CONSULTANCY FOR UNITED NATIONS GENERIC QUALITY ASSURANCE FRAMEWORK

Notes on the Development of

Statistical Quality Assurance Framework for the UNSS

and

Generic Statistical Quality Assurance Framework for a UN Agency

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1   Purpose and Content of this Document

The quality assurance framework(s) are in the process of development. The purpose of this document is to outline the structure envisaged, the approach being taken and to discuss the issues that are being addressed.

The basic proposal as indicated by the title of this document, and as further discussed below, is to produce two documents.

- The *UN Statistical Quality Assurance Framework (UNSQAF)* is intended to provide guidance on how to assure quality across the *UN Statistical System (UNSS)* as a whole. It contains the principles governing international statistical agencies, dimensions of quality, quality issues that have to be addressed, and procedures that are in place or should be in place to assure UNSS quality.

- The *Generic Statistical Quality Assurance Framework (GSQAF)* is intended for individual UN agencies. It is a detailed template that can be used as a starting point for development of a statistical quality assurance framework (SQAF) by any UN agency that does not presently have one, and for review by an agency that does have one.

The term "statistical" has been introduced into both titles to make it clear that the documents refer to the *statistical activities* of the UN agencies rather than the core activities.

Comments and direction from the members of the QAF Task Team and from other experts in UN agencies will be gratefully received and used as the basis for validating or changing the approach and for incorporating additional or revised sections in the second versions of the documents. Some specific questions on which guidance is sought are listed in the last section of these notes.

2   Reasons for a UNSQAF

The reasons for the UNSQAF are summarised below.

There is a growing awareness and appreciation of the value and need for good quality information to support and inform public policy decisions. The importance of data highlighted by recent high profile reports, such as 'A World that Counts' and the importance given to high quality indicators for the post 2015 Sustainable Development Goals strongly reinforce this trend.

Achieving and maintaining public trust in official statistics requires that those statistics are produced in an objective, transparent and professionally independent manner. The United Nations Statistical Commission preserved these and other important principles in 1994 when it adopted a set of *Fundamental Principles of Official Statistics*. Many countries around the world have subsequently adopted a *national code of practice* and/or *statistical quality assurance framework (SQAF)* (or equivalently *data quality assurance framework DQAF)*) to enshrine the principles and best practice and to safeguard public trust. To support the development of SQAFs the UNSD produced a generic National Quality Assurance Framework (NQAF) that is designed to assist countries in developing their particular SQAFs. It has been endorsed by the UNSC

These principles and frameworks target national statistical organisations. For international organisations producing statistics the Committee for the Coordination of Statistical Activities (CCSA) in 2005 adopted the *Principles Governing International Statistical Activities,* which enshrines principles similar to the Fundamental Principles of Official Statistics.   Several

international organisations, in particular the OECD, FAO, and UNIDO have developed and implemented their own SQAFs, and others have SQAFs in draft form.

The United Nations Data Quality Assurance Framework (UNSQAF) is designed to go a step beyond the existing principles for international organisations by introducing a common understanding of quality, quality assurance and quality assessment for all the relevant *UN agencies*, i.e. agencies in the *United Nations Statistical System (UNSS)*. It also aims to clarify the status of statistics compiled by the system and address a number of aspects of statistical work germane to the system, such as data sharing between UN agencies, adjusting national data, and the use of non-official data including big data. It takes the view that every international organisation, at least all those that are part of the UNSS, should have a SQAF. To facilitate this it is accompanied by a detailed template referred to as the *Generic Data Quality Assurance Framework (GSQAF)*, which parallels the NQAF for NSOs and which can be used as a starting point for development of a SQAF by any UN agency that does not presently have one.

In the context of UN projects emerging from the data revolution initiative and the SDG process, the timing of a UNSQAF is important. The global community needs to be reassured that the UNSS has taken all reasonable steps to protect the quality of the data underpinning the measurement of economic, social and environmental progress.

