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CAPACITY-BUILDING IN STATISTICS FOR EVIDENCE-BASED POLICY-MAKING

*Conceptual framework for official statistics: strategies
for economic and social statistics**

Summary

This document reviews the importance of institutional frameworks for official statistics and their role in providing timely and accurate statistics for decision and public policy makers and all local and international users. It also makes clear how important it is for such frameworks to be centralized and for their structure to be effective if the quality of data is to be guaranteed and regularity maintained. Those frameworks must adopt international concepts in order to ensure the geographical and temporal consistency of data. The document also reviews the components, relationships and interlinkages of national statistical offices, together with ways of increasing popular and user confidence in the statistical system and its output. The secretariat of the Economic and Social Commission for Western Asia (ESCWA) submits this document, which was prepared by the Palestinian Central Bureau of Statistics, to member countries for consideration and discussion, with a view to formulating a conceptual framework that will assist those countries in their statistical work and promoting discussion during the Statistical Committee session of the following issues:

- (a) Identification and proposal of a strategy to improve the social and economic official statistics that are available at the regional level for the purpose of fact-based policy formulation;
- (b) Promotion, in cooperation with other United Nations agencies and national Governments, of effective and cooperative regional endeavours aimed at increasing coordination and harmonizing standards in the field of social and economic statistics;
- (c) Identification of priority areas in social and economic statistics, in order to focus efforts at the regional level.

* This paper was prepared by the Palestinian Central Bureau of Statistics, at the request of ESCWA.

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Introduction

1. In the report on the 1994 special session of the United Nations Statistical Commission, the following statement is made regarding principles of official statistics:

“Official statistics provide an indispensable element in the information system of a democratic society, serving the Government, the economy and the public with data about the economic, demographic, social and environmental situation. To this end, official statistics that meet the test of practical utility are to be compiled and made available on an impartial basis by official statistical agencies to honour citizens’ entitlement to public information”.

2. Those and subsequent principles regulate the operation of national statistical offices with respect to the gathering and dissemination of statistics, identify the role and operating framework of those offices and throw light on the principles that must be practised by effective official statistics systems in order to serve Governments, economies and peoples.

3. As important as the principles and framework that regulate the work of national statistical offices is the conceptual framework that aims both to improve the quality of statistics and ensure their geographical and temporal consistency. The broad practical identification of an official statistical conceptual framework could be all the rules and guidelines that have been formulated by international agencies with a view to producing coherent, consistent and comparable national official statistics.

4. The ESCWA secretariat submits this document, which was prepared by the Palestinian Central Bureau of Statistics, to member countries for consideration and discussion, with a view to formulating a conceptual framework that will assist those countries in their statistical work. The principle aim of the document is to promote discussion during the Statistical Committee session of the following issues:

(a) Identification and proposal of a strategy to improve the social and economic official statistics that are available at the regional level for the purpose of fact-based policy formulation;

(b) Promotion, in cooperation with other United Nations agencies and national Governments, of effective and cooperative regional endeavours aimed at increasing coordination and harmonizing standards in the field of social and economic statistics;

(c) Identification of priority areas in social and economic statistics, in order to focus efforts at the regional level.

I. THE CONCEPT OF A STATISTICAL SYSTEM

A. IDENTIFICATION OF A STATISTICAL SYSTEM

5. In most countries, the statistical system includes the central statistical institution, the statistical units of Government institutions and the central bank. The first represents the cornerstone of the official statistical system, in that it is normally the only body charged with the publication of official statistics. It undertakes the collection, analysis and dissemination of official statistics from its primary and secondary sources, namely, surveys and censuses, and the administrative records of ministries and public institutions respectively. Consequently, the central statistical institution constitutes the focal point for the analysis and dissemination of most official statistics.

6. When such an institution is large, as it is in some countries, several statistical agencies are established and specialize in a particular subject. The relationship between those agencies is decentralized. The statistical systems in ESCWA member countries are centralized in that there is one central statistical institution, in addition to ministry and Government institution statistical units that are responsible for the preparation of statistics for their own ministries or institutions. It is very rare for such units to carry out special surveys, because responsibility for conducting national surveys and censuses normally lies with the central statistical institution.

7. If a good national statistical system is to be established, emphasis must be placed at the time of establishment on the basic principles of official statistics, because such statistics are an important source of information in a democratic society, serving the Government, the economy and the public by providing data on population and the social, environmental and economic situation, provided such data are prepared in an impartial manner.

