Palestinian National Authority
Palestinian Central Bureau of Statistics

Methodology of the Existing Buildings Survey

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Chapter One: Introduction

Construction is considered one of the important activities that contribute to economic growth. Strong construction activities are perquisite for the development of infrastructure along with investment opportunities as well as job creations in various economic activities.

Planning and policy making for the development of the social and economic conditions of any country requires the availability of detailed and comprehensive statistical database about the different economic sectors. In the Palestinian Territory, construction is an important economic sector due to its uniqueness and intersection with a number of other sectors, making it more sensitive to changes in economic activities, demographic factors as well as social development. Such uniqueness stems from the contribution of the construction sector to the Gross Domestic Product (GDP), the labor force as well as its connection and direct impact on other economic activities. The construction sector is strongly linked with other activities, such as manufacturing, transport and trade, and others. For example, the manufacturing output of raw materials used in construction is viewed as industry's output but also this material is used in the construction activity, and that reflect on the fact that the economy is an integrated unit.

In particular, the survey of Existing Buildings is a way to cover the informal sector, which contributes a significant proportion of the total construction activities. The informal sector covers small contractors and skilled as well as ordinary workers who are self-employed and not registered within the contracting companies. To measure the output of the informal sector, the methodology is to collect relevant data directly from the owners of buildings because of the difficulty to develop directly a statistical frame for the informal sector. Since the construction of buildings without a permit is active especially outside the boundaries of municipalities, this survey was designed to reach an estimate to the production value of the construction activities, which was carried out by the informal sector.

Large segment of Palestinian households depend on the informal construction sector (Outside establishments) as main source of income where households own construction projects that are characterized by no fixed cost like licensing, reliance on labor force, lesser entry barriers to local market in addition to the small size of the production of these projects individually.

The significance of the results of the Existing Buildings Survey is their contribution to the calculation of the value added of the informal construction sector for the preparation of National Accounts according to the System of National Accounts issued by the United Nations (SNA’93), in addition to its importance in providing the necessary data for decision-makers and planners and others interested in the informal construction sector.

The survey of the Existing Buildings (informal sector) is implemented by countries where the informal construction sector contributes largely to the GDP and to the labor force and that necessitate to monitor this sector in a scientific and accurate manner.
1.1 Objectives

The study aims to develop more sophisticated methodology for monitoring of the informal construction sector in order to relevant calculate the value added to prepare the Gross Domestic Product.

1.2 Report’s structure

The report on the Methodology of Existing Buildings Survey is divided into several chapters as follows:

Chapter One: Includes introduction about the Existing Buildings Survey, its objectives and structure of this report.
Chapter Two: Addresses the most important literature on the subject.
Chapter Three: Presents the main findings of the report.
Chapter Four: Presents the detailed study for changing the methodology of the Existing Buildings Survey.
Chapter Five: Presents scenarios for the development of the methodology of the Existing Buildings Survey.
Chapter Two: Literature Review

The survey of Existing Buildings was among the first surveys that were conducted by PCBS. In the preparatory phase, PCBS examined the status of the construction statistics in the Palestinian Territory and also reviewed the experiences of other countries in the production of such statistics. The first round of Existing Buildings Survey was implemented in 1996 with reference period as 1995. Since then, the survey has been carried periodically on annual basis. It is worth mentioning that the Existing Building Survey is carried out as complementary activity to cover existing buildings in the informal construction sector, which cannot be covered in the main economic surveys that target construction establishments. The Existing Building Survey had been conducted using same methodology until 2007, when the methodology was reviewed and further developed to be more consistent with the informal construction sector.

The index value of expenditure on ongoing maintenance, the costs of maintenance and capital improvements, as well as the value of expenditure on the construction of a building is among the most important indicators that are measured in the Existing Buildings Survey. These indicators are utilized by National Accounts in the calculation of the GDP for the informal sector.

Experience of other countries:
Thorough review of references on the subject using the internet and PCBS' statistical library indicated that most countries do not implement an independent survey for this sector. Some countries cover this sector as part of the informal sector in general and others estimate relevant indicators for the calculation of its contribution to the GDP. In regards to the experiences of neighboring countries in this area,

1. Jordan's experience:

A survey is implemented to cover that part of the construction sector under the name of the supplementary survey through filling of special forms based on a stratified random sample derived from the frame of the new licenses for buildings that are collected in the census of building licenses.

