

## **UNECE Quality Improvement Strategy**

### **Document prepared by ECE**

#### **Introduction**

1. The main purpose of national and international statistical agencies is to provide information to inform the public and policy makers on the functioning of society, the economy and government. To fulfil this role it is important that the statistical outputs of these agencies meet certain quality standards, and that sufficient information on quality is provided to allow users to judge for themselves how reliable these data are.
2. Many national and international statistical agencies have responded to this requirement by producing quality frameworks to define the concept of quality, and to provide criteria against which the quality of outputs can be judged. These frameworks do not necessarily provide precise and objective measures of quality, but do encourage a standard and systematic approach to quality within the agency.
3. The UNECE has recently adopted a framework for statistical quality, and is using this as the basis for developing a quality improvement strategy. This strategy is intended to provide a pragmatic, and cost-effective way to improve and better communicate the quality of data outputs. This paper describes progress so far.

#### **The UNECE Quality Framework**

4. To avoid duplication of work, the UNECE quality framework draws heavily on frameworks and experiences from other international statistical organisations, adapting them to the UNECE context. It is therefore designed to complement the approaches taken by other organizations, whilst taking into account the specific circumstances of the UNECE.
5. The basis of the framework is the ISO standard 9000:2005, which defines quality as the "degree to which a set of inherent characteristics fulfils requirements". Under this definition, the quality of statistical outputs can be determined by the extent to which they meet user needs. This approach to quality is also reflected in the "Fundamental Principles of Official Statistics"<sup>1</sup>, where the first principle refers to the need for official statistics to "meet the test of practical utility".
6. Many attempts have been made to define the components of quality in relation to statistical outputs. For the purposes of developing the UNECE quality framework, the

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<sup>1</sup> See <http://www.unece.org/stats/archive/docs.fp.e.htm>

components defined by other international statistical institutions, particularly Eurostat, the OECD and the IMF, were considered to be the most relevant.

7. Eurostat has defined six components of quality<sup>2</sup> (relevance, accuracy, timeliness and punctuality, accessibility and clarity, comparability, coherence). The OECD has developed a similar set of seven components<sup>3</sup>. Relevance, accuracy, timeliness and accessibility are broadly as defined by Eurostat, whereas coherence combines elements of both comparability and coherence in the Eurostat approach. The OECD component of interpretability is similar to the Eurostat concept of clarity. The remaining component is credibility.
8. The IMF “Data Quality Assessment Framework”<sup>4</sup> largely combines elements found in both the Eurostat and OECD frameworks. It also includes a number of pre-requisites for quality, including the legal and institutional environments, and the availability of sufficient resources. The IMF also introduces the concept of integrity, which combines the OECD dimension of credibility, with the notion of professionalism.
9. The UNECE quality framework combines elements of these two frameworks to define seven components as follows:
  - Relevance
  - Accuracy – with the proviso that absolute accuracy can be difficult to determine when data are taken from other sources rather than collected directly. As this is often the case for UNECE data, two factors should be considered, the credibility of the source, and the plausibility of the data, i.e. the extent to which they look reasonable when compared to other periods, to similar countries, and to the values the statistician would expect;
  - Timeliness
  - Punctuality
  - Accessibility
  - Clarity
  - Comparability – following the OECD approach and including coherence, which can be considered as “comparability between domains”.
10. The OECD concept of credibility and the IMF concept of integrity are most relevant at the level of the organisation, along with considerations of legal and institutional environments, resources and cost-efficiency. Regarding the legal and institutional environment, the UNECE is the custodian organization of the UNECE Fundamental Principles of Official Statistics, which were adopted at this regional level in 1992 not only by the relevant statistical committee, but also by the highest UNECE body at the political level. The Statistical Division has been very active in advising countries of the region, at their request, on statistical legislation and assessing their statistical systems against the fundamental principles, and in contributing to the creation of a similar code for international activities, the Principles Governing International Statistical Activities adopted by the CCSA in 2005.

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<sup>2</sup> See the note “What is Quality of Statistics” at:

<http://forum.europa.eu.int/irc/dsis/qis/info/data/en/public/what%20is%20quality%20of%20statistics.doc>

<sup>3</sup> See <http://www.oecd.org/dataoecd/26/38/21687665.pdf>

<sup>4</sup> See <http://dsbb.imf.org/Applications/web/dqrs/dqrsdqaf/>

11. The UNECE is therefore clearly of the opinion that this aspect is not a secondary issue, but that it needs a different mechanism, such as peer reviews, to monitor and give incentives for improvement if compared to quality aspects that are relevant at the level of individual statistical outputs. It is clear that one cannot be a credible promoter of fundamental principles at country level if one's own institutional environment is not up to the same standards. For this reason, the explicit agreement of the heads of departments within the UN Secretariat at their meeting of 6 July 2007 that they accept the International Principles as binding for the statistical activities under their responsibility is a great step forward in getting the need for institutional specificity for official statistics recognized not only for activities at national level, but also within the UN. This recognition will also help quality considerations at the level of individual outputs to be formally recognized as important, and help heads of statistical divisions to implement a consistent policy of quality levels for individual outputs before data are released to users, based on purely professional considerations.
12. Although the UNECE quality framework focuses on the quality of statistical (data) outputs, these are only part of the activity of a statistical organisation. Other important outputs include statistical standards or norms (such as concepts, classifications and methodologies)<sup>5</sup>, technical assistance (including the provision of training or software applications) and, more generally, any interaction with external people or organisations (including the organisation of meetings and contributions to the coordination of international statistical activities).
13. A total quality management approach would require the measurement of the quality of all of these outputs (along with associated inputs and processes), but this would distract too many resources from regular tasks, which, in turn, could have an adverse effect on quality. At this point it is necessary to return to the notion of cost-efficiency; for this reason, the UNECE is focusing on areas where improvements will be most beneficial. Therefore, although staff are encouraged to think about quality (in terms of meeting user needs) when producing all types of outputs, the main focus of the quality improvement strategy is on statistical data.

