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Globalisation and environment statistics: developments in Eurostat statistics

Document prepared by Eurostat Directorate E

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Summary

Economic globalisation is considered to intensify all types of competition, for talents, for jobs, for the most gainful and most attractive production location, for access to natural resources such as minerals and other sub soil assets, water, but also for biological resources, wildlife and diversity. It is argued that for an important part the environmental effects of globalisation follow those of economic and social globalisation.

Differences between countries and regions in their legal base and in norms and values result in an increasing variety and diversification of the roles of regions and nations in the world wide (cross border) production and consumption process. To monitor the effect of economic developments and the environmental degradation they may cause, more over to allow policy to steer the process of using the environment in the direction of a sustainable situation and towards an ecological modernisation of the economy, effective statistics are needed. Sets of key indicators – sustainable development indicators – are such an instrument to describe the impact of economic changes. Another instrument seen as a useful tool is the system of Integrated Environmental and Economic Accounting (SEEA). In Integrated Environmental and Economic Accounting statistics on for example environmental protection expenditure can be presented in a way allowing for comparison with well known aggregates from the System of National Accounts (SNA) like gross value added. In this paper the challenges for Eurostat and the European Statistical System to develop a better set of environmental statistics in the context of globalisation are presented. The paper especially describes the importance Eurostat dedicates to the approach of Integrated Environmental and Economic Accounting and the strategies needed to bring this domain of statistics to maturity.

1. Globalisation and environment

Globalisation

Globalisation is described by Robin Lynch as a 'range of changes in the way the international economy works' (Lynch, 2006). Lynch argues that there is 'no single phenomenon' but 'a range of structural changes in markets and societies ...'. As such it is an umbrella term for a complex series of economic, social, technological, cultural and political changes as well as

environmental issues describing the increasing interdependency, integration and interaction between people and companies in disparate locations. A 'common cause of all the issues is the growing tendency to economic actors to ignore barriers once imposed by national, or supranational boundaries' (Lynch, 2006). Infrastructural and a wide range of economic and social developments caused this decrease in importance of barriers and distance, and the creation of a regional and globally overarching system of production and consumption. Related to this is also the export of environmental burden by shifting 'dirty' production sites from developed to the emerging countries. It is not any more the sub-region, the state or the region where the economic actors are active, but the whole world: there are no separate markets or regions in the world, but one single global market, one area.

Globalisation refers to this phenomenon of the opening up of economies and borders, resulting concretely in an increase in trade and capital movements, movement of people and of ideas, spread of information, knowledge and technology, and entailing a process of deregulation. This process is not recent but has been accelerating in recent years also as a consequence of the opening up of many new markets and increase of new emerging economies like China and India.

Globalisation is an enormous opportunity, but in a world where economies develop in a different speed and with a different set of norms and values about conservation and use of production means and the environment, it is also a threat for the global and local environment, with problems such as climate change, loss of biodiversity and for example overuse of resources. (EEA, 2007; p. 21). In the tendency for globalisation the developed world, with a high level of consumption, plays a very specific role. The European countries have a relatively large impact on the use of natural resources, not only in Europe but as a result of globalisation, all over the globe. European challenges on the environment are more than ever closely linked to social and economic developments.

Environment statistics

Environment statistics deal with the characteristics of the resources of nature and the relation (influence, use of) between the economic actors (persons, households and business) and these natural resources. The mis- and/or overuse of these resources can result in pressure on the biosphere (flora and fauna), resource depletion, waste generation and emissions causing

damage to human health and wildlife, etc., examples of concrete physical changes. The economic actors are the 'users' of natural resources, but from a conservation point of view can also be considered as 'owners' of the resources in their area, with a responsibility for the conservation and sustainable use of these resources.

Integrated economic and environmental accounting

For many environmental issues the borders between regions are often as functional as they are for the economic or social area. Economic actors, households, business and also governments, claim – because of the economic profit – for the ownership of the resources which are in their region, the natural resources available. Along the lines of this reasoning the countries / economic actors also own the charge of the emissions and the waste created by the societal and economic processes.

For elements, like water and to a greater extent air, borders between regions are of less importance. Air can hardly be allocated to a specific region or kept on one location. The responsibility and ownership of the elements is therefore more difficult to define.

Even more complex is the more long term effect of economic and social developments on the environment. Climate change and loss of biodiversity are the result of complex systems of interacting developments; the changes can be made visible in more long term time series on 'global' patterns.

