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**Harmonizing environmental data collection activities with  
accounting concepts and definitions - A discussion note**

**Note prepared by the OECD in consultation with UNSD and Eurostat<sup>1</sup>  
as a basis for discussion during the preliminary meeting of  
the UN Committee on Environmental-Economic Accounting (29-31 August 2005)**

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## I. Introduction and background

### *Environmental information – Progress and challenges*

Over the past 30 years, environmental information in OECD and many other countries have steadily evolved, driven by increased public awareness of environmental issues, their international aspects and their linkages with economic and social issues. Important strides have been made as regards the amount of environmental information made available and the quality of environment statistics. The drivers for major statistical efforts have often been multilateral environmental agreements or high level national and international policy requests (e.g. EU, G8). The harmonisation of environmental data has further been promoted by international data collection processes such as those carried out via the OECD/Eurostat questionnaire on the state of the environment and the derived UNSD/UNEP questionnaire, by international methodological work such as the EU SERIEE framework and the UN SEEA manual, and by the regular use and publication of environmental data in international work.

Despite this continued progress, great variability remains across countries. Many developments have not yet shown full results, and much remains to be done at both methodological and practical level to improve data quality and provide the right information for the right purpose. Efforts to link environmental indicators to economic policy making are, for example, still in an early stage of development, and policy relevant information remains insufficient in a number of areas<sup>2</sup>, including economic instruments and sectoral breakdowns of environmental data. In most countries, maintaining continuity and regularity in the supply of core statistics remains a challenge; they have to cope with expanding demands for high quality information, and stable or declining funding for a number of statistical and other related activities. Further progress will depend on the level of integration of different information sources, and on the effectiveness of the information processes put in place, including institutional and financial arrangements, legal frameworks, and publication and dissemination strategies.

### *The contribution of environmental accounting*

Environmental accounting work carried out since the 1980s has contributed to these results, with promising developments in areas such as: natural resource asset and flow accounts (e.g. water, forest, land, energy) that are used to derive indicators on the intensity of use of natural resources, reflecting the sustainability of the resource use; material flow accounts, that are being used for deriving indicators on the resource efficiency of economies; environmental satellite accounts that are used to derive data and indicators on environmental protection expenditure, and input-output and NAMEA-type approaches that are progressing in particular in Europe (where they are also seen as helpful tools for monitoring progress towards the Kyoto goals and analysing emission trading), but also in other OECD countries and beyond. Progress has however been hampered by several factors, among which:

- The development of accounting tools is often undertaken in isolation, with insufficient connections to actual policy demands for information and related indicators initiatives, and with insufficient dialogue between accountants and statisticians. A lot of the work completed has shed light on the methodological and conceptual aspects of environmental accounting, on the production of accounts (supply side) and their use in research activities. Less has been achieved as regards practical applications and the potential of environmental accounting as a policy and decision making tool is still not sufficiently known.
- Implementing environmental accounting is typically part of a major systematic and structural effort to improve certain data sets in the longer term<sup>3</sup>, in particular as regards the economic dimension of

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<sup>2</sup> Other areas include for example: biodiversity, toxic contamination, human health and environmental risks.

<sup>3</sup> 30 years of experience in OECD countries have shown indeed that implementing environmental accounting is a long and resource intensive task, and overall progress since the 1970s has been slow despite growing interest. In some countries, among which the pioneers in the field of natural resource accounting, work has been narrowed down with a focus on selected core accounts and often irregular updates.

environmental management and the linkages between economic, environmental and, to a certain extent, social data sets. Hence, greater use of accounting frameworks is desirable, but it may also entail a risk of leading to resource intensive updating processes by making the data production system more complex, more rigid, thus losing the flexibility needed to progressively adjust and refine the resulting indicators and to address more specific and short term information demands.

- Disseminating accounting results to a broader audience in a simple and user-friendly way is complicated by ongoing debates about the level of aggregation or disaggregation that should be applied to derived indicators to ensure appropriate interpretation and use.
- Data needed to populate the accounts are not always readily available or not of sufficient quality. Many environmental data are compiled for different purposes than the accounts. They use definitions and classifications adapted to the specific question under consideration, and terms, derived from statistical classifications, policy documents or legal texts, often expressed in a way understandable by a non-specialist audience and government officials in a majority of countries. Furthermore, many environmental data are still "young" with often incomplete series, and require detailed documentation and meta-data to reflect differences among countries; deviations from international definitions, breaks in time series, etc. .

Further progress will require more work to analyse the actual use of environmental accounts and to assess how the needs of decision-makers (the demand side) are best taken into account. A better communication between users, including policy-makers, and producers (statisticians, accountants) could help to (i) make the potential of accounting tools better known and (ii) find the most appropriate statistical solutions to address policy needs.