B. JUSTIFICATIONS FOR ESTABLISHING A CENTRAL STATISTICAL SYSTEM

8. A central statistical system is essential because of the need for the following:

(a) The provision by a single source of official statistical figures based on precise scientific foundations and in keeping with the most up-to-date international recommendations and measures respecting the preparation of official statistics in all fields, in order to meet the needs of policy and decision makers and interested parties;

(b) The building of a statistical institution requires action to be taken to meet statistical requirements for development plans. Use should be made of international experience and United Nations recommendations regarding the building of such institutions;

(c) The establishment of a comprehensive and unified statistical system that will constitute a tool for the improved performance of the work of ministries and institutions;

(d) The raising of statistical awareness by providing data through the media and by cooperating with universities and other research institutions and ensuring the right of the public to access information, on the basis that statistics are a public commodity.

C. AIMS OF ESTABLISHING A STATISTICAL INSTITUTION

9. The basic aims of establishing a central statistical institution include the following:

(a) To provide a comprehensive and unified national statistical system that would constitute a tool for executive and planning authorities to use in identifying problems and evaluating progress;

(b) To provide sound and impartial official statistics on the demographic, social, economic and environmental situation for the use of citizens;

(c) To use the media and cooperation with universities and other research institutions in order to familiarize public opinion with means of providing information;

(d) To meet the basic needs of businessmen and economic institutions for statistical information on the labour situation and related trends;

(e) To conduct regular public censuses and surveys of housing and other establishments, in accordance with the provisions of the law;

(f) To contribute to international cooperation and the interchange of official statistics that comply with the international standards required for membership of international institutions.

D. RELATIONSHIP BETWEEN THE STATISTICAL INSTITUTION AND VARIOUS USER GROUPS

10. If a statistical institution is to be effective and play the role required of it, it must take action to build a good relationship with those who use its data. That relationship may vary: the relationship with a Government will differ from that with citizens, researchers, universities and international organizations.

11. The main purpose of using official statistics is to identify general trends in society and public and private decision-making; such statistics have many uses for citizens. The value of official statistics increases

with the number of users, because they can provide a general understanding of a country and of trends in both a particular country and the world. Communications with users are important means of strengthening the relationship between them and the statistical institution. Therefore, when a publications policy is being formulated for such an institution, it is important to make a number of assumptions in order to ensure that the official statistics meet the requirements of various types of user: there are differences in the nature of user needs, just as any official statistics can be used for a variety of purposes. The confidentiality of data provided by citizens is a basic principle of official statistics; that is the only limit that should be placed on access to data. An important assumption made by most statistical institutions is that the new and rapid advances made in information technology (IT), including the Internet, have changed the form and way in which official statistics can be made public. Detailed statistics, time series for Government planners, news, summaries of outputs for public opinion and accurate data for researchers all have their own requirements, and users adopt different methods for benefiting from official statistics. Users of statistical systems may be classified into the following groups:

(a) *Government*

12. The Government of a country needs an official statistical system in order to be able to identify the situation of and trends in the economy and the living conditions of citizens. Political decision makers and planners need detailed statistics when formulating Government policy in various fields. Ministries of education, for example, need statistics on population and the number and ages of sectors of the population that are of school age in order to be able to determine development projects for schools, including number of rooms, teachers and curriculum texts, for both current and future use. Statistics are also needed on prices, salaries and other costs when calculating the annual education budget.

13. Governments normally plan on a one-year basis, using fixed dates, when submitting the general budget to the legislative institution. That annual cycle can be used as a schedule for various statistical programmes. Economic indicators must therefore be available, together with forecasts of annual finance expectations and the budget that will be submitted to the legislative institution.

(b) *Citizens*

14. The access of citizens to official statistics is one of the basis principles of such statistics. Normal citizens do not require detailed official statistics; the statistical institution must therefore develop special means of providing statistics that are appropriate to the particular interests of certain groups.

15. Official statistics must be made available to citizens through the media, using reports or press conferences, and the most significant outcomes must be summarized. Detailed statistics must be documented and made available in accordance with international measures and means, which include a description of the concepts and the way in which the data were collected.