3   Audience for the UNSQAF

The intended readership/users of the UNSQAF are:

- managers and staff involved in statistical activities in the UN agencies – the UNSQAF provides quality principles, dimensions and general guidelines for quality assurance across the UNSS;
- senior management of the UN agencies – the UNSQAF indicates how quality is, or will be, assured and assessed across the UNSS;
- national data providers, typically national statistical offices and other national organisations – the UNSQAF indicates how quality of the data they provide is, or will be, assured and assessed; and
- international and national data users – the UNSQAF gives users of the statistics a general impression of the UNSS approach to quality assurance.

It is quite probable that only the managers and staff involved in statistical activities and some sophisticated users will read the UNSQAF in detail. This indicates the need for a summary, which will be attached to the next version.

4   Audience for the GSQAF

The intended readership/users of the GSQAF are:

- managers and staff involved in statistical activities in the UN agencies – the GSQAF provides a starting point for defining or revising a national SQAF;
- senior management of the UN agencies – the SQAF indicates the essential components of an SQAF;

- international data users – the UNSQAF gives users of the statistics a more detailed view of the quality assurance procedures that are envisaged for UN statistical agencies.

National data providers and data users will not be interested in the GSQAF per se, rather they will be interested, in the SQAF, if any, in their particular country

5   *Development Process*

The UNSQAF and GSQAF development process is in six stages:

- preparation of an initial outline, i.e., this document and its attachments;
- discussion at the meeting of UN statisticians (in late September) and by the Task Team members (mid October);
- preparation of a second version incorporating feedback received (end October);
- discussion by the Working Group members (end November);
- preparation of a final version incorporating feedback received (end December);
- submission of final version to CCSA for consideration (Spring 2016).

6   *Source Documents*

Several quality assessment/assurance frameworks have been developed by statistical organisations in recent years and there was no need to reinvent the wheel. Using standards and practices that have already developed is efficient and leads to better quality processes and harmonization across organisations Thus, the UNSQAF and GSQAF incorporated ideas from a range of international and national organisations, as noted below

Fundamental Principles of Official Statistics (1994), UN Statistics Division

- Indicating how national statistical systems should be organized in order to produce appropriate and reliable data that adhere to appropriate professional and scientific standards.
- http://unstats.un.org/unsd/dnss/gp/fundprinciples.aspx

Principles Governing International Statistical Activities (2005), UN Statistics Division

- Comprising principles and practices that were developed and publicized by the CCSA and that should underpin the production of statistics by an international organisation
- http://unstats.un.org/unsd/methods/statorg/Principles_stat_activities/principles_stat_activities.htm

National Quality Assurance Framework (NQAF) Template and Guidelines (2012), UN Statistics Division

- The template is a tool to provide the general structure within which countries can formulate and operationalize national quality frameworks of their own or further enhance existing ones.
- The guidelines support the template providing lists of tools and references specific to sections 3 and 4 of the template, including a detailed mapping showing the correspondence to several existing quality frameworks and links to the online NQAF glossary.

- http://unstats.un.org/unsd/dnss/QualityNQAF/nqaf.aspx

European Statistics Code of Practice (2011), Eurostat
- The Code is based on 15 principles concerning the institutional environment, statistical processes and outputs. It aims to ensure that statistics produced within the European Statistical System are not only relevant, timely and accurate but also comply with principles of professional independence, impartiality and objectivity.
- http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/code_of_practice

European Statistical System Quality Assurance Framework (ESS QAF) (2011), Eurostat
- Developed by Eurostat, the framework identifies possible activities, methods and tools that provide guidance and evidence for the implementation of the European Statistics Code of Practice by European NSOs and Eurostat
- http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/QAF_2012/EN/QAF_2012-EN.PDF

Data Quality Assessment Framework (SQAF) (2003), International Monetary Fund
- Developed by the IMF Statistics Division for use by NSOs and other national government agencies collecting and disseminating statistics.
- https://www.imf.org/external/np/sta/dsbb/2003/eng/dqaf.htm

Quality Framework and Guidelines for OECD Statistical Activities (2011), OECD
- Developed by the OECD for managing quality within its own organisation.
- http://www.oecd.org/std/qualityframeworkforoecdstatisticalactivities.htm

European Central Bank Statistics Quality Framework (ECB SQF)
- Developed by the ECB for managing quality within its own organisation.

