





**Palestinian National Authority  
Palestinian Central Bureau of Statistics**

**Statistical Atlas of Palestine**

**December, 2009**

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## **Acknowledgment**

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## **Preface**

**The production of maps has evolved significantly in recent years due to the widespread use of Geographical Information Systems (GIS) on a large scale. PCBS has given special attention to disseminate its official statistics using modern techniques such as statistical maps that are prepared by using GIS technology.**

**The Statistical Atlas of Palestine 2009 is PCBS' additional achievement in the area of maps-based statistical dissemination. In year 2004, PCBS produced the first paper Statistical Atlas of Palestine based on the results of the Population, Housing and Establishment Census 1997 as well as the results of other surveys conducted by PCBS. In addition, PCBS launched a web-based Atlas on its official web site, with statistical maps covering social, economic and geographic indicators, and these maps are updated annually with the latest statistics. These different data sets have provided users with the ability to compare statistics in different years.**

**This second Statistical Atlas of Palestine is mainly based on the data from the Population, Housing, and Establishment Census 2007. The selection of topics in the statistical maps are in accordance with international recommendations, and consistent with the experiences of other countries in the production of Statistical Atlas. The Atlas covers demographic, social and geographical characteristics as well as housing, establishments, administrative divisions, public services and the Israeli settlements.**

**PCBS hopes that the Statistical Atlas of Palestine 2009 provides researchers, policy and decision makers with the necessary statistical indicators, and facilitate the comparison of census data between 1997 and 2007 to enrich data analysis.**

**December, 2009**

**Ola Awad  
Acting President**





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# 1

## Chapter One



### Introduction





## Introduction

The Statistical Atlas of Palestine 2009 is the second Atlas to be produced by PCBS and it is based mainly on the results of the Population, Housing, and Establishment Census 2007. In addition, it contains results of demographic, economic and area surveys as well as data about buildings, establishments, administrative boundaries, public services infrastructure and the Israeli settlements.

After the successful implementation of the second census in 2007, PCBS started the preparation of the Statistical Atlas in order to further facilitate data presentation to ensure greater utilization of the census results, and to provide users with comprehensive outlook through the linkages of data with geographical locations by using GIS technologies.

In the Statistical Atlas of Palestine 2009, maps were prepared to allow users to make comparison between data of 1997 and 2007 censuses, to shed light on the change in social, economic, geographic and housing characteristics in addition to the change in the administrative boundaries in Palestine. Statistical maps were supported by traditional data presentation such as statistical tables, graphs, and metadata. Furthermore, the maps present indicators on population, labour force, education, culture, housing, natural resources, as well as maps on buildings, establishments, Israeli settlements, and statistical quarters that will be used in the dissemination of statistical data.

The data presentation in the statistical maps is at the governorate level (one of the administrative divisions in the Palestinian Territory) in the West Bank and Gaza Strip. The statistical maps do not include all of the data that was collected in the census 2007 since processing of census data for the Gaza Strip was not completed. The data presentation for the Gaza Strip is based on PCBS' estimation for year 2007 and this is further explained in the Methodology Chapter.

The Department of Cartography and Geographic Information Systems in PCBS prepared the Statistical Atlas, where geographical data was presented in shape files. In addition, ArcGIS 9.2 was used for analysis and mapping; and PowerPoint was used for text presentation. The layers include governorates and the statistical quarters.

All of the statistical maps in the Atlas were based on the local coordinates of Palestine (GCS\_Palestine\_1923).

The Statistical Atlas of Palestine 2009 is comprised of ten chapters. The first chapter contains an introduction; the second chapter deals with concepts and terminology related to various statistical indicators on the map; the third one contains the methodology for collecting data, while Chapter four deals with data quality. The fifth chapter contains a number of general maps that show the position of Palestine with respect to the Arab World as well as other countries, and also describes the change of the administrative divisions in Palestine.

Chapters six, seven and eight include statistical maps with presentation and statistical analysis of main indicators covering demographic, social, and geographical areas as well as buildings and establishments. The data sources were the census data of 2007 for the West Bank and the estimates for the Gaza Strip. Chapter six presents analysis of the characteristics of population, labor, education and culture; where chapter seven presents the characteristics of housing and natural resources. Chapter eight includes maps with data presentation on buildings and economic establishments, from the Census 1997 and Census 2007 for each of the West Bank and Gaza Strip. Chapter nine presents maps on Israeli settlements in the West Bank.

The tenth chapter includes aerial photos that show the boundaries of statistical quarters for main localities (17 locality) in the West Bank and Gaza Strip. The aerial photos also show the names of some of the main features in each locality.



# 2

## Chapter Two

### Concepts and Definitions







### Geographical, Administrative and Statistical Divisions:

According to current administrative divisions, the Palestinian Territory is divided into two geographic regions: West Bank and Gaza Strip.

1. **West Bank** is divided into 11 Governorates (Jenin, Tubas, Tulkarm, Nablus, Qalqiliya, Salfit, Ramallah & Al-Bireh, Jericho & AlAghwar, Jerusalem, Bethlehem, and Hebron).
2. **Gaza Strip** is divided into 5 Governorates (North Gaza, Gaza, Deir Al-Balah, Khan Yunis, Rafah).

### Geographical, administrative, and statistical quarters:

#### Locality:

A permanently inhabited place, which has an independent municipal administration or a permanently inhabited, separated place not included within the formal boundaries of another locality.

#### Statistical quarter:

A locality with a population of 4,000 inhabitants or more (which is the minimal statistical criteria for a locality to be classified as an urban according to the definition adopted by the Palestinian Central Bureau of Statistics) may be divided into statistical quarters. Each quarter contains 3,000 - 5,000 inhabitant using streets or natural areas as clear boundaries for each quarter.

When dividing a locality into statistical quarters, the following factors were taken into consideration:

1. History and buildings' pattern.
2. The main function, which is exercised (agriculture, commerce, industry).
3. Pattern (nature) of land use such as residential, industrial, services, or governmental centers.
4. Social characteristics of the population and other characteristics such as: religion, large families, customs and traditions, standards of living.

### Definitions of Jerusalem J1&J2

Given the geographical and political situations in the Jerusalem governorate, it has been divided into two parts (J1, and J2).

For mere statistical purposes, the Jerusalem Governorate was divided into two parts.

**The first part (J1):** includes that part of Jerusalem, which was annexed forcefully by Israel following its occupation of the West Bank in 1967. This part includes the following localities: (Beit Hanina, Shu'fat Refugees Camp, Shu'fat, Al' Isawiya, Jerusalem "Al - Quds"( Sheikh Jarrah, Wadi Al - Joz, Bab Al-Sahira, As Suwwana, At -Tur, , Ash - Shayyah, Ras Al-Amud), Silwan, Ath – Thuri, Jabal Al – Mukabbir, As – Sawahira Al – Gharbiya, Beit Safafa, Sharafat, Sur Bahir, and Um Tuba and Kufr A'qab).

