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**Note on Environment Statistics to the Meeting of the Bureau of the CES
(Geneva, 12-13 February 2008)**

Paper prepared by Eurostat

(for discussion)

Third meeting of the 2007/2008 Bureau
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Item XXX of the Provisional
Agenda

RAPPORTEUR FOR ENVIRONMENTAL STATISTICS

Note prepared by Eurostat

Introduction

1. Environmental statistics are becoming to be an important field of statistics. Recent developments in the environment (e.g. climate change) and the intensified debate have also put the environment high on the political agenda, as well as the demand for high quality statistics in this field.
2. A first review on environmental statistics has been done in 2006. The recent and fast developments led to the request of the CES bureau to have a renewed review of this statistical domain. Therefore, this review is mainly built on the structure and content of the earlier review.

The international architecture for environmental data and statistics

3. The past 25 years have seen continued developments in the demands for and provision of environmental information and statistics. These developments have been characterised by an increasing **number of activities** and organisations involved. This is partly due to **reporting obligations** under new multilateral environmental agreements and regulations, new or expanded data collection activities carried out by international institutions adding to long-standing data collections (e.g. UNSD, UNECE, FAO, OECD), and, in Europe, reports made to the European Environment Agency (EEA) and its network of Topic Centres and reporting obligations to the European Commission under EU legislation.
4. This proliferation of international bodies involved in different types of environmental reporting has led to a greater institutional dispersion of international activities and to an increasing reporting burden on countries. The need for well managed cooperation between international organisations and coordination of international activities has thus become more pressing than ever before. It has led to an expanding array of **international consultation and**

cooperative work and to recent moves by international organisations (UN, OECD) and the European Commission to clarify the purposes of the different international initiatives in line with the mandates of the organisations in charge, and to further streamline international reporting requirements, especially at European level. Examples of recent moves are the establishment of the Inter-Secretariat Working Group on Environment Statistics, the creation of a UN Committee of Experts on Integrated Environmental Economic Accounting, and the agreement at EU level between three DGs of the European Commission (ENV, JRC, ESTAT) and the EEA, to set up ten environmental data centres.

5. These multi-partner initiatives are supported by **long-standing bilateral relationships and cooperation** on international data collection and methodological developments. The most prominent example is the successful cooperation between the OECD and Eurostat on the Questionnaire on the State of the Environment. Other examples include cooperation on Material Flow Accounts (close cooperation between Eurostat and OECD for methodology and training, with the involvement of the UNCEEA and the London Group) and cooperation on Water Accounts (use at EU level of standard tables defined by the UN).

The Inter-Secretariat Working Group on Environment Statistics (IWG-ENV)

6. The IWG-ENV was established in 2003 and its terms of reference were approved by the UN Statistical Commission in March 2004. Founding members of the IWG-ENV include: Eurostat, the UN Statistics Division, the UN Economic Commission for Europe, UNEP and the OECD. Other members, such as the FAO, have joined or will join as appropriate. Building on long-standing bilateral working relationships, a **major objective** of the IWG is to further enhance the cost-effectiveness of international environmental data activities for both the international bodies involved and participating countries and to further improve environment statistics through international cooperation, harmonisation and capacity building.

7 The work carried out by the IWG-ENV covers both general coordination issues and statistical developments on selected themes.

(1) General coordination work involves the preparation of an inventory and calendar of international environmental questionnaires, the establishment of an Inter-institutional Glossary of Environment Statistics; work on harmonised metadata for environment statistics, and collaboration with other international coordination bodies whose activities are relevant to the advancement of environment statistics (e.g. UNCEEA, London Group).

(2) Work on selected themes started with an International Work Session on **Water Statistics** (Vienna, June 2005) bringing together relevant IGOs and representatives from developed and developing countries. The discussions highlighted the importance of water data for decision making, identified remaining gaps and data quality issues, as well as areas in which further international harmonisation and coordination is required. It gave rise to the creation of an IWG-ENV Subgroup on Water Statistics that might serve as a model for tackling the necessary international coordination on specific themes (assuring complementarity in international data collection, removing redundancies, sharing data and country information between all parties, supporting country efforts in developing water statistics through appropriate sharing of experiences, promotion of best practices and capacity building).

