UNSYSTEM/2016/2

1 March 2016

Meeting of the Chief Statisticians of the UN System

New York, 6 March 2016
United Nations Headquarters, Room DC2-1684
15:30 – 17:30

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A Generic United Nations Quality Assurance Framework

1. Introduction

At the meeting of the Chief Statisticians of the UN System (September 10, 2014 at FAO in Rome) it was agreed that a Quality Assurance Framework (QAF) for United Nations (UN) organisations. This QAF would be generic in nature, hence the acronym UNGQAF.

The relevant section of the minutes from that meeting is presented:

> Quality assurance frameworks for UN system entities
>
> 6. The topic was introduced by UNSD without documentation. In a tour de table, members shared the status of their quality assurance work. The possibility of a Generic Quality Assurance Framework for the UN (UNGQAF) was discussed.
>
> 7. Conclusions:
>
> (6) Members with an existing quality assurance framework (or other similar documents) agreed to send their documents to the secretariat for posting on the new website.
> (7) A task team consisting of UNSD, UNIDO, ODC, FAO and OCHA will look into the possibility of creating a UNGQAF. Other members are welcome to join at any stage.
> (8) UNSD will look into the possibility of supporting this work with a consultant.
>
> Source - http://unstats.un.org/unsd/unsystem/Documents/Minutes-Sept2014.pdf

The Task Team (TT) to address this issue was comprised of members from UNIDO, ODC, FAO, OCHA, ESCAP, UNSD, ITU, UNEP and will be led by UNCTAD.

2. What has happened since?

Originally it was envisaged that the TT would complete the work of drafting a UNGQAF in 12 months i.e. by September 2015 (but it was recognized that this might take longer). Although the ToR for the

consultant was agreed in April 2015, owing to some contractual complications, and not helped by the arrival of UMOJA, the consultant did not begin work until August 2015. I had a number of teleconferences and also face-to-face meetings in August (in Rio at side of ISI WSC) and Geneva in September 2015. Thereafter work progressed well. Although it must be noted it was not always easy to get feedback from the TT - this was particularly the case as the project progressed and the reading material became more mountainous.

A short written report was presented at the meeting of the UN System (New York) in March 2015. A shorter verbal update was presented to the meeting of the UN System (Bangkok) in September 2015.

3. Where remains to be done?

We now have a proposed draft quality framework. The main task in had is to decide if we are satisfied with that draft. Some issues/questions remain outstanding where the consultant needs feedback from us.

The consultant has taken what feedback we have provided and has submitted a number of revised updates. The draft GSQAF-UNSS submitted for this meeting is the culmination of those deliberations.

In the main I am happy with what the consultant has proposed. He has however raised a number of important questions that need to be discussed so that we arrive at an agreed position[1]. Theses should be discussed and a decision reached. The questions are outlined below (in no particular order):

a) Statistics or Data? Should the Framework be for statistics or data - this is not a trivial or cosmetic question.
b) Do we envisage a peer review or quality audit system as an implementation follow-up?

[1] *My opinions provided here to provoke reaction:*

a) Steve's opinion - I believe 'Statistics' is the better option for 2 reasons (1) 'Statistics' is consistent with the scope of UNSS and CCSA, it is the term used in the other UN documents e.g. UN Fundamental Principles of Official Statistics, Principles Governing International Statistical Activities; and (2) I think 'Data' may sound too broad a concept for some management boards to accept - they may be frightened off by this extension in scope.

b) Steve's opinion - I think we should. I don't think we need to discuss the mechanics of this here, but I think it would be useful to establish the principle that our statistics should be subject to some sort of external/public scrutiny. And therefore we should therefore incorporate into the text the requirement for a review mechanism.

c) Steve's opinion - I think making the distinction is very useful. I think the actual definitions may require some more thought.

d) Steve's opinion - I think the UNSS QAF is tidy and avoids putting statistics in the title directly (for those who disagree with my opinions regarding the statistics v data debate).

