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Environmental Goods and Services Sector

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Environmental Goods and Services Sector:

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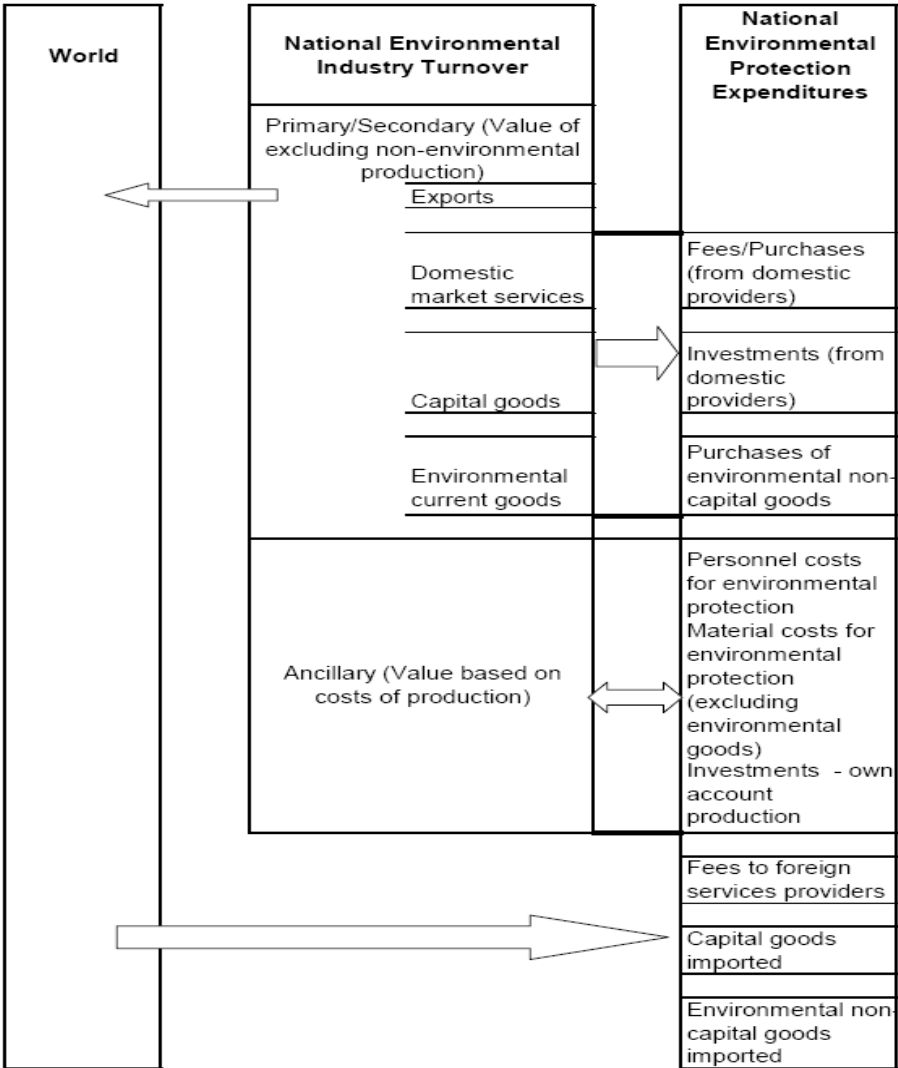Mats Eberhardson, Statistics Sweden : mats.eberhardson@scb.se

Introduction

In SEEA 2003 the "Environment industry" is briefly described in chapter 5 based on the OECD/Eurostat 1999 definition. The SEEA 2003 neither develops nor explains the statistical aspects of the "environment industry" leaving the reader to go to the original source for more information. As described in the initial research list in preparation for the revision process, those countries that publish data related to this issue have developed their own methodology and delimitations. Due to an increased interest in Europe from policy makers such as DG Environment, Eurostat decided to bring the collective community together to establish common methodology and a harmonised reporting format in this area.

In theory, the "Environmental goods and services sector" and "Environmental protection expenditure" are two sides of one coin, one being the supply and the other the demand side of environmental technology and services. Figure 1 describes the two statistical areas. Main differences are how the statistics include imports/exports. EPE statistics include goods and services purchased either from national or international suppliers and cannot distinguish between the two. EGSS can follow the two different items from a product perspective but not from a national enterprise level. EPE also measures the extra cost of environmental goods and services while the EGSS capture the full turnover.

Figure 1: Similarities of EGSS and EPE

PART I. History and limits of the handbook

1. Background

In order to respond to current policy interests in Europe and help to implement future policy measures directed towards the environmental goods and services sector, there is a need to produce and compile comparable statistics between countries.

For this reason, Eurostat re-started work in May 2005 to develop a new collection of data for the Environmental Goods and Services Sector (referred to in this document as environmental sector or EGSS). It was agreed that the manual "The environmental goods & services industry – manual for data collection and analysis" produced in 1999 by OECD/Eurostat was to be used as starting point.

