Sector Review of the Implementation of the Labour Force Survey in Egypt

Final report
October2014

Prepared by
Antonio R. Discenza
Etienne Caruana

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

AGA	Global Assessments
CAPI	Computer-Assisted Personal Interviewing
CAPMAS	Central Agency for Public Mobilization and Statistics
CATI	Computer-Assisted Telephone Interviewing
EA	Enumeration Areas
ENP	European Neighbourhood Policy
ESA 2010	European System of Accounts 2010
ESCoP	European Statistics Code of Practice
ESS	European Statistical System
EU	European Union
EU-LFS	European Labour Force Survey
GDP	Gross Domestic Product
ILO	International Labour Office
IMF	International Monetary Fund
ISCED	International Standard Classification of Education
ISCO	International Standard Classification of Occupations
ISIC	International Standard Industrial Classification
LFS	Labour Force Survey
LPR	Light Peer Review
MS	Master Sample
NACE	Statistical classification of economic activities in the European Community
NSI	National Statistics Institute
PAPI	Paper and Pencil Interviewing
PSU	Primary Sampling Units
SAQ	Self-assessment Questionnaire
SDDS	Special Data Dissemination Standards
SR	Sector Review
UNECE	United Nations Economic Commission for Europe

1. INTRODUCTION

(1) The use of statistics has today become of paramount importance for research and policy making purposes. Today, statistics has many interested users, ranging from national governments, international organisations, the business community, non-governmental organisations, the media and the research community. In a time when all countries deem as an absolute necessity to use their own resources as effectively as possible, there is a strong need to engage in statistical enquiries which can provide relevant, comparable, and high quality results.

1.1. The Labour Force Survey

(2) The Labour Force Survey (LFS) is a large household survey, designed to produce timely statistics on participation in the labour market, as well as on persons outside the labour force. In many countries, these statistics are collected on a continuous basis, and compiled on a quarterly basis. On the other hand, there are still a number of countries that carry out this survey only on an annual basis. A number of developed countries have been carrying out this enquiry for a long period of time and now possess long time series covering over two decades.

(3) Within the European Union, this survey is governed by a regulation (Council Regulation (EEC) No. 577/98 of 9 March 1998) which ensures the highest possible quality results and full harmonisation across all participating countries. Definitions of employment and unemployment in the European Labour Force Survey (EU-LFS) follow strictly the guidelines stipulated by the International Labour Office (ILO), which establishes principles upon which measures of employment and unemployment should be collected and compiled. The strict adaptation of these principles within the ESS is a clear proof of Eurostat's active cooperation with international agencies and organisations, aimed at providing harmonised statistics at international level.

(4) In practice, this means that by following strictly the ILO guidelines in the EU-LFS, Eurostat can compile harmonised labour market statistics which are comparable across the EU as well as with the data from non-EU member countries that are also carrying out this survey. It is this harmonised methodology used across many countries that makes the labour market indicators produced from the LFS often more relevant to users than the statistical reports derived from national employment/unemployment administrative registers.

1.2. European Statistics Code of Practice

(5) Since 2004, the ESS has been working towards a consistent strategy for strengthening statistical systems across the European Union (EU). Good governance across the EU demands for high quality information on the economy and the society in general. In addition, measures need to be in place in order to guarantee the professional independence of the NSIs across the ESS, and to ensure that user needs are the basis for the production of statistics by of the NSIs.

(6) The European Statistics Code of Practice (ESCoP), last revised in 2011, is a self-regulatory instrument which contains the principles and standards to produce and disseminate high quality statistics on the European Union. The ESCoP is based on 15 principles covering three major areas, as follows:

Institutional Environment:

1. Professional independence
2. Mandate for data collection
3. Adequacy of resources
4. Commitment to quality
5. Statistical confidentiality
6. Impartiality and objectivity

Statistical Processes:

7. Sound methodology
8. Appropriate statistical procedures
9. Non-excessive burden of respondents
10. Cost effectiveness

Statistical Output:

11. Relevance
12. Accuracy and reliability
13. Timeliness and punctuality
14. Coherence and comparability
15. Accessibility and clarity.

(8) All European Statistical Authorities, comprising the Commission (Eurostat), National Statistical Institutes and other national authorities responsible for the development, production and dissemination of European Statistics, commit themselves to adhere to the Code. Eurostat also plays a key role in ensuring that ESCoP is fully respected within the EU.

1.3. Sector Reviews

(9) As part of its role in cooperating with international statistical institutions and promoting statistics at international level, Eurostat also assists enlargement countries (Albania, Bosnia and Herzegovina, the former Yugoslav Republic of Macedonia, Iceland, Kosovo1, Montenegro, Serbia and Turkey), as well as countries covered by the European Neighbourhood Policy (ENP)2 in projects aimed at developing the production of statistics in line with EU and international standards. The ENP countries are: Armenia, Azerbaijan, Belarus, Georgia, Moldova, Ukraine, Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, Syria and Tunisia.

(10) As part of this strategy, during the period 2009 – 2012 Eurostat carried out a series of global assessments (AGA) and light peer reviews (LPR) among enlargement and ENP countries. While AGA's were held in order to assess the compliance of the NSIs with EU and international standards for the production of statistics, LPR were more geared towards the assessment of compliance with the ESCoP. The approach used during these reviews was very much similar to that used during the reviews carried out among the EU Member States during 2006-2008.

---

[1]This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence.

(11) Although these reviews have proved very efficient in determining strengths and weaknesses in statistical systems within these countries, the need for more detailed information on specific statistical sectors was felt. This led to the introduction of sector reviews (SR's). Contrary to AGA's and LPR's, SR's focus mostly on statistical processes in a particular sector, rather than on the whole statistical system.

(12) In view of this, SR's are expected to provide very detailed information regarding the statistical sector and more specifically, the scope of the SR comprises:

- An assessment of the statistical production of the relevant sector;
- An assessment of the statistical production against the acquis;
- Reviewing of medium and long-term plans within the sector;
- Proposal of a list of actions to be undertaken in order to improve the data delivery and functioning of the sector under review.

1.4. Sector Review of the LFS in Egypt

(13) The scope of this SR is to assess the Labour Force Survey (LFS) carried out by the Egyptian National Statistical Office (CAPMAS). For the purpose of this SR, two independent reviewers, namely Mr Antonio R. Discenza (Project Leader) and Mr Etienne Caruana, were engaged to collect and assess all the information required for the scope of this review. Both reviewers have extensive experience with the LFS and ESCoP, and are fully aware of Eurostat's recommendations for best practice in LFS.

(14) The two main objectives of this SR were to assess the administrative and technical capacity of CAPMAS to produce high quality statistics on the labour force, as well as to assess the statistical production of this survey against the acquis. In order to carry out this task, reviewers used the ESCoP as their main guidelines for collection of information and analysis.

(15) By using this approach, the reviewers were able to fully assess coherence of results produced from the Egyptian LFS with those produced at EU level. Significant attention was also given to quality, dissemination standards, as well as to documentation of work processes. In addition, the reviewers were requested to provide a number of recommendations based on their findings, for the improvement of the LFS in Egypt.

(16) This SR was carried out in three distinct phases. The preliminary phase of this project entailed the selection of the reviewers by Eurostat. In addition, reviewers were briefed thoroughly and provided with necessary material in preparation for this task. The contractor also ensured that both reviewers were familiar with Eurostat's expectations for this SR and that all specific Eurostat requirements were taken on board during the planning stage of this SR.

(17) During the second stage, the reviewers prepared a detailed self-assessment questionnaire (SAQ, please refer to Annex 1) covering nearly all the principles of the ESCoP, which was approved by Eurostat and sent to CAPMAS in preparation for the main review. The scope of the SAQ was to enable the reviewers to collect preliminary information regarding the Egyptian LFS. This questionnaire also served for CAPMAS to prepare for the reviewers' mission.

(18) The reviewers' mission was carried out during the period 14 – 17 April 2014. An agenda is provided in Annex 2covering all activities carried out during this mission. During the preliminary stage of the mission, the reviewers gave a clear overview of the objectives of the SR, as

instructed by Eurostat. Reviewers also requested CAPMAS to send a list of documents that were necessary for the SR.

