NATIONAL STATISTICAL INSTITUTE
REPUBLIC OF BULGARIA

TECHNICAL IMPLEMENTATION REPORT

(SUMMARY)

ENVIRONMENTAL PROTECTION EXPENDITURE ACCOUNTS

Grant Agreement in the field of Environmental Accounts

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The Environmental protection expenditure is one of the modules of the System of Integrated Environmental and Economic Accounting (SEEA). SEEA is a system of accounts presenting in a sequence the resources and their use within the framework of a given year. The Environmental protection expenditure accounts (EPEA) follow the conventions of national accounts and it is important to maintain the consistency with national accounts. As an integrated framework they can be compared to a large range of macro-economic indicators. In this way they could to be used for political decision making processes and development of sustainability indicators.

Pilot Study on Environmental protection expenditure accounts is implemented under the Grant Agreement in the field of Environmental Accounts (Agreement Number No. 50304.2008.001-2008.324). Project is financially aided by Eurostat as priority area in a view of necessary EU-wide harmonized reporting. When starting the work on the project NSI of Bulgaria had not compiled Environmental Protection Expenditure Accounts.

The project started on 1 January 2009 and had 19-months duration.
The project work was carried out by experts from the NSI "Environment and Energy Statistics" Division in a close collaboration with experts from "Statistics of Industry'" Division and "Non financial National Accounts" Division of NSI.

The purpose of the present project is to assist the NSI of Bulgaria in compiling of this kind of monetary satellite accounts aiming to show the state of the environment elements in our country and to assure consistency and comparability between the data of different countries.

The whole analyzis at macroeconomic level of connection economy-environment cannot be put in practice without use of the information from SNA (System of National Accounts). In particular, the correspondence of data which distinguish environment protection and whole economical activities supposes use of identical concepts, at least coherent, between those two informational systems. Other questions on which we were aiming to receive an answer were which are the weak points and the ways for improvement of data sources and methods for future work. One other side is related to indicating what the society does to solve environmental problems and analyzing to what extent the pollutant pays and how the competitive powers of the industries are effected.

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Main purpose of the pilot project was the compilation of separate accounts for the following environmental domains:

Wastewater
Waste
Air
Other environmental protection,

and also:

- Acquaintance with the methodology of accounts.
- Examination of data sources in conformity with SEEA and ESA 95 methodology and studying data availability.
- Elaborating methodology for compilation of the tables for Bulgaria using the methodology, definitions and concepts of the ESA 95 and available data.
- Improving quality of data reported to Eurostat via OECD/Eurostat Joint Questionnaire "Environmental Protection Expenditures and Revenues".
- Analyzing the data sources and data collection methods in order to harmonize the accounts with the international standards.
- Elaborating data collection system for regular production of environmental protection expenditure accounts year by year.
- Identification of data gaps and the necessary modifications and adjustments of the existing systems to promote compilation of environmental protection expenditure accounts.

In view of the importance of the tables (A – Use of environmental protection services; B – Supply of environmental protection services; C – Financing) for presenting a valuable macro-economic overview on the national economy in the sphere of environmental protection, some of the project's objectives concern checking the plausibility and completeness of the figures and the compilation of estimates for indicators for which less reliable information is available.

For the needs of the project it was also necessary to identify the key problem areas, which need further discussions and the improvements to be done aiming to achieve more consistent, harmonized and plausible Environmental Protection Expenditure Accounts (EPEA).

The long-term objective of the work based on acquired knowledge and experience is also the regular production of data into time-series.

The activities on this project were carried out as follows:

1. Studying the existing methodology.
2. Identification of potential information sources. Screening data availability at different NSI units.
3. Working out and distribution of questionnaires about EPE.
4. Data collection. Preparation and delivery of Interim report.
5. Processing and validation of acquired data.
6. Analysis of obtained data.
7. Compiling EPEA (A,B,C) accounts.