From 2008 onwards, the IWG-ENV's thematic work will address **land use/land cover statistics** through a subgroup to be led by FAO and with involvement of other relevant IGOs. (see Annex for a full list)

The United Nations Committee of Experts on Environmental- Economic Accounting

8. The UNCEEA, created in 2006, has the objective to elevate the System of Environmental Economic Accounting (SEEA) to an international statistical standard. An inherent objective is to ensure better links between environment statistics and accounting concepts and to further harmonize data collection activities on environment and related statistics with environmental economic accounts.

9. Supported by the London Group on Environmental Accounting, which plays an active role in methodological progress, UNCEEA will coordinate work on environmental accounts, with a focus on the revision of the existing SEEA 2003 in order to promote it to an international statistical standard. Implementation and world-wide dissemination of environmental accounts are other objectives of UNCEEA. It has to be noted that most member organisations of the IWG-ENV participate in the UNCEEA and/or the London Group.

The OECD/Eurostat Questionnaire on the State of the Environment

10. Initially developed by the OECD in 1980 and used jointly with Eurostat since 1990, this questionnaire gathers the **best available** environmental data in member countries and promotes international **harmonisation** of this core set of environmental data. The objective is to provide a solid factual basis for international (i.e. OECD and EU) work on environmental issues. It also provides a reference framework for the establishment of environmental information systems in individual countries.

11. The questionnaire covers major environmental domains structured according to the pressure-state-response (PSR) model. It has been **regularly revised** so as to take into account experience gained, statistical and methodological developments at national, international and EU level, and new data needs. The current version of the questionnaire has been adopted in the course of several meetings organised jointly by OECD and Eurostat, and has benefited from a close **cooperation** with (i) the United Nations Statistical Division (UNSD) that, jointly with UNEP, uses a simplified version of the questionnaire to collect environmental data from other countries in the world; (ii) the United Nations' Economic Commission for Europe (UN-ECE) more particularly for tables based on a classification approved by the Conference of European Statisticians and for the section on forest that is coordinated with the Forest Resources Assessment (FRA) carried out by UN-ECE and FAO; (iii) the Secretariat of the Basel Convention for tables on hazardous waste in the section on waste, and (iv) the European Environment Agency (EEA).

12. As far as possible **other international data sources** are used, provided that the needs and objectives of the questionnaire are respected. Examples include the UNFCCC, EMEP and the EEA for data on GHG and air emissions, and the UN-ECE and FAO for selected data on forest resources.

13. The official **country replies** to the questionnaire are coordinated by a **national questionnaire coordinator**. The **treatment, quality assurance and analysis** of the data collected by the questionnaire is made in close cooperation with member countries; and for European Union and EFTA by the OECD and Eurostat Secretariats.

14. The regular revisions of the questionnaire and the cooperation with UNSD and UNEP and other international partners have helped to ensure continued **harmonisation** of major definitions and classifications and to **minimise duplication** of efforts at international level. However more needs to be done to improve the questionnaire processes in Europe, especially with regard to the completeness and quality of the replies, and to ensure coherence in concepts and definitions across all OECD regions (Europe, North America, Asia-Pacific) and beyond.

Developments in Europe

Thematic distribution of roles in the European Union (EU):

15. The European Commission has been addressing the issue of "streamlining reporting requirements" for years already, and has in 2005 taken the initiative to review and clarify the roles and responsibilities of the four major Community bodies involved in environmental data collection, production and hosting: the Directorate General for the Environment (DG ENV), the Joint Research Centre (JRC), the European Environment Agency (EEA) and Eurostat.

16. A technical agreement for the establishment of **Environmental Data Centres** based on a thematic distribution of roles in line with the mandates and strengths of each body was signed by the Directors General of the four partners, the so-called Group of Four (Go4), in December 2005.

17. The aim is to have a **primary data contact point** for the European Commission for major thematic areas, and to ensure the availability of robust environmental data to support European environmental policies. The data centres' task will be to ensure that the data collected fit European policy requirements, that their collection is organised in an efficient way, that the necessary quality assurance is performed and that all relevant existing data are accessible to the other institutions. The actual data collection and quality control will remain in the hands of the institution originally in charge, but will be coordinated with the respective data centre.

