

## ANNEX DOCUMENT : MAPPING AND SAMPLING

REACH works with a refined well detailed mapping of the Lebanese territory, going down to the level of clusters of +/- 200 HH within areas

### THE RANDOM SAMPLING PROCEDURE.

#### 1. The Sampling Base:

REACH conducts on regular basis censuses of the Lebanese Households. The census covers all households within localities of 500 HH and more. As for other localities of less than 500 HH , a representative sample of 1/10 is drawn and the selected areas are entirely censused .The results are reproduced on maps grouping the households within regional strata and district clusters and then within blocks of +/- 200 HH each. The reason for grouping the HH into blocks of equivalent size is to reduce the statistical error that is likely to come from size difference when expanding the sample results to the whole population.

The above procedure is proven valid. In 1996, the UNDP & Ministry of Social affairs published the results of a survey of 1/10 of the Lebanese HH that confirmed the demographic figures REACH was known to have distributed to its clients since 1990.

#### 2. The Sampling Process:

REACH enjoys an established tradition and reputation for not practicing “convenience” sampling. Due to this reputation, it is the accredited company for several “blue chips” commercial clients. Invariably the sampling process at REACH occurs according to the following steps.

#### 3. First stage selection:

Working almost exclusively with multistage area probability samples, REACH has developed since 1985 a stratification of the Lebanese territory designed to reduce the sampling errors. The strata are similar to each other and contain about the same range of diversity based on the following:

- Geographical criteria
- Administrative criteria
- Type of conurbation: Urban, rural
- Religious belonging criteria

This resulted into sixteen first stage areas, grouped as follows:

1. East Beirut, Northern sub, Jounieh Jbeil and sub, Mount Lebanon North
2. West Beirut, Southern suburbs, Mount Lebanon South
3. Saida & sub, South non fully urban Near, South non fully urban Deep

4. Tripoli and sub, North non fully urban North, North non fully urban South
5. Zahleh and Sub, Bekaa non fully urban East, Bekaa non fully urban West

This way of proceeding, while allowing rebuilding, in case of need, the administrative divisions, is much more efficient than the administrative divisions for sampling purposes. It groups units with less diversity and more similarity, which in turn allows reducing the sampling error. All these units will be represented in the sample.

#### 4. Second stage sampling:

In the Urban areas, further strata are formed (by districts) to ensure further homogeneity. The criteria are social class and geographical location. For example, West Beirut is divided into two more clusters: Beirut II more populated, located between Beirut I (East Beirut) and Beirut III (richer and more cosmopolitan, grouping Hamra, Koraytem etc., located towards the seaside. The same goes for Tripoli, Saida, Zahleh, Jounieh- Jbeil, and the major cities in the country.

In non-fully urban areas, we tend to have clusters defined by size (more than 500 dwelling units, less than 500 dwelling units) and where applicable altitude. The clustering procedure is justified by the need to conduct the survey in optimal feasibility conditions in areas where distances might be a handicap to achieve the results within reasonable time frame and good quality control.

#### 5. The PSUs:

Based on the above, REACH has developed a full listing of PSUs on the Lebanese territory:

- PSU identification number: a unique number unambiguously describing each PSU belonging.
- Measure of Size (MOS): Consists of the total number of units in each PSU
- Cumulative measure of Size (Cum MOS): the cumulative total of dwelling units beginning with the first PSU and continuing through the last, allowing to derive the selection range, i.e., the range of chances of being selected corresponding to each PSU. The selection range for any PSU, is anything larger than the Cum MOS of the PSU in the previous line, up to and including the Cum MOS for the line relative to the PSU considered.

The selection of the PSUs will occur using a departure number selected randomly and then applying a skip pattern calculated by dividing the total number of dwellings in the stratum by the desired number of selections. This will allow a PPS selection (Selection Proportionate to Size).

#### 6. The blocks:

The blocks within the PSUs are made as homogeneous as possible in terms of size (+/- 200) and in terms of socio-economic criteria. Depending on the size of the PSU and what it represents, a number of blocks will be selected. These will be selected randomly based on a table of random numbers. There is no need for a more complex procedure since the blocks are equal in size. The PSUs, depending on their size, contain different numbers of blocks. On average there are six blocks per PSU.