Several countries in Europe have already produced statistics on EGSS using as a reference for their work the OECD/Eurostat manual. They have all developed their own procedures to overcome the difficulties experienced in interpreting the manual.

In order to have a data collection both harmonised and comparable, Eurostat decided to develop standard tables (ST) for the collection of statistics on EGSS and a more detailed and updated handbook explaining how to handle the data compilation and how to fill in the tables.

The standard tables essentially aim at identifying some important variables (e.g., employment, turnover, value added and exports) by different actors and activities of the EGSS.

The handbook provides methods to develop new data collection systems on EGSS at national level. It contains definitions, examples and recommendations to ensure that data are compiled and maintained on a consistent basis.

A task force consisting of statisticians from National statistical offices was set up in 2006 to cooperate with the consultant (ICEDD) and Eurostat in order to produce the handbook and the standard tables.

Its mandate was to work on definitions, delimitations and methodological issues for the collection and interpretation of EGSS statistics. Participant countries to the task force were Austria, Finland, France, Germany, the Netherlands, Hungary, Italy, Norway, Spain, Sweden, United Kingdom and Canada.

A consulting group of users was also set up to help the Task Force identify user needs. Participants of the consulting group came from DG Environment, DG Enterprise and Eurostat.

From the user perspective, DG Environment expressed an interest in particular for the domain of cleaner technologies and products. Since they believe end-of-pipe equipment is an approach being phased out, it is important to follow the development of integrated technologies. The innovation potential of EGSS is also of great interest. In addition, the Environmental Technologies Action Plan (ETAP) will be in need of indicators to follow up their actions. The possibility of comparison with other important economies (USA, China, etc) has been also underlined by DG Enterprise.

The proposals from the consulting group have been taken under serious consideration. Nevertheless their requests suffer from a problem of practicality, i.e. feasibility and possibility of producing the desired statistics and indicators. For this reason, during the elaboration of the standard tables and the handbook, the task force has focused on determining the practicality of developing the EGSS statistics.

The final version of the handbook and ST were presented to the Working Group on Environmental Expenditure Statistics on 25 March 2009. All the documents are available on Circa.

The Working Group on Environmental Expenditure Statistics approved the final version of the handbook presented at the meeting and the corresponding standard tables. The standard tables in their current version represent the whole picture of the environmental goods and services sector. Also the manual gives the guidance as regards to filling in these tables. The tables were designed based on the Task Force members' experience in the field and on existing manuals.

A pilot data collection will be launched before a regular collection procedure will start. The working group recommended that the standard tables be sent to countries to identify which areas can be filled in and then suggested that Eurostat either colour the areas where countries should focus their efforts initially (as is done in the OECD/Eurostat Joint Questionnaire for Environmental Protection and Revenues (EPER)) or reduce the reporting tables to those areas that countries can report.

The handbook and the related standard tables are expected to be published by summer 2009.

The handbook on EGSS statistics

The handbook on EGSS explains the scope and the reasoning behind the terms of the standard tables. It also provides extra information necessary to allow a consistent collection and interpretation of the data to be reported by countries.

The handbook has its roots in the experience acquired during the work done on the EGSS by members of the task force.

To a large degree the handbook follows the principles of the OECD/Eurostat 1999 Manual because it is intended to represent the reference handbook used by national statistics offices to carry out studies on EGSS. At the same time it is intended to be a further development of the OECD/Eurostat 1999 Manual.

The handbook provides an analysis of the concepts related to the EGSS, supplemented by a definition and a classification of the sector, practical hands-on and methodological guidance for data collection.

It also recommends methods and approaches for analysis. A great deal of effort has been put in increasing coherency and providing users of the handbook with practical recommendations. Full implementation of these recommendations should help to ensure that data are compiled and maintained on a consistent basis in all Member States of the European Statistical System (ESS).

It is not possible to offer a standard compilation method that can be applied to the circumstances of all countries without adaptation. There are two main reasons this cannot be done: the EGSS does not follow standard industries classifications of products and services (HS/PRODCOM etc) or industries (ISIC/NACE) and there are various approaches used by countries to identify the populations to be included. The countries working on these statistics have developed their own country-specific compilation procedures typically tailored towards policy demand and data availability at national level. This approach means that the statistics are often not comparable between countries.

Some patterns of best practices have emerged from experience so far but the focus can differ across countries. Thus, the handbook outlines the various options that may be available for the collection of data on the EGSS.

The handbook is designed for improvement of existing data collection systems and/or development of new ones. It has been designed so that it can be consulted on a chapter-by-chapter basis if required.

For this reason, each chapter must be capable of being read separately, whilst still forming part of a coherent set. The following table gives a brief overview of the contents of the handbook.