18. The agreed thematic distribution of responsibilities is as follows:

- Data centres for air, climate change, water, biodiversity and land use: EEA
- Data centres for soil and forestry: JRC
- Data centres for natural resources, products and waste: Eurostat

19. The data centres which cover areas that are insufficiently covered by current data collections and for which data quality and availability are not yet satisfactory (e.g. data centre for biodiversity at the EEA or data centre for products at Eurostat), will also have a role to play in the further **development of related statistics**. The Director's meeting described below will set the scene.

20. The implementation of the data centres is coordinated by sector groups (e.g. for a common IT- architecture) of the Go4 and is progressing, taking into account the different points of departure, as e.g. for Eurostat the mandate has expanded significantly. Practical **arrangements** and the links and **synergies** with already existing systems (e.g. Water Information System for Europe, WISE) and the future Shared Environmental Information System (SEIS) are being further discussed, and their benefits for improved coordination beyond the European region need to be further reviewed and discussed with IGOs active in the region, bilaterally and within the IWG-ENV.

21. Improvements expected from the existence of data centres include, for example:

- **Waste statistics:** Member States now have a single entry point for reporting on the Internet, not only for statistics, but also for all other quantitative reporting obligations on waste. The EU Waste Statistics Regulation is now fully operational and the reporting tools developed will be used for integrated reporting of all other waste data. The quality assurance procedures will be applied for all data flows. The continuation of long time series is assured by a routine converting data collected under the Waste Statistics Regulation to the OECD/Eurostat questionnaire section on waste. The so prepared data enable a pre-filling of the related questionnaire tables and minimise double reporting (test

phase: early 2008). Furthermore, having all European waste data collected together and made available via the data centre will allow for improvements in the coherence of available statistics and meta-information.

- **Water statistics:** The Water Information System for Europe (WISE), a prototype of a shared information system, was initiated by the European Commission (DG ENV) and agreed by European Water Directors in 2003 to organise the information flows generated under the EU Water Framework Directive. Operational with some of its functionalities since its public launch on 22 March 2007, it shall however support in the medium term (2010) all relevant water-related data flows (state of the environment, legal compliance, statistics) in Europe. WISE is the main technical tool of the EEA-based European Water Data Centre.
- **Environmental Accounts:** It is expected that environmental accounts will give a serious contribution to the development of the Data Centres for Natural Resources and Products both in terms of data and conceptual framework. In slightly more than a decade, the work on Environmental Accounts EU-widely has significantly evolved as seen in what follows:
 - In 1994, the European Commission identified the main lines of actions for the development of a Green National Accounting framework based on satellites to National Accounts. Since then, Eurostat, in collaboration with Member States' statistical offices and DG Environment's financial support, has developed and implemented different accounting frameworks that cover almost all types of accounts of the System of Environmental and Economic Accounting (SEEA) and the European Strategy for Environmental Accounting (ESEA), approved by the SPC in 2003.
 - In the context of revising the ESEA in 2008, Eurostat has commissioned a study ("Environmental Accounts: state of play of recent work") to assess the progress made by European countries in the compilation of Environmental Accounts from 2000 onwards and to engage the reflection on the further development of EA in Europe towards 2010. This assessment is based on the examination of 135 reports on pilot studies, as well as on an interview survey to experts in charge of Environmental Accounts in the European countries. The final report has just been delivered and contains interesting conclusions that are now to be analysed and discussed.
 - At the conference on 'Beyond GDP' 19-20 November 2007 Commissioner Dimas on the part of the European Commission announced that a policy Communication will be presented in 2008 developing the ideas of going 'beyond GDP' into a roadmap for action. He concluded that "we will also need to speed up and improve the development of integrated accounting in the social and environmental spheres".