#### 7. Households' selection:

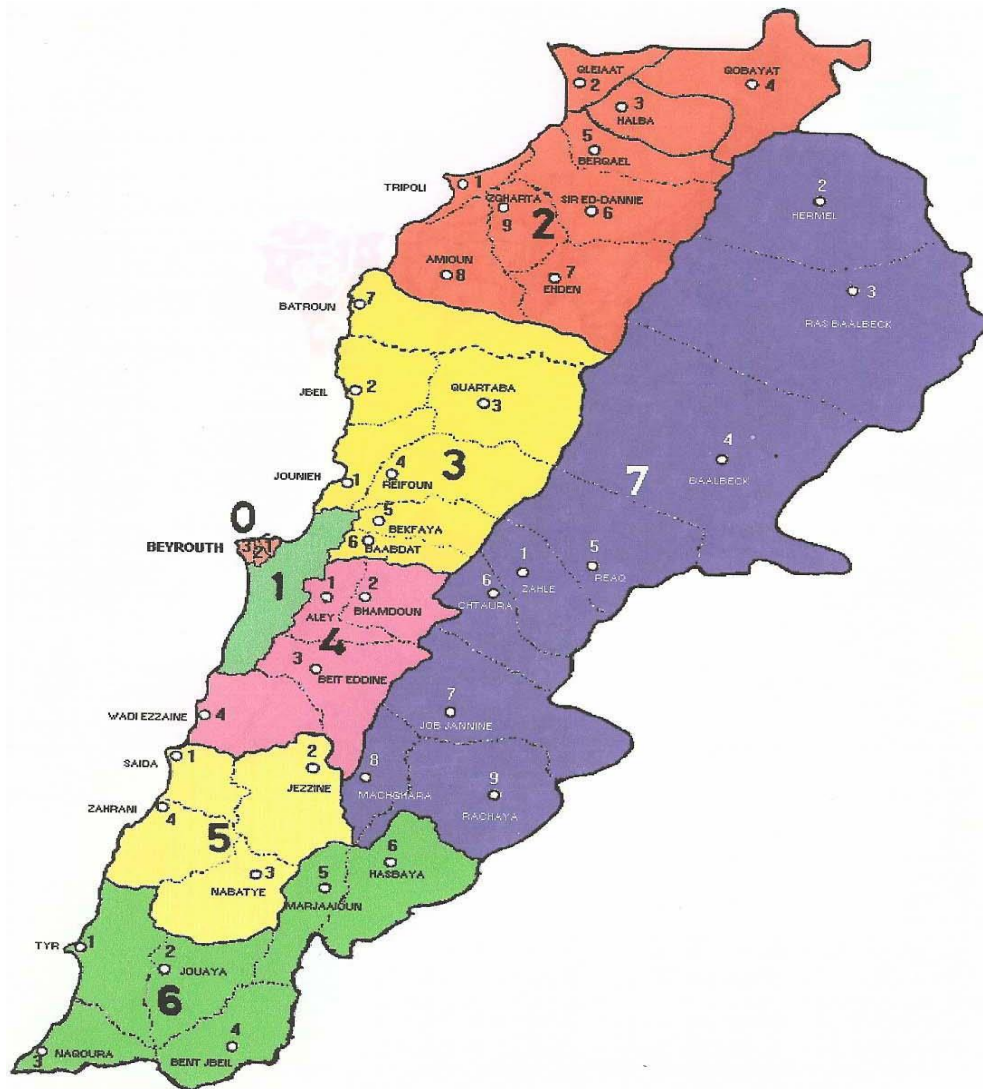
Once a block is selected, a departure number is selected according to a random number procedure and then a skip pattern applies on a random itinerary to be followed by the interviewer.

8. Respondents' selection:

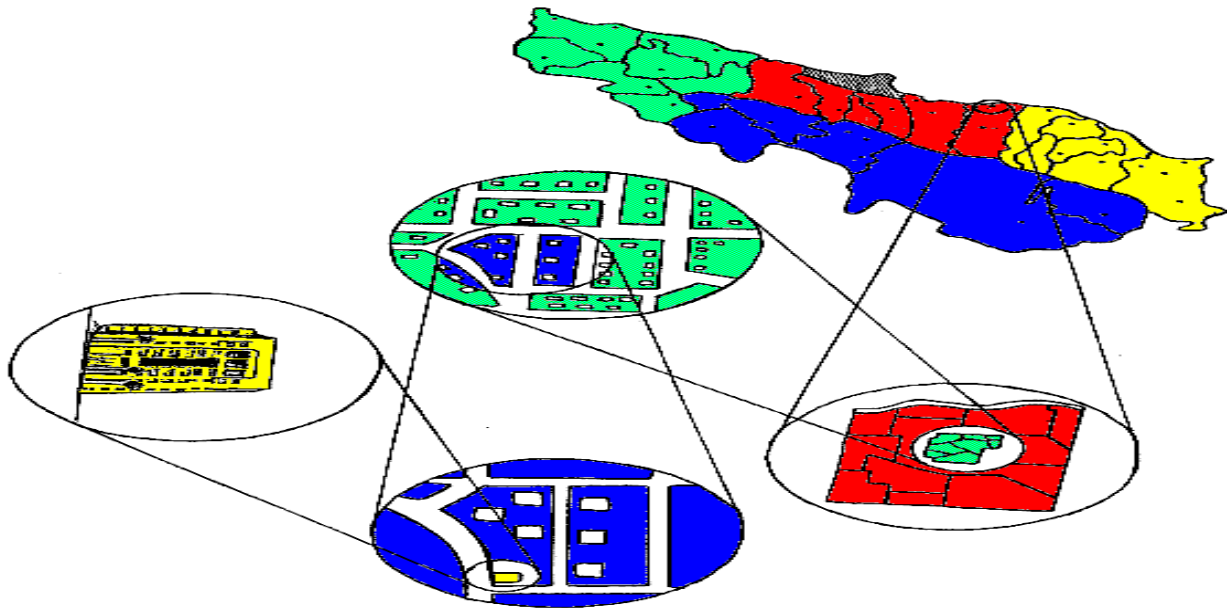
Once a household is selected, one adult who is decision maker concerning the furniture purchase within the household will be picked up to fill the questionnaire.

## Stratification of the Lebanese territory

Each large strata comprises substrata



Here with also a chart summarizing the selection process up to the building



Here is also a sample of PSU mapping

