European environmental economic accounts

Technical Note

Classification of Environmental Purposes (CEP)

Version: April 2024

Contents

1. Introduction to the classification of environmental purposes

Scope of environmental activities, products and expenditures

The Classification of Environmental Purposes (CEP) is a generic, functional classification of economic activities, products, expenditures and other transactions related to environmental protection and management of natural resources.

The CEP is a classification of economic activities, products and related transactions by economic operators. This classification is used in the System of Environmental-Economic Accounting Central Framework (SEEA CF). There are other classifications in SEEA CF for natural resources, e.g. flows of materials or energy, stocks of natural assets, etc. CEP is not used to classify flows nor stocks of natural resources.

The **CEP has the same scope as the environmental activities, products and related transactions in the SEEA CF**[1]. The reference is the SEEA CF definition of environmental activities. Environmental activities are sub-group of the productive activities as in the System of National Accounts (SNA 2008). Productive activity consists of processes or activities carried out under the control and responsibility of institutional units that use inputs of labour, capital, goods and services to produce outputs of goods and services (SNA 2008, para 5.5). Any such activity may be characterised by types of inputs used, technique of production employed, types of outputs, ways in which the outputs are used, etc. Production is carried out under the control, responsibility and management of an institutional unit.

A consequence is that activities beyond the scope of the SNA are also beyond the scope of SEEA CF and of CEP. For example, a large part of ecosystem services, i.e., the contributions of ecosystems to benefits used in economic and other human activity (SEEA CF para 2.22) is outside the scope of CEP. Ecosystem services are addressed in the SEEA Ecosystem Accounting. Some of those ecosystem services, in particular regulation and cultural services, are beyond the SNA production boundary, and those are also outside the CEP scope. One example is pollination. This means that, for

[1] SEEA Central Framework, chapter IV on activity accounts. SEEA CF adopted by the UN Statistical Commission in March 2012. https://seea.un.org/content/seea-central-framework.

SEEA CF chapter IV devoted to economic transactions (in the sense of SNA) related to the environment, i.e. the chapter about economic activity, products and expenditures. This classification is only used for SEEA CF chapter IV. All references in this document to SEEA CF actually mean only chapter IV. The other SEEA CF chapters are about physical flows and asset accounts, e.g. about greenhouse gas emissions, materials, water, waste, etc. Those chapters do not measure products (emissions and waste and water and not 'products' in the SNA sense) nor activities nor expenditure

instance, 'biodiversity' is under the scope of the CEP as far as it is an economic activity performed by an economic unit with human intervention (see below about classification units), but it is outside of the CEP as regards biodiversity support provided by an ecosystem such as a forest to other life forms.

Scope of environmental activities, products and expenditures

For the scope of this classification, **environmental activities** are defined on the basis of SEEA CF chapter IV, and taking into account the latest advancements since the SEEA CF was adopted in 2012[2]. Environmental activities are the economic activities whose purpose is to reduce or eliminate pressures on the environment or to make more efficient use of natural resources. There are two groups of environmental activities: environmental protection and resource management.

- Environmental protection activities are defined as economic activities aimed at preventing, reducing and eliminating pollution or any other degradation of the environment. Also included are measures to restore the environment after it has been degraded. Examples of environmental protection activities are restoring polluted environments, monitoring environmental quality, and investing in technologies designed to prevent or reduce pollution.
- Resource management activities, which preserve, maintain and enhance the stock of natural resources and therefore the safeguarding of those resources against depletion. Examples of resource management activities are substitution, recovery and reuse of materials as well as other activities minimising the intake of natural resources through increased efficiency.

The two types of SEEA environmental activities, namely environmental protection and resource management, have a correspondence at group level of CEP (i.e. 4-digits).

By extension, activities that support the production and the use of environmental products (administration, education, training, information and communication services) as well as environmental engineering or research and development activities are also considered environmental activities.

[2] Since 2021 the scope of SEEA CF environmental activities has broadened to include non-characteristic activities. Back in 2012 there were unresolved technical issues that were included in the SEEA research agenda. This research item was solved and concluded in 2018, with the endorsement of the UN Committee of Experts on Environmental Economic Accounting (UNCEEA). In particular, the treatment of non-characteristic activities in this CEP intro uses the state-of-the-art of environmental accounting and it will be included in the SEEA CF with the next update.

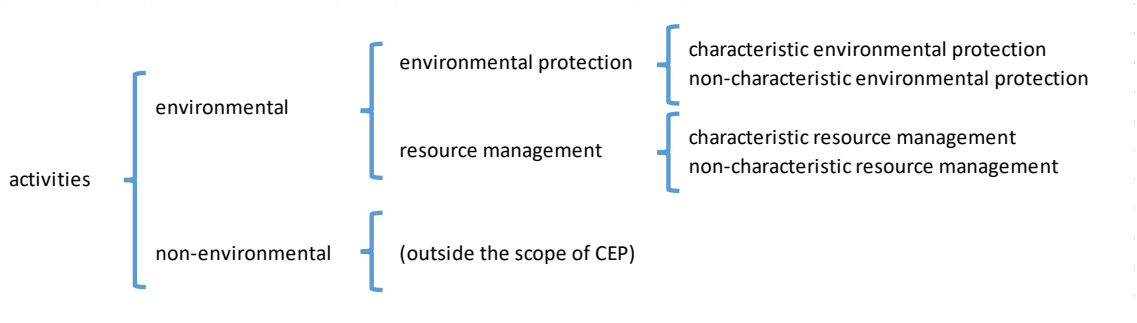
The environmental purpose is a cornerstone concept in the SEEA CF definition of environmental activities. The operationalisation of the environmental purpose is further explained below.

The economic activities whose primary purpose is to reduce or eliminate pressures on the environment or to make more efficient use of natural resources are called **characteristic environmental activities**. These are the environmental activities defined in SEEA CF, §§ 4.11 – 4.13. Besides the activities with a primary environmental purpose, under CEP scope are also certain other activities that do not directly serve an environmental purpose but produce specifically designed products whose use serves an environmental purpose. They are called non-characteristic environmental activities.

The non-characteristic activities correspond to the intuitive concept of secondary purpose activities, but they are formalised without introducing the secondary purpose. The concepts of non-characteristic environmental activities and products are not explicitly referred in SEEA CF, they will be introduced in the next version of the SEEA CF. They build on and improve the concepts of 'characteristic and connected products' sketched in the SNA 2008 chapter for satellite accounts (paras 29.59-29.61) and 'connected products' referred in SEEA CF paras 4.32, 4.65 - 4.67, 4.99 and others as well as 'adapted goods'. SEEA CF admits the definition and measurement scope of these different products vary depending on the type of account or set of statistics being compiled. This different recording was found unsatisfactory and it led to its inclusion in the SEEA CF research agenda in 2012. A technical solution for this research agenda was developed and adopted by the UN Committee of Experts on Environmental Accounting (UNCEEA) in 2018. This solution provides a satisfactory formalisation of 'secondary environmental activities', without using that principle. This technical solution introduces also the reference to the concepts of non-characteristic products and expenditures.

An example of characteristic environmental activity is waste management. An example of non-characteristic activity is the construction of low-energy buildings.

Figure 1: Categories of activities



Both characteristic and non-characteristic environmental activities are under the scope of the CEP.

The considerations above for the environmental purpose of economic activities are equally valid to define **environmental products**. More exactly, they concern the environmental purpose of the use of the product (the production of the product is the activity considered above). The CEP can be used to classify environmental products too.

Environmental products include:

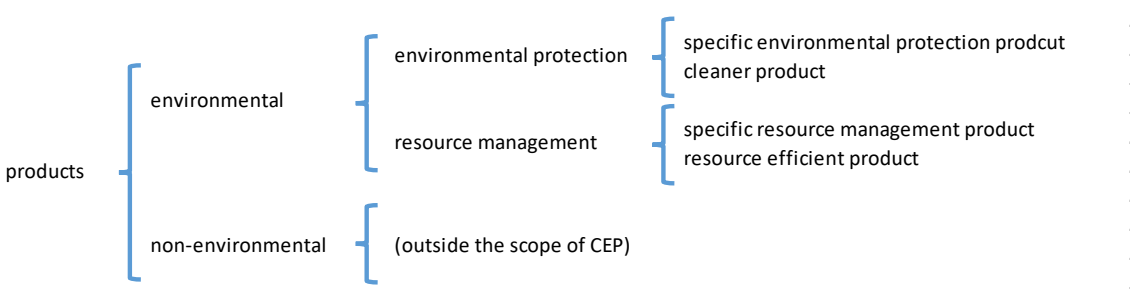
i) specific products, i.e. goods and services produced, designed and manufactured for purposes of environmental protection and management of natural resource (e.g. sewerage services and collection, treatment and disposal services for waste, equipment for renewable energy production);

ii) cleaner and resource efficient goods, i.e. goods whose primary use is not an environmental one, but are less polluting than equivalent "normal" goods which have the same usage and provides an equivalent service. For instance an electric vehicle is a cleaner product than a conventional vehicle with a thermal combustion engine.

"Cleaner goods" help to prevent pollution or environmental degradation because they are less polluting at the time of their consumption and/or scrapping, compared with equivalent conventional goods (e.g. sacks and bags for replacing plastic bags; bio-plastic sacks and bags; electric vehicles components; etc…); "resource-efficient goods" help to prevent natural resource depletion because they contain fewer natural resources in the production stage (e.g. renewable energy, heat from heat pumps and solar panels); and/or in the use stage (e.g. resource efficient appliances, water-saving devices, etc…).

Environmental products are defined in terms of their environmental purpose rather than in terms of who produces them, i.e. environmental activities or not.

Figure 2: Categories of products



The CEP can also classify environmental expenditure. Environmental expenditure is defined on the basis of environmental activities and products.

Environmental expenditure consists of:

- expenditure on environmental products e.g. purchase of solar panels; and
- expenditure incurred for environmental (production) activities. It also includes expenditure in non-environmental products. For instance, waste management by a municipality is an environmental activity, and it requires vehicles, buildings, machinery, etc. which may be conventional ones and not necessarily specific for the environment nor cleaner or more resource efficient.

This means that some environmental expenditure relates to environmental activities, and other expenditure relates to environmental products (goods and services). Expenditures on environmental products are not always related to environmental (production) activities, e.g. purchase of environmental services, like waste or wastewater management by a corporation undertaking non-environmental production activities

This concerns the transactions that the SEEA CF and SNA classify as expenditure. The expenditure considered here is both final uses (final consumption, gross fixed capital formation) and intermediate consumption. This is terminology from the SEEA CF, in turn based on the SNA. Expenditure can be incurred by corporations, households or government (the latter frequently aggregated with non-profit institutions serving households - NPISH). Different categories of expenditure apply to those economic actors, as follows:

By corporations

- Gross fixed capital formation (i.e. investment) on environmental products;
- Gross fixed capital formation for environmental activities, i.e. for the production of environmental products;
- Intermediate consumption on environmental products;
- Intermediate consumption for environmental activities i.e. for the production of environmental products. Intermediate consumption are the goods and services either transformed or used up during production processes;
- Transfers received for environmental activities or environmental products, e.g. unrequited payments from the Government or the sector ‘Rest of the World’ to the corporations.