To a certain degree globalisation of environmental effects, and therefore also the statistics measuring them, follows the developments in business and social statistics. The issues, related to the material flows along the product life cycle (natural resource, product, waste), can be described in statistical balances (input – output tables) as for example the value of natural resources used, the products used and the waste generated, as they are common in the System of National Accounts (SNA). These Environmental Accounts can be related to categories of economic actors (for example along the NACE classification) in the SNA. This extension of the SNA with information from the Environmental Satellite Accounts is described as the Integration of Economic and Environmental Accounting.

These balances also include the elements which are used from other countries/regions, the waste shipped to these countries, the depletion of local and non local natural resources, etc. The physical characteristics can be used in Environmental Accounting but also based on the

adding money values (market prices or other estimations) of goods like natural resources, products and waste can be used to characterise these issues. For those issues where ownership can more easily be allocated, the effect of economic globalisation on the environment can be also be more easily valued and visualised by allocating them to specific individual economic activities. This is more complex – and only possible on aggregate level - for issues like the reduction of biodiversity, deforestation, the depletion of the ozone layer or climate change. The ownership of these processes is difficult to decide on and even more difficult is therefore the generation of a corporate responsibility.

2. Environment statistics in Europe: still very young

Three approaches

Environment statistics are considered a rather young but fast emerging field of statistics. Caused by recently gained knowledge on climate change, loss of biodiversity and their estimated consequences for the sustainability of resources and the future of the globe, environmental issues and consequently also environment statistics are currently an issue of very high (if not the highest) importance and priority. However, as the domain is rather new, the conceptual frameworks, the availability of harmonised data and more over the coordination between the different actors (Statisticians working at NSIs, Environment Ministries, environment protection organisations, which are all active in this field of statistics) still needs to be further developed. As argued before environment statistics has a lot of links with other domains of statistics. Consequently, based on these domains, like international trade, agricultural statistics, a variety of data is available on stocks as well as flows. However the scope of collecting this information was different.

For policy objectives environmental statistics are published in different forms. Three approaches can be distinguished. Next to the regular descriptive statistics published as tables, overviews etc., in describing the environmental impact and also the relation with the economy for policy purposes use is made of sets of indicators. In the second approach, allowing more synthetic rankings, indicators are often combined in so-called composite indicators. Examples are indicators where the GDP is combined with some environmental impact parameters (Green GDP) into a single indicator. Other well known examples of non monetary variants of this approach are the Ecological Footprint and Human Development Index. Thirdly, there are

the multiple indicators approaches where additional indicators on environmental issues are added to macro-economic indicators via the 'satellite' accounts: Environmental accounts. It is clear that these approaches are serving different purposes, but that – as they in principle all are based on the common set of basic statistics – with respect to the data availability they are complementary to each others.

The focus on an integrated approach for describing environmental developments in a global context ?

As mentioned earlier the approaches described serve different purposes. Composite indicators seem to be especially useful for advocacy purposes. Sets of (key-) indicators, for example the sustainable development indicators, give a wide overview of relevant issues but do not show the causal relations. Recent literature and discussions favour the availability of information relating environmental (and social and well being) issues to certain types of economic activity: the approach via the satellite accounts. More in general, environmental indicators are sought that allow policy makers and business managers to act based on evidence to what extent their activities deplete or maintain the environment in a sustainable way. This is of course also related to the fees and penalties/taxes to pay for using the environment, for example taxes for emissions and fees for waste treatment. Relating this to economic activities is a major challenge. Based on these statistics the effects of economic and social globalisation on the environment can be calculated. The resource use by production plants, the wastewater and waste generated to produce products and to get rid of them after their service life can be measured and related to specific types of business. The effect of globalisation can therefore be measured.

Integrated Economic and Environmental Accounting represent a tool to analyse the links between the environment and the economy at EU, national and regional level. As a complement to Environment statistics, environmental accounts allow an analysis in more depth of environmental concerns, as the different modules are broken down by other, non environmental variables, as for an example industry. As the SNA is well established on the different regional levels, for the description of globalisation and the impact on the environment the Integrated Economic and Environmental Accounting seems to be very appropriate. Accounting systems (because of the 'assumed' relationships) can be very helpful in finding (based on the strong explanatory value) good variables.

