

Integrated Household Survey- IHS

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Acronyms & Abbreviations

AI	Adult illiteracy rate
ALI	Adult Literacy Index
ALR	Adult Literacy Rate
BHM	Population Below Half Median Income (50% of median income), (%)
CCA	Common Country Assessment
CGER	Combined (primary, secondary, and tertiary) Gross Enrollment Ratio
DW	person without access to safe drinking water
EFS	Expenditure and Food Survey
EI	Education Index
ESCWA	United Nations Economic and Social Commission for Western Asia
FES	Family Expenditure Survey
FHS	Food & Health Survey
FI	Adult functional illiteracy (%)
FSU	Final Sampling Units
GDPI	GDP Index
GDPpc	gross domestic product (GDP) per capita at purchasing power parity (PPP) in United States dollars
GEI	Gross Enrollment Index
GHS	General Household Survey
HDI	Human Development Index
HIS	Integrated Household Survey
HPI - 1	Human Poverty Index 1
HPI - 2	Human Poverty Index 2
HS	person without access to health services
IHS	Integrated household survey

LCI	Living Conditions Indicator
LCS	Living Conditions Survey
LE	life expectancy at birth
LEI	Life Expectancy Index
LFS	Labour Force Survey
LGHS	Longitudinal General Household Survey
LU	Long-term unemployment (%)
MSS	Modular Survey System
NS40	Probability at birth of not surviving to age 40 (%)
NS60	Probability at birth of not surviving to age 60 (%)
NTS	National Food Survey
OMN	Omnibus Survey
ONS	Office for National Statistics
PPS	Probability Proportional to Size
PSU	Primary Sampling Units
SSU	Secondary Sampling Units
TSU	Tertiary Sampling Units
UBN	Unsatisfied Basic Needs
UNDAF	United Nations Development Assistance Framework
UW	percentage of children under five suffer from underweight (moderate or acute)

1. Executive Summary

This paper is considered as one of the activities carried out by the Economic and Social Commission of Western Asia (ESCWA) to reinforce the capacity of member states in the compilation and dissemination of statistics related to household surveys.

Its main objective is to enhance the abilities of member countries in designing as well as in conducting **Integrated Household Surveys** (IHS) that have proved to be highly imperative in the policy-making process, assessment and follow-up, as well as in the computation of socio-economic indicators that are crucial in spotting progresses en route for the realization of the Millennium Development Goals (MDGs) including goal 1: eradication of poverty and hunger.

1-1 Basic Components of IHSs:

With the above starting point, the paper sheds light on the basic components of IHSs being built upon **four** major surveys, as shown:

a- *Labour Force Survey (LFS):*

The main target of this type of survey is to collect extensive data on employment and unemployment. It is usually conducted each trimester picking up the same sample thus assessing present trends.

b- *General Household Survey (GHS):*

The core objective of this survey is to collect basic data on households, their members, the accommodation status as well as its environment. It is an ounce-a-year survey.

c- *Expenditure and Food Survey (EFS):*

This type of survey focuses on households' expenditures and on the food intake patterns of the household members. In doing so, it adopts two types of field instruments; the **first** being a household questionnaire aimed to collect data on the household itself, the members and the lodging; and the **second** being an expenditure notebook given to each member aged 16 years and above intended to gather information on each purchased item for two weeks on a row.

d- *Omnibus Survey (OMN):*

An **omnibus survey** is a method of quantitative research where data on a wide variety of subjects is collected during the same interview.

More to the point, the paper tackles the possibility of appending to the IHSs new subjects and questions handled by other household surveys like Children Surveys, Food and Health Surveys, Family Health Surveys, Time Management Surveys, and Cultural Surveys.

1-2 Objectives of IHSs:

The paper attempts also to expose in a separate section the objectives of IHSs as pinned beneath:

- To build a **Modular Survey System** which basic platform is to form a number of questions with each set considered as a unit. By adopting the **Flexible Topic Module System**, surveyors can focus subsequently on clear-cut subjects with the possibility of adding new variables and inquiries.
- To facilitate the bringing together of different surveys by agreeing on different concepts or what is technically called **Standardization of Concepts**.
- To embark with data analysis based on a wide-spectrum framework having in mind the magnitude of the data set.
- To select samples that fit the multitude of subjects engaged in the IHSs with exact statistical accuracy based on a sampling frame that is routinely updated.
- To plan for an on-going IHS that can enable the surveyors to track socio-economic and demographic changes thus evaluating the steps forward in reaching the MDGs.

1-3 Basic stages of IHSs:

The paper depicts in this section the eight basic stages in preparing and executing IHSs as shown below:

Stage one:

Main themes to be tackled are defined. This is done based on strategies as well as programs carried out by different ministries and public administrations also on information and indicators needed to quantify both poverty and deprivation. In this juncture, coordination between different national offices is requisite.

Stage two:

Different geographical stratifications needed in field execution and data analysis are defined, knowing that sustainable development strategies and programs are instituted based on geographical and administrative divisions.

Stage three:

The field execution scenario is drawn based on the fact that this type of survey with its multitude of subjects and its topic modules makes it difficult to be executed in one go.

Stage four:

A pilot study is undergone to test the field instrument.

Stage five:

The end result questionnaires and interviewers manuals are made ready.

Stage six:

The **Whole Sample** and the ensuing secondary samples are drawn based on the two-stage stratified unclustered sampling technique knowing that the latter samples should be of equal size to ensure statistical accuracy.

Stage seven:

Recruiting and training working teams with high level of education to ensure a superior level of accuracy in all of the survey stages.

Stage eight:

The final stage deals with the different stages of the survey, namely:

- Informing the public on the objective of the survey and its importance
- Forming the field execution teams and appointing team leaders
- Making random control inspection to ensure the accuracy in the completion of interviews.
- Field instruments checking, coding and data entry.
- Data cleaning
- Analyzing data and using it in formulating strategies and coming up with crucial indicators.

1-4 Advantages and disadvantages of IHSs:

The utmost advantage of IHSs is that it embraces a wide variety of variables and queries that can depict a comprehensive statistical image of the characteristics of households, their members, and their lodgings. Moreover, the survey capacity of indulging in in-depth statistical analysis and serving as a strong base in the computation of composite indicators that can track down the reaching out of the MDGs is another advantage.

Conversely, the multitude of questions may amplify the households' refusal rate to participate in the study or upset the exactness of answers.

1-5 Definitions and indicators used in studying poverty:

The study depicts in this section the two settings used in studying deprivation and poverty, as shown below:

1. A traditional setting where poverty is considered as a shortage in income causing a decrease in the capacity to spend.
2. An all-around setting where poverty is considered as a social and economic phenomenon that can be studied by means of the Human Development Index (HDI), the Human Poverty Index 1(HPI-1) used for the developing world and the Human Poverty Index 2 (HPI-2) used for the developed world, and finally the Unsatisfied Basic Needs (UBN) system that is described at the level of the household.

The study also gives full details on how to estimate the mentioned above indices.

To conclude, the paper stresses the way to define basic needs when estimating the UBN indicators, as shown beneath:

- Defining first what is a basic need and describing it
- Defining the fields and the indicators that are needed to estimate the UBN at the level of the household as a whole and at the level of the members.
- Defining deprivation and contentment lines and thus explaining different degrees of related indicators
- Defining variables and queries in the field instruments useful in measuring different levels of contentment.

1-6 Suggested list of questions and variables:

The study exposes in a separate section a list of variables and questions that can be included in the field instruments, as listed:

- a. Descriptive and organizational variables and questions.
- b. Household members related variables and questions.
- c. Main and secondary housing related variables and questions.
- d. Housing and outer environment related variables.
- e. Household related variables and questions.