(19) Unfortunately, it was not possible for CAPMAS to fill the SAQ and send it to the reviewers before the mission. However, during the mission, the reviewers were given full support and cooperation from CAPMAS, in order to collect all necessary information for the SR as accurately as possible. The experts discussed all matters related to the LFS with all members of CAPMAS staff in an open and transparent way, which was indispensable for the success of the mission. Reviewers were also given the opportunity to visit CAPMAS' training centre, the computer laboratory, as well as the GIS laboratory and discuss technical issues pertaining to the LFS with the people responsible for these Units.

(20) The reviewers very much appreciated the openness of discussion by the CAPMAS-LFS team on all matters pertaining to their LFS, and the willingness to provide information for the purpose of this SR as accurately as possible. Reviewers also found exemplary the way by which the staff discussed the limitations in their statistical system and the willingness to improve their work. It is very clear that all CAPMAS staff members are highly enthusiastic about their work, and keen towards further improving the statistical capacity of this Office.

1.5. The Self-Assessment Questionnaire

(21) The SAQ for LFS was based on the "ESS Quality Assurance Framework 2012", and most of the questions were selected from the Eurostat's documents "Joint Standard Quality Report for Labour Force Survey and Regional Labour Market Statistics" and "National Action Plan for the implementation of the recommendations of the task force on quality of LFS". The SAQ was divided in three parts, namely:

- **Institutional environment:** the first part of the questionnaire focussed on institutional and organisational factors that have a significant impact on the effectiveness and credibility of a statistical authority for developing, producing and disseminating LFS Statistics. Topics addressed in this part of the SAQ covered principles 2, 3 and 6 of the ESCoP. Detailed questions covering the principles 1, 4 and 5 were removed from the questionnaire as they were not deemed relevant for this SR.
- **Statistical Processes:** the second part of the SAQ assessed the main processes for the organisation, collection, compilation and dissemination of the Egyptian LFS against international standards, guidelines and good practices. Specific questions covering ESCoP principles from 7 to 10 were included in this section.
- **Statistical Outputs:** the last part of the questionnaire covered principles 11 to 15 of the ESCoP. In this part the Egyptian Labour Force statistical outputs were assessed against the ESS quality framework criteria, relevance, accuracy, reliability, timeliness, punctuality, coherency, comparability, accessibility to users and clarity. It aimed at verifying consistency with EU standards and comparability of national outputs with those from European countries.

1.6. Disclaimer

(22) The Egyptian LFS was assessed against almost all of the ESCoP principles. For the purpose of this SR, reviewers assessed the LFS based on standards stipulated by European regulations governing this survey, as well as the ILO recommendations. Eurostat's LFS-explanatory notes were constantly referred to in order to assess coherence of the Egyptian LFS with the European

survey. Reviewers also referred to the recommendations made by the Eurostat task force on the quality of the LFS in order to assess the quality of this survey and make recommendations for improvement.

(23) It is worth noting that, while the reviewers did their utmost to collect all information required for the purpose of this SR in an impartial and objective manner, limitations in the review process might still exist, due to the fact that:

- Observations and conclusions from this review depend primarily on information provided by CAPMAS, which despite being highly comprehensive, might still not be fully exhaustive.
- Moreover, observations, conclusions and recommendations made by the reviewers are based mainly on their experience in this line of work and their familiarity with the EU-LFS. It is possible, that some of the recommendations made by the experts might not be feasible to be implemented in a medium term by CAPMAS

(24) In view of these limitations, the experts strongly recommend CAPMAS to invest in further research before implementing any of the recommendations that are being made by the reviewers in this report.

1.7. General Overview of CAPMAS

(25) CAPMAS was established in 1964, and is the official source for national statistics in Egypt, under Presidential Decree (No. 2915). Employing more than 4,000 personnel and managing more than 60 regional offices, CAPMAS is the only governmental agency responsible for publishing official statistics in all demographic, social and economic fields. The office is also responsible for implementing the population and housing census and the economic census. CAPMAS has the role of regulating statistical work carried out by other Government Agencies. In fact, according to Egyptian legislation, no public or private entity may publish statistical data for national purposes without CAPMAS' prior authorisation.

(26) CAPMAS' mission is to produce high quality, and timely statistics that match all user needs within the economic, social and environmental spheres, making it available to all users. In order to achieve these important goals, during the past years, CAPMAS has invested considerably in its statistical systems and collaborated with many national and international agencies by organising conferences, data exchange programmes, seminars and twinning programmes. CAPMAS also contributes effectively to research by providing data to researchers and organising regular conferences to promote statistical research initiatives.

(27) CAPMAS has a relatively flat organisation. Apart from the statistical production units there is also the President's Office Central Administration, an Advisory Committee for Statistical Coordination and a Legal Office (which also fall under the responsibility of the President of CAPMAS). The statistical production falls under the responsibility of five departments, namely:

- Secretariat sector;
- Population statistics and censuses sector;
- Information technology sector;
- Economic statistics and mobilisation sector; and,
- Regional offices sector.

(28) CAPMAS has joined the Special Data Dissemination Standards (SDDS) thus fulfilling the requirements of the International Monetary Fund with a view of enhancing the availability of timely and comprehensive statistics in order to support macroeconomic policies3. As a member of the SDDS, CAPMAS satisfies a number of criteria (e.g. advanced news release calendar), which are also of interest for this SR.

1.8. General Overview of the Labour Force Survey in Egypt

(29) The Egyptian LFS is the main source of labour market statistics in Egypt, and is considered one of the most important surveys in the country, targeting more than 90,000householdsevery year. Primary indicators from the LFS are published on a quarterly basis, while a publication containing more detailed labour market statistics is published every year. In order to carry out the LFS, CAPMAS follows the methodology and harmonised definitions as stipulated by the International Labour Office (ILO).

(30) The first survey of this kind was carried out in Egypt in 1957, and has been developed ever since. One important development in the Egyptian LFS occurred in 2006, when CAPMAS revised its questionnaire to align its methodology with ILO's guidelines and recommendations. In 2008, CAPMAS started implementing this survey on a continuous basis, by spreading the surveys more evenly over the year.

(31) During the past years, CAPMAS has also cooperated with international organisations like the United Nations and Eurostat in order to further improve this survey. One recent initiative to enhance the LFS entailed the introduction of panel sampling in order to improve the quality and consistency of results. CAPMAS invests considerable human and financial resources in carrying out the LFS. This survey is highly promoted among users, including researchers, who are encouraged to use this data for research purposes.

(32) Work on LFS is mainly carried out by a dedicated unit which is responsible for the collection and analysis of this survey. This unit is supported by two other units, which are: the IT unit (responsible for providing the necessary IT tools for the collection and compilation of data), and the sampling unit (responsible for the sampling design of LFS as well as the calculation of sampling errors).

---

[3] Please refer to the book "The Special Data Dissemination Standard: Guide for Subscribers and Users" http://www.imf.org/external/pubs/ft/sdds/guide/2007/eng/sddsguide.pdf.

2. FINDINGS

2.1. Institutional Environment

PRINCIPLE 2: MANDATE FOR DATA COLLECTION

(33) All statistical enquiries carried out and published by CAPMAS, including the LFS, are governed by national legislation, Act No. 35, of 1960, which was later amended in 1982. In particular, this Act stipulates that CAPMAS is responsible for the collection and compilation of national statistics as well as for census taking. This Act also empowers CAPMAS to establish the methodology by which official statistics are collected, compiled and disseminated.

(34) This Act empowers CAPMAS to collect individual data, as long as it is used for statistical purposes, and imposes obligations on this office to ensure non-disclosure of individual information. This Act also allows CAPMAS to access administrative registers for statistical purposes. However, for the purpose of LFS, CAPMAS still relies on households only to provide all the information.

(35) This Act authorises CAPMAS to enforce participation in all household and enterprise surveys, including the LFS, and also stipulates legal actions which can be taken by CAPMAS, against respondents who refuse to provide accurate information for the purpose of this survey. Based on the non-response rates provided by CAPMAS for the Egyptian LFS, it is very clear that this Act is very effective in enforcing high participation in this survey.

(36) Despite these strengths there are new and emerging statistical issues, also involving LFS, which are not tackled by this legislation. For example, the Act fails to stipulate rules and clear lines of action which should be taken by CAPMAS when anonymised micro-data is made available to researchers.