Environmental accounts can answer tricky political questions and give a complement to environment statistics: are we reaching the so much desired decoupling (economic growth with less and less impact on the environment)? Are we respecting the Kyoto targets in terms of greenhouse gas emissions or are we simply exporting the emissions (following delocalisation of production)? What is the ratio between environmental impact and economic output for the global economy and by economic sector? What are the more and less harmful economic sectors for environment?

3. Challenges for environment statistics and accounts for the ESS

For Eurostat the further use and development of the sustainable development indicators in the context of making them fit to indicating the effects of globalisation is of importance, however in the development of environment statistics heavy emphasis will be given to the further development of Integrated Economic and Environmental Accounts.

The main challenges for Eurostat and the ESS on environment statistics are the following:

1. The need to expand and strengthen the work on environment statistics and more specifically links between Economic and Environmental Accounting is recognised as an important activity to be able to deliver in the short run answers on the fast emerging policy questions and secondly to further develop a consistent system of environmental indicators and basic statistics. Next to the inherent value of Integrated Economic and Environmental Statistics as described above the approach has proven to serve also as a very effective tool to improve the basic statistics (top-down approach). The promotion of environmental accounts will generate more and faster progress in the development and use of proper statistics on the environment.

In the coming years the system of environmental accounting has to be further developed to be able to answer the fast upcoming questions, requests for information on the effects of climate change on economy and vice versa the effect of economic developments on the environment. The first challenge is to further develop the data availability for Integrating Economic and Environmental accounting.

2. Linked to the environmental issues are many related issues in, for example the spheres of agriculture, energy and transport. An important challenge for environment statistics is to raise the awareness and commitment in these fields, but in business statistics as well, so that the environmental concerns are better integrated into the sectoral statistics. The relation to environmental accounts via agricultural accounts, forest accounts etc. is evident.

3. Especially because of the complex nature of the conceptual frameworks (climate change, biodiversity, ecosystems) describing the environment with statistics is a task which is far more complex as in 'traditional' statistical domains. Considering the discussions on simplification and the reduction of administrative burden there is little hope that new complex statistical surveys even for the most important data needs can be built up. Therefore, it is a challenge to use statistics that were not designed for environmental purposes, but can be used to derive environmental impacts, such as production and foreign trade statistics (Prodcom (example: Production of toxic chemicals, Comext: Waste exports and imports). Furthermore, administrative and scientific data, or even data collected by Non Governmental Organisations (NGOs), could be used if an appropriate quality labelling system would exist. For many of the fields in environmental statistics available data cannot be rejected only based on the fact that these are not official statistics.

4. Statistics should support the policy aims of the Community. The Community's overarching policy framework is given by the 6th Environmental Action Programme and the Sustainable Development Strategy. Concerning the latter, statistics has until today mainly focused on only two of the three pillars for a sustainable development: Economic statistics and social statistics. The domain of environment statistics is far less developed and the allocation of resources at Eurostat and in NSIs confirms this - or is one main reason for this situation. However, it is encouraging to observe that environment has been raising in the political agenda and is nowadays a very high political priority.

Until now the resources attributed to Environmental Accounts in many Member States are not satisfactory, which is contradictory with the wish to promote some environmental accounts aggregates as official statistics. Staff in charge of environmental accounts welcomes support, and in this context, experts in most advanced countries in this area are ready to provide expertise to countries which are only initiating the main modules of the environmental accounts

Following this challenge a related challenge is to establish a close co-operation at national level between NSIs and Environment Administration/Ministries/Agencies. The ESS Directors Meeting on Environmental Statistics and Accounts (DIMESA) aims to gather these groups. Progress has been made with establishing DIMESA. However, it is clear that a lot of Member states do not even have an environment statistics department; often it is a 2-3 person activity within agriculture or economic statistics.

The challenge is to bring environment statistics (*its bits and pieces*) above the critical mass so that it can become fully operational and visible. Therefore, institutional arrangements are required in Eurostat and the NSIs in terms of resources and staff.

5. From policy perspective there is also a plea for the development of composite indicators pretending an integrated view on the state of the environment, our use of natural capital and the trends in improvements or further degradation. The statistical system has to respond to such initiatives as the Ecological Footprint initiative, either by accepting it and committing itself to actively participate in its statistical improvements, or by providing alternatives, such as the environmental accounts. The challenge in this context is to take a pro-active approach in supporting the development based on high quality considerations.