1-7 Findings and recommendations

To conclude, the paper dwells on the fact that the IHS can be considered as a major development in the production of social and demographic data and thus focuses on its importance. On the other hand, the study shows the disadvantages of its use and stresses the fact that statistical procedures should be improved so IHSs can be taken on board.

The paper, accordingly, gives propositions that can enhance statistical systems, namely:

- To designate a referring national office in the statistics domain that can coordinate the production and dissemination of data processes.
- To evaluate the status of statistical bureaus in the country.
- To establish a continuous dialogue between users of statistics and official producers of statistics.
- To evaluate routinely rules and regulations that governs statistical operations and also to agree upon standards and concepts as well the process of classifying and coding.
- To update programs and information systems of the public offices responsible for producing and collecting data.
- To promote the use of statistics in policy-making in all sectors.

Moreover, the paper sheds light on the different paths that should be taken to come up with accurate results, as shown:

- To take into consideration programs and planning requirements at the national level when designing field instruments and coming up with a list of indicators.
- To benefit from the different technical programs and expertise provided by the specialized United Nations agencies.
- To provide a work plan that rationalizes the budget, human resources and technical needs that the survey may use along with a time plan for execution.
- To recruit and train comprehensively fieldworkers, team leaders, coders and data entry personnel ...etc.
- To update routinely the sampling frames and choose accurate samples that can serve the statistical analysis purposes.

2- Objectives and Methodology of the study (missing)

3- Integrated Household Survey main components:

There are many types of household surveys, and they all have in common the need for many similar data, including in particular demographic, household and housing data. The aforementioned surveys, in case they are undertaken separately, require financial resources, equipment and various human expertise that might not be available in many countries.

Accordingly, the elaboration and execution of an Integrated Household survey, which includes some of the other household surveys patterns, are practical steps allowing on the one hand the availability of surveys resources, and on the other hand, the best use of human resources and equipment available in the country.

The Integrated Household Survey aims at achieving the following four main surveys'¹ goals and contents:

1. Labor Force Survey (LFS)
2. General Household Survey (GHS)
3. Expenditure and Food Survey (EFS)
4. Omnibus Survey (OMN)

3-1: Labor Force Survey (LFS)

The LFS aims at collecting highly detailed data² related to individuals' employment and unemployment, including information about the individual's current and previous jobs, their duration and nature, as well as detailed data related to his work status, income, the type of institution he works for and the economic sector it belongs to, and a series of demographic and educational data essential for the data statistical analysis.

The LFS is undertaken periodically (every three months) on the same sample, Wave Panel Interview, to follow constantly the evolution of the employment and unemployment rates.

¹ Consultation Paper, Proposals for a Continuous Population Survey, Office for National Statistics, United Kingdom, July 2004.

² See in the Annex 9 the list of variables related to employment and unemployment cases.

3-2: General Household Survey (GHS)³

The GHS aims at collecting basic demographic, educational, health and professional data related to the household members, in addition to basic household data and related to its place of residence (address, type, specifications, occupancy, equipment, electricity and sanitary installation, etc., as well as external environment characteristics such as hygiene, noise, lighting, etc.). The GHS is usually undertaken every year.

3-3: Expenditure and Food Survey (EFS)

The EFS encompasses three main areas which are: household incomes, expenditure and food behavior. The survey is executed through two data collection forms; the first being a questionnaire addressed to the household to collect relevant data related to the household members and dwelling, and the second, expenditure diary given to the household and its adult members (16 years and above), in which all consumption and food products bought and consumed are registered (quantities, weights and sizes of each food product bought and consumed should be defined), over two weeks.

The non-response rates in the EFSs are high, especially in regard with the expenditure books, which could reach the third of the distributed expenditure books.

The EFS was adopted by the Office for National Statistics (ONS) in the UK, starting 2001, as an alternative combining two surveys:

1. Family Expenditure Survey (FES)
2. National Food Survey (NTS)

On the other hand, it is possible to use, during the elaboration of the FES, the variables and questions of two other surveys: the Living Conditions Survey (LCS) and the Food & Health Survey (FHS).

3-4: The Omnibus Survey (OMN)⁴

The OMN aims at collecting statistical data related to a variety of topics that cannot have an economically justifiable separate survey, in order to save on costs and time in acquiring reliable statistical results.

Such surveys have been included in the integrated household survey, since it provides additional demographic and social facts, that are attainable from the three first types of survey, data related to individuals' opinions regarding different social, educational, health, political issues and others. This survey is conducted on an arbitrary selection of one adult member of a survey household.

³ Countries sometimes use in the context of this survey the same sample over different years, or different time periods, the Wave Panel Interview, to observe and follow the household social and living conditions evolution. These survey cases are called Longitudinal General Household Survey (LGHS).

⁴ Goals and contents of such surveys have been developed based on the Office for National Statistics (ONS) publications, available on the office's website: <http://www.statistics.gov.uk>

The four abovementioned surveys are the main pillars of the integrated household survey; but these surveys' design allows them to encompass, when necessary, subjects and variables from other statistical surveys related to the households and their members, such as:

1. **Child Status Surveys:** they include, in addition to housing, demographic, educational and professional data related to the household members, the following:
 - ❖ Data related to breastfeeding, type of foods for children under two years.
 - ❖ Data related to types of vaccines administered to children under two years.
 - ❖ Data related to the common diseases and domestic accidents occurring to newborns and children under five years.
 - ❖ Data related to child mortality.
2. **Food and Health Surveys:** they include, in addition to housing and demographic data, the following:
 - ❖ Data related the individual's weight, health and self-acceptance.
 - ❖ Data related to sports activities and the impact of the job nature on the daily physical effort.
 - ❖ Data related to the food and beverages consumed by the individual, healthy or non-healthy food and beverages, any allergy related to a specific type of food.
 - ❖ Data related to the food conservation methods in the household, particularly the use of refrigerators or freezers, freezing and refreezing food.
 - ❖ Data related to vegetables and fruits cleaning and sterilizing and cooking methods.
3. **Household Health Surveys:** they include, in addition to female reproductive health, the social and healthcare for the elderly and problems and issues of the youth.
4. **Time Use Surveys:** they include the daily allocated time by individuals of 15 years and above, for the professional activities, shores, leisure, commuting, daily personal care, childcare and sleeping hours.
5. **Cultural and Art Activities Surveys:** they include the individuals' reading frequency, the types of reading material, frequency of visits to public libraries, theaters, art exhibitions, cinemas, etc., as well as the types of hobbies or activities related to literature and arts, the frequency of listening to music and watching television, the types of music and TV programs they like and the obstacles or facilities available for them to undertake different cultural and art activities.