The survey is a stratified random sample that is based on the estimated cost of constructing a building in any district, where the cost is calculated per square meter, and multiplies it by the number of constructed buildings.

2. Yemen's experience:

The Yemeni experience is significantly similar to the Palestinian one in the issuance of expenditure statements for existing buildings; where this survey is a stratified random sample designed based on the blocks located at the outskirts of district's capitals in big cities and also in the middle of these districts, depending on the number of buildings under construction as an indicator to the concentrated activity of construction and urbanization through the utilization the buildings' frame of census 2004. The Yemeni experience focuses more on building sites at the outskirts of or in the middle of localities.
## Chapter Three: Summary of Results

### Evaluation of the methodology of existing buildings survey

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<tr>
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<tbody>
<tr>
<td><strong>Targeted Population</strong></td>
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<tr>
<td>Targeted population</td>
<td>The survey's targeted population consists of all buildings in the area to be covered. Buildings can be used for: housing only, housing and work, work only or may be closed or empty.</td>
<td>The survey's targeted population consists of all buildings in the area to be covered. Buildings can be used for: housing only, housing and work, work only or may be closed or empty.</td>
<td>No change to the targeted population in the two methodologies</td>
</tr>
<tr>
<td><strong>Sample and sampling frame</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sampling frame – phase 1</td>
<td>All Enumeration Areas (EA's) of the Population, Housing and Establishment Census 1997</td>
<td>Comprehensive sample of 300 Enumeration Areas of the Population, Housing and Establishment Census 2007.</td>
<td>The sampling frame in the new methodology is more up-to-date (since it is updated regularly)</td>
</tr>
<tr>
<td>Sampling frame – phase 2</td>
<td>All buildings that had been listed in the 1997 census and were selected in the sampled enumeration areas in the first phase.</td>
<td>All buildings that had been listed in the comprehensive sample in the census 2007, in addition to buildings that were constructed after the Census 2007.</td>
<td>Because of the addition of new buildings, the frame of the second phase in the current methodology has better coverage</td>
</tr>
<tr>
<td>Updating the frame</td>
<td>Enumeration areas were not updated</td>
<td>Identify all new buildings in enumeration areas of the comprehensive sample (300 districts counted) after the census 2007</td>
<td>Enumeration areas are updated in the current methodology for only the main sample on an annual basis.</td>
</tr>
<tr>
<td></td>
<td>Used update sources</td>
<td>Reference period (Survey's time frame)</td>
<td>Sample size</td>
</tr>
<tr>
<td>------------------------</td>
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<td>----------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td>No sources</td>
<td>Same period for data collection</td>
<td>245 enumeration areas; about 4000 buildings</td>
</tr>
<tr>
<td>Fieldworkers update the enumeration areas of the sample on annual basis, during data collection in the sampled buildings in any enumeration area</td>
<td>Same period for data collection</td>
<td>300 enumeration areas; about 4000 buildings in addition to new buildings</td>
<td>Stratified systematic random cluster of two phases</td>
</tr>
<tr>
<td>Current methodology is better since it takes into consideration the annual update</td>
<td>No difference between the two methodologies</td>
<td>Sample size in the new methodology is larger than the previous one</td>
<td>Same sample type in the two methodologies</td>
</tr>
</tbody>
</table>

1 That part of Jerusalem which was annexed by Israel in 1967
<table>
<thead>
<tr>
<th>Weights</th>
<th>Depending on the design of the sample</th>
<th>Depending on the design of the sample, and single weight is given to each new building listed as new</th>
<th>Weights give better results in the current methodology about the number of buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensional stratum</td>
<td>None</td>
<td>The age of the new building added after data is collected on these buildings</td>
<td>current methodology takes into consideration dimensional stratum</td>
</tr>
<tr>
<td>Dissemination level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geographical levels</td>
<td>Region: West Bank, Gaza Strip, Jerusalem (J1)</td>
<td>Region: West Bank, Gaza Strip, Jerusalem (J1)</td>
<td>No difference between the two methodologies</td>
</tr>
<tr>
<td>Data Collection</td>
<td>Forms are allocated for the sampled buildings that are derived from the buildings frame, in addition to buildings that are established during the reference year.</td>
<td>Forms are allocated for the sampled buildings that are derived from the buildings frame, in addition to buildings that are established during the reference year.</td>
<td>No financial data is collected in the old methodology regarding buildings that are established between the buildings census and the reference year of the survey. Under the new methodology, buildings that are established between the buildings census and the reference of the survey are added to the buildings frame and accordingly become subject to selection in the sample</td>
</tr>
<tr>
<td></td>
<td>The buildings that are established between the buildings census and the reference year of the survey, general data is collected for amending the weights only.</td>
<td>The buildings that are established between the buildings census and the reference year of the survey, they are added to the buildings frame and accordingly become subject to selection in the sample</td>
<td></td>
</tr>
</tbody>
</table>