6. As described above not all environmental issues can easily be linked to the (artificial) boundaries of countries. The Commission's Directorate General for the Environment as well as the European Environment Agency expressed their clear wish to have both water statistics and water accounts available at the level of river basins and sub-basins – a clear consequence from the Water Framework Directive that over-arches almost all work in the water domain at EU level, and whose idea is to use river basins/catchments as the valid (and most useful) dimension for water management and protection, thereby completely neglecting any national/administrative borders. This is a good example for harmonised European environmental policy and the resulting need for international cooperation. However, currently there are no available water statistics at river basin level, nor there are respective economic data available for the establishment of water accounts. The establishment of economical and environment statistics at river basin level can only be done at country level – but with Eurostat in a role to support and harmonise this process.

This challenge to produce sub-national information in water statistics – considering the different size of ecosystems – is just an example and relevant for other areas of environment statistics as well.

4. Strategies to meet these challenges

To meet the challenges described above Eurostat is working along the lines of the following strategies:

1. Emphasis on further development of Integrated Economic and Environmental Accounting
2. Support and promote environmental accounting in the Member States
3. Strengthened cooperation between the main European actors in environment statistics

Ad 1. Emphasis on further development of Integrated Economic and Environmental Accounting

The 2007 Berlin summit of Member States leaders showed the enormous interest in the environment and especially the effect of economy on the environment. The strategy for the further development of the challenges mentioned above is to take advantage of the momentum created by the summit for creating commitments to further develop the Integrated Economic and Environmental Accounts.

Eurostat is acknowledged a leadership role both at EU and international level in the development of environmental accounts. It is an active member of the United Nations Committee of Experts on Environmental-Economic Accounting (UNCEEA) and of the London Group on Environmental Accounting. It is also collaborating with OECD and EEA in some domains of environmental accounting in order to develop synergies and improve quality of statistical data.

In line with its objective to elevate the System of integrated Environmental and Economic Accounting (SEEA) to an international statistical standard, UNCEEA and the London Group envisage a revision of the 'Handbook of National Accounting, Integrated Environmental and Economic Accounting 2003' (SEEA 2003). On the other hand, in the last 10 years Eurostat has issued methodological handbooks which are now recognised and implemented at world

level for the most important areas (Material Flows, Air emissions, Environmental Protection Expenditure and Taxes, Forests, Sub-soil assets, etc.). This methodological advance has to be maintained in the future.

Eurostat is also collaborating with Member States to improve data coverage for environmental accounts at EU level. This happens since the mid-nineties and has been highly supported by DG Environment through financial support, recognising the importance of this issue.

The European Strategy for Environmental Accounting (ESEA) agreed with Member States and adopted in 2003 by the Statistical Programme Committee (SPC) has proven to be a powerful tool to implement work on data collection, harmonisation and methodological developments on environmental accounts and environment statistics at Member States level. However, the difficult period that Eurostat has gone through a couple of years ago allowed only a partial implementation of the ESEA.

Ad 2. Support and promote Environmental Accounting in the Member States

The work developed until now in this field also allows us to identify some problems where we need to intensify our efforts. Huge gaps are observed among Member States and different areas of environmental accounts in term of data availability. For the period 2008-2012, a key priority will be the identification of the gaps in areas of environmental accounts and Member States where data is missing and assist member states in their efforts to fill these gaps.

A rough assessment of the state of play in the field of environmental accounts in EU-15 gives the following picture. A more in depth assessment is currently being done and results are expected by the end of the year.

One can see that even in the EU-15 there are still some countries with low or no activity in specific fields proving that there is still room for improvement. If we consider EU-27 this statement is no doubt stronger.

Member States	Area of work						
	Air emissions	Water accounting	Economy-wide material flow	Environmental protection expenditure	Environmental taxes	Forest and land accounts	Subsoil asset accounts
Belgium	1	2	1	1	1	1	3
Denmark	1	2	1	1	1	1	1
Germany	1	1	1	1	1	1	3
Greece	1	2	1	1	1	1	3
Spain	2	2	3	1	1	2	3
France	1	2	3	1	1	1	1
Ireland	1	2	3	1	1	3	3
Italy	1	2	1	1	1	2	2
Luxembourg	2	3	3	1	1	3	3
Netherlands	1	2	2	1	1	3	1
Austria	1	2	1	1	1	1	1
Portugal	2	3	2	1	1	3	3
Finland	2	1	1	1	1	1	1
Sweden	1	1	2	1	1	2	3
United Kingdom	1	2	1	1	1	2	1
Norway	1	1	2	1	1	2	1