4- The Integrated Household Survey Objectives:

The integrated household survey aims essentially at:

1. Building a Modular Survey System (MSS), with groups of questions, each group forming a topic module aiming at studying a specific topic (e.g. education, health, employment and unemployment, household expenditure, income and possessions, the house surroundings and available facilities, household loans, debts and savings, safety and security levels in the house surroundings, social welfare or poverty and deprivation levels of the household, etc.), which will provide detailed and statistically reliable knowledge of different life aspects of the households and the individuals.
2. Collecting statistical data related to each topic module, not only at the country level, but also at the country's geographic areas, e.g. the state, district, governorate or province.
3. Flexibility in terms of module content, this content will be useful to the biggest number of users; it can also be developed to include, when necessary, additional variables and questions needed by the concerned parties.
4. Standardization of concepts within the different surveys, which is made possible by having one authority to conduct the surveys, within the integrated survey framework, instead of having different authorities conducting the different surveys which form the integrated survey.
5. Conducting outcome statistical analysis at the different geographic areas within the country (states, districts, provinces etc.) from a comprehensive specifications perspective and more complex result analysis through statistics intersections between the different fields, topics and variables patterns and multivariate analysis; this is possible through the diversity and availability of demographic, social, economic and health variables encompassed in one database.
6. Reaching equal statistical precision levels for the results of the survey's different geographic areas by adopting sampling techniques that allow reaching equal sample error values between the geographic areas.
7. Building a statistical sample⁵ and sub-samples corresponding to the needs of the different topics of the integrated household survey and to the requirements of equal statistical precision levels of the results
8. Periodic updating of the sampling frame (at the level of each relevant geographic area) for the arbitrary samples built to stay precise and reliable.
9. The periodic and continuous execution of the integrated survey which will allow the concerned parties to follow-up on the demographic, social and economic development on the one hand, and on the other to assess periodically the success of the programs and plans executed by the country's various administrations; and the possibility of assessing and monitoring the progress in the implementation of the MDGs, including particularly the goal of eradicating severe poverty and hunger.
10. The best use of the funds allocated to surveys, technical equipment and human expertise for the elaboration and execution of statistical surveys.

⁵ See the proposed required statistical samples for the integrated household survey in paragraph 5-6 below.

5- Basic Steps for the Preparation and Execution of the Integrated Household Survey:

The diversity and variety of the different surveys constituting the integrated household survey and the possibility of adding topics, variables and questions to its basic components, require many functions that can be summarized as follows:

5-1 Determining the Survey's Topics and Contents:

This phase is considered the basic step of the integrated household survey preparation during which the various topics to be included in the survey will be determined and which are supposed to take into consideration the objectives and purposes that the integrated household should achieve and which could include the preparation and/or assessment of development plans and programs for the ministries and public administrations in different fields; study and measure specific social and economic household-related phenomena; follow-up and monitor progress in the implementation of the different international conferences recommendations and proposed development programs within the United Nations Development Assistance Framework⁶ (UNDAF), usually elaborated according to the common assessment of the country's needs (or what is known as the Common Country Assessment (CCA)).⁷

In addition to the above, determining the survey topics is linked to the four basic surveys topics of the integrated survey, i.e. the Labour Force Survey (LFS), as well as the General Household Survey (GHS), the Expenditure and Food Survey (EFS) and the Omnibus Survey (OMN), in addition to the fields, indicators and indices adopted for the poverty and deprivation measurement, given that these indicators and indices are also related to the variables and questions that should be included in the survey forms.

This phase requires therefore consultations with the different relevant parties or those using the outcome of the integrated survey through the detailed definition of the statistical data needs of the aforementioned parties; it also requires discussing these needs in bilateral or multilateral meetings, as a prerequisite; after that, the work on the Modules of Integrated Household Survey will start and the detailing of the variables and questions required by each of the questionnaire profiles, which will be included later on in survey forms. It is worth noting that the ONS⁸ gathers the main statistics producers and users in the public and private sector; this can facilitate and accelerate the process of defining the surveys topics and contents.

5-2 Defining the geographic levels required by the actors to conduct surveys and analyze outcomes accordingly:

It goes without saying that the development requirements as well as the plans and programs require survey outcome analysis, not only at the country level, but also at the country's administrative units and geographic areas level. Given that the establishment of the administrative and geographic units based on which the analysis will take place is extremely necessary for the sampling plan and for the whole sample and its sub-samples size, the pre-

⁶ UNDAF organizes the cooperation between the different UN organizations active in the development area and a country's ministries and official administrations in order to establish social, economic and health development projects.

⁷ The CCA studies and assesses a country's development needs; elaborates the required indicators of this assessment process; the CCA and its special indicators list are considered an important for the elaboration of the UNDAF.

⁸ The ONS encompasses the biggest number of data users and producers of a country; it is considered a main step towards the modernization and rationalization of a country's statistical systems.

definition of the administrative unit and the geographic areas referred to must be done in consistency with the ministries and public administrations officials according to the geographic level of the development plans and programs, which could be at the region, district, province, governorate or so.

5-3: Determining the Integrated Household Survey Execution Plan:

The diversity of survey topics and huge number of variables and questions of the topic modules constitutes an important obstacle to the full execution of the survey components at once. Therefore, the integrated survey execution plan is determined as follows:

- a. Setting up a core module encompassing a core group of variables and questions particularly questions related to the individual's demographic, educational, professional and health specificities.
- b. Setting up topic modules comprising each a detailed and various series of relevant questions and variables. Amongst the detailed topic modules that can be elaborated are modules related to education, health, employment and unemployment, household expenditures and assets, the housing surroundings and available facilities, household debts, loans and savings; safety and security in the housing surroundings, social welfare, household poverty and deprivation levels.
- c. Elaborating several integrated household surveys' forms that should each include a number of the core module and topic module(s) questions.
- d. The main or whole sample is broke down into sub-samples; each of their modules will use one of the survey forms mentioned in paragraph (c) by taking into consideration the relevant topic module nature, i.e. the topic module annual data collection frequency or periodicity⁹.

The Integrated household survey implemented in this method will reduce the surveyed burden of filling the forms reducing thus the possibility of refusing to fill the forms or stop filling them before they're done.

5-4 Building Preliminary Samples for the Forms and Operational manuals, Discussing and Testing them:

Based on the topic modules compilation and elaboration, preliminary samples are elaborated for the relevant forms and sent to the parties that have participated in determining the survey topics and contents for their final comment on the consistency of the form contents with their statistical data needs. Then, these preliminary forms are amended and used to elaborate the detailed operational manuals which clarify the questions contained in the forms as well as the form filling, auditing and coding method.

Data entry programs are elaborated for the relevant forms, in particular auto-audit programs which audit the entered data in order to avoid contradictions¹⁰.

⁹ Some surveys need to be conducted yearly (e.g. GHS), every three months (e.g. EFS) or monthly (OMN).

¹⁰ Examples of comparisons that can be included in the logic audit programs: age and educational attainment comparisons/ age and marital status comparisons/ educational attainment and job type comparisons/ type of dwelling and monthly rent...

Small groups of investigators, auditors, coding and data entry personnel are selected and trained on filling-out forms, auditing, coding and data entry; field surveys are then executed on a specific number of households after which all auditing, coding and data entry processes will take place, as well as the extraction of statistical tables and relevant indicators are built in order to detect and test the forms questions clarity, and the difficulties possibly encountered by the investigators in filling them, the time required to achieve them and the clarity of the checking, coding and data entry processes etc.

5-5 Building the Final Forms and operational manuals models:

The testing phase outcome is reviewed to check the questions clarity of the preliminary form, the difficulty and time needed to fill each one of them, the clarity of the auditing, coding and data entry operational manuals etc.

Based on the outcome review of the testing phase preliminary forms, the final survey forms will be built as well as the final models of the fill-in forms, auditing and coding manuals and the data entry programs.

5-6 Building the Whole Sample necessary for the Survey:

Statistical surveys often use probable samples (arbitrary) to reduce financial costs; amongst the main sample types used in household surveys: three-stage or two-stage stratified sample which could be clustered or unclustered which could be at the same time with uniform sampling rate or equal sample size (see details of sample types in annex 1 below).

Most surveys use the stratified clustered sample since it is less costly and more practical filling out forms in field where it would be less costly for the investigators to travel from one house to another, and where the required travel time is shorter. But this sample type has its disadvantages: the similarity of the housing environment specifications within one cluster such as the level of public health, educational services or other in the relevant housing surroundings cluster, or the disturbance sources in the relevant housing surroundings. Therefore, the best choice for conducting the integrated household survey, if the financial means are available, is the two-stage stratified unclustered sample.