<p>| Used forms | Survey's form is used in addition to another form used for collecting general data about buildings that are established between the buildings census and the reference year of the survey | Survey's form only | No financial data is collected in the old methodology regarding buildings that are established between the buildings census and the reference year of the survey |
| Maps | Variable enumeration areas each year and therefore maps are used for one-time based on the sample. Accordingly, any update on the maps does not benefit the survey in future data collection. | Fixed enumeration areas. Maps are updated. Accordingly, any update on the map benefit the survey in future data collection. | Old methodology does not contribute to the update of maps. The current methodology updates maps for the benefit of the survey's future data collection |
| Survey's main findings | Variance calculations: Level of dissemination | Variance calculation reached 15-20% within the same strata | Dissemination of all indicators Variance calculation reached 10% | Current methodology reduced the amount of variation within the stratum since the targeted population were divided into more homogeneous stratum |</p>
<table>
<thead>
<tr>
<th>The cost of construction for new buildings and the quantities of cement</th>
<th>Previous methodology showed contradiction between these two indicators with inverse relationship between the quantities of imported cement and the cost of the construction of a building.</th>
<th>There is complete correlation between these two indicators: Increased quantities of imported cement are correlated with the increase in the cost of construction of buildings for the two years (2008-2009).</th>
<th>The current methodology has contributed to better correlation between the variables of the survey since the sample is more representative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparison of the expenditure regarding the establishment of the new building by type and indicators on buildings number according to Census 2007</td>
<td>Negative correlation between the two indicators</td>
<td>More coherence between the expenditure on establishing new buildings and number of building licenses by type during 2008-2009.</td>
<td>The number of issued licenses is suitable for comparison as this indicator has become more representative to the targeted population according to the laws that have been approved in the Ministry of Local Government.</td>
</tr>
</tbody>
</table>
Chapter Four: Changing of Survey’s Methodology

Detailed review of the Palestinian experience (1996-2007) in using the previous methodology

4.1 Sampling Frame, Weights and samples

- PCBS relies on the 1997 frame to modify the used weights based on the survey's selected sample taking into consideration buildings confined in the sampled Enumeration Area without updating the frame itself. Regarding new buildings established after 1997, a new weight is given to these buildings in addition to the weight given to the Enumeration Area. However, these new buildings are not reflected on the frame or the corresponding maps. Accordingly, the survey does not collect data on these new buildings in future rounds because they are not part of the frame.

- There is constructional pattern within localities or in enumeration areas that is not accounted for during the selection of enumeration areas. The data reveals that there are more construction activities at the outskirts of cities than at the more urbanized centers.

- Jerusalem represents about 9-10% of the survey's sample. The sampling frame of 1997 was used to derive the sample for Existing Buildings Survey where the sample is drawn in two-stages. However, the sample for Jerusalem is drawn in single stage which is the selection of Enumeration Areas while ignoring the second stage regarding the selection of buildings by type of (house, villa, tent, …etc.). This resulted in larger variances in the survey's data on Jerusalem. In addition, buildings are counted in the selected enumeration areas in Jerusalem to calculate the weights through the manual count of existing buildings on the maps.

4.2 Methodology of Data Collection

Data collection requires the fieldworker to visit all of the existing buildings in the sample using the maps of census 1997. In case of new buildings that are not on the maps, all of these buildings are listed, in addition to the buildings that were established during the survey's reference period. However, no financial data is collected for buildings that were established before the reference period of the survey. Such methodology resulted in:

- No collection of data on two key indicators pertaining to the expenditure on current maintenance as well as spending on capital improvements for buildings that were established after 1997. Buildings that were established after 1997 account for 44% according to census 2007 (with annual increase of about 4.4%).
- As a result, the value of these two indicators lacks coverage that increases by time. This also affects the calculation of expenditure or production that is used by National Accounts.

