

State of debate note on the Environmental Protection Expenditure Accounts (EPEA)

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The purpose of this state of debate note on EPEA is to outline where the statistical community is in terms of compilation guides and training material, activities of countries, policy uses, data demand and outstanding technical issues.

1. Existing guidance on EPEA

The overall compilation guide on EPEA was published in 2002 by Eurostat, which framework still stands today. Since then specific data collection handbooks have been published, also by Eurostat, in 2005 focusing on the industry (mining, quarrying, manufacturing and electricity, gas and water), in 2007 focusing on the government¹.

The SEEA 2012 central framework describes EPEA in its chapter 4 (in particular paragraphs 4.12 to 4.91). As such it emphasise the area to meet the standards of official statistics.

Classifications used in the context of EPEA include:

- Classification of environmental protection activities (CEPA: biodiversity, soil, waste...)
- Classification of economic activities (SNA: intermediate consumption, compensation of employees, gross fixed capital consumption...)
- Categories of producers (own account, government, other specialist; non-specialist ...)
- Categories of users (specialist, non-specialist, households, general government...)

Courses on the compilation of EPEA have been held by Eurostat on a number of occasions, the most recent one held in 2012. A new course is planned to be held in 2014, preliminary dates are set to 26-28 of March.

Bilateral sessions are common, at least a couple of countries per year visit or host professional exchanges in the field. Sweden, Italy, Denmark, Belgium and the Netherlands have since yearly 2000's cooperated with countries in the Balkan, Caucasus, African, Mediterranean and accession countries.

2. Current work in countries

Several countries have undertaken studies and pilot work in the area of EPEA, either as a full framework or focussing on a subset of the area. Over 40 pilot studies were undertaken within the EU over the past years². Studies and annual work have also been undertaken in Canada, Australia and in the USA. Canada has for many years measured environmental protection expenditures and publishes

¹ http://epp.eurostat.ec.europa.eu/portal/page/portal/environmental_accounts/methodology/manuals

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http://epp.eurostat.ec.europa.eu/portal/page/portal/environmental_accounts/documents/Catalogue_of_pilot_study_reports.pdf

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the statistics regularly. Australia published annual statistics on environmental protection expenditures between 1990 and 2003 for various sectors of the economy. It is anticipated to publish by June 2014 an information paper on the development of an EPEA with an extension covering some of the issues related to natural resource management for Australia as a way to pick up the work again. The USA has on the other hand suspended its work, the most recent survey related to environmental protection expenditures were published in 2005³.

Most countries in Europe publish environmental protection expenditure statistics for the mining, quarrying, manufacturing and electricity, gas and water industries which includes investments and current expenditures. For EU countries it is obligatory to provide these data as part of structural business statistics. In order to ensure sufficient coverage of the results related to the statistics, these countries mostly conduct specifically targeted surveys.

The national accounts provide data by COFOG where division 05 is about environmental protection. Some countries conduct budget analysis that goes beyond the requirements of COFOG.

The ISIC Rev. 4 and NACE Rev. 2 economic activity classifications provide for some divisions that are directly relevant: E37 (sewerage), E38 (waste) and E39 (remediation).

In order to achieve full EPEA, a data integration approach is necessary. The direct use of existing data from the national accounts or business statistics is possible for parts of the EPEA, especially considering specialist producers of the services (waste, waste water, recycling). For other parts surveys and estimations are required especially for own-account producers but more specifically, for the government, budget analysis is required.

3. Policy uses and data demands

3.1 Policy demand

The main policy uses relate to broad measures to identify and measure society's response to environmental concerns through the supply of and demand for environmental protection services. It therefore measures the costs to protect the environment against the impact of a society's production and consumption behaviour.

For certain policies, there is interest in specific activities or environmental domains (i.e. certain CEPA classes). For example, DG Environment commissioned a report investigating the sectoral costs of environmental policy⁴ and its potential effect on competitiveness. At the same time the research community takes an interest in the data in order to study specific research questions. For example, in Sweden the National Institute of Economic Research together with Göteborg University performed a study attempting to explain why industries invested in the environment the way they did based on statistics on environmental protection expenditures⁵.