The way forward: Bringing networks together and making data collection more efficient

22. Among the factors that play an important role in the quality of environment statistics is the effectiveness of the underlying **data production processes** and of related **institutional arrangements**. In most countries the responsibilities for environmental data and statistics are typically spread among different government agencies and institutions, including environment ministries, environment agencies, and statistical offices. Well organised and coordinated data flows among these institutions are crucial to ensure coherent and cost-effective reporting at both the national and the international level. These need to be complemented by similarly well organised data activities and data flows at international level and appropriate coordination mechanisms, in which the IWG-ENV plays an active role.

23. This is why international data collection activities such as those linked to the OECD/Eurostat Joint Questionnaire on the State of the Environment systematically involve national representatives from both **environment and statistical agencies** and rely on a national questionnaire coordinator who is responsible for the compilation and quality of the official national questionnaire reply to the relevant international body(ies). This is also reflected in the composition of the relevant international working groups such as the OECD Working Group on Environmental Information and Outlooks (**WGEIO**) that is composed of country officials from Environment ministries and/or agencies and National Statistical Offices, i.e. representing both the demand and supply side of environmental information.

24. Since November 2005 Eurostat organises a yearly “**Directors' Meeting on Environment Statistics and Accounts**” (DIMESA) that goes in the same direction: its objective is to gather the heads of the two networks¹ collecting and disseminating environmental data in Europe with a view to coordinating efforts at both the national and EU level (Eurostat, EEA, JRC), as well as with international organisations such as the OECD and the United Nations.

Coordination and division of responsibilities in countries

25. The way responsibilities for environmental data and statistics are shared at national level largely depends on a country's administrative culture, on its overall institutional set up and arrangements, and on how environmental policies developed over time. There is therefore no unique scheme that could be applied or recommended to share responsibilities at national level. It is rather up to each country to identify the most appropriate and cost-effective way of sharing responsibilities and of ensuring coordination both within the country and with relevant IGOs and European institutions and networks.

26. In an area characterised by its cross-cutting nature and multiple interrelationships, the effectiveness with which statistical activities and data flows are organised and coordinated is by far more important than the way chosen to split responsibilities (by theme, by DPSIR components, etc.). It is also by far more challenging and requires additional efforts.

27. By bringing the different networks and institutions together, the regular meetings of DIMESA are expected to support such efforts and to stimulate a better coordination and cooperation between the environmental administrations and the statistical offices at national level in the EU. This is also expected to contribute to OECD-wide efforts via the WGEIO in which the European Commission (DG Environment, Eurostat, EEA) participates actively.

Establishing a single entry point for environmental statistics in Europe?

28. The Norwegian proposal to establish single entry points for all environmental data provided by countries for all International Organisations looks tempting but is not always practical. While the ten European Environmental Data Centres will to some degree provide this kind of functionality, and while Eurostat is offering a single entry point for reporting with its eDAMIS system, checking and validation of the data received would not be easy to handle. It is fundamental that a certain set of minimum quality requirements are met and that data flows be well coordinated and structured. One example: experience with the **OECD/Eurostat Questionnaire on the State of the Environment** has shown that efficient data flows, combined with the use of and/or pre-filling from other international data sources whenever appropriate (and ideally also a joint treatment and validation of the data) are essential to ensure that the work on the questionnaire is both cost-effective (for the countries and for the

¹ The meeting of DIMESA brings together directors of institutions participating in the Environmental Information and Observation Network (EIONET) operated by the EEA, involving Member States' Environment Agencies and Ministries on one side, and the European Statistical System (ESS) with the Environmental Statistics Departments in the National Statistical Offices on the other side.

OECD and the Eurostat Secretariats as well) and leads to good quality statistics. It is expected that the recent developments in the EU will also help to further improve the reporting via the OECD/Eurostat questionnaire, for example by ensuring a **systematic and timely pre-filling** of those questionnaire tables for which data have already been transmitted by countries to European institutions.

29. Shared environmental information systems (SEIS) such as the 'Water Information System for Europe' (WISE) for example will help to solve the problem of diverse reporting pathways on water statistics in the EU and, if well managed, will also enable the pre-filling of selected questionnaire tables. Further progress could also be made by better coordinating the treatment and validation phase, and by reinforcing the role of the national **questionnaire coordinator**.

Making greater use of legal instruments for environmental statistics?