**The second part Jerusalem (J2):** Includes Jerusalem governorate except that part of Jerusalem which was forcefully Annexed by Israel following its occupation of the West Bank in 1967. This part includes the following localities: Rafat, Mikhmas, Qalandya Refugees Camp, the Bedouin Community - Jaba', Qalandya, Beit Duqqu, Jaba', Al – Judeira, Beit Anan, Al-Ram, Dahiat Al-Pareed, Al Al – Jib, Bir Nabala, Beit Ijza, Al – Qubeiba, Khirbet Um Al – Lahem, Biddu, An – Nabi Samu'eil, Hezma, Beit Hanina Al Balad, Qatanna, Beit Surik, Beit Iksa, A'nata, Al Ka'abina (the Bedouin Community – Al – Khan Al – Ahmar), Arab al Jahalin (the Bedouin Communities, Al – Eizariya and Abu Deis), Az Za'eem, Al – Sawahreh Al – Sharqiyeh and Ash – Sheikh Sa'd.

### Expansion and annexation wall:

A complex series of concrete walls, barbed wire, and observation towers, trenches, bypass roads and fences used to stop and control the movement of Palestinians and vehicles in the West Bank and East Jerusalem. Some parts of the wall have been completed, while in other places are still under construction.

### Household:

One person or a group of persons with or without a household relationship, who live in the same housing unit, share meals and make joint provision of food and other essentials of living.

### Palestinian Household:

It refers to the private household whose head holds the Palestinian nationality. As for non Palestinian household, it refers to the household whose head holds non Palestinian nationality irrespective of the nationality of other household members.

### Special types of Households:

**A one-person-household:** It refers to the household comprised of one individual.

**Nuclear household:** It refers to the living household comprised of a couple only; a couple and a son or a daughter (not adopted son or daughter) or more; or a male head of a household with a son or a daughter or more; or a female head of a household with a son or a daughter or more. It is worthy to note that no other relatives or non-relatives live with this household.

**Extended Household:** A household of at least one nuclear household together with other relatives.

**Composite Household:** Refers to household consisting of at least one nuclear household with other non-relatives.

### Average Household Size:

It refers to the average number of household members calculated through dividing the total number of members for a certain category by the number of households for that particular category.

### Head of the household:

It refers to the person who usually lives within the household and is considered as the head of the household by its other members. Often, he \ she is the main decision-maker and responsible for financial support and economic welfare of the household.

### Population Density:

The number of population divided by the total area of that region.

### Sex:

It is divided into male and female.

### Sex Ratio:

The ratio of males to females, usually expressed as the number of males per 100 females.

### Age in Completed Years:

The completed age in years of the person enumerated, which is the difference between the date of birth and the survey reference period.

### Refugee Status:

This status relates to the Palestinians who were forced to leave their land in the Palestinian Territory occupied by Israel in 1948. It applies to their male sons and grandchildren.

1. **Registered Refugees:** It applies to registered refugees holding refugee registration cards issued by UNRWA.
2. **Non-Registered Refugees:** It applies to unregistered refugees who do not hold refugee registration cards issued by UNRWA.
3. **Non-Refugee:** It applies to any Palestinian not categorized under any of the two aforementioned statuses.

### Marital Status:

The status of those 12 years old and over in terms of marriage traditions and laws in the country.

May be one of the following cases:

1. **Never married:** It applies if the person aged 12 years and over has not been married or legally engaged (according to customs and traditions applicable in the country).
2. **Legally engaged:** It applies if the person aged 12 years and over has an official marriage document (issued by a competent court) but has not been actually married yet according to customs and traditions applicable in the country. The divorced, widowed, and married twice do not belong to this category.
3. **Married:** It applies if the person aged 12 years and over is actually and officially married (according to customs and traditions applicable in the country) irrespective of his / her past marital status as well as of whether the couple were together during the reference period or not. The person married to more than one wife is classified as married.
4. **Divorced:** The person aged 12 years and over who previously married and legally divorced but was not married again.
5. **Widowed:** The married person aged 12 years and over whose marriage was ended by the death of the spouse and was not married again.
6. **Separated:** The individual 12 years old and over who was married, but his/her marriage was revoked for some reason without any legal or official registration, and he/she did not marry again.

### Building:

A building is defined as any fixed construction that is temporarily or permanently erected on the surface of the earth or water. A building is surrounded by four walls or with at least one completed ceiling at the time of the visit, regardless of the construction material and the purpose of construction and utilization at the time of the Census. The building might be utilized for habitation, for work, for both, vacant, closed, deserted, under preparation or under construction at the time of the Census.

### Utilization of the Building:

It refers to the way the building is currently used, regardless of the purpose of its construction. The utilization could be one of the following:

1. **Habitation Only:** It means that the building was completely used for residential purposes only, i.e., normal buildings.
2. **Habitation and Work:** It means that some of the houses in the building are used for habitation purposes whereas other units are used for work
3. **Work Only:** It means that the building was used for work only, i.e. not occupied by any household.

4. **Closed:** It means that one household or more occupied the building but it was closed during the listing period. This applies as well to buildings used for work purposes but found closed during the listing period.
5. **Vacant:** It means that the building is not being utilized. Normally, such a building is for rent or for sale.

### Establishment In Operation:

Establishment which is in operation, and at least one person work in during the implementation of establishment census.

### Main Economic Activity:

Is the main work of the establishment based on the (ISIC, rev3) and that contribute by the large proportion of the value added, whenever more than one activity exist in the establishment.

### Establishments Ownership:

This is the sector to which the establishment parent enterprise belongs. It is determined according to the majority of capital ownership or decision making rights. Ownership can be: private national, private foreign, non governmental organization sector, national government company, foreign government company, central government, local authority, foreign government, UNRWA and lastly international organization. It is worth mentioning that reference to national and foreign here is relevant to the residence concept as defined in the SNA-1993 and does not refer to nationality or citizenship.

### Employed:

Persons who were at work at least one hour during the reference period, whether for their own account or for others paid or unpaid, or in the interest of the household. Employees classified according to the number of weekly working hours of the workers (1-14) hours, workers (15-34) hours, workers 35 hours or more.

### Unemployed:

Unemployed persons are those individuals 15 years and over who did not work at all during the reference week, who were not absent from a job and were available for work and actively seeking a job during the reference week. Persons who work in Israel and were absent from work due to closure are considered unemployed, and also those persons never work and not looking for work but waiting to return back to their works in Israel and Settlements.

