector institutions
  - Guilds
  - Unions
  - Population organized groups
  - Community-based and social organizations
  - Ethnic organizations

- Academic researchers: This group required indicators, several metadata and prolonged series.

  - Universities
  - International entities
  - Market and opinion surveys
  - Public Utilities
  - Logistics

5.1. DISSEMINATION SYSTEMS OF THE CENSUS INFORMATION

5.1.1. The Colombian Data Infrastructure (CDI) as a tool for the dissemination of the 2005 General Census

In line with Decree 3851 of November 2, 2006, the CDI is defined as the "administrative system of basic official information, of public use, which consists of a standardized information architecture for the transmission, quality assurance, processing, dissemination and electronic exchange of data between generators and users".

DANE intends to consolidate the information resulting from processing databases. Such databases consist of records, censuses, surveys and observations, which in turn are originated from different systems of information producers in what has been called the "information repository".

Once the basic information was consolidated, standardized and harmonized, different dimensional models were generated, which were the input for the dissemination of information.

The CDI is composed of the following components:

- Infrastructure of statistical data: General statistics by administrative records, censuses or surveys on demographic and economic aspects, derived statistics, models of prospective statistics and the like.

- Data infrastructure with respect to individuals: Records of vital events and migrations required to update the census information of the population, coverage of social protection, educative records, mercantile records, taxpayer records, grant beneficiaries, victims and the like.

- Colombian Infrastructure of Spatial Data (CISD): Geographic information pertaining to cadaster, inventories of physical infrastructure, mineral, water, vegetable and biodiversity resources, geology, geomorphology, soils, natural hazards, climatology, land coverage and use, oceanography, bathymetry, real estate registration, listing of addresses of urban and rural buildings, public utilities' connections, and the like.

- Data infrastructure generated in territorial and regional entities: Databases not included in the foregoing components, which were managed by governor's offices, municipalities; regional, provincial, and local entities, and non-governmental entities voluntarily incorporated to the CDI.

Once the CDI had been formed, DANE could then use it to gradually maintain the Censuses, the continuous statistics, and keep the National Accounts updated, as well as the sampling framework for periodical statistics, as progress was made in the implementation of the technological infrastructure of the information subjects, modules or corresponding increments.

This process, -based on the construction of multidimensional models-enabled the dissemination of the statistical information to the users of the 2005 General Census in a timely, friendly and rapid way, by means of a dynamic enquiry under a Web environment, without breaching the statistical reserve.

The CDI tool for the query of the 2005 Census data

The system enabled the statistical information to be disseminated to the users of the 2005 General Census, by means of the construction of dimensional models for data query, known as "cubes". (Refer to Graphs 15 and 16)

Census information was presented and grouped in various topics, so that the user was able to select the thematic area they wanted to investigate and perform at their choice, crosses with all the investigated variables.

Some topics and subtopics are set forth in the following:

a. The topic pertaining to the demographic characteristics presents:

- Ethnicity
- Fertility
- Mortality
- Migration

b. Socioeconomic characteristics of the population:

- Education
- Languages and technology handling

- Economic activity
- Poverty felt

c. Social security of the population:

- Healthcare
- Pensions
- Disability

d. Dwellings and buildings:

- Typology and occupation of the dwelling
- Dwelling infrastructure
- Services associated with dwellings
- Dwelling tenure

e. Household structure:

- Household overcrowding
- Services of the household and food preparation
- Community participation and household income
- International emigration

f. Goods of durable consumption in the household:

- Appliances ownership in the household
- Vehicles for private use

In the same way, information was also presented and organized by the observational units investigated by the 2005 census, those were:

a. Dwelling presented the following groups of characteristics:

- General features of the dwelling
- Special accommodation sites

b. The household showed the following groups of characteristics:

- General characteristics of the household

- Appliances ownership
- Ownership of vehicles for private use
- Deaths
- International emigration

c. The individual had the following general characteristics of the population:

- Education
- Fertility
- Economic activity
- Migration
- Health and social protection
- Disability
- Languages and computer handling

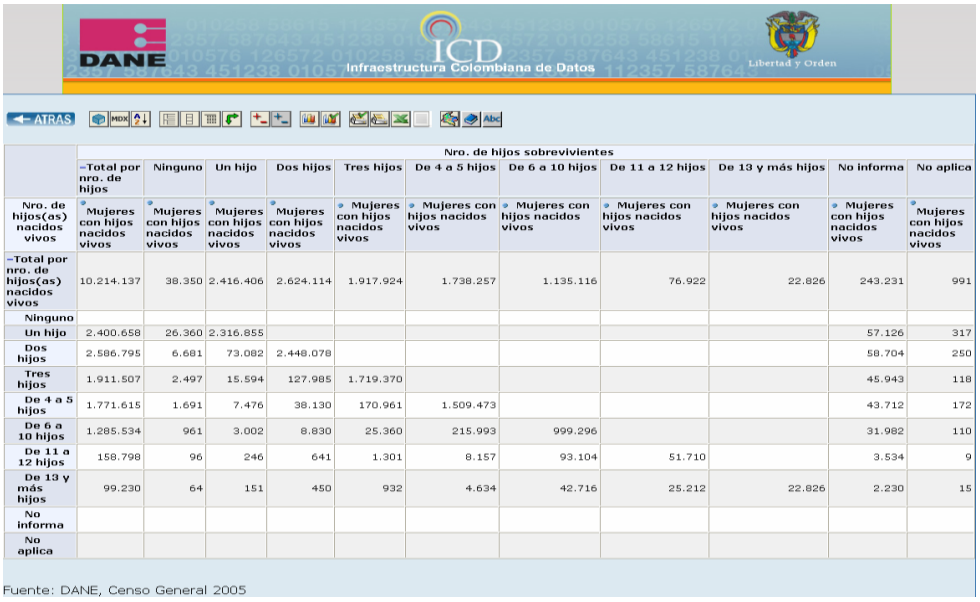
d. General characteristics of the economic units.

e. Agricultural activity.

Graph 15. Colombian Data Infrastructure Query window

Source: DANE.

Graph 16. Colombian Data Infrastructure Census Results window



	Nro. de hijos sobrevivientes										
	-Total por nro. de hijos	Ninguno	Un hijo	Dos hijos	Tres hijos	De 4 a 5 hijos	De 6 a 10 hijos	De 11 a 12 hijos	De 13 y más hijos	No informa	No aplica
Nro. de hijos(as) nacidos vivos	Mujeres con hijos nacidos vivos	Mujeres con hijos nacidos vivos	Mujeres con hijos nacidos vivos	Mujeres con hijos nacidos vivos	Mujeres con hijos nacidos vivos	Mujeres con hijos nacidos vivos	Mujeres con hijos nacidos vivos	Mujeres con hijos nacidos vivos	Mujeres con hijos nacidos vivos	Mujeres con hijos nacidos vivos	Mujeres con hijos nacidos vivos
-Total por nro. de hijos(as) nacidos vivos	10.214.137	38.350	2.416.406	2.624.114	1.917.924	1.738.257	1.135.116	76.922	22.826	243.231	991
Ninguno											
Un hijo	2.400.658	26.360	2.316.855							57.126	317
Dos hijos	2.586.795	6.681	73.082	2.448.078						58.704	250
Tres hijos	1.911.507	2.497	15.594	127.985	1.719.370					45.943	118
De 4 a 5 hijos	1.771.615	1.691	7.476	38.130	170.961	1.509.473				43.712	172
De 6 a 10 hijos	1.285.534	961	3.002	8.830	25.360	215.993	999.296			31.982	110
De 11 a 12 hijos	158.798	96	246	641	1.301	8.157	93.104	51.710		3.534	9
De 13 y más hijos	99.230	64	151	450	932	4.634	42.716	25.212	22.826	2.230	15
No informa											
No aplica											

Fuente: DANE, Censo General 2005

5.1.2. Data Recovery for Small Areas by Microcomputer – (REDATAM + SP)

REDATAM + SP is a software developed by the Latin American and Caribbean Demographic Centre (CELADE), which is the Population Division of the Economic Commission for Latin America and the Caribbean (ECLAC) of the United Nations.

What does REDATAM + SP do?

It enables the information contained in compressed databases to be processed (created in REDATAM format), such as that from population censuses, agricultural censuses, household surveys, etc., that, for example, contained data of millions of people, dwellings and households on the whole.

This makes that a REDATAM database usually contains microdata, that is, data or variables related to individuals, dwellings, households or other information elements which enables the generation of various tabulations for any geographical area defined by the user.

These data, – being hierarchically organized to enable a rapid access - were processed in search of specific results for certain areas of geographical interest. In addition, new variables could be generated and tabulations rapidly processed as well as other statistical results through graphical windows and without the assistance of a programmer.
In order for the census information to be of easy access, DANE implemented under this platform a query system, which enabled access to microdata[87] and aggregated data of the 2005 General Census.

Creation of the Database in REDATAM + SP Platform

Based on the initial documentation of the census files and after a painstaking study of such information about the best way of organizing the database in REDATAM + SP format, some important points were defined in order to assist in the tasks, as follows:

- Organization of information: Advantages and disadvantages of the models, separation of the information and reserves of the information for the collected data.

- Definition of the databases' architecture in the REDATAM + SP format, with respect to the data, both basic and extended. Structuring of the data dictionaries.

- Programming of the query module via WEBSERVER Internet interface for the basic and extended model.

- Initial programming of the XPLAN module under REDATAM + SP, with both the basic and extended data for the recording of CD-ROM.

Based on those definitions, and given the complexities of dealing with the basic and extended models, and the diversity of the type of users, it was concluded that tasks should also incorporate a separation among the different "visions" of the same database, whether that be by external users or by the DANE technicians, as well as the incorporation of products to fulfill the demand of basic data.

In this way, the following components were taken into account:

[87] Microdata: Individual record of the variables making up the information of one particular individual in the database.

- Generation of a base for the extended data.
- Generation of a base for the basic data.
- Programming of the access to the extended base for all users.
- Programming of the access to the basic base for all users.
- Programming of the WEBSERVER application for consultation via Internet of the extended database.
- Programming of the WEBSERVER application for consultation via Internet of the basic database.
- Programming of the XPLAN application for installation in individual equipment via CD-ROM of the extended database.
- Programming of the XPLAN application for installation in individual equipment via CD-ROM of the basic database.

Separation into two databases (basic and extended) was necessary, since the information of the basic model (questions for all of the dwellings and persons) could be consulted for all geographical levels (e.g. up to block); however, for the case of the extended model (questions only for a sample of dwellings, households and persons), the sampling errors did not enable the results at geographical levels smaller than municipal township – remaining areas to be obtained.

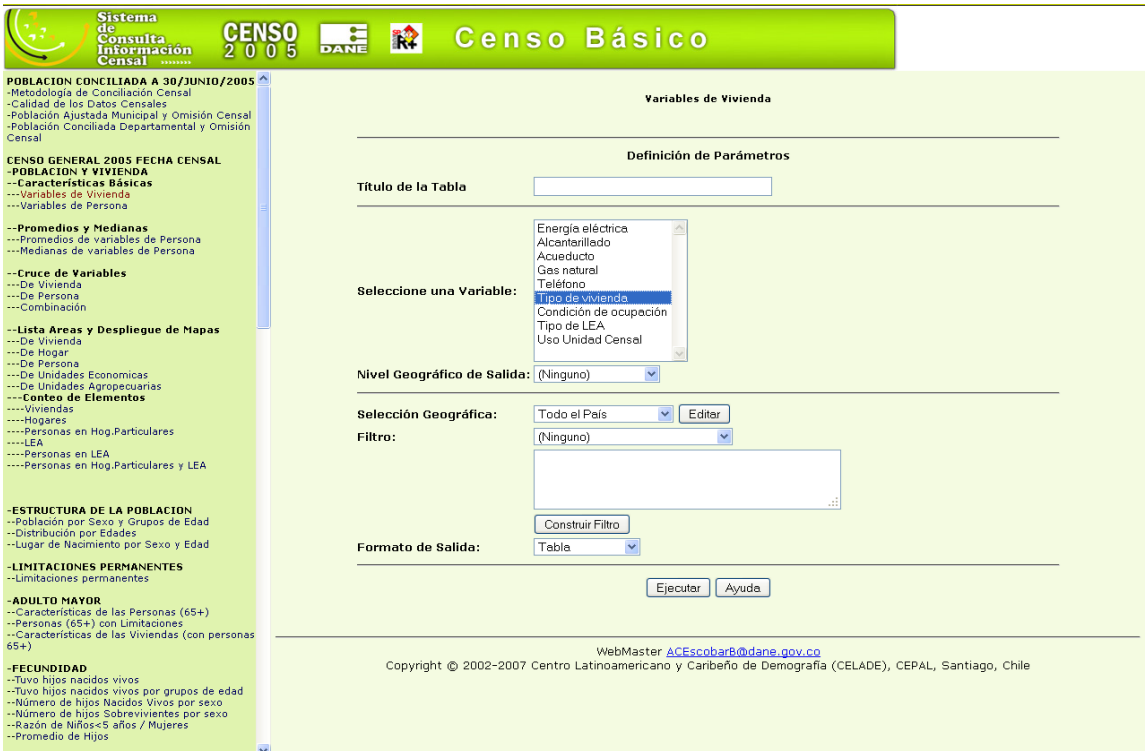
Finally, consistency tests were performed upon the two databases, - basic and extended – in REDATAM + SP format with respect to the quantities of records and totals of variables, as well as a series of checks in order for the official seal certifying their content to be affixed.

Some of the windows of the query system of basic information of the 2005 General Census, which can be accessed through DANE's Website, www.dane.gov.co are presented below:

Graph 17. REDATAM Main Query window – WebServer Interface

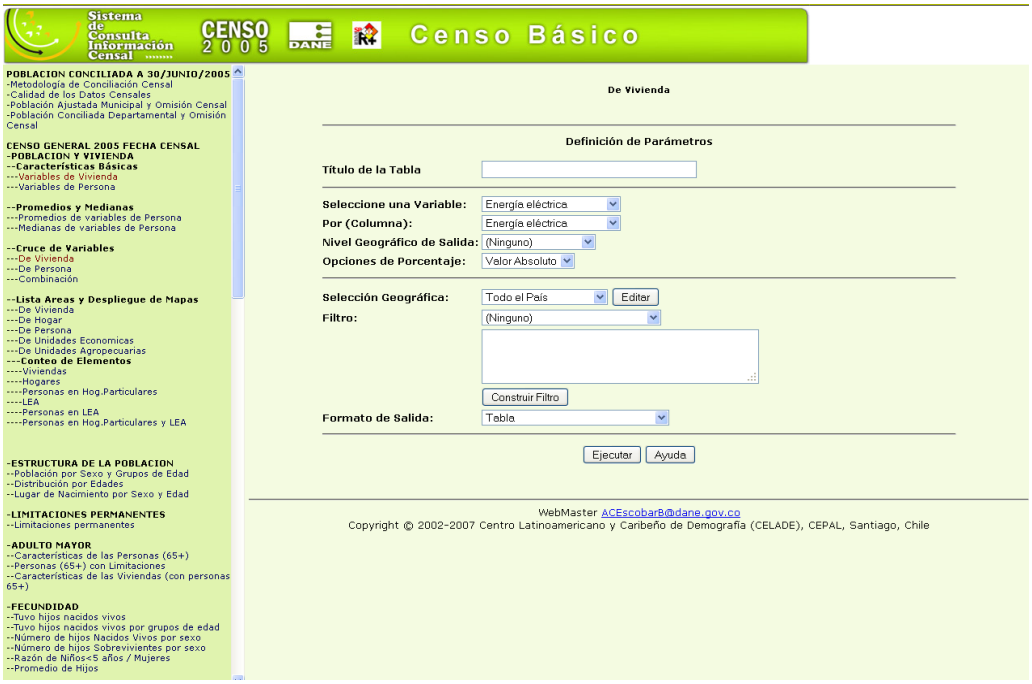
Source: DANE.

Graph 18. Query Window per frequencies – WebServer Interface



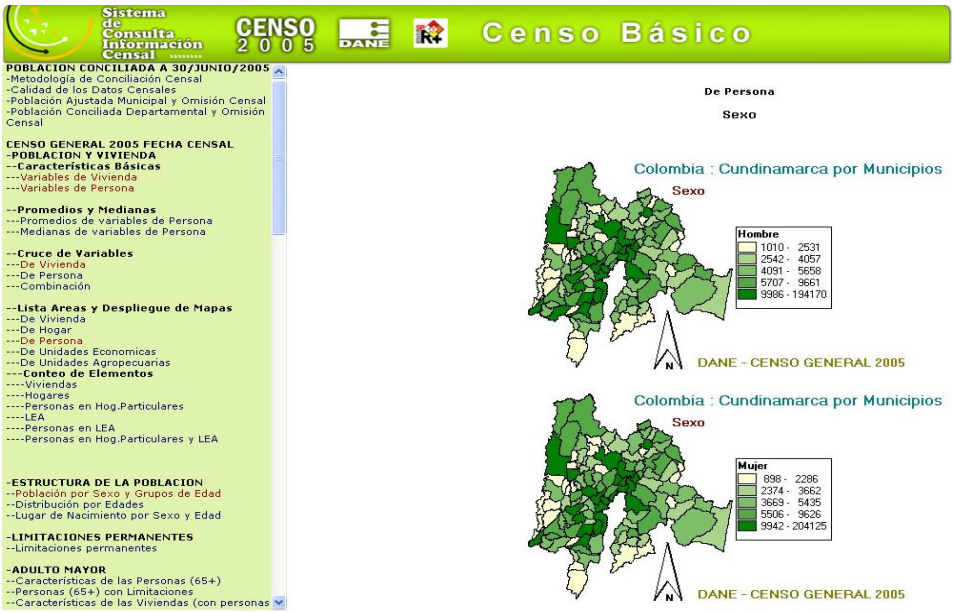
Source: DANE.

Graph 19. Query window per crosses of variables – WebServer Interface

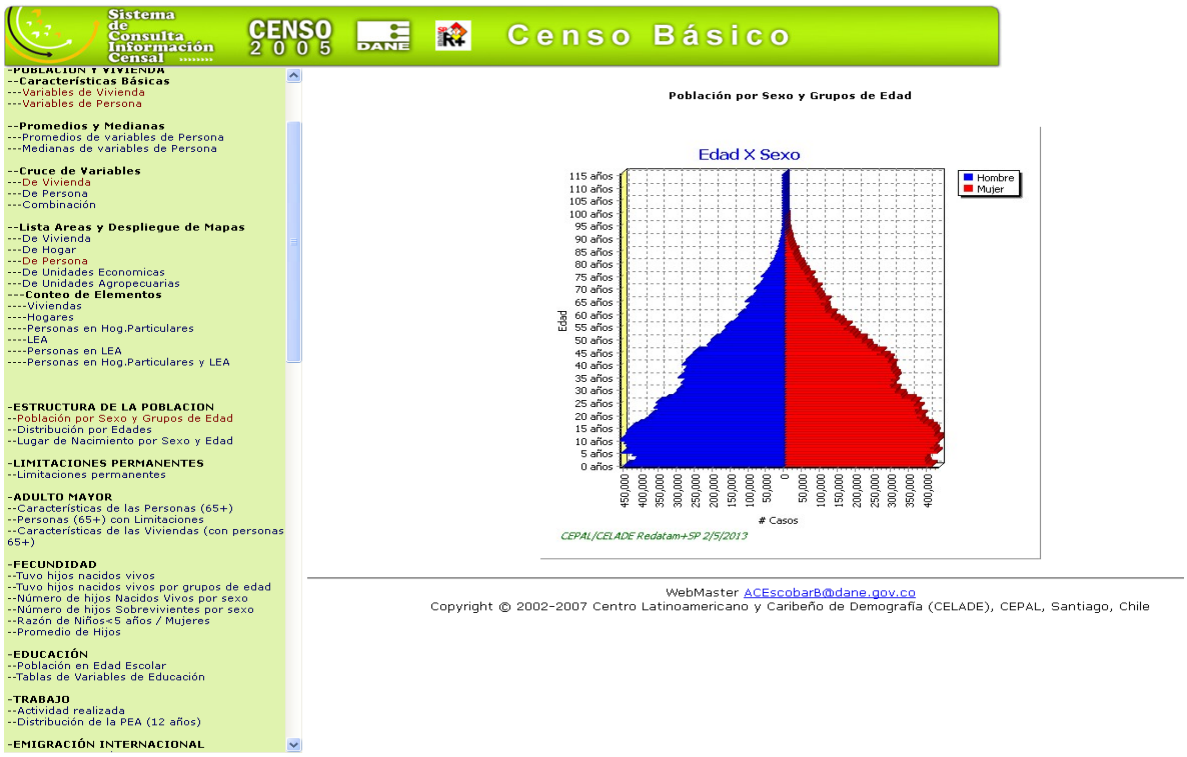


Source: DANE.

Graph 20. Query window of the Thematic Map –WebServer Interface



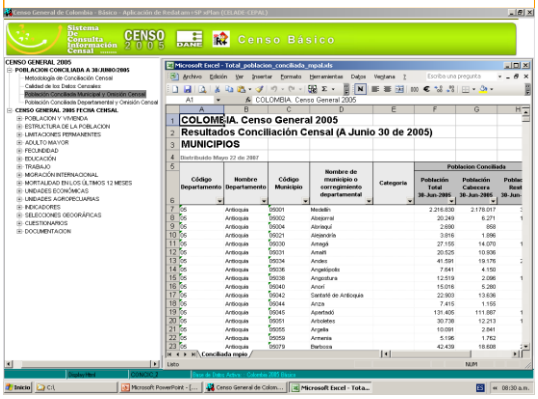
Graph 21. Query window of the Population Pyramid –WebServer Interface



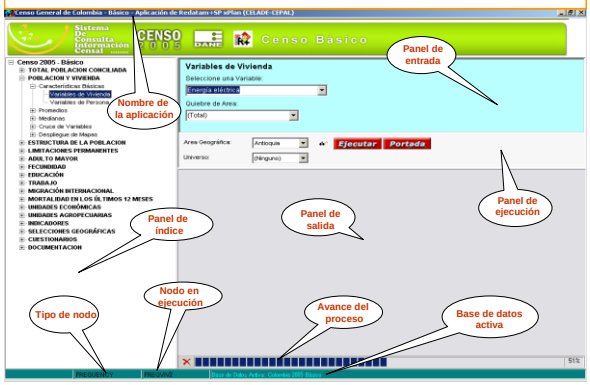
Source: DANE.

Graph 22. REDATAM Window – XPLAN interface

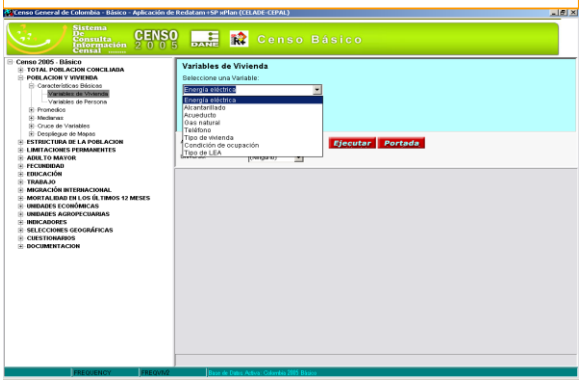
Población conciliada municipal y omisión censal



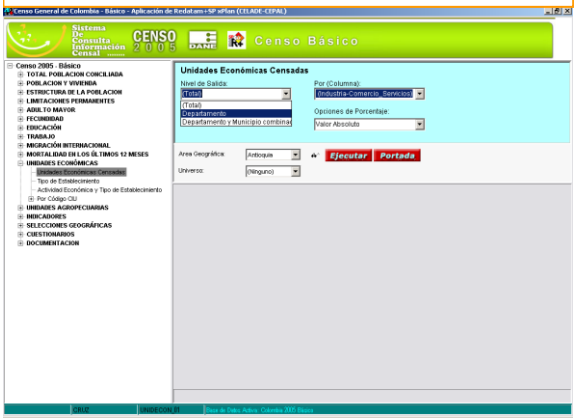
Configuración de la pantalla XPLAN



Nodo POBLACION Y VIVIENDA - Características Básicas
Selección Variables de vivienda

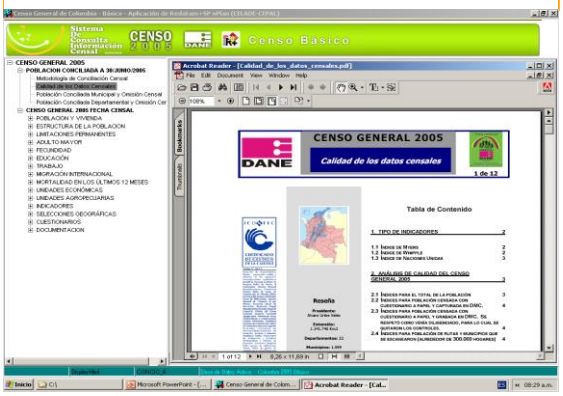


Nodo UNIDADES ECONÓMICAS
Unidades económicas censadas

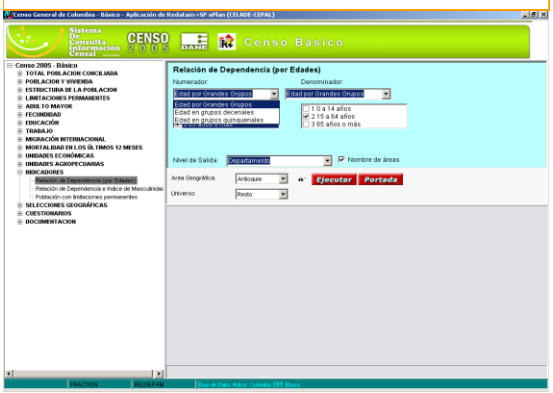


Graph 23. REDATAM Window – XPLAN Interface

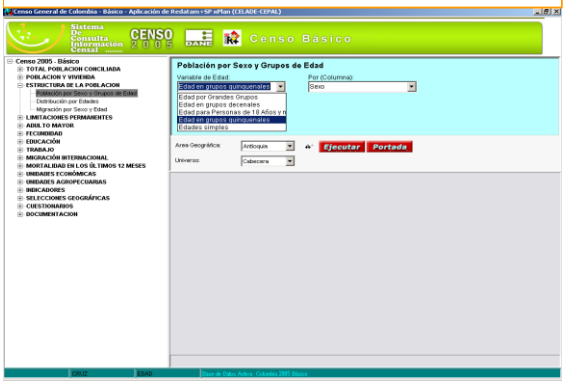
Calidad de los datos censales



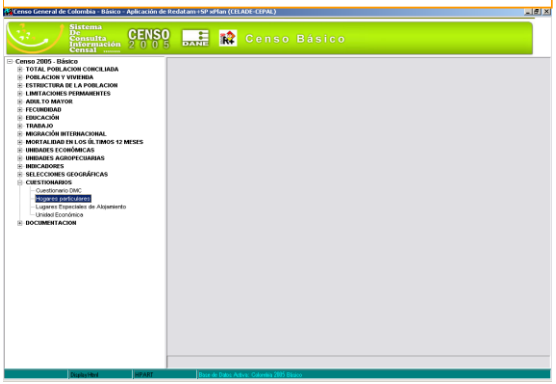
Nodo INDICADORES
Relación de dependencia por edades



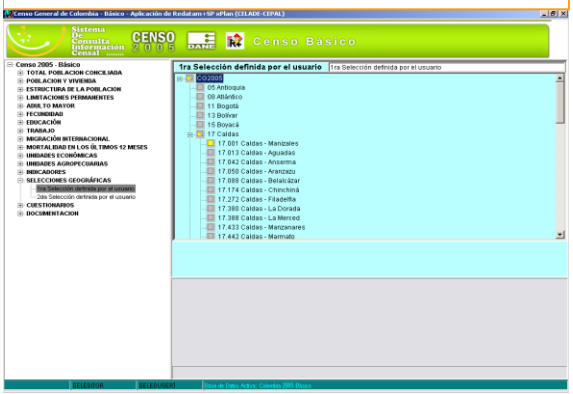
Nodo ESTRUCTURA DE LA POBLACION
Población por sexo y grupos de edad



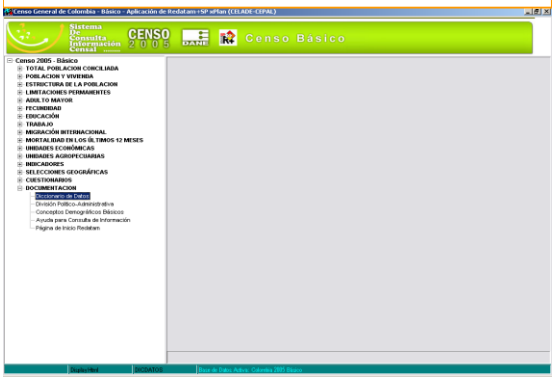
Nodo CUESTIONARIOS
Formulario de hogares particulares



Nodo SELECCIONES GEOGRAFICAS
Primera selección definida por el usuario



Nodo DOCUMENTACIÓN
Diccionario de datos



5.2. DISSEMINATION PRODUCTS AND INSTRUMENTS

5.2.1. Generation of output tables

The information generated by the 2005 General Census through its Output Tables, is available for consultation in both the DANE databank and the on-line systems. (Refer to Annex G)

5.2.2. Components of the helplines per groups of users

Each of the target groups for dissemination had their own helpline, which was composed of the media to guide, deliver the census information and to train. Each one of these three processes counted on the following media:

1. For guidance:

   - Newspaper ads: 91 frames in El Tiempo[88] newspaper (up to December 31, 2008).
   - TV spots: Minute of Reflection with the TV National Commission: 210 programs on National TV and 1,339 on Regional TV (up to December 31, 2008).
   - Brochures of a general nature in DANE's databanks and divisions.
   - Informational workshops at DANE territorial branches.
   - Information on DANE's Website.