By government and NPISH

- Final consumption on environmental products. This is collective consumption whenever products produced by government are not sold;[3]
- Gross fixed capital formation on environmental products;
- Gross fixed capital formation for environmental activities;
- Intermediate consumption for environmental activities;
- Intermediate consumption on environmental products;
- Transfers paid for environmental activities or environmental products, i.e. unrequited payments from the government to the corporations or households;
- Transfers received for environment activities or environmental products, e.g. unrequited payments from the sector 'Rest of the World' to the government.

By households

- Final consumption on environmental products;
- Gross fixed capital formation in cleaner and resource efficient dwellings or in dwellings refurbishment;
- Transfers received for environmental products, i.e. unrequited payments from the government to the households.

Further details and definitions can be found in the Eurostat handbook on environmental protection accounts.

The classification of certain of those expenditures in CEP has clear connections to other functional classifications, e.g. COFOG for government expenditure.

Negative environmental effects

An additional issue is that even activities or products, with a primary environmental purpose may have negative secondary effects (a.k.a. externalities) for the environment. These possible unwanted negative effects are not assessed as classification criteria in the CEP approach. For example, energy production from wind fits within the scope of CEP because it serves the purpose of minimising the intake of fossil resources through the production of energy from a renewable source and regardless of possible noise caused or hindrance to biodiversity.

[3] SNA distinguishes between two types of government final consumption: actual final consumption of general government and final consumption expenditure of the general government. The part that is environmental expenditure is identical and there is no need to distinguish these two types of final consumption. The difference between these two types of final consumption is relevant about social expenditure.

Application of the environmental purpose to activities, products and expenditures

The CEP can classify environmental activities, environmental products or environmental expenditures as defined above. Those activities, products and expenditures are classified according to their environmental purpose. As for every classification by purpose, there is the possibility that a same activity could serve different environmental purposes in different countries (e.g. the purchase of double-glazed windows in warm countries will typically relate to issues of noise protection, whereas in colder countries they will be for energy saving). In order to reduce the possible difficulties for the compiler and to have comparable statistics, some clarification, examples and operational rules have been added in the **explanatory notes of the classification**, in order to clarify and harmonize the classification of a number of activities that could lead to different interpretations by the compilers of statistics and account.

Previous environmental classifications: CEPA and CReMA

The CEP is based on the pre-existing functional classifications used for SEEA CF monetary environmental accounting:

- classification of environmental protection activities and expenditure (CEPA 2000);
- classification of resource management activities and expenditure (CReMA 2008)

The CEPA 2000 is an internationally agreed classification included in the family of international standard classification[4].

The CReMA 2008 (or CReMA for short) has been developed by Eurostat and used in Europe for data collection and analysis of statistics on the Environmental goods and services sector (EGSS)[5] as well as Environmental subsidies and similar transfers (ESST). It includes activities and expenditures related to the management of natural resources, i.e. the preservation and maintenance of the stock of natural resources. The CReMA was built consistently with the structure and classification principles of the CEPA.

[4] The International Family of Classifications primarily contains those classifications that have been reviewed and approved as guidelines by the United Nations Statistical Commission or other competent intergovernmental bodies, covering broad statistical areas such as economics, demographics, labour, health, education, social welfare, geography, environment, and tourism, among others.

[5] See Environmental goods and services sector accounts, Handbook, 2016 Edition.

Categories were built complementarily with CEPA and without overlapping with CEPA classes (the numbering of the CReMA classes follows the CEPA's one).

CEPA and CReMA are more than 15 years old. CEP provides an update to take account of the current state of the art.

2. Explanation classification structure

The CEP has three levels and allows for additional levels for national use. The level 1 structure of CEP (the first two-digits) are the CEP divisions. CEP divisions 01 to 08 are also called (environmental) domains. The level 2 structure of CEP (the third and fourth-digits) are the CEP groups and the level 3 (the fifth and sixth-digits) are the classes.

The following "principles" are at the basis of the classification's design:

- the first level of the classification should be informative and clear for the users about the specific environmental activities, products and expenditures included, and ideally also their primary environmental purpose (commonly directly linking with one or a number of environmental policies);
- the breakdown at all levels (first, second and third) should ensure (as much as possible) symmetry across categories of a given classification detail in the availability of information.

At the first level split, the CEP groups together "homogeneous" environmental protection and/or resource management categories, i.e. categories that are linked together and represent borderline cases, such as for example in the case of activities related to biodiversity and forest or waste and materials recovery (see Table 1).

Table 1 – Classification of environmental purposes - divisions

01	**Air and climate**
02	**Energy**
03	**Wastewater and water resources**
04	**Waste, materials recovery and savings**
05	**Soil, surface and groundwater, biodiversity and forest**
06	**Noise and radiation**
07	**Research and development**
08	**Cross-cutting and other environmental purposes**

CEP divisions 07 and 08 include transversal purposes, i.e. R&D and administration, management as well as education, training and information. The classification of

administrative, regulation, consultancy, education, training, information and other activities should be classified in CEP 01-06 whenever possible. Classification under CEP 08 should be limited to indivisible actions (e.g. trainings covering all environmental issues without distinctions or modules) or cases when there is not enough information to do better.

At the second level split the environmental protection or resource management categories are singled out. The two types of SEEA environmental activities, namely environmental protection and resource management, have a correspondence at group level of CEP. The only exception is obviously represented by CEP 08 Cross-cutting and other environmental purposes as it refers to activities that are traversal to the whole classification that includes both resource management and environmental protection (namely: administration, management as well as education, training and information). The split ensures as much as possible a bridge with CEPA and CReMA as separate classification and as used to classify environmental activities, products, expenditure and other transactions, so that time series reconciliation can be relatively easily established[6].

At the third level split, in almost all cases, an extra level of granularity is offered with regard to the activities, products and expenditures that are object of the classification.

The structure of the CEP classification has been designed to be flexible enough to accommodate policy and user needs of different international settings. In this context, national compilers can also consider to have further level of details to organize available information in their country and relevant for policy needs, by using additional level splits. Setting up a national CEP should follow usual classification principles. E.g. the CEP 020101 “Production of energy from renewable sources” can be further detailed by energy sources (wind, solar, etc.).

The full structure of CEP is found in section 6 and the corresponding explanatory notes in section 7.

It is noted the CEP structure has no categories for climate change mitigation and adaptation, circular economy, bio-economy, and other such policy areas. An alternative solution is proposed as explained in section 5 and in a separate Annex to the classification.

[6] This is particularly important in Europe to preserve data time series built over the last decade, in particular about products and activities of the environmental sector (EGSS account), environmental expenditure (EPEA account) and environmental subsidies (ESST account).

3. Classification units and statistical units

The CEP uses the criterion of environmental purpose to classify environmental economic activities, environmental products and environmental expenditures. The classification units are activities, products and expenditures. The scope of the classification was addressed in section 1.

The statistical units for CEP are the same as the economic units in the SEEA CF and SNA. The SEEA CF (paragraphs 2.109-2.110) states that the relevant economic units are those that interact with each other and that are able to make decisions about the production, consumption and accumulation of goods and services.

The economic units are considered in terms of their economic purposes, objectives and behaviours. An institutional unit is an economic entity that is capable, in its own right, of owning assets, incurring liabilities, and engaging in transactions and other economic activities with other entities. Institutional units may be either households, or legal or social entities (such as corporations) that are recognized independently of the people that own or control them. Groupings of institutional units that are similar in their purposes, objectives and behaviours are defined as institutional sectors. Some groupings of SNA institutional sectors are frequent in environmental economic accounts, as: General Government, Corporations, Households, Non-profit Institutions serving Households, Rest of the World. Those SEEA CF definitions of institutional units and institutional sectors are fully aligned to SNA.

Whenever the CEP classifies **environmental activities** the statistical units are normally enterprises (which correspond to institutional units in the Corporate institutional sectors, as seen above). SEEA CF (para 2.114-2.116) states that an enterprise is the view of an institutional unit as a producer of goods and services. Enterprises owned by the corporate sector or by the Government can engage in environmental activities. Instead the households units do not engage in environmental (productive) activities, unless it is for environmental activities for their own final consumption e.g. production of electricity from solar panels for household use. Exceptionally, CEP may use establishments as statistical units, depending on the data sources available and in particular for SEEA CF accounts related to (environmental) productive activities. An enterprise may comprise one or more establishments and hence may be located across multiple locations within a single economy. An establishment is an enterprise, or part of an enterprise, that is situated in a single location and in which only a single productive activity is carried out, or in which the principal productive activity accounts for most of the value added. Establishments may not be institutional units, in particular if they do not have autonomy of decision. The groupings of establishments that undertake similar types of productive activity are referred to as industries. As

regards statistical units enterprises and establishments, CEP for SEEA CF transactions is not different than ISIC for SNA transactions.

Enterprises may carry out an environmental protection activity as principal, secondary or ancillary activity. The principal activity is the one for which the value added exceeds that of any other activity carried out within the same unit (SNA 2008, § 5.6). A secondary activity is an activity carried out in addition to the principal activity (SNA 2008, § 5.9). An ancillary activity is an activity whose output is intended for use within an enterprise (SNA 2008, § 5.10). Ancillary environmental protection activities directly serve an environmental purpose and result in products for use (other than gross capital formation) within the same establishment to support its principal and secondary activities (e.g. in-house environmental protection services such as monitoring of exhaust gas emissions, or in-house treatment of waste water).

The CEP classifies **environmental products**, i.e. goods and services that have common characteristics. The environmental products enter in the framework SEEA CF chapter IV whenever statistical units operate with them: produce them, consume them, invest on them, etc. according to the economic behaviour of each institutional unit e.g. corporate, government, households. For instance, the statistical units enterprises operate with environmental products whenever they produce or export them, or purchase them as investment. Household units consume environmental products. Government units can either consume or produce environmental products or purchase them as investment. In this respect, the situation for environmental products in SEEA CF is identical to economic products in SNA.

Finally, CEP classifies **environmental expenditure.** Enterprises, government units and household units can incur in environmental expenditure e.g. for consumption or investment (see categories of expenditure in section 1 above). As regards using CEP for expenditure, the statistical unit depends on the structure of the data sources used. For example, analyses of budgetary documents of public administrations imply the classification of individual budget items.