### Employment Status:

It refers to the employment status of the employed or unemployed ever worked persons. The employment status is categorized as follows:

1. **Employer:** A person who work in an establishment that is totally or partially belonging to him \ her and hires or supervises the work of one or more waged employees. This includes persons operating their projects or contracting companies provided they employ a minimum of one waged employee. Shareholders are not considered employers even if they are working in the public \ public limited liability companies.
2. **Self-employed:** A person who work in an establishment that is totally or partially belonging to him \ her and hires no waged employees. This includes persons engaged independently in a profession or trade.

3. **Regular Paid-employed:** A person who works for a public or private employer and receives regular remuneration in wage, salary, commission, tips, piece rates or in kind ...etc. This item includes persons employed in governmental, non – governmental and private institutions along with those employed in a household enterprise in return for a specific remuneration.
4. **Irregular Paid-employed:** A person who works for a public or private employer and receives irregular remuneration in wage, salary, commission, tips, piece rates or in kind ...etc. This item includes persons employed in governmental, non – governmental and private institutions along with those employed in a household enterprise in return for a specific remuneration.
5. **Unpaid family member:** A person who works without pay in an economic enterprise (farm, undertaking, ... etc) operated by a related person in the same family.

### Main Occupation:

The main job or type of work performed by the employed person or used to be performed by the unemployed ever worked person. The occupation refers to the activity in which the employee works more than half of his/her working hours or the most frequent job during the last three months prior to the enumeration night.

### Place of work:

It refers to the working place of the employed person and the last working place of the unemployed ever worked person. Place of work is classified as follows:

1. **At home:** It applies if the employee works inside his housing unit. However, it does not apply to cases in which a grocery with its own door (for instance) is close to the housing unit. In this case, the place of work is considered in the same locality.
2. **In the same locality:** It applies if the employee works inside his locality.
3. **In the same governorate:** It applies if the employee works in one of the localities belonging to the same governorate.
4. **In other governorate:** It applies if the employee works in one of the localities belonging to a different governorate.
5. **In Israel:** It applies if the employee works in the Palestinian Territory occupied by Israel in 1948.
6. **In Settlements:** It applies if the employee works in one of the Israeli settlements established in parts of the Palestinian Territory occupied in 1967.
7. **Abroad:** It applies if the employee works in another country outside the Palestinian Territory.

### Educational Attendance:

Attendance means registering the person in any formal education stage irrespective of whether it took the form of continuous attendance or distance learning. Formal education stages include the elementary stage, preparatory stage, (both of which are referred to as the basic stage), secondary stage, and higher education stage (universities, colleges, vocational institutes, etc.).

Enrollment categories are as follows:

1. **Attending:** It applies if the person is currently enrolled in a regular education stage.
2. **Attended and left:** It applies if the person unsuccessfully left a regular education stage, i.e., without obtaining any degree.
3. **Attended and graduated:** It applies if the person successfully graduated from a regular education stage and did not enroll in any stage after that.
4. **Never attended:** It applies if the person is not currently enrolled and was never enrolled in any regular education stage.

### Years of Schooling Completed:

For persons currently attending, attended and left, or successfully graduated, reference shall be made to the successfully completed formal educational years (completed years.) It neither includes drop out years, failure years, kindergartens years nor ongoing educational year. Educational training courses are not included among the years of regular study.

**Illiterate:** It applies to persons unable to read or write in any language and who were never awarded a certificate from any formal education system.

**Can Read and Write:** It applies to persons who are able to read and write without completing any of the educational stages. Such persons are generally able to read and write simple sentences.

### House:

A building or part of a building constructed for one household only, with one or more independent entrance leading to the public road without passing through another housing unit.

### House type:

Housing unit type may refer to any of the following:

1. **Villa:** A separately established building that is usually constructed from clean stone. It is constructed for the living of one household and consists of a 2–suite, single or double or multiple stories connected through internal stairs. One of the suites is constructed as bedrooms whereas the second suite is constructed for reception and involves the kitchen and other related services. In general, the villa is surrounded by a garden, regardless of the area of this garden, which is surrounded by boarder wall or fence. Villas normally have a roofed parking area (garage). Villas may also include a separate small building or extension as part of them.
2. **House:** A building usually established for the residence of one household or more; it is the typical form of residential buildings prevailing in Palestine. The house may be comprised of a single story or more that is utilized by a single household.
3. **Apartment:** It is a part of a building or a house, consisting of one room or more and annexed with kitchen, bathroom and toilet, which are all closed by an external door leading to the road through a stairway and/or path way. It is prepared usually for one household.
4. **Independent Room:** It is a separate room with no kitchen, bathroom or toilet, but sharing these basic services with other households, and it is prepared for living.
5. **Marginal:** It is a separate unit, usually comprised of one or more rooms. The main construction material of the ceiling and the external walls is zinc, tinsplate, etc, but it does not undergo listing unless it is occupied.
6. **Tent:** It is made of textile, wool, or hair. It is typically used in the Bedouin localities.
7. **Other:** It refers to any type of building other than the aforementioned. Examples of this type include cottages, caves, grottos, and booths occupied by a tenant during the Census.

### Room:

The housing unit or part of the housing unit surrounded with walls and having a ceiling, provided that its area is not less than 4 square meters.



### Average Housing Density:

It refers to the average number of persons living in the room. This average calculated through dividing the total number of individuals for a certain category by the total number of rooms for that particular category.

### Tenure of the House:

This section refers to the household tenure of the housing unit that could be one of the following categories:

1. **Owned:** This category applies when the household or one of the household members usually living therein owns the housing unit.
2. **Rented Unfurnished:** If the housing unit is rented without furniture.
3. **Rented Furnished:** If the housing unit is rented with furniture.
4. **Without Payment:** If the housing unit is used without any payments.
5. **For Work:** If the housing unit is offered to the household as a result of a working relation with one member of the household or more.
6. **Other:** If the tenure of the house is not mentioned above.

### Collective Households:

It refers to the place constructed for the residence of a group of individuals, who live therein and benefit from the services it provides. The collective household; it may be comprised of one building or more or one housing unit or more. Examples of collective households include hotels, hostels, elderly and orphans homes, psycho-therapy clinics and hospitals, collective households for university students, collective living quarters (camps) at the passages, and housing units of priests and nuns in the monasteries and churches (who do not have other households).

### Availability of Durable Goods:

This section refers to the durable goods owned by the household: Private car, refrigerator, solar boiler, central heating, home library (availability of a minimum of 10 non -scholastic books used for developing the cultural, religious aspects of knowledge ...etc.), cooking stove, washing machine, television, video, computer, phone line (other than mobile phones).