On the first stage of the Project we studied the existing basic methodological documents for compiling the EPEA-tables and adopted the recommendations of Eurostat methodological guides. We also analyzed the methodological principles concerning EPEA contained in the Eurostat guides and other methodological sources. As main methodological reference and a

base for organization of work within the project was applied the SERIEE (European System for the Collection of Economic Information on the Environment) Manual published by Eurostat in

1994 and SERIEE Environmental Protection Expenditure Accounts – Compilation Guide, 2002 edition.

The Guides facilitated the understanding of EPEA principles and specified the framework of EPEA. The adoption of the recommendations of Eurostat methodological guide and terminology and nomenclature used also helped us when compiling the EPEA-tables. The latest one highlights three major indicators from the EPEA tables: Current and capital expenditure by industry and the financing of these expenditures. It also recommends these indicators to be compiled annually and to compile the full EPEA perhaps every five years.

We also studied OECD/Eurostat Environmental Protection Expenditure and Revenue Joint Questionnaire/ SERIEE Environmental Protection Expenditure Account - Conversion Guidelines, 2005 edition.

The EPEA pilot project also took stock of other countries' efforts and methods, for example Belgium. Belgian experience provided a thorough methodology for estimating most data with the help of the national accounts' input/output tables.

Main concepts and organization of EPEA

At the beginning of work the efforts were related to the general information concerning the EPEA - principles and nomenclature used.

The purposes of the EPEA are to describe:

- Output of environmental protection services,
- National expenditure for environmental protection,
- Financing of national expenditure for environmental protection.

The central concept on which the EPEA are founded is the National Expenditure for Environmental Protection. This aggregate gives the total of the economic resources that a nation uses for environmental protection.

Sections A to C briefly describe the definition and scope of environmental protection, the activities characteristic for this field and the actors or units according to their function(s) with respect to environmental protection. Section D describes the institutional organization of environmental protection in Bulgaria.

Data collection

During the analysis of the Eurostat materials NSI identified the main data sources and the scope of information on EPEA. The main data sources were:

- Annual Environmental Protection Expenditure Survey (NSI, Bulgaria);

- Annual Business Survey – Book-keeping balance sheet; Receipts and expenditures reports (NSI, Bulgaria);

- National Accounts - Supply-Use tables; production and final expenditure approaches for GDP calculation by National Accounts (NSI, Bulgaria).

Data collection for public administration

With respect to data collection for public administration, the budgetary accounting is the main source of information. The analysis of the public administration units' expenditures (local and central) can be done based on data from budgetary balance sheets. There are some inconsistencies between the national budgetary classification and some chapters of the classification of specific activities for environmental protection. Some chapters of budgetary classification do not allow detailing the waste collection and disposal activities, wastewater treatment and disposal activities. Also it is almost impossible to identify the investments that refer to cleaner technologies as well as the estimation of consumption of fixed capital at the level of specific activities. Once over passing these activities, a general analysis can be done for the environmental protection activities of public administration at central or local level, using

the presented accounting framework. Due to difficulties in exploring the public accounts generated by the ambiguity of budgetary classification regarding the evidence of environmental protection activities, this first evaluation must be completed with new data series. These data series can be obtained by statistical surveys organized at the level of local and central public administration activities.

Data collection for enterprises

Data collection related to the environmental protection expenditure needs to be considered as an integrated activity of the statistical representation requests in the field of environmental protection and also of the units' interests in evaluation of their own environmental performances. The success of that activity comes from the way in which an integration between the potential benefits of units are done, as a consequence of evidencing the environmental expenditure, and the way of reflecting the efficacy of environmental protection measures. In practice, even if the evaluation of environment and of the effects of environmental policies is difficult, the uses of data on environmental expenditure can orientate the general management of units by supplying indications on the environmental benefits coming as a result of an integrated policy "environment-economy".