Codes: 1 = data availability and use; 2 = implementation; 3 = inactivity

In the absence of European Regulations concerning Environmental Accounts, and in particular for the important modules NAMEA (National Accounting Matrix including Environmental Accounts) for Air and Material Flow Accounts, data has been collected on gentlemen's agreement basis. The support to the Member States needs to be continued if we do not want to jeopardize the effort done until now. As long as the data is provided by Member States on a voluntary basis (as it has been until now), the experience of last years proves that grants play a major role to initiate the work on environmental accounts. This is especially important for new Member States. Assistance is needed in order to examine their data sources, improve their data collection, and be able to implement first collection of data in the main modules in conformity with the EU methodology.

The most important results expected from this strategy will be the possibility to reduce the observed gaps between countries in different areas, to get relevant EU totals for the main areas of Environmental Accounts and considerable methodological improvements.

Eurostat will therefore promote the further development of environmental accounts by including in the work program extensive support projects for the development of these statistics and filling in white spots in the availability of experience and data in the Member States' NSIs and related institutes.

The priorities in the development of Environmental Accounts in some more detail

The priority should be to ensure the regular collection and production of a core set of accounts in areas where methods and data sources exist: air emissions and energy use, water supply and use, economy-wide material flows, environmental expenditure and taxes, forest timber and sub-soil assets.

Furthermore support should be given priority to most relevant pilot projects presented at EU-27 level plus EFTA countries. These projects have to be related to the list of areas defined by the European Strategy on Environmental Accounts and 2007 Statistical Work Programme. This strategy combines EU-wide implementation of a core set of accounts that are essential for policy making, resulting in the regular production of data, with further development in other areas. These areas are below ordered in the category 'first priority'. The categories 'second priority' and 'third priority' refer to those elements that need to be included on a longer period or on a more voluntary basis. The strategy is based on a sound priority assessment, taking into account policy demand, methodological achievements and data availability priorities (reference within brackets below).

First priority areas

Economy wide material flow accounts (recommended for harmonised reporting EU wide)

Aggregated material flow accounts to show the annual physical flows of materials between the national economy, the rest of the world economy and the environment as well as material accumulation in the economy. They shall cover natural resources, products, residuals and ecosystems inputs and include indirect and hidden flows.

Air emission accounts (recommended for harmonised reporting EU wide)

Physical flow accounts for air emissions in a NAMEA-type format, linking direct emissions by industries and households to economic activities and corresponding economic data, including through supply-use tables. Complementary tables: bridge table with UNFCCC air emissions recording system, specific emissions due to transport and household emissions linked to consumption expenditure by purpose. Often extended to input-output applications (indirect emissions associated to final demand categories, etc.).

Energy accounts (recommended for harmonised reporting EU wide)

To develop Energy accounts in two stages. In the first stage the accounts consist only in a detailed use table in physical units for energy products, in a NAMEA type format, closely linked with the air emissions tables. Physical units may refer to tonnes, energy units (Tera-Joules) or specific units. In a second stage they would include a more comprehensive set of tables including supply tables and monetary units. They could also include the economic accounts of related industries.

Water flow accounts (recommended for harmonised reporting EU wide)

Within the framework of water accounts, water flow accounts contain a supply-use table for the flows of water and wastewater within the economy and between the economy and the environment (Abstraction, distribution, use of water and collection and returns of wastewater to the environment), in physical and monetary units. Economic accounts of water related industries such as production and distribution of water (NACE 41) are also included.

Forest timber accounts (recommended for harmonised reporting EU wide)

Integrated asset account in monetary and physical units for forestland and standing timber: The module includes physical and monetary supply-use tables for timber and wood products, output related to wooded land by product and industry; and economic accounts for NACE 02, with a disaggregation into pure forestry (i.e. 'growing of timber') and logging. Carbon storage functions are also included.

Subsoil asset accounts (recommended for harmonised reporting EU wide)

Integrated asset accounts for non-renewable mineral resources in monetary and physical units. Presently this is limited to oil and gas reserves. Also include production and distribution of income accounts for the extracting industry (NACE 11.1) for the purpose of calculating the resource rent, the value of the depletion and other changes in volume of subsoil assets.