(c) *Universities and researchers*

16. For analytical purposes, economic and social science researchers need accurate data or primary data in the form of confidential survey registers. That type of use restricts the extent to which data on individuals can be made public while confidentiality is maintained. A number of national statistical offices have begun to publish sample files for the use of citizens, using normal precautions, including the removal of personal details. Modern statistics-related legislation protects such practices by specifically forbidding any attempt to identify the records that have been published anonymously.

17. University and other researchers represent a large proportion of official statistics users: their experimental work gives such statistics added value and increases public awareness and knowledge. Over the years, national statistical institutions have been reluctant to allow the publication of data because of their concern to protect privacy. Professional ethics and research protection are both important: anyone who breaches individual data confidentiality can be penalized and legal sanctions imposed in order to protect privacy.

(d) *International organizations*

18. International organizations are normally highly skilled in the use of statistics, and are interested in ensuring that national statistical offices employ international terminology and classifications, and that any changes at the national level are documented in order to facilitate comparisons with other countries, as well as ensuring that statistics are prepared and disseminated at specific times, in order to enable those organizations to publish their reports on schedule. The statistics made available to international organizations by national statistical offices are also useful for users in the country itself.

(e) *The private sector*

19. Levels of competence amongst private sector users vary widely. Banks and chambers of commerce and industry have highly competent experts who are able to analyze economic and social developments. Since the globalization of share markets, economic indicators have become extremely important factors that can change interest rates and share and currency markets. Those who work in those fields need accurate information on, inter alia, employment, national income, foreign trade and balance of payments. More importantly, they do not require merely daily or weekly estimates, but information on a given time of day, because such data are available electronically throughout the world at the same time. Private sector users of statistics insist that no-one, even a minister of finance or director of a central bank, should have access to such data in advance of the official release time, otherwise the producers of the statistics have to declare the right of a given person to have such access, in accordance with International Monetary Fund standards in the country where the market is open.

20. It is essential that the statistical institution should work toward achieving the principle of partnership and integration in the production and use of statistical records, by involving the largest possible number of people interested in the statistical field and using data in order to formulate a general framework for the type of statistics that are produced and ways and means of disseminating them. User needs can be determined by carrying out a set of activities, including workshops, and by distributing questionnaires to the greatest possible number of interested and related parties before a statistical activity is carried out, in order to gain national consensus on the nature of the data that should be provided. Users must also be involved through dialogue between producers and users, in order to firmly establish and continue a relationship with those sectors and gain their views on the statistical indicator output of the statistical institution.

II. THE COMPONENTS OF A STATISTICAL SYSTEM

21. A good statistical institution is a focal point in the production of official statistics, because it adopts international recommendations as the theoretical framework for concepts, terminology, measures and standards in various statistical fields. In general, a statistical institution covers four main programmes, namely, population statistics, social statistics, economic statistics and geographical statistics. While those divisions may vary from one institution to another, they are the normal focus of official statistics. Set forth below is a brief description of the components of such programmes. Social and population statistics are treated as a single component because of the close link between them.

A. SOCIAL AND POPULATION STATISTICS

22. Population statistics are the basis of social and economic and infrastructure planning. A population statistics system must be designed to provide timely data on the size and constitution of the population, and any changes thereto, for the purpose of analysis and planning at all administrative levels. The connection between the two types of statistic is inevitable: population statistics are constructed from official records and sample surveys that constitute the basis of data relating to social statistic-related issues. The social and population statistics programme provides statistical data on demographic and social trends in society in the following areas:

(a) *Employment and unemployment*: such statistics provide data on the workforce and numbers of workers by economic activity; rates of unemployment; wage levels; work hours; the demographic characteristics of the work force; and working conditions;

(b) *Health*: such statistics include primary and secondary health care; number and capacity of health centres, their activities and geographical distribution; reproductive health; births and deaths; disability; and workers in the health sector;

(c) *Poverty*: statistics cover the incidence, levels and causes of poverty;

(d) *Education and culture*: statistics on numbers of schools, universities and kindergartens; student and teacher numbers; infrastructure in educational institutions; nature and number of cultural institutions and those who use them; and the extent of culture and knowledge in a community;

(e) *Gender and the participation of women*: data on women and men; the participation of women in Government, administrative and executive positions and parliament; and the status of women in respect of, inter alia, education and employment;

(f) *Living conditions*: data on family expenditure and consumption patterns; family income from various sources; conditions and standards of living; the contribution of the family sector to estimates of national accounts; data that assist in studying the nutritional situation; average family expenditure and consumption; assistance to families in cash and kind; and social security;