e) Steve's opinion - I think we are being asked the wrong question - to focus exclusively solely on Big Data is a mistake. I think we should be taking about all 'secondary data' that would include big data, administrative data and other commercial data.

c) Are we content with the distinction drawn between national and international official statistics?
d) Title of the framework - UNSS QAF, UNSS SQAF, UNSS GSQAF?
e) Do we agree to await deliberations of Big Data WGs before we make any pronouncements? There are also a few areas I think could be strengthened to reinforce some important messages:

Reading the report has also raised some questions in my mind. Specifically, a potential role for the UNSS in the context of a 'Data Revolution' - this issue not raised directly in the framework, but I think worth considering. Can the UNSS offer an 'accreditation service' whereby unofficial data/statistics can be accredited or deemed of sufficient quality to be used for SDG/AAAA purposes? This might allow the UNSS to offer an 'inclusive' mechanism whereby civil society/academia etc. could potentially contribute to Agenda 2030 but with some safeguards or controls in place. If such an approach were to be adopted then it would need to be reflected in the text.

I also feel some sections, in particular 3.4 dealing with data production and sharing could be strengthened. These are key to coordination and could be very useful in helping to break down silos and other invisible walls within organisations and wider UN system.

Is there anything else missing?

4. Implementation

We should aim to take comments on board and then redraft - hopefully for the last time. The next step is to discuss whether we need approval from any higher authorities in UN system before we begin adoption.

Steve MacFeely
UNCTAD
February 26, 2016

Annex

CONSULTANCY FOR UNITED NATIONS GENERIC QUALITY ASSURANCE FRAMEWORK

Report on the Preparation of

Assuring Statistical Quality in the UN Statistical System

and

Generic Statistical Quality Assurance Framework for UN Agencies

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Purpose and Content of this Report

The purpose of this report is to describe the underlying ideas and the approach taken in preparing three documents as summarised below.

- *Assuring Quality in the UNSS* provides guidance on how to assure quality across the *UN Statistical System (UNSS)* as a whole. It contains the principles governing international statistical agencies, the proposed 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 (Generic SQAF)* provides guidance to individual UN agencies on how to develop or enhance a statistical quality assurance framework (SQAF) for their own statistical activities. The Generic SQAF comprises a detailed template that can be tailored to the specific situation of the agency. The term "statistical" is included in the title to make it clear that the document refers to the *statistical activities and outputs* of the agency rather than to its core activities (such as analysis or policy development in agriculture, health or telecommunications, etc.,) or to other activities that might involve data or information.
- *Assuring Quality in the UNSS Using the Generic SQAF* is an alternative presentation of the content of the above two documents within a single document.

Comments and directions from the members of the QAF Task Team and from other experts in UN agencies have been taken into account in preparation of the two documents.

The material in this report informs these documents and where relevant is included, sometimes verbatim, in the documents.

Copies of the documents are embedded at the end of the report.

1 Reasons for and Approach to Assuring Quality in the UNSS

There is a growing awareness and appreciation of the value and need for good quality information, and its transparency, to support and inform public policy decisions. The importance of data is highlighted by recent high profile reports, such as 'A World that Counts' and the significance 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*. In 2014, these principles were adopted by the UN General Assembly. Many countries around the world have adopted a *national code of practice* and/or a *statistical quality assurance framework (SQAF)*[2] to capture the principles and best practices, and to safeguard public trust. To support the development of SQAFs the UNSD produced a generic *National Quality Assurance Framework (NQAF),* comprising a *Template and Guidelines,* that is designed to assist countries in developing their particular SQAFs. It has been endorsed by the United Nations Statistical Commission (UNSC) and is widely referenced.

[2] or equivalently a *data quality assurance framework (DQAF)* – the terms *SQAF* and *DQAF* are effectively synonyms, as discussed later.

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.

