Quality Reports and Their Role in Metadata

Component A: Quality Management of Official Statistics
Activity A.3: Quality reports, tools and methods
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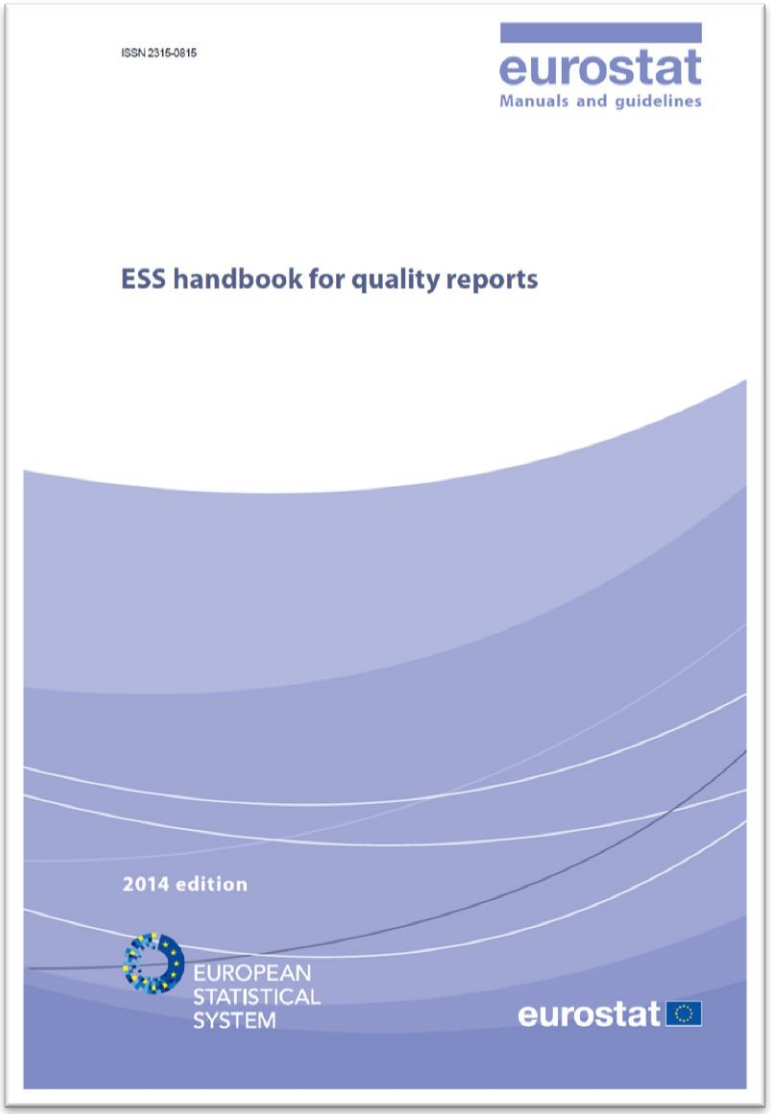
Purpose of this talk (from ToR)

- General characteristics of quality reports in Europe and the OECD and their role in metadata including
  1. the purpose and function of quality reports internally in the organization and for stakeholders and
  2. the connection between SIMS and quality reports in general – how quality reports support metadata and how they may be different (ESMS vs SIMS, OECD / non-ESS countries / DQAF quality reports)

SIMS very short…

- Streamline and harmonize metadata and quality reporting in the ESS
- Decrease the reporting burden on the statistical authorities by creating the framework for *once for all purposes* reporting, where each concept is only reported upon once and is re-usable for other reporting
- Create an integrated and consistent quality and metadata reporting framework where the reports are stored in the same database
- Create a flexible and up to date system where future extensions are possible by adding new concepts



- ESS handbook for quality reports is very good source explaining both the structure and the contents of quality reports
- Contains three parts:
  I. Introduction (10 pp)
  II. Guidelines for prepraring detailed quality reports (100 pp)
  III. Annexes
    1. QPI (17 pp)
    2. SIMS (21 pp)
    3. References (6 pp)

Abbreviations and Acronyms

CoP	European Statistics Code of Practice
QAF	Quality Assurance Framework
EHQR	ESS Handbook for Quality Reports
ESMS	Euro-SDMX Metadata Structure
ESQRS	ESS Standard for Quality Reports Structure
QPI	Standard ESS Quality and Performance Indicators
SIMS	Single Integrated Metadata Structure
SDMX	Statistical Data and Metadata Exchange

EHQR Foreword

- The role of quality reporting is strengthened in Regulation 223/2009 on European Statistics
- Producers of official statistics have to guarantee that European statistics are developed, produced, and disseminated on the basis of *uniform standards* and of *harmonized methods*
- Users of statistics are guaranteed access to appropriate metadata describing the *quality of statistical outputs*, so that they are able to *interpret and use* the statistics correctly

Output/Product Quality Criteria

- In line with CoP output quality in the ESS is assessed in terms of the following quality criteria:
  - *Relevance:* outputs meet the needs of users
  - *Accuracy and Reliability:* outputs accurately and reliably portray reality
  - *Timeliness and Punctuality:* outputs are released in a timely and punctual manner
  - *Coherence and Comparability:* outputs are consistent internally, over time, and comparable between regions and countries; it is possible to combine and make joint use of related data from different sources
  - *Accessibility and Clarity:* outputs are presented in a clear and understandable form, released in a suitable and convenient manner, available and accessible on an impartial basis with supporting metadata and guidance

Process Quality Criteria

- *Output quality* is always achieved through *process quality* which in general terms has two broad aspects:
  - *Effectiveness* which leads to the outputs of good quality
  - *Efficiency* which leads to their production at minimum cost to the NSO and to the respondents that provided the original data.