Table 1: The Structure of the Handbook on EGSS

Where?			What?		
Chapter	Sub-chapter		Information		In particular…
1. Introduction			Purpose, scope and organisation of the Handbook		
2. The EGSS	Definition		Definition from OECD/Eurostat 1999		Which goods and services in the EGSS? Which activities? Definition of cleaner technologies and products
	Classification of activities		Classification of activities by environmental domains:		Based on CEPA 2000 and CRUMA 2007
3. The population	Boundary of the chain of production		How to define the boundaries of the chain of production of goods and services?		Dual use and multi-purpose products cases
	Identification of the actors		Industry Government		
	Sources for identification of the population		How to proceed to build the population?		Sources of information: Activities and products classification (NACE, CPA, HS, CN, etc.)
4. A framework for data collection			How to gather statistics for: Turnover/Value Added, Employment, Exports		Sources of information Supply side and demand side approaches
5. Standard Tables			How to fill in the standard tables?		Identification of activities by groups of producers Identification and examples of cleaner/resource efficient technologies and products
6. Presentation and interpretation of results			How to present and analyse data?		

Standard Tables

The first step of the work on EGSS was to create several proposals of standard tables as a basis for a discussion with the task force. In order to determine the best way to develop standard tables, the following two issues were carefully analysed:

- Current and future objectives and policy needs and uses concerning EGSS;

- Inventory of countries which already produce these data and the comparison between countries' data and methodologies.

The general principle behind the elaboration of standard tables was the wish to take into account all sectors and activities related to environmental issues, leaving the countries the freedom to decide what is feasible.

Several proposals of standard tables were discussed. In the tables, economic activities were classified by NACE (ISIC) codes and the environmental activities were split using a modified version of the classification of the environmental activities proposed by the OECD/Eurostat 1999 Manual. The one area that required substantial further development related to resource use and management (such as energy use) which is excluded from the definition of "environmental protection activities" but needed to be included in the EGSS in a systematic way. In addition areas such as reduction in material use also needed a more systematic way of inclusion. This has led to the further development of a classification of resource use and management – portions of which are used in the EGSS standard tables.

2. Limits of the handbook

The EGSS Handbook is a major step forward towards a better collection of data on the environmental industry. However there are still a number of issues which will require further efforts. The following summarises the main limitations of the EGSS Handbook as it has been accepted by the Eurostat WG on Environmental Accounts in March 2009. Difficulties come from the inclusion in the scope of the Handbook of resource management activities (definitions for Environmental Protection are well established, but for Resource Management it is difficult to classify variables in environmental services, adapted goods, connected goods, integrated technologies and end of pipe technologies), as well as "cleaner" goods and technologies (both issues were left unsolved by the OECD Eurostat 1999 Environmental Industry Manual).

- Technologies goods and services nomenclature, for example the distinction between environmental goods and services and environmental technologies.

- CReMA 2008, in particular activities in management of forest resources and management of wild flora and fauna.

- Estimation of variables using existing statistics, for example the production of renewable energy as an ancillary activity

- Collecting data on integrated technologies and adapted goods

2.1. Technologies goods and services nomenclature

The definition of the EGSS system boundaries includes specific services, connected products (goods and services) and adapted goods. These definitions are well established in the framework of environmental accounts. Nevertheless from a practical point of view, guidelines for the collection of data on these products have not been implemented (e.g. the SERIEE states that list of connected and adapted goods should be established but this has not been the case yet). In the case of the EGSS it has been decided to rely on these definitions in order to (1) rely on a well established framework and (2) be able to compare data from other parts of environmental accounts which are based on those definitions.

In practice some problems arise for the identification of EGSS products and technologies. For example: What is a connected service? Where to draw the line between connected and environmental specific services?

Furthermore the EGSS Handbook adds to environmental goods and services a third category (environmental technologies) which overlaps the first two so the categories are not exclusive.

Environmental technologies (both end of pipe and integrated technologies) include many different things. The starting point used in the Handbook is the definition of the OECD/Eurostat 1999 manual which includes methods, practices and knowledge to transform resources into output.

For the scope of EGSS handbook it has been decided to proxy this knowledge by the production of equipment and facilities for the environment. The problem is that these producers are providers of services and producers of goods: which means that the technology group can overlaps with the services and goods category. It can be said that technology should be a subset of goods and services: this should include the provider of new methods of production which are environmental services (producers of methods who hold and sell e.g. the patents of the end-of-pipe or integrated technologies), the activities which put together components for building up environmental goods (i.e. the building of facilities for EP or for RM such as renewable energy production; the service of designing and assembling end-of-pipe or integrated technologies).

In order to reduce the possibility of overlapping between the three categories of environmental output (goods, services and technologies) the handbook offers a number of examples for illustrating the products to be included in the technology group.

2.2. Collecting data on integrated technologies and adapted goods

Two main issues regarding adapted goods and integrated technologies will need to be further investigated:

- The boundaries of adapted goods and adapted technologies: which are adapted goods and integrated technologies? How to distinguish them in practice?

- Data reporting for adapted goods: the inclusion of total figures for some adapted goods (e.g. recycled materials) could be "problematic" since it could easily overwhelm the rest of the sector.

The SERIEE framework and definitions have been used in the Handbook for solving these problems. Though, since no collection of data focused on adapted goods and integrated technology has been made yet, further effort should be placed on it.