As for the choice between the uniform sampling rate and the equal sample size, the need for equal statistical precision levels between the different geographic areas requires using the uniform sample size given that the proposed sample type for the integrated survey is the two-stage stratified clustered sample and the equal sample size in the survey's various geographic areas.

As for the whole sample and the sub-sample size, they are determined according to the number of administrative units or geographic areas based on which the sample and the statistical analysis will be built on the one hand and the sub-samples on the other; and for each will be filled a form, which questions are made of the core module and topic module(s) questions referred to in item (c) of paragraph 5-3.

Finally, this proposal is a rather a general guideline to be developed and detailed based on additional considerations and specificities, i.e. the population groups (rural, urban or Bedouin), the housing distribution type (clustered residences and buildings or individual widely dispersed residences), the general living standard in the relevant geographic group (high, medium or low living standard) etc.

5-7 Forming and Training the Teams:

The number and diversity of topics and questions in the integrated household survey form require competent teams to work on the surveys regularly and not occasionally, the required educational level is secondary or university level. Forming and training the teams on data collection, auditing, coding and data entry requires a number of steps including:

- ❖ Accepting candidates' application for the different job positions based on a personal application form for each of the above mentioned functions (data collection/auditing/coding/data entry).
- ❖ Selecting a number of candidates that exceeds the required number for each position in order to train the selected individuals and choose the best, taking into consideration the possibility of drop outs amongst the field or office trainees or workers at a later stage.
- ❖ Organizing detailed and in-depth training sessions for each of the field workers, the auditors and the coding and data entry personnel; it is worth mentioning here that the coding of some variables could require candidates with specific qualifications such as the coding process of answers related to the job or the economic activity type.
- ❖ Testing the trainees, each in his field of expertise and selecting the best.

5-8 Field and Office Work:

The Integrated Household Survey is done at two levels, field and office levels, based on the following steps:

1. The field work, i.e. filling-out forms, is preceded and accompanied by a wide information campaign which informs the citizens of the survey and its objectives.
2. The field work is conducted on the basis of investigators groups in each geographic areas headed by an experienced leader.
3. The investigators receive and deliver the forms according to delivery and reception lists under the supervision of the team leader.
4. The filled forms will be reviewed by the team leader for a preliminary auditing of their completion and absence of any serious problem.
5. Arbitrary field auditing techniques are applied by an independent team to monitor the correct field form filling and to detect any error or fraud by the data collectors.
6. The forms are then sent to the head office of the survey administration to be checked by the auditing teams.
7. Forms not responding to the satisfaction requirements are then sent back to the field team to be completed or rectified.
8. The complete forms are sent to the auditing team and coded; then to the data entry team according to the delivery and receipt lists under the supervision of the auditing and coding team leaders

9. The entered data are cleaned¹¹ before being statistically exploited.
10. The results are then screened, cleaned and analyzed are exploited to elaborate and assess plans and programs; and in building the various indicators and indices.

6- Advantages and disadvantages of the Integrated Household Survey:

The integrated household survey is based on collecting the Labour Force Survey (LFS), General Household Survey (GHS), Expenditure and Food Survey (EFS) and Omnibus Survey (OMN) components; it also takes into consideration the objectives of the different field development plans and programs, as well as the needs of the poverty and deprivation measuring and study, the lists of recommendations, indicators and variables of the international conferences, the United Nation Development Assistance Frame work (UNDAF) and the Common Country Assessment (CCA). Undertaking a survey with this much objectives and topics must have advantages and disadvantages.

The integrated household survey advantages include:

- ❖ The survey forms encompass a wide number and variety of variables and questions which will provide a comprehensive and rich statistical image of the dwelling, household and individual status from the social, economic, educational, food levels and others.
- ❖ The capacity of these surveys to undertake more comprehensive and in-depth analysis through statistical intersections between the different variables of a database, which will allow us to highlight the connections and interconnectivity between the different demographic, social, economic, health and other variables.
- ❖ Building aggregated indicators for the different demographic, social, health and economic fields to be used in the assessment and monitoring of the implementation of the MDGs including specifically severe poverty and hunger eradication.

The HIS disadvantages which can be related to the excessive number of questions in the form include the possibilities:

- ❖ Of a high number of refusals to fill the whole form;
- ❖ That the surveyed will not complete the whole form due to tiredness or boredom;
- ❖ That the surveyed will provide wrong or imprecise answers in an attempt to finish the form as quickly as possible.

Based on the above, the survey contents are supposed to be determined and therefore the number and nature of the form questions taking into consideration the possibility of acquiring the most diversified quantity of data on the one hand, and on the other, making sure that the form size and questions will be as such that the refusal rate of filling the forms will not be high nor that the answers will be incorrect or imprecise due to the surveyed getting tired.

¹¹ The data cleaning process is based on the bi-variable statistical tables to check if any filled box in the table shouldn't be logically filled; this completes the office auditing process and the auto- logical auditing program.

7- The Integrated Household Survey and Poverty Study:

Sever poverty eradication and hunger is the first goal of the MDGs; poverty is one of the topics which study requires detailed demographic, social and economic data that can be provided by the statistical surveys and data, in particular, the Integrated Household Survey (IHS).

7-1 Poverty and Poverty Study Approaches¹²:

Dr. Mohamed Hussein Baker identifies poverty as “a state of physical deprivation which most important aspects is the low food consumption, in quantity and quality; the deterioration of the health, education and housing conditions; the deprivation of ownership of durable goods and other financial assets; the loss of reserves or security to face difficulties such as diseases, disabilities, unemployment, disasters and crisis”. He also states that “the first attempts to measuring poverty were based on direct indicators related to the household income or consumption capability, namely the total household or per capita or expenditures; the statistical unit share of the consumption, the food consumption rate and the per capita food-energy share”.

Dr Baker also refers to the fact that the poverty measuring methods have developed considerably; e.g. the method of measuring the Unsatisfied Basic Needs (UBN) which relies on the direct observation of the basic needs satisfaction instead of the internal capability which allows a household to satisfy these needs as in the poverty line method. This method, in addition to integrating the basic needs which do not depend on the household income, the required data are more available and reliable compared to the poverty line method. The basic needs method can be applied by using the general population census or household surveys in general without the need for the household income and expenditures surveys data nor to breakdown expenditure and income data from other sources. Some of the main poverty measuring approaches are:

1. **The traditional approach:** it tackles poverty as an income shortage and thus a spending capability shortage; it is a one-dimensional approach based on what can be considered as the **monetary poverty**; its study requires data provided usually by the household budget surveys. In this approach, a person is considered poor or belonging to the category of those below the poverty line if he lives with less than two dollars a day; whereas a severe poor or belonging to the category of those below the severe poverty line is someone living with less than a dollar a day.
2. **A multidimensional approach:** addresses poverty as a complex socio-economic phenomenon which study requires a number of variables and indicators touching upon the different dimensions of this phenomenon; it applies usually several methodologies and methods:
 - ❖ **Three indices calculated at the national level:** Human Development Index (HDI), Human Poverty Index (HPI-1) (for the developing countries) and the Human Poverty Index (HPI-2) (for the industrial or developed countries).
 - ❖ **An index for the household living standards:** It is calculated by using the Unsatisfied Basic Needs (UBN) method.

¹² Dr. Mohamed Hussein Baker, Application of Poverty Measuring, 2007.