In summary, the statistical units are as follows:

- Statistical units for CEP when classifying environmental activities: normally, institutional units. In some circumstances (e.g. data sources or for certain production-oriented SEEA accounts): establishments.
- Statistical units for CEP when classifying environmental products: normally, institutional units engaged in transactions with those products. In some circumstances (e.g. data sources or for certain production-oriented SEEA accounts): establishments.

- Statistical units for CEP when classifying environmental expenditures: normally, institutional units engaged in expenditure. In some circumstances (e.g. data sources) aggregations of institutional units.

In practical applications, the choice of the classification unit is often determined by the specific kind of SEEA account to be compiled.

4. Classification criteria: environmental purpose

The environmental purpose criterion has a central function delimitating the scope of the CEP and allocating the classification units to CEP divisions/groups/classes. While some economic activities may be undertaken only for a single purpose, many activities are undertaken for a variety of purposes. Guidance to implement the purpose criterion is provided here.

Conceptually, the environmental purpose should be understood in terms of the motivation of the agent who engages in production activities, acquires a product (good or service) or generates a financial transaction, regardless of effect or impact. Real effects or impacts of activities are not considered ex-post. In practice, however, motivation is difficult to discern. Many economic activities are undertaken for a variety of purposes, environmental and non-environmental ones. Determining the purpose may involve a degree of interpretation, suffer changes over time or may not be fully comparable across countries. More clarity can be achieved by distinguishing the following operational aspects:

- Purpose based on technical nature, i.e. inputs, production process and output characterising a given activity irrespective of legislation or revealed intentions;
- Purpose based on intention, motivation or presumed effect, i.e. assumed environmental consequences of an activity or action. Actual dominant motivation and stated intentions may be difficult to observe or measure;
- Purpose laid down in legislation, in particular, purpose stated in the provisions or preambles of the legislation, which may or may not correspond to the legislation title;
- Purpose identified indirectly through the real effect, i.e. the objectively proven consequences on the environment of an activity or action. This operational aspect is a last resource and should be avoided as much as possible.

In practice, the **principal basis** for determining the environmental purpose of an activity or a product is **the technical nature**. This is the most neutral basis for determining the environmental purpose and thus best suited for statistics. In particular, the technical nature considers if the economic activity reduces the pressure

on the environment or makes more efficient use of natural resources, whatever the stated motivations and presumed or real effects are. For example, this criterion leads to the inclusion of waste management because the activity complies with the reference definition from a technical point of view, i.e. it removes waste from the environment and reduce pollution.

The **environmental effects or environmental impact** are different from the purpose. Actions and activities undertaken for other than environmental purposes can have positive environmental effects. Establishing the environmental effects, or confirming presumed effects, is more burdensome than analysing the purpose (technical nature), as it may require more information and may only be observable ex-post. It may require a complete life-cycle analysis and analysis of behaviour of economic actors, substitution effect and elasticities. The environmental effects or impacts are not the principal basis for determining the environmental purpose. The environmental intention or effect or the purpose laid down in legislation can be considered as auxiliary basis to determine the environmental purpose (e.g. technologies involving several environmental domains), in particular if the available information does not allow the application of the technical nature criterion. This may be useful in particular for environmental expenditures, for instance to classify a particular subsidy as environmental, the following criteria should be considered:

- the technical nature of the activity supported by a specific subsidy or similar transfer (i.e. if the supported activity is an environmental protection or resource management activity and the subsidy and similar transfer is specific to it) and
- the legislator's motive behind the subsidy or similar transfer as given by the title or description in the legislation.

This approach to operationalise the environmental purpose and technical nature allows statisticians to identify environmental activities and environmental products on a conceptual basis. This means it is possible to make lists of environmental activities and products based on the consideration of their fulfilment of the SEEA environmental purpose criterion. Statisticians around the world compile such lists, taking account of the national circumstances. For instance, there is a list of core environmental products and activities applicable in the European Union countries (and it even has legal status in those countries): Commission Implementing Regulation (EU) No 2015/2174. In order to facilitate the use of this list, Eurostat has also developed an operational list with correspondence to standard classifications of activities and products (NACE, CPA and PRODCOM, the former two being the European versions of ISIC and CPC).

5. CEP and policy areas

The CEP is designed to classify data compiled according to the SEEA CF, and the SEEA CF is a multi-purpose statistical framework. One of the advantages of such framework is the possibility to compile in one single exercise data serving the needs of different users, also with interests in different policy areas. Correspondingly, one of the goals of the CEP is to support an integrated framework, flexible enough to ensure the organisation of the information according to policy needs in the short, medium and long-term.

Some policy areas are directly classification entries, i.e. biodiversity. For other policy areas such as climate change or circular economy, a mapping is necessary. They cannot be directly categories of the classification. This is for two reasons:

1) Some of those policy areas have overlaps. This is the case, e.g. for climate change mitigation and circular economy: some activities that have a circular economy purpose also have a climate mitigation purpose. For instance, activities leading to more recycling lead to more secondary raw materials and eventually to less emissions of greenhouse gases, insofar the generation of secondary raw materials require less energy and less emissions than extraction of primary raw materials. Another example: activities leading to reforestation lead both to more carbon sequestration (thus climate change mitigation) and more physical support for biodiversity. Such overlaps across policy areas means climate change, circular economy, biodiversity, etc. cannot be categories of the same statistical classification. Given the multi-purpose goal of CEP and SEEA CF, this problem requires a different, separately solution.

2) Some of these policy areas, but not all, have a scope extending beyond the SEEA CF of environmental activities. One example of policy area fully within the scope of SEEA CF is biodiversity: all activities with a biodiversity (main) purpose are within the SEEA CF environmental activities scope, and thus under the CEP scope. One example of policy area partially beyond the scope of SEEA CF is the circular economy: whereas some circular economy activities are within the scope of SEEA CF environmental activities (such as waste management) others are not (such as repair of products to extend their life cycle).

The solution proposed is to generate aggregates of CEP categories for policy areas, whenever the CEP categories do not exist or are not considered sufficiently relevant. Those aggregates may not be categories of the CEP. Those aggregates partially overlap with each other and thus their total would lead to double counting. Those aggregates

are however a useful application and extension of the CEP with a view to provide users with SEEA-based estimates on important policy areas such as climate change. Examples of mapping into the six dimensions of the European Union taxonomy are provided in an Annex to the classification.

6. Structure of the classification of environmental purposes

01 Air and climate

0101 Reduction and control of greenhouse gases

010101 Prevention of greenhouses gases emissions

010102 Treatment of greenhouse gases

010103 Monitoring and measurement of greenhouse gases

010199 Others for reduction and control of greenhouse gases, n.e.c.

0102 Reduction and control of other air pollutants

010201 Prevention of other air pollutants emissions

010202 Treatment of other air pollutants

010203 Monitoring and measurement of other air pollutants

010299 Others for reduction and control of other air pollutants, n.e.c.

02 Energy

0201 Energy from renewable sources

020101 Production of energy from renewable sources

020102 Equipment and technologies for renewable energy

020103 Supporting services for renewable energy

020104 Monitoring and measurement of energy from renewable sources)

020199 Others for energy from renewable sources, n.e.c.

0202 Energy savings and management

020201 Energy savings through in-process modifications

020202 Energy efficient buildings; other efficient energy-demand technologies

020203 Monitoring and measurement for energy savings and management

020299 Others for energy savings and management, n.e.c.

03 Wastewater and water resources

0301 Wastewater management

030101 Prevention of wastewater pollution

030102 Management of sewerage networks

030103 Treatment of wastewater

030104 Treatment of cooling water

030105 Monitoring and measurement for wastewater management

030199 Others for wastewater management, n.e.c.

0302 Water savings and management of natural water resources

030201 Reduction of water intake

030202 Water reuse and savings, reduction of water losses and leaks

030203 Replenishment of natural water resources

030204 Monitoring and measurement of water savings and natural water resources

030299 Others for water savings and management of natural water resources, n.e.c.

04 Waste, materials recovery and savings

0401 Waste management

040101 Prevention of solid waste pollution

040102 Collection and transport of waste

040103 Treatment and disposal of hazardous waste

040104 Treatment and disposal of non-hazardous waste

040105 Monitoring and measurement for waste management

040199 Others for waste management, n.e.c.

0402 Materials recovery and savings

040201 Reduction of the intake of wood

040202 Reduction of the intake of mineral (metal, stone, glass, ceramics, other)

040203 Reduction of the intake of fossil fuels for non-energy uses

040204 Reduction of the intake of natural resources for textiles

040205 Reduction of the intake of other materials

040206 Monitoring and measurement for materials recovery and savings

040299 Others for materials recovery and savings, n.e.c.

05 Soil, surface and groundwater, biodiversity and forest

0501 Protection of soil, surface and groundwater

050101 Prevention of pollutant infiltration into soil and water bodies

050102 Cleaning up of soil and water bodies

050103 Protection from erosion and other physical degradation of soil and water

050104 Prevention and remediation of soil and groundwater salinity

050105 Monitoring and measurement for soil, surface and groundwater protection

050199 Others for soil, surface and groundwater protection, n.e.c.

0502 Protection of biodiversity and landscape

050201 Protection and rehabilitation of species and habitats

050202 Protection of natural and semi-natural landscapes

050203 Monitoring and measurement for protection of biodiversity and landscape

050299 Others for protection of biodiversity and landscape, n.e.c.

0503 Management of forest resources

050301 Reforestation, afforestation and forest-related land management

050302 Protection against forest fires

050303 Monitoring and measurement of forest resources

050399 Others for management of forest resources, n.e.c.

06 Noise and radiation

0601 Protection against noise and vibration

060101 Prevention and reduction of noise and vibration

060102 Monitoring and measurement for protection against noise and vibration

060199 Others for protection against noise and vibration, n.e.c.

0602 Protection against radiation

060201 Protection of ambient media against radiation

060202 Transport and treatment of high level radioactive waste

060203 Monitoring and, measurement of radioactivity

060299 Others for protection against radiation, n.e.c.

07 Research and development

0701 R&D for air and climate

070101 R&D for reduction and control of greenhouse gases

070102 R&D for reduction and control of other air pollutants

0702 R&D for energy

070201 R&D for renewables

070202 R&D for renewables and energy savings

0703 R&D for wastewater management

070300 R&D for wastewater management

0704 R&D for water resources

070400 R&D for water resources

0705 R&D for waste

070500 R&D for waste

0706 R&D for materials recovery and savings

070600 R&D for materials recovery and savings

0707 R&D for soil, surface and groundwater and biodiversity

070701 R&D for soil, surface and groundwater

070702 R&D for biodiversity

0708 R&D for forest management

070800 R&D for forest management

0709 R&D for noise and radiation

070901 R&D for noise and vibration

070902 R&D for radiation

08 Cross-cutting and other environmental purposes

0801 Environmental education and training

080100 Environmental education and training.

0802 General environmental administration, management, regulation, dissemination and consultancy

080200 General environmental administration, management, regulation, dissemination and consultancy

0803 Other environmental purposes

080300 Other environmental purposes

7. Explanatory notes

01 Air and climate

Activities, expenditures and products aimed at reducing air emissions and/or concentration of air pollutants.