The document entitled *Assuring Quality in the UNSS* is designed to go a step beyond these principles for international organisations by introducing a common understanding of the quality dimensions and quality assurance for all *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 agency in the UNSS should have its own SQAF, especially because production of statistics is not the core business of the agency and thus may not be strongly supported or coordinated. A SQAF provides a basis for support and coordination. The document outlines the measures that might be taken to ensure that SQAFs are established, building on recent initiatives by the CCSA to coordinate and promote better quality statistics in the UNSS, in particular the newly established role of chief statistician for each agency.

Several international organisations, in particular the OECD, FAO, and UNIDO, have already developed and implemented their own SQAFs, and others such as ITU, UNCTAD and the Humanitarian Data Exchange have SQAFs in draft form.

To facilitate the development and implementation of SQAFs by UN agencies, *Assuring Quality in the UNSS* is accompanied by a framework referred to as the *Generic Statistical Quality Assurance Framework (Generic SQAF).* This framework is modelled on the NQAF Template and Guidelines produced by the UNSD except that it targets UN agencies rather than NSOs. It recognises that a "one size that fits all agencies" SQAF is not realistic and thus proposes a generic SQAF that can be adapted to the specific circumstances of an individual agency. This is the closest to harmony across the UNSS that is likely to be achieved in the context of quality assurance

The Generic SQAF can be used as a starting point for development, or review and revision, of a SQAF by any UN agency. It supports SQAF construction or enhancement by distinguishing the elements:

- that should be harmonised across all agencies (like principles and quality dimensions);
- that are likely to be similar if not exactly the same across all agencies (like quality guidelines); and
- that are likely to be quite different across agencies (like institutional context).

It has the same format as the SQAF for a particular agency might have except:

- there are some missing sections because the material to which they refer is likely to vary significantly across agencies; and
- there some additional remarks indicating what has to be done or added in order to specialise the document to a particular agency

The timing of these documents is important given the context of UN projects emerging from the data revolution initiative and the SDG process. The global community needs to be reassured that members of the UNSS are taking all reasonable steps to ensure the quality of the data underpinning measurements of economic, social and environmental progress.

2 Audience for Assuring Quality in the UNSS

The intended readership/users of the document *Assuring Quality in the UNSS* are:

- *managers and staff involved in statistical activities in UN agencies* – the document provides principles, quality dimensions and broad guidelines for quality assurance across the UNSS;
- *senior management of the UN agencies* – the document indicates how quality is, or will be, assured and assessed across the UNSS as a whole;
- *national data providers, typically national statistical offices and other national organisations* – the document indicates how quality of the data they provide to UN agencies is, or will be, assured;
- *the UN Statistical Division (UNSD)* – as coordinator of the UNSS, the UNSD is the agency with overall responsibility for ensuring that quality is assured by the UN agencies
- *international and national data users* – the document gives users of statistics produced by UN agencies an overview of the UNSS approach to quality assurance.

3 Reasons for the Generic SQAF

The reasons for the Generic SQAF is that it enables an agency that does not presently a SQAF with a plausible structure for building one and with a well defined indication of its content. In the case of an agency that already has a SQAF, or similar document, the Generic SQAF provides a basis for review and revision.

The benefits of a SQAF to an agency are that it will:

- provide a systematic mechanism for facilitating the ongoing identification of data quality problems and possible actions for their resolution;
- provide a basis for creating and maintaining a data quality culture within the agency;
- stimulate and maximize the interaction among the agency staff involved in production or use of statistics;
- give greater transparency to the processes by which statistics are produced and their quality is assured and thereby reinforce the agency's image as a trustworthy provider of good quality statistics;
- provide reference material that can be helpful in training; and
- provide a mechanism for the exchange of ideas on quality assurance with other producers and users of statistics, at international and national levels.