(37) Moreover, although the Act empowers CAPMAS to access administrative registers for statistical purposes; it fails to empower CAPMAS to demand changes in existing registers mainly for statistical purposes. For example, administrative data held within the ministry responsible for employment and unemployment benefits still proves insufficient regarding registered employment and unemployment data, despite CAPMAS' efforts to access this information to complement the LFS.

PRINCIPLE 3: ADEQUACY OF RESOURCES

(38) In general, CAPMAS' personnel feel that the current level of human and financial resources assigned to the LFS is adequate. The management is clearly aware of the high levels of human and financial resources that need to be invested in order to ensure that this survey is carried out in accordance to high quality standards. CAPMAS also feels that LFS is currently satisfying all major user needs for labour market statistics, and this justifies all the resources that are currently being invested in this survey.

(39) During 2011, CAPMAS assigned 217 full-time employees for the purpose of LFS. This number grew to 220 workers in 2012 and then to 250 employees in 2013. In addition, CAPMAS also employs more than 350 personnel on part-time basis, every year, to assist during the data collection. These figures do not include interviewers. When it comes to spending, CAPMAS

allocates 2.5 million Egyptian pounds (approximately € 0.27 million) every year specifically for this survey.

Table 1. Survey annual budget for each 100,000 population.

Year	Annual Budget Million LE	Population Millions	Budget per 100,000 population	GDP Million LE	% GDP
2011	2.5	80.5	3,104	1,475,326	0.0002
2012	2.5	82.3	3,037	1,508,527	0.0002
2013	2.5	84.6	2,954	1,677,352	0.0001

(40) A large share of staff working on LFS is qualified in statistics or in a related field of study, and also has a long experience working in social surveys and compiling social statistics. There is a high level of commitment at all levels towards producing high quality statistics, and all staff understands the importance of their work.

(41) CAPMAS is also highly committed towards developing the skills of all personnel further. In fact, during the past years, the office has developed an internal training centre which caters for many of the training needs, offering both general training programs and intensive statistical or IT programs for specific tasks. In addition, CAPMAS personnel are constantly encouraged to attend externally and internally organised training courses, as well as conferences. Moreover, technical personnel are encouraged to collaborate with researchers in order to further develop their skills. CAPMAS also organises regular conferences jointly with the research community where technical papers, often based on statistics collected by CAPMAS, are presented and discussed.

(42) CAPMAS has a very strong IT infrastructure which supports collection, analysis and dissemination of data, including that of the LFS. During the past years, CAPMAS has developed its own data warehouse, which considerably improved the Office's statistical capacity and efficiency. At the moment, CAPMAS is working on a new website which is expected to improve CAPMAS' dissemination standards. Furthermore, the IT unit is collaborating with the LFS team on a project aimed at replacing the existent Paper-and-Pencil Interviewing (PAPI) method used for data collection by a Computer-Assisted Personal Interviewing (CAPI). CAPMAS has also invested in a GIS system in preparation for the forthcoming Egyptian census.

(43) There is however still need for more technical assistance on statistical techniques which are indispensable for smooth running of the LFS. It clearly emerged from this review, that although the CAPMAS-LFS team is highly familiar with the advantages of probabilistic weights in order to reduce the effect of non-response bias, they are still unfamiliar with the advanced weighting and calibration techniques that have been introduced in many countries during the past years.

PRINCIPLE 6: IMPARTIALITY AND OBJECTIVITY

(44) CAPMAS does not have a written dissemination policy specifying methods and processes ensuring impartiality and objectivity when disseminating results. CAPMAS holds documents on work processes employed in LFS. However, these documents are not exhaustive and need to be enhanced. Moreover, there is no sufficient information provided to advanced users on the work processes carried out by the LFS team on this survey.

(45) This does not mean that these principles are not upheld within this office. In fact, from feedback provided to the reviewers, it is very clear that this principle is taken very seriously by CAPMAS' President and all the management team. The legislative status of CAPMAS allows it to determine the choices of sources and methods used in the compilation of LFS solely based on statistical considerations. Moreover, the Statistics Act does not allow for any external influence in the compilation of statistical reports. As a member of the SDDS, this office also abides to special dissemination standards set by the International Monetary Fund, stipulating impartiality and objectivity.

(46) .CAPMAS is committed towards correcting any erroneous data as soon as they are detected when it comes to correction of published statistics. However, there is still no publicly available written policy which establishes the principles and procedures by which these corrections are made. On the other hand, CAPMAS has a revisions policy which also stipulates that users should be informed in advance on major revisions and changes in the methodology of the LFS.

2.2.   Statistical Processes

PRINCIPLE 7: SOUND METHODOLOGY

Infrastructural issues

(47) CAPMAS has a methodological and technical infrastructure in place which defines, validates and monitors the implementation of the work processes of LFS. The responsibility for monitoring the work processes of the LFS falls on CAPMAS' Central Administration Department, which reports on the quality of work and work processes directly to the President of CAPMAS. This unit has the responsibility of evaluating the quality of all CAPMAS projects, including LFS. It is also responsible for reviewing annual and periodical bulletins before publication stage.

(48) In addition, sampling for LFS falls under the responsibility of the sampling unit, which establishes the methodology for maximising the LFS sample's efficiency. This unit is also responsible for maintaining and updating the LFS sampling frame. More details on the methodology by which these updates are made are provided below.

(49) The IT unit supports the LFS team by providing the necessary IT tools for the collection, coding, data entry and compilation of results. It also computes the LFS weights based on instructions provided by the LFS team and the sampling unit.

(50) Coding for this survey is carried out by an internal classifications unit.

Technical Staff

(51) During the past years, CAPMAS has changed its recruitment policies in order to ensure that the persons selected for technical posts indeed possess the technical knowledge and abilities to carry out their work as efficiently as possible. In parallel, CAPMAS is implementing a series of initiatives, which mainly comprise training, aimed at improving the knowledge of existing staff.

LFS questionnaire

(52) The LFS questionnaire[4] follows many of the ILO recommendations for measuring labour market statistics. In particular, it contains all the questions required for calculating the unemployment rate according to the ILO definition, although differences from the recommended ILO-methodology exist. Reviewers also noted that the Egyptian LFS questionnaire does not fully comply with the twelve principles stipulated in Annex 2 of Commission Regulation 1897/2000 in order to ensure full harmonisation of results. More details regarding these divergences are provided in the section entitled "Divergences of national concept from European concepts and requirements".

(53) CAPMAS currently uses two versions of the questionnaire - a long and short version. The main difference between the two versions is that the long questionnaire contains two ad-hoc modules addressing health and housing, while the short version of the questionnaire contains only labour market-oriented questions. Both questionnaires contain all the annual and quarterly variables[5], which means that full consistency between the LFS annual and quarterly datasets can be achieved. However, this goal has not been achieved yet, due to the fact that annual weights are computed independently from the quarterly weights.

Coding

(54) Coding of occupations and economic activity is carried out internally by trained coders, based on a description of the job as reported by the respondents. Coding of the main economic activity of the enterprises is similarly recorded based on description of the main 'function' of the enterprise as reported by the interviewers. Coding is carried out at the end of the data entry but only the codes are entered into the database for data analysis. Although the practice of entering only codes is acceptable due to the fact that entering the descriptions would prolong the data entry process, it limits considerably the ability of the analysts to verify the quality of the work carried out by the coders.

(55) CAPMAS currently uses ISCO-88 for classifying occupations in the LFS and is planning to adopt the new ISCO-08 classification by 2015. In order to minimise errors during coding, CAPMAS has developed a 6-digit coding system for internal purposes, which classifies occupations in a much more detailed manner than the 4-digit ISCO. Although this 'fine-tuned' classification has been designed on ISCO-88, it can still be effectively linked to ISCO-08. In view of this, revisions on past data using the new coding system are still possible.

(56) CAPMAS uses ISIC Rev. 4 for classification of economic activity. Although many of the codes in ISIC Rev. 4 can be linked to NACE Rev 2, reviewers have identified a number of cases where

---

[4]Annex 3 contains the LFS questionnaire which has been used in 2010.
[5]As defined in Com. Regulation n° 377/2008

one-to-one mapping (at full digit level) between these two classifications is not possible. Still the minimum European requirements for coding in LFS are satisfied since this linking suffices to provide reliable data at NACE division and section level.