(j) *Population*: vital and migration statistics; demographic and quantitative analysis of all population data; family size; the gender of the head of household; family composition; age composition; family standard of living; relationship to head of household; preparation of population estimates;

(h) *Security and justice*: crime and criminal trends; misdemeanours; statistics on all aspects of the justice system, including number of employees and their various demographic and social characteristics; cases dealt with by courts and recorded in police files; penalties imposed on criminals;

(i) *Children*: this issue acquired particular importance after the signature in 1989 of the Convention on the Rights of the Child, which advised those involved with child rights, including institutions, organizations and individuals, of the need for statistical data on all aspects of the situation of the child. In recent years a number of statistical reports have been published on the status of the world's children. Related statistics include such issues as child labour, education, health and nutrition, well-being, the threats to which children are exposed, demographic and social characteristics and crime.

B. ECONOMIC STATISTICS

23. Because economic progress is considered a condition for social development, economic statistics are the focus of general interest. Such economic indicators as growth, inflation, unemployment and balance of payments usually lead Governments to take decisions and measures that affect the economic situation of every family and economic project.

24. On the other hand, national accounts and economic statistics are designed to give a clear and detailed picture of the economic situation of a country that will assist in carrying out the process of evaluating whether the registered trends indicate the improvement or otherwise of the national economy. National accounts verify State accounts, because they register the output and income of institutions in various sectors of the economy and how such income is used for public and private consumption, in addition to the value of State production assets. Economic statistics include the following matters:

(a) *National accounts*: those accounts include annual and quarterly national income at current and constant prices; the preparation and balance of supply and use tables; integrated economic accounts at current and constant prices; and sectoral accounts, including financial, non-financial, Government, non-profit institutions serving household, and the household sector; the preparation of short-term indicators at current and constant prices;

(b) *Industry*: main economic statistics on industrial activity; data on such activity for national accounts;

(c) *Trade*: imports and exports; type, components and value of imported and exported goods; place of production of imported goods; economic data on trade movements and balance of trade for preparation of national accounts;

(d) *Construction*: contractors in the official and informal sectors;

(e) *Prices*: consumer prices; consumer, producer and wholesale prices indices.

C. GEOGRAPHICAL STATISTICS

25. Programmes related to geographical statistics deal mainly with the use of land, which is the basis for life and development; such natural resources as water, which is vital for agricultural and economic development and, as a result, development and social security; energy, which is closely linked to the environment and various aspects of development; agriculture; and tourism. All those fields are linked to the land and its uses and to many other statistical programmes and, in particular, national accounts and social statistics. Work to provide statistical data is undertaken as part of geographical statistics in the following programmes:

(a) *Environmental statistics*: include all aspects of the environment, including air pollution and quantities of emissions, atmospheric condition indicators, and the management, collection, disposal and origin of various forms of domestic and industrial waste; and data on ways of disposing of and managing waste water;

(b) *Agricultural statistics*: cover plant production and animal husbandry; the capital composition of the agricultural sector; prices of agricultural products; and production income;

(c) *Statistics on water, energy and natural resources*: data related to renewable water resources and groundwater and methods of using them, quantities of water used and incoming and outgoing; sources of energy; energy consumption; quantities and value of consumption of various types of energy; quantities and value of imported and exported fuels; natural and mineral resources;

(d) *Tourism statistics*: local, incoming and outgoing tourism; numbers of visitors; places visited; aims and costs; cultural and tourism sites; number, capacity and cost of hotels;

(e) *Land use statistics*: official and unofficial land use; statistical data on periodic changes in land use, with a view to assisting the relevant authorities to formulate appropriate environmental policies in order to limit desertification and unsuitable land use; sites of outstanding international environmental interest; the most important biodiversity sites; fertile regions, forests and types of wild plants; fish stocks and marine life forms; and distribution of endangered species of plants;

(f) *Housing and housing conditions*: housing and related demographic and social changes in accordance with local and international standards; housing conditions;

(g) *Transport statistics*: numbers of vehicles, accidents, length and type of roads; air, sea and rail transport.

