

**Environmental goods and services sector
Pilot study 2008**

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1. Foreword

The environmental goods and services sector is integrated by those aimed to measure, prevent, limit, minimise or correct the environmental damage caused by water, air and soil in addition to problems related to waste, noise and ecosystems (environmental protection) and exhausting of resources (management of natural resources).

The aims of environmental policy, implemented legal regulations, together with the general awareness of the need to respond to environmental contamination and preserve natural resources, have caused a quick increase in supply and demand of environmental goods and services.

The environmental technologies sector is being considered as a new market segment, compared to traditional industries, which contributes to the development of the European economy and can improve corporate processes, products and practices. In this way, the political interest in the environmental sector is focused on its growth potential, creation of jobs, international trade, competitiveness, R&D of less contaminant and more efficient technologies and goods for the use of resources in addition to other environmental aspects.

With the purpose of having necessary information available to meet European and national requirements and enable the implementation of measures aimed at development of the environmental sector, it is essential to prepare statistics for the sector. On a methodological note, EUROSTAT has prepared a manual "*The Environmental Goods and Services Sector: A data collection handbook*", and a questionnaire with a series of standard tables with the purpose of establishing comparable statistics on a European level in this field.

The INE made estimates of the series 1995-2001 of the environmental protection expenditure account in 2002, and is currently finishing estimates corresponding to a base change for this account. The management account and use of natural resources in which EUROSTAT is working, designing the methodology and first results tables has not started yet. The environmental sector, which comprises goods and services aimed at environmental protection and management of natural resources, excluding those for the support of these, such as water for example, can fall into this same sub-area of environmental accounts.

This pilot study, the first performed by the INE on the environmental goods and services sector, based on the methodology and questionnaire designed by EUROSTAT, presents information on the main environmental sectors in our country: collection and processing of waste, recycling, waste water, renewable energies, ecological agriculture and some services activities. In the future, it will be necessary to complete the study by analysing other activities: sustainable construction; the production of desalinated water and use of irrigation equipment which use less water; the production of biofuels; paper recycling and bioplastics; the manufacture of products which use recycled materials; of top energy efficiency electrical appliances, etc.

2. 2. Delimitation of the environmental goods and services sector

This sector includes the goods, services and technologies produced to protect the environment or management of resources, which are classified according to their function and characteristics as:

- **Specific environmental services**

According to the Eurostat manual, the output of "characteristic" environmental protection or resource management services is considered a specific service. In the "European system for the collection of financial data on the environment," "characteristic" activities are defined as those which meet an environmental aim.

- **Related products**

Services or goods which do not lead to the output of characteristic activities and however, have a direct environmental protection or resource management aim, without presenting any other utility. For example, waste bags, thermostats to regulate the temperature in buildings and sewage tank maintenance services.

- **End-process technologies**

They mainly include technical facilities and equipment produced to measure, monitor, process and correct the contamination of environmental degradation and exhausting of resources; two aims are differentiated:

- The processing, reduction or removal of contamination or degradation after having been produced.
- The reduction of exhausting natural resources by means of reusing or recycling materials.

- **Adapted products**

They are less contaminant or more efficient goods for the use of resources than the equivalent normal products. Those products which have a similar utility regardless of the effect on the environmental are considered normal products. Its main use is not an environmental protection or resource management activity. Adapted products may be split into:

- Less contaminant products: they help to prevent environmental contamination or degradation because they are less contaminant during the consumption phase and/or when they are removed.
- More efficient products for use of resources: they help to prevent exhausting natural resources because they consume less natural resources during the manufacture phase.

- **Integrated technologies**

Technical processes, methods and knowledge integrated into production processes which end up being less contaminant or use less resources than equivalent normal technology used by national producers. Its use is environmentally less damaging than use of the alternatives.

With the purpose of simplifying, the environmental goods and services sector tables do not differentiate specific environmental services and related services.

The producers of environmental goods, services and technologies are spread out all over the classes of NCEA-2009 and tackle all economic activities including non-market activities.

The Environmental Goods and Services Sector also include auxiliary activities. According to the ESA-95 an auxiliary activity is a support activity performed within a company with the purpose of creating the conditions which enable carrying out principal or secondary activities.

3. Environmental protection activities

Environmental protection activities tackle activities which produce both preventive and corrective goods and services such as reduction of emissions, reduction of environmental risk or repair of environmental damage.

In general, an environmental protection activity is comprised of collection, processing, reduction, prevention or removal of contaminants and contamination or any other environmental degradation.

Environmental protection activities include goods and services which are clearly supplied with an environmental aim for which they should not include activities whose result is beneficial to the environment but which have been carried out regardless of environmental considerations.

These activities grouped in accordance with the ***Classification of Environmental Protection Activities*** (CEPA) are subdivided into:

- **CEPA 1 - Air and climate protection**

This also includes measurements and activities whose aim is to reduce contaminant emissions into the air or concentrations of atmospheric contaminants, as well as those measures and activities whose aim is to control Greenhouse gas emissions and gases which have a negative effect on the ozone layer.