2. For the delivery of census information:

   - General access to Colombiestad: Open and dynamic query to the total base of consolidated data of the census, through the virtual structure of Colombiestad.
   - Institutional program by Television: For the dissemination of topics of interest, inferred from the census information (one minute a day) for six months, a timeframe that was extendable.

[88] Newspaper with the largest circulation at the national level.

- Set of CD-ROMs with the final consolidated data of the nation, departments and municipalities.

- Census information Website: Updated on a periodic basis with the basic data of the nation, departments and municipalities.

- Congress report: Final document, in limited edition, with the nation's consolidated data, including summaries by departments and municipalities.

- Press bulletins: Newspapers with the basic data of the nation, departments and municipalities, which were disseminated in the respective regional and local media.

- Children's brochure: With the basic data of the nation, departments and municipalities at the level of understanding and interest of children.

3. For the users' training: on-site and on-line, long distance and virtual courses:

- Courses (up to December 31, 2008):

  - Afro-Colombian: National and territorial workshops and non-credit continuing education course

  - Indigenous: National and territorial workshops and non-credit continuing education course

  - Gypsies: National and territorial workshops and non-credit continuing education course

  - Community Action Boards: Non-credit continuing education course

  - Children and youths (program for 8 to 12 year-old students): 100

  - Universities, guilds, public sector: 50

6. RELATED DOCUMENTATION[a]

Series The following documentation enables going in greater detail on each one of the relevant topics. It is available on both DANE's Website and the Internal Documentation System of the Entity.

1. Methodological data sheet, 2005 General Census
2. Conceptual and methodological design, 2005 General Census
3. Questionnaires, 2005 General Census
4. Questionnaire on urban context, 2005 General Census
5. Methodology with ethnic groups of Colombia to conduct the 2005 General Census
6. Post-census studies, 2005 General Census
7. Design of validation and imputation, 2005 General Census
8. Design of database consolidation, 2005 General Census
9. Compensation of population registered in census due to non-geographical coverage and to transference contingency of census information, 2005 General Census
10. Methodology of census conciliation, 1985 – 2005. Colombia
11. Design of personnel management, 2005 General Census
12. Operational design, 2005 General Census

[a] The translation of these titles is for reference purposes only.

13. Methodology for the oversight of the cartographic information, foundation for the census operation, 2005 General Census

14. Design of the production, distribution and material control system, 2005 General Census

15. Design of the security plan, 2005 General Census

16. Features of the software used to capture the cartographic novelties in DMC, 2005 General Census

17. Basic concepts and description of DANE's geographical information system, 2005 General Census

18. Methodology of cartographic basic complementation at the office, 2005 General Census

19. Methodology for the digital capture of census units, 2005 General Census

20. Symbology and patterns for the representation of DANE's digital cartographic information, 2005 General Census

21. Levels of cartographic information for the storage of the digital cartographic information in DMCs, 2005 General Census

22. Design of the awareness-raising plan, 2005 General Census

23. Design of the awareness-raising plan for local authorities, 2005 General Census

24. Design of the awareness-raising plan for social and community-based organizations, 2005 General Census

25. Communications plan, 2005 General Census

26. Strategic plan for the dissemination of the results of the 2005 General Census

27. Design of the test system, 2005 General Census

28. Methodology of the monitoring to CMCS census processes, 2005 General Census

29. Consistency specifications for the capture of dwelling, household, population, economic and agricultural data through DMC, 2005 General Census

30. Consistency rules, validation and imputation for ethnic groups, 2005 General Census

31. Technical guidelines for the critique of the hard copy forms, 2005 General Census

32. Structure control 1, 2005 General Census

33. Structure control 2, 2005 General Census

34. Population Output Tables, 2005 General Census

35. Households Output Tables, 2005 General Census

36. Dwellings Output Tables, 2005 General Census

37. Economic units Output Tables, 2005 General Census

38. Agricultural units Output Tables, 2005 General Census

39. Specifications for the control the consistency and imputation validation, 2005 General Census

40. Operation manual of the verification and census imputation system, 2005 General Census

41. Manual of the verification and census imputation system, 2005 General Census

42. Guidelines for the selection of the survey sampling in DMC, 2005 General Census

43. Statistical methodology for the design and estimation of the survey sampling, 2005 General Census

44. Guidelines for the generation of estimations from the survey sampling, 2005 General Census

45. Guidelines for the estimation of variance on the survey sampling, 2005 General Census

46. Design of the Census Monitoring and Control System (CMCS), 2005 General Census

47. Functional specifications of the CMCS, 2005 General Census

48. Guidelines for the estimation of post-census indicators 0A Phase and subsequent, 2005 General Census

49. Guidelines for the estimation of post-census indicators. Demographic component, 2005 General Census

50. Update of the CMCS parameters, 2005 General Census

51. Basic information of the indicators for the structuring of the system databases

52. Design of the capture process and its applications, 2005 General Census

53. Design of the databases, 2005 General Census

54. Common errors in DMC, 2005 General Census

55. Guidelines for the handling of the DMC, 2005 General Census

56. Messages to be deployed in the DMC capture application, 2005 General Census

57. Schemes of relation entity of the census database, 2005 General Census

58. General guidelines for the procurement of a technological solution for the dissemination of the 2005 General Census, in a dynamic way under a web environment

59. Computer architecture, 2005 General Census

60. Computer plan, 2005 General Census

61. Rules for naming objects in the database, 2005 General Census

62. Auditing module of the databases, 2005 General Census

63. Data dictionary, 2005 General Census

64. Dictionary of CMCS data, 2005 General Census

65. Delivery of census information to the Colombian Data Infrastructure (CDI), 2005 General Census

66. Data dictionary of the digital cartographic information to be stored in the DMCs, 2005 General Census

67. Processes mapping, 2005 General Census

68. Functional model, 2005 General Census

69. Procedure of receipt and delivery of elements, 2005 General Census

70. General procedure to feed and operate the CMCS of the pre-census subsystem, 2005 General Census

71. General procedure to feed and operate the CMCS, 2005 General Census

72. Load and transmission procedure of the census information, 2005 General Census

73. Load and transmission procedure of the census information, phase one, 2005 General Census

74. Administration manual of the CMCS users', 2005 General Census

75. User manual for structure 1, 2005 General Census

76. User manual for the generation of database flat files, 2005 General Census

77. User manual for the load of expanded files to base, 2005 General Census

78. SourceForge[89] SySSurvey functionality manual, 2005 General Census

79. Supervisor manual, 2005 General Census

80. Interviewer manual, 2005 General Census

81. Field-coordinator manual, 2005 General Census

82. General-coordinator manual, 2005 General Census

83. ORU manager manual, 2005 General Census

84. Territorial assistants manual, 2005 General Census

85. Instructor manual, 2005 General Census

86. Structure and curricular designs, program of statistical information collection, 2005 General Census

87. Manual for the technological solution, 2005 General Census

88. Cartography guidebook, 2005 General Census

89. Awareness-raising manual for DANE personnel: how to raise awareness in the municipality, 2005 General Census

90. Manual to access the CMCS, 2005 General Census

91. Updating manual of indicator parameters of the CMCS, 2005 General Census

92. Updating manual of the CMCS form, 2005 General Census

93. Basic manual for critique and coding of the Test General System (TGS), 2005 General Census

[89] SourceForge is owned and operated by Slashdot Media.

94. Glossary, 2005 General Census

95. Control plan, 2005 General Census

96. Treatment of non-compliant, 2005 General Census

97. Flipchart on basic concepts, 2005 General Census

98. Interactive CD, 2005 General Census

99. Introduction Audio CD, 2005 General Census

100. The interview Audio CD, 2005 General Census

101. Interviewer activities Audio CD, 2005 General Census

102. Enumerator activities Audio CD, 2005 General Census

103. Basic concepts Audio CD, 2005 General Census

104. 2005 General Census

105. The digital questionnaire Audio CD, 2005 General Census

106. Guide for the selection of contractors at the management, administrative and coordination levels for the 2005 General Census

107. Guide of general recommendations of action for the municipality, 2005 General Census

108. Logistic guide: Handling, preparation, packing, labeling, storage and return, 2005 General Census

109. Guide for the daily use and control of the Data Capture Devices (DMC) and Global Positioning System (GPS) devices, 2005 General Census

110. Operation guide of the Unique National Collection Center, 2005 General Census

111. Guide for the return of the census material from the municipalities of groups 3A and 3B, 2005 General Census

112. Guide for the return of the census material from the municipalities of groups 4 and routes, 2005 General Census

113. Guide of the operation plan of street dwellers, 2005 General Census

114. Guide for the capture of rural georeferenced information and the urban surroundings, 2005 General Census

115. Awareness-raising guide for the municipality, 2005 General Census

116. Guide and protocol of desk tests, 2005 General Census

117. Guide and protocol of simulation tests, 2005 General Census

118. Guide to conduct the simulation test – survey sampling algorithm, 2005 General Census

119. Guide for the software simulation test for data entering in DMC of the collected information in analogue questionnaires, 2005 General Census

120. Guide to conduct the simulation test of the technological solution, 2005 General Census

121. Guide and protocol of field tests, 2005 General Census

122. Guide for the preparation and organization of the territorial field test, 2005 General Census

123. Guide for the actual operation test, component: material distribution, 2005 General Census

124. Guide for the actual operation test, component: personnel training and management, 2005 General Census

125. Guide for the actual operation test, component: collection in field, 2005 General Census

126. Guide to obtain the verification and control indicator of the SIGOB, 2005 General Census

127. Directions for the control of materials, 2005 General Census

128. Directions for the data entering of the hard copy forms, 2005 General Census

129. Directions for the critique of the census forms completed in hard copy, 2005 General Census

130. Directions for the handling and control of inventories, 2005 General Census

131. Directions for the collection of material and moving of equipment of groups 3A, 3B, 4 and routes, 2005 General Census

132. Directions for the manual geo-referencing of buildings, 2005 General Census

133. Directions for territorial branches: actual operation test, 2005 General Census

7. 2005 GENERAL CENSUS TIMETABLE

No.	Activities	Star Date	End Date	2004			2005												2006												2007											
				OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
	ACTIVITIES PRE-CENSUS	**01-oct-04**	**22-may-05**																																						
1.	DESING	01-oct-04	31-dic-04																																						
2.	PREPARATION Y CONSTRUCTION	01-ene-05	22-may-05																																						
	CENSUS OPERATIONAL	**22-may-05**	**22-may-06**																																						
3.	EXECUTION	22-may-05	22-may-06																																						
	ACTIVITIES POST-CENSUS	**07-mar-06**	**forward**																																						
4.	PROCESSING, DEBUGGING AND ANALYSIS	07-mar-06	22-nov-06																																						
5.	EVALUATION AND CENSUS CONCILIATION	23-may-06	22-nov-06																																						
6.	DISSEMINATION	23-may-06	forward																																						

GLOSSARY

This chapter presents the definitions of the elements that give specificity to the census work, as well as those of each one of the variables and categories that compose both the topic and content that was intended to be investigated in the census, according to the decisions made throughout the design of each one of the census processes.

Apartment: It is a dwelling unit that makes up part of a building, wherein other units are located and are usually used as dwellings. It has direct access from outside or via aisles, playgrounds, corridors, stairs or elevators. It has a toilet and kitchen inside.

Building: It is an independent and separate construction, composed of one or more units.

Census household: It refers to a person or group of persons, whether relatives or not, occupying the entire dwelling or part thereof and meeting their basic needs from a common budget and usually share meals.

Dwelling: It refers to the unit occupied or intended to be occupied by one or more persons.

House: It is the building formed by just one unit, whose use is as a dwelling, with direct access from the public way or from outside the building. The toilet and kitchen may be located inside or not. Houses are also considered those where the garage, living room or any other room are used as economic use.

Examples: Attached houses in most of the residential areas, houses in condominiums, chalets, cottages, a dwelling made of waste material (hovel), houses with a bathroom and kitchen in the backyard (farms).

Household head: It refers to the usual resident recognized as such by the other members of their household. Usually it is the father, the mother or the main breadwinner of the household. A household must always have one and just one household head.

Indigenous house: It is a building composed of only one unit, whose use is as a dwelling, constructed according to the customs of each ethnic group, maintaining the traditional structure irrespective of the materials from which it is built. They are given

different names, according to both the ethnic group and the region, such as: *Maloka*[90], *bohio*[91], *tambo*[92], *choza*[93], and house among others.

Other type of dwelling: It refers to a space adapted as a dwelling, which was inhabited at the time of the census interview. It usually lacks a bathroom and a kitchen. Included in this category are: railway cars, containers, boats, tents, caves, bridges and cabins.

"Room" type: It is a dwelling unit that makes up part of a building, and which has one or more spaces. It has direct access from outside or through aisles, playgrounds, hallways, corridors or other spaces of common circulation. Usually, it lacks bathroom and a kitchen inside or only has one of these services.

This type of dwelling is different from bedrooms or rooms of a dwelling where the residents enter in through spaces which are not common areas, such as dinning or living rooms, other bedrooms, etc., therefore, they do not meet the "independence" condition.

Unit: It is an independent and separate space making up part of or the entire building; it may be used as a dwelling, economic unit or SAS.

Usual resident: It refers to the person living permanently or most of the time in a dwelling or SAS, even if they are absent at the time of the interview.

[90] Maloka: A large communal dwelling used by some South American Indian peoples.

[91] Bohio: A hut.

[92] Tambo: A stilt home.

[93] Choza: A shack.

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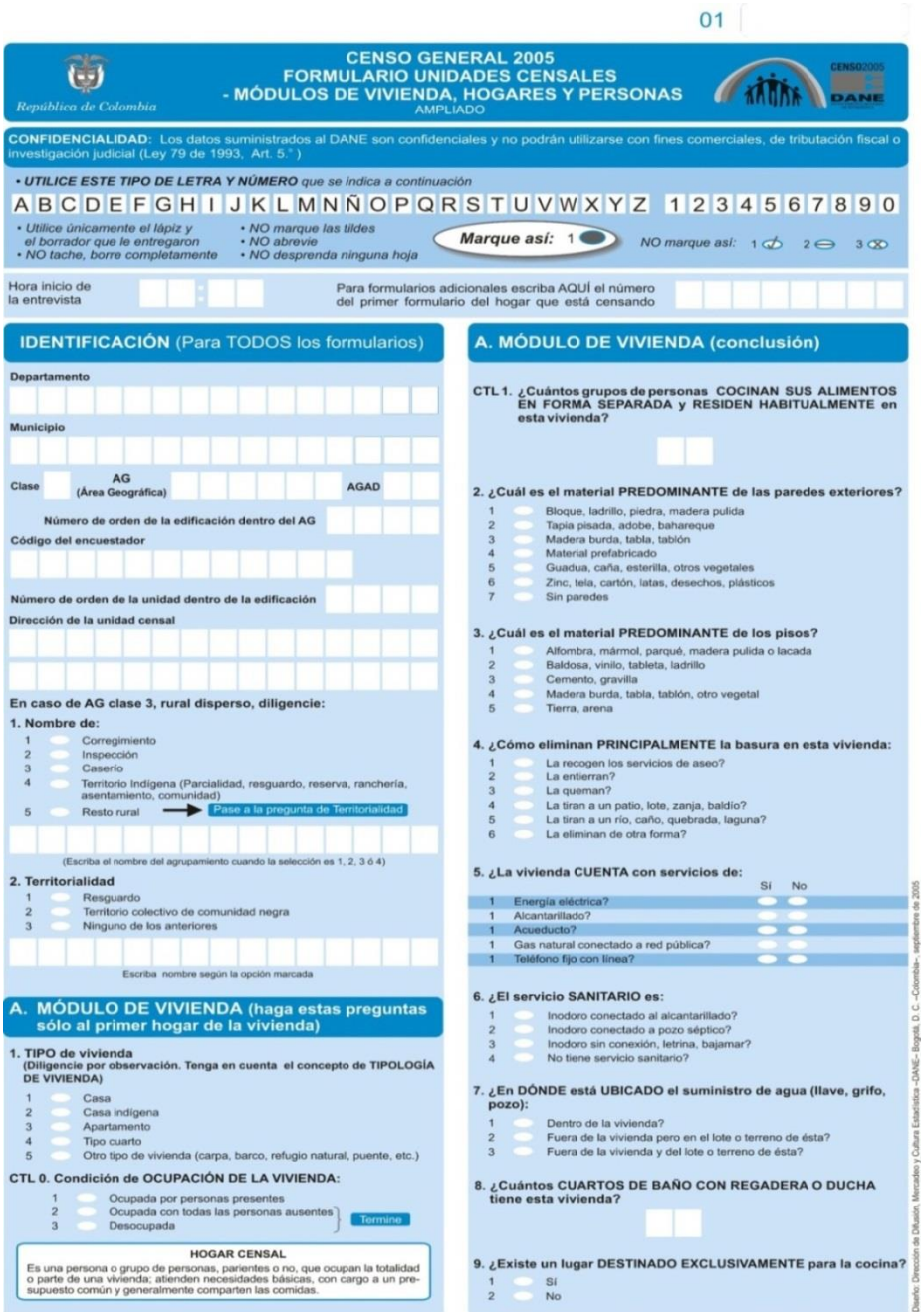
ANNEXES

Annex A. Thematic content in the 2005 General Census



01

República de Colombia

CENSO GENERAL 2005
FORMULARIO UNIDADES CENSALES
- MÓDULOS DE VIVIENDA, HOGARES Y PERSONAS
AMPLIADO

CENSO2005 DANE

CONFIDENCIALIDAD: Los datos suministrados al DANE son confidenciales y no podrán utilizarse con fines comerciales, de tributación fiscal o investigación judicial (Ley 79 de 1993, Art. 5.°)

• ***UTILICE ESTE TIPO DE LETRA Y NÚMERO*** *que se indica a continuación*

A B C D E F G H I J K L M N Ñ O P Q R S T U V W X Y Z 1 2 3 4 5 6 7 8 9 0

• *Utilice únicamente el lápiz y el borrador que le entregaron*
• *NO tache, borre completamente*
• *NO marque las tildes*
• *NO abrevie*
• *NO desprenda ninguna hoja*

Marque así: 1 ●

NO marque así: 1 ✓ 2 ⊖ 3 ⊗

Hora inicio de la entrevista : :

Para formularios adicionales escriba AQUÍ el número del primer formulario del hogar que está censando

IDENTIFICACIÓN (Para TODOS los formularios)

Departamento

Municipio

Clase **AG** (Área Geográfica) **AGAD**

Número de orden de la edificación dentro del AG

Código del encuestador

Número de orden de la unidad dentro de la edificación

Dirección de la unidad censal

En caso de AG clase 3, rural disperso, diligencie:

1. Nombre de:

1 ○ Corregimiento
2 ○ Inspección
3 ○ Caserío
4 ○ Territorio Indígena (Parcialidad, resguardo, reserva, ranchería, asentamiento, comunidad)
5 ○ Resto rural → Pase a la pregunta de Territorialidad

(Escriba el nombre del agrupamiento cuando la selección es 1, 2, 3 ó 4)

2. Territorialidad

1 ○ Resguardo
2 ○ Territorio colectivo de comunidad negra
3 ○ Ninguno de los anteriores

Escriba nombre según la opción marcada

A. MÓDULO DE VIVIENDA (haga estas preguntas sólo al primer hogar de la vivienda)

1. TIPO de vivienda
(Diligencie por observación. Tenga en cuenta el concepto de TIPOLOGÍA DE VIVIENDA)

1 ○ Casa
2 ○ Casa indígena
3 ○ Apartamento
4 ○ Tipo cuarto
5 ○ Otro tipo de vivienda (carpa, barco, refugio natural, puente, etc.)

CTL 0. Condición de OCUPACIÓN DE LA VIVIENDA:

1 ○ Ocupada por personas presentes
2 ○ Ocupada con todas las personas ausentes
3 ○ Desocupada
→ Termine

HOGAR CENSAL
Es una persona o grupo de personas, parientes o no, que ocupan la totalidad o parte de una vivienda; atienden necesidades básicas, con cargo a un presupuesto común y generalmente comparten las comidas.

A. MÓDULO DE VIVIENDA (conclusión)

CTL 1. ¿Cuántos grupos de personas COCINAN SUS ALIMENTOS EN FORMA SEPARADA y RESIDEN HABITUALMENTE en esta vivienda?

2. ¿Cuál es el material PREDOMINANTE de las paredes exteriores?

1 ○ Bloque, ladrillo, piedra, madera pulida
2 ○ Tapia pisada, adobe, bahareque
3 ○ Madera burda, tabla, tablón
4 ○ Material prefabricado
5 ○ Guadua, caña, esterilla, otros vegetales
6 ○ Zinc, tela, cartón, latas, desechos, plásticos
7 ○ Sin paredes

3. ¿Cuál es el material PREDOMINANTE de los pisos?

1 ○ Alfombra, mármol, parqué, madera pulida o lacada
2 ○ Baldosa, vinilo, tableta, ladrillo
3 ○ Cemento, gravilla
4 ○ Madera burda, tabla, tablón, otro vegetal
5 ○ Tierra, arena

4. ¿Cómo eliminan PRINCIPALMENTE la basura en esta vivienda:

1 ○ La recogen los servicios de aseo?
2 ○ La entierran?
3 ○ La queman?
4 ○ La tiran a un patio, lote, zanja, baldío?
5 ○ La tiran a un río, caño, quebrada, laguna?
6 ○ La eliminan de otra forma?

5. ¿La vivienda CUENTA con servicios de:

		Sí	No
1	Energía eléctrica?	○	○
1	Alcantarillado?	○	○
1	Acueducto?	○	○
1	Gas natural conectado a red pública?	○	○
1	Teléfono fijo con línea?	○	○

6. ¿El servicio SANITARIO es:

1 ○ Inodoro conectado al alcantarillado?
2 ○ Inodoro conectado a pozo séptico?
3 ○ Inodoro sin conexión, letrina, bajamar?
4 ○ No tiene servicio sanitario?

7. ¿En DÓNDE está UBICADO el suministro de agua (llave, grifo, pozo):

1 ○ Dentro de la vivienda?
2 ○ Fuera de la vivienda pero en el lote o terreno de ésta?
3 ○ Fuera de la vivienda y del lote o terreno de ésta?

8. ¿Cuántos CUARTOS DE BAÑO CON REGADERA O DUCHA tiene esta vivienda?

9. ¿Existe un lugar DESTINADO EXCLUSIVAMENTE para la cocina?

1 ○ Sí
2 ○ No

Diseño: Dirección de Difusión, Mercadeo y Cultura Estadística –DANE– Bogotá, D. C. –Colombia– septiembre de 2005

02

B. MÓDULO DE HOGARES (para cada uno de los hogares)

(Pregunte SIEMPRE por la persona cabeza (jefe(a)) del hogar o cónyuge

Diligencie UN formulario por cada hogar

CTL2. NÚMERO DE ORDEN DEL HOGAR dentro de la vivienda

10. ¿Su HOGAR:

1 Vive aquí en arriendo o subarriendo?
Valor mensual pagado
$
Valor en pesos colombianos

2 Vive aquí en su vivienda propia?
2.1 Está totalmente paga?
2.2 Se está pagando?
Valor mensual pagado:
$
(Valor en pesos colombianos)

3 Vive en esta vivienda con permiso del propietario, sin pago alguno?
4 Vive en esta vivienda por tenencia o posesión sin título, o propiedad colectiva?
5 Vive aquí en otra situación?

11. Incluidos la sala y el comedor, ¿de cuántos cuartos en total DISPONE SU HOGAR?
(NO cuente cocina, baños, ni los destinados exclusivamente para garaje o negocio)

12. ¿CUÁNTOS de esos cuartos USAN PARA DORMIR las personas de ESTE HOGAR?

13. ¿El servicio sanitario que utiliza este hogar es de USO:

1 Exclusivo de las personas del hogar?
2 Compartido con personas de otros hogares?
3 No tiene servicio sanitario?

14. ¿De dónde obtiene PRINCIPALMENTE este hogar el agua para BEBER O PREPARAR ALIMENTOS:

1 Acueducto?
2 Pozo con bomba o sin bomba, jagüey, algibe?
3 Agua lluvia?
4 Pila pública?
5 Carrotanque, aguatero?
6 Río, quebrada, manantial, nacimiento?
7 Agua embotellada o en bolsa?

15. ¿En dónde PREPARAN los ALIMENTOS las personas de este hogar:

1 En un cuarto usado sólo para cocinar?
2 En un cuarto usado también para dormir?
3 En una sala-comedor con lavaplatos?
4 En una sala-comedor sin lavaplatos?
5 En un patio, corredor, enramada o al aire libre?
6 No preparan alimentos en la vivienda? → Pase a 17

16. ¿Con qué energía o combustible cocinan PRINCIPALMENTE?