(57) In order to classify current and highest achieved level of education, CAPMAS uses a pre-defined list of education levels. The current level of disaggregation of these items does not suffice to enable complete one-to-one mapping to ISCED for both 1997 and 2011 versions[6].However by the end of 2014, CAPMAS intends to start applying the new ISCED2011 classification. CAPMAS is also currently studying the possibility to construct a mapping table in order to recode the past data into ISCED 1997 and ISCED 2011.

LFS target population

(58) The Egyptian LFS is a household survey, and therefore does not include persons living in institutional households. A household is considered to be a group of persons, generally family members, sharing expenses. However, non-family members, like servants, who also share the household's resources are also considered as members of the household.

(59) In the Egyptian LFS, persons who leave the household for a period exceeding 6 months are considered as non-members of the household for the purpose of LFS. This definition is not in line with the UN definition of usual residence, which stipulates that the duration criteria should be of 12 months. CAPMAS insists of using the 6-month threshold for LFS to ensure full consistency with the latest population and housing census, which was carried out in 2006.

(60) Moreover, surveys carried out by CAPMAS address only persons of Egyptian nationality, which means that foreign residents are excluded from the Egyptian LFS. Also excluded from this survey are persons working in the Armed Forces.

Sampling Frame for LFS

(61) For sampling purposes, CAPMAS uses a Master Sample (MS) which is used as sampling frame for all social surveys, including the LFS. The MS can be regarded as a sample of 5,024 Enumeration Areas (EA's) with over 1 million households, taken from CAPMAS' register of households and persons, produced from the latest population and housing census. On average, every enumeration area has 200 households. However, EA's with much less than 200 households do exist, especially in rural areas. In some cases, CAPMAS merges adjacent small EA's prior to sampling so that all Primary Sampling Units (PSU's) have very similar sizes prior to selection.

(62) Selection of PSU's for the MS is made through stratified random sampling based on the 27 governorates and on the degree of urbanisation (urban/rural), where equal proportions of PSU's are selected within every strata. Prior to the selection of these units, the frame is arranged in such a way as to enable implicit stratification with regard to the geographic location. In practice, this means that each sub-governorate (kism/markaz) is ordered in a serpentine fashion according to the geographic location within the strata based on its location. This approach ensures that an adequate representation of every strata is obtained in the MS, thus improving the efficiency by which sampling is carried out. Implicit stratification is possible since CAPMAS has developed a system by which the location of all EA's could be identified from their census-based register of

---

[6] It seems that at the moment is not possible to distinguish Masters from Ph.D. as required by the new classification.

households. The MS is designed to cover all parts of Egypt. However, no estimates of under-or over-coverage are currently available for LFS.

(63) Every five years, the MS is replaced by a new, and independent, set of 5,024PSU's. Whenever possible, extraction of the MS is carried out from a new census-based register, in order to ensure that information regarding all the households in the MS is as updated as possible. During the inter-censual periods, when a fresh register of households is not available, CAPMAS updates the selected list of EA's through a specific enquiry. The current version of MS was extracted from the 2006 population and housing census and updated in 2010.

(64) Apart from the contact address, the MS also contains auxiliary information regarding the households which can be used for sampling purposes, including: governorate name and code, city name and code, shiakha/village name, degree of urbanisation groups, PSU, road name, road number, block number, building number, organising number, building owner name, location and number of the housing unit in building, name of head household.

The LFS Sample

(65) Every year, the MS is split into four equally sized sub-samples of 1,256 PSU's, i.e. one for each quarter. A gross sample of 18 households is then selected randomly from each of the selected PSU and contacted for the LFS. Two additional households are selected per PSU to enable substitution of non-responding households. In this regard, reviewers would like to remark that the use of substitution of non-responding households is not widespread within the ESS and its effect is still controversial. The sampling scheme used by CAPMAS also incorporates the use of a panel, as described in the following section.

(66) In the effort to limit the burden on households as much as possible, CAPMAS eliminates households that already participated in previous surveys from the MS prior to selection.

(67) The Egyptian LFS is carried out on a continuous basis; however, not all the weeks of the year are covered. More specifically, every quarter the selected EA's are split randomly into 5 equal sub-samples and assigned for interviewing for specific weeks of the quarter as follows: 1st month: week 1, week 3; 2nd month: week 1, week 3; 3rd month: week 1. The last month of every quarter is covered by only one week, while the remaining two months are represented by two weeks.

(68) At the moment, it is not possible for CAPMAS to cover more weeks from the last month due to a number of operational constraints which are limiting the efficiency of data collection and data analysis. In fact, according to CAPMAS personnel, under the current circumstances, if CAPMAS decides to prolong the period of data collection to cover all the months equally, then CAPMAS will risks not meeting its LFS publication deadlines.

(69) Although this approach suffices to compile reliable quarterly and annual estimates, it still fails to provide full coverage of all quarters, since more than half of the survey weeks are skipped. Moreover, the months are not covered equally and this may introduce biases to the sample.

(70) CAPMAS is considering ways by which this problem can be solved. At the moment, CAPMAS is planning to introduce Computer Assisted Personal Interviewing (CAPI) in the LFS. It is hoped that the improved efficiency in data collection that will result from this significant investment, will suffice to allow a better coverage of all the reference months.

Documentation

(71) It is CAPMAS' policy to make available relatively detailed information regarding the methodology used for the compilation of statistics carried out within this Office. The LFS is no exception. In this regard, CAPMAS produces metadata files highlighting the methodology and principles used for the compilation of the employment and unemployment rate from the LFS. These metadata files can also be downloaded from CAPMAS' website.

(72) Information on the LFS that can be accessed from these files includes details of the sampling methodology used, mode of data collection, etc.(Examples of these metadata files are provided in Annex 4.) More detailed information for the users is provided in the LFS annual publication.

(73) Reviewers noted that these methodological notes are very readable and clear, and are surely useful for the general public to understand the basic concepts and technical issues behind the published figures. However, the level of detail does not suffice for researchers who need to use LFS for more advanced research.

(74) The reviewers also noted a number of inaccuracies in the metadata files which might lead to misleading conclusions regarding the quality of the survey itself. One example is the following: metadata reported that the LFS is "carried out in four surveys in January, April, July and October" but actually the surveys cover all the three months of each quarter. CAPMAS is committed to correcting these inaccuracies immediately.

Methodological Improvements

(75) CAPMAS is clearly very open to learn from best practices in order to improve its statistical system. This is also evident for the LFS. In fact, during the past years, CAPMAS cooperated with international organisations (e.g. ILO, Eurostat, etc.) and with the research community (e.g. Universities) on new initiatives aimed for improving the survey.

(76) During the past years, CAPMAS has also proved to be very keen to introduce new methodologies and change past practice to improve the survey. A clear example of this is a new project that is currently being implemented by CAPMAS, on the introduction of CAPI in the LFS. This initiative is in line with Eurostat's recommendations.

PRINCIPLE 8: APPROPRIATE STATISTICAL PROCEDURES

LFS questionnaire and data collection

(77) The LFS team consults the field-workers and supervisors on a regular basis in order to assess the validity of the questionnaire. Feedback is also sought from the responding households themselves, as well as from the main users of data. Basing on this feedback, CAPMAS makes regular updates in its questionnaires.

(78) All revisions to the questionnaire are thoroughly tested prior to data collection, through pilot surveys that are carried out among small samples of households. No written procedures are currently in place explaining the processes by which these tests are made.

(79) Data collection is currently carried out by face-to-face interviewing using paper questionnaires (PAPI).Small groups of EA's are assigned to supervisors who monitor the work and progress made by the interviewers working in those areas. Supervisors are responsible for the quality of

work carried out by the interviewers and are expected to assist them in case they experience any difficulties during their work.

(80) All interviewers and supervisors are briefed prior to the data collection, and are provided with regular training on basic skills required for field work. In particular, training sessions are carried out every quarter among all interviewers and supervisors, which entail:

- Delivering presentations on general issues related to the LFS (e.g. survey importance, objectives, definitions, methodology according to the international standards);
- Detailed briefing of the LFS questionnaire; and,
- 'On-the-job' training using case studies.