2.2.1. The boundaries of adapted goods

It should be noted that adapted goods differ from specific services as well as connected products due to the fact that while the latter have no use except for environmental protection or resource management, the former do not have environmental protection or resource management as their primary purpose. According to SERIEE, goods (durable or non-durable) have to be considered as "adapted" if, on the basis of their technical nature, comply with the following criteria:

- are less polluting at the time of their consumption and/or scrapping, than equivalent normal products (Environmental Protection adapted goods)

- have less content of natural resource inputs in the production stage and/or in the use stage (Resource Management adapted goods).

Adapted goods are not produced for satisfying a primary environmental purpose but their technical characteristics make them less pollutant or less resource-consuming.

The definition of adapted goods is based on technical characteristics of goods. *According to this definition there may be often the case that adapted products are used as intermediate consumption and are incorporated in other (thereby also adapted) products (SERIEE § 2031).* For example recycled row paper and books printed on recycled paper are to be considered both adapted goods. Another

example is the use of CFC-free foams for refrigerators. In this case either the CFC-free foams (for that part incorporated in the refrigerators) and the refrigerators are adapted goods[1].

2.2.2. Data reporting for adapted goods[2]

As it has been stressed above, adapted goods differ from specific services as well as connected products due to the fact that while the later have no use except for environmental protection or resource management, the former do not have environmental protection or resource management as their primary purpose. Due to such peculiarity of adapted goods, SERIEE recommends not including in statistics the total amount of economic aggregates related to adapted goods, but only the part related to the characteristics of the products less harmful for the environment. *As a matter of fact only the "environmental share" of adapted goods complies with environmental purposes,* while the remaining part of these products relate to purposes other than environmental. To include in environmental statistics and accounts the total amount of aggregates related to adapted products would certainly lead to an overestimation of the size of the environmental market.

Generally, adapted goods are more costly than equivalent "normal" products. The SERIEE recommends calculating the "environmental share" of adapted goods by calculating the extra costs due to the *adaptation* of the good to environmental purposes[3].

Adapted goods may exist – now or more likely in the future – which are not more expensive than normal equivalent products or normal products may disappear making it impossible to have an equivalent normal product to which a comparison can be made. In these cases to assess the environmental share of adapted goods would require going beyond the extra cost criterion and would require, e.g., technical knowledge, the consultation of experts, etc.

For the purpose of producing statistics on EGSS, the "environmental share" of adapted goods should be calculated. This would be correct from the point of view of the definition of the sector. The problem of having overwhelming figures of adapted goods hiding the rest of the sector would be solved at the source.

Since a priority of our work is to ensure a well timed production of quality statistics on the EGSS, if it is impossible to asses the "environmental share" by means of the extra cost or other methods, the total figures should be included. In this case, in order to ensure comparability and a proper interpretation of data, the compiler of EGSS statistics is recommended to clearly explain that the total figures for adapted goods (and not just the environmental share) are accounted for and to exclude such figures if possible – in the standard tables – from the total size of the EGSS since the figures would clearly overestimate the adaptation of these goods for environmental purpose, which is the only part to be included in the EGSS sector.

In practice the EGSS Handbook recommends a list of adapted goods to be established by collecting these from countries in order to ensure consistency and comparability between countries. A reporting row should perhaps be added to the standard tables showing the "environmental share" of these products clarifying how countries have dealt with this problem. If it is not possible, only the total would be filled in (and in this case particular attention should be paid in presenting the figures).

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[1] Such cases can lead to double counting. In order to avoid double counting the intermediate consumption of adapted goods by producers of other adapted goods should be quantified and deducted, as it is always done in the SERIEE accounts in the case of specialised producers of specific services which in turn purchase specific services as intermediate consumption. For adapted products SERIEE(pg. 91) also suggests that "when such double counting is expected to be important it is necessary to make an assessment of the technical relations and to decide at which stage of the manufacturing process extra cost should be measured".

[2] The following arguments can be applied to the case of integrated technologies, ceteris paribus.

[3] To assess extra cost, adapted and equivalent normal products should be compared at the level of their cost of production excluding any taxes on products and excluding any subsidies on products or on production, i.e. prior to subsidies to producers or fiscal incentive measures for consumers.

In this way:

- The consistency with the SNA, SEEA and SERIEE framework would be assured.

- If the calculation of "environmental share" is possible, there should not be any more problems in summing up figures of adapted goods to the rest of the sector because the definition of the sector itself includes this part of the adapted goods.

- If the calculation of "environmental share" is not possible, everything should be as it is in the handbook: compilers and users should be aware they are overestimating the sector and thus adapted goods figures should not be added to the rest of the sector.

2.3. CReMA 2008, in particular activities in management of forest resources and management of wild flora and fauna

The CReMA 2008 is a brand new classification for resource management activities. This classification derives from and it is fully compatible with the CRUMA which is being proposed to be an international standard classification.

Nevertheless, the CReMA presents some limits which come in particular from the level of detail of its classes. In particular, the activities which should go into each class are not always very well established. This is the case for example of the management of forest resources and the management of wild flora and fauna.