30. Experience with mandatory rather than voluntary reporting is mixed. On the one hand, mandatory reporting requirements help to justify and secure funding of statistical activities and to set priorities in countries. Experience also shows that it leads to greater harmonisation of definitions and methodologies and to subsequent improvements in data quality and comparability in the area of application. Eurostat, for example, has experienced that data quality (in all aspects, the most prominent being completeness) of voluntary collected data in the EU is generally lower than that of mandatory data collections covered by statistical law. On the other hand, mandatory reporting may also lead to breaks in time series and the abandonment of older time series, and entails a risk of losing comparability with countries that do not have the same legal requirement. Mandatory reporting often also means less flexibility to adapt to new or changing data needs.

31. Despite the positive experience in the EU with mandatory reporting requirements, countries do not always accept proposals for new statistical regulations, while at the same time they claim that resources for voluntary reporting are difficult to justify and call for legal cover in order to secure their internal resources.

32. It is therefore important that both voluntary reporting (for example via the OECD/Eurostat questionnaire) and mandatory reporting (via EU legislation) coexist, that they are coherent and mutually supportive. If an agreement on a statistical law cannot be reached, then at least strong efforts should be made to develop mutually accepted guidelines to improve data quality. Such guidelines should be coherent with and build on existing international frameworks for the quality of statistics (e.g. the Quality Declaration of the European Statistical System, the OECD Statistics Strategy, the OECD WGEIO common strategy and plan of action on environmental data quality, and related UN Principles).

Communicating results and improving the visibility and accessibility of environmental statistics

33. In general, **better communication** of improvements achieved is needed in order to raise awareness about progress made and the current state-of-the-art in environment statistics and accounts. This also includes regular and systematic **feedback** from IGOs to national data providers about the quality of the data provided and how they were used and published. It further includes appropriate **documentation** of the data published or released to final users so as to facilitate quality checks and interpretation. This is an area in which further progress could be made, in particular as regards core data series that are used in international policy and analytical work. It could benefit from better coordination, but would require additional and well focused efforts by national data providers and IGOs.

34. Experience shows that statistical quality can be significantly improved when the statistics are **regularly published and easily accessible**. This generally stimulates greater use of the statistics and generates useful feedback about their relevance and quality. This in turn stimulates data quality efforts. Data quality efforts can be further encouraged when the data are used for the calculation of **highly visible indicators**. In the EU these are the Structural Indicators (SI) and the Sustainable Development Indicators (SDI) published by Eurostat, and the Core Set of Indicators published by the European Environment Agency. In the OECD these are for example the Key Environmental Indicators (KEI) and the OECD Core Set of environmental indicators. IGOs increasingly release environmental data for free (e.g. in Europe: Eurostat's website, EEA publications, EMEP data, etc.). Some publications and databases are released for sale. In most cases however, member countries' governments can get free access to related publications and databases. These developments can be seen as steps in the right direction, even though more could be done to ensure better and appropriate access to environmental information.

III. Annex:

Work programme of the IWG-ENV in 2008-2009

In the biennium 2008-2009 the Working Group will focus on:

- (i) Continuing methodological and harmonization work in the subject area of water through the Subgroup on Water Statistics and present the results in the form of technical documents that will be made available on the web;
- (ii) Continuing and finalizing work on the joint Glossary of Environment Statistics and make the Glossary available on the web;
- (iii) Continuing work on a proposal for harmonized metadata guidelines for environment statistics, testing the proposal for water statistics, finalizing the draft on the basis of the lessons learnt and make the proposed guidelines available on the web;
- (iv) Setting up the subgroup, led by FAO, on land use and land cover statistics with a mandate and work programme to harmonize the classifications of land use and land cover, to develop a core set of variables and to compile best practices for data collection. The Working Group will reconsider the organization of a joint international work session on land use and land cover statistics after the establishment of the Subgroup;
- (v) Coordinating the implementation of the 2008 data collection and dissemination programme;
- (vi) Further developing the Working Group's website in order to make the work more transparent and the results widely available;
- (vii) Pooling resources by joint training and capacity building actions in particular in the ECA, ESCWA, ECLAC regions and in the ENP countries on the basis of the shared work programmes of the member organizations.