4 Audience for the Generic SQAF

The intended readership/users of the Generic SQAF are:

- *managers and staff involved in statistical activities in the UN agencies* – the Generic SQAF provides a starting point for developing, or for reviewing and revising, an agency SQAF;
- *senior management of the UN agencies* – the Generic SQAF indicates the essential components of an agency SQAF;

- *international data users* – the Generic SQAF 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 national QAF in their particular country

5 Development Process

The development process for the documents is in six stages:

- preparation of an initial outline;
- discussion at the meeting of UN statisticians (in September 2015) and subsequently by the QAF Task Team members;
- preparation of a revised version incorporating feedback received (end January 2015);
- review of the revised version by the Task Team (mid February 2016);
- preparation of the final version incorporating feedback received (end February 2016)
- submission of final version to CCSA for consideration (Spring 2016).

6 Source Documents

Many quality assessment/assurance frameworks have been developed by statistical organisations in recent years and there is no need to reinvent the wheel. Using standards and practices that have already developed is not only efficient but also helps promote harmonization across agencies. Thus, *Assuring Quality in the UNSS* and the *GSQAF* draw on the following frameworks.

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

- The principals indicate 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

- The document comprises 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 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 by 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, etc., but also produced by sound methods and comply with principles such as 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, the framework is 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

- The document was developed by the OECD to help manage quality within its own organisation and to demonstrate its quality commitment to users.
- http://www.oecd.org/std/qualityframeworkforoecdstatisticalactivities.htm

European Central Bank Statistics Quality Framework (ECB SQF)

- The document was developed by the ECB for managing quality within its own organisation.
- https://www.ecb.europa.eu/stats/html/sqf.en.html

UNIDO Data Quality: A quality assurance framework for UNIDO statistical activities

- The framework was developed by UNIDO Statistics Unit to support statistical quality assurance for UNIDO as a whole.
- It covers the major quality aspects of statistics produced by UNIDO, including the key quality dimensions applicable to UNIDO's statistical activities.
- http://www.unido.org//fileadmin/user_media/Publications/Research_and_statistics/Branch_publications/Research_and_Policy/Files/Working_Papers/2008/WP062008%20UNIDO%20Data%20Quality%20-%20A%20quality%20assurance%20framework%20for%20UNIDO%20statistical%20activities.pdf

The FAO Statistics Quality Assurance Framework (FAO-SQAF)

- Development of a SQAF was recognized as a key area in the FAO Long Term Strategy (2013-2017). The document was subsequently developed within the context of creating the

position of Chief Statistician and establishing the Inter-Departmental Working Group on Statistics (IDWG-Statistics) at the FAO.

- The document comprises a quality framework and a mechanism to ensure the compliance of FAO statistics.
- http://www.fao.org/docrep/019/i3664e/i3664e.pdf

The UNCTAD Statistical Quality Framework (USQF) (Draft)

- The framework addresses quality and efficiency concerns across UNCTAD in a harmonised way.
- It presents a commonly understood definition of quality and its dimensions, agreement on quality and performance indicators, and a quality assessment program.

The Data Quality Assessment Framework for ITU (Draft)

- The framework addresses quality and efficiency concerns in the ITU.
- It presents a commonly understood definition of quality and its dimensions, agreement on quality and performance indicators, and a quality assessment program.
- https://www.itu.int/en/ITU-D/Statistics/Documents/events/wtis2014/018_E_doc.pdf

Quality Assurance Framework Humanitarian Data Exchange (Draft)

- The document is a descriptive report on the SQAF that will be adopted by the Humanitarian Data Exchange (HDX) platform.
- It builds on existing best practices within internationally recognised quality management frameworks.
- http://docs.hdx.rwlabs.org/wp-content/uploads/HDX_Quality_Assurance_Framework_Draft.pdf

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

- The model was developed by UNECE and endorsed by the UN Statistical Commission.
- It presents a generic model for the business processes that produce official statistics.
- It provides a standard framework and harmonised terminology to help statistical organisations to modernise their statistical production processes and to share methods and components.
- In the context of the Generic SQAF it provides a basis for presenting quality guidelines in terms of the sequence of subprocesses that constitute a production process.
- http://www1.unece.org/stat/platform/display/metis/The+Generic+Statistical+Business+Process+Model

7 Distinctive Characteristics of UN Agencies Producing Statistics

UN agencies (and, indeed, international organisations in general) that produce statistics have some characteristic features that are quite similar to, or quite distinct from national statistical offices (NSOs), as follows.