³ www.census.gov/econ/overview/mu1100.html

⁴ http://ec.europa.eu/environment/enveco/industry_employment/pdf/sectoral_costs_summary.pdf

⁵ http://www.konj.se/download/18.70c52033121865b1398800096977/WP_102.pdf

3.2 Data demand – internationally

Since many years the OECD and Eurostat are collecting data on environmental protection expenditure using the so-called Joint Questionnaire on Environmental Protection Expenditure and Revenue (JQ-EPER).

The European Commission has proposed to the European Council and Parliament to amend the existing Regulation (EU) 691/2011 on European environmental economic accounts by adding 3 more modules, including one on EPEA. That module would require Member States to provide annual data on:

- general government (including Non-Profit Institutions serving Households) and corporations as institutional sectors producing EP services. Specialist producers produce EP services as their principal activity,
- households, general government and corporations as consumers of EP services,
- the rest of the world as beneficiary or origin of transfers for environmental protection.

The main variables to be covered will be:

- output of environmental protection services. Market output, non-market output and output of ancillary activities are distinguished,
- intermediate consumption of environmental protection services by specialist producers,
- imports and exports of environmental protection services,
- VAT and other taxes less subsidies on products on environmental protection services,
- gross fixed capital formation and acquisitions less disposals of non-financial non-produced assets for the production of environmental protection services,
- final consumption of environmental protection services,
- environmental protection transfers (received/paid).

The future Regulation does not ask for data on connected or adapted products. The future European regulation will take a base from the OECD/Eurostat JQ-EPER, collected every year.

4. Outstanding issues

4.1 Conceptual clarifications possibly needed for application of compilation methods

A key issue when interpreting the environmental protection expenditures accounts, in particular when comparing between countries, is to be aware of the coverage. It is rare for countries to compile the full framework. Statistics for the industry sector and for water management and waste management are typically included. Other sectors, like e.g. the service sector in general, or agriculture, may not be included. Another point is the coverage of variables needed to derive to the net national expenditure. In the absence of comprehensive surveys covering the total economy, and variables ranging from compensation of employees, financial transfers and trade, additional data sources or modelling are approaches used to fill the gaps to arrive to a net figure. This approach poses conceptual as well as compilation challenges.

In the national studies, the compilation of EPEA has often taken the majority of time leaving little space to interpret the data and challenge the analytical aspects of the framework. How much does the modelled data impact on the final results? And what happens to the analysis of the net EPE when parts of the EPEA are left blank?

4.2 Adapted products

The EPEA includes many activities. Certain choices on coverage have been made in the SEEA already (e.g. inclusion of all renewable energy production under resource management), others not yet. One specific issue that is also mentioned in the 2012 SEEA research agenda is described below.

“Measurement of adapted (cleaner and resource efficient) products

Practice suggests that the measurement of such products can be very difficult and expensive. Given the transitory nature of adjectives such as clean and resource efficient there is also an issue of comparability over time and across countries. “

It should be noted that the proposed regulation for EPEA in Europe will not require the reporting of connected and adapted products.

4.3 Analytical values - integrating physical flows to the EPEA

One way to increase the use of the available statistics and enhance the interest may be to examine the effects of EPEA on emission levels. By choosing a specific environmental domain, waste, air or water one can expand the analysis. Cost effectiveness and measured effect provides further insight to the environmental economics measured through the EPEA.

4.4 Analytical values – how to integrate natural resource management expenditure without causing double counting?

Economic statistics related to natural resources are important in the environmental accounts and it can be a challenge to communicate where to search for it in the environmental accounts. Discussions regarding energy efficiency are in particular such an area. For analytical purposes it might be seen as beneficial to include, or link the management of energy resources to the results from the EPEA. However, how can the statistics be clear enough not to double count the different areas?

Boundary issues would arise in relation to for example recycling of wood and steel products but also for energy economising.

Another example relates to transport. In this area a lot of measures could be thought of, including exchanging of fuels, change of mode of transportation and optimisations of routes to minimise the distance of transport. These types of measures could potentially be covered both by EPEA and resource management expenditures⁶.

5. References and links

For references please see the hyperlinks provided in the earlier sections.

⁶SCB 2010:[Environmental Protection Expenditure – new data collection and additional information in Sweden, 2010](#)