UNIDO Data Quality: A quality assurance framework for UNIDO statistical activities
- Developed by UNIDO Statistics Unit as a framework for data quality assurance for UNIDO.
- Covers the major quality aspects of statistics produced by UNIDO, including the key quality dimensions applicable to UNIDO's statistical activities.

The FAO Statistics Quality Assurance Framework (FAO-SQAF)
- Developed within the context of the creation of the position of Chief Statistician and the establishment of the Inter-Departmental Working Group on Statistics (IDWG-Statistics).
- Comprises a quality framework and a mechanism to ensure the compliance of FAO statistics.

The UNCTAD Statistical Quality Framework (USQF) (Draft)
- Addresses quality and efficiency concerns across UNCTAD in a harmonised way.
- Presents a commonly understood definition of quality and its dimensions, agreement on quality and performance indicators, and a quality assessment program.

Quality Assurance Framework Humanitarian Data Exchange (Draft)

- Is a descriptive report on the data quality assurance framework that will be adopted by the Humanitarian Data Exchange (HDX) platform.
- Builds on existing best practices within internationally recognised quality management frameworks.

Generic Statistical Business Process Model (GSBPM) Version v5.0 (2013), UNECE

- Developed by UNECE and endorsed by the UN Statistical Commission.
- Defines and describes the set of business processes needed to produce official statistics.
- Provides a standard framework and harmonised terminology to help statistical organisations to modernise their statistical production processes and to share methods and components.
- http://www1.unece.org/stat/platform/display/metis/The+Generic+Statistical+Business+Process+Model

7   *Distinctive Characteristics of International Organisations Producing Statistics*

There are some distinctive characteristic features of UN agencies (and, indeed, of international organisations producing statistics in general) that have to be taken into account in SQAF development.

- With the exception of UNSD and Eurostat, the agencies process data and produce statistics as a by-product, often an important by-product, of their main function.
- It is desirable, but by no means always the case, that a particular unit in an UN agency is designated as having responsibility for coordinating statistics within the agency. If such a unit is designated it is typically the unit is the largest producer of statistics within the agency.
- UN agencies are almost never primary data collectors in the sense of gathering data directly from individual households, businesses and institutions. They typically gather data from national statistical organisations, and other national ministries, departments and agencies who are the primary data collectors.
- UN agencies gather data for a range of countries and add value by drawing together the data, harmonizing them, aggregating them, and analysing them across countries.

Although UN agencies have these characteristics in common they can differ quite substantially in structure from one other. At one end of the spectrum are agencies that have a *centralised statistical function*, i.e., most statistical activities take place within a single organisational unit within the agency and that unit has a statistical coordination role. An example is the IMF where most statistical activities are undertaken within the Statistics Division. At the other end of the spectrum is an organisation like the World Health Organisation, which has a decentralised statistical function where statistics are produced independently in a number of organisational unit and there is no strong coordinating role.

8 Concept of Statistical Activity and Statistical Production Process

The starting point for development of the UNSQAF is a clear understanding of what activities are regarded as being in scope. This means establishing what is meant by *statistical activity* and *statistical production process.*

A *statistical activity* is defined as an activity in which the primary focus is acquiring, processing, storing or disseminating statistical data (rather than using them), or on building the statistical infrastructure to do this. Statistical activities are divided into two groups:

(1) *statistical production activities,* associated with acquiring, processing, storing and disseminating specific statistical data, including the specification and design of these activities; and

(2) *statistical infrastructure activities*, associated with developing and maintaining the *statistical infrastructure* that supports production activities and that includes the standard definitions and classifications and data acquisition, processing, storage and dissemination tools.

As there are typically many statistical production activities within an agency, for ease of description and assessment, they are divided into separate *statistical production processes*. A statistical production process (sometimes called a *statistical production line*) is identified by the following characteristics.

- It is under the control of a single manager.
- It covers a specified topic or range of topics.
- It acquires data from a specific source or set of sources.
- It produces a specific statistical product or set of related products.

Likewise statistical infrastructure activities can be grouped into *statistical infrastructure processes*. Examples are statistical classification development, and management of metadata systems.

The goal of these definitions is to enable all statistical activities can be unambiguously covered by identifying the Agency's statistical processes. These statistical processes are typically the target of quality assessments.