The following table presents one of the key aggregates namely the national current and capital expenditure, by categories of users/beneficiaries:

Table 1. Current and capital expenditure for environmental protection

million national currency BGN

Categories	Expenditure for environmental protection in categories			
	2004	2005	2006	2007
Households	64.12	68.58	74.22	91.69
Government	386.86	268.98	405.95	681.11
Producers	699.54	750.06	579.34	885.00
Total	1150.52	1087.62	1059.51	1657.80

Problematic areas

Up to the present moment we faced serious unsolved problems related to the necessity of adjustment for the purposes of the project:

- Problems of filling out the tables aroused as main economic statistics do not separately identify transactions related to the environment.
- At this stage *Classification of Functions of the Governments* (COFOG) is not put into effect.
- There are difficulties in definition in a practical way of environmental protection undertakings and expenditure.
- Lack of economic statistics including national accounts' data at a detailed level.
- Problems exist with regard to the coverage of environmental protection domains and categories of units involved in these activities.
- Adapted and connected products - According to the SERIEE Manual (§ 2026) adapted products are defined as on one hand being less pollutant than equivalent normal products, and on the other hand - being more costly than equivalent normal products. No primary statistics on adapted or connected products are available.

- The identification of intermediate consumption of environmental protection services by CEPA is difficult with respect to the specialized producers.
- Lack of split in the national accounts' data between waste (90.02 NACE) and wastewater (90.01 NACE).
- It is difficult to divide consumption of fixed capital and subsidies on production of environmental services.
- Problems related to the confidentiality of individual statistical data were ascertained. According to the Law on Statistics in force the principle of confidentiality of individual statistical data is applied. At same time it prevents presenting the information in cases when given aggregation consists of less than 3 units or the share of one of units in the aggregation exceeds 75 % of the whole value.

As a result of the project it was planned to establish data collection system for regular production of environmental protection expenditure accounts but in the course of the project some difficulties were found. The main problem refers to data quality – it is not possible to ensure data quality for all domains (different data sources, different response rates etc.). Also it was found that compiling tables is a time-consuming work. Even though in some fields there are threats for double counting and in some positions under-recording can be observed. Differences exist between concepts used by national accounts statistics and environment expenditure statistics. Also these tables were found quite complicated for users without special knowledge in SERIEE methodology and data recording principles to understand them.

Further steps

The following steps should be followed in order to build a System of statistical surveys for the collection of data on environmental protection expenditures: identification of units which have that has specific environmental protection activities, unit's classification based on the specialization degree, constructing of a corresponding sample base, establishment of some connection between the identified enterprises and their position in the statistical Register of economic agents.

Main tasks for future are to improve data quality from environmental expenditure survey and to find more administrative data sources that can be used for data cross checking. Tables will not be compiled annually because of reasons mentioned above, but will be filled-in over a period of some years to see the changes in the economy – how much resources are spent for the environmental protection.

Conclusions

Despite difficulties the EPEA tables that were possible to fill brought some interesting results. The production table (Table B) required a thorough investigation of data availability of specialized producers, secondary non-specialized producers and ancillary activities. The National Accounts assisted with most variables needed. This meant that specialized and secondary producers could be well covered in the EPEA tables.

The content of the indicators from the EPEA differ in some manner by the macroeconomic indicators of expenditures, calculated at in present in the national accounting. EPEA comes further in evidencing the environmental protection expenditure as macroeconomic indicators, especially by describing their use and the financing of environmental protection services.

The investigations done and presented in this report shows that using as much as possible the information from the environmental statistical surveys and national accounts, an environmental protection expenditure account can be built using the method presented - an account which will allow an integrated analysis „economy-environment".

The development of detailed EPEA accounts for BG was very important. Although there are missing figures that have to be estimated for completing the accounts, the accounts provide us with a good estimation of national expenditure on environmental protection for the domains wastewater, waste, air, other environmental protection and for environmental protection activities as a whole.

The lack of data on different environmental domains and the transformation of data collections regarding to the years 2004 – 2007 obstructed the compilation the EPEA-table.

The tables took considerable time to compile. There were so many different data sources to choose from, all with different definitions and content even though they seemed to cover the same issue. The results of the tables, based on the combination of raw data and estimation procedures were a serious challenge for the project team.