This classification includes 7 classes as follows:

> 10: Management of waters
>
> 11: Management of forest resources
>
> > 11 A: Management of non-cultivated forest areas
> >
> > 11 B: Minimisation of the intake of forest resources
>
> 12: Management of wild flora and fauna
>
> 13: Management of energy resources
>
> > 13 A: Production of energy from renewable sources
> >
> > 13 B: Heat/Energy saving and management
> >
> > 13 C: Minimisation of the intake of fossil resources as raw material for other use than energy production
>
> 14: Management of minerals
>
> 15: Research and development
>
> 16: Other natural Resource Management activities

2.4. Estimation of variables using existing statistics, for example the production of energy from renewable sources as an ancillary activity

The Handbook focuses on a supply side approach for estimating four main variables of the EGSS: Turnover, Value Added, Employment and Exports, Using existing statistics is the main object of the Handbook since the burden of launching new surveys is seldom feasible for National statistical offices.

Unfortunately finding data on the EGSS from existing statistics can be very difficult because the statistics developed using the standard statistical classifications (such as ISIC/NACE,

PRODCOM/HS/CPA/CPC) do not allow for an easy identification of EGSS activities. This is the case, for example, for resource management ancillary activities, in particular auto production of energy from renewable energy sources (heat pumps, biogas, solar cells, etc.).

Following the NACE 2 Introductory Guidelines[4], the auto production of energy from renewable sources should not be accounted as an ancillary activity (Section 2.2 §53d) but should be separated out into a separate kind of activity unit, which would mean it should be treated as a secondary activity (Section 2.2 §54). Since the auto production of energy from renewable sources is one of the most significant activities for resource management in some industrial sectors (mainly in the food industry and the paper industry), this should therefore be recorded as an secondary activity in the Standard Tables for the EGSS, however since in most cases separation into a separate KAU is not possible it is recommended that this be recorded as an ancillary activity in the Standard Tables for the EGSS.

For statistical purposes in the context of EGSS, ancillary activities are those as defined by Council Regulation (EEC) No. 696/93, Section IV B1 and B4 of 15.03.1993 on the statistical units for the observation and analysis of the production system in the Community and the Introductory Guidelines of NACE 2 plus auto production of energy from renewable sources (section 2.2).

2.5. Summary of remaining issues related to the Environmental Goods and Services Sector

A number of the implementation and overlapping of category problems that remained in the Eurostat/OECD 1999 manual have been solved, notably by the introduction of the CReMA classification on resource management activities (CRUMA adapted for the needs of the EGSS). However there are still some ambiguities that have not yet been fully solved although through the use of examples, the new EGSS handbook helps statisticians to identify portions of the EGSS that previously have been difficult to establish where the system boundaries should be drawn. As experience is gained in data collection and statistical production some of these topics may need additional harmonization in the future.

PART II. Contextual information for EGSS

3. Standard tables on EGSS statistics

Based on discussions in the task force meetings, new proposals for standard tables were drawn up and proposed during the task force meetings which took place in October 2008 and February 2009.

In its latest version, an electronic EXCEL workbook forms the EGSS standard tables. Through the standard tables, national statistical institutes are kindly requested to:

> - Provide information on the methodology they have used to produce statistics on the EGSS;

> - Fill in the data-sheets for two economic sectors (industries and government) and four main economic variables (turnover, value added, employment and exports).

The latest version of the standard tables consists of 11 data-sheets. One data-sheet is provided by variable and by group of producers (7 tables to fill out); one data sheet summarizes the different groups of producers for each variable (4 tables filled out automatically), that is:

4

http://epp.eurostat.ec.europa.eu/pls/portal/docs/PAGE/PGP_DS_NACE_REV_2/PGE_DS_NACE_REV_2/NACEREV.2INTRODUCTORYGUIDELINESEN.PDF

- 4 data sheets for the industry group and 3 for the General Government of producers (exports of General Government is not included).

- 4 data sheets for the total of each variable.

The figures below present the structure of the current standard tables. On Circa it is possible to find the latest complete version of the standard tables.

Figure 2: Index of the standard tables

INDEX eurostat	Environmental Goods and Services Sector		
	Index		

	Datasheet	Description	
Introduction	Intro	Introduction about the Eurostat data collection on the environmental goods and services sector	for information
Explanatory notes	Notes	Notes on how to fill in the standard tables	for information
Methodology	Methodology	National authorities are kindly asked to provide information on the methodology used for gathering the data reported in the standard tables	to be filled in
Examples (Corporations)	Corporations - examples	This data sheet provide some examples of activities, godds and services to be included in the EGSS and their classification by environmental domain	for information

Data

Variable	Title	Description	Type
Turnover	Corporations - Turnover	Data sheet for turnover of the industries	to be filled in
	Government - Turnover	Data sheet for turnover of the government	to be filled in
Value Added	Corporations - Value Added	Data sheet for value added of the industries	to be filled in
	Government - Value Added	Data sheet for value added of the government	to be filled in
Employment	Corporations - Employment	Data sheet for employment of the industries	to be filled in
	Government - Employment	Data sheet for employment of the government	to be filled in
Exports	Corporations - Exports	Data sheet for exports of the industries	to be filled in
TOTAL	TOTAL - Turnover	Total turnover by sector	for information
	TOTAL - Value added	Total value added by sector	for information
	TOTAL - Employment	Total employment by sector	for information
	TOTAL - Exports	Total exports by sector	for information

The data sheets contain the environmental domains in columns and NACE categories in rows.