- The requirement for a country to report to a UN agency is typically not supported by a national law, whereas the requirement to report to an NSO is underpinned by a statistics act. Nevertheless the pressure to report may be quite high.
- A UN agency processes data and produces statistics as a *by-product*, possibly an important by-product, of its main function, whereas for NSOs these are its main functions.
- Typically statistics are produced by more than one organisational unit within UN agency. This is somewhat similar to statistics being produced independently operated surveys within an NSO and/or by other organisations within a national statistical system (NSS).
- It is desirable, but by no means always the case, that a particular unit in a UN agency is designated as having responsibility for coordinating statistics within the agency. If such a unit is so designated it is typically the unit that is the largest producer of statistics within the agency. This is somewhat similar to the situation that the NSO is the largest producer of statistics within the NSS.
- UN agencies are never *primary* data collectors in the sense of gathering data directly from individual households, businesses and institutions. They typically obtain data from NSOs and other national ministries, departments and agencies, which are the primary data collectors. Nevertheless, if the data obtained by an agency would not otherwise have been collected, then the respondent burden on the individual households, businesses or institutions can be attributed to the agency.
- A UN agency gathers data for a range of countries and typically adds value by verifying the data, combining them, harmonizing them, aggregating them, analysing them across countries, and providing cross country commentaries. This is a not a role that is undertaken by an NSO.
- Quite often data provided by countries to a UN agency are considered to be *official statistics* by those countries. Nevertheless, verification and harmonisation by the UN agency may result in changes to these data. An NSO is never in the position of modifying official statistics, rather it is in the position of creating them.
- A UN agency does not undertake estimation in the sense of weighting up a sample as does an NSO. It does undertake estimation in a quite different sense, namely that of deriving and publishing estimates for individual counties by modeling the data for the countries where the data are missing. Whilst an NSO may impute data for individual units where the data are missing but it will never publish these data.
- Primary users of statistics collected by a UN agency are within the agency itself. There is a very heavy focus on gathering together data from possibly many sources and analysing them in order to produce commentary and underpin policy making. In this context it is especially important that the users are fully aware of the limitations of the data, particularly where the data have been derived by modelling. This puts a significant obligation on UN agencies that produce statistics to ensure that their own users are fully informed about data quality and do take account of data deficiencies, especially where data have been modelled. In this context the Guidelines for Accurate and Transparent Health Estimates Reporting (GATHER) currently being prepared by a working group of health experts will provide an example of best practice. It will include checklist of items to report whenever global health estimates are published. Whilst NSOs have certainly have a role in informing users about data quality they are rarely publishing data that have been modelled.

These distinctive characteristics have been taken into account in developing *Assuring Quality in the UNSS* and the *Generic SQAF*. They are the reason why the generic NQAF for NSOs cannot simply be directly applied to UN statistical agencies.

8 Differences between UN Agencies

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 designated statistical coordination role. Examples are the UN, the IMF and UNESCO, where most statistical activities are undertaken within the (UN) Statistics Division, the (IMF) Statistics Division, and the Institute for Statistics, respectively. At the other end of the spectrum is an agency, such the World Health Organisation (WHO) which have a decentralised statistical function whereby statistics are produced independently in a number of organisational units without a substantial coordinating role. The Food and Agriculture Organisation (FAO) was in a similar situation until recently when it introduced a Chief Statistician and supported by the Inter-Departmental Working Group on Statistics to oversee the FAO Statistical Programme of Work as a collaborative effort.