1 Energía eléctrica
2 Gas natural
3 Gas en cilindro o pipeta
4 Petróleo, gasolina, kerosén, alcohol
5 Leña, madera, material de desecho, carbón vegetal
6 Carbón mineral

17. ¿Cuáles de los siguientes APARATOS DE USO DOMÉSTICO tiene este hogar:

		1. Sí	2. No
1	Nevera o enfriador?		
1	Máquina lavadora de ropa?		
1	Equipo de sonido?		
1	Calentador de agua?		
1	Ducha eléctrica?		
1	Licuadora?		
1	Horno eléctrico o a gas?		
1	Aparatos de aire acondicionado?		
1	Ventilador?		
1	Televisor a color?		
1	Computador?		
1	Horno microondas?		

18. ¿Cuántos VEHÍCULOS, sólo de uso particular, tiene este hogar:
(Si no tiene, coloque 0)

		Cantidad
1	Bicicleta?	
2	Moto, motoneta?	
3	Lancha, velero, bote?	
4	Carro?	

19. ¿Alguien de este hogar PARTICIPA ACTIVAMENTE en alguna organización de beneficio comunitario?

1 Sí
2 No

20. ¿Usted considera que los INGRESOS MENSUALES DE SU HOGAR:

1 Son suficientes para cubrir los gastos básicos del hogar?
2 Son más que suficientes para cubrir los gastos básicos del hogar?
3 No alcanzan para cubrir los gastos básicos del hogar?

21. ¿Cuál CONSIDERA usted que debiera ser el INGRESO MENSUAL que requiere su hogar para CUBRIR ADECUADAMENTE los GASTOS BÁSICOS?

1 De 0 a $200 000
2 De $200 001 a $400 000
3 De $400 001 a $700 000
4 De $700 001 a $1 000 000
5 De $1 000 001 a $1 500 000
6 De $1 500 001 a $2 000 000
7 De $2 000 001 a $3 000 000
8 De $3 000 001 a $4 500 000
9 Más de $4 500 000
10 No informa
11 No sabe

22. ¿Alguna o algunas personas, siendo miembros de este HOGAR, se han ido a VIVIR de MANERA PERMANENTE al EXTERIOR?

1 Sí
1.1 ¿CUÁNTAS en total?

1.2 ¿En qué PAÍSES RESIDEN ACTUALMENTE y en cuál de los siguientes periodos se produjo su salida?

País de residencia actual	2001 - 2005	1996 - 2000	Antes de 1996
	¿CUÁNTOS?		
Venezuela			
Estados Unidos			
España			
México			
Costa Rica			
Canadá			
Australia			
Ecuador			
Panamá			
Perú			
Bolivia			
Otro país			

2 No → Pase a CTL3

03

B. MÓDULO DE HOGARES (continuación)

CTL3. ¿Cuáles son los nombres y apellidos de las personas que conforman este hogar, RESIDENTES HABITUALES presentes o no? COMIENCE POR LA PERSONA CABEZA (JEFE(A)) DEL HOGAR, y continue con la persona de mayor edad para terminar con la de menor edad.

Nro. de orden de la persona

(Primer nombre, segundo nombre, primer apellido, segundo apellido, como aparecen en el Registro Civil o en cualquier documento de identidad. Las mujeres casadas, viudas o divorciadas deben anotarse con los apellidos de soltera)

Primer nombre — Segundo nombre
Primer apellido — Segundo apellido

Primer nombre — Segundo nombre
Primer apellido — Segundo apellido

Primer nombre — Segundo nombre
Primer apellido — Segundo apellido

Primer nombre — Segundo nombre
Primer apellido — Segundo apellido

Primer nombre — Segundo nombre
Primer apellido — Segundo apellido

Primer nombre — Segundo nombre
Primer apellido — Segundo apellido

Primer nombre — Segundo nombre
Primer apellido — Segundo apellido

Primer nombre — Segundo nombre
Primer apellido — Segundo apellido

Primer nombre — Segundo nombre
Primer apellido — Segundo apellido

Primer nombre — Segundo nombre
Primer apellido — Segundo apellido

*** Si hay más de 10 PERSONAS, continúe listándolas en OTRO CUESTIONARIO a partir de la número 11.**

PERSONA CABEZA (JEFE(A)) DEL HOGAR CENSAL

Es el residente habitual reconocido como tal por los demás miembros del hogar.

B. MÓDULO DE HOGARES (conclusión)

RESIDENTE HABITUAL

Es la persona que VIVE PERMANENTEMENTE O LA MAYOR PARTE DEL TIEMPO EN UNA VIVIENDA aunque en el momento de la entrevista se encuentre ausente.
También son RESIDENTES HABITUALES, porque NO TIENEN residencia habitual en OTRA PARTE:
- Las personas que se encuentran ausentes por motivos especiales, como vacaciones, cursos de capacitación, viajes de negocio; siempre y cuando la ausencia sea de seis meses o menos.
- Las personas detenidas temporalmente en inspecciones de policía.
- Las personas secuestradas sin importar el tiempo de ausencia.
- Los enfermos internados en hospitales o clínicas sin importar el tiempo de ausencia.
- Las personas desplazadas, sin importar el tiempo de permanencia en el hogar que se está entrevistando.
- Las personas que prestan el servicio militar en la Policía y van a dormir a sus hogares.

CTL4. ¿Hay OTRAS personas que HAGAN PARTE de este hogar y que no hayan sido anotadas en la lista anterior?
(Niños menores de edad, ancianos, personas internadas en clínicas, personas secuestradas, personas en vacaciones fuera del hogar).

1 ○ Sí (Pregunte quiénes, asegúrese de que sí son RESIDENTE HABITUALES e INCLÚYALOS en el listado)
2 ○ No

CTL5. ¿Alguna o algunas de las PERSONAS LISTADAS RESIDEN HABITUALMENTE EN OTRA PARTE?

1 ○ Sí (Pregunte quiénes, asegúrese de que sí son residentes de otro hogar; en caso afirmativo, TÁCHELOS del listado)
2 ○ No

CTL6. Total de personas en el hogar (Después de hacer todas las verificaciones y correcciones) ☐☐

23. De las personas anteriormente mencionadas, ¿quién realiza el MAYOR aporte MENSUAL en DINERO para el sostenimiento y el pago de las obligaciones del hogar?
(Si el aportante no pertenece al hogar, escriba 00; si dos o más personas aportan en cantidades iguales, escriba el número de orden de la primera de las persona que el entrevistado mencione).

Número de orden ☐☐

24. ¿Cuántas personas que ERAN MIEMBROS de este hogar han FALLECIDO EN LOS ÚLTIMOS DOCE MESES?
(Si la respuesta es 00, pase a CTL7) ☐☐

(Relacione en la tabla si es mayor a 00) ↓

Orden	Sexo	Edad al morir	¿Se hizo certificado de defunción?
1	1 ○ Hombre 2 ○ Mujer	☐☐☐	1 ○ Sí 2 ○ No
2	1 ○ Hombre 2 ○ Mujer	☐☐☐	1 ○ Sí 2 ○ No
3	1 ○ Hombre 2 ○ Mujer	☐☐☐	1 ○ Sí 2 ○ No
4	1 ○ Hombre 2 ○ Mujer	☐☐☐	1 ○ Sí 2 ○ No
5	1 ○ Hombre 2 ○ Mujer	☐☐☐	1 ○ Sí 2 ○ No

Si encuentra un hogar con más de 5 personas fallecidas en los últimos doce meses, diligencie los formularios adicionales que sean necesarios

CTL7. ¿Dentro de esta vivienda, su hogar desarrolla con regularidad alguna actividad ECONÓMICA PARA OBTENER INGRESOS?

1 ○ Sí (Después de diligenciar el módulo C para todas las personas residentes habituales, diríjase al módulo D para diligenciar la información correspondiente a la unidad económica principal del hogar)
2 ○ No

OBSERVACIONES

Copie INMEDIATAMENTE y en el MISMO ORDEN, el NÚMERO de la persona,el NOMBRE y APELLIDOS, en la pregunta CTL8 del Módulo de personas.

05

C. MÓDULO DE PERSONAS (haga estas preguntas a TODAS las personas del hogar)

CTL8. Número de ORDEN, nombres y apellidos de la persona

Primer nombre

Segundo nombre

Primer apellido

Segundo apellido

25. ¿ Es... HOMBRE o MUJER?

1 Hombre
2 Mujer

26. ¿Cuál es la FECHA de nacimiento de...?
(Tal como figura en el documento de identidad o en el registro civil)

1 Día Mes Año
2 No sabe

CTL9. ¿Cuántos años CUMPLIDOS tiene...?

27. ¿Cuál es la RELACIÓN O PARENTESCO de... con la persona cabeza (jefe o jefa) del hogar?

1 Cabeza (jefe o jefa) de hogar
2 Pareja (cónyuge, compañero(a), esposo(a))
3 Hijo(a), hijastro(a)
4 Yerno, nuera
5 Nieto(a)
6 Padre, madre, suegro(a)
7 Hermano(a), hermanastro(a)
8 Otro pariente
9 Empleado(a) del servicio doméstico
10 Otro no pariente

28. ¿Dónde NACIÓ...?

1 En ESTE municipio
2 En OTRO municipio colombiano

Nombre del departamento

Nombre del municipio

3 En OTRO país

Nombre del país

¿En qué año LLEGÓ a Colombia?

Año

29. ¿Cuando... nació, LA MAMÁ RESIDÍA en:

1 En el MUNICIPIO DONDE... NACIÓ?
2 En OTRO municipio colombiano?

Nombre del departamento

Nombre del municipio

3 En OTRO país?

Nombre del país

4 No sabe

30. ¿En dónde vivía... HACE CINCO AÑOS?

1 No había nacido → Pase a 32
2 En ESTE municipio
3 En OTRO municipio colombiano

Nombre del departamento

Nombre del municipio

4 En OTRO país

Nombre del país

¿En qué año LLEGÓ a Colombia?

Año

→ Pase a 32

31. El LUGAR DONDE VIVÍA... hace cinco años era:

1 ¿La cabecera municipal (donde está la Alcaldía)?
2 ¿Un centro poblado, corregimiento, inspección de policía, caserío?
3 ¿Parte rural (vereda, campo)?

32. Durante los ÚLTIMOS cinco años, ¿... cambió su lugar de residencia?

1 Sí

1.1 ¿En qué AÑO FUE LA ÚLTIMA VEZ?

Año

1.2 ¿En ESA OCASIÓN, ... vivía:

1 En ESTE municipio?
2 En OTRO municipio colombiano?

Nombre del departamento

Nombre del municipio

3 En OTRO país?

Nombre del país

→ Pase a 1.4

1.3 ¿EL LUGAR DONDE VIVÍA ... era:

1 La cabecera municipal (donde está la Alcaldía)?
2 Parte rural (centro poblado, corregimiento, inspección de policía, caserío, vereda, campo)?

1.4 ¿La PRINCIPAL CAUSA por la que... CAMBIÓ SU LUGAR DE RESIDENCIA en esa ocasión fue:

1 Dificultad para encontrar trabajo o ausencia de medios de subsistencia?
2 Riesgo de desastre natural (inundación, avalancha, deslizamiento, terremoto, etc.) o como consecuencia de éste?
3 Amenaza o riesgo para su vida, su libertad o su integridad física, ocasionada por la violencia?
4 Necesidades de educación?
5 Motivos de salud?
6 Razones familiares?
7 Miembro pueblo nómada u otra razón?

2 No

C. MÓDULO DE PERSONAS (continuación)

33. ¿De acuerdo con su CULTURA, PUEBLO o RASGOS FÍSICOS, ... es o se reconoce como:

1 ○ Indígena?

1.1 ¿A cuál PUEBLO INDÍGENA pertenece?

(Escriba el nombre del pueblo)

2 ○ Rom?
3 ○ Raizal del Archipiélago de San Andrés y Providencia?
4 ○ Palanquero de San Basilio?
5 ○ Negro(a), mulato(a), afrocolombiano(a) o afrodescendiente?
6 ○ Ninguna de las anteriores?

Pase a 35

34. ¿Habla... la LENGUA de su pueblo?

1 ○ Sí
2 ○ No

35. ¿Por FALTA de dinero, ... no consumió NINGUNA de las tres COMIDAS BÁSICAS (desayuno, almuerzo,comida), uno o más días de la semana pasada?

1 ○ Sí

1.1 ¿Cuántos días?

2 ○ No

36. En salud, ¿es... APORTANTE, COTIZANTE o BENEFICIARIO de:

1 ○ El Instituto de Seguros Sociales –ISS?
2 ○ Regímenes especiales (Fuerzas Militares, Policía Nacional, Universidad Nacional, ECOPETROL, Magisterio)?
3 ○ Otra EPS (Entidad Promotora de Salud)?
4 ○ Una ARS (Administradora de Régimen Subsidiado) a través del SISBEN?
5 ○ Ninguna?
6 ○ No sabe?

37. ¿En el ÚLTIMO AÑO... estuvo enfermo?

1 ○ Sí

1.1 ¿La última vez ... ACUDIÓ POR ATENCIÓN:

1 ○ Al servicio de salud al que tiene derecho?
2 ○ A otro hospital, clínica, consultorio médico o centro de salud?
3 ○ A una droguería o farmacia, tegua o curandero?
4 ○ Médico tradicional de su grupo étnico?
5 ○ A ninguna parte?

2 ○ No

38. Durante los ÚLTIMOS CINCO AÑOS, ¿... ha PADECIDO O PADECE ALGUNA ENFERMEDAD que ha requerido:

	Sí	No	¿El tratamiento fue o está siendo atendido por el Sistema General de Seguridad Social?
1 Cirugía cardíaca (diferente de trasplante)?	○	○	1 ○ Sí 2 ○ No
2 Trasplante (riñón, médula ósea, córnea, hígado)?	○	○	1 ○ Sí 2 ○ No
3 Neurocirugía del sistema nervioso central?	○	○	1 ○ Sí 2 ○ No
4 Tratamiento médico y quirúrgico de trauma mayor?	○	○	1 ○ Sí 2 ○ No
5 Tratamiento quirúrgico por enfermedad congénita?	○	○	1 ○ Sí 2 ○ No
6 Reemplazos articulares?	○	○	1 ○ Sí 2 ○ No
7 Diálisis por insuficiencia crónica?	○	○	1 ○ Sí 2 ○ No
8 Manejo por grandes quemaduras?	○	○	1 ○ Sí 2 ○ No
9 Tratamiento para VIH-SIDA?	○	○	1 ○ Sí 2 ○ No
10 Quimioterapia y radioterapia para el cáncer?	○	○	1 ○ Sí 2 ○ No
11 Unidad de cuidados intensivos?	○	○	1 ○ Sí 2 ○ No

39. ¿... tiene LIMITACIONES PERMANENTES para:

	Sí	No
1 Moverse o caminar?	○	○
2 Usar sus brazos y manos?	○	○
3 Ver, a pesar de usar lentes o gafas?	○	○
4 Oír, aun con aparatos especiales?	○	○
5 Hablar?	○	○
6 Entender o aprender?	○	○
7 Relacionarse con los demás por problemas mentales o emocionales?	○	○
8 Bañarse, vestirse, alimentarse por sí mismo?	○	○
9 Otra limitación permanente?	○	○

(Si en todas marcó No, pase a 41)

40. De las anteriores limitaciones de..., ¿cuál es la que más AFECTA SU DESEMPEÑO DIARIO?
(Seleccione del listado anterior, y asigne el número que corresponda)

¿Esta limitación FUE OCASIONADA:

1 ○ Porque nació así?
2 ○ Por una enfermedad?
3 ○ Por un accidente?
4 ○ Por violencia de grupos armados?
5 ○ Por violencia dentro del hogar?
6 ○ Por violencia de delincuencia común?
7 ○ Por edad avanzada, envejecimiento?
8 ○ Por otra causa?
9 ○ No sabe

PARA PERSONAS DE 3 AÑOS O MÁS

41. ¿... sabe LEER Y ESCRIBIR?

1 ○ Sí

1.1 Durante los ÚLTIMOS DOCE MESES, ¿cuántos LIBROS LEYÓ..., diferentes a los necesarios para la realización de su trabajo o estudio?
(Si no leyó, escriba 00)

2 ○ No

42. ¿ASISTE ... ACTUALMENTE a algún preescolar, escuela, colegio o universidad?

1 ○ Sí

1.1 ¿Este establecimiento ES OFICIAL?
1 ○ Sí
2 ○ No

2 ○ No

2.1 ¿POR QUÉ: (Para menores de 26 años)

	Sí	No
1 Considera que ya terminó sus estudios o son suficientes?	○	○
1 Los costos educativos son altos, falta de dinero?	○	○
1 Necesita trabajar?	○	○
1 Falta de cupos en los establecimientos educativos?	○	○
1 Lejanía de establecimientos educativos?	○	○
1 Por enfermedad, requiere educación especial?	○	○
1 **(Para mujeres mayores de 12 años)** Por embarazo?	○	○
1 Otra causa?	○	○

Pase a 44

43. ¿La INSTITUCIÓN a la que asiste... está ubicada en:

1 ○ En ESTE municipio?
2 ○ En OTRO municipio colombiano?

Nombre del departamento

Nombre del municipio

43.1 ¿Cuánto TIEMPO, EN MINUTOS, GASTA... normalmente en el recorrido de ida a la institución?

07

C. MÓDULO DE PERSONAS (continuación)

PARA PERSONAS DE 3 AÑOS O MÁS (conclusión)

44. ¿Cuál fue el ÚLTIMO AÑO DE ESTUDIOS que ... aprobó?

1.	**Preescolar**		Prejardín	Jardín		Transición	
2.	**Básica primaria**	1.°	2.°	3.°	4.°	5.°	
3.	**Básica secundaria** *(Bachillerato básico)*	6.° (1.°)	7.° (2.°)	8.° (3.°)	9.° (4.°)		
4.	**Media académica o clásica** *(Bachillerato clásico)*	10.° (5.°)	11.° (6.°)				
5.	**Media técnica** *(Bachillerato técnico)*	10.° (5.°)	11.° (6.°)				
6.	**Normalista**	10.°	11.°	12.°	13°		
	SUPERIOR						
7.	Técnica profesional	1	2				
8.	Tecnológica	1	2	3			
9.	Profesional	1	2	3	4	5	6
	POSTGRADO						
10.	Especialización	1	2				
11.	Maestría	1	2	3			
12.	Doctorado	1	2	3	4	5	6
13.	**Ninguno**	0					

PARA PERSONAS DE 5 AÑOS O MÁS

45. ¿Sabe... UTILIZAR EL COMPUTADOR?

1 Sí
2 No → Pase a 47

46. En la ÚLTIMA semana, ¿... utilizó el computador?

1 Sí

1.1 ¿Para cuáles de las SIGUIENTES ACTIVIDADES:

		Sí	No
1	Realizar tareas propias de su trabajo o estudio		
1	Realizar transacciones comerciales o financieras		
1	Entretenimiento		
1	Comunicarse con otras personas		
1	Otra actividad		

2 No

47. ¿Durante LA SEMANA PASADA, ...:

1 Trabajó?
2 No trabajó, pero tenía trabajo?
3 Buscó trabajo, pero había trabajado antes?
4 Buscó trabajo por primera vez?
5 Estudió y no trabajó ni buscó trabajo?
6 Realizó oficios del hogar y no trabajó ni buscó trabajo?
7 Estuvo incapacitado permanentemente para trabajar?
8 Vivió de jubilación o renta y no trabajó ni buscó trabajo?
9 Estuvo en otra situación?

→ Pase a 51

48. ¿A cuál ACTIVIDAD ECONÓMICA se dedica la empresa, establecimiento, negocio o finca en donde... Trabajó?

49. ¿En ESE TRABAJO, ... Era:

1 Obrero(a), empleado(a)?
2 Patrón(a), empleador (a)?
3 Trabajador(a) por cuenta propia?
4 Empleado(a) doméstico(a)?
5 Trabajador(a) familiar sin remuneración?

PARA PERSONAS DE 5 AÑOS O MÁS (conclusión)

50. ¿El SITIO donde trabajó... la semana pasada, está ubicado en:

1 En ESTE municipio?
2 En OTRO municipio colombiano?

Nombre del departamento

Nombre del municipio

3 En OTRO país?

50.1 ¿Cuánto TIEMPO, EN MINUTOS, GASTA... normalmente en el recorrido de ida a su sitio de trabajo?

51. ¿Está... AFILIADO a un Fondo de Pensiones o pertenece a un régimen especial de pensiones?

1 Sí
2 No
3 Ya esta pensionado

52. ADICIONAL A LA ACTIVIDAD PRINCIPAL a la que se dedicó... durante la semana pasada (trabajo, estudio, oficios del hogar). ¿cuáles de las siguientes ACTIVIDADES COMPLEMENTARIAS realizó:

		Sí	No	¿Cuántas horas en la semana?
1	Ayudar trabajando en un negocio familiar?			
1	Vender por su cuenta algún producto?			
1	Hacer algún producto para vender?			
1	Ayudar trabajando en el campo o en la cría de animales?			
1	Realizar otros oficios del hogar?			
1	Realizar otro tipo de actividad?			

PARA PERSONAS DE 10 AÑOS O MÁS

53. ¿ACTUALMENTE ...:

1 No está casado y lleva dos años o más viviendo con su pareja?
2 No está casado y lleva menos de dos años viviendo con su pareja?
3 Está separado(a), divorciado(a)?
4 Está viudo(a)?
5 Está soltero(a)?
6 Está casado(a)?

54. ¿Cuáles de los siguientes IDIOMAS... HABLA:

		Sí	No
1	Español (castellano)?		
1	Inglés?		
1	Francés?		
1	Italiano?		
1	Alemán?		
1	Otro?		

C. MÓDULO DE PERSONAS (conclusión)

PARA MUJERES DE 12 AÑOS O MÁS

55. ¿Ha tenido... algún HIJO O HIJA que haya NACIDO VIVO (A)?

1 ○ Sí

¿Cuántos? ☐☐

¿Cuántos hombres? ☐☐ ¿Cuántas mujeres? ☐☐

2 ○ No → Pase a CTL10

56. De los HIJOS e HIJAS que NACIERON VIVOS de..., ¿cuántos están VIVOS ACTUALMENTE?

¿Cuántos? ☐☐

¿Cuántos hombres? ☐☐ ¿Cuántas mujeres? ☐☐

2 ○ No sabe

57. ¿En qué AÑO Y MES TUVO... su ÚLTIMO hijo(a) nacido(a) vivo(a)?

AÑO

1 ○ 2005
2 ○ 2004
3 ○ 2003
4 ○ 2002
5 ○ 2001
6 ○ 2000 o antes

MES

1 ○ Enero
2 ○ Febrero
3 ○ Marzo
4 ○ Abril
5 ○ Mayo
6 ○ Junio
7 ○ Julio
8 ○ Agosto
9 ○ Septiembre
10 ○ Octubre
11 ○ Noviembre
12 ○ Diciembre

58. ¿En qué año tuvo... su PRIMER hijo(a) nacido(a) vivo(a)?

☐☐☐☐
Año

CTL10. ¿... fue censado este año (o el año pasado) en ESTE o en OTRO MUNICIPIO del PAÍS?

1 ○ Sí

1.1 Número del certificado censal asignado en esa ocasión:

☐☐☐☐☐☐☐☐☐☐ – ☐
DV

1.2 ○ No recuerda

2 ○ No → Pase a CTL13

CTL11. ¿... dónde fue CENSADO

1 ○ En ESTE municipio?

Zona:
1 ○ Cabecera municipal
2 ○ Parte rural

2 ○ En OTRO municipio?

Nombre del departamento

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Nombre del municipio

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Zona:
1 ○ Cabecera municipal
2 ○ Parte rural

CTL12. ¿En qué MES fue CENSADO?

☐☐
Mes

CTL13. Número del Certificado Censal asignado a la persona

☐☐☐☐☐☐☐☐☐☐ – ☐
DV

(Continúe con la siguiente persona del listado de miembros del hogar)

Al terminar el ÚLTIMO MIEMBRO DEL HOGAR, después de diligenciar los módulos de viviendas, hogares y personas: **EN CASO DE EXISTIR UNIDAD ECONÓMICA ASOCIADA AL HOGAR, (Respuesta "SI" en CTL7) DEBE DILIGENCIARSE EL CUESTIONARIO RESPECTIVO.**

OBSERVACIONES

45

D. MÓDULO DE ACTIVIDAD ECONÓMICA ASOCIADA AL HOGAR

IDENTIFICACIÓN (Para TODOS los formularios)

1. Nombre comercial:

2. Razón social o nombre del propietario:

3. Tipo de documento:

1 Nit

1.1 Número

1.2 Dígito de verificación

2 Cédula de ciudadanía del propietario

2.1 Número

4. Número telefónico

CARACTERÍSTICAS DE LA UNIDAD ECONÓMICA

5. ¿Esta unidad económica es:

1 Única?
2 Principal?
3 Sucursal?
4 Unidad auxiliar?

→ Pase a 6

5.1 ¿Qué tipo de unidad auxiliar?

1 Gerencia
2 Bodega
3 Punto de venta o distribución
4 Taller de mantenimiento
5 Centros de atención al cliente (servicios y/o orientación) y similares

→ Pase a 15

6. ¿El mayor porcentaje de ingresos de la unidad económica o negocio

1 Mantenimiento y reparación?
2 Compra y venta de productos **no fabricados** por la unidad? → Pase a 8
3 Alojamientos, restaurantes, cafeterías, bares, expendios de comida? → Pase a 11
4 Construcción?
5 Transporte?
6 Correo y telecomunicaciones?
7 Intermediación financiera, seguros o fondos de pensiones y cesantías?
8 Educación?
9 Salud, servicios sociales o disposición de basuras?
10 Otros servicios?
11 Productos elaborados o transformados por ustedes? → Pase a 14
12 Otras actividades diferentes a industria, comercio o servicios? → Para ÁREA RURAL pase a módulo E Si no TERMINE

→ Pase a 13

CARACTERÍSTICAS DE LA UNIDAD ECONÓMICA (conclusión)

7. ¿Los bienes que mantiene o repara PRINCIPALMENTE son:

1 Vehículos automotores?
2 Motocicletas?
3 Efectos personales?
4 Enseres domésticos?
5 Computadores y equipos de oficina?
6 Maquinaria y equipo industrial?

→ Pase a 15

8. ¿Vende principalmente a:

1 Minoristas, otros mayoristas, usuarios industriales, comerciales o institucionales?
2 Público en general?

9. ¿Las mercancías que vende son principalmente:

1 Nuevas? (Cuando se trate de alimentos marque siempre nuevas)
2 Usadas?

10. ¿Qué grupo de mercancías vende principalmente esta unidad económica o negocio?

→ Pase a 15

11. ¿Esta unidad económica o negocio corresponde principalmente a:

1 Restaurante?
2 Cafetería, fuente de soda o frutería?
3 Otros expendios de comida?
4 Expendio de bebidas alcohólicas?
5 Hotel, hostal o aparta hotel?
6 Residencias, moteles, amoblados?
7 Centro vacacional, zona de camping?
8 Otro tipo de alojamiento?