For definitions of mitigation and adaptation, please refer to IPCC, 2018: Annex I: Glossary [Matthews, J.B.R. (ed.)]

It includes activities and expenditures related to prevention and/or reduction of emission and concentrations of greenhouse gases (included under CEP 0101) and of other air pollutants (included under CEP 0102).

It excludes activities and expenditures related to climate change adaptation.

0101 Reduction and control of greenhouse gases

Activities, expenditures and products aimed at reducing greenhouse gases emissions into the ambient air or reducing their concentrations.

It includes:

• preventing greenhouse gases emissions through cleaner production processes and products;

• treatment of greenhouse gases emissions through end of pipe processes and equipment;

• monitoring greenhouse gases emissions;

• all other activities aimed at reducing greenhouse gases emissions including education, training, information provision and general administration (ETIGA) activities.

It excludes:

• activities, expenditures and products related to renewable energy (included under CEP 0201);

• activities, expenditures and products for energy saving (included under CEP 0202);

• climate change adaptation activities, expenditure and products (e.g. disaster prevention activities dedicated to extreme weather events such as storms, heat waves, droughts, flood, etc.).

010101 Prevention of greenhouse gases emissions

Activities, expenditures and products aiming to eliminate or reduce the emissions of greenhouse gases through In-Process Modifications (IPMs), through:

• cleaner production processes and other technologies (cleaner technologies);

• cleaner (adapted) products.

It includes:

• production and installation of processes designed to reduce the generation of greenhouse gases during production, storage or transportation, e.g.:

- fuel combustion improvement;
- recovery of solvents;
- prevention of spills and leaks through improving air-tightness of equipment, etc.

• modifying or adapting production process or facilities to enable either the substitution of raw materials, energy, catalysts and other inputs by non- (or less) polluting products, or the treatment of raw materials prior to their use in order to make them less polluting in terms of greenhouse gases emissions;

• electric and hybrid cars, buses and other cleaner and more efficient vehicles, including components (as specified in the Eurostat Guidance Note);

• charging stations and other essential infrastructure for recharging electric road vehicles.

Guidance note – Reporting of electric and more resource-efficient transport equipment in EPEA and EGSS accounts

010102 Treatment of greenhouse gases

Activities, expenditures and products involving the installation, maintenance and operation of end-of-pipe equipment for the removal and/or reduction of air emissions and pollutants either from the combustion of fuels or from other processes.

Exhaust gases are emissions into the air, usually through exhaust pipes, stacks or chimneys. Ventilation air refers to the exhaust from air conditioning systems of industrial facilities.

It includes:

• exhaust gas and air treatment for solids and liquids particulate: dry processes (through fabric filters, separators, dust collectors), wet processes (scrubbers, washing towers);

• exhaust gas and air treatment for gaseous and vaporous materials through absorption processes, condensation processes, catalytic exhaust purification, biological exhaust gas cleaning (biowashers), post combustion;

• carbon capture and storage (CCS) & carbon capture and use (CCU) related infrastructure and systems operation;

• activities aiming to increase the dispersion of gases to reduce concentrations of greenhouse gases.

010103 Monitoring and measurement of greenhouse gases

Activities, expenditures and products aimed at monitoring air emissions and pollutant concentrations.

It includes:

• measurement services of air quality with specific reference to greenhouse gases;

• measurement services of greenhouse gases from vehicles and heating systems;

• monitoring related to the ozone depleting substances and greenhouse gases;

• manufacturing and installation of monitoring and measurement equipment for greenhouse gases emissions.

It excludes:

• activities of weather stations.

010199 Others for reduction and control of greenhouse gases n.e.c.

All other activities, expenditures and products aimed at reducing emissions and/or concentration of greenhouse gases, including ETIGA activities specific to CEP 0101 when they can be separated from other activities belonging to CEP 0101 and from similar activities related to other CEP classes.

It includes:

• education, training, information provision and general administration (ETIGA) activities.

0102 Reduction and control of other air pollutants

Activities, expenditures and products aimed at reducing emissions of pollutants other than greenhouse gases into the ambient air or reducing their concentrations.

It includes:

• preventing air emissions of pollutants other than greenhouse gases through cleaner production processes and products;

• treatment of air emissions of pollutants other than greenhouse gases through end of pipe processes and equipment;

• monitoring air emissions of pollutants other than greenhouse gases;

• all other activities aimed at reducing air emissions of pollutants other than greenhouse gases including education, training, information provision and general administration (ETIGA) activities.

It excludes:

• activities, expenditures and products for energy saving (included under CEP 0202);

• climate change adaptation activities, expenditure and products (e.g. disaster prevention activities dedicated to extreme weather events such as storms, heat waves, droughts, flood, etc.);

• activities, expenditures and products related to renewable energy (included under CEP 0201).

010201 Prevention of other air pollutants emissions

Activities, expenditures and products aiming to eliminate or reduce the emissions of greenhouse gases through In-Process Modifications (IPMs), through:

• cleaner production processes and other technologies (cleaner technologies);

• cleaner (adapted) products.

It includes:

• production and installation of processes designed to reduce the generation of emissions other than greenhouse gases during production, storage or transportation;

• modifying or adapting production process or facilities to enable either the substitution of raw materials, energy, catalysts and other inputs by non- (or less) polluting products, or the treatment of raw materials prior to their use in order to make them less polluting in terms of emissions other than greenhouse gases.

010202 Treatment of other air pollutants

Activities, expenditures and products involving the installation, maintenance and operation of end-of-pipe equipment for the removal and/or reduction of air emissions and pollutants other than greenhouse gases either from the combustion of fuels or from other processes, e.g. filters capturing air pollutants from factory chimneys.

010203 Monitoring and measurement of other air pollutants

Activities, expenditures and products aimed at monitoring emissions and concentration of pollutants other than greenhouse gases.

It includes:

• measurement services of air quality with specific reference to air pollutants other than greenhouse gases;

• measurement services of air pollutants from vehicles and heating systems;

• monitoring related to air pollutants other than greenhouse gases;

• manufacturing and installation of monitoring and measurement equipment for emissions other than greenhouse gases.

It excludes:

• activities of weather stations.

010299 Others for reduction and control of other air pollutants n.e.c.

All other activities, expenditures and products aimed at reducing emissions and/or concentration of other air pollutants, including ETIGA activities specific to CEP 0102

when they can be separated from other activities belonging to CEP 0102 and from similar activities related to other CEP classes.

It includes:

• education, training, information provision and general administration (ETIGA) activities.

02 Energy

Activities, expenditures and products aimed at production of renewable energy and at energy savings.

0201 Energy from renewable sources

Activities, expenditures and products related to renewable energy.

It includes:

• the production of renewable energy, supporting services for renewable energy, monitoring, measurement and similar activities.

020101 Production of energy from renewable sources

Activities, expenditures and products related to the production of energy from renewable sources.

Sources for the production of renewable energy are:

• Wind

• Solar

• Aero-thermal

• Geothermal

• Hydrothermal and ocean energy

• Hydropower, excluding pump storage stations (included under CEP 020201)

• Biomass (including biogas and biofuels)

• Landfill gas

• Sewage treatment plant gas and biogas

Biomass is defined as the biodegradable fraction of products, waste and residues of biological origin from nature, agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste. Biomass includes biofuel and biogas.

Renewables include the primary energy equivalent of hydro (excluding pumped storage), geothermal, solar, wind, tide and wave sources. Energy derived from solid biofuels, biogasoline, biodiesels, other liquid biofuels, biogases and the renewable fraction of municipal waste are also included.

It includes:

• production of electricity, heat and fuels (including hydrogen) from renewable sources. For example: production of electricity from wind, solar and hydropower, production of heat from aerothermal, hydrothermal and geothermal sources, production of biofuels for transport, production of biogas and biofuels from waste etc., fuel wood production, wood pellets and other wood or vegetal based energy products, biofuels from recycled materials (cooking oil);

• production of renewable energy as non-market output for own use by households and as secondary output by producers classified in other industries;

• production of energy through incineration of biodegradable waste;

• production of energy from cogeneration and trigeneration plants using renewable fuels for this purpose.

It excludes:

• pump storage stations (included under CEP 020201)

• waste incineration without energy recovery (included under CEP 040103);

• waste incineration with energy recovery from non-biodegradable waste (included under CEP 020201);

• activities aimed at the use of renewable energy (e.g. distribution);

• production of biogas from sewage sludge (included under CEP 030103);

• production of biomass to be further processed into biofuels.

The production of energy from renewable sources can be further detailed at 4th level by type of renewable energy or split into three categories (renewable with and without CO2 emissions and non-carbon based fuels) to have coherence with air emissions accounts.

020102 Equipment and technologies for renewable energy

Specific equipment for the production of energy from renewable sources.

It includes:

• equipment for producing energy from renewable sources (solar panels, photovoltaic cells, hydraulic turbines, wind turbines, fire wood and other biomass boilers, etc.);

• energy storage technology associated with renewable energy source (e.g. compressed air storage power stations, sensitive heat storage systems, latent heat storage system, hydrogen storage, power to gas i.e. storage of wind power in the form of hydrogen/methane).

020103 Supporting services for renewable energy

Activities, expenditures and products related to the construction, installation and maintenance of renewable energy production sites.

It includes:

• engineering and architectural services related to renewable energy.

020104 Monitoring and measurement of energy from renewable sources

Activities, expenditures and products aimed at monitoring renewable energy

It includes:

• inventories of renewable energy;

• assessments of the potential for renewable energy production.

020199 Others for energy from renewable sources n.e.c.

All other activities, expenditures and products related to renewable energy, including ETIGA activities specific to CEP 0201 when they can be separated from other activities belonging to CEP 0201 and from similar activities related to other CEP classes.

It includes:

• education, training, information provision and general administration (ETIGA) activities

0202 Energy savings and management

Activities, expenditures and products aiming at reducing energy use such as in-process modifications (IPMs), reduction of losses, etc.

It includes:

• activities, expenditures and products aiming at providing energy savings through IPMs;

• activities, expenditures and products aiming at minimising heat and energy losses and maximisation of energy recovery;

• activities, expenditures and products concerning monitoring and measurement (M&M) and management related to energy saving;

• ETIGA linked to the management and saving of heat and energy.