(81) Interviewers are also provided with detailed manuals explaining all concepts and definitions used in the questionnaire. Interviewers are given a letter signed by CAPMAS' President explaining the purpose of LFS, as well as the legal obligation of the selected households to participate in the survey. Interviewers are obliged to show this letter to the interviewed households prior to data collection.

(82) In order to minimise the rate of non-contacts, interviewers are requested to carry out a minimum of three visits in every household before classifying them as non-contacts. Proxy interviews are allowed, although highly discouraged. Interviewers are requested to indicate proxy interviews in the questionnaire so that the rate of proxy interviews can be monitored on a regular basis.

(83) In order to monitor the quality of LFS data collection, CAPMAS has a quality control unit which regularly carries out audit checks among a highly representative sample of responding households. These audit checks entail re-collecting of partial information from the LFS which has already been collected by the interviewers. This information is then compared with the data provided by the interviewers, in order to assess the quality of work carried out by the interviewers and supervisors. Every month, CAPMAS produces reports on interviewers' and supervisors' performances based on these audit checks and immediate corrective measures are taken whenever required.

The LFS Sample:

(84) Based on the information provided in the previous section, it can be deduced that the sampling methodology used by CAPMAS is based on a two-stage cluster design, whereby every year:

- 5,024 PSU's (or EA's) are selected by stratified random sampling within urban and rural governorates, as explained above, and,
- A gross sample of 18 (+2) households per PSU is selected.

(85) The selected PSU's are then split into four equal and independent sub-samples to be interviewed over the four consecutive quarters. On average, CAPMAS contacts approximately 90,432 households for the purpose of LFS, and a sampling rate of 0.45% is achieved.

(86) During the past years, CAPMAS has also explored the possibility of introducing panel sampling in order to improve sampling methodology efficiency. In 2007, CAPMAS initiated a rotational design 2-(2)-1 which comprised a system where one third of the interviewed households (approximately 6 households per PSU) were carried forward to the following quarter, while

another third were carried forward to the following year. With this system, only a third of the interviewed households per quarter were 'new' panel households.

(87) This methodology was stopped in 2013, and then replaced by a more simplistic design in 2014. The new panel design comprises a 50% overlap of the households interviewed during the third quarter which are forwarded to the consecutive year. This approach is clearly less efficient than the one which was used during the period 2007 – 2012.

Administrative Registers

(88) CAPMAS does not use administrative data for the purpose of LFS. Moreover, CAPMAS still has not explored the possibility of linking information obtained from households with administrative registers. This means that all information pertaining to this survey is currently being collected directly from households.

Classifications

(89) CAPMAS has an internal classifications unit responsible for coding (mainly ISIC and ISCO). Coding is done manually by trained personnel who use specifically designed software/programs to make the coding process as efficient as possible. This software is based on a search engine which helps the coders to select the appropriate code. Automated programs for coding have not been implemented yet, although CAPMAS is currently exploring this option, as part of the CAPI project.

Calculation of weights for LFS

(90) The computation of probabilistic weights for the Egyptian LFS is currently being made using post-stratification weighting, at persons' level by sex, degree of urbanisation and governorate level. Quarterly household population estimates provided by the demographic statistics unit, are used for the computation of these weights. These figures result from updates on household population statistics from the latest population and housing census. Updates are made on quarterly basis by taking into account only the natural increase. The effect of migration on household population counts (and distributions) is ignored since it is considered insignificant.

(91) Reviewers noted that age is not being taken into account for post-stratification weighting, which in practice means that inconsistencies between consecutive quarterly surveys can be expected, especially in age-dependent variables. Moreover, this methodology does not comprise corrections for unit non-response bias and panel attrition (where applicable). Some inconsistencies also exist between the surveyed population and figures used for weighting purposes (e.g. members of the army are excluded from the LFS sample but included in demographic estimates).

(92) Moreover, since the data is not being calibrated at household level[7], the integrated design of the LFS is not being taken into account for the computation of the final set of cross-sectional weights. As a consequence of this, this survey cannot be used to produce high quality and

---

[7] Calibration at household level would imply that all the household members have the same individual final weight, which can be used to produce estimates from the household perspective.

coherent estimates at household level (e.g. number of reference persons who are unemployed is not coherent with the number of households whose reference person is unemployed).

Treatment of item non-response

(93) CAPMAS relies considerably on the data collection team in order to keep item non-response at minimal levels. Any missing information identified by supervisors, or the central office, is verified with the interviewers and the households. Missing information retained further to the data entry process is not imputed during data analysis and reported as missing. In this regard, reviewers have noted that CAPMAS still has not developed proper statistical imputation procedures to tackle item-non-response.

Revisions of past data

(94) So far, CAPMAS have never carried out any revisions of past time-series data, even when significant changes in the data collection methods were introduced. Reviewers have also noted that CAPMAS does not have written work procedures to be implemented, should revisions be required.

PRINCIPLE 9: NON-EXCESSIVE BURDEN ON RESPONDENTS

(95) The CAPMAS' Advisory Committee has the responsibility for monitoring the use of CAPMAS' published statistics. This Advisory Committee advices the President's Office on measures to be implemented in order to improve the relationship between CAPMAS and users.

(96) So far, CAPMAS had never carried out user surveys in order to measure the level of satisfaction of users with the data produced from specific surveys, like the LFS. However, processes are in place in order to assess the usability of statistical data and whether the information that is being disseminated justifies the associated costs and burden. Measures implemented by CAPMAS in order to monitor data usage include specific meetings with data users and opinion polls of the general public.

(97) From the feedback obtained from users, CAPMAS feels that the LFS is meeting most of the user demands. This survey is also regarded as the main source of labour market statistics in Egypt, which makes it highly relevant for policy makers. Consequently, CAPMAS feels that ensuring highest quality standards for this survey should be prioritised over all other principles, including household response burden. This is the main reason why CAPMAS feels that there should be no distinction between annual and quarterly ad-hoc modules for labour market oriented questions in the LFS and all questions in the LFS should be treated as if they were core questions. One important measure that has been taken by CAPMAS so far, in order to limit the burden on respondents, was the introduction of a long and a short questionnaire so that ad-hoc modules designed to collect non-labour market statistics are introduced only during the third quarter8.

(98) In addition, the sampling unit also flags households which participated in past social surveys so as to ensure that these are not burdened again with a new survey. The reduction in quality due to this measure, and its impact on the final results, can be ignored.

---

[8]The short questionnaire takes 15 minutes while the long questionnaire takes 25 minutes per household to compile

PRINCIPLE 10: COST EFFECTIVENESS

(99) During the past three years, annual spending on this survey amounted to 2.5 million Egyptian Pounds, as shown in Table 1. Spending patterns are expected to change significantly in the coming years further to the introduction of CAPI.

(100) On average, CAPMAS employs a total of 4,050 employees9 in the central and regional offices. From these, nearly 900 employees are statisticians, while approximately 2,300 are other professional and managerial staff (e.g. supervisors). An additional workforce of 291 interviewers is engaged every month for data collection.

(101) CAPMAS has an internal mechanism in order to monitor the use of financial and human resources for the production of statistics. In case of the LFS, this responsibility falls directly under the Head of the Population Statistics and Census Unit, who is also responsible for estimating costs and allocating resources for new initiatives related to this survey.

(102) The Head of the Population Statistics and Census Unit reports to the President's Head Office. The latter carries out separate audits on overall use of resources. No externally managed mechanisms are yet in place in order to monitor the use of CAPMAS' financial and human resources.

2.3. Statistical Outputs

PRINCIPLE 11: RELEVANCE

(103) As a member of the SDDS, CAPMAS is obliged to give equal access to data to all its users. This entails the dissemination of an advanced news release calendar, at least three months before the dissemination date, and simultaneous access of data to all its users. Within the SDDS there are also specific time schedules, set by the IMF, within which LFS data has to be published. The news release calendar can be accessed freely on CAPMAS' website.

(104) CAPMAS also issues yearly publications with detailed results from the LFS apart from news bulletins highlighting salient results from the LFS. Other information available on CAPMAS' website includes very old data with labour market indicators, going back to 1957. So far, seasonally adjusted data is not being compiled by CAPMAS.