→ Pase a 15

12. ¿Esta unidad económica o negocio ofrece principalmente:

1 A la mesa?
2 Autoservicio?

→ Pase a 15

13. ¿Qué servicios presta u ofrece esta unidad económica o negocio?

→ Pase a 15

14. ¿Cuál es el principal producto que fabrica o transforma esta unidad económica o negocio? ¿Cuál es su materia prima principal y su uso o destino?

1 Producto

2 Materia prima principal

3 Uso o destino

15. En promedio, ¿cuántas personas trabajaron el mes anterior en esta unidad económica o negocio?

16. Código CIIU Rev. 3

(Para diligenciar en oficina)

E. MÓDULO DE ACTIVIDAD AGROPECUARIA (sólo para Clase 3 - Rural disperso)

IDENTIFICACIÓN (Para TODOS los formularios)

Dirección de la finca, hacienda, tambo, ranchería, granja o terreno?

1. ¿Cuál es el nombre de finca, hacienda, tambo, ranchería, granja o terreno?

2. ¿Cuál es el área de la finca, hacienda, tambo, ranchería, granja o terreno?

Área ,

1 Hectárea
2 Fanegada
3 Cuadra
4 Metro cuadrado
5 Cuerda

CARACTERÍSTICAS DE LA ACTIVIDAD AGROPECUARIA

3. ¿En los terrenos de esta finca, durante el año 2005, qué cultivos se sembraron o se sembrarán?

Nro.	Nombre común de los cultivos solos o asociados	Unidad de superficie	Área total sembrada		
			En el I semestre (cultivos de ciclo corto)	En el II semestre (cultivos de ciclo corto)	Día de la entrevista (cultivos de ciclo largo)
1			,	,	,
2			,	,	,
3			,	,	,
4			,	,	,
5			,	,	,
6			,	,	,
7			,	,	,
8			,	,	,
9			,	,	,
10			,	,	,

Unidad de superficie: **1** Hectárea **2** Fanegada **3** Cuadra **4** Metro cuadrado **5** Cuerda
(Si encuentra más de diez cultivos agrícolas, diligencie los formatos adicionales que sean necesarios)

2 No se sembró

4. El día de hoy, ¿en los terrenos de esta finca existen:

Clase de cobertura	Sí	No	1.1 Código unidad de superficie	1.2 Área total
1 Bosques plantados?				,
2 Forrajes o pastos?				,
3 Malezas o rastrojos?				,

Unidad de superficie: **1** Hectárea **2** Fanegada **3** Cuadra **4** Metro cuadrado **5** Cuerda

47

E. MÓDULO DE ACTIVIDAD AGROPECUARIA (conclusión)

ACTIVIDAD PECUARIA

5. El día de hoy, ¿en los terrenos de esta finca hay:

Clase de cobertura	Sí	No	1.1 Cantidad total
1 Vacas, toros, novillos(as), temeros(as), becerros(as), toretes, vaquillas, búfalos?	⬭	⬭	
2 Caballos, yeguas, mulas?	⬭	⬭	
3 Burros, burras, asnos?	⬭	⬭	
4 Ovejas, corderos, camuros?	⬭	⬭	
5 Cabras, chivos?	⬭	⬭	
6 Porcinos, marranos, cerdos, lechones?	⬭	⬭	
7 Pollos, gallos, gallinas?	⬭	⬭	
8 Otras especies menores (pavos, cuyes, conejos, codornices, colmenas)?	⬭	⬭	

6. El día de hoy, ¿en los terrenos de esta finca hay áreas dedicadas al cultivo de:

Clase de especie	Sí	No	1.1 Código unidad de superficie	1.2 Área total
1 Peces?	⬭	⬭		,
2 Camarones?	⬭	⬭		,

Unidad de superficie: **1** Hectárea **2** Fanegada **3** Cuadra **4** Metro cuadrado **5** Cuerda

Resultados de entrevista por unidad censal

	Unidad de vivienda					
	Cantidad de visitas					
	1	2	3	4	5	6
Fecha	D D M M	D D M M	D D M M	D D M M	D D M M	D D M M
Hora	H H : M M	H H : M M	H H : M M	H H : M M	H H : M M	H H : M M
Resultado						

Resultado: **0** Sin suspensión **1** Ausente en el momento de la entrevista **2** Rechazo **3** Desocupada **4** Informante no idóneo **5** Desocupada por uso temporal **6** Incompleta **7** Otro

Código del supervisor

Hora de terminación de la entrevista :

01

República de Colombia

CENSO GENERAL 2005
FORMULARIO PARA LUGARES ESPECIALES DE ALOJAMIENTO - LEA

CENSO2005 DANE

CONFIDENCIALIDAD: Los datos suministrados al DANE son confidenciales y no podrán utilizarse con fines comerciales, de tributación fiscal o investigación judicial (Ley 79 de 1993, Art. 5.°)

• ***UTILICE ESTE TIPO DE LETRA Y NÚMERO*** *que se indica a continuación*

A B C D E F G H I J K L M N Ñ O P Q R S T U V W X Y Z 1 2 3 4 5 6 7 8 9 0

- *Utilice únicamente el lápiz y el borrador que le entregaron*
- *NO tache, borre completamente*
- *NO marque las tildes*
- *NO abrevie*
- *NO desprenda ninguna hoja*

Marque así: 1 ●

NO marque así: 1 ✓ 2 ⊖ 3 ⊗

Hora inicio de la entrevista : :

Para formularios adicionales escriba AQUÍ el número del primer formulario del hogar que está censando

IDENTIFICACIÓN (Para TODOS los formularios)

Departamento

Municipio

Clase **AG** (Área Geográfica) **AGAD**

Número de orden de la edificación dentro del AG

Código del encuestador

Número de orden de la unidad dentro de la edificación

Dirección de la unidad censal

En caso de AG clase 3, rural disperso, diligencie:

1. Nombre de:

1 Corregimiento
2 Inspección
3 Caserío
4 Territorio Indígena (Parcialidad, resguardo, reserva, ranchería, asentamiento, comunidad)
5 Resto rural → Pase a la pregunta de Territorialidad

Escriba nombre del agrupamiento cuando la selección es 1, 2, 3 ó 4

2. Territorialidad

1 Resguardo
2 Territorio colectivo de comunidad negra
3 Ninguno de los anteriores

Escriba nombre según la opción marcada

A. MÓDULO DE INSTITUCIÓN

1. TIPO de institución o establecimiento:

1 Cárcel o centro de rehabilitación penitenciario
2 Albergue infantil u orfanato
3 Asilo de ancianos u hogar geriátrico
4 Convento, seminario o monasterio
5 Internado de estudio
6 Cuartel, guarnición o estación de Policía
7 Campamento de trabajo
8 Lugar para alojar habitantes de la calle recogidos por la autoridad
9 Casas de lenocinio o prostíbulos
10 Albergue de desplazados
11 Albergue de reinsertados
12 Centro de rehabilitación no penitenciario
13 Otro

A. MÓDULO DE INSTITUCIÓN (continuación)

2. ¿Cuál es el material PREDOMINANTE de las paredes exteriores?

1 Bloque, ladrillo, piedra, madera pulida
2 Tapia pisada, adobe, bahareque
3 Madera burda, tabla, tablón
4 Material prefabricado
5 Guadua, caña, esterilla, otros vegetales
6 Cinc, tela, cartón, latas, desechos, plásticos
7 Sin paredes

3. ¿Cuál es el material PREDOMINANTE de los pisos?

1 Alfombra, mármol, parqué, madera pulida o lacada
2 Baldosa, vinilo, tableta, ladrillo
3 Cemento, gravilla
4 Madera burda, tabla, tablón, otro vegetal
5 Tierra, arena

4. ¿Cómo eliminan PRINCIPALMENTE la basura en esta institución?

1 La recogen los servicios de aseo
2 La entierran
3 La queman
4 La tiran a un patio, lote, zanja, baldío
5 La tiran a un río, caño, quebrada, laguna
6 La eliminan de otra forma

5. La institución CUENTA con servicios de:

		Sí	No
1	¿Energía eléctrica?	●	●
1	¿Alcantarillado?	●	●
1	¿Acueducto?	●	●
1	¿Gas natural conectado a red pública?	●	●
1	¿Teléfono fijo con línea?	●	●

CTL1. ¿Existe en esta institución o establecimiento ALGÚN HOGAR?

1 Si hay hogares particulares en la institución, UNA VEZ FINALIZANDO EL MÓDULO DE PERSONAS DE LOS RESIDENTES DEL LEA que no pertenecen a dichos hogares particulares, DIRÍJASE AL CUESTIONARIO DE UNIDADES CENSALES PARA RECOLECTAR LA INFORMACIÓN DE VIVIENDA, HOGAR Y PERSONAS

2 No

CTL2. Total de RESIDENTES EN ESTA INSTITUCIÓN, que no pertenecen a hogares particulares:

CTL3. ¿Dentro de esta institución se desarrolla alguna actividad ECONÓMICA adicional para obtener ingresos?

1 (Una vez terminado el diligenciamiento del módulo B para todas las personas residentes habituales que no pertenecen a hogares particulares, diligenciar el módulo de unidades económicas para las unidades dentro del LEA)

2 No

Diseño: Dirección de Difusión, Mercadeo y Cultura Estadística -DANE- Bogotá, D. C. -Colombia-, septiembre de 2005

02

B. MÓDULO DE PERSONAS (para residentes que no pertenecen a hogares particulares)

CTL4. Número de ORDEN, nombres y apellidos de la persona

Primer nombre

Segundo nombre

Primer apellido

Segundo apellido

6. ¿Es ... HOMBRE o MUJER?

1 Hombre
2 Mujer

7. ¿Cuál es la FECHA de nacimiento de...?
(Tal como figura en el documento de identidad o en el registro civil)

1 Día Mes Año
2 No sabe

CTL5. ¿Cuántos años CUMPLIDOS tiene...?

8. ¿Dónde NACIÓ...?

1 En ESTE municipio
2 En OTRO municipio colombiano

Nombre del departamento

Nombre del municipio

3 En OTRO país

Nombre del país

¿En qué año LLEGÓ a Colombia?

Año

9. ¿Cuando... nació, LA MAMÁ RESIDÍA en:

1 En el MUNICIPIO DONDE... NACIÓ?
2 En OTRO municipio colombiano?

Nombre del departamento

Nombre del municipio

3 En OTRO país?

Nombre del país

4 No sabe

10. ¿En dónde VIVÍA... hace cinco años:

1 No había nacido? → Pase a 12
2 En ESTE municipio?
3 En OTRO municipio colombiano?

Nombre del departamento

Nombre del municipio

3 En OTRO país?

Nombre del país

¿En qué año LLEGÓ a Colombia?

Año

→ Pase a 12

11. El LUGAR DONDE VIVÍA... hace cinco años era:

1 ¿La cabecera municipal (donde está la Alcaldía)?
2 ¿Un centro poblado, corregimiento, inspección de policía, caserío?
3 ¿Parte rural (vereda, campo)?

12. Durante los ÚLTIMOS cinco años, ¿... cambió su lugar de residencia?

1 Sí

1.1 ¿En qué AÑO FUE LA ÚLTIMA VEZ?

Año

1.2 ¿En ESA OCASIÓN, ... vivía:

1 En ESTE municipio?
2 En OTRO municipio colombiano?

Nombre del departamento

Nombre del municipio

3 En OTRO país?

Nombre del país

→ Pase a 1.4

1.3 ¿El LUGAR DONDE VIVÍA ... era:

1 La cabecera municipal (donde está la Alcaldía)?
2 ¿Un centro poblado, corregimiento, inspección de policía, caserío?
3 ¿Parte rural (vereda, campo)?

1.4 ¿La PRINCIPAL CAUSA por la que... CAMBIÓ SU LUGAR DE RESIDENCIA en esa ocasión fue:

1 Dificultad para encontrar trabajo o ausencia de medios de subsistencia?
2 Riesgo de desastre natural (inundación, avalancha, deslizamiento, terremoto, etc.) o como consecuencia de éste?
3 Amenaza o riesgo para su vida, su libertad o su integridad física, ocasionada por la violencia?
4 Necesidades de educación?
5 Motivos de salud?
6 Razones familiares?
7 Miembro pueblo nómada u otra razón?

2 No

03

B. MÓDULO DE PERSONAS (para residentes que no pertenecen a hogares particulares) (continuación)

13. De acuerdo con su CULTURA, PUEBLO o RASGOS FÍSICOS, ¿... es o se reconoce como:

1 ○ Indígena?

1.1 ¿A cuál PUEBLO INDÍGENA pertenece?

(Escriba el nombre del pueblo)

2 ○ Rom?
3 ○ Raizal del Archipiélago de San Andrés y Providencia?
4 ○ Palenquero de San Basilio
5 ○ Negro(a), mulato(a), afrocolombiano(a) o afrodescendiente?
6 ○ Ninguna de las anteriores?

Pase a 15

14. ¿Habla... la LENGUA de su pueblo?

1 ○ Sí
2 ○ No

15. Por FALTA de dinero, ... No consumió NINGUNA de las tres COMIDAS BÁSICAS (desayuno, almuerzo o comida), uno o más días de la semana pasada?

1 ○ Sí

1.1 ¿Cuántos días?

2 ○ No

16. ¿... tiene LIMITACIONES PERMANENTES para:

		Sí	No
1	Moverse o caminar?	○	○
2	Usar sus brazos y manos?	○	○
3	Ver, a pesar de usar lentes o gafas?	○	○
4	Oir, aún con aparatos especiales?	○	○
5	Hablar?	○	○
6	Entender o aprender?	○	○
7	Relacionarse con los demás por problemas mentales o emocionales?	○	○
8	Bañarse, vestirse, alimentarse por sí mismo?	○	○
9	Otra limitación permanente?	○	○

PARA PERSONAS DE 3 AÑOS O MÁS

17. ¿... sabe LEER Y ESCRIBIR?

1 ○ Sí
2 ○ No

18. ¿Asiste ... ACTUALMENTE a algún preescolar, escuela, colegio o universidad?

1 ○ Sí

1.1 ¿Este establecimiento ES OFICIAL?

1 ○ Sí
2 ○ No

2 ○ No

19. ¿Cuál fue el ÚLTIMO AÑO DE ESTUDIOS que... Aprobó?

1.	**Preescolar**	○ Prejardín	○ Jardín	○ Transición			
2.	**Básica primaria**	1.° ○	2.° ○	3.° ○	4.° ○	5.° ○	
3.	**Básica secundaria** *(Bachillerato básico)*	6.° ○ (1.°)	7.° ○ (2.°)	8.° ○ (3.°)	9.° ○ (4.°)		
4.	**Media académica o clásica** *(Bachillerato clásico)*	10.° ○ (5.°)	11.° ○ (6.°)				
5.	**Media técnica** *(Bachillerato técnico)*	10.° ○ (5.°)	11.° ○ (6.°)				
6.	**Normalista**	10.° ○	11.° ○	12.° ○	13° ○		
	SUPERIOR						
7.	Técnica profesional	1 ○	2 ○				
8.	Tecnológica	1 ○	2 ○	3 ○			
9.	Profesional	1 ○	2 ○	3 ○	4 ○	5 ○	6 ○
	POSTGRADO						
10.	Especialización	1 ○	2 ○				
11.	Maestría	1 ○	2 ○	3 ○			
12.	Doctorado	1 ○	2 ○	3 ○	4 ○	5 ○	6 ○
13.	**Ninguno**	0 ○					

PARA PERSONAS DE 5 AÑOS O MÁS

20. ¿Durante LA SEMANA PASADA, ...:

1 ○ Trabajó?
2 ○ No trabajó, pero tenía trabajo?
3 ○ Buscó trabajo, pero había trabajado antes?
4 ○ Buscó trabajo por primera vez?
5 ○ Estudió y no trabajó ni buscó trabajo?
6 ○ Realizó oficios del hogar y no trabajó ni buscó trabajo?
7 ○ Estuvo incapacitado permanentemente para trabajar?
8 ○ Vivió de jubilación o renta y no trabajó ni buscó trabajo?
9 ○ Estuvo en otra situación?

PARA PERSONAS DE 10 AÑOS O MÁS

21. ¿ACTUALMENTE ...:

1 ○ No está casado y lleva dos años o más viviendo con su pareja?
2 ○ No está casado y lleva menos de dos años viviendo con su pareja?
3 ○ Está separado(a), divorciado(a)?
4 ○ Está viudo(a)?
5 ○ Está soltero(a)?
6 ○ Está casado(a)?

PARA MUJERES DE 12 AÑOS O MÁS

22. ¿Ha tenido... algún HIJO O HIJA que haya NACIDO VIVO (A)?

1 ○ Sí

¿Cuántos?

¿Cuántos hombres?

¿Cuántas mujeres?

2 ○ No → Pase a CTL6

23. De los HIJOS e HIJAS que NACIERON VIVOS de..., ¿cuántos están VIVOS ACTUALMENTE?

1 ¿Cuántos?

¿Cuántos hombres?

¿Cuántas mujeres?

2 ○ No sabe

04

B. MÓDULO DE PERSONAS (para residentes que no pertenecen a hogares particulares) (continuación)

24. ¿En qué AÑO Y MES TUVO... su ÚLTIMO hijo(a) nacido(a) vivo(a)?

AÑO

1 ○ 2005
2 ○ 2004
3 ○ 2003
4 ○ 2002
5 ○ 2001
6 ○ 2000 o antes

MES

1 ○ Enero
2 ○ Febrero
3 ○ Marzo
4 ○ Abril
5 ○ Mayo
6 ○ Junio
7 ○ Julio
8 ○ Agosto
9 ○ Septiembre
10 ○ Octubre
11 ○ Noviembre
12 ○ Diciembre

CTL6. ¿... fue censado este año (o el año pasado) en ESTE o en OTRO MUNICIPIO del PAÍS?

1 ○ Sí

1.1 Número del certificado censal asignado en esa ocasión:

[ ][ ][ ][ ][ ][ ][ ][ ][ ] – [ ]
DV

1.2 ○ **No recuerda**

2 ○ No → Pase a CTL9

CTL7. ¿... dónde fue CENSADO?

1 ○ En ESTE municipio?

Zona:

1 ○ Cabecera municipal
2 ○ Parte rural

2 ○ En OTRO municipio colombiano?

Nombre del departamento

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

Nombre del municipio

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

Zona:

1 ○ Cabecera municipal

2 ○ Parte rural

CTL8. ¿En qué MES fue CENSADO?

Mes

[ ][ ]

CTL9. Número del Certificado Censal asignado a la persona:

[ ][ ][ ][ ][ ][ ][ ][ ][ ] – [ ]
DV

(Continúe con la siguiente persona del listado)

Notas:

1. Para clase 1, 2 y 3 terminado el cuestionario de LEA se DEBE DILIGENCIAR EL CUESTIONARIO ECONÓMICO. El principio general es TODO LEA DEBE TENER UN CUESTIONARIO ECONÓMICO ASOCIADO.
2. Recuerde: Si en CTL3, la respuesta es "SI" debe diligenciar cuestionario de Unidades Económicas Adicional.
3. EN CLASE 3 terminado el LEA DILIGENCIAR EL AGROPECUARIO

OBSERVACIONES

D. MÓDULO DE UNIDAD ECONÓMICA ASOCIADA AL LEA

IDENTIFICACIÓN (Para TODOS los formularios)

1. Nombre comercial:

2. Razón social o nombre del propietario:

3. Tipo de documento:

1 Nit

1.1 Número

1.2 Dígito de verificación

2 Cédula de ciudadanía del propietario

2.1 Número

4. Número telefónico

CARACTERÍSTICAS DE LA UNIDAD ECONÓMICA

5. ¿Esta unidad económica es:

1 Única?
2 Principal?
3 Sucursal?
4 Unidad auxiliar?

→ Pase a 6

5.1 ¿Qué tipo de unidad auxiliar?

1 Gerencia
2 Bodega
3 Punto de venta o distribución
4 Taller de mantenimiento
5 Centros de atención al cliente (servicios y/o orientación) y similares

→ Pase a 15

6. ¿El mayor porcentaje de ingresos de la unidad económica o negocio proviene de:

1 Mantenimiento y reparación?
2 Compra y venta de productos **no fabricados** por la unidad? → Pase a 8
3 Alojamientos, restaurantes, cafeterías, bares, expendios de comida? → Pase a 11
4 Construcción?
5 Transporte?
6 Correo y telecomunicaciones?
7 Intermediación financiera, seguros o fondos de pensiones y cesantías?
8 Educación?
9 Salud, servicios sociales o disposición de basuras?
10 Otros servicios?

→ Pase a 13

11 Productos elaborados o transformados por ustedes? → Pase a 14
12 Otras actividades diferentes a industria, comercio o servicios? → Para ÁREA RURAL pase a módulo E Si no TERMINE

CARACTERÍSTICAS DE LA UNIDAD ECONÓMICA (conclusión)

7. ¿Los bienes que mantiene o repara PRINCIPALMENTE son:

1 Vehículos automotores?
2 Motocicletas?
3 Efectos personales?
4 Enseres domésticos?
5 Computadores y equipos de oficina?
6 Maquinaria y equipo industrial?

→ Pase a 15

8. ¿Vende principalmente a:

1 Minoristas, otros mayoristas, usuarios industriales, comerciales o institucionales?
2 Público en general?

9. ¿Las mercancías que vende son principalmente:

1 Nuevas? (Cuando se trate de alimentos marque siempre nuevas)
2 Usadas?

10. ¿Qué grupo de mercancías vende principalmente esta unidad económica o negocio?

→ Pase a 15

11. ¿Esta unidad económica o negocio corresponde principalmente a:

1 Restaurante?
2 Cafetería, fuente de soda o frutería?
3 Otros expendios de comida?
4 Expendio de bebidas alcohólicas?
5 Hotel, hostal o aparta hotel?
6 Residencias, moteles, amoblados?
7 Centro vacacional, zona de camping?
8 Otro tipo de alojamiento?

→ Pase a 15

12. ¿Esta unidad económica o negocio ofrece principalmente:

1 A la mesa?
2 Autoservicio?

→ Pase a 15

13. ¿Qué servicios presta u ofrece esta unidad económica o negocio?

→ Pase a 15

14. ¿Cuál es el principal producto que fabrica o transforma esta unidad económica o negocio? ¿Cuál es su materia prima principal y su uso o destino?

1 Producto

2 Materia prima principal

3 Uso o destino

15. En promedio, ¿cuántas personas trabajaron el mes anterior en esta unidad económica o negocio?

16. Código CIIU Rev. 3

(Para diligenciar en oficina)

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E. MÓDULO DE ACTIVIDAD AGROPECUARIA (sólo para Clase 3 - Rural disperso)

IDENTIFICACIÓN (Para TODOS los formularios)

Dirección de la finca, hacienda, tambo, ranchería, granja o terreno?

1. ¿Cuál es el nombre de finca, hacienda, tambo, ranchería, granja o terreno?

2. ¿Cuál es el área de la finca, hacienda, tambo, ranchería, granja o terreno?

Área ,

1 Hectárea
2 Fanegada
3 Cuadra
4 Metro cuadrado
5 Cuerda

CARACTERÍSTICAS DE LA ACTIVIDAD AGROPECUARIA

3. ¿En los terrenos de esta finca, durante el año 2005, qué cultivos se sembraron o se sembrarán?

Nro.	Nombre común de los cultivos solos o asociados	Unidad de superficie	Área total sembrada		
			En el I semestre (cultivos de ciclo corto)	En el II semestre (cultivos de ciclo corto)	Día de la entrevista (cultivos de ciclo largo)
1			,	,	,
2			,	,	,
3			,	,	,
4			,	,	,
5			,	,	,
6			,	,	,
7			,	,	,
8			,	,	,
9			,	,	,
10			,	,	,

Unidad de superficie: **1** Hectárea **2** Fanegada **3** Cuadra **4** Metro cuadrado **5** Cuerda
(Si encuentra más de diez cultivos agrícolas, diligencie los cuestionarios adicionales que sean necesarios)

2 No se sembró

4. El día de hoy, ¿en los terrenos de esta finca existen:

Clase de cobertura	Sí	No	1.1 Código unidad de superficie	1.2 Área total
1 Bosques plantados?				,
2 Forrajes o pastos?				,
3 Malezas o rastrojos?				,

Unidad de superficie: **1** Hectárea **2** Fanegada **3** Cuadra **4** Metro cuadrado **5** Cuerda

64

E. MÓDULO DE ACTIVIDAD AGROPECUARIA (conclusión)

ACTIVIDAD PECUARIA

5. El día de hoy, ¿en los terrenos de esta finca hay:

Clase de cobertura	Sí	No	1.1 Cantidad total
1 Vacas, toros, novillos(as), terneros(as), becerros(as), toretes, vaquillas, búfalos?	⬭	⬭	
2 Caballos, yeguas, mulas?	⬭	⬭	
3 Burros, burras, asnos?	⬭	⬭	
4 Ovejas, corderos, camuros?	⬭	⬭	
5 Cabras, chivos?	⬭	⬭	
6 Porcinos, marranos, cerdos, lechones?	⬭	⬭	
7 Pollos, gallos, gallinas?	⬭	⬭	
8 Otras especies menores (pavos, cuyes, conejos, codornices, colmenas)?	⬭	⬭	

6. El día de hoy, ¿en los terrenos de esta finca hay áreas dedicadas al cultivo de:

Clase de especie	Sí	No	1.1 Código unidad de superficie	1.2 Área total
1 Peces?	⬭	⬭		,
2 Camarones?	⬭	⬭		,

Unidad de superficie: **1** Hectárea **2** Fanegada **3** Cuadra **4** Metro cuadrado **5** Cuerda

Resultados de entrevista por unidad censal

Lugares Especiales de Alojamiento –LEA

	Cantidad de visitas					
	1	2	3	4	5	6
Fecha	D D M M	D D M M	D D M M	D D M M	D D M M	D D M M
Hora	H H : M M	H H : M M	H H : M M	H H : M M	H H : M M	H H : M M
Resultado						

Resultado: **0** Sin suspensión **1** Ausente en el momento de la entrevista **2** Rechazo **3** Desocupada **4** Informante no idóneo **5** Desocupada por uso temporal **6** Incompleta **7** Otro

Resultados de entrevista por unidad censal

Unidad Económica Asociada al LEA

	Cantidad de visitas					
	1	2	3	4	5	6
Fecha	D D M M	D D M M	D D M M	D D M M	D D M M	D D M M
Hora	H H : M M	H H : M M	H H : M M	H H : M M	H H : M M	H H : M M
Resultado						

Resultado: **0** Sin suspensión **1** Ausente en el momento de la entrevista **2** Rechazo **3** Desocupada **4** Informante no idóneo **5** Desocupada por uso temporal **6** Incompleta **7** Otro

Código del supervisor

Hora de terminación de la entrevista :

01

República de Colombia

CENSO GENERAL 2005
FORMULARIO
UNIDAD ECONÓMICA INDEPENDIENTE

CENSO2005 DANE

CONFIDENCIALIDAD: Los datos suministrados al DANE son confidenciales y no podrán utilizarse con fines comerciales, de tributación fiscal o investigación judicial (Ley 79 de 1993, Art. 5.°)

- ***UTILICE ESTE TIPO DE LETRA Y NÚMERO*** *que se indica a continuación*

A B C D E F G H I J K L M N Ñ O P Q R S T U V W X Y Z 1 2 3 4 5 6 7 8 9 0

- *Utilice únicamente el lápiz y el borrador que le entregaron*
- *NO tache, borre completamente*
- *NO marque las tildes*
- *NO abrevie*
- *NO desprenda ninguna hoja*

Marque así: 1 ●

NO marque así: 1 ✓ 2 ⊖ 3 ⊗

Hora inicio de la entrevista : :

IDENTIFICACIÓN (Para TODOS los formularios)

Departamento

Municipio

Clase **AG (Área Geográfica)** **AGAD**

Número de orden de la edificación dentro del AG

Código del encuestador

Número de orden de la unidad dentro de la edificación

Dirección de la unidad censal

En caso de AG clase 3, rural disperso, diligencie:

1. Nombre de:

1 ○ Corregimiento
2 ○ Inspección
3 ○ Caserío
4 ○ Territorio Indígena (Parcialidad, resguardo, reserva, ranchería, asentamiento, comunidad)
5 ○ Resto rural → Pase a la pregunta de Territorialidad

Escriba nombre del agrupamiento cuando la selección es 1, 2, 3 ó 4

2. Territorialidad

1 ○ Resguardo
2 ○ Territorio colectivo de comunidad negra
3 ○ Ninguno de los anteriores

Escriba nombre según la opción marcada

LOCALIZACIÓN UNIDAD ECONÓMICA

1. Nombre comercial:

2. Razón social o nombre del propietario:

LOCALIZACIÓN UNIDAD ECONÓMICA (conclusión)

3. Tipo de documento:

1 ○ Nit

1.1 Número

1.2 Dígito de verificación

2 ○ Cédula de ciudadanía del propietario

2.1 Número

4. Número telefónico

CARACTERÍSTICAS DE LA UNIDAD ECONÓMICA

5. ¿Esta unidad económica es:

1 ○ Única?
2 ○ Principal?
3 ○ Sucursal?
4 ○ Unidad auxiliar?
} Pase a 6

5.1 ¿Qué tipo de unidad auxiliar?