A- Human Development Index (HDI):

The Human Development Index (HDI) is a complex/aggregated index established by the UNDP in 1990 to assess the human development level in the different countries, developing or industrial, based on three indicators:

1. **The health and life span indicator**, measured by the life expectancy at birth. This indicator is supposed to measure indirectly the satisfaction level of the individual basic physical needs such as healthy food, safe drinking water, decent housing, hygiene and medical care.
2. **The knowledge or education attainment indicator**: measured by the adult literacy rates (15 years and above) and the total enrolment rate¹³ (or net) in the primary, intermediate and secondary levels combined.
3. **Living standard indicator**: measured by the GDP per capita in the country's PPP; the country's GDP refers directly to the country's wealth as a whole.

The HDI value varies between zero and 1. Countries with an HDI superior to 0.8 are considered of high human development levels; whereas countries with an HDI of 0.5 and 0.8 are within the group of medium human development countries; and the countries of low human development have an HDI below 0.5 (see the human development index and indicators calculation method and equations in annex 4 below).

B- Human Poverty Indices HPI-1 and HPI-2:

HPI-1 aims at measuring the developing countries deprivation rate, whereby the HPI-2 aims at measuring the industrial countries deprivation rate. The UNDP has elaborated these two indices by using different indicators for each due to the social and economic differences between the developing and industrialized countries.

The indicators used for building the **Human Development Index 1 HPI-1** (for the developing countries) includes:

- 1- **The developing countries life expectancy indicator**: measured by the rate of population with a life expectancy below 40 years (population %).
- 2- **Adult illiteracy indicator**: measured by the percentage of illiterates out of the total population of those of 10 years and above.
- 3- **Living condition indicator**: measured by three sub-indicators:
 - ❖ Percentage of population with no access to safe water
 - ❖ Percentage of population with no access to health services
 - ❖ Percentage of underweight (medium or severe) children (below 5 years) according to their ages.

Whereas the **HDI-2** (for industrial countries) is based on four indicators:

- 1- **The industrial countries life expectancy indicator**: measured by the percentage of population with a life expectancy below 60 years (% of population)

¹³ The total enrolment rate of the three levels is equal to the number of enrolled students in all three levels regardless of age, divided by the total number of school-age persons in the three concerned levels, multiplied by 100.

- 2- **Adult occupational illiteracy indicator:** measured by the percentage of illiterates out of the total population of 16 to 65 years
- 3- **Percentage of population below poverty line indicator:** measured by the percentage of household members with an income below half of a country's mean household income
- 4- **Long-term unemployment indicator:** measured by the rate of the unemployed for more than 12 months (out of the total labor power).

HPI-1 provides the percentage of household (and population) suffering from deprivation in developing countries which allows the HPI-2 from determining the percentage of households (or population) suffering from poverty in the industrial countries; each of these two indices according to annex 5 below.

C- Unsatisfied Basic Needs (UBN) Method and the Household Living Standard Index:

The three indices (HDI, HPI-1, HPI-2) allow measuring the national poverty which allows the UBN method to build an index that measures the different poverty and deprivation dimensions first at the household level, then at the national or districts and provinces levels within a country if the concerned parties wish so.

“The UBN is applied by calculating a UBN statistical index. For the index calculation, the basic needs fields are first determined and a number of representative indicators for each field. Each indicator is given a grade of 0 to 2. Zero is for the severe deprivation of basic needs and 2 for the maximum fulfillment of basic needs. 1 is the basic needs deprivation threshold; individuals and households graded less than 1 are considered to suffer from the deprivation of basic needs satisfaction”¹⁴.

The UBN method tackles poverty and deprivation as complex phenomena impacted by, and impacting, many social, economic, cultural and environment factors and variables etc; this method encompasses in its dimensions and indicators, a diversity that surpasses the above mentioned three indices dimensions and indicators (HDI, HPI-1, HPI-2).

In the context of studying poverty related issues, it is known that researchers and stakeholders use a number of socio-economic variables and indicators, from an analysis perspective of poor societies and households characteristics and proposing policies aimed at eradicating poverty, and not from the perspective of socio-economic variables and indicators being used as poverty and deprivation measuring tools, in all of their different dimensions. Whereas the Unsatisfied Basic Needs method relies on using a number of demographic, social, health and environmental variables as tools that enable measuring poverty and deprivation in all their dimensions by using these variables (i.e. the questionnaire forms) for building a series of indicators and indices that allow measuring satisfaction and deprivation levels in the social, economic and health fields.

The Unsatisfied Basic Needs method was used in Lebanon¹⁵ and Iraq¹⁶ through the use of countries' raw data. It is worth noting that the use of previously available data limits the

¹⁴ Dr. Mohamed Hussein Baker, Application of Poverty Measuring, 2007.

¹⁵ This method was used for the first time in Lebanon in the framework of the Mapping of Living Conditions in Lebanon study in 1998, by using the data of the population and dwelling statistical survey, 1995-1996. It was used a second time in the context of the Mapping of Human Poverty and Living Conditions in Lebanon study by using the data of the national household living standards study 2004.

¹⁶ This method was used in Iraq in the framework of the mapping of deprivation and living standards in Iraq, Bagdad, 2006, by using the living standards survey data, 2004.

number, variety and potentials of the indicators used to measure the household satisfaction levels in various fields. This will be discussed in due time.

The use of the Unsatisfied Basic Needs method to study poverty in its different dimensions raises a series of problems that must be clarified and /or solved, including the following:

1. Determine the meaning of basic needs and then detail these needs in various fields while taking into consideration the specific characteristics of countries and geographic areas.
2. Determine the indicators¹⁷ and fields used to measure the households and individuals satisfaction or deprivation levels.
3. Determine the satisfaction and deprivation thresholds that could include an approved referential framework (such as the Millennium Development Goals).
4. Determine the scoring systems of the various indicators and indices of the satisfaction or deprivation categories.
5. Determine whether the satisfaction or deprivation measuring processes (i.e. the process to determine the aforementioned thresholds and scoring systems) will be conducted on an absolute basis that doesn't take into consideration the countries and geographic areas characteristics, or on a relative basis that takes into account the aforementioned characteristics.
6. Determine how to build the index scores of the satisfaction or deprivation levels for the various fields based on their indicators scores, including the weights of the index indicators of each of the basic needs fields.
7. Determine how to build the scoring system of the general household satisfied needs index, based on index scoring of the various fields, including weights of the various basic needs indices.
8. Determine the basis of the probable samples needed for the study taking into consideration the levels of analysis required later on (will the analysis be at the state level in general or only at the level of specific geographic areas, provinces, states, governorates, districts, etc.)
9. Determine the variables and questions that should be included in the relevant questionnaires which will be the basis for the satisfaction levels indicators in various fields, in light of the index and indicators that will be suggested by the experts in the unsatisfied basic needs method. It is worth noting that these variables can include the dwelling, its external environment and vicinity, the entire household, each member of the household, children within the household (given that they have their own characteristics that require specific questions), the mother in the household (these variables could be related to reproductive health), the elderly, the disabled, and members suffering from chronic diseases (given that each one has his own needs and special requirements).

¹⁷ Refer to annexes 6, 7 and 8, lists of fields and indicators used in Lebanon and Iraq and the comparative study on poverty and deprivation in the Arab World.

7-2: The relation between the Integrated Household Survey and poverty measuring:

The Integrated Household Survey presents numerous and various data that enable poverty measuring by using the Human Poverty Indices 1 and 2 and the household living standards index.

On the other hand, the data of the various fields and topics included in the survey allows to conduct extensive and varied analysis of the specific characteristics of the poor at the following levels: demographic, educational, professional and health levels, physical and mental disabilities, reproductive health, food, sports and social activities, infant mortality rates, the characteristics of the dwellings, their equipment and the availability of basic services in their vicinity, the sources of disturbance in the vicinity of these dwellings, and finally estimates regarding the expenditures of poor households, the percentage of distribution in the various categories of expenditures, as well as estimates of their income and sources of income.