Process Quality Criteria (cont'd)

- In line with the principles of the CoP, the quality criteria of the statistical processes are as follows:
  - *Sound methodology* including adequate tools, procedures and expertise, underpins quality statistics
  - *Appropriate statistical procedures* implemented from data collection to data validation, underpin quality statistics
  - *Non-excessive burden on respondents:* the reporting burden is proportionate to the needs of the users and is not excessive for respondents
  - *Cost effectiveness:* resources are used effectively

Purpose and function of quality reports

- *Quality reporting* underpins *quality assessment*, which in turn is the starting point for *quality improvements*
- Thus, standards and guidelines for effective quality reporting are an essential aspect of the quality management/assurance framework
- There is a wide range of different possible quality reports according to the scope of the report, the level of detail, the producer or user orientation, and the perspective of process or output

Role of quality reporting

- Within a quality management framework, a quality report is a means to an end, not an end in itself
- First of all, it should provide a factual account of quality according to the reporting structure
- Moreover, recommendations for quality improvement should be identified and later implemented based on the quality report

ESMS and ESQRS

- ESMS has been considered as the concise, *user-oriented* format of quality reporting because it contains a *basic level* of quality information – the information focuses more on the *statistical output* rather than the underlying process itself
- The ESQRS is a more *detailed* quality reporting structure more addressed to the *producers* of statistics and which focuses more on the statistical *process* side

ESMS ∪ ESQRS = SIMS

- In SIMS all statistical concepts of both ESMS and ESQRS have been included and streamlined, by assuring that all concepts appear and are therefore reported upon *only once* (direct re-usability of existing information)
- It is a dynamic structure in the sense that additional statistical metadata and quality concepts can be included if necessary in the future

ESMS ∪ ESQRS = SIMS (cont'd)

EURO-SDMX Metadata Structure (Dec 2010)	
1	**Contact**
1.1	Contact organisation
1.2	Contact organisation unit
1.3	Contact name
1.4	Contact person function
1.5	Contact mail address
1.6	Contact email address
1.7	Contact phone number
1.8	Contact fax number
2	**Metadata update**
2.1	Metadata last certified
2.2	Metadata last posted
2.3	Metadata last update
3	**Statistical presentation**
3.1	Data description
3.2	Classification system
3.3	Sector coverage
3.4	Statistical concepts and definitions
3.5	Statistical unit

Single Integrated Metadata Structure	
S.1	**Contact**
S.1.1	Contact organisation
S.1.2	Contact organisation unit
S.1.3	Contact name
S.1.4	Contact person function
S.1.5	Contact mail address
S.1.6	Contact email address
S.1.7	Contact phone number
S.1.8	Contact fax number
S.2	**Introduction**
S.3	**Metadata update**
S.3.1	Metadata last certified
S.3.2	Metadata last posted
S.3.3	Metadata last update
S.4	**Statistical presentation**
S.4.1	Data description
S.4.2	Classification system
S.4.3	Sector coverage
S.4.4	Statistical concepts and definitions
S.4.5	Statistical unit

ESS Standard for Quality Reports Structure	
I	**Contact**
I.1	Contact organisation
I.2	Contact organisation unit
I.3	Contact name
I.4	Contact person function
I.5	Contact mail address
I.6	Contact email address
I.7	Contact phone number
I.8	Contact fax number
II	**Introduction**

Quality and Performance Indicators

- 16 quality and indicators to be reported in the ESS Quality Reports to Eurostat
  - Relevance (R1)
  - Accuracy and Reliability (A1 – A7)
  - Timeliness and Punctuality (TP1 – TP3)
  - Coherence and Comparability (CC1 – CC2)
  - Accessibility and Clarity (AC1 – AC3)
- Numerical indicators described by

QPIs (cont'd)

- All 16 QPIs described by
  - Definition
  - Applicability
  - Calculation formulae
  - Target value
  - Aggregation level and principles
  - Interpretation
  - Specific guidance
  - References

SIMS and Quality Reports

- SIMS consists of a number of fields, that may be combined into quality reports in different ways for different purposes
- SIMS is a hierarchical structure (4 levels), and the fields should be filled “backwards”, i.e. from the most detailed level (level 4) to the least detailed level (level 1)
- Higher levels should summarize lower levels
- Don’t assume that all levels are visible to the end user, i.e. expect to introduce some redundancy