1 ○ Gerencia
2 ○ Bodega
3 ○ Punto de venta o distribución
4 ○ Taller de mantenimiento
5 ○ Centros de atención al cliente (servicios y/o orientación) y similares
} Pase a 15

6.¿El mayor porcentaje de ingresos de la unidad económica o negocio

1 ○ Mantenimiento y reparación?
2 ○ Compra y venta de productos **no fabricados** por la unidad? → Pase a 8
3 ○ Alojamientos, restaurantes, cafeterías, bares, expendios de comida? → Pase a 11
4 ○ Construcción?
5 ○ Transporte?
6 ○ Correo y telecomunicaciones?
7 ○ Intermediación financiera, seguros o fondos de pensiones y cesantías?
8 ○ Educación?
9 ○ Salud, servicios sociales o disposición de basuras?
10 ○ Otros servicios?
} Pase a 13
11 ○ Productos elaborados o transformados por ustedes? Pase a 14
12 ○ Otras actividades diferentes a industria, comercio o servicios? → Termine

Diseño: Dirección de Difusión, Mercadeo y Cultura Estadística –DANE– Bogotá, D. C. –Colombia–, septiembre de 2005

02

MÓDULO DE UNIDAD ECONÓMICA

CARACTERÍSTICAS DE LA UNIDAD ECONÓMICA (continuación)

7. ¿Los bienes que mantiene o repara PRINCIPALMENTE son:

1 Vehículos automotores?
2 Motocicletas?
3 Efectos personales?
4 Enseres domésticos?
5 Computadores y equipos de oficina?
6 Maquinaria y equipo industrial?

Pase a 15

8. ¿Vende principalmente a:

1 Minoristas, otros mayoristas, usuarios industriales, comerciales o institucionales?
2 Público en general?

9. ¿Las mercancías que vende son principalmente:

1 Nuevas? (Cuando se trate de alimentos marque siempre nuevas)
2 Usadas?

10. ¿Qué grupo de mercancías vende principalmente esta unidad económica o negocio?

Pase a 15

11. ¿Esta unidad económica o negocio corresponde

1 Restaurante?
2 Cafetería, fuente de soda o frutería?
3 Otros expendios de comida?
4 Expendio de bebidas alcohólicas?
5 Hotel, hostal o aparta hotel?
6 Residencias, moteles, amoblados?
7 Centro vacacional, zona de camping?
8 Otro tipo de alojamiento?

Pase a 15

12. ¿Esta unidad económica o negocio ofrece principalmente:

1 A la mesa?
2 Autoservicio?

Pase a 15

13. ¿Qué servicios presta u ofrece esta unidad económica o negocio?

Pase a 15

CARACTERÍSTICAS DE LA UNIDAD ECONÓMICA (conclusión)

14. ¿Cuál es el principal producto que fabrica o transforma esta unidad económica o negocio? ¿Cuál es su materia prima

1 Producto

2 Materia prima principal

3 Uso o destino

15. En promedio, ¿cuántas personas trabajaron el mes anterior en esta unidad económica o negocio?

16. Código CIIU Rev. 3

(Para diligenciar en oficina)

OBSERVACIONES

Resultados de entrevista por unidad económica independiente

	Cantidad de visitas					
	1	2	3	4	5	6
Fecha	D D M M	D D M M	D D M M	D D M M	D D M M	D D M M
Hora	H H : M M	H H : M M	H H : M M	H H : M M	H H : M M	H H : M M
Resultado						

Resultado: **0** Sin suspensión **1** Ausente en el momento de la entrevista **2** Rechazo **3** Desocupada **4** Informante no idóneo **5** Desocupada por uso temporal **6** Incompleta **7** Otro

República de Colombia

CENSO GENERAL 2005
CUESTIONARIO DE ENTORNO URBANÍSTICO

CENSO2005 DANE

CONFIDENCIALIDAD: Los datos suministrados al DANE son confidenciales y no podrán utilizarse con fines comerciales, de tributación fiscal o investigación judicial (Ley 79 de 1993, Art. 5.°)

Hora inicio de la entrevista ☐☐:☐☐ Número de formulario ☐☐☐☐☐☐

- ***UTILICE ESTE TIPO DE LETRA Y NÚMERO*** *que se indica a continuación*

A B C D E F G H I J K L M N Ñ O P Q R S T U V W X Y Z 1 2 3 4 5 6 7 8 9 0

- *Utilice únicamente el lápiz y el borrador que le entregaron*
- *NO tache, borre completamente*
- *NO marque las tildes*
- *NO abrevie*
- *NO desprenda ninguna hoja*

Marque así: 1 ● *NO marque así:* 1 ✓ 2 ⊖ 3 ⊗

IDENTIFICACIÓN (Para TODOS los formularios)

Departamento ☐☐

Municipio ☐☐☐

Clase AG (Área Geográfica) AGAD

Lado de manzana

Código del supervisor

1. La vía de acceso al lado de la manzana es:

1 Sin acceso (TERMINE)
2 Sendero o camino en tierra por puentes elevados de tablones
3 Peatonal
4 Vehicular en tierra
5 Vehicular en recebo, balastro, gravilla, pavimentada (cemento, asfalto o adoquín)en mal estado
6 Vehicular pavimentada (cemento, asfalto o adoquín) en buen estado

2. En este lado de manzana o en el de enfrente, hay presencia de:

		Si	No
1	Parques	○	○
1	Plazoletas		
1	Áreas deportivas o recreativas	○	○
1	Zonas verdes		

3. El andén del lado de manzana es:

1 Sin andén
2 Discontinuo
3 Continuo sin zonas verdes
4 Continuo con zonas verdes

4. En las vías o andenes de este lado de manzana o del de enfrente, se observan residuos provenientes de:

		Si	No
1	Botaderos de basura	○	○
1	Plazas de mercado o ferias		
1	Fábricas o talleres	○	○
1	Terminales de bus		
1	Aguas negras	○	○

5. El antejardín del lado de manzana es:

1 Sin antejardín
2 En rastrojo o huerta (Sin importar tamaño)
3 Pequeño (menor de 2 metros de profundidad)
4 Mediano (de 2 a 5 metros de profundidad)
5 Grande (mayor de 5 metros de profundidad)

6. En este lado de la manzana hay edificaciones con acceso desde la vía:

1 ○ Si

1.1 En el lado de la manzana predomina:

1 ○ Unidades censales individuales
2 ○ Unidades censales agrupadas

2 ○ No (TERMINE)

7. Cuál es el entorno urbanístico predominante del lado de manzana:

1 ○ Tugurio
2 ○ Desviación social o zonas de tolerancia u olla
3 ○ Desarrollo progresivo sin consolidar
4 ○ Deterioro urbanístico
5 ○ Industrial predominante
6 ○ Desarrollo progresivo consolidado
7 ○ Comercial predominante
8 ○ Residencial intermedio
9 ○ Residencial con comercio especial o compatible
10 ○ Residencial exclusivo
11 ○ Residencial de baja densidad
12 ○ Otro

OBSERVACIONES

Annex B. Groups of variables used for making the calibration models
Household Models * person and age * sex

Age	Model 1		Model 2		Model 3		Model 4	
	Male	Female	Male	Female	Male	Female	Male	Female
0	V01	V41	V01	V32	V01	V26	V01	V12
1	V02	V42						
2	V03	V43	V02	V33				
3	V04	V44	V03	V34	V02	V27		V13
4	V05	V45	V04	V35	V03	V28	V03	V14
5	V06	V46	V05	V36	V04	V29	V04	V15
6	V07	V47	V06	V37	V05	V30	V05	V16
7	V08	V48						
8	V09	V49	V07	V38				
9	V10	V50						
10	V11	V51	V08	V39	V06	V31	V06	V17
11	V12	V52	V09	V40	V07	V32	V07	V18
12	V13	V53	V10	V41	V08	V33	V08	V19
13	V14	V54	V11	V42	V09	V34		
14	V15	V55	V12	V43	V10	V35	V09	V20
15	V16	V56	V13	V44	V11	V36		
16	V17	V57	V14	V45	V12	V37		
17	V18	V58						
18	V19	V59	V15	V46				
19	V20	V60						
20	V21	V61	V16	V47				
21	V22	V62					V10	V21
22	V23	V63	V17	V48	V13	V38		
23	V24	V64						
24	V25	V65	V18	V49	V14	V39		
25	V26	V66						
26	V27	V67	V19	V50				
27	V28	V68	V20	V51				
28	V29	V69	V21	V52	V15	V40	V11	V22
29	V30	V70						

Household Models * person and age * sex (final)

Age	Model 1		Model 2		Model 3		Model 4	
	Male	Female	Male	Female	Male	Female	Male	Female
30	V31	V71	V22	V53	V16	V41		
31 - 34	V32	V72	V23	V54	V17	V42		
35 - 39	V33	V73	V24	V55	V18	V43		
40 - 44	V34	V74	V25	V56	V19	V44		
45 - 49	V35	V75	V26	V57	V20	V45		
50 - 54	V36	V76	V27	V58	V21	V46		
55 - 59	V37	V77	V28	V59	V22	V47		
60 - 64	V38	V78	V29	V60	V23	V48		
65 - 69	V39	V79	V30	V61	V24	V49		
70 and more	V40	V80	V31	V62	V25	V50		

Source: DANE Household Models * person and age * sex.

School attendance Models * age

Model A			
Age	Attendance		
	Yes	No	Not stated
3 - 25 years	A01	A02	A05
26 or over	A03	A04	

Source: DANE.

Educational level Models * Age

Educational Level	Model B		Model D	
	3 - 25 years	26 years or over	3 - 25 years	26 years or over
Pre-primary education	B01	B10	D01	D06
Primary education	B02	B11		
Lower Secondary education	B03	B12	D02	D07
Middle secondary education, middle technical, normalist	B04	B13	D03	D08
Professional technical	B05	B14	D04	D09
Technological education	B06	B15		
Bachelor's degree	B07	B16		
Post graduate education	B08	B17		
None	B09	B18	D05	D10
Not stated	B19		D11	

Source: DANE.

Activity last week Models * Age

Age	Model C		Model E	
	Worked; did not work but was employed; looked for a job but had worked before	Looked for a job for the first time; attended school, but did not work and did not look for a job; performed household chores and did no work and did not look for a job; did not work due to permanent disability; was living on a pension or capital income and did not work or did not look for a job; was in another condition; not stated	Worked; did not work but was employed; looked for a job but had worked before	Looked for a job for the first time; attended school and did not work and did not look for a job; performed household chores and did no work and did not look for a job; did not work due to permanent disability; was living on a pension or capital income and did not work or did not look for a job; was in another condition; not stated
0 - 4	C01	C08		
5 - 9	C02	C09	E01	E04
10 - 14	C03	C10		
15 - 19	C04	C11		
20 - 24	C05	C12	E02	E05
25 - 29	C06	C13		
30 and over	C07	C14	E03	E06

Source: DANE.

The twenty models are structured from greatest to the least complexity as follows:

Model	Age * Sex	Attendance * Age	Educational Level * Age	Last week activity * Age
1	1	A	B	C
2	1	A	D	C
3	1	A	B	E
4	1	A	D	E
5	1	A	B	C
6	2	A	D	C
7	2	A	B	E
8	2	A	D	E
9	2	A	B	C
10	2	A	D	C
11	3	A	B	E
12	3	A	D	E
13	3	A	B	C
14	3	A	D	C
15	3	A	B	E
16	4	A	D	E
17	4	A	B	C
18	4	A	D	C
19	4	A	B	E
20	4	A	D	E

Source: DANE.

Housing Models

Model 1		
Type of housing unit	House	V01
	Indigenous dwelling; another type of housing	V02
	Apartment	V03
	Room type	V04
Electricity supply	Yes	V05
	No	V06
Water supply system	Yes	V07
	No	V08
sewage Disposal	Yes	V09
	No	V10
Total of households		**V11**

Model 2				
	Urban		Rural	
Type of housing unit	House	V01	House	V01
	Indigenous dwelling; room type; another type of housing	V02	Indigenous dwelling; apartment; room type; another type of housing	V02
	Apartment	V03		
Electricity supply	Yes	V04	Yes	V03
	No	V05	No	V04
Water supply system	Yes	V06	Yes	V05
	No	V07	No	V06
sewage Disposal	Yes	V08	Yes	V07
	No	V09	No	V08
Total de households		**V10**		**V09**

Model 3				
	Urban		Rural	
Type of housing unit	House	V01	House	V01
	Indigenous dwelling; room type; another type of housing	V02	Indigenous dwelling; apartment; room type; another type of housing	V02
	Apartment	V03		
Electricity supply	Yes	V04	Yes	V03
	No	V05	No	V04
Water supply system	yes	V06	yes	V05
	No	V07	No	V06
	Total of	V08		V07

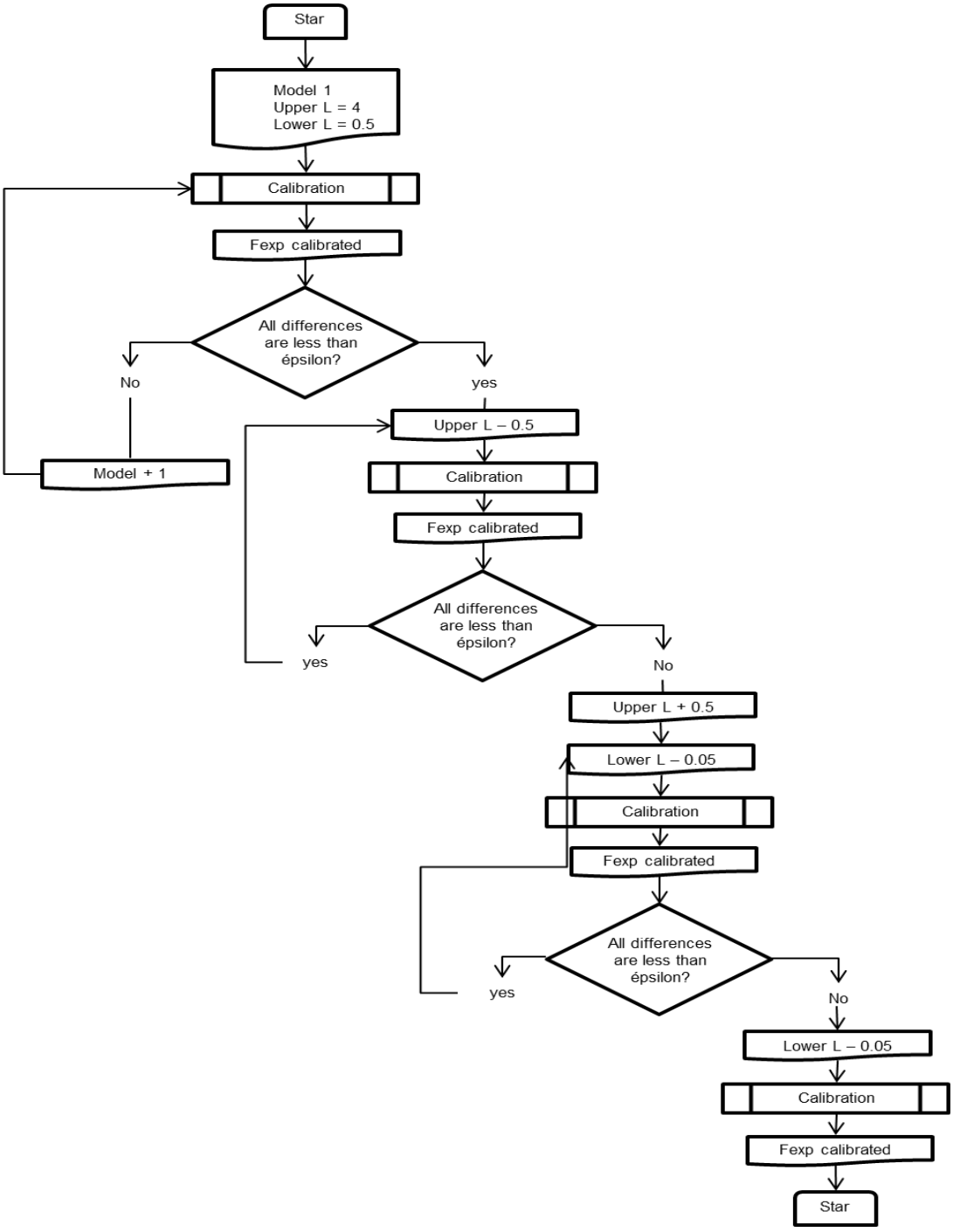
Model 4				
	Urban		Rural	
Type of housing unit	House	V01	House	V01
	Indigenous dwelling; room type; another type of housing	V02	Indigenous dwelling; apartment room type; another type of housing	V02
	Apartment	V03		
Electricity supply	Yes	V04	Yes	V03
	No	V05	No	V04
	Total of households	V08	**Total of households**	V07

households

Model 5					Model 6	
Urban			Rural			
Type of housing unit	House	V01	House	V01	Total of dwellings	V01
	Indigenous dwelling; room type; another type of housing	V02	Indigenous dwelling; apartment; room type; another type of housing	V02	Total of households	V02
	Apartment	V03				
	Total of households	V08	**Total of households**	V07		

Source: DANE.

Annex C. Flowchart of the calibration process



Source: DANE.

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
5	1	1	1	4	0,8	3,5	7	0,5	4
5	1	2	1	21	0,5	4	5	0,5	2
5	1	3	1	5	0,9	4,5	7	0,5	4
5	1	4	1	5	0,65	2	6	0,55	1,5
5	1	5	1	5	0,9	4,5	7	0,5	4
5	1	6	1	5	0,8	4	7	0,5	4
5	1	7	1	5	0,9	3,5	7	0,5	4
5	1	8	1	4	0,9	4,5	7	0,5	4
5	1	9	1	5	0,7	2	7	0,5	4
5	1	10	1	5	0,8	2,5	6	0,9	1,5
5	1	11	1	5	0,8	3,5	4	0,5	2
5	1	12	1	5	0,7	2,5	6	0,8	1,5
5	1	13	1	5	0,9	3	6	0,55	1,5
5	1	14	1	5	0,8	2,5	1	0,7	2,5
5	1	15	1	4	0,75	2,5	2	0,9	2,5
5	1	16	1	5	0,9	2,5	2	0,5	4
5	1	99	1	2	0,7	2,5	2	0,55	3
5	1	99	3	10	0,75	3,5	2	0,6	2,5
5	30	99	1	5	0,75	2,5	4	0,55	3
5	30	99	3	5	0,6	2,5	2	0,6	1,5
5	31	99	1	2	0,5	3	1	0,6	1,5
5	31	99	3	10	0,65	4	6	0,9	1,5
5	34	99	1	2	0,7	2	1	0,55	2,5
5	34	99	3	5	0,7	3	2	0,5	1,5
5	42	99	1	3	0,5	4	6	0,9	4,5
5	42	99	3	21	0,5	4	7	0,5	4
5	45	99	1	21	0,5	4	4	0,5	4
5	45	99	3	5	0,65	3,5	1	0,5	2
5	51	99	1	2	0,55	2	2	0,9	2
5	51	99	3	10	0,9	4,5	6	0,9	1,5
5	79	99	1	5	0,9	4,5	7	0,5	4
5	79	99	3	5	0,6	2,5	2	0,8	1,5
5	88	99	1	21	0,5	4	6	0,75	2
5	88	99	3	5	0,9	4	6	0,9	1,5
5	101	99	1	5	0,65	2	1	0,55	2,5
5	101	99	3	5	0,55	3	2	0,5	1,5
5	129	99	1	5	0,65	2,5	6	0,5	1,5
5	129	99	3	3	0,6	2,5	1	0,5	1,5
5	147	99	1	5	0,8	2	1	0,5	1,5
5	147	99	3	15	0,55	2,5	6	0,7	1,5
5	148	99	1	5	0,9	3	7	0,5	4
5	154	99	1	5	0,9	3	6	0,9	1,5
5	154	99	3	5	0,75	4	1	0,9	3
5	172	99	1	5	0,9	4,5	2	0,5	2
5	172	99	3	10	0,55	3,5	6	0,9	1,5
5	190	99	1	5	0,6	2	2	0,55	1,5

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
5	190	99	3	10	0,55	3,5	1	0,9	2
5	209	99	1	5	0,7	2	2	0,55	1,5
5	209	99	3	5	0,6	4	2	0,6	1,5
5	212	99	1	5	0,9	4,5	7	0,5	4
5	212	99	3	15	0,65	4	6	0,9	2
5	234	99	1	5	0,7	2	2	0,6	1,5
5	234	99	3	15	0,55	3	6	0,9	1,5
5	237	99	1	5	0,7	2,5	6	0,65	1,5
5	237	99	3	5	0,6	4	6	0,9	1,5
5	250	99	1	5	0,65	2	6	0,5	1,5
5	250	99	3	15	0,5	4	6	0,9	4,5
5	264	99	1	2	0,7	2	1	0,75	1,5
5	264	99	3	5	0,55	4	1	0,6	1,5
5	266	99	1	3	0,65	2,5	6	0,65	1,5
5	266	99	3	21	0,5	4	6	0,9	4,5
5	282	99	1	1	0,65	2	1	0,6	1,5
5	282	99	3	4	0,65	4	6	0,9	2
5	284	99	1	10	0,9	3,5	1	0,9	2,5
5	284	99	3	20	0,9	4	2	0,9	2,5
5	308	99	1	5	0,65	2,5	2	0,55	2
5	308	99	3	5	0,75	4	2	0,9	2
5	310	99	1	1	0,65	2	2	0,6	2
5	310	99	3	20	0,5	1,5	7	0,5	4
5	318	99	1	1	0,6	2	7	0,5	4
5	318	99	3	5	0,6	2,5	2	0,9	4,5
5	321	99	1	5	0,7	2	1	0,55	1,5
5	321	99	3	1	0,9	1,5	6	0,9	1,5
5	360	99	1	5	0,9	4,5	6	0,7	1,5
5	360	99	3	5	0,9	2	2	0,9	1,5
5	361	99	1	5	0,65	2,5	2	0,5	1,5
5	361	99	3	15	0,55	4	6	0,9	1,5
5	368	99	1	21	0,5	4	7	0,5	4
5	368	99	3	21	0,5	4	5	0,8	1,5
5	376	99	1	5	0,9	4,5	7	0,5	4
5	376	99	3	10	0,5	3,5	2	0,75	3
5	380	99	1	5	0,75	4	6	0,9	1,5
5	380	99	3	4	0,5	3,5	1	0,5	1,5
5	400	99	1	2	0,9	4,5	2	0,5	1,5
5	400	99	3	5	0,55	3,5	6	0,9	4,5
5	440	99	1	5	0,9	4,5	6	0,55	1,5
5	490	99	1	4	0,5	2	6	0,75	1,5
5	490	99	3	10	0,65	4	6	0,9	2
5	541	99	1	5	0,7	2,5	3	0,55	3
5	541	99	3	10	0,6	3	6	0,9	3
5	579	99	1	5	0,9	3	6	0,9	2
5	585	99	1	1	0,65	2	1	0,65	1,5
5	591	99	1	1	0,65	2,5	2	0,65	1,5

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
5	591	99	3	20	0,5	1,5	2	0,9	2
5	607	99	1	1	0,65	2	2	0,6	1,5
5	607	99	3	5	0,55	4	6	0,9	1,5
5	615	99	1	5	0,9	3	6	0,9	1,5
5	615	99	3	20	0,9	3	6	0,9	1,5
5	631	99	1	5	0,7	2	7	0,5	4
5	631	99	3	2	0,6	3,5	2	0,5	1,5
5	656	99	1	5	0,7	2	2	0,75	1,5
5	656	99	3	5	0,7	3,5	6	0,7	1,5
5	659	99	1	1	0,5	4	2	0,6	2
5	659	99	3	5	0,7	4	2	0,55	2
5	664	99	1	2	0,5	2,5	1	0,55	1,5
5	664	99	3	4	0,5	4	2	0,8	2
5	665	99	1	21	0,5	4	7	0,5	4
5	665	99	3	21	0,5	4	7	0,5	4
5	674	99	1	4	0,75	2	2	0,65	2
5	679	99	1	3	0,6	2	2	0,6	2,5
5	679	99	3	5	0,6	2,5	2	0,8	1,5
5	686	99	1	5	0,8	1,5	1	0,5	1,5
5	686	99	3	5	0,7	3	6	0,7	1,5
5	697	99	1	4	0,6	3	7	0,5	4
5	736	99	1	4	0,5	2	6	0,6	1,5
5	736	99	3	5	0,7	4	2	0,7	1,5
5	756	99	1	5	0,8	2,5	2	0,9	4
5	756	99	3	10	0,7	4	6	0,75	1,5
5	761	99	1	1	0,6	3	2	0,6	1,5
5	761	99	3	5	0,75	3	6	0,65	1,5
5	790	99	1	5	0,9	2,5	2	0,9	4,5
5	790	99	3	15	0,55	4	6	0,9	1,5
5	837	99	1	5	0,7	2	6	0,65	1,5
5	837	99	3	5	0,6	3,5	6	0,9	2
5	847	99	1	5	0,8	2,5	2	0,5	1,5
5	847	99	3	21	0,5	4	7	0,5	4
5	858	99	1	2	0,6	2,5	2	0,55	1,5
5	858	99	3	15	0,5	3,5	6	0,65	1,5
5	887	99	1	4	0,5	2,5	7	0,5	4
5	887	99	3	20	0,7	4	6	0,9	1,5
5	893	99	1	2	0,55	2,5	2	0,7	1,5
5	895	99	1	21	0,5	4	2	0,5	3
5	895	99	3	20	0,9	4	7	0,5	4
8	1	1	1	5	0,9	2	6	0,9	2
8	1	2	1	1	0,9	4,5	2	0,8	4
8	1	3	1	1	0,9	2,5	6	0,9	1,5
8	78	99	1	5	0,8	2,5	6	0,75	1,5
8	78	99	3	5	0,65	3,5	6	0,9	1,5
8	137	99	1	5	0,65	2,5	7	0,5	4
8	137	99	3	15	0,6	4	2	0,5	1,5