Measuring the households poverty level, classifying them in various fields, and following up on the development of the poor households satisfied needs level over time¹⁸ can help in designing and developing official and civil plans and programs that aim at alleviating poverty. This is an important role to which the integrated household survey can make serious contributions by providing the necessary data to measure poverty continuously and periodically.

8. Primary list of variables and questions included in the integrated household survey questionnaires (Questionnaires Profiles):

This list variables and questions were elaborated based on the content of many general and specialized household survey questionnaires, the household place of residence and members. It is worth noting that the primary list attached to the Annex 9 does not necessarily include all the elements required in the integrated household survey questionnaires. Furthermore, many variables and questions can be added consequently, in the light of the needs and goals of parties requiring or undertaking the survey. Accordingly, this “primary” list can be considered as “the core of a bank of variables and questions related to households, their members, dwelling, neighborhood and external environment”. This core can be expanded based on the development programs and plans goals and needs, in addition to dwelling, household and household members’ needs and problems revealed by the field studies.

On the other hand, it is possible at a later stage to link the questions and variables of the aforementioned “Questions Bank” with various indicators and indices required to set and/or evaluate national programs and plans, or to monitor the achieved progress toward

¹⁸ Following up on the development of the poor households satisfied needs requires the use of Panel Samples, which means conducting the study over several years on the same household sample.

the execution of goals and recommendations of different development and population-oriented conferences.

The list includes variables and questions within the following main frameworks:

1. Defining the survey and the surveyors;
2. Address;
3. Family's identification documents;
4. Demographic and residency data related to the household members;
5. Data related to the educational attainment;
6. Data related to the economic activity;
7. Data related to the vocational training;
8. Data related to the member's health status and health insurance;
9. Data related to physically or mentally disabled household members;
10. Data related to reproductive health;
11. Data related to nutrition;
12. Data related to sports and social activities;
13. Data related to all deaths that have occurred in the family during the last 24 months;
14. Data related to the household main dwelling and its installations;
15. Data related to the household properties;
16. Data related to secondary dwellings owned or rented by the household;
17. Data related to the household expenditure during the last 12 months;
18. Data related to the household incomes during the last 12 months;
19. Data related to the environmental nuisance;
20. Data related to the available services near the household place of residence;
21. Data related to the operation of filling, checking and classifying the questionnaire.

9 – Conclusions and recommendations:

Statistical surveys related to the household and its members are essential to provide detailed statistical data in various areas; they are also the foundation of elaborating, following-up and evaluating socio-economic plans and programs. In fact, statistical surveys by samples are much more than just an alternative for population censuses and administrative records systems, for they allow the collection of additional and more diversified data than the data collected by population censuses and administrative records systems.

On the other hand, the adoption of the Integrated Household Survey (IHS) is an advanced methodological step within the framework of demographic and social data production operations. Indeed, it allows the detailed definition of all variables required to study

demographic and social topics, among others, through the adopted flexibility topic modules. It also allows the standardization of concepts used in different surveys, as well as the sustainability and periodicity of statistical data production at the level of regional geographic units, with a high level of statistical precision. That will provide officials, planners and other concerned parties with a constant, reliable and precise flow of statistical data that will help them elaborate and assess plans and programs.

The study highlights the high importance of IHS and its capabilities; it indicates however the restrictions and disadvantages that may result from its adoption, which requires the countries willing to undertake such surveys to develop the components of the statistical system and the mechanisms aiming at coordinating statistical activities; as well as elaborate carefully and thoroughly all the IHS phases, steps and requirements.

Some of the proposals related to the development of statistical systems and coordination mechanisms:

1. Identifying a national reference in the field of statistical information that will handle the coordination of holistic, reliable and precise data production and dissemination, which will fulfill the goals and needs of different ministries and public administrations, as well as the needs of both public and private sectors. Many countries rely on the national councils for statistical information as a national reference to develop general policies related to statistical activities in the country and coordinate, monitor and track statistical activities.
2. Undertaking detailed studies of the statistical institutions status and scientific capabilities (at the human and technical levels) in concerned ministries and public administration, in order to develop methods, means and mechanisms to produce, disseminate and benefit from the statistics.
3. Launch periodic consultations between the statistics users and the public administrations¹⁹, responsible for producing and/or collecting the statistical data at the administrative level to identify users' needs as to the statistical data types, and coordinate the data production while conducting the least field surveys possible.
4. Elaborating an integrated work plan for the statistics production and storage in central data banks, as well as the data investment, analysis and dissemination to the users and other interested parties in both public and private sector.
5. Developing the contents of the cards and forms used in the administrative statistics collection, ran by the concerned specialized administrations, such as the personal status administrations, the general security services and the Ministry of Education, in the aim of making the best use of the data that might be available in these cards and forms.
6. Investing and analyzing the administrative statistical data collected through administrations and entities.
7. Modernizing laws governing statistics and statistical confidentiality.

¹⁹ These administrations include but are not limited to the Central Administration of Statistics, the Personal Status Administrations, General Security Services and the Ministry of Education and Higher Education.

8. Standardizing criteria, concepts and lists of classification and codification related to different economic, social, health and administrative aspects and activities, etc., as well as updating and assessing these aspects and activities, as required.
9. Updating computer hardware and software tools used by public administrations responsible for producing and/or collecting statistical data, in addition to strengthening their capacities at the financial and technical expertise levels. A special attention should be given to Central Administrations of Statistics, mainly concerned with producing and disseminating statistical data.
10. Establishing databases, or statistical information banks, that include raw data, statistical tables (in the economic, social and health fields, etc.) and statistical frames; the information banks contents should be made accessible to all users within defined terms and costs.
11. Promoting the use of statistics in the formulation of general policies for relevant countries and ministries, in all sectors.
12. Ongoing scientific assessment of the statistical surveys operations, obstacles and outcomes, in the aim of developing these surveys and avoid potential obstacles.

As to the elaboration of the IHS requirements, main proposals include:

1. Providing the funds and computer and office equipment required to undertake a survey.
2. Linking between the needs and contents of the survey questionnaires, by launching wide consultation and coordination operations with different administrations and ministries to define the nature and types of statistical data needed by these administrations and ministries to include them in the survey topic modules.
3. Benefiting from the technical support programs and expertise unavailable in the country and that can be provided by the specialized UN bodies.
4. Elaborating a detailed work plan that includes the survey financial costs and needs in human expertise, equipment and software tools; as well as setting a timetable to elaborate and implement the integrated survey contents, within each topic module.
5. Selecting appropriately the staff responsible for collecting, checking, coding and uploading data, in addition to providing them with detailed and thorough training to avoid any mistakes being made by poorly trained individuals during their job, as well as providing financial motivations allowing the selection of secondary school or university graduates to execute survey-related office and field work.
6. Establishing survey-related databases that include raw data, and make them accessible to the users so they will be able to draw tables and undertake statistical analysis, as appropriate.
7. Updating databases periodically, in the light of consequent and ongoing surveys.
8. Updating statistical frames periodically, based on the survey statistical samples and taking into consideration the regional analysis needs and the levels of statistical precision required.

10-Annexes and bibliography:

Annex 1

Types of sampling techniques that can be used in the IHSs

There are a handful of sampling techniques that can be used in conducting IHSs, as listed below:

1-Stratified sampling technique:

The sample pool in this scenario is divided into different populations or groups based on a certain characteristic like for instance geographical area such as *Mohafazas*. Moreover, a stratified sample can be drawn using a uniform sampling rate or equal sample sizes.