(105) CAPMAS also makes available anonymized10LFS micro-data to all users for free. All this information can be downloaded from CAPMAS' website, but is subject to registration.

(106) CAPMAS is currently working on a new website to enhance the Office's dissemination standards. Apart from being more efficient, this new website will contain an online dissemination tool which will enable users to extract custom-made tables directly from the data warehouse.

(107) CAPMAS personnel indicated policy makers, media, researchers and businesses as main users of LFS statistics. CAPMAS invests considerable resources in order to ensure that the LFS remains highly relevant to these users. For example, this year, CAPMAS introduced more questions

---

9Full-time equivalent, excluding interviewers

10 However, the reviewers noted that CAPMAS is not using any appropriate software for this task thus there are concerns that the LFS are actually fully anonymized.

addressing under-utilisation of the labour force and potential increases in the labour market, since it was highly demanded by policy makers.

(108) Information mostly sought by users includes statistics on employment and unemployment. This information is mainly sought at governorate level, and disaggregated by core demographic variables like age and sex. Statistics on educational attainment and participation in lifelong learning are also sought by LFS users, although important education-related indicators such as the early school leavers rate and tertiary educational attainment rate are still not being computed.

PRINCIPLE 12: ACCURACY AND RELIABILITY

Data collection

(109) A detailed overview of all the procedures that have been adopted by CAPMAS so far in order to minimise errors during data collection has already been provided in this document. Reference was also made to the audit processes that are currently in place in order to monitor the work carried out during the data collection.

(110) Very strict checks are also made on the filled questionnaires in order to ensure that complete information is provided by all households. The data entry program that is used by CAPMAS also has a number of in-built validation rules to identify inconsistencies during the data entry stage.

(111) CAPMAS also carries out double data entry on 5% of its questionnaires in order to verify the quality of the data entry process.

(112) The following table provides measures of non-sampling error rates measured by CAPMAS prior to the data analysis stage:

Table 2 - Non-sampling errors

Errors	Error rate in %
Errors found by supervisors	2
Errors found during data editing stage, prior to data entry	8
Errors found during data entry	3
Number of inconsistencies – illogical errors – identified before coding	10

(113) CAPMAS also compiles figures on non-response rates at household level. These rates are under-estimated, since they are computed further to substitutions. Non-responding households also include ineligible households and non-contacts.

Table 3 - Household non-response rates in LFS

		Non response rate (%)	Reason for non-response (%)		
			Refusals	Non-contacts	Other reasons
Survey year	2013	5.5	15.3	68.7	16.0
	2012	7.4	10.9	65.1	24.0
	2011	5.9	13.2	72.1	14.7
	2010	6.5	8.5	79.6	11.9
	2009	10.8	4.8	78.9	16.3
Quarter	Quarter 1	5.6	11.2	65.2	23.7
	Quarter 2	4.8	14.7	70.8	14.6
	Quarter 3	6.3	21.5	66.2	12.3
	Quarter 4	5.3	9	18.3	72.8

Chart 1. Household Non-response rates by Governorate (%)
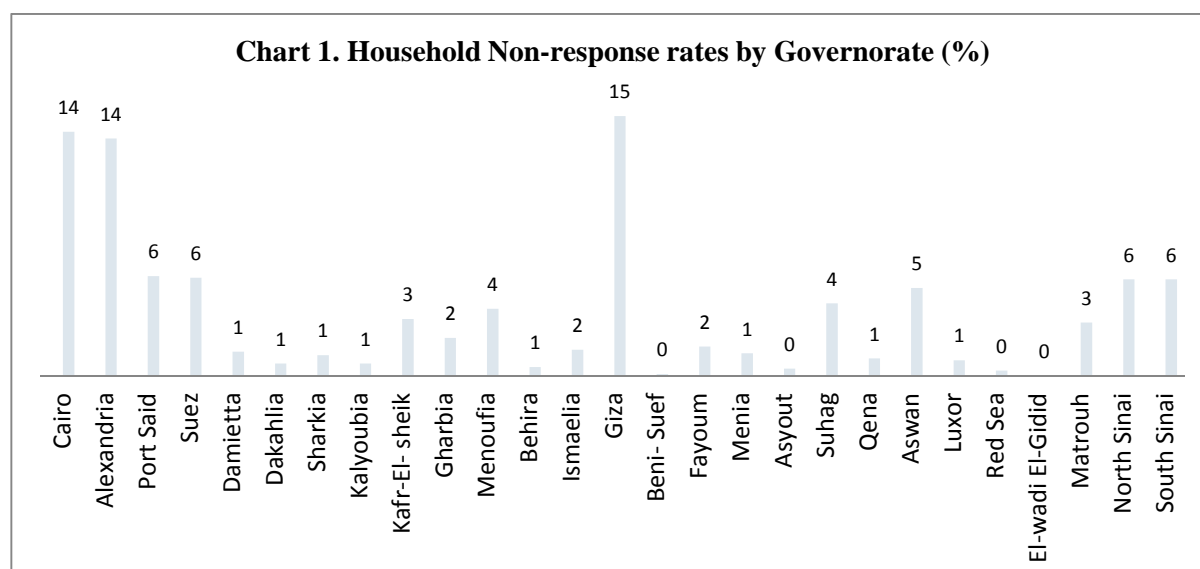
Data analysis

(114) Quality checks are made during the analysis stage in order to identify misleading information. Still, these checks do not seem to be carried out in a standardised and systematic manner. In fact, processes outlining the rules which need to be followed by statisticians in order to identify inconsistencies in the LFS datasets are not documented. This means that, with the current system, quality checks are being implemented manually by the analysts, thus leaving room for inconsistencies in the approaches used.

(115) Moreover, no procedures seem to be in place in order to determine the effect of weights and imputations on the main estimates. Statistics on possible under/over-reporting are also not compiled, making it very difficult to reduce their effect using appropriate statistical methods. Sampling errors are also not computed, not even on the main LFS indicators. Reviewers also noted that the CAPMAS team has not yet adopted a common statistical package which can be used to validate and analyse appropriately LFS data.

(116) Quality checks are in place in order to determine the level of consistency of results, by comparing LFS estimates with past time series data. No comparisons are made with auxiliary information in order to determine the level of coherence of LFS with other statistical sources.

Item non-response

(117) CAPMAS invests considerable resources for the data collection in order to minimise item non-response, as explained in previous sections of this report. However, information that is still missing after the data collection is not imputed during data analysis, and is reported as missing data.

Sampling frame

(118) The processes carried out by CAPMAS for updating the LFS sampling frame have already been explained in previous sections of this report. The fact that the MS is not updated on a yearly basis is of most relevance to the quality of LFS, leaving room for possible under/over-coverage problems in LFS results.

PRINCIPLE 13: TIMELINESS AND PUNCTUALITY

(119) CAPMAS respects SDDS timeframes for the publication of LFS quarterly results. In addition, CAPMAS produces a publication with detailed annual LFS statistics, four months after the end of the reference year. Anonymised micro-data for researchers is made available just one month after this publication. According to CAPMAS team, there have never been instances when these deadlines were not met.

PRINCIPLE 14: COHERENCE AND COMPARABILITY

Inconsistencies in time-series data

(120) CAPMAS has been compiling LFS statistics since 1957. A long time series on labour market data is therefore expected. Although this data is available, it might not be fully suitable for time-series analysis due to inconsistencies caused by methodological changes that occurred during the past years.

(121) Major changes have been made during the past years in the LFS questionnaire in order to align the Egyptian LFS with ILO standards, which have surely accentuated these inconsistencies. For example, one of the major changes that were carried out recently on the LFS questionnaire, entailed the addition of auxiliary questions to the LFS questionnaire in order to determine more accurately whether persons who declare "Not Having worked during the reference week, not even for one hour" and "Were absent from a job/business" should indeed be classified as unemployed. This change, which was implemented in 2007, involved adding a number of specific questions in order to identify those persons which have been involved in minor employment activities (e.g. agriculture production, vegetables or food preparation, sewing and knitting, paid handicraft, fishing, etc.). This caused a significant break in series, with a consequent increase in the employment and a decrease in the unemployment. Another significant change which also occurred during the past entailed a modification in the panel design, i.e., from a rotational pattern 2-(2)-1 to a simpler design comprised of one overlapping quarter only.