Environmental Goods and Services Sector (recommended for harmonised reporting EU wide)

Environmental Goods and Services Sector (EGSS) include the production of goods and services to measure, prevent, limit, minimise or correct environmental damage. This also includes cleaner technologies, products and services that reduce environmental risk and minimise pollution and resource use. The monitoring of these activities includes the structure of the sector, i.e. employment, value added, exports etc.

Environmental protection expenditure accounts (recommended for harmonised reporting EU wide)

Monetary satellite accounts that show the supply and use of environmental protection services and products and for the sources of financing of environmental protection. It includes for example investments, revenues, transfers, taxes and other items conducted by the national actors in the economy for environmental protection.

Environmental taxes (recommended for harmonised reporting EU wide)

In a first stage the environmental taxes accounts identify within taxes in the national accounts those taxes that are related to the environment, using the definition and criteria set by OECD/Eurostat. Then the tax revenues are classified by category (energy, transport, pollution and resource taxes). The environmental taxes can in a second stage be broken down by industry/final use and environmental domain. Integration of environmental taxes within an overall framework will constitute the second stage of the development of the account.

Water emission accounts (area for short term development and experimental implementation in volunteer countries)

As a part of the integrated framework for water accounts this module consists in the physical description of flows of water pollutants in a NAMEA-type format. Include the physical description of discharges of water pollutants into the sewage system and their removal by wastewater treatment plants. This may also include the allocation of substances to environmental themes (eutrophication, acidification, etc.)

Second priority areas**Resources use, management and exploitation expenditure accounts (area for medium-term development and experimental implementation in volunteer countries)**

Monetary satellite accounts for the description of transactions aimed at the (sustainable) use of natural resources. Include activities like recycling, energy and material saving, development of renewable energy, sustainable management of forests and fish stocks, water supply, etc. Include ancillary activities as well as specific transfers and the analysis of financing. It can also include monetary satellite account describing expenditure aimed at the prevention and the compensation of damages from natural disasters (floods, avalanches, landslides, etc.) and technological hazards (oil spills, explosions, pipelines and transport major accidents, etc.).

Given, in particular, the needs of the Water Framework Directive, priority is given to the development of the water resource management accounts.

Waste accounts (area for medium-term development and experimental implementation in volunteer countries)

Physical accounts of waste generation by industries and households in a NAMEA-type format, cross classifying waste generated by industries and categories of waste. Include the description of waste treatment by type of treatment and categories of waste in physical units as well as the economic accounts of waste-related industries, namely waste management and recycling.

Eco-systems accounts (area for long term development)

In principle they consist in physical accounts for biotopes, species, ecozones and/or landscape units. As for water quality accounts it includes the definition of a set of indicators for eco-system quality and changes in quality. However data are largely missing and for the time being there is no statistical or accounting answer to the high policy demand.

Use of raw materials accounts (area for short term development and experimental implementation in volunteer countries)

Supply-use tables or input-output tables in monetary and physical units for some raw materials and intermediate products not described in other modules. May also take the form of comprehensive physical input-output tables.

Water quality accounts (area for short term development and experimental implementation in volunteer countries)

Water quality accounts focus on the quality aspect of the state of water bodies. They consist in an accounting framework that produces summary indicators for water quality of rivers at various geographical levels. The indicators can be aggregated and compared over time (which is the key advantage of the accounting approach). Links with water abstraction, emissions to water and protection measures could be established using models.

Core land use and cover accounts (area for short term development and experimental implementation in volunteer countries)

Integrated asset accounts for land in physical and monetary units, including balance sheets and changes in balance sheets, land use being linked with economic activities. Land cover and land use changes are described and classified according to their economic, natural or other causes. This core set of accounts is the basis for the development of supplementary accounts focusing on, e.g., land productivity, partitioning of land and biodiversity.

Third priority areas

Specific substance accounts (area for long term development)

Supply-use or input-output tables in physical units for substances such as chemical elements or compounds like nutrients (e.g. N. P), carbon, toxic substances, hazardous chemicals, etc. This may also include accumulation accounts for specific substances.

Forest accounts: non-wood functions (area for long term development)

Presently consists in a set of tables that mainly cover the recreational uses and ecological functions (protection of soil and water, biodiversity, protection against natural disasters, etc.) as well as forest health (defoliation). The main emphasis is on physical description, but monetary valuation of several non-wood functions is also being investigated.

