

**Federal Statistical Office**



**Country Update for Germany**

**Environmental Economic Accounting,  
Federal Statistical Office of Germany**

**Paper prepared for London Group Meeting 2004 (Copenhagen, Denmark –  
September 22<sup>th</sup> –24<sup>th</sup> )**

## **1) PHYSICAL FLOW ACCOUNTS**

### **Energy and air emissions**

The data of the German Environmental Economic Accounting (GEEA) on energy and air emissions in a NAMEA-type breakdown are updated annually. Detailed data can be found in the Subject-Matter Series 19, Number 5 "Material and energy flow accounts" . Download from the Statistics Shop of the Federal Statistical Office in the internet (<http://www.destatis.de/shop>)

under the category 8 "Economic and environmental economic accounting".

### **Physical Input-Output-Tables (PIOT)**

In a project financially supported by EUROSTAT Physical Input-Output-Tables (PIOT) were set up for Germany for the year 1995. The PIOT describe the flows of materials and energy within the economic system and between the economic system and the natural environment, including changes in the natural environment caused by human activities like using natural assets as source of raw materials and as sink for residuals. The PIOT consist of input-tables to show which sectors use which materials or pick up materials, of output-tables to show which sectors produce goods or give away materials and of material-integration-tables (Input-Output Tables) which show the material flows between the branches. The flows are measured in tonnes. A summary of the final report and the complete final report and the tables in German language can be downloaded under

[http://www.destatis.de/allg/d/veroe/proser4fumw2\\_d.htm](http://www.destatis.de/allg/d/veroe/proser4fumw2_d.htm). ("Physical Input-Output Tables of the Federal Statistical Office" and "Endbericht zum Projekt Physical Input-Output Table for Germany 1995")

### **Water and waste water**

In the project "Environmental Accounts for Water and Waste Water (1991-1998)" financially supported by EUROSTAT data for water and waste water are presented in a NAMEA-type breakdown. On the basis of an estimation method water and waste water data were calculated for those years, for which no primary data are available. By another estimation model some important waste water emissions were also worked out. A summary of the project can be printed by the following download

[http://www.destatis.de/allg/e/veroe/gsrwa\\_e.htm](http://www.destatis.de/allg/e/veroe/gsrwa_e.htm) .The complete project report as a printed working paper can be ordered by email (free of charge) from the following address: <mailto:christine.flachmann@destatis.de> Meanwhile data on water and wastewater flows have been updated until 2001.

### **Economy-wide material flow accounts**

The data on the economy-wide material flow accounts are updated annually . In March 2004 a methodological revision of the German economy-wide material flow accounts from 1991 to 2001 on basis of Eurostat-Handbook "Economy-wide material flow accounts and derived indicators – A methodological guide", has been concluded. This project also yielded data on the supply and use of primary materials (raw materials and imports) in a NAMEA-type breakdown for the period 1993 to 2000. The report will be published in October and will as well be available in the world wide web (<http://www.destatis.de>).

## **2) LAND ACCOUNTS**

Work on land accounting continued by supplementing the previous concepts of area use by branches of production by a much more detailed NAMEA-type breakdown of the land use category of built-up and traffic area and by the implementation of a first methodological approach to address the land use category of agricultural land. The work was co-financed by Eurostat. The edited version of the final report is available as download [http://www.destatis.de/allg/e/veroe/bodennutz\\_e.htm](http://www.destatis.de/allg/e/veroe/bodennutz_e.htm) . Actual results of the built-up/traffic area by industry-matrix for the year of 2001 were presented in the annual press conference on environmental economic accounts in November 2003. The report of this press conference is also available in English language and may be downloaded (<http://www.destatis.de/download/e/ugr/prconfreport01.pdf>).

### **3) ENVIRONMENTAL PROTECTION EXPENDITURE ACCOUNTING**

The data on environmental protection expenditure are updated annually. A methodological revision and a more comprehensive coverage on the basis of the SERIEE concept has been finished by way of a project co-financed by Eurostat at the end of July 2004. The report will be published at the end of the year in a printed version as well as in the world wide web (both in German). Environment-related taxes are also published annually for the year before. Taxes related to transport are available in a NAMEA-type breakdown with about 2 years time lag.