It excludes:

• the production of energy, both from renewable sources and fossil fuels (included under CEP 0102); operation of cogeneration and trigeneration plants that use renewable fuels as a specific example of production of energy from renewable sources;

•activities, expenditures and products mainly aimed at reducing air pollution (included under CEP 01).

020201 Energy savings through in-process modifications

Activities, expenditures and products aiming at minimising the consumption of energy through IPMs. These activities are often carried out as ancillary or own-final-use activities.

It includes:

• replacement or adjustment of production processes (including energy production processes);

• manufacturing and installation of heat recovery equipment;

• production of (non-renewable) energy from cogeneration and trigeneration plants;

• production of energy through incineration of non-biodegradable waste;

• equipment for heat and electricity cogeneration from non-renewable sources, manufacturing and installation of cogeneration plants and their components;

• equipment for heat, cold and electricity trigeneration from non-renewable sources, manufacturing and installation of trigeneration plants and their components;

• reducing losses in energy transportation;

• pumped-storage hydropower stations (PSHS);

• certain elements of smart grids, such as smart meters and specific software;

• the manufacturing and installing of all equipment used for energy storage (including PSHS), other than the ones specifically developed for storing energy produced from renewable sources.

It excludes:

• activities, expenditures and products related to the production of renewable energy from cogeneration and trigeneration plants (included under CEP 020101).

020202 Energy efficient buildings; other efficient energy-demand technologies

Activities, expenditures and products aiming at minimising the consumption of energy through the renovation of existing buildings and construction of energy efficient buildings as well as the use of other efficient energy-demand technologies.

Standards for renovation of the existing building stock and for construction of new buildings are set at the EU level. Check with the Directive amending the Energy Performance of Buildings Directive (2018/844/EU) for the definition of standards for efficient renovation and definition of new energy efficient buildings.

It includes:

• energetic refurbishment activities;

• construction of new energy efficient buildings;

• production of insulating materials and triple-glassed windows;

• energy efficient appliances (e.g. washing machines, fridges, dishwashers, etc.) and machinery (e.g. boilers, etc.).

020203 Monitoring and measurement for energy savings and management

Activities, expenditures and products aimed at monitoring energy performances with the view of increasing energy efficiency.

It includes:

• audits, production of energy performance certificates and assessments of energy savings potentials.

020299 Others for energy savings and management n.e.c.

All other activities, expenditures and products related to energy savings and management, including ETIGA activities specific to CEP 0202 when they can be separated from other activities belonging to CEP 0202 and from similar activities related to other CEP classes.

It includes:

- education, training, information provision and general administration (ETIGA) activities.

03 Wastewater and water resources

Activities, expenditures and products aimed at treating wastewater (up to environmental standards or quality norms) and at safeguarding stocks of water.

Wastewater is discarded water that is no longer required by the owner or user (SEEA, Central Framework, par. 3.86).

Septic tanks are tanks through which wastewater is flowing and the suspended matter is decanted as sludge - organic matter in the water and in the sludge are partly decomposed by anaerobic bacteria and other micro-organisms.

It includes activities, expenditures and products related to wastewater management (included under CEP 0301) and water savings and management of natural water (included under CEP 0302).

0301 Wastewater management

Activities, expenditures and products aimed at the prevention of pollution of surface water through the reduction of the release of wastewater into inland surface water and seawater.

It includes:

• the collection and treatment of wastewater;

• septic tanks;

• monitoring activities;

• education, training, information provision and general administration (ETIGA) activities.

It excludes:

• activities, expenditures and products aiming to protect groundwater from pollutant infiltration and the cleaning up of water bodies after pollution (included under CEP 0501).

030101 Prevention of wastewater pollution

Activities, expenditures and products aimed at reducing the generation of wastewater through in-process modifications (IPMs) through:

• cleaner and more efficient production processes and other technologies (cleaner technologies);

• cleaner (adapted) products.

It includes:

• production and installation of processes designed to reduce water pollutants or wastewater generated during production. Examples include separation of networks and treatment and re-use of water used in production processes, etc.;

• modifying or adapting an existing production process or facilities to enable the substitution of raw materials, catalysts and other inputs by non- (or less) water polluting products.

030102 Management of sewerage networks

Activities, expenditures and products aimed at the operation, maintenance and repair of sewerage networks.

Sewerage networks which are the systems of collectors, pipelines, vehicles, tanks, conduits and pumps used in the process of transporting wastewater (rainwater, domestic and other wastewater) from the points of generation to either a sewage treatment plant or to a point where wastewater is discharged.

030103 Treatment of wastewater

Activities, expenditures and products aimed at treating wastewater up to environmental standards or quality norms.

Three broad types of treatment (mechanical, biological, and advanced treatment) are defined below. Alternative definitions of types of treatment may be used, e.g. based on removal rates for biological oxygen demand.

• Mechanical (or physical) treatment separates wastewater into treated water and sludge. Mechanical treatment includes the use of sedimentation and the use of screens to separate large solids. Sedimentation may be assisted by chemicals or flotation (elimination of sand, oil, part of the sludge, etc.).

• Biological treatment employs aerobic or anaerobic microorganisms to treat wastewater and results in treated wastewater and separate sludge containing microbial mass and pollutants. This activity is designed to eliminate pollution from oxidisable materials through the use of bacteria: activated sludge techniques or

anaerobic treatment for specific concentrated wastewater. Biodegradable materials are treated with the addition of bacteria-enriched sludge in open or closed tanks.

• Advanced treatment reduces specific constituents in wastewater not normally achieved by other treatment options. It covers all processes which are not considered to be mechanical or biological. This activity is aimed at eliminating oxidisable non-biodegradable matter at a higher level, as well as metals, nitrate, phosphorous, etc. Special equipment is required for each depollution process.

It includes:

• mechanical (or physical) treatment;

• biological treatment;

• advanced treatment;

• septic tanks, their maintenance and emptying as well as other products for septic tanks (biological activators, etc.);

• treatment of sewage sludge for disposal or other uses (e.g. agriculture, incineration with energy recovery and biogas production);

• construction and operation of sewage treatment.

030104 Treatment of cooling water

Activities, expenditures and products which bring cooling water up to environmental standards before releasing into the environment.

It includes:

• cooling towers (to the extent they are required to reduce pollution, as distinct from technical needs);

• cooling circuits for processing water and for condensing released vapour;

• equipment for enhancing the dispersion of cooling water on release.

It excludes:

• activities, expenditures and products associated with the reduction of the use of cooling water and more efficient water cooling (for example in the energy sector) such as air cooling, circuits for use of cooling water for heating purposes, closed cooling circuits (included under CEP 030201).

030105 Monitoring and measurement for wastewater management

Activities, expenditures and products aimed at monitoring the concentration of pollutants in wastewater and the quality of inland surface water and marine water at the place wastewater is discharged.

It includes:

• analysis and measurement of pollutants, etc.

030199 Others for wastewater treatment n.e.c.

All other activities, expenditures and products aimed at wastewater management, including ETIGA activities specific to CEP 0301 when they can be separated from other activities belonging to CEP 0301 and from similar activities related to other CEP classes.

It includes:

• education, training, information provision and general administration (ETIGA) activities.

0302 Water savings and management of natural water resources

Activities, expenditures and products aiming at the minimisation of intake from inland waters and at increasing stocks of water.

It includes:

• activities, expenditures and products aiming at providing water savings through IPMs;

• activities, expenditures and products aiming at minimising water losses and leaks and at water reuse;

• activities, expenditures and products concerning M&M related to water savings;

• ETIGA linked to the management and saving of water.

It excludes:

• activities, expenditures and products of collection, treatment and distribution of water (e.g. construction of dams and reservoirs on rivers for the purposes of increasing water stocks);

• activities, expenditures and products related to dykes and embankments (e.g. damming activities, activity that regulate water flow for flood protection) as they are related to natural risk management and protection of human property;

• activities, expenditures and products performed for the main purpose of improving water quality, fighting water salinity, e.g. in coastal areas increasing groundwater stocks specifically to avoid saltwater intrusion into freshwater (included under CEP 050101) or protection of soil against erosion e.g. in mountainous areas (included under CEP 050103);

• M&M related to pollutant concentrations in wastewater and water quality at the place wastewater is discharged (included under CEP 030105);

• M&M related to the monitoring of surface water quality and groundwater and marine waters (included under CEP 050105).

030201 Reduction of water intake

Activities, expenditures and products aimed at reducing the intake of water per unit of output through in-process modifications (IPMs).

It includes all kinds of adjustment of existing technologies for reducing the intake of water (from households, public services and industrial activities) as for example:

• cultivation of plants that use less water for agriculture;

• the construction and installation of drip irrigation systems;

• activities associated with the reduction of the use of cooling water and more efficient water cooling (for example in the energy sector) such as air cooling, circuits for use of cooling water for heating purposes, closed cooling circuits.

030202 Water reuse and savings, reduction of water losses and leaks

Activities, expenditures and products aimed at the reduction of water losses and leaks, water reuse and savings

It includes:

• desalinization of seawater;

• rainwater collection;

• construction or installation of water re-use systems, i.e. of systems which capture rainwater or transform wastewater (from industrial processes or households' use) into

water that can be used in production processes or by households (e.g. for irrigation, toilet flushing) and of water saving systems for taps, toilets etc.;

• maintenance and repair of water pipelines, water recirculation and more water efficient appliances.

030203 Replenishment of natural water resources

Activities, expenditures and products aimed at increasing water stocks.

It includes:

• for example: recharge of groundwater bodies through infiltration systems, development of vegetal cover and landscape works to increase water infiltration.

It excludes:

• activities and expenditures related to prevention and remediation of soil and groundwater salinity (included under CEP 0501);

• activities and expenditures related with the maintenance of the quality of water bodies (included under CEP 0501);

• activities and expenditures related to the restoration of aquatic habitats (included under CEP 0502).

030204 Monitoring and measurement of water savings and water resources

Activities, expenditures and products aimed at measuring and monitoring the use and the level of water stocks.

It includes:

• for example: manufacture of electric contact gauge or pressure probes.

030299 Others for water savings and management of natural water resources n.e.c.

All other activities, expenditures and products related to water savings and management of natural water, including ETIGA activities specific to CEP 0302 when they can be separated from other activities belonging to CEP 0302 and from similar activities related to other CEP classes.

It includes:

• education, training, information provision and general administration (ETIGA) activities, for example: information campaigns to encourage water savings, activities of general government units or parts thereof that administer and regulate the use of water resources or are responsible for water saving policies.

04 Waste, materials recovery and savings

Activities, expenditures and products aimed at managing waste (included under CEP 0401) and at reducing the use of materials (included under CEP 0402).

0401 Waste management

Activities, expenditures and products which prevent the generation of waste and reduce the harmful effects of waste on the environment.