1-a Stratified sampling technique with a uniform sampling rate:

Each stratified sample size in this scenario is calculated based on the population size of the stratum. For instance, if our population is the number of households in Lebanon and the required total sample size is 6000 households, by using a uniform sampling rate throughout the Mohafazas meaning the strata, we obtain different sample sizes as shown in Table 1.

- Each Mohafaza has a different sample size
- Sampling errors are larger in the small-sized samples
- This type of sampling is self-weighted

Table 1: Sampling rate, sample size and self-weighted factor per Mohafaza

Mohafaza	Actual number of households	Number of households in the sample	Uniform sampling rate	Self-weighted factor
Beirut	101695	693	0.68%	146.7
Mount Lebanon	371289	2532	0.68%	146.6
North of Lebanon	162344	1107	0.68%	146.7
Beqaa	102797	701	0.68%	146.6
South of Lebanon	89423	610	0.68%	146.6
Nabatieh	52306	357	0.68%	146.5
Lebanon	879854	6000	0.68%	146.6

1-b Stratified sampling technique with equal sample sizes:

In this scenario, the stratified samples have equal sizes. For instance, if our population is the number of households in Lebanon, by stratifying again by Mohafazas, we divide our total sample size by the number of strata which is 6 in this respect (as shown in Table 2) thus having equal sample size in each group.

- Sampling errors are equal throughout the different Mohafazas
- Each sample has a different weight factor

Table 2: Sampling rate, sample size and self-weighted factor per Mohafaza in the equal sample size scenario

Mohafaza	Actual number of households	Equal sample size per Mohafaza	Uniform sampling rate	Weight factor
Beirut	101695	1000	0.98%	101.7
Mount Lebanon	371289	1000	0.27%	371.3
North of Lebanon	162344	1000	0.62%	162.3
Beqaa	102797	1000	0.97%	102.8
South of Lebanon	89423	1000	1.12%	89.4
Nabatieh	52306	1000	1.91%	52.3
Lebanon	879854	6000	0.68%	146.6

2-Three-stage stratified sampling technique:

This sampling technique follows the below steps:

- T population is stratified according to a first-hand characteristic which is in this case the geographical attribute, namely the 6 Mohafazas;
- An exhaustive list of cities and towns with the corresponding number of primary residences is made available serving as a sampling frame for the second step in the sampling process;
- A sample of cities and towns in each stratum is drawn later using the probability proportional to size technique. The drawn sample will form what is called the list of primary sampling units (PSU);
- PSU are then divided into geographic islets having equal number of primary lodgings. By using then the equal probability sampling technique, a sample of these islets in each Mohafaza is drawn constituting a list of secondary sampling units (SSU);
- At the final stage, each drawn geographic islet serves as a frame to randomly choose a certain number of households which will serve as the tertiary final sampling units (FSU) or (TSU).

3-Two-stage stratified clustered sampling technique

In this technique, each geographical stratum, i.e. Mohafaza in this respect, will statistically be treated separately. Town and cities in each Mohafaza will be divided into geographical islets having equal number of primary residences. A certain number of islets are drawn systematically from each Mohafaza forming the primary sampling units (PSU).

An exhaustive listing of primary lodgings is performed. A defined number of primary residences considered as a cluster and forming the secondary sampling units are randomly drawn from each islet. The total of the former should equal the required sample size of households from each Mohafaza.

4-Two-stage stratified unclustered sampling technique

Each geographical stratum or Mohafaza is treated individually.

An exhaustive listing of cities and towns with the corresponding number of primary residences is made available.

Using the probability proportional to size technique, a list of towns and cities is drawn forming the primary sampling units (PSU).

A defined number of households are chosen whereby the total number of primary residences from chosen towns and cities equals the required sample size in each Mohafaza.

Annex 2

Confidence levels in percentage given to results depending on whether the sampling rate is uniform or the samples are of equal size

Statistical results are, by and large, imparted with a percentage confidence level. Hence, to depict the difference in the uses of equal sample sizes and uniform sampling rates processes, we will expose in this part the mathematical equation of confidence levels in percentage which is computed when presenting survey results, as depicted down:

Equation 1: Confidence level in % of the sample (P_s) when using 95% of confidence or 5% of chance of error.

$$\pm 1.96 \left[\sqrt{\frac{P_s(100 - P_s)}{N_s}} \right] \cdot \left[\sqrt{\frac{N_p - N_s}{N_p - 1}} \right]$$

where N_s is the sample size and N_p the total population size

The confidence level in percentage at the level of the whole population P_p is computed by using equation 2 (as shown beneath).

Equation 2

$$P_p = P_s \pm 1.96 \left[\sqrt{\frac{P_s(100 - P_s)}{N_s}} \right] \cdot \left[\sqrt{\frac{N_p - N_s}{N_p - 1}} \right]$$

Table 1: Percentage sampling rate error based on different % confidence levels in the two Mohafazas of Nabatieh and Mount Lebanon when using the uniform sampling rate technique

	Confidence Level (%)						
Percentage	2%	5%	10%	30%	50%	70%	90%
% sampling rate error in the Mohafaza of Nabatieh(sample size 357 households out of 52306 as a total)	1.45%	2.25%	3.10%	4.74%	5.17%	4.74%	3.10%
% sampling rate error in the Mohafaza of Mount Lebanon (sample size 2532 households out of 371289 as a total)	0.54%	0.85%	1.16%	1.78%	1.94%	1.78%	1.16%
Number of times of differences in the sampling error estimates between the 2 Mohafazas	2.7 times	2.7 times	2.7 times	2.7 times	2.7 times	2.7 times	2.7 times
The estimated value in % in the population of Nabatieh ranges between the lowest and the highest limits corresponding to each proportion of the sample	0.55%	2.75%	6.90%	25.26%	44.83%	65.26%	86.90%
	3.45%	7.25%	13.10%	34.74%	55.17%	74.74%	93.10%
The estimated value in % in the population of Mount Lebanon ranges between the lowest and the highest limits corresponding to each proportion of the sample	1.46%	4.15%	8.84%	28.22%	48.06%	68.22%	88.84%
	2.54%	5.85%	11.16%	31.78%	51.94%	71.78%	91.16%

Table 2: Percentage sampling rate error based on different confidence levels in the two Mohafazas of Nabatieh and Mount Lebanon when using the equal sample size technique

	Confidence level (%)						
Percentage	2%	5%	10%	30%	50%	70%	90%
% sampling rate error in the Mohafaza of Nabatieh(sample size 1000 households out of 52306 as a total)	0.86%	1.34%	1.84%	2.81%	3.07%	2.81%	1.84%
% sampling rate error in the Mohafaza of Mount Lebanon (sample size 1000 households out of 371289 as a total)	0.87%	1.35%	1.86%	2.84%	3.09%	2.84%	1.86%
Number of times of differences in the sampling error estimates between the 2 Mohafazas	0.99 times	0.99 times	0.99 times	0.99 times	0.99 times	0.99 times	0.99 times

Annex 3
Drawing with equal probability when choosing random samples

Drawing with equal probability when choosing random sample is done as follows:

Given that the population size is 200 and the sample is 40, the different steps entailed are:

1- Estimation of the drawing step:

The drawing step is calculated by dividing the total population size by the sample size.

2- Primary random draw point:

The first drawing point should be between one and the value of the drawing step and is chosen randomly with the help of the computer.

3- Listing of the systematic numbers to be picked up:

If the drawing step is 5 and the first pick-up is number 3, the following units should be, 8, 13, 18, 23 ... 198.

Annex 4/Human Development Index (HDI)

The human development index of a country is calculated based on the listed below equations and the fact that the estimation takes into consideration the minimum and maximum value of each indicator as shown in the following table.

