

**CONFERENCE OF EUROPEAN STATISTICIANS**

For discussion

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Agenda

**COMMENTS ON THE RAPPORTEUR REPORT ON ENVIRONMENT STATISTICS**

**Note prepared by the UNECE secretariat**

**INTRODUCTION**

1. In the view of UNECE, environment statistics, in spite of some partial success stories, still suffers from two basic gaps which do not seem to be in the current focus of the activities of international organizations. These two gaps are:

- a lack of definition of what the framework of official statistics means in practice for the area of environment statistics or, in other words, where the boundary between official statistics and other statistical work in this area should be drawn;
- a lack of standards, as compared to other statistical areas, for official statistics in the various parts of this area that are officially adopted by a competent statistical body such as the Statistical Commission or the Conference of European Statisticians. As a consequence, many national statistical offices that are pressed to take up this area in their national statistical programmes cannot easily turn to broadly accepted and widely implemented statistical standards as a benchmark and guidance.

**ENVIRONMENT STATISTICS AS PART OF OFFICIAL STATISTICS**

2. The most common approach to this issue is institutional, both at national and international levels: what is produced and released by the statistical office, or the statistical department of an international or supranational organization, is under the legal framework of official statistics, whereas what is produced by other national producers such as ministries or environment agencies is in most cases not. The arrangement in the EU can illustrate this point: EUROSTAT's activities are Community Statistics, whereas the statistical outputs of DG ENV and the European Environment Agency are not.

3. This institutional divide is considered sometimes as a reasonable proxy for a distinction by the two prevailing sources of environment statistics: those based on business or household surveys on the one hand, including those environment statistics derived from statistics in other areas such as agriculture, transport or energy, are equated with the responsibility of statistical offices (statistical departments in international organizations), whereas on the other hand those based on monitoring and observation data should remain in the government agencies other than NSOs (other parts of international organizations), and therefore completely outside the framework of official statistics.<sup>1</sup>

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<sup>1</sup> Another source for environment statistics is administrative data, like government expenditure on environment. For simplicity, this category is not further detailed in the rest of this paper.

4. Like primary data collection for administrative purposes, primary data collection through technical devices for monitoring purposes is not part of the framework of official statistics; only its secondary use for the purpose of official statistics. The borderline between the two phases is relatively clear-cut for the transformation of administrative data into official statistics (such as in the case of custom-based foreign trade statistics). However, the same borderline is far from being clarified for monitoring and observation data. Monitoring and observation data do not only include monitoring of air, water and soil quality, but also sources like remote sensing or automated traffic counts that do not cause burden on any respondent.

5. Unless they have an exhaustive coverage like remote sensing for land use, networks for monitoring are usually not designed to be representative for an (infinite) universe of points in a given territory (or space over a given territory). Meteorological observations increasingly try to close gaps in their observations networks so as to be able to capture the atmosphere for the whole globe even outside national territories. But in national monitoring networks, the points of measurements are chosen based on other considerations than to be a random sample of all points. The impact of this specific characteristic on how to generalize raw monitoring data to official statistics aggregates has not been the issue of much debate in environment statistics, but it cannot be carried out without models of spatial aggregation. These models are rather complex, and require an intense cooperation between statisticians and natural scientists. Also a conceptual issue is at stake: should, from the point of view of official statistics, spatial aggregation lead to an aggregate covering the whole territory of a country, or only parts of it like the populated area?

6. There is a third type of activity that seems to be completely outside the framework of official statistics: statistics on the fauna and flora of a country. This is the domain of researchers, from the design and data collection to the compilation and dissemination of results, and is likely to remain there. The only small contribution of official statistics in this domain are perhaps aggregates based on administrative data like zones of protection or number of officially protected species, but this is rather marginal.

7. It would certainly help to clarify the division of work between various players if the dividing line between official statistics and other data work would be drawn in analogy to administrative data, i.e. responsibility for the design of monitoring networks and the data collection and processing for monitoring purposes outside official statistics agencies, and the use of such data for official statistics aggregates inside, but developed jointly between statistical offices and other agencies with relevant know-how. In determining results of official statistics in this sense, all users and stakeholders have to be asked for their information needs (in addition to what the simple monitoring results provide), and through bundling and filtering of these information needs, the most relevant outputs have to be determined as priority list for standards of official statistics to be developed and implemented, together with appropriate classifications.