9 Scope of UNSQAF and GSQAF

The UNSQAF and GSQAF include all *statistical activities* within UN agencies, whether conducted by persons with a formal role of statistician or any other role such as economist or sociologist, metadata management, statistical systems development, and whether on a full time or part-time basis. In general, they do not include human resource management, financial management and ICT infrastructure as these are not specific to the agency's statistical activities but rather reflect the management of the organisation as a whole. The only respect in which these activities are covered is where their management is such that it is having a notably adverse effect on the agency's statistical activities.

The frameworks cover all dimensions of data quality, also of process quality and institutional quality. The last mentioned are important as good data quality depends upon good process quality, which, in turn, depends upon good institutional quality. These three aspects of quality are nicely represented in the European Statistics Code of Practice.

10 The Structure of the UNSQAF

The provisional structure of the UNSQAF is as follows.

1. *An introductory section explaining the purpose of the document.*

2. *A section reproducing the CCSA defined principles governing statistical activities, including the examples of good practices to illustrate each principle.*

3. *A section providing definitions of data quality and process quality dimensions recommended for use by all those agencies in the UNSS that have not yet defined quality dimensions.*

4. *A section describing the quality issues to be addressed by the UNSS and how they will be addressed and monitored.*

Annexes

1. *List of available reference documents.*

2. *List and brief description of existing UN agency SQAFs.*

11 The GDAQF Template

The provisional structure of the GSQAF is as follows.

1. *An introductory section explaining the purpose of the document and how it can be used to produce or help in reviewing the SQAF for a specific agency.*

2. *A section indicating what information the Agency should provide in order to provide context for following guidelines and assessment program.*

3. *A section reproducing the CCSA defined principles governing statistical activities, including the examples of good practices to illustrate each principle, exactly as in the UNSQAF.*

4. *A section providing definitions of data quality and process quality dimensions, exactly as in the UNSQAF.*

5. *A section indicating the likely content of the quality guidelines for the Agency.*

6. *A section defining the quality assessment program, including self-assessment and peer based assessment, complemented by external assessment when circumstances demand it.*

Annexes

1. *List of available reference documents*

2. *A possible set of quality and performance indicators; and*

3. *A possible quality self-assessment checklist.*

12 Preliminary Versions

Preliminary versions of the UNSQAF and GSQAF are available as a separate documents.

13 Questions on which Guidance is Sought and Other Issues for Discussion

Questions

#1. Is the approach of creating two distinct SQAFs, one for the UNSS as a whole and a generic one for a UN agency appropriate? If not what should be the approach?

#2. Is the name UN Statistical Quality Assurance Framework (UNSQAF) appropriate? An alternative is UN Data Quality Assurance Framework (UNDQAF)

#3. Is the name Generic Statistical Quality Assurance Framework (GSQAF) appropriate? Is it too easily confused with UNSQAF? Alternatives are Generic Data Quality Assurance Framework (GDQAF) and Statistical Quality Assurance Framework Template (SQAFT).

#4. Is the reason for the UNSQAF (Sections 3) well expressed? If not how could it be improved?

#5. Are the audiences for the two documents (Sections 4 and 5) well defined? If not how could they be better defined?

#6. Is the list of reference documents (section 6) complete? If not what other documents should be taken into account?

#7. Are the distinctive characteristics of international agencies producing statistics (Section 7) well expressed? If not have could they be better expressed?

#8. Are the concepts of statistical activity and statistical production process (Section 8) well defined? If not how could the definitions be improved?

#9. Is the scope of the UNSQAF and GSQAF (Section 9) well defined? If not how should it be defined?

#10. Is the general structure of the UNSQAF (Section 10) appropriate? If not what should be added, changed or subtracted?

#11. Is the general structure of the GSQAF (Section 11) appropriate? If not what should be added, changed or subtracted?

Other Issues for Discussion

Chapter 4 of the UNSQAF contains a number of issues that need to be resolved to ensure a harmonised approach across the UNSS.

In addition it would be much appreciated if those agencies that already have a SQAF, or equivalent, of their own would share their experiences in their development and implementation, in particular the effects they have had on data quality.