For agencies at the decentralised in of the spectrum, a SQAF is particularly important. This is exemplified by the FAO, which, in the introduction to its SQAF notes *the initiative is particularly important within the current context of a decentralized statistical system, where each FAO technical department carries out its own statistical programme of work and maintains ownership of its data. In such system, and without the proper coordination mechanisms, common standards and methodologies are not consistently applied on a corporate scale, and any adoption is undertaken on a good-will basis*.

Another closely related characteristic that can vary between UN agencies is whether or not they have a formal mandate to collect statistics. For example, the UNSD has such a mandate, UNCTAD does not. Evidently such a mandate gives support to statistical activities

9 Concept of Statistical Activity and Statistical Production Process

The starting point for development of Assuring Quality in the UNSS and the GSQAF 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 on acquiring, processing, analysing, storing and/or disseminating statistical data (rather than on using them), or on building the statistical infrastructure to support such activities. A statistical activity may be conducted by a person with the formal title of statistician or another title such as economist or sociologist, metadata management expert, statistical systems development expert. It may be conducted by a person on a full-time or part-time basis.

In general, *statistical activities* do <u>not</u> 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 such activities may be covered is where their management is having a notably adverse effect on the agency's statistical activities.

Statistical activities thus defined may be 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 overall planning of the statistical programme as a whole, standard definitions and classifications, standard data acquisition, processing, storage, dissemination and metadata management methods and 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 to be unambiguously covered by identifying the Agency's *statistical processes*. It is these statistical processes that are typically the target of quality assessments.

10 Underlying Statistical Principles

The CCSA *Principles Governing International Statistical Activities* were adopted in 2005 and there is a case for revising or abbreviating them and the corresponding indicators in the light of subsequent developments. However, the QAF Task Force does not have an official mandate for such a revision and the resulting principles would no longer have the status of an international standards Thus the current set of principles are used in *Assuring Quality in the UNSS* and in the *Generic SQAF* without change.

11 Quality Dimensions

In order to address quality assurance comprehensively and systematically, quality is typically viewed in terms of a number of *dimensions* (or *components*, or *principals*) as illustrated in the following examples

In its *Quality Framework and Guidelines* the OECD defines:

- relevance; accuracy; credibility; timeliness; accessibility; interpretability; coherence; and cost-efficiency;

In its *Data Quality Assessment Framework* the IMF defines:

- prerequisites of quality; assurances of integrity; methodological soundness; accuracy and reliability; serviceability; and accessibility:

The *European System Code of Practice (ESCoP)* defines 15 principles in three groups:

- *Institutional environment*: professional independence; mandate for data collection; adequacy of resources; quality commitment; statistical confidentiality; impartiality and objectivity;
- *Statistical processes*: sound methodology; appropriate statistical procedures; non-excessive burden on respondents; and cost effectiveness;
- *Statistical outputs*: relevance; accuracy and reliability; timeliness and punctuality; coherence and comparability; and accessibility and clarity.

The quality guidelines in the *UNSD's generic NQAF* are presented in 19 sub-groups within four groups:

- *Managing the statistical system*: coordinating the national statistical system; managing relationships with data users and data providers; and managing statistical standards;
- *Managing the institutional environment*: assuring professional independence; assuring impartiality and objectivity; assuring transparency; assuring statistical confidentiality and security; assuring the quality commitment; and assuring adequacy of resources;
- *Managing statistical processes*: assuring methodological soundness; assuring cost-effectiveness; assuring soundness of implementation; managing the respondent burden; and
- *Managing statistical outputs*: assuring relevance; assuring accuracy and reliability; assuring timeliness and punctuality; assuring accessibility and clarity; assuring coherence and comparability; and managing metadata.

Evidently there is no unique right way of defining the dimensions of quality and no particular combination of dimensions is likely to be outstandingly better than all the others.