This excludes measures undertaken to save on costs (such as energy savings), which are included in resource management categories.

- **CEPA 2 - Management of wastewater**

This includes those activities and measures whose aim is to prevent the contamination of superficial waters, reducing the unloading of wastewaters into domestic superficial waters and marine waters. Wastewater collection and processing, in addition to regulatory and control activities are included here. They also include sewage tanks.

This excludes those actions and activities whose aim is to protect underground water from infiltration of contaminants in addition to the cleaning of water masses which are already contaminated. These are included in protection and decontamination activities for soils, underground and superficial waters.

- **CEPA 3 - Management of waste**

"Waste management" is understood to mean those activities and measures whose aim is to prevent the generation of waste and reduce its damaging effects on the environment. They include collection and processing of waste including regulatory and control activities. In addition to recycling and composting, collection and processing of waste with low and very low radioactivity, daily cleaning and rubbish collection.

- **CEPA 4 - Protection and decontamination of soils, underground and superficial waters**

This refers to those measures and activities whose aim is to prevent infiltration of contaminants, cleaning of soils and water masses and protection of soils against erosion and other kinds of physical degradation and against salinisation. This includes control of contamination of solids and underground waters.

Excluded are wastewater management activities (see CEPA 2), in addition to those activities whose aim is to protect biodiversity and landscapes (CEPA 6).

- **CEPA 5 - Reduction of noise and vibrations**

This refers to those measures and activities whose aim is the control, reduction and removal of noises and vibrations caused by industrial activity and transport. They include activities to reduce the noise caused by the neighbourhood (soundproofing of dance halls, etc.) in addition to activities to reduce noise in places frequented by the public (swimming pools, etc.) in schools, etc.

This excludes reduction of noise and vibrations regarding protection at the workplace.

- **CEPA 6 - Protection of biodiversity and countryside**

This is understood to be those measures and activities whose aim is to protect and recover animal and vegetable species, ecosystems and habitats in addition to natural and semi natural landscapes. It may be that in practice, it is difficult to differentiate between protection of "biodiversity" and that of "landscapes". For example, maintaining or creating certain kinds of landscape, biotypes, ecological areas and similar topics (rows of mushrooms, lines of trees to re-establish "natural corridors") is an activity clearly related to the preservation of biodiversity.

They exclude protection and recovery of historical monuments or recovery of landscapes with a high percentage of built areas, control of weeds for agricultural purposes and protection of forests against forest fires when done for mainly financial reasons. Also excluded are the creation and maintenance of green areas over roads and recreational structures (creation and. golf courses and other sports facilities).

Normally, we would not have to include actions and expenses related to municipal parks and gardens but in some cases they may be related to biodiversity and these activities and expenses should then be included.

- **CEPA 7 - Protection against radiation**

Covers activities and measures aimed at reducing or removing the negative consequences of radiation issued by any source. This includes handling, transport and processing of waste with a high radioactivity index, that is, waste which, because of its high radionuclide content, require plating during normal handling and transport operations.

Excluded are activities and measures regarding prevention of technological risks (e.g. safety outside nuclear power stations) as well as protection measures adopted in the workplace. Nor are activities related to collection and processing of waste with a low radioactivity index included (see CEPA 3)

- **CEPA 8 - Environmental research and development**

This class includes all R+D activities and expenditure whose purpose is environmental protection: identification and analysis of sources of pollution, mechanisms for dispersion of contaminants into the environment, as well as its effects on humans, species and the biosphere. This section includes R&D for the prevention and removal of any kind of contamination, in addition to R&D aimed at contamination measurement and analysis equipment and instruments. As long as they can be separated, all R&D activities, although they refer to another specific category, should be classified into this entry.

- **CEPA 9 - Other environmental protection activities**

For other environmental protection activities they include all environmental protection activities for the administration and management of the environment or training or learning activities aimed specifically towards environmental protection for public information when they are not classified into another section in the CEPA. Activities which generate costs which cannot be broken down and activities not classified elsewhere are also included.

4. Resource management activities

The resources management group includes management activities and preservation of natural resources. Although protection of the environment is excluded from the scope of resources management, inevitably they include some activities associated with environmental protection (generate. energy saving and management, renewable energies, etc).

Protection activities for the quality of natural resources, for example, activities to protect biodiversity and landscape or activities aimed at preserving certain functions or quality of the natural setting (air, soil and underground waters) are not included in this group, but are included in environmental protection activities.

In accordance with the ***Classification of Resource Management Activities*** (CreMA,), the activities included in the category resources management are grouped into:

- **CReMA 10 - Management of water resources**

The management of waters includes activities aimed at reducing consumption by means of modifying productive processes, reduction of losses and leaks, building facilities for reuse and water saving, etc. and replacement of water reserves. For example, the reloading of underground waters to increase or replenish water reserves (but not with the purpose of improving the water quality or responding to salinity, which would be CEPA 4); improving soil, developing vegetable covering with the purposes of increasing water infiltration and reloading aquifers (but not with the purpose of protecting soil against erosion, which would be CEPA 4).