Solid waste covers discarded materials that are no longer required by the owner or user. Solid waste includes materials that are in a solid or liquid state but excludes wastewater and small particulate matter released into the atmosphere (SEEA Central Framework, par. 3.84). Waste may be generated during the extraction of raw materials, during the processing of raw materials to intermediate and final products, during the consumption of final products, and during any other human activity.

It includes:

• prevention of waste;

• collection, transport, treatment and disposal of waste including low-level radioactive waste;

• monitoring activities;

• education, training, information provision and general administration (ETIGA) activities;

• street cleaning and the collection of public litter;

• goods specifically aiming at waste management (e.g. trash bags, bins, waste containers, trucks for waste collection).

It excludes:

• snow and ice removal;

• materials recovery including processing of waste into secondary raw materials (included under CEP 0402);

• production of biogas and biofuels from waste (included under CEP 0201);

• production of energy through incineration of waste (included under CEP 0201, from biodegradable waste or under CEP 0202, from non-biodegradable waste and where bio-degradable and non-biodegradable waste fractions cannot be separated);

• environmental protection expenditures and activities related to discharging of waste materials directly into ambient water (included under CEP 0301 or CEP 0501) or air (included under CEP 0101 and CEP 0102);

• collection and treatment of high level radioactive waste (included under CEP 060202).

040101 Prevention of solid waste pollution

Activities, expenditures and products aimed at eliminating or reducing the generation of solid waste through IPMs through:

• cleaner and more efficient production processes and other technologies (cleaner technologies);

• cleaner (adapted) products;

'Prevention' means measures taken before a substance, material or product has become waste, that reduce:

(a) the quantity of waste, including through the re-use of products or the extension of the life span of products;

(b) the adverse impacts of the generated waste on the environment and human health;

(c) the content of hazardous substances in materials and products;

It includes:

• replacing an existing production process by a new process such that the toxicity or volume of waste produced is reduced. This includes separation and reprocessing (cleaner technologies);

• modifying or adapting the production processes or facilities to enable substitution of raw materials, catalysts and other intermediate inputs with new, "adapted" inputs whose use produces less waste or less hazardous waste (cleaner products).

040102 Collection and transport of waste

Collection of waste, either by municipal services or similar institutions or by public or private corporations, and its transport to the place of treatment or disposal.

'Collection' means the gathering of waste, including the preliminary sorting and preliminary storage of waste for the purposes of transport to a waste treatment facility.

'Separate collection' means the collection where a waste stream is kept separately by type and nature with a view to facilitate a specific treatment.

It includes:

• the separate collection and transport of waste fractions to facilitate recovery, collection and transport of hazardous waste;

• collection and transport of demolition waste;

• the part of street cleaning involving litter and collection of garbage.

It excludes:

• winter services, i.e. snow and ice removal services to ensure roads are passable in winter.

040103 Treatment and disposal of hazardous waste

Activities, expenditures and products which change the physical, chemical, or biological character or composition of waste to render it non-hazardous, safer for transport, amenable for recovery or storage, or to reduce it in volume as well as operations of final disposal. A particular waste may undergo more than one treatment process.

Hazardous waste is waste which poses a substantial actual or potential hazard to human health or living organisms due to its toxic, infectious, radioactive, flammable or other character.

Physical treatment of hazardous waste fixes the waste in an inert, impervious matrix via phase separation and solidification.

Chemical treatment is used both to effect the complete breakdown of hazardous waste into non-toxic gases and, more usually, to modify the chemical properties of the waste, e.g. to reduce water solubility or to neutralise acidity or alkalinity.

Thermal treatment of hazardous waste converts hazardous waste into gases and incombustible solid residues via high-temperature oxidation. The flue gases are released into the atmosphere and any slag or ash produced is deposited in the landfill. The main technologies used in the incineration of hazardous waste are the rotary kiln, liquid injection, incinerator grates, multiple chamber incinerators, and fluidised bed incinerators. Residues from hazardous waste incineration may themselves be regarded as hazardous waste. The resulting thermal energy may or may not be used for producing steam, hot water, or electricity.

Disposal of waste is the final deposition of waste above or underground in controlled or uncontrolled fashion, in accordance with the sanitary, environmental or security requirements.

Landfill refers to final disposal of hazardous waste in or on land in a controlled way, which meets specific geological and technical criteria.

Underground disposal refers to temporary storage or final disposal of hazardous wastes underground that meet specific geological and technical criteria.

It includes:

• treatment of low-level radioactive waste, defined as waste which does not require shielding during normal handling and transportation due to its low radionuclide content;

• physical/chemical, thermal and biological treatment, including the construction of specific facilities;

• conditioning of wastes, and any other relevant treatment method;

• incineration (with no energy recovery) including waste gasification and pyrolysis;

• landfill;

• containment;

• underground disposal, and any other relevant disposal method excluding dumping at sea.

It excludes:

• activities, expenditures and products related to high level radioactive waste (included under CEP 0602);

• activities, expenditures and products related to materials recovery (included under CEP 0402).

040104 Treatment and disposal of non-hazardous waste

Activities, expenditures and products which change the physical, chemical, or biological character or composition of waste to render it amenable for recovery or storage, or to reduce it in volume as well as operations of final disposal.

Incineration is the thermal treatment of waste during which chemically fixed energy in matter is transformed into thermal energy. Combustible compounds are transformed into combustion gases leaving the system as flue gases. Incombustible inorganic matters remain in the form of slag and fly ash.

It includes:

• treatment of non-hazardous waste: physical/chemical treatment, biological treatment and any other treatment method (such as composting), including the construction of specific facilities;

• disposal of non-hazardous waste: incineration in the case of non-energy use, landfill and any other disposal method, including the construction of specific facilities (e.g. waste disposal sites).

It excludes:

• backfilling using demolition waste (included under CEP 0402);

• activities aimed at materials recovery (included under CEP 0402).

040105 Monitoring and measurement for waste management

Activities, expenditures and products aimed at monitoring waste and waste management, for example the generation and storage of waste, their toxicity, etc.

040199 Others for waste management n.e.c.

All other activities, expenditures and products aimed at waste management, including ETIGA activities specific to CEP 0401 when they can be separated from other activities belonging to CEP 0401 and from similar activities related to other environmental protection classes.

It includes:

• education, training, information provision and general administration (ETIGA) activities, as for example: e.g. campaigns to inform and encourage waste reduction, implementation of guidelines for waste prevention, etc.

0402 Materials recovery and savings

Activities, expenditures and products aiming at minimising the intake of natural resources through increased efficiency, substitution, recovery and reuse of materials.

Restoration of materials found in the waste stream to a beneficial use which may be for purposes other than the original use (EEA Glossary).

'Recovery' includes any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a

particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy.

'Material recovery' means any recovery operation, other than energy recovery and the reprocessing into materials that are to be used as fuels or other means to generate energy.

'Recycling' means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations.

It includes:

• activities aiming at minimising the intake of natural resources per unit of output through IPMs;

• recovery from waste streams;

• reuse of products;

• activities and products concerning M&M related to the reduction material use;

• ETIGA activities linked to the management of material resources.

It excludes:

• activities related to the management of biological natural resources (included under CEP 0502 and CEP 0503) and water resources (included under CEP 0302);

• activities related to the management of fossil energy resources.

040201 Reduction of the intake of wood

Activities, expenditures and products aiming at minimising the intake of wood through increased efficiency, substitution, recovery and reuse of materials.

It includes:

• activities aiming at minimising the intake of timber resources per unit of output through IPMs, for example: wood saving saws, more efficient wood stoves and furnaces;

• recovery of wood and paper (including cardboard) from waste streams;

• reuse forest products and by-products, for example: reuse of timber products;

• activities and products concerning M&M related to the reduction of intake wood.

It excludes:

• the collection, transportation and sorting of waste (included under CEP 0401);

• the production of energy from waste (included under CEP 0201 and CEP 0202).

040202 Reduction of the intake of mineral

Activities, expenditures and products aiming at minimising the intake of minerals (metallic and non-metallic) through increased efficiency, substitution, recovery and reuse of materials.

It includes:

• activities aimed at minimising the intake of minerals through IPMs, for example: all the kinds of replacement or adjustment of production processes aiming at reducing the use of mineral resources; backfilling using demolition waste;

• activities that aim at substituting mineral-based materials by wood-based materials (or materials made of other abundant, renewable resource) for construction;

• activities aimed at reducing scrap and the recovery of mineral based materials from waste streams. This includes the processing of metallic and non-metallic mineral materials waste and scrap and end-of-life products into secondary raw materials. For example, if part of a material recovery operation:

- mechanical crushing or reduction of metal waste from used cars, washing machines, bikes, railway wagons etc.;
- shredding of metal waste, end-of-life vehicles, dismantling of vessels, etc.;
- physical-chemical and thermal processes for recovery especially for metals;
- other methods of mechanical treatment as cutting, pressing to reduce the volume;
- reclaiming metals out of photographic waste, e.g. fixer solution or photographic films and paper; recycling of spent batteries and accumulators;
- crushing, cleaning and sorting of glass;
- crushing, cleaning and sorting of other waste such as demolition waste to obtain secondary raw material;

• activities and products concerning M&M related to the reduction of minerals use;

• ETIGA activities linked to the management of minerals.

It excludes:

• exploitation of mineral resource stocks (including exploration and discovery of new reserves);

• measures and activities that improve the efficiency of mineral resources extraction;

• the collection, transportation and sorting of waste (CEP 0401);

• the production of energy from waste (CEP 0201 and 0202).

040203 Reduction of the intake of fossil fuels for non-energy use

Activities, expenditures and products aiming at minimising the intake of fossil fuels resources for non-energy uses through increased efficiency, substitution, recovery and reuse of materials.

It includes:

• activities aiming at the minimisation of the intake of fossil energy resources for uses other than energy production (e.g. the production of plastics, chemicals, rubber) through IPMs, for example: replacement or adjustment of technologies;

• recovery of materials made from fossil energy resources, for example: processing of petrol-based waste into secondary raw materials (plastic packaging and bottles recovery through mechanical/chemical processes); recovery of textiles (from petrochemical materials), recycled inkjet and toner cartridges for printers;

• production of substitutes for materials made of fossil fuels, for example: bio-based sacks and bags, including paper bags, for replacing plastic bags; other bio-based plastics, composites, lubricants, solvents, detergents, paints, lacquers, varnishes and packaging, etc. which replace comparable and commonly used fossil-fuel based products;

• activities and products concerning M&M related to the reduction of the use of fossil fuel for uses other than energy production;

• ETIGA activities linked to the management and saving of fossil resources used as an input for production processes other than energy production.

It excludes:

• the collection, transportation and sorting of waste (included under CEP 0401);

• the production of energy from waste (included under CEP 0201 and CEP 0202).