D. OTHER STATISTICS NOT INCLUDED IN OFFICIAL STATISTICS PROGRAMMES

26. The economic, social and geographical statistics mentioned above must be regularly prepared by statistical offices, in accordance with United Nations recommendations and classifications. Recently, however, new issues have emerged that are currently being worked on, for which statistical experts are preparing lists of indicators. Those issues include the following:

(a) *Statistics on good governance*: recently, a number of initiatives have been undertaken with a view to developing a set of indicators to measure democracy, good governance, transparency and administrative corruption;

(b) *Human rights statistics*: such statistics are a recent development and relate to the extent to which citizens enjoy, inter alia, education, political, health and employment rights and freedom of opinion, as provided for in international conventions and national constitutions;

(c) *Statistics on domestic violence*: this sensitive issue requires special ways and means of measurement. A number of proposals have been put forward regarding means of gathering and analyzing the relevant statistical data. In recent years, some countries have carried out surveys on domestic violence;

(d) *ICT statistics*: in 2004, a final set of ICT indicators was adopted by the International Telecommunication Union and certain United Nations and other organizations and work began on means of collecting and preparing those indicators. ICT statistics include measuring the extent to which those technologies are used in all social, economic and geographical sectors. In recent years, some countries have carried out special ICT surveys.

27. Discussions are currently taking place with respect to the nature of those types of statistic, and whether they should be considered as official statistics or could be derived from social, economic and geographical statistics because of the interlocking nature of their subject matter. Good governance and human rights, for example, can be derived from a group of social and economic statistic indicators. ICT statistics also have a social aspect, through household surveys, and an economic aspect, through economic surveys, while human rights statistics comprise a mixture of social and economic indicators.

28. Other issues have emerged that relate to a mechanism for dealing with that type of statistic, in respect of legal measures, including human rights, democracy and good governance and domestic violence, concerning which the following three dimensions must be taken into account:

- (a) The body responsible for monitoring and making available the statistics;
- (b) The body responsible for holding accountable those who infringe such rights;
- (c) The body responsible for infringing those rights.

29. Here, the matter should be raised of responsibility for collecting data on the above issues and whether it should be up to the statistical institution to carry out the relevant surveys, or the responsibility of unions and human rights watchdogs to provide the statistical institution with statistics from their administrative records.

E. LIST OF INDICATORS THAT HAVE BEEN SUMMARIZED FOR POLICY FORMULATION PURPOSES

30. As is well known, the Millennium Development Goals (MDGs) have become the main point of reference for measuring country development, in the developing countries in particular. MDG indicators are the most recent of the internationally-agreed development indicators, including such social aspects as poverty, health, education, women, the child, information and communication technologies (ICT), the environment, and international cooperation for development. A total of 48 indicators have been identified in order to measure the extent of progress made towards achieving MDGs. Furthermore, a number of targets have been set that are to be reached by 2015.

31. The MDG indicators constitute guidelines, not all of which are applicable to every country. Expert group meetings and workshops have recommended that each country should identify a set of indicators appropriate to its particularities, within the MDG framework, in a process that is known as the customization of MDGs. Each country should prepare of set of the indicators most relevant to itself and consistent with the general MDG framework, to be used as the basis for the national development programme and in order to ensure that the statistical programme produces data on those indicators within specified periods.

32. In consultation with users and decision makers, the statistical institution may agree to further indicators to assist in the planning and formulation of national policies.

III. THE STRUCTURE OF A STATISTICAL INSTITUTION

33. In common with other official institutions, the statistical institution must have a clear administrative structure that determines communications between its various components and identifies the duties of each. A good administrative structure may be as follows:

- (a) Head of the statistical institution;
- (b) Deputy head of institution, with responsibility for statistical affairs;
- (c) Deputy head of institution, with responsibility for support services;

(d) Such main administrative statistical units as population and social statistics, economic statistics, geographical statistics, censuses and anything else the institute considers essential. Administratively, those units will come under the deputy head of institution with responsibility for statistical affairs;

(e) Administrative support units, including a field-work unit, a data systems unit, and an administrative and financial unit. Administratively, those units will come under the deputy head of institution with responsibility for support services.

34. Each of those administrative units will comprise a set of such specialized units as population and social statistics, and such subsidiary units as employment, education, standards of living and gender statistics. Several subsidiary units could be grouped together as, for example, labour and education statistics. The economic statistics unit could include such subsidiary units as national accounts, prices and comparison figures, Government finance, trade, industry and companies. Geographical statistics could include agriculture, tourism, land use, the environment, energy, water and natural resources.