- **CReMA 11 - Management of natural forestry resources**

Includes activities to reduce consumption of forestry resources by means of modifying productive processes.

- **CReMA 12 - Management of wild flora and fauna**

Includes activities to reduce consumption by means of modifying processes (e.g.: vessel repurchase programmes for the introduction of more efficient fishing fleets and equipment), the repositioning of populations of wild flora and fauna (e.g.: reproduction to replenish reserves for fishing or hunting for repopulation purposes and not to protect biodiversity which would be CEPA 6), and direct management of wild flora and fauna populations.

- **CReMA 13 - Management of fossil energy resources**

Production of energy from renewable sources: the reduction in use of non-renewable energy sources by means of producing renewable energy sources such as solar, wind, seas, geothermal or biomass.

Heat and energy saving and management: activities to reduce the use of non-renewable energy sources by means of minimising heat and energy losses and energy saving.

Minimisation of the consumption of fossil resources as a raw material for uses different to energy production: activities to reduce oil consumption for uses different to energy production.

- **CReMA 14 - Management of minerals**

For the management of raw materials they include activities to reduce consumption by means of modifying productive processes and the production and consumption of recycled materials.

- **CReMA 15 - R&D for natural resources management**
- **CReMA 16 - Other natural resources management services**

General administration of natural resources, environmental management, regulation, education, training and information, activities which generate indivisible expenses.

5. Estimate of the environmental goods and services sector 2008 Statistical sources used.

In this pilot study estimates have been made for 2008 for production and gross added value for basic prices in addition to the use of an equivalent number of full time people and exports for the sector's main activities, investigating the CPA 2008 classification codes which appear below.

CODE CPA- 2008	DESCRIPTION OF THE ENVIRONMENTAL PRODUCT OR SERVICE INCLUDED IN THE CODE
01	Agriculture and ecological livestock products (except certain agriculture support services as more efficient irrigation equipment operation)
22.11.2	Retreaded pneumatic tyres, of rubber
22.19.1	Reconditioned rubber in primary forms or in plates, sheets or strips
23.65.11	Panels, blocks and similar articles, vegetable fibre, straw or conglomerate wood remains with mineral agglutinates
28.11.22	Turbines and water wheels
28.11.24	Wind turbines
28.11.32	Turbine and hydraulic wheel components including regulators
35.11.10	Production of renewable electricity
37	Waste water collection and processing services
38.1	Waste; waste collection services
38.2	Waste processing and removal
38.3	Material assessment services; secondary raw materials
39	Sewage services and other waste management services
72.1	Experimental R&D services in natural and technical sciences with the purpose of environmental or resource management
74.90.13	Environmental consultancy services

For the selection of goods and services to included in the study, priority has been given to those whose results can be obtained from statistical operations from the INE or other institutions (as is the case of the Ministry of Agriculture and Rural and Marine Setting for the production of ecological agriculture) and the most important environmental activities in our country.

In the first place including Codes of classification -2008 corresponding economic goods and services whose production household production 100% economic goods and services nature environmental, involves One part very Important value Total for the production economic goods and services environmental.

In addition to the classification codes CPA-2008 whose production of goods and services is not identifiable as 100% environmental, there has been an estimate of the figures corresponding to:

- Production of ecological agriculture goods excluding the corresponding support services.
- Production of renewable electricity.
- Experimental research and development services in natural and technical sciences (code 72.1 of the CPA-2008).

The analysis of the remaining activities and products is still pending investigation; additional efforts in the fields of interest will be necessary.

The nature of the pilot study of these results, which implies the provisional nature of some figures and their location in the tables presented are also notable.

- “Material assessment services, secondary materials as gross” which include as specific and related environmental services in division 38, appear as added to the category "other resources management activities" and an additional analysis is required to carry out its breakdown into paper, metal, etc.
- The production and use of auxiliary environmental protection activities are not broken down by kind of activity or division of the NCEA-2009, to the date of publication of this study; it is necessary to perform a more detailed analysis for its breakdown.

Finally, regarding the following sources were used:

- Regarding ecological agriculture, estimates come from data from the Ministry of the Environment and Rural and Marine Setting, data from the Farm Accountancy Network and the Report on the value and volume of national ecological products in the Spanish agrofood industry”.
- The estimates corresponding to divisions 23 to 35 of the NCEA-2009, which include renewable electrical energy good wind and hydraulic turbines, are based on production value data from the Industrial Products Survey (IPS), broken down in to the detailed levels of PRODCOM, and the results of production variables, gross added value, employment and exports of the Industrial Companies Survey (ICS) on a NCEA-2009 class level.
- As for the estimates corresponding to divisions 37 to 75 of the NCEA-2009, processing of wastewater and waste and other auxiliary activities, the estimates come from the provisional results of the Environmental Protection Expense Account and Survey. Other sources are used indirectly and by means of the environmental protection expense account, such as the water satellite account.