The Generic SQAF borrows from the ESCoP and NQAF groupings and from the OECD output quality dimensions in defining eight output quality dimensions, two process quality dimensions and two institutional quality dimensions. The logic for this grouping is that output quality is what matters most to the users, but good output quality depends upon good process quality, which, in turn, depends upon a good institutional environment including a well managed statistical system.

Comment [M1]: To complete

Ideally the quality dimensions should be standardised across the UNSS. However, given that there is no optimum choice, it is fine for agencies with already well defined quality dimensions to continue to use them and to develop a concordance table showing how they relate to the dimensions in the Generic SQAF.

12 Quality Guidelines and Quality Checklists

QAFs invariably include quality guidelines and/or quality checklists. *Quality guidelines* are typically for use when designing and building statistical processes. Thus they are often presented by phase and subprocess, in accordance with the GSBPM as this is the natural perspective for designers and builders.

Quality checklists may be used during the statistical process, or after the process in an evaluation phase. In the former case the checklist will likely be organised by phase and subprocess. In the latter case it may well be organised by quality dimension with the idea of ensuring all aspects of quality are covered. This also has the virtue of providing a different perspective than was used for design and possibly exposing some weaknesses that had not been recognised. In fact all the

items in a checklist can linked to both the relevant subprocess(es) and the relevant dimension(s), as exemplified in a checklist recently developed for the Global Health Expenditure Database by WHO.

Quality guidelines and quality checklist used for evaluation are closely related in the sence that they can be derived from one another. For example a guideline that states:

- *Use international classifications wherever available*,

can readily be converted into a checklist item by turning the statement into a question:

- *Have international classifications been used wherever available?*

13 Current Coordination Mechanisms for the UNSS

Comment [M2]: To be checked and corrected/elaborated as need be.

The CCSA is the primary mechanism for coordinating statistical activities across the UNSS. However it does not have any formal authority to require UN agencies to do anything. Thus coordination take place only on a voluntary basis.

- As an example of coordination, the UN agencies in the UNSS have recently agreed that they will each nominate a person within their agency to be the *Chief Statistician* to represent the agency at meetings of the UNSS and to be responsible for coordination of statistical activities to the extent possible within the agency.

The UNSD is the agency with the responsibility for coordination across the UNSS, but again on a voluntary basis.

As noted in Section 9 above, the existence or otherwise of a mandate for collection of statistics varies by agency, as does the authority of the designated Chief Statistician within the agency, and the degree of coordination between the units within the agency that produce statistics.

14 Consideration of Big Data

Based on widespread use of new telecommunications and other devices, huge volumes of data are generated by global positioning system (GPS) devices, automated teller machines, scanning devices, sensors, mobile phones, satellites and social media. Because of their high volume, high velocity and wide variety, these data are commonly referred to as *big data*. More generally, *big data* is a broad term for data sets so large or complex that traditional data processing applications are inadequate. Challenges include analysis, capture, data curation, search, sharing, storage, transfer, visualization, querying and information privacy.

The potential of using big data sources for official statistics resides in the timely —sometimes real-time —availability of large amounts of data, often at minimal cost. However, taking advantage of big data requires identification of the user needs they will address, it requires new tools and methods for their acquisition and processing and it raises issues in terms legislation, privacy, management and finance.

Recognising the need for further investigating the benefits and challenges of big data for official statistics the Statistical Commission created the *Global Working Group (GWG) on Big Data for Official Statistics* in March 2014. At its first meeting in October 2014, the GWG established eight task teams that are due to deliver their findings by the end of 2015 on the topics of:

- Advocacy and communication; Linking Big Data and the Sustainable Development Goals;
- Access and partnerships: Training, skills and capacity building;

- Cross-cutting issues; Mobile phone data; Satellite imagery; and Social media data.

Given that these teams have not yet all concluded their work and reported their findings it would be premature to make recommendations for use of big data in the documents. Rather the recommended approach is to wait and see

15 Scope of the Documents

In the two documents quality assurance is considered from two overlapping but distinct viewpoints:

- quality assurance for the UNSS as a whole; and
- quality assurance for an individual agency within the UNSS.