**Descriptive Example:**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>○</td>
<td>Represent buildings established in 1997</td>
</tr>
<tr>
<td>□</td>
<td>Represent buildings established during 1998-2006</td>
</tr>
<tr>
<td>△</td>
<td>Represent buildings established during the reference year (i.e. 2007)</td>
</tr>
</tbody>
</table>

The descriptive drawing shows that some of the buildings that were established in 1997 are part of the sampling frame 1997 and drawn in the survey's sample. Complete data is collected about these buildings including financial data relevant to expenditure indicators (new building, additions, current maintenance, and capital improvements).

Regarding buildings established during 1998 and 2006, they are not part of the sampling frame 1997 and as a result not drawn in the survey's sample. These buildings are not reflected in the weights and no financial data is collected about these buildings. Regarding buildings established during the survey's reference year, data relevant to expenditure indicator is collected for these new buildings. However, data relevant to other indicators are not collected since the building is a new one.
4.3 **Maps and Buildings Register**
Maps are considered essential tool in this survey. New buildings are not reflected on the maps or the sampling frame or the weights.

4.4 **Survey's Instrument, Concepts, Definitions and Fieldwork**

- Definition of current maintenance and capital improvements are not fully clear to fieldworkers and respondents. The identification of which maintenance can be classified as current or capital is ambiguous. This resulted in fluctuation in the values of these two indicators.

- Revision of the definition of current expenditure used in the Existing Buildings Survey revealed that respondents provide broad estimation and therefore results pertinent to this indicator lacks consistency.

- There are no items in the cost of construction of the building, maintenance and capital improvements that cover the cost of the engineering design.

- One question in the Existing Buildings Survey is about the estimated current cost of the building (without land). The collected data is found not accurate with variances reaches about 40%. As a result, statistics pertaining to this indicator was never published.

4.5 **Weight Calculation, Tabulation, Validation and Re-interviewing**

- Thorough revision of the calculation of indicators, procedures of data editing, and routines of tabulations were implemented to ensure validity of these operations.

- Paired Sample T-test was applied on the re-interviewing data and the results indicated significant consistency (5%) between the survey's results especially for current expenditure, capital improvements, and the construction of the building.

- However, the difference between the data provided in the original questionnaire and the interviewing forms amounted to about 70% in certain instances due to different respondents since the building is under construction. This reiterates on the fact that time difference is not a factor for lack of data accuracy.
Chapter Five: Scenarios for changing of Methodology

5.1 Frame and the targeted population:
5.1.1 Targeted population:
Targeted population of the Existing Buildings Survey includes all buildings in the selected Enumeration Areas. Type of Buildings include: Housing only, both housing and work, Work only, closed, and vacant.

Construction activities are continuous and that requires defining specific time frame for the targeted population. The fieldworker should decide on the status and use of the building. Defining the targeted population also help in measuring over and under coverage during the development of the survey's frame and after the completion of the survey's results.

Buildings type includes villa, house, apartments building, marginal, Establishment or under construction and others in case none of the mentioned types is identified.

5.1.2 Sampling Frame
After defining the target population, the sampling frame is prepared by using available data which come from two main sources:

1. Central registers:
A good source of the sampling frame is the central building register providing that it is up-to-date with basic data (identification fields, building type, and current use of the building). The sample could be drawn from this register using one sampling phase only.

2. Buildings census:
A questionnaire is filled for each building including basic data such as building type, current use and establishment year. The census should have specific reference period. However, the problem in such approach is that some of the basic data might not be available and that would lead to lack of coverage in the buildings frame.
In case that data about buildings is made available through a buildings census, the quality of the census data affects the quality of the sampling frame and the samples drawn from this frame as well. On the other hand, censuses provide data on specific geographical areas and thus frames of enumeration areas could be developed based on the census data as the case with the sampling frame for the Existing Buildings Survey.

In addition, the frame of enumeration areas and the frame of buildings could be both utilized to better serve the sampling as shown:
Scenario 2: Buildings frame includes listing of buildings, identification data and main characteristics.

Scenario 1: Enumeration Areas Frame. Listings of enumeration areas, total number of buildings per enumeration area along with.

Scenario 3: Frame for comprehensive listing of enumeration areas, along with total buildings per enumeration area and identification data.