More work is also needed to make the links between physical and monetary accounts operational. This could be particularly fruitful in areas where continuity and regularity in measurement efforts can be ensured in the longer term and where accounting frameworks:

- help trace basic stock-flow relationships of natural resources;
- help disaggregate the data by economic activity sector in line with economic classifications;
- help improve the quality of economic information on the environment, such as statistics on environmental protection expenditure and revenues;
- provide a basis for calculating sustainability indicators (e.g. intensity of natural resource use, resource productivity, decoupling indicators<sup>4</sup>) and analysing underlying drivers and structural changes.

This needs to be supported with co-ordinated statistical efforts to improve the availability and quality of those environmental data that are needed to populate the accounts. It has also to be ensured that these data are compiled in a way as coherent as possible with accounting concepts and definitions, or can easily be converted to a compatible format. Greater harmonisation with accounting concepts and definitions is in turn expected to contribute to improvements in environmental data quality by providing additional consistency checks and estimates to fill data gaps, and by providing an integrated framework for linking different data sets in a coherent way.

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<sup>4</sup> While macro-level decoupling indicators are relatively easy to calculate, breaking these indicators down at sectoral level to highlight underlying drivers and structural change proves much more difficult due to data gaps and a general lack of coherence in the definitions and classifications used.

## II. Moving towards a greater harmonisation of environmental data with accounting concepts and definitions

### *The way forward*

Results can only be achieved if data harmonisation to support accounting work is put in the broader context of ongoing efforts to improve the quality of environmental statistics, taking into account the complementarities among different statistical tools and their costs and benefits for given purposes.

It is suggested to consider two major inter-related elements of work:

- Work to be applied to international environmental data collection activities. Such work would be part of the continued development and harmonisation of international environmental questionnaires carried out by the OECD and Eurostat, and UNSD and UNEP, and whose co-ordination is supported by the Inter-Secretariat Working Group on Environment Statistics (IWG-ENV)<sup>5</sup>. Recent initiatives include the organisation of an international work session on water statistics (Vienna, June 2005) and the set-up of a sub-group working on the streamlining and harmonisation of international water statistics, including their coherence with accounting concepts and definitions.
- Work to be encouraged by providing harmonised methodological and practical guidance. Such work would be part of the implementation and further development of the SEEA and should be coherent with the proposed strategy for promoting the accounts and with the related research agenda. It would build on the accumulated experience of the London Group on Environmental Accounting and the ESEA Task Force (European Strategy on Environmental Accounting) of Eurostat, and would serve as a methodological basis for further improvements in international data collections and for supporting efforts at national level. It should include guidance for countries that are at an early stage of development of their environmental information system<sup>6</sup> and guidance for countries that wish to improve an existing system (e.g. conversion guidelines, "bridge" tables).

### *Planning and priority setting*

In both cases, further data harmonisation needs to be carefully planned and prioritised so as to secure appropriate funding.

Priority should be given to those areas where the application of statistical frameworks based on accounting concepts follows the criteria used for selecting environmental indicators (policy relevance, analytical soundness, measurability), i.e. where it:

- is best connected to the actual demands for information, i.e. where it adds value to the policy relevance of the resulting information;
- has mutual benefits for both the quality of the accounts and the quality of the underlying data, and where these benefits can be gained at a reasonable cost and synergies can be exploited;
- helps consolidating and improving existing accounting activities and the data needed to populate these accounts, with emphasis on the most promising areas (e.g. environmental expenditure accounts, selected natural resource and material flow accounts, selected NAMEA-type accounts).

### *Work to be applied to international environmental data collection activities.*

Selecting priority areas along these lines is particularly important for work to be applied to existing international data collections. These activities have been tailored to the purposes of international policy and reporting work, in line with the mandates and the work programmes of the IGOs involved, and with the active participation of their respective member countries. Current efforts aim at further improving (i) the

<sup>5</sup> Established in 2003, the IWG-ENV has a special focus on the development and harmonisation of methods, concepts and standards for environment statistics, and on the international co-ordination of data collection and training.

<sup>6</sup> Like the recent Training workshops for Material Flow Accounts and NAMEA initiated by Eurostat.

quality of the data collected and their relevance for performance assessment and indicator development (timeliness, coherence over time, coherence among countries, documentation/meta-data, etc.) and (ii) the cost-effectiveness of the collection and treatment process (minimisation of the reporting burden, better international co-ordination, implementation of a commonly agreed upon data hierarchy and development of simplified questionnaire versions, etc.).