### **Key Features of the UNECE Quality Improvement Strategy**

14. ***User needs*** – the recent UNECE reforms have shifted the focus from mainly serving internal customers to developing a much wider customer base. Whilst we have some knowledge of the needs of the key users of our statistical data (other parts of the UN, national governments and international bodies), we currently know almost nothing about the needs of our growing numbers of users in the academic and private sectors. We will launch a survey of user needs in autumn 2007 to address this.
15. ***Improving accessibility and visibility*** – we now make all of our statistical outputs available free of charge on our web site, and have in place a programme of improvements to that site based on user feedback. We also recognize that we cannot just expect potential users to find our data without a little help. For this reason, we have a number of initiatives

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<sup>5</sup> See the report by Eurostat on assessing the quality of statistical norms at:  
[http://epp.eurostat.ec.europa.eu/pls/portal/docs/PAGE/PGP\\_DS\\_QUALITY/TAB47143266/QUALITY%20OF%20NORMS.PDF](http://epp.eurostat.ec.europa.eu/pls/portal/docs/PAGE/PGP_DS_QUALITY/TAB47143266/QUALITY%20OF%20NORMS.PDF)

underway to improve the visibility of our work, such as establishing a marketing group, producing a new key publication “UNECE Countries in Figures”<sup>6</sup>, and increasing our outreach to potential users through the Swivel web site<sup>7</sup>.

16. ***Improving quality control*** – statistical staff in the UNECE have been made aware of the quality framework, and have had a direct input to the development of the quality improvement strategy, via seminars and training sessions. In this way they have been encouraged to take ownership of the strategy, and to follow a consistent approach to quality, thinking in terms of the components above. To support this culture change, we are developing a number of rules and tools, including standards for documentation and metadata, as well as improved data validation tools, including graphical visualization.
17. ***Communicating quality*** - users often say they want data to be of “good quality”, but are not really sure what this means, and do not have the necessary evidence to judge how “good” the data really are. Assessing and communicating quality can be seen as rather circular in that if users are told that the quality of statistical outputs is good, this is likely to be reflected in their assessment of quality. This is where the concept of credibility is important, honest assessments of quality will help to increase credibility and trust, which will have a positive impact on perceptions of quality in the longer term. We are therefore seeking ways to improve and standardize the metadata we provide, so that users have better information to assess the quality of our outputs themselves.

### **Putting the Quality Improvement Strategy into Practice**

18. A quality manager (Steven Vale) has been nominated, and the existing Database Coordination Group, which consists of statisticians responsible for data production and dissemination, has extended its role to cover overseeing the implementation of the quality improvement strategy. This group has drawn up a work-plan identifying priorities and tasks for the period to December 2008, by considering the costs and benefits of a number of proposed tasks. The group will regularly review progress and will continue to produce quality improvement work plans on an annual basis for as long as this adds sufficient value to UNECE outputs.
19. As in many other organizations, there is a certain amount of statistical work within the UNECE that does not fall directly under the Statistical Division; examples include transport and timber statistics. The quality framework and improvement strategy will be extended to these areas insofar as data production activities are concerned. This will partly be achieved through the use of common tools for data production and dissemination.

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<sup>6</sup> See - <http://www.unece.org/stats/profiles2007/>

<sup>7</sup> See - <http://www.swivel.com/users/show/1005968>

## Summary

20. Quality frameworks provide the theoretical basis for assessing the quality of statistical outputs and a structure for communicating with data users about quality. A quality improvement strategy is necessary to manage a programme of practical actions to improve quality. Neither is sufficient on its own; quality frameworks provide the structure whereas quality improvement strategies provide the mechanism to implement change. The relationships between the different elements of the UNECE quality model are shown in Annex 1.
21. Quality improvement strategies should focus on the key issues faced by the organization, and should help to prioritize the tasks that will address those issues. It is important that the staff of the organization feel that they have responsibility for quality, and that ideas for quality improvements should come from them, rather than be imposed by managers. The individual tasks resulting from the strategy should also have clear ownership and a transparent review mechanism.
22. Quality improvement strategies are, by their nature, very specific to individual organizations. However, the principle of combining user feedback with ideas from staff to develop programmes of quality improvements based on a cost-benefit approach seems to be rather more generic. The UNECE is still in the early stages of implementing the approach described in this paper, and is developing the quality improvement strategy from a virtual concept to a physical document (all other elements of the model already exist as physical documents). We would therefore welcome feedback on this approach from other organizations.

## Annex 1 – The UNECE Quality Model

### Elements of the model

#### Quality Framework

Provides the basis for ↓↓

#### Quality Improvement Strategy

Manifests itself as ↓↓

#### Time-delimited Quality Improvement Programmes

Composed of ↓↓

#### Quality Improvement Tasks

### Governance

Owned and agreed by senior managers on behalf of all staff

Developed by quality manager based on inputs from all staff

Owned and agreed by Database Coordination Group based on cost-benefit assessments of proposed tasks, and available resources

Owned by individuals or groups of staff, reporting to the Database Coordination Group via the quality manager