8. The issue of delimiting the role of official statistics is more clear-cut for those parts of environment statistics that are either purely survey-based (e.g. business surveys about environmental expenditure or waste), or an extension of official statistics in other areas (transport, energy, agriculture, forestry, certain industries), such as the greenhouse gas emissions from economic activities. All phases of the production process are clearly within official statistics. However, for the latter type of statistics, the choice of aggregates from other statistics that should form a basis for environment statistics is too often driven by short-term data availability considerations, to the detriment of conceptual approaches by which several

possibilities are assessed against a set of criteria of official statistics, or by the information needs of one specific type of use.<sup>2</sup>

9. The choice of parameters that make possible the conversion of aggregates from other areas into environment statistics proper should take place within the framework of official statistics, but requires intensive cooperation between statisticians and other professionals. Some difficult choices are involved in this conversion; the case where this is a simple multiplication with a physical constant determined by natural science that is independent of time and space is rather the exception than the rule. In many cases, e.g. for emission coefficient, such physical parameters will have to be combined with differences and changes in the product mix that are influenced by technical progress and market innovation/penetration.

## STATISTICAL STANDARDS

10. In spite of the many international activities listed under area 3.1 in DISA/IP, there is a lack of international standards for the various elements of basic environment statistics. Countries where official statisticians would like to start building up this area cannot turn easily to international standards, they have to turn to best practices in other countries (but without any international guide about which countries can be considered as good or best practices).

11. Some substitutes for officially approved standards exist at international level: questionnaires developed by international organizations, some of them jointly by several organizations with subsequent data sharing; classifications to be applied in data collection/dissemination; and sets of indicators. However, these are partial solutions that do not replace the need for developing, adopting and implementing explicit statistical standards.

12. This can be best illustrated with indicator lists. In most cases, they reflect information needs of one particular user group (sometimes at very high level), but at international level, they frequently go too far in the direction of the specification of indicators without consultation of statisticians. Statisticians are left with fine-tuning and data collection from member countries, the subsequent processing to improve comparability over time and between countries, and dissemination. In such types of activities, statisticians can put a stamp on the quality of the data, but the conceptual adequacy of the definitions used for the outputs, for which they should be responsible according to the UN Fundamental Principles of Official Statistics, is preempted by the choice and specifications of indicators made outside the framework of official statistics.

13. It is clear that the international statistical system, as one of its tasks, should respond positively to requests for providing the necessary statistical services for an important user group and collect the best possible data available from countries. However, without an official stamp for the conceptual adequacy that the outputs are a valid reflection of characteristics that is relevant for a variety of users and the public, to be developed and decided under professional independence and impartiality like in other areas of official statistics, these outputs will never get the authoritativeness that results of official statistics

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<sup>2</sup> The UNFCCC greenhouse gas methodology can be taken as an example: in the case of greenhouse gases emitted by cars, the proposed methodology may produce sufficiently accurate estimates at a larger geographical scale, but as part of official statistics, a statistical standard should also be able to produce unbiased results e.g. for each EU country separately, irrespective of size.

enjoy in other areas. In other words: providing statistical services for predefined concepts is a starting point and continues to be an important part of international statistical activities, but it should not remain the exclusive focus. To develop international standards of official statistics for the various elements of the environment would require a similar canvassing of information needs of all user groups that normally precedes development work towards statistical standards in other areas, and a methodological development work that ends with the adoption of standards by an international statistical authority.

14. Similar comments as for indicator sets are applicable to the two other surrogates of statistical standards: questionnaires by international organizations are usually secretariat driven and reflect their information needs; a valuable set of data may result from such activities, but without links to approved statistical standards, there is an important part for the legitimacy as benchmark for national official statistics missing. Classifications used in official statistics should also reflect a multi-user perspective, and not be driven, like classifications in waste e.g., exclusively by the operational and administrative needs of managing this sector.