General description of the introductory sheets

The explanatory Notes sheet contains an overview of the Standard Tables, reporting instructions and an explanation of the classifications used. For more detailed information this sheet makes reference to the Handbook.

The Methodology sheet asks for a description of the methodologies used by the countries to produce the EGSS statistics (e.g. survey, estimation from environmental expenditure, business register, model, etc). In this sheet, details are asked on how data have been obtained for each variable and group of producers (e.g. the turnover of corporations, the turnover of the General Government, etc). This sheet requires also filling in some meta information as, for example, the contact point for EGSS statistics in each country.

The Corporations' examples sheet contains in the cells some examples of environmental goods, technologies and services which can be found in the EGSS. These examples are not exhaustive. They are thought just as a guide for including as much information as possible and to clarify classification problems. Furthermore, as in the data sheets, the rows which are likely to contain no data (i.e. kind of environmental goods, technology and services that are not likely to be found for a particular NACE sector) are shaded.

This does not mean that shaded cells are not to be filled in. If countries collect data for some of the shaded cells, a footnote should be added to give more detail on the product and/or producer concerned. This will help in expanding the list of examples and in assuring consistency of data among countries.

Figure 3: Overview of Standard Tables

Figure 4: Overview of natural environmental protection CEPA classes (Standard Table columns)

A. Environmental Protection											
CEPA 1	CEPA 1.1.2 and 1.2.2	CEPA 2	CEPA 3	CEPA 4	CEPA 5	CEPA 6	CEPA 7	CEPA 8	CEPA 8.1.2	CEPA 9	
Protection of ambient air and climate	of which for the protection of climate and ozone layer	Wastewater management	Waste management	Protection and remediation of soil, groundwater and surface water	Noise and vibration abatement	Protection of biodiversity and landscapes	Protection against radiation	Research and development (R&D)	R&D for the protection of climate and ozone layer	Other	Total A

Figure 5: Overview of natural resources management CReMA classes (Standard Table columns)

B. Resources Management															
CReMA 10	CReMA 11	CReMA 11 A	CReMA 11 B	CReMA 12	CReMA 13	CReMA 13 A	CReMA 13 B	CReMA 13 C	CReMA 14	CReMA 15	CReMA 15.5.1	CReMA 16			
Management of waters	Management of forest resources	Management of non-cultivated forest areas	Minimisation of the intake of forest resources	Management of wild flora and fauna	Management of fossil energy resources	Production of energy from renewable sources	Heat/Energy saving and management	Minimisation of the intake of fossil resources as raw material	Management of minerals	Research and development (R&D)	R&D for the production of energy from renewable sources	Other		Total B	

Figure 6: Overview of type of activity and of type of output breakdowns (ST rows) for Corporations and General Government

Corporations	
of which ancillary activities	
of which non-market activities	
env. specific and connected services	
connected goods	
adapted goods	
end-of-pipe technologies	
integrated technologies	

General Government	
of which ancillary activities	
env. specific and connected services	
connected goods	
adapted goods	
end-of-pipe technologies	
integrated technologies	

General description of the data sheets

Each data sheet identifies the variable to be reported, the unit used (i.e. thousands of euro/national currency, thousands of full time equivalent, etc.) and the type of producer concerned (General Government or Corporations). The respondents should also fill in the name of the country and the year of reference.

Data

Each data sheet includes elements in rows and in columns:

  - the rows present the producers breakdown. For the Corporations the NACE ver. 2 two digits breakdown is used. Nevertheless it is possible to fill in the Standard Tables at an aggregate level of detail (e.g. aggregating two or more two digits NACE classes or using NACE sections). For the General Government, the breakdown is the level of Government given by the European System of Accounts 1995 (ESA 1995). In addition for both Corporations and General Government, the rows of the Standard Tables data sheets contain an extra selective breakdown in order to indicate the part of ancillary activities and to provide data by type of production outputs (i.e. environmental specific and connected services, connected goods, adapted goods, end of pipe technologies and integrated technologies). Only for Corporations, the Standard Tables data sheets contain an additional row for recording the part of non-market activities.

  - the columns present the environmental domains, according to the CEPA and the CReMA classifications.

Therefore, the columns are exactly the same in the corporations and the General Government's data sheets but the rows differ.

The Standard Tables spreadsheet file allows users to hide/show details for rows and columns in order to reduce the tables for printing. Filtering the rows/columns is only intended for an easier handling of the tables and do not impede that all the cells of data sheets could potentially be filled in.