Equation to calculate Index	XI =	X - min(X)			
		max(X) - min(X)			
Life Expectancy Index	LEI =	LE - 25			
		85 - 25			
Adult Literacy Index	ALI =	ALR - 0			
		100 - 0			
Gross Enrolment Index	GEI =	CGER - 0			
		100 - 0			
Education Index	EI =	$\frac{2}{3}$	ALI	+	$\frac{1}{3}$ GEI
GDP per capita Index	GDPI =	log(GDPpc) - log(100)			
		log(40000) - log(100)			
GDP per capita Index	GDPI =	log(GDPpc) - 2			
		4.60206 - 2			
Human Development Index	HDI =	LEI + EI + GDPI			
		3			

the case of Jordan :Example					
LEI =	$\frac{72.2 - 25}{60}$			=	0.787
ALI =	$\frac{92.7 - 0}{100 - 0}$			=	0.927
GEI =	$\frac{78.7 - 0}{100 - 0}$			=	0.787
EI =	$\frac{2}{3}$	0.927	+	$\frac{1}{3}$ 0.787	= 0.88
GDPI =	$\frac{\log(4654 \$) - 2}{2.60206}$				
GDPI =	$\frac{3.66783 - 2}{2.60206}$			=	0.641
HDI =	$\frac{0.787 + 0.880 + 0.641}{3}$			=	0.769

Annex 5
Human Poverty Index 1 and Human Poverty Index 2

Human Poverty Index 1 in a country is estimated as follows:

1-By calculating the Living Conditions Indicator (LCI),

$$LCI = \frac{DW + HS + UW}{3}$$

where DW is the proportion of population with no safe drinking water, HS is the proportion of population with no access to health services and UW is the percentage of children under 5 years of age who are underweight.

2-By including the LCI in the HPI1 equation,

$$HPI_1 = \sqrt[3]{\frac{(NS_{40})^3 + (AI)^3 + (LCI)^3}{3}}$$

where NS40 is the proportion of population with an expectation of life at birth below 40 and the AI is the adult illiteracy indicator.

Human Poverty Index 2 in a country is estimated using the subsequent equation

$$HPI_2 = \sqrt[3]{\frac{(NS_{60})^3 + (FI)^3 + (BHM)^3 + (LU)^3}{4}}$$

where NS60 is the proportion of the population with 60 years as life expectancy at birth, FI, the adult functional illiteracy indicator, BHM, the proportion of the population with an income below the half median and LU, the long unemployment indicator (LU).

An Example of HPI₂ for Sweden is missing.

Annex 6
Fields and indicators that were used while considering the basic unsatisfied needs in Lebanon

First: identify areas and indicators:

Precisely, 5 fields and 24 indicators were taken into account as depicted beneath:

1-Education indicators;

- 1- School enrolment for children aged 6 years and above
- 2- Pre-school enrolment in the 4-6 years age group
- 3- Highest level of education in the population aged 15 years and above
- 4- Foreign languages fluency in the population aged 15 years and above

2-Health indicators:

- 1- Health insurance
- 2- Chronic diseases and presence of health problem (half a weight)
- 3- Occupational hazards (half a weight)
- 4- Health care centers accessibility (half a weight)

3-Residence indicators

- 1- Household member share of rooms (half a weight)
- 2- Household member share of residence surface area (half a weight)
- 3- Basic floor covering
- 4- Main type of heating system

4-Water, electricity and sanitation indicators

- 1- Main source of drinking water
- 2- Main source of utility water (half a weight)
- 3- Utility water availability from the main stream
- 4- Electric current availability from the public electricity network
- 5- Sanitation types
- 6-Waste disposal methods

5-Economic conditions of households

- 1- Mean individual daily income
- 2- Economic dependency ratio
- 3- Basic household members conditions (employment/unemployment status, working ability)
- 4- Household electric and audio-visual appliances possession (half a weight)
- 5- Modes of transport ownership (half a weight)
- 6- Number of telephone lines (main line and head of household cellular line) (half a weight)

Second: Methodology of calculating living conditions indicator LCI in Lebanon:

This part is missing.

Annex 7

Fields and indicators that were used while considering the basic unsatisfied needs in Iraq

About 6 fields and 42 indicators were considered in that case as shown below:

1-Education indicators:

- 1- Educational enrollment
- 2- Highest educational level attained (18 years and above)
- 3- Time needed to get to primary school (half a weight)
- 4- Time needed to get to secondary school (half a weight)
- 5- Satisfaction from school

2-Health indicators

- 1- Number of household members suffering from a chronic disease or having a health problem.
- 2- Children malnutrition (half a weight)
- 3- Dwarfing (half a weight)
- 4- Health care centers seeking during pregnancy
- 5- Time spent to reach a public hospital (half a weight)
- 6- Time spent to reach a primary health center (half a weight)
- 7- Health care services satisfaction

3-Infrastructure indicators

- 1- Main source of drinking water
- 2- Drinking water availability
- 3- Water quality satisfaction
- 4- Availability of electric current
- 5- Durability of electric current from the main network
- 6- Sanitation type
- 7- Waste disposal methods

4-Residence indicators

- 1- Materials with which the ceiling is put together
- 2- Household member share of number of rooms
- 3- Type of energy used in the heating system
- 4- Residence satisfaction (surface area, privacy, expenses, lighting, indoors environment)
- 5- Indoors pollutants

5-External residence surrounding

- 1- Traffic and transportation satisfaction
- 2- Quality of the road leading to the residence
- 3- Extent to which ambulances and/or civil defense can reach-out the residence
- 4- Market accessibility satisfaction
- 5- Outdoors cleanliness satisfaction
- 6- Outdoors pollutants (out of a total of 5: litter and garbage, sanitary pipes water leakage, smoke, wrecked army trucks, gun reservoirs)
- 7- Unwanted sites next to the residence (out of a total of 8: river, railway, highway, industrial quarter, high-pitch area, garbage disposal site, declination, valley opening)
- 8- Satisfaction vis-à-vis the outdoors children safety

- 9- Gun shooting next to the residence

6-Household economic condition indicators

- 1- Average individual income
- 2- The possibility of getting hold of the amount of 100 thousands Dinars in a week time
- 3- Employment and job opportunities satisfaction
- 4- Household members working conditions
- 5- Dependency ratio (family size over number of household members who are working)
- 6- Number of durables (out of a total of 16)
- 7- Assets ownership (residence, car, real estate)
- 8- Number of daily basic needs that can be ensured (out of a total of 6: warmth inside the house during winter, cool climate inside the house during summer, possibility of spending a night outside the house during the end of the week, possibility of buying new furniture, possibility of shopping for clothes, purchasing meat or fish)
- 9- Complete economic evaluation of the household.

Annex 8

Fields and indicators that were used while considering the basic unsatisfied needs in the comparative study on poverty and deprivation in the Arab World

1-Education indicators

- 1- School enrollment
- 2- Highest educational level attained

2-Health indicators

- 1- Chronic diseases
- 2- Children malnutrition (half weight)
- 3- Dwarfing (half weight)
- 4- Health care centers seeking during pregnancy (half weight)
- 5- Place of delivery (half weight)

3-Residence indicators:

- 1- Household member share of rooms
- 2- Toilet availability

4-Basic residence infrastructure indicators

- 1- Main source of drinking water
- 2- Main source of lighting (half weight)
- 3- Heating material used in cooking (half weight)
- 4- Waste disposal methods

5-Household economic condition indicators

- 1- Dependency ratios
- 2- Household members working conditions
- 3- Household electric and audio-visual appliances possession (half weight)
- 4- Assets ownership (half weight)

Annex 9 is missing.

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