Assuring Quality in the UNSS is aimed at covering the UNSS as a whole.

The *Generic SQAF* is aimed at quality assurance for an individual agency.

Both documents refer to quality assurance rather than quality assessment. Their aims are broader than assessment, which is considered a part of quality assurance.

16 Document Titles

Generic Statistical Quality Assurance Framework

As previously noted, it is not sufficient to refer simply to a *quality assurance framework* for a UN agency as, without a qualifier, this can be misconstrued to refer to the core function of the agency rather the statistics it produces. The two main options are *statistical quality assurance framework* and *a data quality assurance framework* and the question is which is the more appropriate?

There are examples to support each option. On the one hand there are:

- the IMF Data Quality Assessment Framework (DQAF);
- the ITU Data Quality Assessment Framework (DQAF); and
- the Australian Bureau of Statistics Data Quality Assurance Framework (DQAF).

On the other hand there are:

- the South African Statistical Quality Assurance Framework (SASQAF);
- the FAO Statistics Quality Assurance Framework (FAO-SQAF);
- the European Central Bank Statistics Quality Framework (ECB SQF); and
- the UNCTAD Statistical Quality Framework (USQF).

Other options are Generic Statistics Quality Framework, Generic Statistical Quality Framework, Generic Statistical Quality Management Framework, Generic Data Quality Framework, and Generic Data Quality Management Framework

In preparing the document, after considering the options, the title *statistical quality assurance framework* has been chosen as the term *data* could be more broadly interpreted to include data that are not statistical. Finally, however the choice of title is one that the UN QAF Task Force can make.

Assuring Quality in the UNSS

The document could perhaps have been more logically called the *UNSS Quality Assurance Framework (UNSS SQAF)*. This title has not been used because it and the Generic SQAF could rather easily be confused given that the Generic SQAF is produced by the UNSS. Again, the final choice of title is one that the UN QAF Task Force can make.

17 Structure of Assuring Quality in the UNSS

The proposed structure of the document 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 the quality dimensions that are recommended for use by all agencies in the UNSS that have not yet defined quality dimensions.
4. A section describing harmonisation and other quality issues that need to be addressed by the UNSS
5. A section indicating quality assurance can be promoted in the UNSS.

Annex

List of available reference documents including brief descriptions of existing UN agency SQAFs.

18 Structure of the Generic SQAF

The proposed structure of the document 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 an agency should provide in order to establish the 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 *Assuring Quality in the UNSS*.
4. A section providing definitions of data quality and process quality dimensions, exactly as in *Assuring Quality in the UNSS*.
5. A section indicating the content of the quality guidelines for an agency.
6. A section outlining a quality governance procedures and quality assessment program for an agency, including quality and performance monitoring, self-assessment and a periodic external assessment.

Annexes

List of available reference documents

19 Combined Document

There is significant duplication of material in the two documents. In particular the principles and quality dimensions are identical in both and the introductory sections are similar. Also, there may be some confusion in the mind of readers regarding the separate purposes of the documents. As a possible way of addressing this concern, a third document has been produced which includes all the material in both documents but without repetition.

- The benefit of the two separate documents is that they clearly distinguish the role to be played by each UN agency independently from the role of coordination across all agencies which is likely the responsibility of the UNSD and CCSA. The downside of having two documents is that there is duplication across them and every chance they will become out of step.
- The benefit of a single document is absence of duplication. The downside is that the roles of indidivual agencies and of the UNSS as a whole are not so clearly distinguished.

Whether to use the two separate documents or the combined document is a decision for the QAF Task Force.

20 The Documents

Assuring Quality in the UNSS	 Asuring Quality in the UNSS
Generic Statistical Quality Assurance Framework	 Generic SQAF
Assuring Quality in the UNSS and Generic Statistical Quality Assurance Framework	 Assuring Quality and Generic SQAF