Water quantity accounts (area for medium-term development and experimental implementation in volunteer countries)

Water quantity accounts focus on the quantitative description of water stocks. They consist in an accounting framework describing stocks and flows within the hydrological system and its interface with the economy, producing indicators such as available renewable water resource and rate of extraction. When relevant for national balance sheets, monetary valuation may be included.

Fish and fisheries accounts (area for medium-term development and experimental implementation in volunteer countries)

Asset accounts in monetary and physical units for sea-fish stocks in national Exclusive Economical Zones (EEZ). Also include physical data on captures/landings, fisheries accounts (NACE 05) and possibly supply and use tables for fish and fish products. This could be extended to cover fresh water fish and aquaculture as well as it should identify subsidies and other fisheries related transactions within national accounts.

Complementary land accounts (area for long term development)

On the basis of the core land accounts, complementary land accounts cover various land quality issues like land use intensity, fragmentation and partitioning of land, soil sealing or compaction, erosion and soil losses, role of soils in the climate change, pollution of soils, etc. They include the description of land protection and management, development of environmentally friendly land management, land conservation services, etc.

Ad 3. Further strengthen cooperation between the main European actors in Environment statistics

The field of Environmental statistics is wide and complex and embraces many different domains. Several of these are clearly linked to statistics already available in other fields like agriculture, transport, energy, business, production and trade statistics. Many are rather complex (ecosystems, biodiversity) and are linked to fields where the traditional statistics have not been active. The collection of data in several of these fields also does not follow the traditional ways of collecting and processing. Remote sensing or specific counting (birds, etc.) are used to collect the relevant information and as a consequence different networks for collecting and processing of data exist. At European level many of these elements are covered by three relevant organisations: Eurostat and the European Statistical System (ESS), the European Environment Agency (EEA) and the Environmental Information and Observation Network (EIONET) and the Joint Research Centre (JRC) with all the links to remote sensing and photo interpretation. In November 2005 DG Environment, the EEA, the JRC and Eurostat created the Group of four (Go4). They agreed on the division of roles in environmental

reporting and dissemination and to establish 10 Environmental Data Centres (EDC): Natural Resources, Products (IPP), Waste, Soil, Forestry, Air, Climate Change, Water, Biodiversity and Land Use. The basic role of the EDC is to serve as the main point for all data requirements of users (like DG Environment as a main data policy user) in that specific domain. An EDC should also ensure data quality and coordinate and facilitate data exchanges between decentralised data banks within future shared information systems. The conceptualisation of the EDCs should permit the data centres to be developed into real information hubs, with function as real knowledge bases in the specific domain, assuring also an efficient exchange and transfer to and from other existing knowledge bases (world wide). Eurostat is committed to develop its three EDCs (Natural Resources, Products and Waste) in close cooperation with the Go4 partners. A next step in the development of the overall system will be the development of the Shared Environmental Information System (SEIS) building on the experiences from other overarching reporting frameworks like the Infrastructure for Spatial Information in Europe (EU, 2007).

The cooperation between Eurostat and other bodies in the field of environment information is good, but can still be developed further. The coordination of the work between the Go4 allows an efficient use of the scarce resources but also asks for a prioritisation of the work. A further elaboration of this cooperation both on European, but as well at National level, in particular between NSIs and Environment Agencies and Ministries, will be promoted.

References:

CBS (1998, 2001), NAMEA as Validation Instrument for Environmental Macroeconomics, CBS, the Netherlands

EEA (2007), Europe's Environment; fourth assessment, p. 21, European Environment Agency, EEA, Copenhagen

UN (2003), The Handbook of National Accounting: Integrated Environmental and Economic Accounting 2003; United Nations Statistical division
<http://unstats.un.org/unsd/envaccounting/seea.asp>

EU (2007), Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community

(INSPIRE) was published in the official Journal on the 25th April 2007. The INSPIRE Directive entered into force on the 15th May 2007

Eurostat (n.d), The Eurostat Environmental Accounts Web-site:

http://epp.eurostat.ec.europa.eu/portal/page?_pageid=2873,63643317,2873_63744289&_dad=portal&_schema=PORTAL

LYNCH, Robin (2006), Globalisation and official statistics, ONS UK, Conference of European statisticians.