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
8	141	99	1	5	0,55	2	6	0,8	2
8	141	99	3	15	0,6	3,5	2	0,55	2
8	296	99	1	5	0,9	2,5	6	0,9	1,5
8	296	99	3	5	0,65	2	3	0,6	1,5
8	372	99	1	1	0,5	2	7	0,5	4
8	372	99	3	5	0,5	3,5	3	0,5	1,5
8	421	99	1	5	0,9	2	2	0,6	1,5
8	421	99	3	15	0,65	3	6	0,9	4,5
8	433	99	1	5	0,9	3,5	6	0,9	1,5
8	433	99	3	5	0,75	3	2	0,65	2
8	436	99	1	5	0,7	2,5	2	0,5	2
8	436	99	3	16	0,5	3	2	0,9	3
8	520	99	1	5	0,9	3	2	0,9	4,5
8	549	99	1	15	0,5	1,5	1	0,5	1,5
8	549	99	3	20	0,5	1,5	4	0,55	1,5
8	558	99	1	5	0,7	2,5	6	0,7	1,5
8	558	99	3	10	0,5	3	2	0,65	1,5
8	560	99	1	5	0,8	4	2	0,5	2
8	560	99	3	10	0,65	3,5	1	0,6	2
8	573	99	1	5	0,65	2,5	6	0,9	4,5
8	573	99	3	21	0,5	4	6	0,9	1,5
8	606	99	1	5	0,65	2	6	0,75	1,5
8	606	99	3	10	0,65	4	6	0,9	1,5
8	634	99	1	3	0,75	3	2	0,5	2
8	638	99	1	5	0,8	3	2	0,5	2,5
8	638	99	3	20	0,9	4,5	6	0,8	1,5
8	675	99	1	5	0,55	3,5	5	0,5	2,5
8	675	99	3	20	0,55	2	7	0,5	4
8	685	99	1	5	0,75	3	6	0,9	1,5
8	685	99	3	20	0,65	3	2	0,9	2
8	758	99	1	4	0,7	2,5	6	0,75	1,5
8	770	99	1	5	0,75	2	5	0,65	1,5
8	832	99	1	1	0,6	3	1	0,5	1,5
8	832	99	3	10	0,55	2,5	2	0,5	1,5
8	849	99	1	1	0,7	3	1	0,65	1,5
11	1	1	1	5	0,9	2	6	0,9	3
11	1	2	1	5	0,9	1,5	6	0,9	1,5
11	1	3	1	21	0,5	4	7	0,5	4
11	1	4	1	4	0,8	3	7	0,5	4
11	1	5	1	4	0,5	2,5	7	0,5	4
11	1	6	1	4	0,75	2,5	7	0,5	4
11	1	7	1	2	0,8	3,5	7	0,5	4
11	1	8	1	4	0,9	2	6	0,9	4
11	1	9	1	5	0,9	2	6	0,9	3,5
11	1	10	1	2	0,9	4,5	6	0,9	3,5
11	1	11	1	2	0,8	3,5	7	0,5	4
11	1	12	1	4	0,9	2	6	0,9	3,5

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
11	1	13	1	5	0,9	3	6	0,9	3
11	1	14	1	3	0,9	3,5	2	0,9	3
11	1	15	1	2	0,9	4,5	6	0,9	2,5
11	1	16	1	2	0,65	1,5	2	0,65	3
11	1	17	1	3	0,9	4,5	1	0,5	2
11	1	18	1	2	0,9	3	6	0,9	4
11	1	19	1	2	0,65	3	7	0,5	4
13	1	1	1	5	0,75	3,5	2	0,8	3
13	1	2	1	20	0,9	3,5	2	0,6	2,5
13	1	3	1	5	0,8	3	6	0,9	2
13	1	4	1	5	0,9	3,5	7	0,5	4
13	1	5	1	3	0,6	4	2	0,55	2
13	1	6	1	5	0,9	3	2	0,5	2
13	1	7	1	5	0,8	3	6	0,9	2
13	1	8	1	5	0,9	3,5	6	0,9	2
13	1	9	1	5	0,8	4	6	0,9	2
13	1	10	1	3	0,5	3,5	6	0,9	3
13	1	11	1	10	0,6	4	6	0,9	2
13	1	12	1	4	0,75	3	6	0,9	1,5
13	1	13	1	10	0,9	4,5	6	0,9	3,5
13	1	14	1	4	0,7	3,5	2	0,8	4
13	1	15	1	5	0,9	3,5	6	0,9	2
13	6	99	1	4	0,5	4	2	0,55	1,5
13	6	99	3	5	0,6	4	6	0,9	1,5
13	52	99	1	5	0,9	3	2	0,5	2,5
13	52	99	3	5	0,65	4	2	0,9	3,5
13	140	99	1	5	0,75	2	2	0,5	1,5
13	140	99	3	5	0,5	4	2	0,55	1,5
13	160	99	1	1	0,55	3,5	2	0,55	1,5
13	222	99	1	5	0,7	2,5	2	0,65	1,5
13	222	99	3	10	0,55	3,5	5	0,6	1,5
13	244	99	1	5	0,65	2	7	0,5	4
13	244	99	3	21	0,5	4	6	0,9	1,5
13	430	99	1	5	0,9	3	6	0,9	2,5
13	430	99	3	20	0,8	2,5	2	0,8	2
13	433	99	1	1	0,55	2,5	7	0,5	4
13	433	99	3	5	0,6	2	2	0,5	1,5
13	442	99	1	5	0,75	2	6	0,7	1,5
13	442	99	3	15	0,55	3,5	2	0,5	1,5
13	468	99	1	5	0,9	4	6	0,9	1,5
13	468	99	3	20	0,9	3,5	7	0,5	4
13	647	99	1	21	0,5	4	7	0,5	4
13	647	99	3	21	0,5	4	6	0,5	1,5
13	654	99	1	5	0,8	2	6	0,6	1,5
13	657	99	1	5	0,8	3,5	2	0,5	2,5
13	657	99	3	20	0,55	4	6	0,9	3
13	667	99	1	5	0,7	2,5	5	0,9	1,5

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
13	667	99	3	20	0,65	2	6	0,9	2,5
13	670	99	1	1	0,5	4	7	0,5	4
13	673	99	1	2	0,65	2,5	2	0,55	1,5
13	673	99	3	15	0,5	3,5	6	0,9	1,5
13	683	99	1	3	0,6	3,5	5	0,6	1,5
13	688	99	1	2	0,75	3	2	0,5	2
13	688	99	3	15	0,6	4	2	0,55	1,5
13	760	99	1	5	0,8	1,5	2	0,9	1,5
13	836	99	1	5	0,9	4,5	6	0,7	1,5
13	836	99	3	10	0,65	3,5	2	0,7	3
13	838	99	1	5	0,7	2	1	0,5	1,5
13	838	99	3	20	0,5	3	1	0,5	1,5
13	873	99	1	3	0,5	4	6	0,75	1,5
13	873	99	3	20	0,65	2,5	6	0,9	1,5
13	894	99	1	5	0,75	2	2	0,7	2
13	894	99	3	21	0,5	4	1	0,9	2,5
15	1	99	1	5	0,9	2,5	7	0,5	4
15	1	99	3	9	0,5	4	6	0,65	1,5
15	176	99	1	5	0,8	2,5	6	0,75	3
15	176	99	3	5	0,65	4	2	0,8	2
15	238	99	1	5	0,8	3	6	0,9	1,5
15	238	99	3	21	0,5	4	2	0,9	4
15	299	99	1	4	0,55	2,5	7	0,5	4
15	299	99	3	20	0,5	2,5	2	0,55	1,5
15	407	99	1	1	0,55	2,5	2	0,55	3
15	407	99	3	15	0,65	4	2	0,7	1,5
15	469	99	1	1	0,75	2,5	2	0,6	1,5
15	469	99	3	5	0,5	4	6	0,9	1,5
15	491	99	1	1	0,75	2	2	0,7	2
15	491	99	3	5	0,6	3,5	2	0,6	1,5
15	516	99	1	5	0,75	2	6	0,8	1,5
15	516	99	3	5	0,65	4	2	0,55	1,5
15	572	99	1	5	0,9	4,5	6	0,9	4,5
15	572	99	3	5	0,75	3	6	0,9	4,5
15	646	99	1	1	0,7	2	1	0,7	1,5
15	646	99	3	5	0,65	2	6	0,9	1,5
15	693	99	1	5	0,65	2	1	0,6	2,5
15	693	99	3	5	0,55	2,5	6	0,5	1,5
15	753	99	1	5	0,75	3,5	6	0,9	4,5
15	753	99	3	21	0,5	4	6	0,9	1,5
15	759	99	1	5	0,9	4,5	2	0,65	4
15	759	99	3	10	0,6	3,5	6	0,9	1,5
15	806	99	1	2	0,75	2	1	0,55	1,5
15	806	99	3	4	0,7	2,5	1	0,55	1,5
17	1	0	1	5	0,9	2	6	0,9	2
17	1	0	3	5	0,55	3,5	6	0,9	1,5
17	13	99	1	5	0,6	4	2	0,55	2,5

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
17	13	99	3	20	0,6	4	6	0,6	1,5
17	42	99	1	5	0,7	3	2	0,5	2
17	42	99	3	15	0,6	4	6	0,9	4
17	50	99	1	1	0,5	2,5	6	0,7	1,5
17	50	99	3	20	0,75	3,5	6	0,9	1,5
17	174	99	1	5	0,8	2,5	6	0,9	4,5
17	174	99	3	20	0,5	3	2	0,9	3,5
17	272	99	1	3	0,5	2,5	2	0,5	1,5
17	272	99	3	5	0,55	3	6	0,9	1,5
17	380	99	1	5	0,7	2,5	2	0,55	2,5
17	380	99	3	5	0,7	3	1	0,75	2,5
17	433	99	1	5	0,75	2,5	2	0,5	2
17	433	99	3	21	0,5	4	6	0,5	1,5
17	486	99	1	5	0,75	3	4	0,55	1,5
17	486	99	3	5	0,65	3,5	6	0,9	1,5
17	513	99	1	5	0,75	3	2	0,5	1,5
17	513	99	3	10	0,6	3	2	0,5	1,5
17	524	99	1	5	0,7	2	2	0,5	2
17	524	99	3	5	0,5	4	6	0,8	1,5
17	541	99	1	4	0,7	2	2	0,9	2
17	541	99	3	5	0,6	3	6	0,9	1,5
17	614	99	1	1	0,6	3,5	6	0,9	1,5
17	653	99	1	5	0,6	3,5	6	0,9	4,5
17	653	99	3	10	0,5	4	2	0,7	1,5
17	777	99	1	5	0,8	2,5	2	0,7	2
17	777	99	3	5	0,6	3	6	0,75	1,5
17	873	99	1	1	0,65	2,5	2	0,75	2
17	873	99	3	10	0,8	3	1	0,5	2
17	877	99	1	21	0,5	4	7	0,5	4
17	877	99	3	21	0,5	4	5	0,65	1,5
18	1	99	1	5	0,75	2,5	6	0,9	4,5
18	1	99	3	15	0,7	3,5	6	0,9	1,5
18	205	99	1	2	0,5	4	2	0,6	1,5
18	205	99	3	21	0,5	4	7	0,5	4
18	247	99	1	5	0,75	3	1	0,6	2
18	592	99	1	5	0,9	3,5	2	0,65	2
18	592	99	3	21	0,5	4	5	0,6	2
18	753	99	1	2	0,7	2	1	0,55	2
18	753	99	3	21	0,5	4	1	0,5	1,5
19	1	99	1	4	0,5	2	6	0,75	1,5
19	1	99	3	5	0,65	3,5	6	0,9	4,5
19	100	99	1	5	0,5	3,5	1	0,6	4
19	100	99	3	5	0,7	4	6	0,9	1,5
19	142	99	1	5	0,75	3	2	0,6	2,5
19	142	99	3	5	0,6	3,5	7	0,5	4
19	212	99	1	5	0,8	3	7	0,5	4
19	212	99	3	21	0,5	4	2	0,75	1,5

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
19	318	99	1	5	0,9	4,5	2	0,9	2,5
19	455	99	1	1	0,55	2,5	7	0,5	4
19	455	99	3	15	0,55	3,5	6	0,9	2,5
19	513	99	1	2	0,7	2	2	0,6	1,5
19	513	99	3	10	0,6	3,5	1	0,9	2,5
19	532	99	1	5	0,75	2	2	0,9	4,5
19	532	99	3	21	0,5	4	6	0,8	1,5
19	548	99	1	5	0,7	2	2	0,5	1,5
19	548	99	3	5	0,75	4	6	0,9	1,5
19	573	99	1	5	0,75	2	7	0,5	4
19	573	99	3	10	0,5	4	1	0,5	2,5
19	698	99	1	3	0,6	2,5	2	0,65	1,5
19	698	99	3	21	0,5	4	7	0,5	4
19	780	99	1	12	0,7	3	7	0,5	4
19	780	99	3	5	0,55	2,5	2	0,9	4
19	807	99	1	5	0,9	3	2	0,6	1,5
19	807	99	3	5	0,65	3,5	6	0,8	1,5
19	845	99	1	5	0,75	2,5	6	0,8	1,5
19	845	99	3	20	0,55	2,5	1	0,7	2,5
20	1	99	1	4	0,9	3,5	6	0,9	1,5
20	1	99	3	10	0,5	3	6	0,8	1,5
20	11	99	1	5	0,8	2	2	0,5	1,5
20	11	99	3	10	0,55	4	2	0,75	3,5
20	13	99	1	5	0,75	2,5	2	0,5	1,5
20	13	99	3	20	0,9	4,5	6	0,9	4,5
20	32	99	1	5	0,65	2	2	0,6	1,5
20	32	99	3	20	0,9	4	6	0,9	2
20	45	99	1	5	0,9	4,5	2	0,9	4,5
20	45	99	3	20	0,75	3,5	6	0,9	2,5
20	60	99	1	5	0,8	2	6	0,75	1,5
20	60	99	3	5	0,6	3	1	0,6	1,5
20	175	99	1	2	0,5	3,5	6	0,5	1,5
20	175	99	3	20	0,7	2,5	6	0,9	1,5
20	178	99	1	5	0,75	2,5	2	0,7	2
20	178	99	3	20	0,55	3,5	2	0,9	3
20	228	99	1	5	0,9	3,5	2	0,9	3
20	228	99	3	20	0,65	3	6	0,9	1,5
20	238	99	1	5	0,8	3	6	0,75	1,5
20	238	99	3	19	0,5	4	2	0,6	1,5
20	250	99	1	3	0,5	3	1	0,7	1,5
20	250	99	3	10	0,65	3,5	6	0,9	1,5
20	295	99	1	5	0,75	2	2	0,55	1,5
20	295	99	3	5	0,65	2	2	0,55	1,5
20	310	99	1	15	0,6	4	2	0,6	4
20	310	99	3	21	0,5	4	4	0,5	2
20	383	99	1	5	0,7	2	1	0,6	1,5
20	383	99	3	10	0,55	4	2	0,75	1,5

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
20	400	99	1	5	0,75	2	2	0,55	1,5
20	400	99	3	20	0,55	2,5	7	0,5	4
20	517	99	1	5	0,8	3	2	0,6	1,5
20	517	99	3	15	0,6	4	2	0,9	3,5
20	550	99	1	4	0,55	2,5	2	0,5	1,5
20	550	99	3	15	0,5	3,5	2	0,5	1,5
20	570	99	1	3	0,55	2	2	0,6	1,5
20	570	99	3	20	0,7	4	2	0,5	1,5
20	614	99	1	1	0,7	2	2	0,6	1,5
20	614	99	3	5	0,6	3,5	2	0,5	1,5
20	621	99	1	5	0,75	2	1	0,5	1,5
20	621	99	3	20	0,65	4	6	0,9	1,5
20	710	99	1	5	0,9	4,5	2	0,9	3
20	710	99	3	10	0,5	4	1	0,9	3,5
20	750	99	1	5	0,9	3,5	5	0,5	2
20	750	99	3	10	0,55	3,5	2	0,6	1,5
20	770	99	1	3	0,5	4	2	0,5	1,5
20	770	99	3	5	0,5	3,5	2	0,5	2,5
23	1	99	1	5	0,9	2	6	0,9	1,5
23	1	99	3	5	0,65	3	6	0,9	1,5
23	68	99	1	5	0,65	2	6	0,8	1,5
23	68	99	3	10	0,5	4	2	0,75	2,5
23	162	99	1	5	0,8	3	6	0,9	1,5
23	162	99	3	5	0,7	3,5	6	0,9	4,5
23	182	99	1	5	0,8	2	6	0,65	1,5
23	182	99	3	5	0,6	3	6	0,55	1,5
23	189	99	1	4	0,8	4	2	0,5	1,5
23	189	99	3	5	0,8	3	1	0,75	2
23	350	99	1	5	0,75	2,5	2	0,55	1,5
23	350	99	3	15	0,55	3,5	2	0,7	1,5
23	417	99	1	5	0,8	4	2	0,65	4
23	417	99	3	5	0,5	3,5	2	0,5	1,5
23	466	99	1	5	0,9	2,5	6	0,9	2
23	466	99	3	21	0,5	4	6	0,9	4
23	555	99	1	5	0,9	3	6	0,7	2
23	555	99	3	5	0,7	3,5	3	0,65	1,5
23	570	99	1	5	0,75	3	1	0,6	2,5
23	570	99	3	5	0,65	4	6	0,9	2
23	580	99	1	1	0,6	4	2	0,5	2
23	580	99	3	21	0,5	4	3	0,55	4
23	660	99	1	5	0,8	2,5	2	0,5	1,5
23	660	99	3	15	0,6	3,5	6	0,9	1,5
23	672	99	1	5	0,75	2	2	0,5	1,5
23	672	99	3	10	0,75	2	2	0,9	2
23	675	99	1	5	0,8	2	1	0,55	1,5
23	675	99	3	5	0,75	3	2	0,55	1,5
23	807	99	1	5	0,9	4,5	2	0,5	1,5

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
23	807	99	3	5	0,65	4	6	0,9	1,5
23	855	99	1	5	0,9	2,5	2	0,7	2
23	855	99	3	10	0,65	4	2	0,7	3
25	1	99	1	5	0,65	2	2	0,55	1,5
25	1	99	3	10	0,7	3	1	0,55	2
25	53	99	1	5	0,7	2,5	2	0,6	3
25	53	99	3	15	0,55	3	2	0,55	1,5
25	99	99	1	3	0,8	3	2	0,6	2,5
25	99	99	3	9	0,5	3,5	1	0,5	3,5
25	126	99	1	4	0,9	4,5	2	0,5	2,5
25	126	99	3	5	0,7	4	6	0,9	1,5
25	151	99	1	5	0,7	2,5	2	0,55	2,5
25	151	99	3	5	0,55	2,5	6	0,65	1,5
25	175	99	1	5	0,75	2	6	0,75	2,5
25	175	99	3	5	0,8	1,5	2	0,5	1,5
25	181	99	1	5	0,7	3,5	1	0,7	1,5
25	181	99	3	5	0,5	4	6	0,9	2
25	183	99	1	21	0,5	4	7	0,5	4
25	183	99	3	15	0,5	1,5	5	0,6	1,5
25	214	99	1	2	0,75	3	1	0,5	3
25	214	99	3	5	0,6	2,5	6	0,8	1,5
25	245	99	1	5	0,7	2,5	1	0,8	3,5
25	245	99	3	5	0,5	4	6	0,9	1,5
25	269	99	1	5	0,9	2,5	7	0,5	4
25	269	99	3	5	0,75	3	2	0,6	1,5
25	286	99	1	5	0,9	4,5	7	0,5	4
25	286	99	3	10	0,6	3	2	0,8	2
25	290	99	1	5	0,9	2,5	6	0,9	2
25	290	99	3	5	0,6	4	6	0,9	2
25	295	99	1	2	0,75	1,5	1	0,9	1,5
25	295	99	3	5	0,65	2,5	2	0,5	1,5
25	307	99	1	10	0,9	3,5	2	0,55	4
25	307	99	3	5	0,5	3	2	0,6	1,5
25	320	99	1	1	0,55	2,5	2	0,5	2
25	320	99	3	21	0,5	4	2	0,5	3
25	322	99	1	1	0,8	2	1	0,65	2
25	322	99	3	5	0,7	3,5	2	0,8	2,5
25	377	99	1	3	0,7	2	4	0,6	3
25	386	99	1	1	0,5	3	1	0,6	3
25	386	99	3	20	0,9	2,5	6	0,9	2,5
25	394	99	1	5	0,65	2,5	2	0,5	1,5
25	394	99	3	20	0,6	4	7	0,5	4
25	430	99	1	5	0,9	4,5	7	0,5	4
25	430	99	3	5	0,7	4	6	0,9	1,5
25	473	99	1	5	0,9	2,5	6	0,75	1,5
25	473	99	3	20	0,8	2	2	0,6	1,5
25	486	99	1	1	0,5	2	2	0,65	4

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
25	486	99	3	5	0,65	3,5	2	0,65	1,5
25	513	99	1	4	0,65	2,5	2	0,5	1,5
25	513	99	3	21	0,5	4	2	0,8	2,5
25	572	99	1	5	0,8	2,5	2	0,6	2
25	572	99	3	5	0,55	4	2	0,9	4,5
25	649	99	1	5	0,55	3,5	1	0,55	1,5
25	649	99	3	20	0,65	4	2	0,55	2
25	740	99	1	2	0,9	4	6	0,9	3,5
25	740	99	3	4	0,5	3,5	6	0,6	1,5
25	743	99	1	4	0,6	3	2	0,65	2,5
25	743	99	3	5	0,55	4	6	0,8	1,5
25	754	1	1	5	0,65	4	7	0,5	4
25	754	2	1	5	0,75	3,5	7	0,5	4
25	754	3	1	4	0,6	4	7	0,5	4
25	754	4	1	14	0,55	4	6	0,6	3
25	754	5	1	21	0,5	4	6	0,75	2,5
25	754	6	1	5	0,65	4	6	0,9	3,5
25	754	99	1	21	0,5	4	7	0,5	4
25	754	99	3	1	0,8	2,5	1	0,65	3
25	758	99	1	1	0,7	3	1	0,55	3,5
25	758	99	3	2	0,5	2	6	0,7	1,5
25	772	99	1	5	0,7	1,5	2	0,6	1,5
25	785	99	1	3	0,8	2,5	2	0,55	3,5
25	785	99	3	5	0,6	2	2	0,5	1,5
25	815	99	1	4	0,75	2,5	1	0,5	3,5
25	815	99	3	17	0,6	4	2	0,6	3
25	817	99	1	5	0,7	1,5	1	0,55	3
25	817	99	3	5	0,7	2,5	2	0,75	2,5
25	843	99	1	5	0,7	2	6	0,8	2,5
25	843	99	3	15	0,6	4	2	0,55	1,5
25	845	99	1	1	0,7	2,5	2	0,9	2,5
25	845	99	3	5	0,55	2,5	2	0,55	1,5
25	873	99	1	5	0,75	2,5	2	0,6	1,5
25	873	99	3	2	0,5	4	2	0,55	1,5
25	875	99	1	3	0,55	3,5	6	0,9	4,5
25	875	99	3	10	0,55	4	6	0,9	4,5
25	899	99	1	5	0,9	4,5	7	0,5	4
25	899	99	3	5	0,7	3,5	6	0,9	2
27	1	99	1	5	0,9	2,5	4	0,75	4
27	361	99	1	4	0,7	3	2	0,6	1,5
27	787	99	1	3	0,5	3	2	0,6	1,5
41	1	99	1	5	0,9	2,5	5	0,8	4
41	1	99	3	5	0,5	3,5	2	0,9	4,5
41	16	99	1	2	0,75	2,5	2	0,55	1,5
41	16	99	3	5	0,6	2,5	2	0,55	2
41	20	99	1	3	0,6	2	7	0,5	4
41	132	99	1	4	0,9	3	6	0,9	1,5

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
41	132	99	3	5	0,7	2,5	6	0,6	1,5
41	298	99	1	5	0,9	2,5	2	0,55	2
41	298	99	3	5	0,55	4	2	0,5	2
41	306	99	1	1	0,7	3	2	0,6	1,5
41	306	99	3	7	0,55	4	6	0,9	1,5
41	349	99	1	1	0,7	2	2	0,65	1,5
41	349	99	3	10	0,55	3,5	1	0,7	1,5
41	396	99	1	2	0,5	3,5	2	0,5	2
41	396	99	3	5	0,65	2,5	6	0,9	4,5
41	524	99	1	1	0,65	2,5	2	0,6	1,5
41	524	99	3	3	0,6	4	6	0,75	1,5
41	551	99	1	20	0,9	4	4	0,5	4
41	551	99	3	5	0,9	4	1	0,5	4
41	615	99	1	2	0,65	3	1	0,5	1,5
41	615	99	3	10	0,65	3,5	2	0,6	2
41	668	99	1	1	0,7	3	1	0,55	2
41	668	99	3	2	0,55	4	6	0,65	1,5
41	799	99	1	1	0,65	2,5	2	0,75	2
41	799	99	3	20	0,6	2,5	7	0,5	4
41	801	99	1	3	0,75	2,5	1	0,75	1,5
41	801	99	3	5	0,65	3	2	0,55	1,5
41	807	99	1	1	0,55	3,5	2	0,6	1,5
41	807	99	3	5	0,55	4	2	0,6	1,5
41	885	99	1	1	0,8	2	1	0,7	1,5
44	1	99	1	2	0,6	2,5	7	0,5	4
44	35	99	1	1	0,65	2	7	0,5	4
44	78	99	1	9	0,5	2	7	0,5	4
44	78	99	3	5	0,9	3,5	2	0,75	2,5
44	90	99	1	5	0,7	2,5	2	0,8	1,5
44	98	99	1	5	0,7	2,5	1	0,55	2
44	110	99	1	1	0,75	3	1	0,65	1,5
44	279	99	1	5	0,75	2,5	6	0,5	2
44	279	99	3	21	0,5	4	6	0,9	2,5
44	378	99	1	2	0,55	1,5	3	0,5	3,5
44	560	99	1	1	0,8	3	7	0,5	4
44	650	99	1	5	0,6	2	7	0,5	4
44	650	99	3	5	0,75	3	2	0,9	4,5
44	847	99	1	3	0,5	4	1	0,65	2
44	855	99	1	3	0,8	2,5	2	0,5	3,5
44	874	99	1	5	0,9	2	1	0,55	3
47	1	99	1	3	0,65	4	2	0,5	2
47	1	99	3	10	0,9	3,5	6	0,9	2
47	30	99	1	5	0,7	2,5	2	0,5	1,5
47	30	99	3	15	0,5	3	6	0,8	1,5
47	53	99	1	21	0,5	4	4	0,7	4
47	53	99	3	20	0,65	4	1	0,5	2
47	58	99	1	10	0,75	4	3	0,55	2