The total figures for the environmental protection group (i.e. the CEPA classes) and for the resource management group (i.e. the CReMA classes) are automatically calculated.

The total value of the variable by class of producer is not automatically calculated since the respondent has the choice of the level of detail to answer to the Standard Tables (e.g. from NACE 2 digits to NACE section).

Footnotes

Columns of footnotes are also integrated for each environmental domain (e.g. CEPA and CReMA classes) and for each column of total.

The footnotes should be referenced in the footnote column highlighted in yellow. Footnotes references should be alphabetical, separated by a right bracket. The footnote text should be entered in the yellow area below each data table. Each footnote text should be preceded by the corresponding footnote reference.

Countries can use more than one footnote reference next to a value. e.g.: a)b)e)h). When doing so, it is not necessary to leave a space between the references, since the right bracket is already serving as separator. Given the limited width of the footnote reference columns, it is possible that some of footnote references will not be visible. However, this will have no impact on the processing of data and metadata.

Figure 7: Footnotes area of the Standard Tables

	Your Footnotes
Footnote area: *(Footnote references + texts)* **-->**	
EXPLANATIONS	
A. FOOTNOTE REFERENCES:	
1) Footnote references should be entered in the <u>footnote columns</u> (highlighted in yellow), in the	
data area (E4:V102). Footnote references should be "alphabetical", separated by a right bracket,	
e.g.: *a)*	
b)	
c)	
Please do **NOT** use **any other format** for the footnote references!	
2) You can enter **more than one** footnote reference next to a value. e.g.: a)b)e)h)	
When doing so, it is not necessary to leave a space between the references, since the right	
bracket is already serving as separator.	
3) Given the limited width of the footnote reference columns, it is possible that some of your	
footnote references will not be visible. However, this will have no impact on the processing	
of your data and metadata.	
B. FOOTNOTE TEXTS	
1) The yellow highlighted area to the right of this text, corresponds to the **FOOTNOTE**	
AREA (E103:E138). In this area you can enter the **footnote text(s)** corresponding to	
the <u>footnote reference(s)</u> which you have entered in the **footnote columns** (data area E4:V102).	
2) Footnote texts **should be preceded** by the corresponding footnote reference, e.g.	
e.g.: *a)This is the first footnote text referring to footnote reference **a)** in the data area.*	
*b)This is the second footnote text referring to footnote reference **b)** in the data area.*	
c) etc......	
3) When inputting the footnote texts it is <u>not necessary</u> to leave a space between the	
footnote reference and the footnote text, since the right bracket is already serving as	
separator.	
4) Please use **one** (1) **line only** per footnote text, even if it is very long.	
5) In case you **delete** a <u>footnote reference</u> **entirely** from the <u>data area</u> (i.e. it no longer figures	
anywhere in the data area), please do **not forget** to also **delete** the corresponding	
footnote texte in the footnote area	

The yellow highlighted area at the bottom of each data sheet corresponds to the footnote area. In this area countries can enter the footnote texts corresponding to the footnote references. Footnote texts should be preceded by the corresponding footnote references. When introducing the texts, it is not necessary to leave a space between the footnote reference and the text, since the right bracket is

already serving as separator. One text line per footnote reference should be used, even if it is very long.

Specific description of the data sheets concerning the Corporations

Data sheets concerning the corporations are consistent with the tables of the 2008 NAMEA[5] Air emission accounts by industry. Details by NACE classes (2-digits level) are first asked. If it is not possible to fill-in the NACE 2-digits level cells (in case of, for example, confidentiality of some values), interim aggregates are an alternative to furnish these values. These interim aggregates regroup several NACE classes, such as, for example, the class C 23-25 including the activities of the manufacture of metals or the NACE section A regrouping the NACE 01 to 03, agriculture, fishing and forestry.

For each NACE class of producers, the following information is asked:

- the total value (in the row entitled by the name of the NACE class),

- the part of the total value that concerns ancillary activities,

- the part of the total value that concerns non-market activities,

- and the part of the total value that concerns environmental specific and connected services, connected goods, adapted goods, end-of-pipe technologies and integrated technologies.

Some rows of the data sheets are shaded. The shade means that the category of technology or products is not expected in the related NACE class of producers. However, if respondents have values to fill in these cells, a footnote should be used in order to detail the technologies or products concerned.

Specific description of the data sheets concerning the General Government

Data sheets concerning the General Government detail the values of variables by statistical units, i.e. the level of government (central, regional and local).

4. Presentation and interpretation of data

Given that this sector cuts across the standard industry and product classifications, EGSS data need to be treated with some caution. Chapter 6 of the handbook gives some hints to present the data.

The data collected on EGSS can be analysed at different levels. These include:

- Analysis by **economic variable**. Comparing data on the EGSS by economic variable reveals some interesting figures on the main characteristic of the sector in terms of employment, turnover, value added and exports. Furthermore these variables can be used to provide information on productivity and competitiveness, for instance.