It is important to note here that environmental statistics cover many aspects that are traditionally not covered in the accounts and where the application of accounting concepts could lead to additional work with little added value or even to a duplication of efforts. This is the case for many aspects linked to specific environmental management or policy objectives, for a number of environmental quality aspects and for addressing issues of uncertainty. It is further the case for aspects linked to short term or frequently changing and conflicting policy demands. This implies that trade-offs have to be made between the desire to achieve full harmonisation with accounting concepts, the need to keep the reporting burden at an acceptable level, and the need to keep the questionnaires effectively focussed on the questions to be addressed.

***Work to be encouraged by providing harmonised methodological and practical guidance.***

Methodological work on data harmonisation could take a broader and longer term perspective, with the further review and harmonisation of classifications, terms and definitions, in particular those that could be useful to (i) cover different aspects of sustainable development and its capital basis in a more consistent way, and (ii) support in-depth analysis of underlying drivers and structural changes. (see also ESA/STAT/AC.108).

The development of practical guidance to countries and capacity building, however, needs to be more focussed and pragmatic, distinguishing various levels of ambition (modular approach). Emphasis could be given, in a first stage, to those data where harmonisation is needed to respond to both international and national data needs.

***Practical steps – Suggested course of action over the next two years***

***Work to be applied to international environmental data collection activities.***

Suggested first steps:

① Review those data series included in the OECD/Eurostat and UNSD/UNEP questionnaires that already build on accounting concepts, starting with the section on inland waters for which work is already ongoing.

(i) identify those series where further harmonisation is required to keep up with recent international developments;

(ii) highlight remaining differences with accounting concepts, terms and definitions; and analyse the reasons for these differences (data availability, level of aggregation/detail requested, relevance with respect to the policy questions to be addressed and the type of international work to be supported, type of indicators to be derived, etc.);

(iii) make concrete proposals for amendments, distinguishing between those that can be easily implemented as part of the continued updating of the questionnaires (minor amendments) and those that raise questions as to their relevance or feasibility, and hence require further discussion and/or adjustments in the related accounting concepts.

② Carry out a similar review of other data series included in the OECD/Eurostat and UNSD/UNEP questionnaires, and identify those series that could benefit from further harmonisation with accounting concepts and definitions, with emphasis on those areas in which both physical and monetary data are available and/or where further harmonisation with accounting concepts would facilitate the linkage

with economic information and the calculation of efficiency or decoupling indicators. Examples include: air emissions, waste generation, environmental expenditure.

Responsible bodies :

- a) preparation and co-ordination of proposals and report to UN EACC: members of the IWG-ENV with involvement of other international partners as appropriate (e.g. London Group);
- b) final decision on actions to be taken by the official bodies of the IGOs in charge of the data collections (e.g. for the OECD/Eurostat questionnaire: OECD Working Group on Environmental Information and Outlooks, Eurostat Working Group on Environment Statistics).

***Work to be encouraged by providing harmonised methodological and practical guidance.***

Suggested first steps:

- ❶ Pursue the development of methodologies and guidance for data harmonisation as part of ongoing work in the field of (a) water accounting and statistics; (b) mineral and energy asset accounts; (c) material flow accounts; (d) NAMEA-type air accounts.
- ❷ Initiate the development of methodologies and guidance for data harmonisation in areas covered in other international data collections and reporting processes that could benefit from improved harmonisation with accounting concepts and definitions (examples include: energy accounting and statistics; greenhouse gas emission inventories, energy and emission accounts).
- ❸ Carry out a survey of the current situation and practices in countries as regards the harmonisation of data collection activities with accounting concepts (initiatives taken, methodologies used, difficulties encountered, type of guidance needed, etc.) to help prioritising further work.

Responsible bodies :

UN EACC; London Group; Oslo Group; other international partners and IGOs as appropriate.

### **III. Issues for discussion**

According to your expertise and your country's or institution's experience:

- ❶ In what areas are data gaps or insufficient data harmonisation seen as a major obstacle to the development of environmental accounts? For which types of uses/purposes have these gaps been most significant? (research purposes, e.g. modelling, forecasting; indicator development, policy analysis, performance assessment, public communication, etc.). In what areas has insufficient data harmonisation generated additional costs?
- ❷ Adopting a long term vision, what should be the overall scope and the priorities for further data harmonisation with accounting concepts and definitions? Taking into account the trade-offs that need to be made between the benefits that can be gained and the resources required. Taking into account the general strategy for promoting and implementing environmental accounting and the proposed research agenda.
- ❸ What should the priorities and the suggested course of action be for the next two years?
  - (i) As regards further data harmonisation as part of international environmental data collections?
  - (ii) As regards general methodological and practical guidance on data harmonisation as part of the further development and implementation of the SEEA?