### **4) SECTORAL REPORTING MODULES**

In late 2001 GEEA started with the concept of integrating so-called sectoral reporting modules into the accounting framework. They are restricted to a specific sector of economic activities each (e.g. agriculture, transport, private households) and try to set up - as far as possible - the complete system of environmental-economic accounts for the sector examined. As such these sectoral reporting modules respond to the need to integrate environmental aspects into sectoral policy. Results from two projects co-financed by Eurostat for a reporting module "transport and environment" have been completed and available as download in German language ([http://www.destatis.de/allg/d/veroe/ugrverk\\_d.htm](http://www.destatis.de/allg/d/veroe/ugrverk_d.htm)). The project on transport and environment provides among others data for the transport sector in a NAMEA-type breakdown for a number of variables like energy use, emissions, land use, tonnes and person kilometres and environmental taxes.

A project on "agriculture and environment" (in collaboration with the Federal Agricultural Research centre) is under way. In the project the agricultural sector is distinguished by different agricultural production processes for which economic data, data on special material and energy flows and intensity indicators are presented. An interim report discusses main methodological problems and shows some first results. It was published in July 2004 and is available in German (<http://www.destatis.de/allg/d/veroe/berichtsmodullawi.htm>). For the sector private households a project "private households and environment" was started to examine this specific sector according to its environmental impact.

### **5) APPLICATIONS / METHODOLOGICAL WORK**

#### **National Strategy for Sustainable Development**

The National Strategy for Sustainable Development of the federal government was adopted in 2002 (<http://www.dialog-nachhaltigkeit.de>). The indicator set is comprised of 21 indicators selected to measure progress towards sustainable development. A paper of the GEEA department on "The Role of the National Accounts and its Satellite Systems for the German

National Strategy for Sustainable Development"

(<http://www.destatis.de/download/e/ugr/sustainable.pdf>) describes which contributions accounting systems can make to underlay the sustainability indicators with supplementary information in order to provide a data basis for an integrated sustainability analysis. Within the forthcoming press conference of GEEA in November 2004 there will be presented special analyses according to those indicators of the National Strategy for Sustainable Development that are provided by GEEA. The report will be published in German with the day of the press conference (2 November 2004) and in English at the beginning of 2005.

### **Decomposition analysis**

A second focus of applications of the accounting data is to analyse the observed changes in e.g. emissions within a certain period by means of a structural decomposition method. The paper "Decomposition analysis of carbon dioxide-emissions changes in Germany -Conceptual framework and empirical results" describes the theoretical background of this analytical tool and shows different methodological approaches before focusing on the method applied in German Environmental-Economic Accounting. The approach chosen is based on a method applied by Statistics Netherlands but is extended to be applicable to more general cases. The paper can be downloaded (.pdf-file) under:

[http://www.destatis.de/download/e/veroe/fach\\_vero/dekomposition.pdf](http://www.destatis.de/download/e/veroe/fach_vero/dekomposition.pdf)

### **Annual GEEA-reports**

GEEA publishes annually a "Report of the German Environmental-Economic Accounts" with analysis and detailed tables. The reports show in a standardised way the complete picture of German environmental economic accounts. It is only available in German and can be downloaded under: [http://www.destatis.de/allg/d/veroe/d\\_ugr03.htm](http://www.destatis.de/allg/d/veroe/d_ugr03.htm).

The report about the yearly press conference on GEEA which highlights different issues every year is also available in English: [http://www.destatis.de/allg/e/veroe/e\\_ugr02.htm](http://www.destatis.de/allg/e/veroe/e_ugr02.htm).

### **Modelling**

During the last years the data of the GEEA have been used in a growing number of econometric modelling projects by research institutes, mainly on the basis of the PANTA RHEI model. Examples are scenarios in the fields of energy use, carbon dioxide emissions, land use or transport. Results from a modelling projects on transport will be presented at the press conference on GEEA in November 2004 which will be done jointly by Federal Statistical Office and the Environment Agency Germany (concerning the publication of the results look above under "National Strategy for Sustainable Development").