- Analysis by **economic sector**. In comparing Corporations and the General Government, these analyses provide information on, e.g., the importance of public ownership

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[5] The NAMEA (National Accounting Matrix including Environmental Accounts) is a framework in which different types of statistical data are consistently organised, bringing together economic and environmental information that come from different parts of the statistical system.
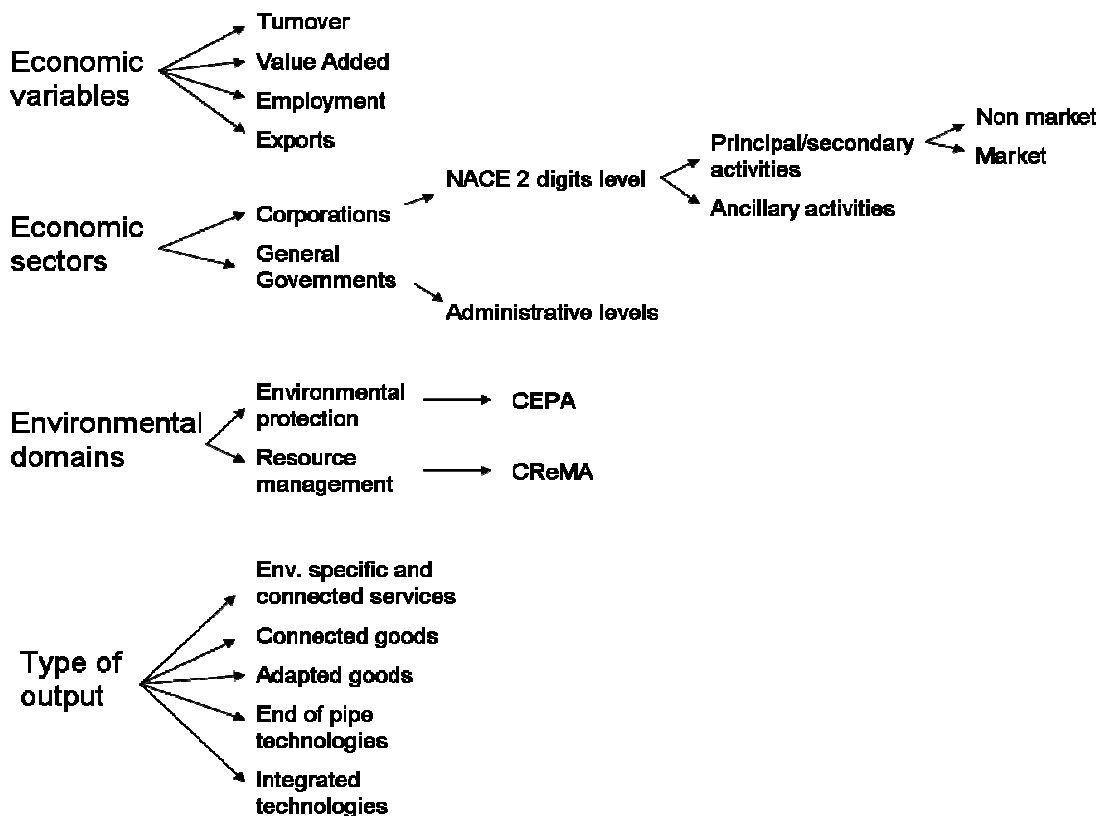
and the evolution of privatisation. Corporations and General Government can be analysed also at a more detailed level providing information on the magnitude of environmental activities of the different NACE sub-sectors (for the corporations) and administrative levels (for the General Government). For the corporations data can be also analysed to measure the importance of ancillary activities and the evolution of outsourcing as well as the relative magnitude of market and non-market activities.

- Analysis by **environmental domain**. Comparing data on the EGSS by environmental domains reveals which are the main domains of specialisation of environmental producers in a country. This analysis is important because a large majority of environmental companies focus on only one of the environmental domains and the competitive conditions in each of the domains can vary significantly. Combined with the environmental protection expenditure data, the analysis of the EGSS can also provide an indication of the environmental priorities of the countries.

- Analysis of **time series**. Time series of employment, turnover, value added and exports can give an indication of the EGSS evolution, its growth and its competitiveness.

- Analysis by type of **environmental output**. In comparing the figures for the different types of environmental goods, technologies and services, this analysis can highlight, for example, the importance of cleaner and resource efficient technologies compared to end of pipe technologies. Given the peculiarities of adapted goods, particular attention should be given to the producers of this class of environmental goods.

These analyses can be done using different levels of details, as it is shown in figure 8 below.

When presenting data on the EGSS, it is important to accompany them with other related statistics, as for example, statistics on environmental pressures. When comparing data from different countries it will be important to choose the right variable to build up meaningful indicators.

Figure 8: Different levels of details for presenting the data on the EGSS

It is expected that this new handbook will allow for more consistent development of statistics for the environmental goods and services sector and the standard tables will provide a good starting point for the collection of country data.

The standard tables and the handbook presented in this paper are the results of the work done in collaboration with the Task Force on the environmental goods and services sector. Eurostat would like to recognise and thank the Members of this Task Force: