United Nations | DESA Statistics Division

Session 1.2: The United Nations National Quality Assurance Framework

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Workshop on the Implementation of a National Quality Assurance Framework for Official Statistics in Countries of the Latin American and Caribbean Region

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What is quality in Statistics (Definition)

Quality is the degree to which a set of inherent characteristics of an object fulfils requirements (see International Standards Organization, ISO 9000:2015).

In the context of statistical organizations, the object is the statistical output or product, the process, the institutional environment or the whole statistical system

A simple definition of quality is "fit for use" or "fit for purpose".

What is quality in Statistics (Definition)

Notes:

- It is the users' needs that define the quality.
- It is multi-dimensional. The dimensions of quality are interrelated and, there are trade-offs between some of them.
- Quality is crucial for the confidence in a statistical institution and its products.
- Quality is the responsibility of all!

Other important definitions:

Quality Management: Coordinated activities to direct and control an organization with regard to quality (ISO)

1. Establishing quality policies and objectives
2. Establishing processes to achieve these objectives (planning, quality assurance, control and improvement)

Quality management system: Provides a coherent and holistic system as a basis for quality management

Other important definitions

Quality management systems for statistics are based on quality assurance frameworks which are based on FPOS:

1. Quality assurance frameworks designed for official statistics are all based on the UN Fundamental Principles of Official Statistics (FPOS)

2. What is specific about (official) statistics?: Professional independence; impartiality; protection of privacy; access to all types of data requires high trust; This is reflected in laws, quality frameworks and ethical standards that go beyond the generic quality management systems

Why do we need a NQAF?

A National Quality Assurance Framework (NQAF) is a coherent and holistic system for statistical quality management. It is a tool for all working in official statistics:

1. Its objective is to achieve quality improvements at the level of the statistical system, including management, coordination and institutional arrangements, processes and statistical outputs in order to meet user needs.
2. It sets a standard of quality and hereby assures trust in official statistics.

What is the United Nations National Quality Assurance Framework (UN NQAF)?

1. UN NQAF is the generic United Nations (UN) national quality assurance framework which is contained in Chapter 3 and the Annex of the UN National Quality Assurance Frameworks Manual for Official Statistics (Manual) (available at: https://unstats.un.org/unsd/methodology/dataquality/un-nqaf-manual/).

2. The UN NQAF consists of principles, requirements and elements to be assured.

3. The UN NQAF does not aim to replace any of the existing statistical quality assurance frameworks and guidelines for official statistics. Countries and individual producers of official statistics that are already fully engaged in quality assurance and are following one of the existing quality frameworks may view the UN NQAF and the Manual only as an additional reference point that supports what they are already doing, and as a source of information on the application of quality assurance in different situations.

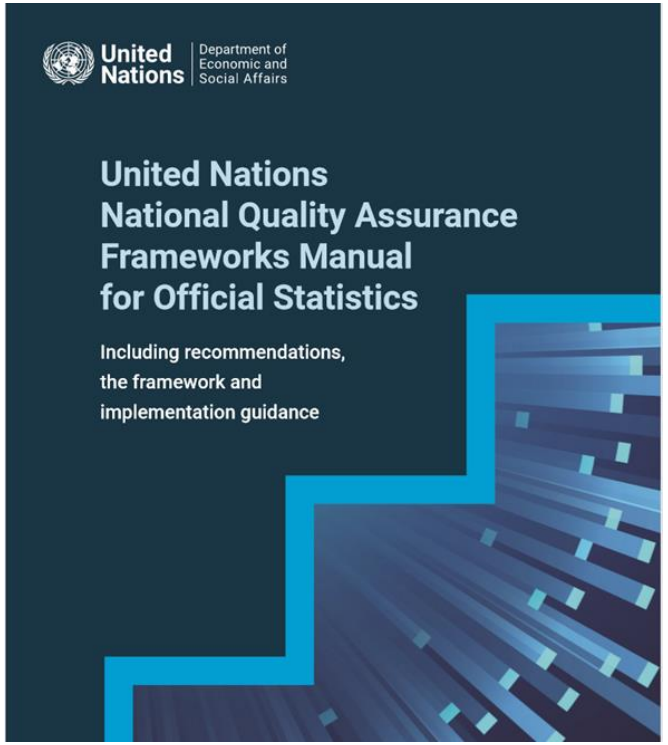
International quality frameworks for statistics

- UN Fundamental Principles of Statistics (1994, 2014)
- **UN National Quality Assurance Framework (NQAF 2013, 2019)**
- European Statistics Code of Practice (2005, 2011, 2017)
- African Charter on Statistics (2009)
- Code of good practice in statistics for Latin America and the Caribbean (2011, 2023)
- ASEAN Community Statistical System (ASS) Code of Practice (2012)
- OECD Good Statistical Practice (2015)

Basic principles are common

The Manual overview

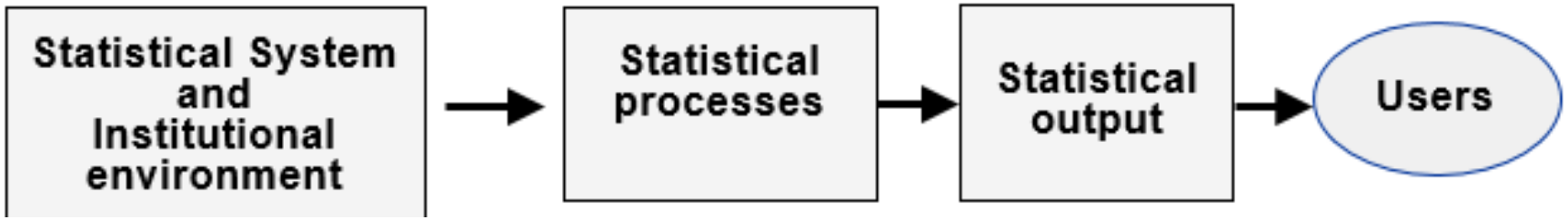
Part	Chapter	Title
Introduction	Chapter 1	Contents and use of this Manual
Recommendations	Chapter 2	Recommendations on quality assuarance for official statistics
UN NQAF	Chapter 3	The UN National Quality Assurance Framework: principles and requirements
Implementation	Chapter 4	Assessment tools and risk management
	Chapter 5	Development and implementation of a national quality assurance framework
	Chapter 6	Implementation of quality assurance within the national statistical system
	Chapter 7	Quality assuarance for statistics compiled from different data sources
	Chapter 8	Quality assuarance for SDG indicator data and statistics
References	Chapter 9	Quality assurance in the global statistical system
UN NQAF Annex	Annex A	Detailed Checklist of elements to be assured



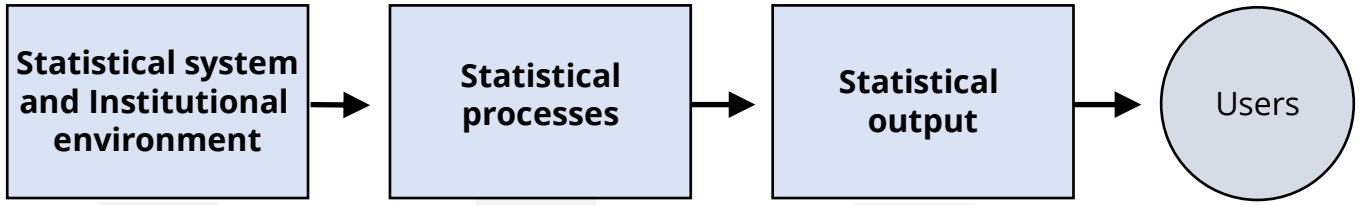
See https://unstats.un.org/unsd/methodology/dataquality/un-nqaf-manual/

Chapter 3 and Annex: United Nations National Quality Assurance Framework (UN NQAF)

- UN NQAF arranges its quality principles and associated requirements into four levels, ranging from the over-arching institutional and cross-institutional level through the statistical production processes to the outputs:
- Level A: Managing the statistical system
- Level B: Managing the institutional environment
- Level C: Managing statistical processes
- Level D: Managing statistical outputs



UN NQAF structure – logic



1. Coordinating the national statistical system
2. Managing relationships with data users, data providers and other stakeholders
3. Managing statistical standards
4. Assuring professional independence
5. Assuring impartiality and objectivity
6. Assuring transparency
7. Assuring statistical confidentiality and data security
8. Assuring the quality commitment
9. Assuring adequacy of resources

10. Assuring methodological soundness
11. Assuring cost effectiveness
12. Assuring appropriate statistical procedures
13. Managing the response burden

14. Assuring relevance
15. Assuring accuracy and reliability
16. Assuring timeliness and punctuality
17. Assuring accessibility and Clarity
18. Assuring coherence and comparability
19. Managing metadata

There are 19 principles, 87 requirements and 356 elements to be assured (good practices)

Please note:

The United Nations National Quality Assurance Framework (UN NQAF) of Chapter 3 is descriptive. However, FPOS and the associated recommendations of Chapter 2 support specific principles and give them an obligatory character.

UN NQAF – principles on 4 levels

Level A. Managing the statistical system

- Coordination of the national statistical system and managing relations with all stakeholders is a precondition for the quality and efficient production of official statistics. Ensuring the use of common statistical standards throughout the system is an important part of this management.

❖ **Principle 1: Coordinating the national statistical system**

❖ **Principle 2: Managing relationships with data users, data providers and other stakeholders**

❖ **Principle 3: Managing statistical standards**

UN NQAF – principles on 4 levels

Level B. Managing the institutional environment

- The institutional environment is one of the prerequisites to ensure the quality of statistics. Principles to be assured are professional independence, impartiality and objectivity, transparency, statistical confidentiality, quality commitment and adequacy of resources.

❖ **Principle 4: Assuring professional independence**

❖ **Principle 5: Assuring impartiality and objectivity**

❖ **Principle 6: Assuring transparency**

❖ **Principle 7: Assuring statistical confidentiality and data security**

❖ **Principle 8: Assuring the quality commitment**

❖ **Principle 9: Assuring adequacy of resources**

UN NQAF – principles on 4 levels

Level C. Managing statistical processes

- International standards, guidelines and good practices are fully observed in the statistical processes used by the statistical agencies to develop, produce and disseminate official statistics, while constantly striving for innovation. The credibility of the statistics is enhanced by a reputation for good management and efficiency.

❖ **Principle 10: Assuring methodological soundness**

❖ **Principle 11: Assuring cost-effectiveness**

❖ **Principle 12: Assuring appropriate statistical procedures**

❖ **Principle 13: Managing the respondent burden**

UN NQAF – principles on 4 levels

Level D. Managing statistical outputs

- Output quality is measured by the extent to which the statistics are relevant, accurate and reliable, timely and punctual, readily accessible and clear for the users, and coherent and comparable across geographical regions and over time.

❖ **Principle 14: Assuring relevance**

❖ **Principle 15: Assuring accuracy and reliability**

❖ **Principle 16: Assuring timeliness and punctuality**

❖ **Principle 17: Assuring accessibility and clarity**

❖ **Principle 18: Assuring coherence and comparability**

❖ **Principle 19: Managing metadata**

UN NQAF structure – logic

Statistical system and Institutional environment → **Statistical processes** → **Statistical output** → Users

1. Coordinating the national statistical system
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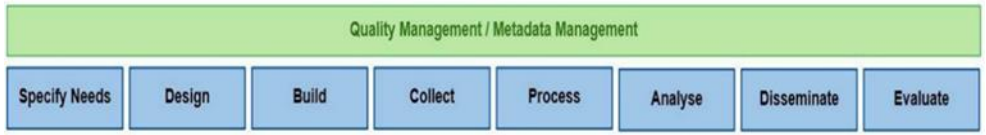


UN NQAF structure – hierarchy of principles, requirements and elements to be assured

19 Principles (commitments that guide us in achieving our quality objectives)

A principle is implemented by complying with its requirements

87 Requirements (something that is needed to ensure implementation)

In general, compliance with a requirement depends on the compliance with the elements to be assured under this requirement