15. The statistical standards in need of development for individual areas of environment statistics have to be developed in such a way that they fit into the relevant layers of the SEEA. The SEEA is an ambitious and complex overall framework for environment statistics, and it rather builds on than replaces the needs for statistical standards in individual areas such as water, air, land use, etc. SEEA allows statistics in these areas to be arranged in a systematic way, with the possibility to correct inconsistencies and fill gaps as residuals, but it has to be complemented by statistical standards for how to edit, adjust and aggregate the basic data to reliable results of official statistics, and handbooks of good national practices for implementing such standards.

16. From the framework of official statistics point of view, the fourth and final category of SEEA accounts about adjusting SNA for the impact on the environment, or in other words about monetary valuation of the degradation in various parts of the environmental, is very problematic and likely to remain controversial, unless such valuation can be based on observable transaction prices. It may be preferable to leave this extension, and the responsibility for any statistics along these lines, to the research community or a specific user. The primary task of official statistics is to measure in an unbiased and transparent way over time, and if possible in a comparable way between countries, how the various components of the environment develop (deterioration, stability or improvement), and in terms of priorities, developing standards and guidelines for such measurements in physical terms as part of international statistics are likely to produce quicker results and to be more beneficial to national statisticians and users.

#### **WILL BUSINESS AS USUAL IN THIS AREA ADDRESS THE ABOVE PROBLEMS?**

17. The present variety of international activities in this area has the advantage that several approaches can be developed and tested, but on the other hand there is an obvious risk that nobody feels responsible for a top-down approach within the framework of official statistics. Continuing in the same bottom-up way after four decades of work in this area is unlikely to address the gaps outlined above.

18. While some national statistical offices have made great progress in introducing environment statistics as part of official statistics, and in approaching this area at least partially within this framework, there is no parallel at international level: international

activities seem to be mainly driven by the internal needs of an organization, or by a best possible attempt in data collection to fill a politically defined list of indicators, about which statisticians had not been consulted.

19. The only possible exception to this is the Committee of Experts on Environmental-Economic Accounting that works under the auspices of the UN Statistical Commission. Although its main focus is on the SEEA, its mandate includes a global assessment of environment statistics and environmental economic accounting. Phase I of this assessment is completed, but phase II is still ahead. There may be an opportunity to include the above aspects in the planned assessments. It is very important that national official statisticians are associated from the very beginning with any activity that addresses the above gaps, in view of their much more advanced way of integrating environment statistics into official statistics.

### **A POSSIBLE SMALL CONTRIBUTION BY UNECE**

20. The Statistical Division of UNECE used to be involved in methodological work on environment statistics in the '80s and '90s, as part of the activities under the Conference of European Statisticians. Many expert meetings were organized in this area, and the Conference adopted a series of classifications pertaining to land use, air, water, fauna and flora, and waste. Some data work, resulting in publications, was also carried out in that period. However, with the transfer of responsibility for this activity from the Statistical to the Environment and Human Settlements Division of UNECE in the mid-'90s, this work disappeared from the agenda of the Conference. The responsible Committee for Environmental Policy decided on priorities other than regular statistical work, be it methodological work towards standards or regular data collection and dissemination. The Environmental Performance Reviews for specific UNECE countries, carried out under the responsibility of this Committee, have been based on ad hoc data collections from national sources, and the use of international data sources, notably EUROSTAT, EEA and OECD. The gap that is felt most strongly is reliable statistics for non-EU/non-OECD countries that are comparable with the rest of the ECE region.

21. Recently, a new methodological activity was started under the responsibility of the present EHLM Division, described as activity 9.1 in the UNECE Statistical Programme 2008. The interim result of this activity is a publication entitled "Environmental Indicators and Indicators-based Assessment Reports – East Europe, Caucasus and Central Asia". The Bureau of the Committee on Environmental Policy asked at its last meeting in January 2008 that the Conference of European Statisticians should also be associated with this work. Involving the CES in a way still to be defined would have the advantage of offering a possibility to check the proposed list of indicators from the official statistics framework point of view, to compare it with similar lists, and to suggest amendments where needed. This could develop as another example of inter-sectoral work in which the Conference may be involved.

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