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
47	58	99	3	5	0,5	4	6	0,5	1,5
47	170	99	1	5	0,7	2,5	2	0,5	1,5
47	170	99	3	10	0,65	4	2	0,55	1,5
47	189	99	1	5	0,8	2,5	2	0,55	1,5
47	245	99	1	5	0,7	2,5	6	0,65	1,5
47	245	99	3	5	0,5	3,5	2	0,9	3,5
47	268	99	1	5	0,7	2	6	0,9	4,5
47	268	99	3	15	0,5	4	6	0,9	1,5
47	288	99	1	5	0,9	4,5	2	0,65	1,5
47	318	99	1	3	0,7	3,5	2	0,5	2
47	318	99	3	15	0,75	4	2	0,9	3
47	551	99	1	15	0,75	2	2	0,55	1,5
47	551	99	3	15	0,5	4	6	0,75	1,5
47	555	99	1	5	0,9	3,5	6	0,9	2,5
47	555	99	3	5	0,5	4	6	0,9	1,5
47	570	99	1	5	0,65	2,5	2	0,9	3
47	570	99	3	5	0,55	2	6	0,7	1,5
47	605	99	1	5	0,6	2,5	1	0,5	1,5
47	605	99	3	21	0,5	4	1	0,6	2
47	707	99	1	5	0,75	3,5	2	0,55	2
47	707	99	3	5	0,55	3,5	6	0,9	1,5
47	745	99	1	5	0,8	2,5	3	0,55	1,5
47	745	99	3	5	0,7	3	6	0,9	1,5
47	798	99	1	5	0,7	3	2	0,55	1,5
47	798	99	3	15	0,5	4	6	0,9	1,5
47	980	99	1	10	0,75	4	6	0,9	2,5
47	980	99	3	5	0,9	3,5	2	0,5	2,5
50	1	99	1	5	0,8	2	6	0,7	2,5
50	1	99	3	10	0,55	4	2	0,9	2,5
50	6	99	1	2	0,55	3,5	1	0,5	4
50	6	99	3	10	0,65	3,5	6	0,9	1,5
50	226	99	1	5	0,7	2	2	0,5	1,5
50	226	99	3	14	0,55	3	2	0,75	2
50	313	99	1	5	0,9	3	2	0,75	3,5
50	313	99	3	5	0,65	2,5	6	0,9	1,5
50	573	99	1	5	0,75	2,5	1	0,5	2
50	573	99	3	15	0,65	2	1	0,6	1,5
50	689	99	1	4	0,9	4	2	0,55	2
50	689	99	3	10	0,5	3,5	1	0,55	1,5
52	1	99	1	5	0,7	2,5	7	0,5	4
52	1	99	3	5	0,8	2,5	6	0,9	1,5
52	356	99	1	4	0,7	3	2	0,9	3
52	356	99	3	2	0,5	3,5	6	0,8	1,5
52	378	99	1	5	0,7	2	2	0,9	4
52	378	99	3	5	0,55	2,5	2	0,9	3
52	399	99	1	5	0,7	3	2	0,55	2
52	399	99	3	5	0,5	3,5	6	0,9	1,5

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
52	490	99	1	21	0,5	4	1	0,5	1,5
52	678	99	1	4	0,7	4	2	0,55	2
52	683	99	1	5	0,8	2,5	2	0,5	1,5
52	683	99	3	5	0,5	3,5	2	0,65	2,5
52	835	99	1	5	0,9	3	6	0,9	1,5
52	838	99	1	10	0,9	3	2	0,5	3,5
52	838	99	3	15	0,6	3	6	0,9	1,5
54	1	1	1	5	0,65	4	6	0,9	1,5
54	1	2	1	21	0,5	4	6	0,9	2,5
54	1	3	1	10	0,9	4	6	0,9	1,5
54	1	4	1	5	0,9	2,5	6	0,9	2
54	1	5	1	21	0,5	4	6	0,9	2,5
54	1	6	1	5	0,9	2,5	6	0,9	1,5
54	1	7	1	2	0,7	2	6	0,9	1,5
54	1	8	1	5	0,9	3	2	0,5	2
54	1	9	1	20	0,9	4	7	0,5	4
54	1	10	1	20	0,9	3,5	6	0,9	2
54	3	99	1	1	0,65	2	2	0,55	2
54	3	99	3	5	0,5	4	6	0,7	1,5
54	172	99	1	4	0,75	2,5	1	0,5	2
54	172	99	3	5	0,5	3	2	0,5	1,5
54	206	99	1	5	0,7	2,5	6	0,9	1,5
54	206	99	3	20	0,9	4,5	6	0,9	1,5
54	261	99	1	2	0,5	2	6	0,6	1,5
54	261	99	3	10	0,5	3,5	2	0,75	1,5
54	405	99	1	5	0,9	2,5	6	0,9	2
54	405	99	3	3	0,5	3	1	0,65	1,5
54	498	99	1	5	0,9	4,5	6	0,9	4,5
54	518	99	1	5	0,75	2,5	6	0,8	2,5
54	518	99	3	21	0,5	4	7	0,5	4
54	553	99	1	1	0,5	3	1	0,5	1,5
54	599	99	1	1	0,5	2	1	0,75	1,5
54	599	99	3	15	0,7	2,5	5	0,9	1,5
54	810	99	1	5	0,75	2	2	0,55	2
54	810	99	3	5	0,5	3,5	6	0,55	1,5
54	874	99	1	5	0,9	2,5	6	0,9	4,5
54	874	99	3	4	0,5	4	1	0,55	1,5
63	1	1	1	5	0,75	2,5	3	0,65	3
63	1	2	1	5	0,6	3,5	6	0,55	1,5
63	1	3	1	5	0,7	2,5	7	0,5	4
63	1	4	1	10	0,65	4	5	0,9	4
63	1	5	1	10	0,65	3	4	0,5	2
63	1	6	1	5	0,7	2,5	2	0,5	3
63	1	7	1	15	0,8	3,5	6	0,9	2,5
63	1	8	1	20	0,75	3	6	0,9	1,5
63	1	9	1	10	0,6	4	6	0,9	1,5
63	1	10	1	5	0,7	4	6	0,9	1,5

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
63	130	99	1	5	0,7	2	6	0,9	4,5
63	130	99	3	5	0,6	3,5	6	0,9	1,5
63	190	99	1	5	0,8	2	2	0,5	2,5
63	190	99	3	7	0,5	4	2	0,5	2
63	212	99	1	1	0,65	3,5	1	0,65	1,5
63	212	99	3	10	0,5	2,5	1	0,5	1,5
63	272	99	1	5	0,7	2	2	0,5	1,5
63	272	99	3	10	0,55	3,5	2	0,5	1,5
63	302	99	1	4	0,65	2,5	2	0,65	2
63	302	99	3	12	0,5	3,5	6	0,7	1,5
63	401	99	1	5	0,9	4,5	6	0,7	2
63	401	99	3	2	0,5	3,5	2	0,65	1,5
63	470	99	1	5	0,75	2	6	0,65	1,5
63	470	99	3	10	0,55	4	2	0,5	2,5
63	548	99	1	5	0,7	3	2	0,9	4,5
63	548	99	3	15	0,55	4	2	0,9	4,5
63	594	99	1	5	0,7	2	2	0,5	1,5
63	594	99	3	10	0,55	4	5	0,65	1,5
63	690	99	1	1	0,7	3	1	0,6	3
63	690	99	3	10	0,55	3	1	0,65	1,5
66	1	0	1	5	0,9	3,5	5	0,9	4
66	1	0	3	5	0,9	4,5	2	0,5	1,5
66	45	99	1	9	0,5	3	7	0,5	4
66	45	99	3	21	0,5	4	1	0,5	1,5
66	88	99	1	5	0,55	1,5	2	0,5	1,5
66	88	99	3	5	0,6	3,5	6	0,8	1,5
66	170	0	1	5	0,8	3	6	0,9	2
66	170	0	3	5	0,6	3,5	2	0,9	3
66	400	99	1	5	0,9	4,5	6	0,9	4,5
66	440	99	1	3	0,6	2	1	0,5	1,5
66	440	99	3	10	0,65	3	2	0,6	2
66	594	99	1	5	0,7	2	1	0,55	2,5
66	594	99	3	21	0,5	4	6	0,75	1,5
66	682	99	1	5	0,9	3	6	0,9	2
66	682	99	3	5	0,55	4	2	0,8	2,5
68	1	1	1	5	0,75	4	7	0,5	4
68	1	2	1	10	0,7	4	6	0,9	4
68	1	3	1	5	0,9	3,5	6	0,9	4,5
68	1	4	1	21	0,5	4	6	0,55	3
68	1	5	1	5	0,65	2,5	6	0,7	2,5
68	1	6	1	10	0,7	4	6	0,9	2
68	1	7	1	5	0,7	2	6	0,7	1,5
68	1	8	1	10	0,6	3,5	2	0,8	3,5
68	1	9	1	15	0,6	4	4	0,5	1,5
68	1	10	1	5	0,9	4,5	5	0,5	1,5
68	1	11	1	10	0,75	4	3	0,5	2
68	1	12	1	5	0,65	2,5	6	0,9	1,5

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
68	1	13	1	5	0,9	4,5	6	0,9	1,5
68	1	14	1	20	0,9	3,5	2	0,9	4,5
68	1	15	1	21	0,5	4	6	0,75	2
68	1	16	1	15	0,7	4	6	0,5	1,5
68	77	99	1	5	0,9	2,5	6	0,9	3
68	77	99	3	5	0,6	2,5	7	0,5	4
68	81	99	1	5	0,9	2,5	6	0,9	2
68	81	99	3	19	0,55	4	7	0,5	4
68	190	99	1	4	0,6	4	2	0,55	2,5
68	190	99	3	5	0,7	3	6	0,9	1,5
68	276	99	1	5	0,9	2,5	7	0,5	4
68	276	99	3	5	0,9	4,5	1	0,5	4
68	307	99	1	5	0,8	2,5	2	0,9	3,5
68	307	99	3	5	0,75	3,5	1	0,9	2,5
68	406	99	1	21	0,5	4	7	0,5	4
68	406	99	3	5	0,7	3,5	2	0,5	1,5
68	432	99	1	5	0,8	2,5	6	0,9	1,5
68	432	99	3	10	0,6	4	6	0,9	1,5
68	500	99	1	21	0,5	4	5	0,9	4
68	500	99	3	5	0,5	1,5	6	0,5	1,5
68	547	99	1	5	0,8	2,5	7	0,5	4
68	547	99	3	3	0,5	2	2	0,9	2,5
68	549	99	1	21	0,5	4	3	0,75	3,5
68	549	99	3	4	0,5	3,5	2	0,75	2,5
68	572	99	1	5	0,7	2	1	0,6	1,5
68	572	99	3	5	0,55	4	2	0,55	1,5
68	575	99	1	5	0,9	4,5	1	0,5	2
68	575	99	3	15	0,55	3,5	2	0,65	1,5
68	615	99	1	2	0,55	4	2	0,5	3
68	615	99	3	15	0,8	4	6	0,9	1,5
68	655	99	1	5	0,9	2,5	2	0,5	2
68	655	99	3	5	0,6	3	2	0,55	1,5
68	679	99	1	5	0,75	2	6	0,9	4,5
68	679	99	3	5	0,5	3,5	6	0,65	1,5
68	689	99	1	4	0,6	1,5	2	0,5	1,5
68	689	99	3	5	0,55	3,5	2	0,55	2,5
68	755	99	1	5	0,8	2	6	0,65	1,5
68	755	99	3	5	0,6	2,5	6	0,55	1,5
68	861	99	1	5	0,75	2	2	0,5	1,5
68	861	99	3	10	0,65	3	7	0,5	4
68	895	99	1	2	0,7	4	1	0,65	1,5
68	895	99	3	5	0,55	4	2	0,9	4,5
70	1	99	1	5	0,9	2	6	0,9	1,5
70	1	99	3	5	0,8	4	6	0,8	1,5
70	215	99	1	3	0,55	4	1	0,55	2
70	215	99	3	5	0,7	3	2	0,7	1,5
70	235	99	1	3	0,6	4	2	0,5	1,5

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
70	235	99	3	5	0,6	3,5	6	0,9	1,5
70	418	99	1	5	0,65	2	1	0,5	1,5
70	418	99	3	15	0,55	3,5	6	0,55	1,5
70	429	99	1	5	0,65	2	2	0,7	1,5
70	429	99	3	5	0,6	2,5	6	0,9	1,5
70	508	99	1	5	0,75	3	7	0,5	4
70	508	99	3	20	0,55	4	5	0,5	1,5
70	670	99	1	5	0,75	2	1	0,5	1,5
70	670	99	3	15	0,55	3	6	0,9	1,5
70	678	99	1	10	0,6	3,5	5	0,55	1,5
70	678	99	3	5	0,7	2	1	0,5	1,5
70	702	99	1	5	0,65	2,5	2	0,65	1,5
70	702	99	3	5	0,55	3,5	7	0,5	4
70	708	99	1	5	0,9	3	7	0,5	4
70	708	99	3	5	0,7	2,5	7	0,5	4
70	713	99	1	5	0,6	2,5	2	0,5	1,5
70	713	99	3	5	0,65	2,5	6	0,9	4,5
70	717	99	1	1	0,5	2,5	6	0,9	1,5
70	717	99	3	5	0,65	3	1	0,6	1,5
70	742	99	1	5	0,75	3	1	0,8	3
70	742	99	3	4	0,5	4	7	0,5	4
70	771	99	1	10	0,5	2,5	7	0,5	4
70	771	99	3	5	0,9	2,5	2	0,9	2,5
70	820	99	1	5	0,7	2	6	0,9	1,5
70	820	99	3	10	0,6	4	6	0,75	1,5
70	823	99	1	1	0,55	4	2	0,55	2
70	823	99	3	5	0,55	4	2	0,55	1,5
73	1	99	1	2	0,75	3	6	0,9	2
73	1	99	3	10	0,65	4	2	0,55	2,5
73	30	99	1	5	0,9	3	2	0,65	1,5
73	30	99	3	5	0,6	3	1	0,55	2
73	55	99	1	5	0,75	1,5	2	0,6	1,5
73	55	99	3	5	0,5	4	2	0,9	2,5
73	124	99	1	4	0,75	4	1	0,5	3
73	124	99	3	5	0,55	4	6	0,9	1,5
73	148	99	1	1	0,55	2	2	0,6	2
73	148	99	3	7	0,55	4	2	0,75	1,5
73	168	99	1	5	0,9	2,5	6	0,9	4
73	168	99	3	10	0,7	4	6	0,9	1,5
73	268	99	1	5	0,9	3,5	6	0,8	3
73	268	99	3	5	0,5	4	6	0,9	1,5
73	275	99	1	5	0,9	4,5	6	0,9	2
73	275	99	3	5	0,65	3	1	0,6	1,5
73	283	99	1	5	0,6	2	2	0,9	4,5
73	283	99	3	5	0,55	2,5	6	0,9	1,5
73	319	99	1	5	0,75	2	2	0,5	1,5
73	319	99	3	5	0,6	3,5	6	0,9	1,5

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
73	349	99	1	5	0,8	2	6	0,75	1,5
73	352	99	1	1	0,7	2	2	0,7	1,5
73	352	99	3	5	0,55	2	6	0,6	1,5
73	408	99	1	5	0,6	2	2	0,5	1,5
73	408	99	3	15	0,6	2,5	6	0,75	1,5
73	411	99	1	5	0,7	2	6	0,6	3
73	411	99	3	5	0,65	3	2	0,7	2
73	443	99	1	5	0,75	2	2	0,5	1,5
73	443	99	3	5	0,65	3	6	0,9	1,5
73	449	99	1	5	0,9	3	6	0,9	2
73	449	99	3	2	0,5	4	2	0,9	2
73	483	99	1	1	0,7	2	2	0,55	1,5
73	555	99	1	1	0,6	4	2	0,5	2
73	555	99	3	15	0,65	4	6	0,75	2
73	563	99	1	1	0,5	2	1	0,65	1,5
73	563	99	3	5	0,55	3	6	0,9	1,5
73	585	99	1	2	0,8	2,5	2	0,5	2,5
73	585	99	3	5	0,65	3,5	2	0,55	1,5
73	671	99	1	5	0,8	2	2	0,5	1,5
73	671	99	3	10	0,65	3,5	2	0,5	1,5
73	861	99	1	5	0,65	2	2	0,9	2,5
73	861	99	3	1	0,55	4	2	0,6	2,5
76	1	1	1	5	0,75	4	6	0,9	1,5
76	1	2	1	10	0,9	3,5	6	0,9	2
76	1	3	1	15	0,5	3	6	0,55	2
76	1	4	1	5	0,5	2	6	0,6	1,5
76	1	5	1	15	0,9	3,5	5	0,55	2,5
76	1	6	1	5	0,75	3,5	7	0,5	4
76	1	7	1	5	0,75	2,5	4	0,9	3,5
76	1	8	1	5	0,9	4	6	0,9	2,5
76	1	9	1	21	0,5	4	6	0,9	2
76	1	10	1	5	0,9	4	3	0,7	3
76	1	11	1	5	0,9	4,5	3	0,75	4
76	1	12	1	5	0,9	4,5	4	0,75	4
76	1	13	1	5	0,8	4	6	0,75	1,5
76	1	14	1	10	0,9	4	2	0,7	3
76	1	15	1	10	0,9	4	2	0,65	3,5
76	1	16	1	5	0,9	2,5	7	0,5	4
76	1	17	1	5	0,9	3	7	0,5	4
76	1	18	1	5	0,9	3	5	0,65	4
76	1	19	1	5	0,6	2	6	0,7	2
76	1	20	1	5	0,9	3	6	0,9	2,5
76	1	21	1	5	0,8	2,5	2	0,55	2
76	1	22	1	21	0,5	4	6	0,9	2,5
76	20	99	1	5	0,7	1,5	2	0,9	4
76	20	99	3	20	0,7	3,5	7	0,5	4
76	36	99	1	5	0,7	2,5	6	0,7	1,5

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
76	36	99	3	20	0,55	4	1	0,75	1,5
76	41	99	1	5	0,65	2	2	0,55	1,5
76	41	99	3	15	0,55	3,5	2	0,75	2,5
76	109	99	1	4	0,8	2,5	6	0,9	1,5
76	111	99	1	5	0,75	2	6	0,8	2,5
76	111	99	3	5	0,6	4	6	0,9	1,5
76	113	99	1	5	0,8	2,5	6	0,75	1,5
76	113	99	3	5	0,55	4	6	0,9	1,5
76	122	99	1	2	0,7	4	6	0,9	4,5
76	122	99	3	20	0,7	3,5	2	0,55	1,5
76	126	99	1	5	0,65	2	2	0,55	2
76	126	99	3	5	0,55	3,5	1	0,55	1,5
76	130	99	1	5	0,75	2,5	7	0,5	4
76	130	99	3	5	0,8	3,5	6	0,9	4,5
76	147	99	1	5	0,8	2	6	0,6	2
76	147	99	3	10	0,5	3,5	2	0,65	1,5
76	233	99	1	5	0,75	2	2	0,55	1,5
76	233	99	3	5	0,7	4	6	0,9	1,5
76	248	99	1	5	0,9	3	6	0,9	3,5
76	248	99	3	5	0,75	3,5	6	0,75	1,5
76	275	99	1	5	0,75	2	6	0,75	2,5
76	275	99	3	5	0,5	4	2	0,75	3
76	306	99	1	5	0,9	2	1	0,9	4,5
76	306	99	3	5	0,6	3,5	6	0,9	1,5
76	318	99	1	5	0,9	3	2	0,8	4
76	318	99	3	15	0,75	3	2	0,9	3
76	364	99	1	5	0,9	3	6	0,9	2
76	364	99	3	5	0,7	3	6	0,7	1,5
76	400	99	1	5	0,8	2	6	0,75	1,5
76	400	99	3	5	0,55	4	6	0,6	1,5
76	403	99	1	1	0,55	2,5	2	0,6	2
76	403	99	3	2	0,55	3	6	0,9	4,5
76	497	99	1	1	0,7	2	2	0,55	1,5
76	497	99	3	10	0,55	3	2	0,7	4
76	520	99	1	2	0,5	2	6	0,8	2,5
76	520	99	3	5	0,6	2,5	7	0,5	4
76	563	99	1	5	0,75	2,5	6	0,6	1,5
76	563	99	3	4	0,5	4	2	0,6	1,5
76	606	99	1	5	0,7	2	7	0,5	4
76	606	99	3	21	0,5	4	7	0,5	4
76	616	99	1	5	0,75	2,5	2	0,55	2
76	616	99	3	5	0,55	4	2	0,55	1,5
76	622	99	1	5	0,8	2	6	0,9	2,5
76	622	99	3	10	0,55	4	6	0,9	2
76	670	99	1	1	0,75	2	2	0,6	1,5
76	670	99	3	5	0,7	4	6	0,9	1,5
76	736	99	1	5	0,7	2,5	2	0,5	2

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (continuation)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
76	736	99	3	20	0,9	3	2	0,6	2,5
76	823	99	1	5	0,7	2,5	6	0,9	2
76	823	99	3	2	0,5	3	2	0,55	1,5
76	834	99	1	5	0,9	3	6	0,9	2,5
76	834	99	3	5	0,6	3	6	0,75	1,5
76	890	99	1	5	0,7	1,5	2	0,55	1,5
76	890	99	3	5	0,5	3	2	0,55	1,5
76	892	1	1	20	0,9	3,5	2	0,55	4
76	892	2	1	15	0,8	3,5	3	0,55	3
76	892	3	1	20	0,65	4	2	0,75	4
76	892	4	1	20	0,9	3	7	0,5	4
76	895	99	1	5	0,8	3	6	0,6	2
76	895	99	3	5	0,65	3,5	6	0,9	4,5
81	1	99	1	5	0,9	4,5	6	0,75	2
81	65	99	1	1	0,65	3,5	2	0,6	2
81	65	99	3	21	0,5	4	1	0,65	1,5
81	736	99	1	21	0,5	4	6	0,9	4,5
81	736	99	3	21	0,5	4	6	0,9	3
81	794	99	1	15	0,7	3	6	0,6	2,5
85	1	99	1	5	0,9	3	6	0,9	4,5
85	1	99	3	20	0,7	2	1	0,5	1,5
85	10	99	1	5	0,9	3	2	0,5	3
85	10	99	3	15	0,7	2,5	2	0,9	4
85	250	99	1	3	0,8	4	2	0,5	2
85	250	99	3	20	0,65	4	6	0,9	1,5
85	440	99	1	4	0,5	4	6	0,65	2
85	440	99	3	15	0,55	2,5	2	0,5	1,5
86	1	99	1	5	0,75	2,5	6	0,9	4,5
86	320	99	1	5	0,8	3,5	1	0,9	4,5
86	568	99	1	4	0,9	4	6	0,7	2,5
88	1	99	1	5	0,7	2,5	6	0,9	1,5
88	1	99	3	5	0,6	4	6	0,9	1,5
88	564	99	1	1	0,9	1,5	1	0,9	1,5
88	564	99	3	5	0,55	4	2	0,8	2,5
91	1	99	1	5	0,9	4	6	0,9	1,5
95	1	99	1	4	0,65	4	7	0,5	4
99	1	99	1	5	0,7	2	6	0,9	1,5

Annex D. Calibration model and limits for each municipal township, remaining areas or quarter (final)

				Household			Dwelling		
Dept	Muni	District / quarter levels	Class	Model	Lower Limit	Upper Limit	Model	Lower Limit	Upper Limit
76	736	99	3	20	0,9	3	2	0,6	2,5
76	823	99	1	5	0,7	2,5	6	0,9	2
76	823	99	3	2	0,5	3	2	0,55	1,5
76	834	99	1	5	0,9	3	6	0,9	2,5
76	834	99	3	5	0,6	3	6	0,75	1,5
76	890	99	1	5	0,7	1,5	2	0,55	1,5
76	890	99	3	5	0,5	3	2	0,55	1,5
76	892	1	1	20	0,9	3,5	2	0,55	4
76	892	2	1	15	0,8	3,5	3	0,55	3
76	892	3	1	20	0,65	4	2	0,75	4
76	892	4	1	20	0,9	3	7	0,5	4
76	895	99	1	5	0,8	3	6	0,6	2
76	895	99	3	5	0,65	3,5	6	0,9	4,5
81	1	99	1	5	0,9	4,5	6	0,75	2
81	65	99	1	1	0,65	3,5	2	0,6	2
81	65	99	3	21	0,5	4	1	0,65	1,5
81	736	99	1	21	0,5	4	6	0,9	4,5
81	736	99	3	21	0,5	4	6	0,9	3
81	794	99	1	15	0,7	3	6	0,6	2,5
85	1	99	1	5	0,9	3	6	0,9	4,5
85	1	99	3	20	0,7	2	1	0,5	1,5
85	10	99	1	5	0,9	3	2	0,5	3
85	10	99	3	15	0,7	2,5	2	0,9	4
85	250	99	1	3	0,8	4	2	0,5	2
85	250	99	3	20	0,65	4	6	0,9	1,5
85	440	99	1	4	0,5	4	6	0,65	2
85	440	99	3	15	0,55	2,5	2	0,5	1,5
86	1	99	1	5	0,75	2,5	6	0,9	4,5
86	320	99	1	5	0,8	3,5	1	0,9	4,5
86	568	99	1	4	0,9	4	6	0,7	2,5
88	1	99	1	5	0,7	2,5	6	0,9	1,5
88	1	99	3	5	0,6	4	6	0,9	1,5
88	564	99	1	1	0,9	1,5	1	0,9	1,5
88	564	99	3	5	0,55	4	2	0,8	2,5
91	1	99	1	5	0,9	4	6	0,9	1,5
95	1	99	1	4	0,65	4	7	0,5	4
99	1	99	1	5	0,7	2	6	0,9	1,5