35. In addition to the legal advisor who will be attached to either the head of the statistical institution or the deputy head of institution with responsibility for support services, the statistical institution could establish an independent unit for staff training. The name and location of each specialized unit should be identified in the organizational structure of the institution.

IV. THE INTERRELATIONSHIP BETWEEN SPECIALIZED ISSUES IN A STATISTICAL INSTITUTION

36. While the social, population, economic and geographical divisions into which statistical programmes fall that are referred to above are acceptable for the purpose of allocating duties to institutional statistics units, it is not appropriate to consider them as completely distinct fields: the interrelationship between the main and the subsidiary programmes is obvious and makes it difficult to adopt a standard organizational structure for every statistical institution. Set forth below are some examples of such interrelationships:

A. SOCIAL AND POPULATION STATISTICS AND ECONOMIC STATISTICS

37. National accounts are based on statistics from the domestic sector and economic institutions. In addition to economic statistical data, use is made of domestic expenditure and consumption survey data, and labour force, health and education statistics.

B. SOCIAL AND POPULATION STATISTICS AND GEOGRAPHICAL STATISTICS

38. Domestic surveys are used to provide data on housing conditions and domestic energy and water consumption statistics, which form part of geographical statistics. Similarly, environmental statistics and, in particular, on pollution in the region of housing, which may be classified as geographical statistics, convey one aspect of living conditions that may be considered as social statistics.

C. GEOGRAPHICAL STATISTICS AND ECONOMIC STATISTICS

39. While tourism statistics are classified as geographical statistics, they may also be considered as economic statistics. Similarly, energy and water, which are a main concern of economic statistics, may be considered as geographical statistics, and the same applies, vice versa, to transport and communications.

D. POPULATION, SOCIAL, GEOGRAPHICAL AND ECONOMIC STATISTICS ALTOGETHER

40. There are several fields that may be classified under any of the three [sic – **should this be four?**] fields, including tourism, domestic energy, and water use in the domestic and housing sector. Tourism statistics on domestic standards of living, for example, which represent the social aspect, also provide data on expenditure on tourism, an economic matter, and information on land use, which is a geographical matter.

V. THE QUALITY OF STATISTICS

41. The quality of statistics is a complex concept. In recent international discussions, the concept has been expanded beyond the traditional concern with precise figures to include overall quality from the viewpoint of users. Such focus on user views came about as a result of the movement calling for the adoption of comprehensive management methods in order to ensure quality, which were originally developed and applied in the industrial production of consumer goods and are currently applied in all fields, including in statistical institutions. Some such national institutions have developed a philosophy of comprehensive management methods as a methodological system of improving quality.

42. The application of such a system for statistics requires user needs to be given central concern, along with quality of output, use of communal working techniques, and the provision of useful statistical tools for the identification and monitoring of other statistical matters. Statistical bodies, whether or not they adopt the philosophy of comprehensive management or some other method as the basis of their governance and monitoring policy, must decide on the quality dimensions for statistical output. Set forth below are the purposes for which the philosophy of comprehensive management of official statistics are most useful:

(a) As a quality checklist for use in the process of planning statistical programmes or designing surveys and, in particular, with respect to the content of statistical programmes or surveys;

(b) That checklist can also be used in the design of a quality control system to cover all dimensions and, consequently, can prioritize quality improvements by balancing all the relevant elements against cost;

(c) Qualified users need a quality permit that contains information and an independent verification of quality dimensions.

43. In addition to precise figures, the concept of the overall quality of official statistics includes user concern over data content, timing and comparison over successive years. In accordance with the International Monetary Fund data quality assessment framework (DQAF), the concept also covers the following themes:

(a) *Fundamental conditions for quality*

- (i) Institutional legal framework;
- (ii) Resources for the statistical institution;
- (iii) Relevance to issue.

(b) *Subject*

- (i) Professional competence;
- (ii) Transparency;
- (iii) Ethical measures.

(c) *Methodology*

The concepts and specifications used in statistical work;
Comprehensiveness;
Classifications used;

(d) *Precision and reliability*

- (i) Degree of confidence in source of data;
- (ii) Evaluation of primary data;
- (iii) Methods used in statistical work;
- (iv) Evaluation of middle data and evaluation and adoption of outputs;
- (v) Analytical hypotheses;
- (vi) Methods of adjusting data and disclosure of hypotheses using for adjustment;
- (viii) Pre-notification of any adjustments made to the working methodology.