Frame for buildings located in the enumeration areas of the comprehensive sample. Buildings' identification data and main characteristics.
Statistical frames could be developed using one of these scenarios:

5.2 Scenarios

1. **First Scenario:**

   The frame is a listing of enumeration areas and samples are drawn using area sampling. The drawn sample is of type enumeration areas where each one could be listed completely or partially depending on the desired sample. Such method that relies on listing of all buildings in the whole of each geographical area compensate for lack of coverage in the buildings sampling frame. However, the problem in this method is the inability to control the type of buildings in the sample where the number of buildings by type will not correspond to the actual number in the targeted population, and this would require the modifications of the weights based on census data. This, in return, generates different type of problems as mentioned earlier since the census data has incomplete basic data such as the building type, use of the building and the establishment year of the building.

2. **Second scenario:**

   The frame is a listing of buildings from the census and samples are drawn directly from this frame as stratified samples. However, the problem with this kind of sampling methods stem from the sampling frame that is usually lacking complete data (non-stated values) because it is based on the census. In addition, the lack of coverage increases over time and that affect the representation of the data to the targeted population considering the many changes that have occurred on the buildings since the census was conducted.

   Another problem is that the direct drawing of samples from the frame could result in buildings that are geographically dispersed and such situation requires the drawing of cluster samples to reduce dispersion.

3. **Third scenario**

   The frame is comprised of both listing of enumeration areas and listing of buildings. Such design takes advantages of the enumeration areas frame as well as the buildings frame to improve sampling methods and to facilitate the update of the basic data and address the lack of coverage. Double sampling or two phase sampling are used to draw PSU from the master sample file.

   The advantage of this method is the greater ability to control the sampling units and the ability to update the enumeration areas at relatively lesser cost. On the other hand, the disadvantages of such method is its complexity since the first sample has to be on the level of enumeration areas and the second sample will be based on the first one and will be on the level of buildings.

   The following diagram describes the development of the buildings frame:
Use of maps:
Each enumeration area that was listed during the census has usually a geographical map showing its boundaries as well as other details like the streets and buildings located in that area. Data in the sampling frame usually correspond to the data on the geographical map. The map contains statistical information about the enumeration area with main geographical features and signs in the field. The enumeration area shows buildings and housing units numbered from the start of the enumeration area to its end. Buildings are drawn on the maps in their specific locations along with their numbers in the field as well as the number of housing units in each building.

Sampled buildings can be identified in the field through the use of statistical map that lead fieldworker to its exact location of the building.

Sample design:
Sampling design of the Existing Buildings Survey depends on the available sampling frames that differ, using variance calculation, in the degree of accuracy of these estimates, taking into account the quality of the statistical frames and the extent of their representation to the buildings on the ground. In addition, sampling frames also affect the coverage of the drawn
samples whereas frames based on censuses requires regular update to compensate for lack of coverage. Representative frames and methods to update these frames will be discussed later in this chapter.

Scenarios of sample design:

First scenario:
This scenario depends on the availability of an updated frame derived from central registers rather than from a census. The frame is representative of the targeted population to a large extent and contains enough details about each building.

A stratified sample is drawn using variables about each building in the frame. The sample is directly drawn without the need for multiple-stage sampling, and that depends on the quality of the sampling frame itself.

This scenario is very effective providing that the availability of registers that have accurate data. However, this is not available in many countries due to the absence of central building registers or the lack of data quality. It is proposed in this context to design the sample as follows:

Stratum: These stratum are for buildings and the following variables are used for identifications:

1. Geographical area: These areas could be provinces or districts or other areas of administrative divisions within the country. These areas are characterized by differences in expenditures on buildings, while there is homogeneity within the same geographical area. Such characteristic is important for the design of the survey, and dissemination levels.

2. Type of building: The proposed types include: villa, house, apartment building, marginal, establishment, under construction and other. Selection of building types depends on the country itself and the extent that these types are common. It is of importance to classify buildings by type since some types require greater expenditure, for example: Expenditure on a large villa is larger than expenditure on a house. Building type can be used as levels for data dissemination and that emphasizes the need to create stratum based on these criteria.

3. Age of the building: This is divided into three groups,
   - 1-10 years
   - 11-20 year
   - More than 20 year

This depends on differences in the cost for buildings that are modern, medium in modernity and those that have become old. Other grouping could be used depending on the conditions of buildings in the targeted area. Specialists could be consulted in this exercise to ensure adequate grouping of the building age. Still, this variable is important due to the differences in the expenditures according to age of building.
These stratum are sufficient to design a sample that could be drawn from a frame based on high quality building register. Still, other variables could be used as well including the size of the building or the number of rooms in the building to increase the quality of the sample design. Such additions of extra variables could lead to greater cost. However, additional variables could be used as stratum implicitly and could be represented through a systematic random sample.