### Connection to Water:

1. **Public Water Network:** A network of pipes for the purpose of providing clean water to households. It normally belongs to a municipality, the council or to a private company.
2. **Mekorot Israeli company:** A network of pipes for the purpose of providing clean water to households. It normally belongs to Mekorot Israeli company.
3. **Collection Water Wells:** Wells that are dug in the ground for the purpose of collecting rain water.
4. **Springs:** Water that is discharged from the ground at an intersection point between the topographic surface and the groundwater table; it could be permanent or seasonal, and it is considered as one of the natural resources for irrigation.
5. **Water Tanks:** Using water from vehicles that distribute and transfer water.
6. **Others:** If the source of water was not mentioned above.

### Household Consumption for Heating:

Consumption energy by Households in the different activities within Households Heating.

### A Settlement:

A settlement, which is considered by the Israeli occupation as legal settlement and meets locality conditions. The Israeli Central Bureau of Statistics defines a locality as follows:

An inhabited place according to the following criteria:

1. Mainly has 20 or more inhabitants.
2. Self-ruled.
3. Not included in the formal borders of another locality.
4. Formally recognized.

In addition to the settlements and Jewish neighborhoods; located in Jerusalem (J1).

### Regional Councils:

The regional councils are administrative authorities encompassing a number of settlements. Such councils are represented by Yesha, which is a high council representing the settlers in the "West Bank". However, Yesha does not represent J1 or the other settlements Annexed by Israel. There are 6 regional councils in the West Bank: Shomeron, Arvot Ha' Yardin (the Jordan Valley), Matte Binyamin, Megilliot, Gosh Ezyon, and Har Hevron (Mount Hebron).

### Overwhelming Ideology:

The rural settlements were classified according to Overwhelming Ideology as follows: religious settlements, secular settlements, and mixed settlements.

### Settlements Types:

**Urban Settlement:** It's a settlement has 2,000 or more inhabitants, beside those settlements located inside Jerusalem area (J1), which classified as urban settlements regardless the number of population.

**Rural Settlement:** It's a settlement has less than 2,000 inhabitants, also includes agricultural localities. Excluding settlements located inside Jerusalem area (J1), which classified as urban settlements regardless the number of population.

1. **Moshav:** It refers to a rural settlement organized as a cooperative association, which has the right to agricultural farmland (as defined by the Israel Lands Administration). These settlements consist of family units, each of which is an independent economic entity. Part of the production and economic administration of the moshav is handled by the cooperative association, and the residents determine the degree of cooperation.
2. **Collective Moshav:** It refers to a collective rural settlement where production and marketing are cooperative and consumption is private.
3. **Kibbutz:** It refers to a collective rural settlement with cooperative production, marketing, and consumption.
4. **Institutional Settlement:** It refers to an institution, which has the characteristics of a settlement but is not within the administrative boundaries of another settlement.
5. **Communal Settlement:** It refers to a settlement organized as a cooperative association, which has no right to farmland and its members determine the extents of its cooperative activities concerning production, consumption, municipal, and social activities.
6. **Other Rural Settlement:** It's a settlement has less than 2,000 inhabitants and not found in any type of the settlements above.

# 3

## Chapter Three



### Methodology

3.1 Census Coverage

3.2 Special Questionnaire of Jerusalem Governorate

3.3 Questionnaires and Forms

3.4 Fieldwork

3.5 Methodology Relevant to Data on Gaza Strip



### 3.1 Census Coverage

The PHC-2007 covered all individuals who were in the Palestinian Territory on the census reference night (30/11-1/12/2007) regardless of nationality and citizenship. It also covered all Palestinians who have usual residence in the Palestinian Territory (including those who were temporarily absent for less than one year for the purpose of visit, tourism, treatment, etc. while their households are still living at their permanent places of residence in the Palestinian Territory). All Palestinian students abroad while their households are still living at their permanent places of residence were also included, in addition to all prisoners and detainees in the Israeli jails regardless of the duration of detention. The census excluded all Palestinians holding identity cards who were absent for more than one year (except for the students), even if their households are still living in their places of residence in the Palestinian Territory.

This was a decision made by the Census National Committee in its first meeting. The resolution states the following

1. **Determine the coverage of the census to include the entire population, housing and establishments in the Occupied Palestinian Territory in 1967, with the exception of Israeli settlements.**
2. **The enumeration includes the following categories of individuals:**
  - A. All individuals living in the Palestinian Territory at the census reference date regardless of nationality, citizenship and reason of presence, and regardless of where present in the Palestinian Territory.
  - B. All Palestinians who live abroad temporarily and for less than a year whose normal place of residence is in the Palestinian Territory, are to be counted with their households.
  - C. All Palestinians who are studying abroad, regardless of the duration of the study and length of residence abroad, and all individuals detained in Israeli jails regardless of the period of detention, are to be counted with their households.

### 3.2 Special Questionnaire of Jerusalem Governorate

Due to the special situation in the governorate of Jerusalem, particularly (J1) area. A summarized questionnaire has been designed especially for household and housing conditions for the J1 area of Jerusalem containing the following questions:

1. Number of nuclear households, type of housing unit and number of rooms.
2. Household members booklet which includes (head of the household relationship, sex, religion, age, refugee status, educational level and marital status).

### 3.3 Questionnaires and Forms

Three questionnaires have been designed for data collection which are: listing of buildings, housing and households questionnaire, the household and housing conditions questionnaire and economic establishments questionnaire. An additional questionnaire has been allocated for hotels. The following is a detailed demonstration of the items and variables of these questionnaires:

#### **Buildings, Housing and Households Listing Questionnaire**

The questionnaire of buildings, housing and households contains in addition to the identification data, a number of items and detailed variables including:

The owner's name or the name of the building, the type of building, current use of the building, type of owner, the year of establishment, construction material for external walls, the number of floors in the

building, the number of housing units at the building, current use of the housing unit, and the reason for the closure, absence, desertion of closed units, or abandoned.

#### **Households and Housing Conditions Questionnaire**

The questionnaire of households and housing conditions in addition to the identification data, has the following items and variables:

##### Section I: Housing Data and Conditions

**Housing data includes occupation type, housing type, number of rooms, number of nuclear households, housing property, number of bedrooms, connectivity of public water, electricity and sanitation, availability of a kitchen, bathroom and toilet, the method used for the disposal of household wastes, the main source of energy used in cooking and heating, availability of durable goods to the household, available information technology for the household.**

##### Section II: Individuals Data

- A. Data of all individuals regardless of their age, sex and nationality which are: the name, the head of the household, sex, date of birth, age in completed years, original nationality, religion, usual place of residence of the individual's mother when giving birth, usual place of residence, duration of residence in the usual place of residence, previous place of residence, and reason for changing previous place of residence.
- B. Data of Palestinian individuals which are: identification number, the refugee status, and difficulties or disabilities that might cause suffering for the individuals in case they exist and availability of insurance.
- C. Data of all individuals aged 5 years and over, namely: education, number of study years which are successfully completed in the formal educational system, usage of computer.
- D. Data of all individuals 7 years and over, namely: relation to labor status, main occupation, economic activity, sector activity status and place of work.
- E. Data of all individuals 10 years and over, namely: education level, specialization, place of getting higher education level and vocational training obtained by the individuals.
- F. Data of all individuals aged 12 years and over, namely: marital status, age at first marriage, duration of marriage, the number of live births and the number of them still alive males and females throughout the duration of marriage for women, and the number of live births and the number of them still alive males and females during the previous year.