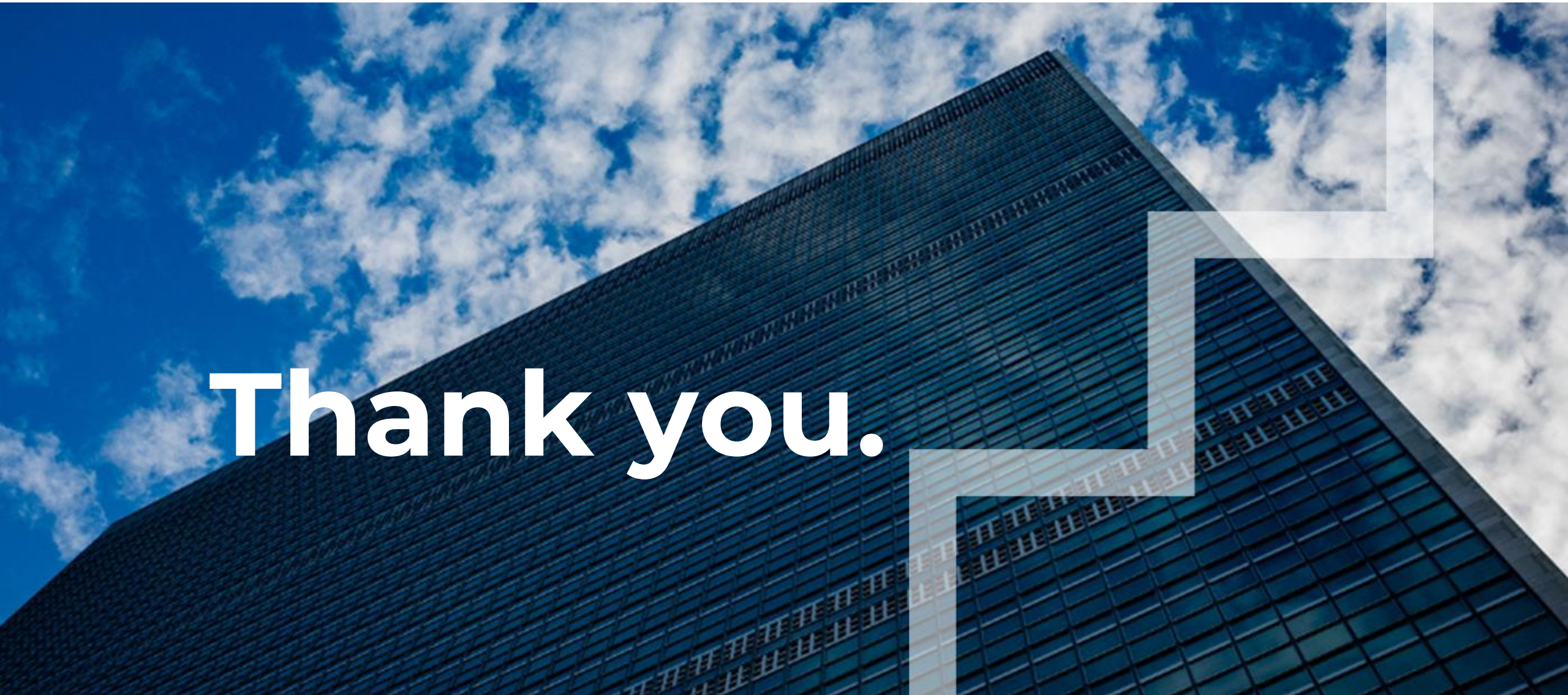
357 Elements to be assured

Possible activities, methods and tools to meet the requirement, reflecting a good practice. To be followed or assured as long as they are applicable.

UN NQAF structure – hierarchy: Example

Principle 1: Coordinating the national statistical system

- Coordination of the work of the members of the NSS is essential for improving and maintaining the quality of official statistics. Principle 1 is mainly supported by FPOS 8.
  - **Requirement 1.1: A statistical law establishes the responsibilities of the members of the national statistical system, including its coordination. Its members are identified in a legal or formal provision.**
    - The coordination role of the national statistical office (NSO) or other body is defined in a statistical law.
    - The statistical law specifies the requirements for official statistics and the scope of the national statistical system (NSS).
    - Members of the NSS are identified in a formal document.
    - Responsibilities of NSS members for the development, production and dissemination of official statistics are clearly specified in the respective laws and regulations.


Thank you.