(122) In each of these cases, no revisions have been made by CAPMAS for historical data in order to avoid breaks in series. In addition, these breaks in series were not flagged to warn users about potential inconsistencies in the main LFS indicators.

Inconsistencies caused by weighting methodology

(123) After assessing the methodology used for weighting purposes, reviewers concluded that annual data might not be consistent with the quarterly data at regional level, due to the fact that annual weights are computed independently from the quarterly weights.

(124) In addition, as already explained above, weights are computed at individual level, which means that consistency between household estimates and individual estimates by household type cannot be ensured. For this reason household estimates are not disseminated. CAPMAS tried in recent years to produce household weights but did not succeed, probably due to lack of experience and lack of knowledge about suitable methods and software.

Divergences of national concept from European concepts and requirements

(125) Although several adjustments have been recently made to better classify the population according to ILO recommendations, there seem to be room for further improvements. The following is a list of divergences from international recommendations that were noted by the reviewers.

- Definition of resident population for the scope of the LFS is different from the UNECE and Eurostat (ESA 2010) concept of usual residence – a 6 months' criteria is currently used instead of one year (or more) one.
- The age range for unemployed person is 15-64, instead of the 15-74 as recommended by ILO.
- The unemployment classification used by CAPMAS uses a reference period of three months for the duration of seeking work, instead of four weeks (or one month) as recommended by ILO and Eurostat.
- The wording in the questions used to classify persons by main economic status according to the ILO definition (see for example Annex 3, questions 117, 118 and 119) could be improved, in order to improve harmonisation of results. For example, it must be made more clear that:
  - the category of persons who are employed includes all persons who were engaged in any kind of work done for pay or profit for at least one hour during the reference week, where the pay includes cash payments or "payment in kind" (payment in goods or services rather than money);
  - employment includes also the "unpaid family workers", i.e. those persons working in a family business or on a family farm without pay, living in the same household as the owner of the business or farm.

  Moreover,
  - The specification of the reference week "from Monday X to Sunday Y" should substitute the more general term "past week".
  - The criteria of "formal attachment to the job" in order to consider a person which is absent from work employed, should also be assessed in the questionnaire.
- Reviewers also noted that the order of the questions in the LFS questionnaire is not according to the European and ILO recommendations. In this regard, Commission Regulation (EC) No 1897/2000 concerning the operational definition of unemployment (Principle 1 in Annex II) states that questions on the labour status according to the ILO definition should not be

preceded by questions on the main or the usual activity (student, housekeeping, retired, etc.).This is envisaged to avoid a "prejudice in the response to the questions on the ILO labour status".

This principle has been widely interpreted in Europe by Member States in the sense that questions concerning participation in education and training during last 4 weeks cannot precede those regarding ILO status in the personal/individual questionnaire. At the same time, the highest level of education completed (which is considered a core social variable) is often asked before the ILO status, in the household section, in order to be able to introduce consistency rules between education attainment and occupational level.

- This specific order of questions is not being respected in the Egyptian LFS questionnaire. Moreover, an additional module about "The Housing Conditions of the Household" is added at the beginning of the long questionnaire and collected during the third quarter of the year. This contrasts with the international recommendations because of its possible influence on the answers to the standard LFS questionnaire.

- Target population is the civilian population excluding persons working with armed forces; however the results are grossed up to the total population, thus ignoring inconsistencies between the sample and target population.

- Coherence of LFS data with population statistics is assured by gender and at regional levels only, since age is not used in the post-stratification weighting process. In practice, this means that inconsistencies in variables which are highly dependent on ages of respondents are expected.

PRINCIPLE 15: ACCESSIBILITY AND CLARITY

(126) LFS data are disseminated using both traditional means and modern web technology. Quarterly bulletins are made available to the public in printed copies, as well as in electronic format. The quarterly bulletins contain a wide set of tables and useful metadata that facilitate proper interpretation of results to the users. CAPMAS also offers assistance by telephone or by email to assist users to interpret these results. Custom-made reports are compiled by CAPMAS upon request, against a cost recovery charge.

(127) A specific web page containing information on the national LFS exists. It is translated in English and displays only partial data and metadata. Full access is guaranteed only to enrolled users who have paid a small enrolment fee, as previously explained. CAPMAS is currently working on a new and more efficient website, which will contain more detailed metadata on all the data produced by CAPMAS, including the LFS: http://www.censusinfo.capmas.gov.eg/Metadata-ar-v4.2/index.php/catalog

(128) When it comes to dissemination of micro-data, CAPMAS already provides anonymised micro-data from the LFS on its website. CAPMAS is also currently working on a policy establishing clear rules, protocols, restrictions and anonymisation criteria by which anonymized data can be disseminated for research purposes.

3. RECOMMENDATIONS

3.1. Recommendations on Part 1 – Institutional Environment

Rec.1. **There is strong need for more communication and collaboration between different units and divisions, in order to allow for more cross-cutting initiatives to further improve the LFS.**
   a. Such collaboration requires more detailed and organised documentation of all the internal work processes and their changes in time (methodology, organization, actors involved, phases, timing, necessary inputs, expected outputs, methods, software, etc.).
   b. There needs to be a clearer division of roles and responsibilities within the directorates in order to avoid work duplication. When a process has to be run jointly by two separate/independent units, it is important to define who the stakeholders are.

Rec.2. **Further methodological assistance/training is required on more advanced statistical techniques and best practice which have been successfully implemented in the LFS by more experienced NSI's. Training is also required on statistical packages in order to improve efficiency during data analysis. Areas where training is required include:**
   a. complex sampling design (stratification, rotation pattern, space-time allocation of the sample, oversampling, replacement/substitutions of final units), in order to explore the possibility to get more efficient designs;
   b. analysis of non-response and methods for non-response adjustment;
   c. verification of data and imputation of item non-response;
   d. weighting methods, moving from simple stratification to calibration, exploiting the possibility to get household weights;
   e. seasonal adjustment of time series;
   f. calculation of standard errors and coefficient of variations, and their dissemination;
   g. anonymisation techniques of micro-data; and,
   h. linking longitudinal micro-data and longitudinal estimates.

Rec.3. **Proposals for changes in the LFS should be thoroughly assessed before they are implemented.**
   a. Any proposed change should be evaluated in detailed and comprehensive technical papers, in which the impacts of all the aspects of the survey, are carefully assessed (organization, methodology, results, break in time series, etc.).
   b. Reviewers also recommend the setting-up of an internal cross-unit task force to analyse new methodological proposals and their impact on processes and outcomes.
   c. Reviewers strongly advice to seek more than one expert's opinion on important technical issues.
   d. CAPMAS should give more importance to the comparability over time when introducing major modifications to the LFS. In cases when these modifications cannot be avoided, then CAPMAS should consider revising historical data in order to enable analysis of LFS statistics over time.
   e. CAPMAS should carefully monitor possible breaks in the time series caused due to changes which shall shortly be implemented in the rotational structure of the LFS sample (as the sample has no more overlap, the estimates of changes from quarter to quarter could be less precise than in the past).

Rec.4. Carry out coherence tests on LFS data and ensure that differences between labour market statistics derived from LFS, National Accounts and Business Statistics are kept to a minimum. In addition, CAPMAS should provide reasons to the users on why these differences exist.

Rec.5. Investigate the possibility of using more administrative sources for statistical purposes, even for the purpose of LFS.