(e) *Usefulness*

- (i) Regularity and up-to-dateness;
- (ii) Coordination of data;
- (iii) Adjustment policy and practices.

(f) *Ease of access*

- (i) Ease of access to statistical data;
- (ii) Ease of access to middle data;
- (iii) Assistance to users.

44. A number of international organizations have developed mechanisms for monitoring progress in the development of statistics, some of the most important of which include DQAF, the General Data Dissemination System (GDDS), and the Special Data Dissemination Standard (SDDS). Those mechanisms are useful because statistical bodies employ them in evaluating the quality and comprehensiveness of the statistics they issue and the extent to which they conform to the United Nations basic principles of official statistics.

45. Country association with the standards and systems that were developed by the International Monetary Fund, namely, GDDS and SDDS, is a strong indication of the progress that has been made in the provision of economic and social statistics: models A and B relating to the evaluation of data, and model C concerning the evaluation of statistical institutions, are highly appropriate mechanisms. Model A relates to the comprehensiveness of the system with respect to the collection of data, the nature of data sources, the timeframe employed, analytical methods, the concepts, terminology and classifications used and the fields covered by the statistics. Model B relates to data and indicator groups, dissemination models, plans for developing statistics, quality and data characteristics. Model C concerns integration between the reports prepared by the statistical institution and the measures taken to make them accessible to the public.

46. Commitment to the conditions for the general system and measures for disseminating and continually updating data will entail the publication of a regular report on statistical quality, up-to-dateness and comprehensiveness. That report will in effect evaluate the extent of compliance with the basic principles for official statistics and identify the fields that need to be developed.

47. Nevertheless, statistical institutions also need to develop standard mechanisms for measuring the quality of statistics that are produced on the basis of United Nations guidelines on statistical quality: the mechanisms prepared by institutions should be detailed and contain a comprehensive list of standards for examining quality, in order to permit continual evaluation. That list should normally be derived from the international quality guidelines that are themselves derived from the basic principles for official statistics.

VI. THE CLASSIFICATIONS USED IN OFFICIAL STATISTICS

48. Statistical institutions must use international classifications when preparing social, economic and geographical statistics, in order to permit them to be used for international comparisons and increase their analytical usefulness. That does not of course conflict with the right of each country to prepare classifications that are appropriate to its particularities. A country may, for example, prepare a classification of professions on the basis of the international classification of professions, to which have been added professions that exist in that country but are not included in the international classification. The same applies to the International Standard Classification of Educations (ISCED 1997), health statistics classifications and employment and other classifications.

VII. INFORMATION TECHNOLOGY AND STATISTICAL OFFICES

49. Currently, it is difficult to produce data without using a computer, or for any technical or administrative official to do his work without computer assistance. Statistical institutions must therefore have a system comprising a computer that is linked to an internal network for processing the data from surveys and censuses and for handling office work and to the Internet for e-mail and access to major databases. Equipment must be up-to-date and high specification, and a technical team must be available to manage the statistical institution system. That team should comprise engineers and programmers that are part of a special information systems management unit that has specific duties, including data processing, the development of systems and programs and the provision of technical support in the event of technical problems.

50. Technical staff are the real key to expanded use of information technology (IT). The IT staff selected must therefore be the cream of experienced university graduates with computer science qualifications. It is recommended that IT employees should be accorded special privileges in order to ensure that they remain in the institution for the longest possible time, given the high demand for specialists and experts from the private sector.

51. It is essential that the statistical institution IT system should be so designed as to serve all stages of the process of producing statistics, including data collection, entry, analysis and publication. It does not matter if a statistical institution has to depend on foreign experts when developing its IT systems, particularly in specialized fields and areas in which institution employees have no expertise.

52. Statistical institutions must decide whether they want a centralized or decentralized internal statistics production system. What is meant by a centralized system is a specialized unit within the statistical institution that is responsible for all stages of the production system, while in a decentralized system, various units within the statistical institution each undertake the production of their own statistics. Statistical institutions must also work towards developing an electronic system that interacts with users, for which a nominal fee may be charged, in order to help in development of the system. The statistical institution must also take into consideration the need to keep abreast of IT developments and the consequent need to continually update computers in order to be able to use the latest programs.