040204 Reduction of the intake of natural resource for textiles

Activities, expenditures and products aiming at minimising the intake of natural resources for producing textiles through increased efficiency, substitution, recovery and reuse of materials.

It includes:

• activities aiming at the minimisation of the intake of natural resources for producing textiles through IPMs;

• recovery of textiles: of clothing (made of wool, cotton and similar), household textiles (bed linen, towels and similar), home textiles (carpets, curtains and similar), technical textiles (medical textiles, textiles in vehicle construction and building industry);

• activities and products concerning M&M related to the recovery of textiles;

• ETIGA activities linked to recovery of textiles.

It excludes:

• the collection, transportation and sorting of waste (CEP 0401);

• the production of energy from waste (CEP 0201 and CEP 0202).

040205 Reduction of the intake of other materials

Activities, expenditures and products aiming at minimising the intake of other natural resources through increased efficiency, substitution, recovery and reuse of materials.

It includes:

• activities aiming at the minimisation of the intake of other natural resources through IPMs;

• recovery of other materials;

• activities and products concerning M&M related to the recovery of other materials;

• ETIGA activities linked to recovery of other materials.

It excludes:

• the collection, transportation and sorting of waste (included under CEP 0401);

• the production of energy from waste (included under CEP 0201 and CEP 0202).

040206 Monitoring and measurement of materials recovery and savings

Activities, expenditures and products aimed at measuring and monitoring the reduction of the use of natural resources used as materials.

040299 Others for materials recovery and savings n.e.c.

All other activities, expenditures and products related to the reduction of intake of natural resources used as materials, including ETIGA activities specific to CEP 0402 when they can be separated from other activities belonging to CEP 0402 and from similar activities related to other CEP classes.

It includes:

- ETIGA activities linked to recovery of other materials;
- all other activities related to material recovery.

05 Soil, surface and groundwater, biodiversity and forest

Activities, expenditures and products aimed at protection and remediation of soil and water, biodiversity and forests.

0501 Protection of soil, surface and groundwater

Activities, expenditures and products aimed at the prevention of pollutant infiltration, cleaning up of soils and water bodies and the protection of soil from erosion and other physical degradation including salinisation.

It includes:

• prevention of pollutant infiltration;

• cleaning up of soil and water bodies;

• protection from erosion;

• prevention and remediation of soil and groundwater salinity;

• monitoring of soil and groundwater pollution;

• activities for protection and remediation of marine environment.

It excludes:

• wastewater management activities, expenditures and products (CEP 0301);

• activities, expenditures and products aimed at the protection of biodiversity and landscape (CEP 0502).

050101 Prevention of pollutant infiltration into soil and water bodies

Activities, expenditures and products aimed at reducing or eliminating the penetration of polluting substances into soil and water.

It includes:

• activities related to sealing of soils of industrial plants;

• installation of catchment for pollutant run-offs and leaks;

• strengthening of storage facilities;

• organic farming as well as agricultural and grazing practices preventing infiltration into soils and water bodies;

• transportation of pollutant products.

It excludes:

• transport of waste (included under CEP 040102).

050102 Cleaning up of soil and water bodies

Activities, expenditures and products to reduce the quantity of pollutants in soil and water bodies either in situ or in appropriate installations.

It includes:

• soil decontamination at former industrial sites, landfills and other black spots, with activities consisting of for example: measures for separating, containing and recovering deposits, extraction of buried casks and containers, decanting and re-storage, installation of off-gas and liquid effluent drainage networks, soil washing by means of degasification, pumping of pollutants, removal and treatment of polluted soil, biotechnological methods capable of intervening without affecting the site (use of enzymes, bacteria, etc.), physical and chemical techniques such as pervaporation and extraction using supercritical fluids, injection of neutral gases or bases to stifle internal fermentation, etc.;

• dredging of pollutants from water bodies (rivers, lakes, estuaries, etc.);

• the decontamination and cleaning up of surface water following accidental pollution e.g. through collection of pollutants or through application of chemicals;

• the cleaning up of oil spills on land, inland surface waters and seas – including coastal areas.

It excludes:

• civil protection services;

• the liming of lakes and artificial oxygenation of water bodies (included under CEP 0502).

050103 Protection from erosion and other physical degradation of soil and water

Activities, expenditures and products aimed at protecting soil from erosion and other physical and chemical degradation of soil and water (compacting, encrusting, marine water contamination, etc.).

Soil erosion is the detachment and movement of topsoil or soil material from the upper part of the profile by the action of wind or running water especially as a result of changes brought about by human activity (such as unsuitable or mismanaged agricultural methods).

It includes:

• activities intending to restore the protective vegetal cover of soils;

• construction of anti-erosion walls;

• control of eutrophication and growth of green algae;

• organic aquaculture.

It excludes:

• activities of soil protection inside forest areas (included under CEP 050301);

• conventional agricultural production;

• protection of settlements against natural hazards such as landslides.

050104 Prevention and remediation of soil and groundwater salinity

Activities, expenditures and products aimed at preventing salinisation or reducing salinity. Concrete actions will depend on climatic, geological and other country-specific factors.

It includes, if undertaken for an explicit purpose of prevention and remediation of soil and groundwater salinity:

• actions to increase groundwater tables, e.g. through increased freshwater infiltration to avoid infiltration of seawater into groundwater bodies;

• lowering of groundwater tables (when groundwater contains high levels of salts) through long-term re-vegetation programmes, changes in irrigation practices, etc.;

• cropping practices to maintain water/soil quality;

• managing/protecting native vegetation to stop further loss and improve soil health (pH, fertility, structure);

• reclamation of saline soil through methods, such as physical methods (e.g. scraping, flushing, deep ploughing, subsoiling) or applying organic amendments (e.g. green manure);

• soil mulching to reduce salt accumulation.

It excludes:

• activities that respond to economic purposes (conventional agricultural production, reclamation of land from the sea, etc.).

050105 Monitoring and measurement for soil, surface and groundwater

Activities, expenditures and products aimed at monitoring the quality and pollution of soils, groundwater and surface water, measuring the extent of soil erosion and salinisation etc.

It includes:

• the operation of monitoring systems;

• inventories of "black spots";

• maps and databases of groundwater and surface water quality, soil pollution, erosion and salinity, etc.

050199 Others for soil, surface and groundwater n.e.c.

All other activities, expenditures and products aimed at protecting and remediating soil, groundwater, surface water and marine waters, including ETIGA activities specific to the CEP 0501, when they can be separated from other activities belonging to CEP 0501 and from similar activities related to other CEP classes.

It includes:

• education, training, information provision and general administration (ETIGA) activities;

• all other activities related to protection of soil, surface and groundwater.

0502 Protection of biodiversity and landscape

Activities, expenditures and products aimed at protecting and replenishment of wild fauna and flora, safeguarding and restoring their habitats, ecosystems of which they are part, natural or semi-natural terrestrial, marine and other aquatic ecosystems .

Such activities, measures and products are included regardless of the type of areas involved (terrestrial, aquatic incl. wetlands, and marine areas) and whether they occur in areas which are classified as protected areas.

It includes:

• the environmental rehabilitation of abandoned mining and quarrying sites and related expenditure.

It excludes:

• farming and gardening activities (outside the scope of CEP classification except organic farming included under CEP 0501);

• the protection and rehabilitation of historic monuments or predominantly built-up landscapes;

• the control of weeds for agricultural purposes;

• the recreational structures and spaces such as urban parks and gardens, golf courses and other sports facilities;

• management of zoos, oceanarium, aquarium, and of city greenery;

• establishment and maintenance of green spaces along roads;

• 'extraction' activities, such as 'hunting' or 'fishing';

• activities related to soil cleaning (to be reported under CEP 0501).

050201 Protection and rehabilitation of species and habitats

Activities, expenditures and products aimed at the conservation, reintroduction or recovery of wild fauna and flora (irrespective of whether threatened by extinction), the maintenance of their habitats, and the restoration, rehabilitation and reshaping of damaged habitats for the purpose of strengthening their natural functions. Activities aimed at the minimisation of the intake of wild flora and fauna for production purposes, through IPMs, are also covered.

It includes:

• conserving genetic heritage, monitoring and restricting (placing bans on) exploitation, trade, etc. of specific animal and plant species, for protection purposes;

• creation of gene reserves or banks, improvement of linear infrastructures (e.g., underground passages or bridges for animals at highways or railways, the restoration of small-scale structures like hedges or orchards, green bridges etc.), feeding of the young, management of special natural reserves (botanical conservation areas, etc.);

• species conservation including re-introduction of locally extinct species and species repopulation;

• control of invasive alien species that pose a threat to native fauna, flora and habitats;

• control of native species with an intensive development that pose a threat to native fauna, flora and habitats (case of boar or deer);

• restoration activities (replenishment of wild flora and fauna stocks), for example: repopulation of stocks of wild fauna by introducing new individuals;

• restoration of water bodies as aquatic habitats: artificial oxygenation and lime-neutralisation actions;

• renaturalisation of river banks;

• land control: purchase of land for protection of species and habitats;

• production of fishing nets which reduce the by-catch, production of pesticides with no (lower) impact on the wild flora, algorithm to switch off the wind turbines, the installation of warning sounds to protect the bats;

• measures that protect plants or a stand of plants, like trees, from mechanical or chemical damage.

It excludes:

• activities aimed at the minimisation of the intake wild growing forest products (CEP 050301).

050202 Protection of natural and semi-natural landscapes

Activities, expenditures and products aimed at protecting natural and semi-natural landscapes to maintain and increase their ecological value.

It includes:

• the preservation of legally protected natural objects;

• environmental rehabilitation of abandoned mining and quarrying sites;

• burying electricity lines;

• maintenance of landscapes that are the result of traditional agricultural practices threatened by prevailing economic conditions, etc.;

• renaturation of artificial lakes and bogs;

• biodiversity and landscape protection related to agriculture.

It excludes:

• protection of historic monuments, increase of aesthetic values for economic purposes (e.g., re-landscaping to increase the value of real estates);

• protection of predominantly built-up landscapes.

050203 Monitoring and measurement for biodiversity and landscape

Monitoring, analysis and inspection activities, expenditures and products which are not classified under the preceding items.

It includes:

• for example: censuses, inventories, databases of flora and fauna.

050299 Others for protection of biodiversity and landscape n.e.c.

All other activities, expenditures and products aimed at protecting species and habitats and landscapes. It includes ETIGA activities specific to CEP 0502, when they can be separated from other activities belonging to CEP 0502 and from similar activities related to other environmental protection classes.

It includes:

• education, training, information provision and general administration (ETIGA) activities, for example: general government activities for preserving stocks through the enforcement of quotas, regulation, monitoring, control (including police functions) for e.g. fishing activities, the management of wild game reserves which preserves resource functions.