Annex E. Census Variables

Variables of the record of households and dwellings

VARIABLE NAME	VALUE LABEL	TYPE	B/A	IND
Dwellings				
V01B_TIP_VIV	Tipo de vivienda	HD, IL	B	1
VC00B_CON_OCUP	Condición de ocupación	Creada	B	1
V02A_MAT_PARED	Material de pared	HD	A	2
V03A_MAT_PISOS	Material de los pisos	HD, IL	A	2
V04A_ELI_BASURA	Eliminación de basura	HD	A	2
V05B1_ELECTRICA	Energía eléctrica	HD, IL	B	1
V05B2_ALCANTARI	Alcantarillado	HD, IL	B	1
V05B3_ACUEDUCTO	Acueducto	HD, IL	B	1
V05B4_GAS_NAT	Gas natural	NR	B	1
V05B5_TELEFONO	Teléfono	NR	B	1
V06A_TIPO_SERSA	Tipo de servicio sanitario	HD, IL	A	2
V07A_AGUA_SERVI	Ubicación servicio de agua	IL, NR	A	2
V08A_NRO_BANOS	Número de baños	IL, NR	A	2
V09A_EXISTE_COCINA	Existe lugar exclusivo para cocina	IL, NR	A	2
Household				
H10A1_VIVEN_EN	Su hogar vive en...	NR	A	3
H10A2_PAGADA	Vivienda totalmente pagada	NR	A	2
H10A3_VR_ARRIEN	Valor pagado por arriendo al mes	NR	A	2
H10A4_VR_PAGO	Valor pagado por vivienda propia al mes	NR	A	2
H11A_NRO_CUARTOS	Número de cuartos del hogar	NR	A	2
H12A_NRO_DORMIT	Número de cuartos para dormir	NR	A	2
H13A_USO_SERSA	Uso del servicio sanitario	NR	A	2
H14A_AGUA_COCIN	Origen agua para cocinar	NR	A	2
H15A_SITIO_COCINA	Lugar donde cocinan	NR	A	2
H16A_COCINAN_CON	Tipo de energía para cocinar	NR	A	2
H17A01_NEVERA	Hay neveras	NR	A	2

Variables of the record of households and dwellings (continuation)

VARIABLE NAME	VALUE LABEL	TYPE	B/A	IND
H18A1_BICICLETAS	Número de bicicletas	IL, NR	A	2
H18A2_MOTOS	Número de motos	IL, NR	A	2
H18A3_BOTES	Número de lanchas, veleros, botes	IL, NR	A	2
H18A4_AUTOS	Número de automóviles	IL, NR	A	2
H19A_ORGA_COMU	Participa en organización comunitaria	IL, NR	A	2
H20A_INGR_SUFIC	Ingresos alcanzan para los gastos básicos	NR	A	2
H21A_INGR_ADECU	Ingresos adecuados para el hogar	NR	A	2
H22B01_PERS_EPORT	Hay personas en el exterior	NR	B	1
H22B02_TOT_PERS	Total personas en el exterior	NR	B	1
H22B03_VEN05	Total personas en Venezuela 05	NR	B	1
H22B04_VEN00	Total personas en Venezuela 00	NR	B	1
H22B05_VEN96	Total personas en Venezuela 96	NR	B	1
H22B06_USA05	Total personas en Estados Unidos 05	NR	B	1
H22B07_USA00	Total personas en Estados Unidos 00	NR	B	1
H22B08_USA96	Total personas en Estados Unidos 96	NR	B	1
H22B09_ESP05	Total personas en España 05	NR	B	1
H22B10_ESP00	Total personas en España 00	NR	B	1
H22B11_ESP96	Total personas en España 96	NR	B	1
H22B12_MEPOR05	Total personas en México 05	NR	B	1
H22B13_MEPOR00	Total personas en México 00	NR	B	1
H22B14_MEPOR96	Total personas en México 96	NR	B	1
H22B15_CTR05	Total personas en Costa Rica 05	NR	B	1
H22B16_CTR00	Total personas en Costa Rica 00	NR	B	1
H22B17_CTR96	Total personas en Costa Rica 96	NR	B	1
H22B18_CAN05	Total personas en Canadá 05	NR	B	1
H22B19_CAN00	Total personas en Canadá 00	NR	B	1
H22B20_CAN96	Total personas en Canadá 96	NR	B	1

Variables of the record of households and dwellings (final)

VARIABLE NAME	VALUE LABEL	TYPE	B/A	IND
H22B36_OTR05	Total personas en otro país 05	NR	B	1
H22B37_OTR00	Total personas en otro país 00	NR	B	1
H22B38_OTR96	Total personas en otro país 96	NR	B	1
HC06B_TOT_PER	Total personas del hogar	IL	B	1
H23B_NPER_APOR	Número de orden de la persona de mayor aporte	IL	B	1
H24B_NRO_FALL	Número personas fallecidas	IL	B	1

Source: DANE.

Variables of the record of deceased persons

VARIABLE NAME	VALUE LABEL	TYPE	IND
F24B2_SEPORO	Sexo	NR	2
F24B3_EDAD	Edad	NR	2
F24B4_CERT_DEFUN	Certificado de defunción	NR	2

Source: DANE.

Variables of the record of persons in the household

VARIABLE NAME	VALUE LABEL	TYPE	B/A	IND
P25B_SEPORO	Sexo	IL	B	1
P26B1_DIA_NAC	Día de nacimiento	NR	B	2
P26B2_MES_NAC	Mes de nacimiento	NR	B	2
P26B3_ANO_NAC	Año de nacimiento	IL	B	2
P26B4_NO_SABE	No sabe la fecha de nacimiento	IL	B	3
PC09B_EDAD	Edad	HD, IL	B	1
P27B_PARENTESCO	Parentesco con el jefe	IL	B	1
P28B1_LUG_NAC	Donde nació	IL, NR	B	1
P28B2_DPTO_NAC	Departamento de nacimiento	NR	B	1
P28B3_MPIO_NAC	Municipio de nacimiento	NR	B	1
P28B4_PAIS_NAC	País de nacimiento	NR	B	1
P28B5_ANO_LLEGO	Año en que llegó al país	NR	B	1
P29B1_RES_MAMA	Lugar residía la mamá al nacer	NR	B	1
P29B2_DPTO_MAMA	Departamento donde residía la mamá al nacer	NR	B	1
P29B3_MPIO_MAMA	Municipio donde residía la mamá al nacer	NR	B	1
P29B4_PAIS_MAMA	País donde vivía la mamá	NR	B	1
P30B1_VIVIA_5ANOS	Lugar donde vivía hace 5 años	NR	B	1
P30B2_DPTO_5ANOS	Departamento donde vivía hace 5 años	NR	B	1
P30B3_MPIO_5ANOS	Municipio donde vivía hace 5 años	NR	B	1
P30B4_PAIS_5ANO	País donde vivía hace 5 años	NR	B	1
P30B5_ANO_LLEGO	Año cuando llegó al país hace 5 años	NR	B	1

Variables of the record of persons in the household (continuation)

VARIABLE NAME	VALUE LABEL	TYPE	B/A	IND
P31B_CLASE_5ANOS	Clase dentro del municipio	NR	B	1
P32B1_CAMBIO_5 AÑOS	Cambio de lugar últimos 5 años	NR	B	1
P32B2_ANO_ULT	Año del último cambio	NR	B	1
P32B3_LUG_ULT	En donde vivía antes	NR	B	1
P32B4_DPTO_ULT	Departamento del último cambio	NR	B	1
P32B5_MPIO_ULT	Municipio del último cambio	NR	B	1
P32B6_CLASE_ULT	Clase dentro del municipio	NR	B	1
P32B7_PAIS_ULT	País del último cambio	NR	B	1
P32B8_CAUSA_ULT	Causa del cambio del lugar de residencia	NR	B	1
P33B1_ETNIA	Pertenencia étnica	IL, NR	B	1
P33B2_COD_ETNIA	Código del pueblo indígena	NR	B	1
P34B_HABLA_LENG	Habla la lengua de su pueblo	NR	B	1
P35B1_AYUNO	Tuvo días de ayuno	IL	B	1
P35B2_DIAS_AYUNO	Días de ayuno en la última semana	NR	B	1
P36A_EPS	Tipo de aporte a salud	NR	A	2
P37A1_ENFERMO	Estuvo enfermo el último año	NR	A	2
P37A2_ATENCION_SAL	Lugar a donde acudió al servicio médico	NR	A	2
P38A01_CARDIACA	Cirugía cardiaca últimos 5 años	NR	A	2
P38A02_SGSS	Si la cirugía cardiaca la atendió la SGSS	NR	A	2
P38A03_TRANSPL	Transplante de órgano en los últimos 5 años	NR	A	2
P38A04_SGSS	Transplante lo hizo el SGSS	NR	A	2
P38A05_NEURO	Neurocirugía últimos 5 años	NR	A	2
P38A06_SGSS	Neurocirugía la hizo el SGSS	NR	A	2
P38A07_TRAUMA	Tratamiento médico y quirúrgico de trauma mayor	NR	A	2

Variables of the record of persons in the household (continuation)

VARIABLE NAME	VALUE LABEL	TYPE	B/A	IND
P38A19_QUIMIO	Quimioterapia para cáncer	NR	A	2
P38A20_SGSS	Quimioterapia lo atendió el SGSS	NR	A	2
P38A21_CUIDADOS	Cuidados intensivos	NR	A	2
P38A22_SGSS	Cuidados intensivos fue facilitado por el SGSS	NR	A	2
P39B1_CAMINAR	Limitación para caminar	IL, NR	B	2
P39B2_BRAZOS	Limitación para usar brazos o manos	IL, NR	B	2
P39B3_VER	Limitación para ver	IL, NR	B	2
P39B4_OIR	Limitación para oír	IL, NR	B	2
P39B5_HABLAR	Limitación para hablar	IL, NR	B	2
P39B6_APRENDER	Limitación para aprender	IL, NR	B	2
P39B7_MENTALES	Limitación para socializar	IL, NR	B	2
P39B8_INDEPEND	Limitación para bañarse por sí mismo	IL, NR	B	2
P39B9_OTRA_LIM	Otro tipo de limitación	IL, NR	B	2
P40A1_LIM_PERMA	Principal limitación permanente	IL, NR	A	2
P40A2_CAUSA	Causa de la limitación permanente	NR	A	2
P41B1_ALFABETA	Sabe leer y escribir	IL	A	1
P41A2_NRO_LIBROS	Número de libros que leyó último año	NR	A	2
P42B1_ASISTENCIA	Asistencia a alguna institución educativa	NR	B	1
P42B2_TIP_ESTAB	Tipo de institución educativa	NR	B	2
P42A1_TERMINO	Porque terminó sus estudios	IL, NR	A	2
P42A2_COSTOS	Por altos costos	IL, NR	A	2
P42A3_TRABAJAR	Porque necesita trabajar	IL, NR	A	2
P42A4_CUPOS	Por falta de cupos	IL, NR	A	2
P42A5_LEJANIA	Por lejanía	IL, NR	A	2
P42A6_ENFERMO	Por enfermedad	IL, NR	A	2
P42A7_EMBARAZO	Por embarazo	IL, NR	A	2

Variables of the record of persons in the household (final)

P46A6_PC_OTRA	Otra actividad	NR	A	2
P47B_OCUPACION	Clase de trabajo que realizó en la última semana	NR	B	1
P48A1_COD_ACTIV	Código de la actividad económica de la empresa	NR	A	2
P49A_TRABAJO	Tipo de trabajo	NR	A	2
P50A1_SITIO_TRAB	Ubicación del sitio donde trabajó	NR	A	2
P50A2_DPTO_TRAB	Departamento donde trabajó	NR	A	2
P50A3_MPIO_TRAB	Municipio donde trabajó	NR	A	2
P50A4_TIEMP_TRAB	Tiempo que gasta en ir al trabajo	NR	A	2
P51A_FONDO_PENS	Tipo de afiliación a un fondo de pensiones	NR	A	2
P52A01_NEGOCIO	Dedicación en un negocio familiar	IL	A	2
P52A02_HORAS	Horas en negocio familiar	NR	A	2
P52A03_VENDER	Dedicación en venta de productos	IL	A	2
P52A04_HORAS	Horas en venta de productos	NR	A	2
P52A05_PRODUCTO	Dedicación en fabricación de productos	IL	A	2
P52A06_HORAS	Horas en fabricación de productos	NR	A	2
P52A07_CAMPO	Dedicación en el campo o cría de animales	IL	A	2
P52A08_HORAS	Horas en el campo o cría de animales	NR	A	2
P52A09_OFIC_HOG	Dedicación en oficios del hogar	IL	A	2
P52A10_HORAS	Horas en oficios del hogar	NR	A	2
P52A11_OTRA_ACT	Dedicación en otra actividad	IL	A	2
P52A12_HORAS	Horas en otras actividades	NR	A	2
P53B_EST_CIVIL	Estado conyugal de la persona	IL, NR	B	1
P54A1_ESPANOL	Habla español	IL, NR	A	3
P54A2_INGLES	Habla inglés	NR	A	3
P54A3_FRANCES	Habla francés	IL	A	3
P54A4_ITALIANO	Habla italiano	IL	A	3

Source: DANE.

Variables of the record of economic units

VARIABLE NAME	VALUE LABEL	TYPE	IND
E03A_TIPO_IDE	Tipo de identificación del propietario	NR	2
E03B_NIT_CC	NIT/CC del propietario	NR	2
E03C_DV_NIT	Dígito de verificación para el NIT	NR	2
E04_NRO_TEL	Teléfono	NR	3
E05A_TIP_UECONOM	Tipo de unidad económica	IL, NR	1
E05B_TIP_UAUPORILIAR	Tipo de unidad económica auxiliar	IL, NR	1
E06_ACT_ECONOM	Tipo de actividad económica	IL, NR	1
E07_TIP_BIENES	Tipo de bienes	IL, NR	1
E08_TIP_CLIENTE	Tipo de clientes	IL, NR	1
E09_EST_MERCANC	Estado de mercancías que vende	IL, NR	1
E11_TIP_NEGOCIO	Tipo de negocio UE	IL, NR	1
E12_TIP_SERVICIO	Tipo de servicio que ofrece la UE	IL, NR	1
E15_TOT_PERS	Promedio de personas que trabajaron en el último mes	NR	1
E16_CIIURV3	Código CIIU Rev. 3 AC	IL, NR	1
E17_ACT_ECON	Industria comercio servicios	Creada	1
EC00_CON_OCUP	Condición de ocupación UE	Creada	1

Source: DANE.

Variables of the record of agricultural units

VARIABLE NAME	VALUE LABEL	TYPE	IND
A02A_UNI_MEDIDA	Unidad superficie UA	-	
A02B_AREA	Área de la UA	-	
A02B1_AREA	Área de la UA – Hectáreas	IL, NR	1
A03_CULTIVOS	Cultivos agrícolas	IL	1
A04A_BOSQUES	Bosques plantados	NR	1
A04B_UNI_BOSQUES	Unidad superficie en bosques	-	
A04C_AREA_BOS	Área de bosques plantados	-	
A04C1_AREA_BOS	Área de bosques plantados (Ha)	NR	1
A04D_PASTOS	Forrajes o pastos	NR	1
A04E_UNI_PASTOS	Unidad superficie pastos	-	
A04F_AREA_PASTOS	Área en pastos	-	
A04F1_AREA_PASTOS	Área en pastos - hectáreas	IL, NR	1
A04G_MALEZA	Malezas o rastrojos	NR	1
A04H_UNI_MALEZA	Unidad superficie malezas	-	
A04I_AREA_MALEZA	Área en malezas o rastrojos	-	
A04I1_AREA_MALEZA	Área en malezas (Ha)	NR	1
A05A_BOVINO	Bovinos	NR	1
A05B_TOT_BOVINO	Número de bovinos	NR	1
A05C_EQUINO	Equinos	NR	1
A05D_TOT_EQUINO	Número de equinos	NR	1
A05E_ASNAL	Asnales	NR	1

Variables of the record of agricultural units (final)

VARIABLE NAME	VALUE LABEL	TYPE	IND
A05F_TOT_ASNAL	Número de asnales	NR	1
A05G_OVINO	Ovino	NR	1
A05H_TOT_OVINO	Número de ovinos	NR	1
A05I_CAPRINO	Caprinos	NR	1
A05J_TOT_CAPRINO	Número caprinos	NR	1
A05K_PORCINO	Porcinos	NR	1
A05L_TOT_PORCINO	Número de porcinos	NR	1
A05M_AVES	Aves	NR	1
A05N_TOT_AVES	Número de aves	NR	1
A05O_OTRAS	Otras especies	NR	1
A05P_TOT_OTRAS	Número de otras especies	NR	1
A06A_CUL_PECES	Cultivo de peces o camarones	NR	1
A06B_UNI_PECES	Unidad superficie peces	-	
A06C_AREA_PECES	Área del cultivo de peces	-	
A06C1_AREA_PECES	Área de peces (Ha)	NR	1
A06D_CUL_CAMARON	Cultivo de camarones	NR	1
A06E_UNI_CAMARON	Unidad superficie camarones	-	
A06F_AREA_CAMARON	Área cultivo de camarones	-	
A06F1_AREA_CAMARON	Área de camarones (Ha)	NR	1
A07_EXISTE	¿Existe actividad agro?	Creada	2

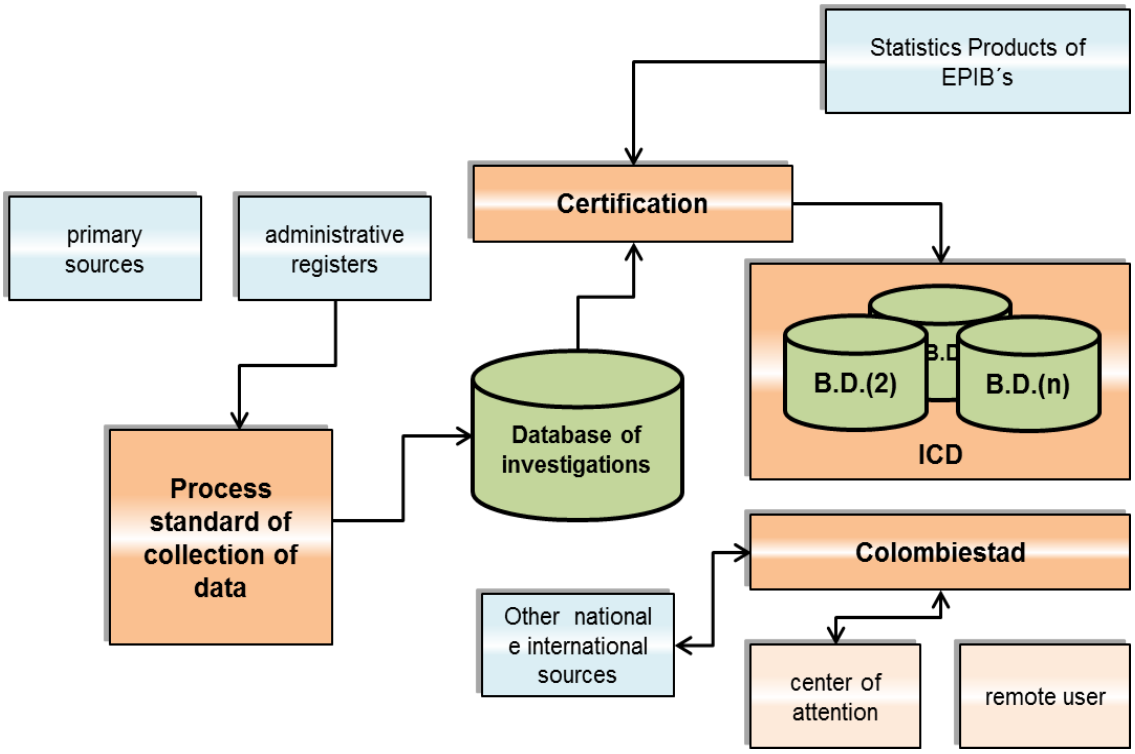
Source: DANE.

Variables of the record of crops

VARIABLE NAME	VALUE LABEL	TYPE	IND
C03B_COD_CULT	Código cultivo agrícola	NR	1
C03C_UNI_CULT	Unidad superficie cultivo	-	
C03D_AREA_1SEM	Área sembrada 1.er semestre	-	
C03D1_AREA_1SEM	Área 1er semestre (Ha)	NR	1
C03E_AREA_2SEM	Área Sembrada 2.do semestre	-	
C03E1_AREA_2SEM	Área 2.do semestre (Ha)	NR	1
C03F_AREA_ENTRE	Área de cultivo agrícola	-	
C03F1_AREA_ENTRE	Área de cultivo agrícola (Ha)	NR	1

Source: DANE.

Annex F. Colombiestad functional structure



Source: DANE.

Annex G. Basic tables

Table 1. Total population registered in the census in private households and in special accommodation sites, by sex, according to territorial entities, by areas and age groups.

Table 1A. Total population registered in the census in private households, by sex, according to territorial entities, by areas and age groups.

Table 1B. Total population registered in the census in special accommodation sites, by sex, according to territorial entities, areas and age groups.

Table 2. Total population registered in the census in private households and in special accommodation sites, by sex, according to territorial entities and areas.

Table 3A. Total population registered in the census in private households, by sex, according to territorial entities and simple ages.

Table 3B. Total population registered in the census in special accommodation sites, by sex, according to territorial entities, areas and simple ages.

Table 4. Total population registered in the census in private households, by kinship relation with the household head, according to territorial entities, areas and sex.

Table 5. Total population registered in census in private households, by kinship relation with the household head and sex, according to territorial entities, areas and age groups.

Table 6. Household heads by educational level attained, according to territorial entities, areas and sex.

Table 7A. Total population registered in the census in private households, by place of birth, according to territorial entities and areas of current residence.

Table 7B. Total population registered in the census in special accommodation sites, by place of birth, according to territorial entities and areas of current residence.

Table 8A. Population of 10 years old and over registered in private households, by marital status and sex, according to territorial entities, areas and age groups.

Table 8B. Population of 10 years old and over registered in the census in special accommodation sites, by marital status and sex, according to territorial entities, areas and age groups.

Table 9A. Population of 5 years old and over registered in private households, by literacy and sex, according to territorial entities, areas and age.

Table 9B. Population of 5 years old and over registered in the census in special accommodation sites, by literacy and sex, according to territorial entities, areas and age.

Table 10A. Population of 3 years old and over registered in private households, by school attendance and sex, according to territorial entities, areas and age.

Table 11A. Population of 3 years old and over registered in private households, by educational level attained, according to territorial entities, areas and sex.

Table 11B. Population of 3 years old and over registered in the census in special accommodation sites, by educational level attained, according to territorial entities, areas and sex.

Table 12A. Population of 5 years old and over registered in private households, by activity carried out the previous week, according to territorial entities, areas, sex and age.

Table 12B. Population of 5 years old and over registered in the census in special accommodation sites, by activity carried out the previous week, according to territorial entities, areas, sex and age.

Table 13. Population deceased in the last year, by sex and issuance of death certificate, according to territorial entities, areas and age groups at death.

Table 14A. Female population of 12 years old and over, registered in the census in private households, by live-born children and surviving children, according to territorial entities, areas and mothers' age groups.

Table 14B. Female population of 12 years old and over, registered in the census in special accommodation sites, by live-born children and surviving children, according to territorial entities, areas and mothers' age groups.

Table 15A. Total population registered in the census in private households, by ethnicity and sex, according to territorial entities, areas and age groups.

Table 15B. Total population registered in the census in special accommodation sites, by ethnicity and sex, according to territorial entities, areas and age groups.

Table 16A. Population of 3 years old and over registered in private households, by educational level attained, according to territorial entities, areas, sex and ethnicity.

Table 16B. Population of 3 years old and over registered in the census in special accommodation sites, by educational level attained, according to territorial entities, areas, sex and ethnicity.

Table 17A. Total population registered in the census in private households by permanent limitations and sex, according to territorial entities, areas and age groups.

Table 17B. Total population registered in the census in special accommodation sites, by permanent limitations and sex, according to territorial entities, areas and age groups.

Table 18. Population of 3 years old and over, with permanent limitations, registered in the census in private households, by educational level attained, according to territorial entities, areas and sex.

Table 19. Population of 5 years old and over with permanent limitations, registered in the census in private households by activity carried out the previous week, according to territorial entities, areas, sex and age.

Table 20. Private households, by migratory experience abroad, according to territorial entities and areas.

Table 21. Persons permanently residing abroad since 2001, by country of current residence, according to territorial entities and areas.

Table 22. Dwellings, by situation of occupation, according to territorial entities, areas and types of dwelling.

Table 23. Dwellings occupied with persons in place, by number of households within the dwelling, according to territorial entities and areas.

Table 24. Dwellings occupied with persons in place, by availability of public utilities, according to territorial entities and areas.

Table 25. Special accommodation sites, by type, according to territorial entities and areas.

Table 26. Economic units, by situation of occupation and economic activity, according to territorial entities, areas and types of sites of the establishment.

Table 27. Economic units of industry and employed personnel, by ranges of average employed personnel in the previous month, according to territorial entities, areas and ISIC codes.

Table 28. Economic units of trade and employed personnel, by ranges of average employed personnel in the previous month, according to territorial entities, areas and ISIC codes.

Table 29. Economic units of services and employed personnel, by ranges of average employed personnel in the previous month, according to territorial entities, areas and ISIC codes.

Table 30. Dwellings occupied with persons in place, located in scattered rural areas, by agricultural activity, according to territorial entities and areas.

Tables with information in greater detail on persons

Table 1. Total population registered in the census in private households, by affiliation with the Social Security System in Health and sex, according to territorial entities, areas, and age groups.

Table 2. Population who were sick during the previous year, registered in the census in private households, by place where they were attended the last time they got sick and by sex, according to territorial entities, areas, and age groups.

Table 3. Population registered in thr census in private households, who for the last five years have suffered or suffer catastrophic diseases, by type of medical treatment and by care provided by the General System of Social Security, according to territorial entities and areas.

Table 4. Population between 3 and 26 years old who do not attend formal education registered in the census in private households, due to absences, according to territorial entities, areas and simple ages.

Table 5. Population 3 years old and over, who are registered in the census in private households, who attend formal education, by location of the educational institution, according to territorial entities and area of current residence.

Table 6. Population 5 years old and over who are employed, registered in the census in private households, by location of the work place, according to territorial entities and area of current residence.

Table 7. Population 5 years old and over who are employed, registered in the census in private households, by occupational position and sex, according to territorial entities and areas.

Table 8. Population 5 years old and over who are employed, registered in the census in private households, by occupational position and sex, according to territorial entities, areas and affiliation to pension funds.

Table 9. Population with permanent limitations registered in the census in private households, by the limitation that most affects the person's performance and by sex, according to territorial entities, areas and causes of the limitation.

Tables with information in greater detail on dwellings

Table 1. Occupied dwellings with persons in place, by prevailing materials of the outer walls, according to territorial entities, areas, types of dwellings and prevailing materials of floors.

Table 2. Occupied dwellings with persons in place, by garbage disposal system, according to territorial entities and areas.

Table 3. Occupied dwellings with persons in place, by type of bathroom, according to territorial entities and areas.

Tables with information in greater detail on households

Table 1. Private households, by forms of dwelling ownership, according to territorial entities and areas.

Table 2. Private households, by number of rooms, according to territorial entities, areas and size of households.

Table 3. Private households, by number of rooms used to sleep, according to territorial entities, areas and size of households.

Table 4. Private households, by power supply to cook food, according to territorial entities and areas.

Table 5. Private households, by access to water to cook food, according to territorial entities and areas.

Table 6. Private households, by place where food is prepared, according to territorial entities and areas.