Stratum based samples increase the quality of the design and therefore the accuracy of the resulting estimates. It is easy to compute the variance for this type of sample design.

4. Sample type:

Sample type could be of type stratified systematic random sample or a simple random sample. However, usually a systematic random sample is used to be able to include implicit stratum. When estimates and variance calculations are prepared, the sample type could be treated as a simple random sample without returning.

5. Sample size

Greater accuracy of estimates requires increase in the sample size, but this also brings higher cost. Balancing between desired accuracy and cost always raises a question on the level of accuracy that is acceptable for the different dissemination levels, and the acceptable margin of error that can not affect the quality of the estimate.

Specialists differ in the acceptable margin of error for the different type of estimates. Some estimates require 5% as margin of error while others must not exceed the 2% or 1% or less. In case that estimates will be disseminated at different levels, it is usually acceptable to have marginal errors for estimates at aggregated dissemination levels but dissemination at detailed levels requires greater caution.

Regarding the existing buildings survey, most of the resulting estimates are of economic nature – expenditures – that sometimes permit up to 5% error at the detailed levels, because collected answers depend on the estimate of the respondent rather than recorded data.

The design of the Existing Buildings Survey accepts marginal errors of up to 5% for the different geographical dissemination levels. The sample size for the Existing Buildings Survey in the Palestinian Territory was estimated to about 4000 building, and this is enough for the dissemination of the resulting estimates on the geographical levels: The West Bank, Gaza Strip and Jerusalem by an error of not more than 5%.

6. Distribution of the sample

For the Existing Buildings Survey, it is useful to ensure that sample distribution is proportional to size of the strata, and thus achieve self-weighted sample design. Samples for smaller strata could be increased to ensure better representation providing that changes are done through weights.
7. Updating the frame

The update of the frame in this scenario assumes that it is a continuous one since the frame is dependent on the buildings register. This applies to all of the variables in the frame including the identification data and basic characteristics pertinent to the different stratum. It is important to draw the sample after all updates are being implemented on the frame.

Second scenario:
This scenario assumes the preparation of a sampling frame based on the data of the buildings census. The sample is designed based on enumeration areas as PSU's, and that requires multiple sampling designs.

The proposed sample design is as follows:

1. Stratum: The Existing Buildings Survey differs from other surveys in the use of two-stage sampling design where some stratum will be used in the first stage while others will be used in the second stage. The following variables could be used to form the stratum for the first phase
   - Geographical location: Expenditures and characteristics of buildings differ based on the geographical area. Therefore, it is important to take into consideration the administrative geographical classification in the design of the stratum.
   - Locality type: The classification of this variable depends on the division in each country and that include Urban, Rural, Camps, Bedouins …etc. This contributes to accuracy of data and representation of estimates.
   - Percent change of buildings in localities: This is important to ensure selection of enumeration areas in the first phase of the sampling design include areas of variable construction activities such as fast, medium, and slow activities.
   - Enumeration areas are classified to three or more types according to percent change in the number of buildings in these areas. This is obtained through data comparison between two or more censuses to obtain the annual average increase in the number of buildings. This is important to identify the construction activities at the enumeration area and locality levels. This could be classified into: 0-5%; 5-10%; or more than 10% depending on the census data.

   In case that annual change in the number of buildings per enumeration area is not possible due to change of the boundaries of these areas, the annual change is estimated at the locality level.

2. Sample size: It is acceptable to have a marginal error of 5% for the different dissemination levels and less than 5% for the whole sample size.

3. Distribution of the sample: It is useful to ensure that sample distribution is proportional to the size of the strata, and thus achieve self-weighted sample design. In the first phase of the sampling design, it is important to ensure coverage for all stratum and control the number of selected buildings in the second phase.
Final recommendations regarding the development of the previous methodology:

Adopt the third scenario in the development of the new methodology (after year 2007) and the use of the new sample design.

Final recommendations regarding the adoption of the newly developed methodology (2008-2009):

1. Sampling frame is to be updated to include the whole locality rather than fixed enumeration areas.
2. Design of geographical stratum and treatment of abnormal values