3.2. Recommendations on Part 2 - Statistical Processes

Rec.6. Enhance the LFS questionnaire[11] for better compliance with ILO and Eurostat recommendations:
   a. Change the reference week for unemployment, which should be four weeks rather than three months;
   b. Apply the international recommendation for the age-range of unemployed persons (a 15-64 range is currently used instead of 15-74);
   c. Apply the ESA2010 concept of usual residence as stated by UNECE/Eurostat Recommendations for the 2011 round of census (6 months criteria is currently used instead of one year or more);
   d. improve the set of questions used to identify employed persons clarifying that:
   * any kind of work done for pay or profit should be taken into account;
   * mode of payment can be both in cash or " in kind" (payment in goods or services rather than money);
   * "unpaid family workers" should also be considered , i.e. those persons working in a family business or on a family farm without pay, living in the same household as the owner of the business or farm; the criteria of "formal attachment to the job" in order to consider employed a person which is absent from work.
   e. Improve the specification of the reference periods for employment using the words "from Monday X to Sunday Y" instead of the more general "past week".
   f. Move the two modules on housing and health, which are present in the long questionnaire, from the beginning of the questionnaire to the end of the questionnaire (as an additional module), in order to avoid possible influence of these questions on the answers to the standard LFS questionnaire;
   g. verify, with experts from the Educational Sector, that the questions about education variables allow recoding into ISCED2011;
   h. evaluate the option to move the questions on the current enrolment and participation in formal education and training after the sections Table 2 and Table 3 of the LFS questionnaire (see Annex 3). Moreover, both current education and general/vocational training should be asked to all the persons aged over 14 years, not only to those people who are not enrolled in formal education.

---

[11]With reference to the LFS Questionnaire, version 2010, in Annex 3.

Rec.7. **Test other approaches to update the master sampling file more frequently, even if only for some "turbulent" regions, with high internal or international migration/movements.**
   a. The technical unit responsible for sampling should use the feedback obtained from the production units to make amendments in the PSU's, on regular basis.
   b. Make more use of the information provided in the sampling frame for sampling, as well as analysis of non-response and non-response adjustment.
   c. Explore the possibility of using other administrative registers to update the frame (e.g. water and power suppliers' database).

Rec.8. **Improvements in sampling design.**

   a. Spread the number of survey weeks more evenly during the all the quarters of the year. CAPMAS should aim to cover all the weeks of the year. If this is not possible in the short run, then CAPMAS should strive towards covering at least a sixth week during the last month of the every quarter, so that all the survey months are equally represented.
   b. Take accurate stock of, and possibly measure, all advantages and disadvantages of panel design. Try to identify strengths of the former panel structure 2-2-1 compared to the new panel structure. In this regard, reviewers strongly recommend that CAPMAS should re-consider the old panel structure, and possibly, enhance it to a panel structure 2-(2)-2 recommended by Eurostat.
   c. Explore the potential of the rotation scheme, in combination with mixed mode CAPI-CATI data collection, to improve efficiency and reduce costs and burden associated with data collection.
   d. Explore the potential of dependent interviewing, whereby respondents interviewed for the second or third time, are asked to confirm information that they already provided during the previous interview. This interviewing method should be limited only to those variables which are generally very stable over time (e.g. sex, date of birth, nationality, etc.) And never applied to those variables needed for classification of ILO status. The benefits of dependent interviewing can be fully reaped if applied in combination with an efficient panel structure.
   e. Try to find feasible alternatives to increase response rates, studying the effect on the estimates of over-sampling and substitution.

Rec.9. **Avoid substitutions of non-respondents as this practice introduces biases in LFS estimates which can be hardly catered for.**

Rec.10. **Consider the use of effective automated methods for validity checks and probabilistic models for imputation against item non-response.**

Rec.11. **Improvements in weighting procedures are required.**
   a. Consider re-designing the weighting methodology, taking into account the sampling design, using calibration techniques instead of post-stratification, and trying to compute household weights.
   b. Add age groups in the weighting procedure, 5-years age-groups at national level and wider age-groups at regional or governorate level.
   c. There is strong need for more information on under-coverage and over-coverage in the sampling frame, so that they can be counteracted effectively during the weighting stage.

d. Exploit more the information available in the MS file for weighting purposes and try to make use only of variables which remain unchanged over time (e.g. year of birth, governorate).

e. Add an additional step in the weighting procedure to adjust for the non-response and panel attrition verifying if these are correlated to individual characteristics only or any household characteristics.

f. Ensure full consistency in the LFS main variables between annual estimates and quarterly estimates, and if possible, avoid computing annual weights based on a methodology which ignores the quarterly weights.

Rec.12. There is a need for more detailed quality-related information on fieldwork in order to improve management during data collection.

a. Analysis of visit time is important to reduce the number of attempted contacts, thus making fieldwork more effective (e.g. identify the time periods during which people are more likely to be at home).

b. Interviewers should be able to distinguish between different types of failed surveys, e.g. ineligible, non-contacts, refusals, etc. This information is indispensable for proper computation of non-response adjustments. Data collection units should be able to compute more refined rates on over-coverage, non-contact, refusals, etc. to monitor fieldwork, before substitution.

c. Find ways to measure non-sampling errors caused by interviewers and respondents, in particular in case of proxy respondents.

d. Exploit analytical capabilities of fieldwork indicators, even using GIS applications, to identify limitations and increase efficiency in data collection.

Rec.13. Explore the possibility to implement, directly on the CAPI software, the electronic tool already used for coding (e.g. databases containing dictionary of descriptions of jobs or economic sectors, associated with the exact codes, better if containing old and new classifications) to allow interviewers to code directly ISIC/NACE and ISCO.

a. The full descriptions given by the respondents should be always registered in the micro-data to verify the quality of the coding carried out by the interviewers.

Rec.14. CAPMAS is planning to pass to a CAPI data collection system using tablets. The following are some of the actions that CAPMAS should implement during the design stage of this system.

a. The layout of the LFS questionnaire should be modified in CAPI form.

b. An efficient IT platform should be identified for the design of the CAPI software which permits future enhancements of the questionnaire in the future.

c. Carrying out pilot surveys or simulation of interviews using CAPI.

d. Intensive testing of the CAPI system should be carried out before launch of CAPI survey. These tests include:
   − testing of in-built validations for identification of hard and soft errors;
   − testing file transfer from client and server; and,
   − carry out tests against possible loss of data.

e. CAPMAS should carry out study visits, or ask for assistance, from countries where CAPI technique is proved to be well implemented and effective.

f.   The CAPI program should have a series of in-built validations to reduce errors during data collection.

g.   Editing mechanism must become more efficient with the introduction of CAPI, although the principles of checking and editing should not change.

h.   Thorough checking is required on the CAPI program before implementation stage, thus there is urgent need to acquire more technical competence to detect and solve data inconsistencies directly on a centralized database.

i.   A more suitable system for a continuous and automated monitoring of fieldwork and interviewers is needed.

3.3. Recommendations on Part 3 - Statistical Outputs

Rec.15.   Metadata are available to generic users with sufficient level of detail.

a.   More detailed information is needed for advanced internal and international users (e.g. mapping between the National Education Level Classification collected from the questionnaire and the recoded ISCED International classification).

b.   More documentation should be made available in English for international users.

Rec.16.   A better explanation of some aspects of the LFS is required for the SDDS metadata system. In some cases, there are inaccuracies in the information that has been provided.

Rec.17.   Increase the information about quality of statistics which is available to the users.

Rec.18.   Pay attention to a possible lack of consistency when producing estimates by household characteristics, or by relation to the Head of the Household. These quality limitations are expected since the weights are computed at individual level only and not at household level.

Rec.19.   Do not publish anonymized micro-data files to the general public on the website, if these data have not been fully anonymized, using appropriate software. Should any of the information provided to users be disclosed, the credibility of CAPMAS among its users could be seriously compromised.

a.   CAPMAS could work on a standard contract which stipulates clearly the conditions under which micro-data can be shared (using as reference the Eurostat guidelines http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/documents/How_to_apply _for_microdata_access_1.pdf).

Rec.20.   Make arrangements to revise data backwards when major breaks occur.

Rec.21.   Take into account time-related inconsistencies when introducing modifications, and estimate the effect of these changes on the consistency of results.

Rec.22.   Explore the possibility of time series analysis on aggregated data, which also comprises the production of:

a.   monthly estimates of employment and unemployment;

b.   seasonally Adjusted time series; and,

c.   possible forecasts on employment and unemployment.

Rec.23. CAPMAS should carry out regular coherence tests between estimates of LFS and other national sources (e.g. National Accounts and Business Statistics) so as to identify possible limitations in the survey, and explain differences to the users.

Rec.24. Dissemination of figures, bulletins and historical data, should be free on the website, and subscription should be asked only on a voluntary basis.

4. ANNEXES

ANNEX 1
Self-assessment questionnaire

ANNEX 4
Metadata IMF