53. The provision of computers and electronic appliances in a statistical institution is not an end in itself: employees must be able to fully exploit the technology. Both the public and the private sectors show the desire to invest in technology, but neither invests sufficiently in staff training. As a result, many users access a mere 50 per cent of the potential of modern programs. Any modernization policy must therefore include effective staff training.

54. Consideration should also be given to the provision of a standardized information system in the statistical institution, and the establishment of local networks in all regional branches and offices of the institution, in order to provide user access via the Internet to publications and data banks.

55. With respect to the publication of statistics and public access thereto, a statistical institution must have a clear policy based on the most recent standards and techniques, some of which include the following:

- (a) The creation of a dynamic archive of the statistics produced by the institution that will allow individual users and institutions to access them easily;
- (b) The provision of statistical sets according to particular user needs: Governments, individuals, research and academic institutions, local and regional organizations and United Nations organizations all have different needs, as the experience of statistical institutions has shown;
- (c) The exploitation of such modern dissemination techniques as the Statistical Data and Metadata Exchange (SDMX).

VIII. INCREASING POPULAR CONFIDENCE IN THE STATISTICAL SYSTEM

56. If official statistics are to be precise and impartial, a statistical institution must mainstream work ethics that will promote popular confidence in the data which it disseminates. The senior management must therefore accord particular importance to official statistics and give them credibility, quality and impartiality, ensuring that they meet international ethical standards. The development by each country of a code of practice is an additional tool for strengthening the professional and ethical aspects of official statistics-related work and for increasing efficiency in providing the Government, the private sector and civil society institutions with unbiased official statistics, as part of the building of a free and democratic society.

57. Set forth below are the main aims of establishing a code of practice:

- (a) The preparation of a document to be adopted at the national level that focuses on best practices in official statistics-related work and makes clear the roles and duties of all those who are involved in such work, including the Prime Minister, the head of the consultative council for official statistics, the head of the central statistical institution, statistical units in ministries, research specialists and statistical data users;

- (b) The establishment of the appropriate framework for statistical best practices, on which all national statistical units must be based if the best possible, precise and credible internal statistics are to be obtained and conform to and respect professional standards.

58. A code of practice for the production of official statistics contains a set of basic principles that identify best practices in official statistics-related work, which include the following:

- (a) Relevance;
- (b) Independence;
- (c) Quality;
- (d) Public access to data;
- (e) Confidentiality;
- (f) Balance between user needs and the burden on researchers;
- (h) Integration and amassing of expertise and innovation;
- (h) Cost and utility of producing official statistics.

59. A code of practice also contains a set of official work procedures in specific fields that have a serious impact on official statistics. Such procedures include the following:

- (a) Consultation with users of statistical data;
- (b) Coordination between the central statistical institution and Government institutions;
- (c) Good data management;
- (d) Newspaper data;
- (e) Availability of data;
- (f) Confidentiality;
- (g) Public services;
- (h) Publication of data, method and cost of presentation;
- (i) Management of the burden on data sources;
- (j) Archiving and documentation of data;
- (k) Professional competence.

IX. SUPPORT BODIES (CONSULTATIVE COUNCIL FOR OFFICIAL STATISTICS)

60. The consultative council for official statistics is a national consultative organization comprising representatives of the public and private sectors, the voluntary sector and academics, as well as those able to advise at the political level with respect to national priorities for which statistics are needed. Of the council's various duties, the most important are the following:

- (a) To review annual plans for the statistical system;
- (b) To evaluate the work and performance of the official statistics system;
- (c) To evaluate proposals and consultancy on issues relating to the development of official statistics;
- (d) To assist in the creation of appropriate conditions for the development and strengthening of coordination between producers of data, with a view to improving the quality of official statistics and the timeliness of their dissemination;
- (e) To periodically evaluate the extent to which the confidentiality of data and privacy of those involved in research has been respected;
- (f) To periodically review statistics publication policies and the provision of non-aggregated data for public use.

X. STATISTICAL INSTITUTION MEMBERSHIP OF NATIONAL COMMITTEES

61. It has become vital for statistical institutions to participate in various national committees in order to strengthen their capacity to provide relevant data for various national projects, at both the planning and the evaluation stages. There are many projects one can think of in which the statistical institution of every country could participate. Examples of such projects include the following:

- (a) The preparation of the national ICT strategy;
- (b) E-Government projects;
- (c) Electronic education projects.