##### Section III: Household Members

Summary of the number of household members divided into males and females.

##### Section IV: Tourism and Kindergartens

Tourism inside and outside Palestine; children enrolled in kindergartens by sex.

##### Section V: Agricultural Holdings

Includes the individual holder in the questionnaire, and the number of agricultural holdings by type (plant, animal, and mixed).

##### Section VI: Mortality

Includes questions about a case or more of death in the household during the 12 months preceding the census and thus the name of the deceased and their relationship to the head of the household, sex and age



at death and whether death was during pregnancy and childbirth and that for females in the stage of pregnancy and childbearing.

### 3.4 Fieldwork

Fieldwork stage of implementing the Population, Housing and Establishment Census-2007 includes several consecutive fieldwork operations which are:

#### 3.4.1 Updating Maps

PCBS proceeded to conduct a comprehensive updating of the maps for all Palestinian localities in early November 2006, which was completed at the end of June 2007. All localities were visited and their maps which had been prepared by the Census National Committee for nominating and enumerating the localities were updated.

After the completion of amendments to the maps, localities were divided into enumeration areas; each one includes about 150 housing units, with the exception of small localities that include less than 150 housing units, where each locality was considered to be an enumeration area, regardless of the number of the housing units accompanied by identifying aspects of the census fieldwork teams: supervisors, observers and enumerators. Everyone was allocated a specific area of work on maps to avoid overlapping or under counting of enumeration areas; many copies of the maps were photocopied for field work teams and the central operations room. The number of enumeration areas reached 4,916.

#### 3.4.2 Identifying and Delineation Enumeration Areas

Supervisors put signs on the walls of buildings located on the outer borders of enumeration areas of the 4,916 areas distributed on localities in the West Bank and Gaza Strip except (J1). The implementation of this process took 25 days from 18/08/2007 to 11/09/2007.

#### 3.4.3 Numbering and Counting of Buildings, Housings and Households as well as Establishments

The observers and their assistants carried out this process in all localities during the period from 20/10/2007 to 10/11/2007 through checking all buildings and putting the census number on the entries as well as the numbering of all housing units in each building, and collecting main data of the buildings and the housing units.

The main objective of this operation is to provide a range of important data on the numbers and characteristics of the buildings for use in policy making concerning housing. This process also aims to facilitate the work of enumerators in the implementation stage of counting the population. The observers during these operations have given each household a reminder questionnaire to be filled in on the morning of 01/12/2007 regarding the people who spent the reference night which is (30/11-01/12/2007) in housing and submit it to the enumerator to assist in the process of counting the population and ensure accuracy and coverage.

#### 3.4.4 Population Count

This process was implemented in the West Bank during the period from 01/12/2007 to 16/12/2007, while in the Gaza Strip it was implemented during the period from 25/12/2007 to 08/01/2008, where enumerators visited all the households in their homes and obtained data on the housing in which they live and their different characteristics, as well as all household members and registered the demographic, social and economic characteristics of each household member.

#### 3.4.5 Receipt of Booklets

The process of receiving booklets started after each enumerator had covered his/her enumeration area, which ended in the West Bank in the evening of 16/12/2007, and in the Gaza Strip in the evening of 08/01/2008. The process of receiving booklets is divided into two parts: fieldwork receipt, and then delivery to the censuses directorate in PCBS premises.

#### Receipt of Booklets from the Fieldwork

After the completion of the counting phase, the observers received all booklets and questionnaires from the enumerators which are: the household and housing conditions booklets, the enumerator organizational book. After receiving them, the observers submitted them to their supervisors, where they also conducted a technical check. The receiving process began in the West Bank as of 16/12/2007 and lasted until 25/12/2007 (during which was the holiday of Eid Al-Adha), while in the Gaza Strip it started from 08/01/2008 until 12/01/2008. All booklets were handed over to PCBS main premises in Ramallah and Gaza.

#### Receipt of Booklets in PCBS Main Premises

The receipt process started in the main premises in Ramallah from all governorates on 29/12/2007 and ended on 07/01/2008 in the West Bank, while it started on 24/01/2008 and ended on 26/01/2008 in the Gaza Strip.

#### 3.4.6 Post Enumeration Survey

Post enumeration is considered to be a developed technique of assessing and evaluating census findings. It was implemented through selecting a random sample of 218 enumeration areas representing all types of localities. The purpose of conducting such a study was to measure the rate of coverage and individuals in the Census-2007 to take these rates into account when preparing estimates of the population in the years to come after the census.

The field work was implemented during the period from 29/12/2007- 03/01/2008, and 12/01/2008- 16/01/2008 in the Gaza Strip. The process of editing the selected booklets for this survey was begun, matching them with the booklets of household and housing conditions which were obtained during the process of counting the population, i.e., data entry, data processing and extracting findings. These processes ended on 30/01/2008.

#### 3.4.7 Preparation of the Preliminary Results

After the completion of the counting process on 16/12/2007, the enumerators and observers carried out a desk review and prepared the preliminary results in the fieldwork from 16/12/2007 until 18/12/2007. After that, during the period from 24/12/2007 until 30/12/2007 preliminary results were compiled and reviewed by census managers in the governorates and then sent to the Census office in PCBS main premises. This operation was carried out in Gaza Strip during the period from 08/01/2008 until 15/01/2008.

After the receipt of the preliminary results forms from the fieldwork by the end of December 2007, which included a number of households and individuals both males and females at the level of the enumeration area, this data was entered into computers to extract preliminary statistical tables at the level of Palestinian Territory and the governorates level. These tables contain the number of households and the number of male and female individuals.

During the receipt of preliminary results, their coverage had been thoroughly checked which covered all enumeration areas to be compared with the main enumeration areas booklet to make sure that no enumeration area was dropped.

### **3.4.8 Data Processing**

Data processing stage includes all the stages after the fieldwork such as: editing, coding, data entry, electronic editing and disseminating through both the traditional methods (Publications) and online and on CDs and databases. Data processing was carried out in the West Bank by having two work shifts. This process started on 13/01/2008 by training editors and coders, and about 120 employees had been hired for each work shift in addition to the supervisor crew for each shift.

### **3.4.9 Preparation of Final Findings Stage**

During this stage certain basic steps had been achieved of which the most important were: data processing, tabulation and dissemination.

## **3.5 Methodology Relevant to Data on Gaza Strip**

The Population, Housing, and Establishment Census 2007 had provided partial of the data about the Gaza Strip. However, not all of the required data was made available from the 2007 census because processing of census data for the Gaza Strip was not completed. As a result, other required indicators on the characteristics of households and individuals in the Gaza Strip were estimated based on the results of the surveys that were carried out by PCBS in the Gaza Strip in 2006 and 2007. The following clarifies the mechanism that was used to obtain estimates of some of the indicators on the Gaza Strip:

### **3.5.1 Statistical Data on the Social and Demographic Characteristics**

1. Total number of population and number of households by governorate, as well as the distribution of population by sex was adopted in accordance with the actual enumeration of the population in the governorates of the Gaza Strip during the period 25/12/2007- 08/01/2008.
2. Distribution of population by other characteristics (marital status, refugee status, type of household, size of household) represents the projected data from the Palestinian Demographic and Health survey 2006.
3. Distribution of population by education indicators (educational attendance, educational status) represents the projected data from the Palestinian Demographic and Health survey 2006.
4. Data on the labor force (labor force participation rate, unemployment rate, the distribution of employees by place of work, by economic activity and by occupation, and by employment status) were based on data estimates, according to the results of the labor force survey for the round (October - December, 2007) the fourth quarter, 2007.

### **3.5.2 Data for Area Statistics**

1. The number of housing units in the Gaza Strip was based on the final results of the report of the Buildings in the Palestinian Territory 2007.
2. Regarding data on housing conditions (tenure, type of housing unit, number of rooms in the housing unit, availability of durable goods), estimates were based on the results of the Palestinian Demographic and Health survey 2006.
3. Estimates on the distribution of households by main source of water in the housing unit were based on the results of the Palestinian Demographic and Health survey 2006.
4. Estimates on the main source of energy used for heating were based on the results of the Palestinian Expenditure and Consumption Survey 2007.



# 4

## Chapter Four



### Data Quality

4.1 Introduction

4.2 Control Procedures in the Preparatory Stage

4.3 Control Procedures in the Implementation Stage

4.4 Control Procedures in the Stage of Data Processing

4.5 Data Quality Assurance



### 4.1 Introduction

There are two types of errors that can occur: statistical errors and non statistical errors. Statistical errors occur in surveys using samples and do not exist in the censuses. It is easy to measure errors and to estimate the rate of errors since it results from errors in the sample. While non-statistical errors are possible to occur at any stage of the implementation of the censuses or surveys, there was a need for developing a system to control the quality of census data during the implementation of the second Palestinian Census of 2007 since there were many stages of work in planning and implementing the census requiring a great number of employees hired for a short time, with variation in work quality from one to another that could badly affect the findings of the census and their reliability.

The main objective of the quality control programme is to prevent or reduce the incidence of errors to the greatest extent possible and to detect errors in order to take appropriate measures to correct them. Without using such a programme, census data might contain many errors and may not be suitable for use.

To achieve the required efficiency, an efficient system of quality control at all stages of the census had been developed to control all stages from the very beginning of the preparatory stage till data processing and dissemination to guarantee high level of data quality. Quality control is of vital importance particularly in the planning stage since it is connected with all stages to come, and thus every stage was allocated enough time and procedures to ensure the achievement of high quality and reliability of census data.

### 4.2 Control Procedures in the Preparatory Stage

The preparatory phase took into account the development of simple definitions and instructions and compatibility with international recommendations and the needs of beneficiaries in the design of questionnaires to the extent that instructions could be transferred honestly. Attention was paid to ensure that all booklets and questionnaires would be received and stored, and that all booklets and questionnaires would be entered into the computer in addition to preparing certain forms to control quality of work, achievement and the design and selection of data entry programs beforehand.

A plan was made for updating localities, enumeration areas manual, and detailed maps of the enumeration areas manual, where every establishment, building, housing, household and individual were counted, and adequate attention was given to special localities such as nomads, since they were covered in the census. Clear and simple instructions were developed for counting personnel at border crossings and the residents of collective housing.

It also set up a procedures to examine the coverage rates for individuals and households through the post Enumeration Survey. Also taken into account was the printing of booklets and questionnaires to validate data collection, entry and storage. A certain type of indexed bags was used for keeping the households and housing conditions booklets as well as the buildings booklets to be easily reached and used.

Through a pilot census comprehensive testing was done for all questionnaires, tools, procedures, forms, fieldwork and office editing, PES, printing of questionnaires and manuals at this stage, selection of data entry programs and error detecting programs, reviewing lists and coding manuals and tabulation processes and preparatory stage dissemination in advance. The expected requirements of human and financial resources, time schedule for the completion of all activities in this stage had been estimated in advance.

### 4.3 Control Procedures in the Implementation Stage

#### 4.3.1 Selection and training of employees

Given the magnitude of this project, multiple levels and the volume of its employees, it was necessary to develop procedures that ensure the collection of reliable data, since maps of each area were updated under continuous supervision from the project management, and to re-divide enumeration areas according to the ability of fieldworkers in various activities so as to achieve them on time.

It had been taken into consideration to select the best qualified unemployed employees particularly those with scientific qualifications like diploma and B.A. since there are many in nearly all the governorates except (Ramallah and Al-Bireh, and Jerusalem) where we had to employ a small number of Palestinian university students as enumerators, and also that the fieldworkers have to be from the same locality to guarantee their efficiency in carrying out their mission.

Plans and training programs for all employees had been prepared in advance: census managers had been trained in the governorates first and then trained supervisors, who participated in turn in the training of enumerators and observers. As a precaution, PCBS trained in each stage an additional 30% of the actual required employees as alternates in case of resignation, dismissal, emergent conditions, and low achievements.

#### 4.3.2 Data collection

Fieldworkers were distributed so that each supervisor had responsibility for managing 5 observers, and each observer had to supervise 5 enumerators, while each enumerator had to collect data for about 150 housing units within 15 days. The basics of selecting the employees depended on the a unified assessment (test); the individuals who got the highest grades were selected and employed, while the census directors (PCBS Managers) were selected for their considerable experience in administrative and statistical work, and some of PCBS statisticians and fieldworkers were appointed to work as supervisors.

With regard to the method of counting, the direct interview technique was used and the necessity of getting data from the head of households, or from a reasonable adult person. In case of the absence of the head of household or non-existence of the right person, the enumerator pays other visits to the household at different periods of time until he/she collects the data from the qualified person.

Enumerators had also depended on official documents in terms of collecting basic data such as name, date of birth, identification number, and submitting a reminder questionnaire to the households to fill in the basic required data before the actual counting to save time and facilitate the mission for both households and enumerators. Moreover, specific instructions had been given to all employees of all levels in how to carry out fieldwork and desk reviews, and in how to review and correct the errors. The supervisor, for example, had to check himself/herself part of the questionnaires for at least 2% of what had been achieved by the observer and the enumerator in addition to checking the coverage and quality of data, particularly on the first days of work, and supervising the daily desk and fieldwork. As for observers, they have to collect 5% of the data from the households that the enumerator had collected to ensure household coverage and consistency of individual data, and notifying the enumerators of their errors.

Every supervisor had to meet his/her fieldworkers subordinates on a daily basis to give new directions and instructions received from the operations room to correct errors that occurred in the previous day



and to avoid errors. Those supervisors had to conduct a daily desk review of what had been achieved by their subordinates. A campaign had accompanied all activities of the census, and included all means of media, and as the census date approached, to ensure greater cooperation of the citizens census crews.

Many types of forms were developed regarding either the daily accomplishments and follow up or the accomplishment of the preliminary findings and related materials, documents, booklets, received supplies or deliveries, control of employees work duration and follow up forms of households coverage which were prepared ahead in stage of enumerating buildings and others.

A central operations room was formed at the PCBS headquarters in the West Bank and another in the Gaza Strip whose main task was to work 24 hours a day, including technicians, administrators and support services to answer queries and to meet the needs and requirements and issuing any written general instructions. This was in addition to the group of assistants in each governorate to assist the census director.

This census was also significant for using decentralized databases in the governorates, through which the employees daily achievement was registered and which controlled all technical and administrative work processes in all stages. This helped the Census management and the central operations room at the headquarters of PCBS to control and follow-up on work at various levels and take necessary action in the suitable time.

The post enumeration survey was implemented for 4% of the total enumeration areas aiming at examining the coverage rates of individuals and households, and a complete re-count of all households and individuals in selected enumeration areas was conducted. This study showed under coverage of individuals reached 3% in the West Bank.

### 4.3.3 Refusals Cases

Several procedures were developed to cope with the refusal cases by some private citizens especially in the Jerusalem Governorate and surrounding communities resulting from Israeli harassment toward the Palestinians residing in Jerusalem and the surrounding areas. These procedures included field visits by members of the central operations room to deal with such cases, and participation of officials to eliminate these cases.

### 4.4 Control Procedures in the Stage of Data Processing

Data processing stage includes editing, coding, data entry, reviewing lists and checking all previous operations to data entry for all enumeration areas. All procedures and instructions were made so as to check the consistency of the data and coding fields and ensure the entry of all enumeration areas as well as all booklets and questionnaires, and their content of buildings and housing units, households and individuals data. As procedures to check the booklets and questionnaires and the process of moving them from one operation to another, to ensure that all operations required for each form were properly implemented, a store was prepared for all the documents to be indexed and categorized, so that the store keeper controlled the flow of bags and booklets and the preparation of daily achievement.

Coding manuals were prepared and examined beforehand as well as the instructions for editing and coding procedures for checking the consistency of the data and how to detect and correct errors. All editing and coding employees were selected among the best fieldworkers who collected the data from households and individuals. Training was conducted for them centrally to ensure unifying of concepts

and checking data to eliminate disparities in fieldwork in all governorates. Editing, coding and testing consistency of (100%) of the questionnaires was conducted, in addition to desk reviewing, editing and coding (100%) in order to eliminate differences between individual editors, and to discover and correct errors and circulating them daily.

With regard to data entry, tests had been held for all applicants, and those that performed best on the exam were trained centrally on a unified procedures of data entry. During the first three days all what had been entered was deleted to be reentered again to correct errors and notify the employees to avoid such errors in the future. Certain procedures were adopted to ensure the correctness of data entry, since in the first stage a unique separate file was prepared for each enumeration area that included identification data (to ensure coverage) including the number of households and the total number of booklets to ensure that all booklets and all households had been entered. Upon data entry a thorough examination of the identification data and the range of each digital key question was conducted, so that the computer did not accept any figure outside this range, such as the head of the household relationship, sex and all the pre-coded questions in the household and housing conditions questionnaire, and the type of building in the buildings questionnaire, for example. The remaining other questions were exposed to a comprehensive re-examination of the range of each question after data entry, and extraction errors lists resulting from data of inconsistency.

After data entry certain lists were extracted to ensure the coverage of data entry of all enumeration areas, buildings, housing units, households and individuals, and to examine the internal consistency of the data of each unit. The used procedures were to extract errors lists that must be corrected or questioned, and these lists were submitted to the best reviewers under full supervision of the technical operations in the censuses directorate.

Certain prepared previously programs were used to detect errors according to the following procedures:

1. A manual was prepared for instructions of desk editing and the procedures of the questionnaire of the household and housing conditions, as well as a set of desk editing instructions printed on paper, and the procedures of the questionnaire of buildings, containing all the tests, whether the tests designed to ensure the coverage of data entry, to detect inconsistency errors or to detect abnormal and rare cases; they were reviewed, and there is a printed name and number for every error in the manual to be easily found.
2. A list was extracted for each enumeration area including the identification data of each building, housing unit, household or individual message (Type of Check) and the number printed in the manual, which helps the auditor to recognize the message name and type of error, location and procedures of editing and audit procedures patch, which consists of more than (600 ) checks on several stages.
3. Lists were submitted to the reviewers to go back to the original booklets; if the error was caused by the data entry, it would be corrected on the list, but if the error was due to fieldwork, all associated questions should be considered for correction. For example: if the type of housing was a tent or a separate room, the number of rooms must be (1) by definition, so the first treatment would be conducted through manual editing, then extracting the electronic lists after data entry for such types of tests, then they were corrected manually on the original booklets, and data were reentered correctly. As for the coverage test, there is a key reference that contains all enumeration areas and shows the number of booklets and households in the enumeration area then to be entered to computer. At this point if there was a variation between the number that was actually entered of

booklets and households, and what was entered of the total number of households in the file of each area, an error message appears to indicate it to be corrected. Through this method we ensure that 100% of the households were entered. By the same method we ensure that all household members were distributed to males and females and that 100% of them were entered through connecting the manually prepared summary of household members and the entered data of each household, and the individuals number distributed to males and females through the individual successive number in the household to ensure that 100% of households members were counted and entered according to their gender, in addition to the existence of a unique successive number for each household in the enumeration area.

As for dealing with the non applicable, they were coded as non applicable and represented by the figure (9) according to the number of digits for each question unless there is a certain indication that leads to selecting the suitable answer for variables such as: gender and head of household relationship in the questionnaire of households and housing conditions.

1. Extracting all enumeration areas lists through this way and all kinds of tests.
2. Amended lists were sent back to data entry to be entered and corrected, and a copy of the daily entered data was kept in several different places.
3. Previous stages were conducted twice or more until the data of each enumeration area became clean.
4. All files were compiled for enumeration areas for each locality of each governorate. Then all tables and any additional tests were conducted in participation of all specialists in the different areas (Demography, Education, Labor Force, Housing, Buildings, etc.) to test the data before the final tabulation in order to correct errors according to the aforementioned procedures.

### 4.5 Data Quality Assurance

The process of census results evaluation by estimating the values of errors and trends is considered to be a necessary process to answer questions concerning the accuracy and the coverage of census data and to defend the credibility of the findings against skeptics. There are several methods and tools to evaluate the results of the census in terms of coverage and content, which includes either a single source of data (the census itself) or multiple sources. The use of multiple sources, in turn, is one of two ways: either by comparing the booklets of individuals or comparing the overall values.

The quality testing programme for the Census 2007 contains several methods for measuring the quality and the coverage of data and trends, concentrated in several areas such as: Post Enumeration Survey (matching individual booklets), the comparison with administrative booklets, the comparison with the results of household surveys, conducting demographic analysis. The following is a detailed explanation of these areas:

#### 4.5.1 Post Enumeration Survey (PES)

The Post Enumeration Survey is a sample survey conducted shortly after the census to assess the census. PES usually consists of two types of match studies: identical study to measure coverage errors and re-interview survey for the purposes of assessing the errors in the content of census data with respect to indicators of population.

The Enumeration Survey is usually the only reliable method of measuring errors in the census coverage in developing countries, if we take into account the lack of accurate administrative registers, and the

limited availability of accurate demographic data on fertility, mortality and internal migration. In addition, the method of matching individual records provides the possibility of getting separate estimates on both coverage errors and content errors which is not easily achieved in the studies that do not adopt the method of matching individual records.

In the PES the quality control of data is easier due to the limited area of study, that is, a sample of areas. On the other hand, PES process includes an additional operation that is not included in the census, which is the matching process between census booklets and the booklets of PES and this additional step would include non-statistical errors. Due to this, all requirements of supervisors and enumerators should be prepared and well qualified, so the rate of supervisors to enumerators should be (1 to 5). It is necessary to appoint distinguished and adequately trained matching officials at all stages.

Although that the Enumeration Survey was not designed to be fully independent of the census, since the enumeration areas of the census will be used as preview units for the Enumeration Survey, the following points should be taken into account since they would lead to independence in practical actions:

1. The return of all census questionnaires from the field before the start of counting in the Enumeration Survey.
2. Counting the areas of the Enumeration Survey by crews of fieldworkers excluding those who worked as enumerators in the census (it is logical to employ census supervisors and observers to work in the Enumeration Survey in order to benefit from their experience, as long as they are appointed to work in other areas than those they worked in during the census).
3. The employees of the Enumeration Survey must not have any preliminary information about census findings in the enumeration areas in which they are going to work.
4. The employees of the census also must not know what enumeration areas will be selected to conduct the Enumeration Survey later.
5. The data of the Enumeration Survey must be separately processed from the census data.

### Describe the Used Frame

The frame of the Enumeration Survey includes all the enumeration areas of the Census-2007 which totaled 4,916 enumeration areas distributed in all governorates of the West Bank and Gaza Strip. To implement the Enumeration Survey, 218 enumeration areas were chosen to be a stratified cluster sample designed for a single-stage, where all households in selected enumeration areas in the sample were collected.

#### 4.5.2 Internal Data Consistency Testing

Given the fact that the Population, Housing and Establishments Census-2007 is the second census on population, households, individuals, buildings and housing units and their detailed characteristics, the issue of testing data quality by all possible means was of paramount importance, especially the internal data consistency and comparing the findings with other surveys.

Based on the distinct experience of the census, certain instructions were developed during the fieldwork implementation to assure getting high data quality, and develop procedures and forms to control supervision and follow up.

Certain rules for desk editing and procedures of detecting consistency errors and correcting them had also been drawn up. During the cleaning process, many tables and detailed editing were extracted,



reviewed and tested by the Censuses directorate and by those concerned with the subject from the other directorates.

In addition, a copy of the raw data was handed over to each subject specialist to test the accuracy and data quality and consistency of procedures before the process of extracting the final tables and to make any adjustments required.

### 4.5.3 Findings Comparison with Other Sources

The census data and indicators were compared by the subjects officials and census directorate with the common data and indicators of surveys. A comparison was conducted between the key indicators and the derived rates from census data in several areas. Comparison was made with the indicators of the Household Health Survey 2006, Demographic Survey 2004 and Health survey 2000, in addition to various comparisons with previous census findings of 1997, particularly with regard to population, distribution of gender and age, total fertility rates, average household volume and household composition, and results indicated a great amount of consistency between them. Comparison of disability indicators with Census-1997 findings, and Health Survey 1996, was difficult and even impossible due to variation of the concepts of disability and difficulty.

With regard to housing and housing conditions, data were compared with indicators of census and household surveys common indicators, particularly in the indicators of the number of rooms per household, housing density, and the type of housing, in general; most results were close and logical.

When comparing the Census-2007 with Census-1997 indicators and with certain selected surveys, the results were as they appear in the next table, where the data indicated age structure and quality, percentage distribution of the households depending on the type of household, the average household size, and others. The data was of high quality and differences are logical and justified and there is consistency between indicators drawn from different sources, taking into account the reference date and work methodologies to explain the differences in case it exists.

### Comparison Table Between Selected Indicators in Census and Some Surveys

Indicator	Census 1997	Health Survey 2000	Demographic Health Survey 2004	PAPFAM 2006	Census 2007
Sex Ratio	103.2	102.0	102.1	102.8	103.1
Median age	17.0	17.4	17.6	17.9	18.0
<b>Age distribution</b>					
0-14	45.0	44.9	43.9	43.9	41.5
15-64	51.2	51.5	52.3	52.8	55.1
65+	3.8	3.6	3.8	3.3	3.4
<b>Proportional distribution of the households</b>					
consisted of One person	3.7	4.3	5.0	4.1	4.2
Nuclear household	74.0	79.0	82.7	80.7	83.2
Extended household	21.7	16.5	12.2	15.0	12.4
Compound household	0.6	0.2	0.1	0.2	0.2
Household Size	6.1	5.7	5.5	5.9	5.5
No. of persons per room	1.9	2.0	1.8	1.8	1.6

### 4.5.4 Use of Demographic Analysis Methods

The usage of demographic analysis methods to assess population data of censuses is considered one of the common methods for assessing the quality of data. It can assess the data of age and age structure and sex in the community through estimating certain demographic measures to examine and assess the data of age and sex. The following was conducted:

- Calculating some index numbers to measure the accuracy of age data and preference of individual age such as: Myers number, Patchi, Wipple and the Secretariat of the United Nations.
- Calculating the percentages of different age groups.
- Calculating the sex ratio for age groups.
- Calculating the percentage of not stated.
- Examining internal consistency between the relevant variables when extracting the tables.

This had logical and acceptable results within the standards and recommendations.