0503 Management of forest resources

It includes activities, expenditures and products related to the conservation and replenishment of timber stocks and sustainable management of forests. The management of forest resources concerns all types of forests (planted, natural or naturally regenerated according to SEEA classification) in both forests available for wood supply and forests not available for wood supply, but excluding the management of protected areas and nature conservation activities (CEP 0502).

It includes:

• restoration, replenishment activities or development of new forest areas, for example: reforestation and afforestation, machinery for planting;

• the prevention and control of forest fires, biological and mechanical control of pests, for example: development of firewalls;

• forest-management-related land improvements, for example: soil conservation, fertilisation and liming to improve soil properties, terracing works to reduce erosion, reclamation of unproductive land and land from sea for forestry;

• activities and products concerning M&M related to sustainable management of forests;

• ETIGA activities linked to the sustainable management of forests.

It excludes:

• activities related to roundwood production (both industrial roundwood and fuelwood) and extraction of non-wood forest products (mushrooms, truffles, berries, nuts, balata and other rubber-like gums, cork, lac and resins, balsams, vegetable hair, eelgrass, acorns, horse chestnuts, mosses and lichens);

• afforestation, reforestation with invasive alien tree species or management of invasive alien tree species for timber production;

• protection and management of biodiversity in forest areas (included under CEP 0502);

• control of invasive alien tree species (included under CEP 0502);

• pest control using chemical agents (of non-biological origin);

• buildings, unless serving exclusively forest-related environmental purpose;

• machinery associated with timber extraction and machinery associated with fire-protection unless serving exclusively to fight forest fire;

• activities of soil protection outside forest areas (included under CEP 0501).

050301 Reforestation, afforestation and forest-related land management

Activities, expenditures and products aimed at restoration, maintenance, replenishment or development of new forest areas.

It includes:

• growing of standing timber: planting, replanting, transplanting, thinning and conserving of forests and timber tracts;

• growing of coppice, pulpwood and fire wood;

• operation of forest tree nurseries;

• manufacturing of equipment dedicated to silviculture;

• forest-management-related land improvements, e.g.: soil conservation, fertilisation and liming to improve soil properties, terracing works to reduce erosion, reclamation of unproductive land and land from sea for forestry.

It excludes:

• afforestation and reforestation with invasive alien tree species or management of invasive alien tree species for timber production;

• activities of soil protection outside forest areas (included under CEP 0501).

050302 Protection against forest fires

Activities, expenditures and products aimed at the prevention and control of forest fires.

It includes:

• manufacturing and installing of firebreaks;

• other activities and expenditures linked to the control of forest fires.

050303 Monitoring and measurement of forest resources

Activities, expenditures and products aimed at monitoring the management of the forest resources

It includes:

• forestry inventories;

• forest management consulting services;

• timber evaluation;

• forest pest and disease control.

050399 Others for management of forest resources n.e.c.

All other activities, expenditures and products aimed at sustainable management of forest resources, including ETIGA activities specific to the CEP 0503, when they can be separated from other activities belonging to CEP 0503 and from similar activities related to other environmental protection classes.

It includes:

• education, training, information provision and general administration (ETIGA) activities related to sustainable management of forests;

• all other activities related to sustainable management of forests.

06 Noise and radiation

Activities, expenditures and products aimed at the control, reduction and abatement of industrial and transport noise and the reduction or elimination of the negative consequences of particle radiation emitted from any source.

0601 Protection against noise and vibration

Activities, measures and products aimed at the control, reduction and abatement of industrial and transport noise.

It includes:

• activities for the abatement of neighbourhood noise (soundproofing of dancing halls, etc.);

• activities for the abatement of industrial and transport noise and vibration in places frequented by the public (schools, etc.).

It excludes:

• abatement of noise and vibration for purposes of protection for employees in the workplace.

060101 Prevention and reduction of noise and vibration

Activities, expenditures and products aimed at reducing noise and vibration from industrial equipment, vehicle motors, aircraft and ships engines, exhaust systems and brakes, or noise level due to tyre/road or wheel/rail surface contact and activities and measures aimed at installing and managing anti-noise / anti-vibration facilities.

It includes:

• adaptation of equipment, vehicles (buses, trucks, or train and power units in the case of rail transport, aircraft and ships) in order to make them less noisy: soundproofing of hoods, brakes, exhaust systems, silencers etc.;

• equipment and machines conceived or constructed for low noise or vibrations, low noise level flares and burners, etc.;

• noise abatement through the modification of surfaces such as substituting concrete by silent asphalt, multi-layered surfaces, etc.;

• screens, embankments or hedges;

• covering sections of urban motor ways or railroads;

• measures to limit industrial and vicinity noise:

  - add-on facilities, covering and soundproofing of machines and piping, fuel regulation systems;
  - sound absorption, noise screens, barriers, soundproofing of buildings, noise protective windows;
  - plant modifications, specially conceived foundations to absorb vibrations, extra cost for regrouping of buildings and/or of facilities in the interest of noise abatement, special facilities in building construction or reconstruction.

060102 Monitoring and measurement for protection against noise and vibration

Activities, expenditures and products aimed at monitoring the level of noise and vibration.

It includes:

• for examples the installation and operation of stationary measurement and monitoring sites or mobile equipment in urban areas, observation networks, etc.

060199 Others for protection against noise and vibration n.e.c.

All other activities, measures and products aimed at noise and vibration abatement, including ETIGA activities specific to the CEP 0601, when they can be separated from other activities belonging to CEP 0601 and from similar activities related to other CEP classes.

It includes:

• education, training, information provision and general administration (ETIGA) activities, for example training to raise awareness of noise issues (e.g. through educational initiatives for schools, educational media, and national or international campaigns such as “International Noise Awareness Day”);

• development of noise reduction action plans when relevant measures can be traced as a distinct activity;

• traffic management; introduction of time and geographical restrictions for noisy vehicles;

• bypass roads which divert traffic from residential areas; creation of pedestrian areas; creation of construction-free buffer zones;

• financial incentives for the production and use of low-noise vehicles; labelling or information programmes for consumers which encourage the use of low-noise vehicles and low-noise driving.

0602 Protection against radiation

Activities, expenditures and products aimed at the reduction or elimination of the negative consequences of particle radiation emitted from any source.

Radioactive waste is defined as any material that contains or is contaminated with radionuclides at concentrations or radioactivity levels greater than the "exempt quantities" established by the competent authorities, and for which no use is foreseen. Radioactive wastes are produced at nuclear power plants and at associated nuclear fuel cycle facilities as well as through other uses of radioactive material, for example, the use of radionuclides in hospitals and research establishments. Other important wastes are those from mining and milling of uranium and from the reprocessing of spent fuel.

It includes:

• collection, conditioning, handling, transportation, treatment and disposal of high-level radioactive waste, i.e. waste that, because of its high radionuclide content, requires shielding during normal handling and transportation.

It excludes:

• activities and expenditures related to the prevention of technological hazards (e.g. external safety of nuclear power plants);

• protection activities taken at workplaces;

• activities and expenditures relating to electromagnetic and acoustic radiation;

• activities related to collection and treatment of low-level radioactive waste (CEP 04).

060201 Protection of ambient media against radiation

Activities, expenditures and products for the protection of soil, air and water and other ambient media from radiation.

It includes

• protection activities such as screening, creation of buffer zones, etc.

060202 Transport and treatment of high level radioactive waste

Activities, expenditures and products related to any process designed for the transport, conditioning, containment or underground disposal, recovery and use of high-level radioactive waste.

It includes:

• collection and transport of high-level radioactive waste;

• conditioning of high-level radioactive;

• underground disposal of high-level radioactive waste (construction of burial sites for radioactive waste and the manufacturing and installation of relating equipment).

060203 Monitoring and measurement of radioactivity

Activities, expenditures and products aimed at monitoring ambient radioactivity and radioactivity due to high level radioactive waste by means of specific equipment, instruments and installations.

It includes:

• installation and operation of stationary measurement and monitoring sites.

060299 Others for protection against radiation n.e.c.

All other activities, expenditures and products related to protecting ambient media against radiation, including ETIGA activities specific to the CEP 0602, when they can be separated from other activities belonging to CEP 0602 and from similar activities related to other CEP classes.

It includes:

• education, training, information provision and general administration (ETIGA) activities.

07 Research and development

R&D for developing the stock of knowledge related to the prevention and elimination of all forms of pollution and the preservation of natural resources stocks. This includes the conception of new applications of available knowledge in the field of environmental protection and resource management.

Research and development (R&D) comprises "creative and systematic work undertaken in order to increase the stock of knowledge…and to devise new applications of available knowledge" (see Frascati manual, OECD 2015) in the field of environmental protection. Environmental R&D is classified in accordance with the 2007 NABS (Nomenclature for the Analysis and Comparison of Scientific Programmes and Budgets).

It includes:

• identification and analysis of sources of pollution (incl. climate change), mechanisms of dispersion of pollutants in the environment as well as their effects on human beings and the biosphere;

• resource management oriented R&D;

• R&D oriented towards equipment and instruments for pollution/resource use, incl. treatment, abatement, measurement and analysis.

0701 R&D for reduction and control of air emissions

R&D related to the reduction of air emissions and/or concentration of air pollutants. I

It includes:

• R&D related to electromobility;

• R&D related to the development of carbon capture and storage processes;

• R&D related to methanation and hydrogen upgrading processes using renewable energy.

070101 R&D for reduction and control of greenhouse gases

R&D related to the reduction and/or concentration of greenhouse gases.

070102 R&D for reduction and control of other air pollutants

R&D related to the reduction and/or concentration of other air pollutants.

0702 R&D for energy

R&D related to renewable energy and energy savings and management.

070201 R&D for renewables

R&D related to renewable energy.

070202 R&D for energy savings

R&D related to energy savings and management.

0703 R&D for wastewater management

070300 R&D for wastewater management

R&D related to treating wastewater (up to environmental standards or quality norms).

It includes:

- R&D related to membrane technology for wastewater and water treatment.

0704 R&D for water resources

070400 R&D for water resources

R&D related to safeguarding stocks of water.

0705 R&D for waste management

070500 R&D for waste management

R&D related to waste management.

0706 R&D for materials recovery and savings

070600 R&D for materials recovery and savings

R&D related to materials recovery.

0707 R&D for soil, surface, groundwater and biodiversity

R&D related to the protection and remediation of soil, water surface, groundwater and biodiversity.

070701 R&D for soil, surface and groundwater

R&D related to the protection and remediation of soil, water surface and groundwater

070702 R&D for biodiversity

R&D related to the protection of biodiversity

0708 R&D for forest management

070800 R&D for forest management

R&D related to forest management.

0709 R&D for noise and radiation

R&D related to the reduction and abatement of industrial and transport noise and the reduction or elimination of the negative consequences of particle radiation emitted from any source.

070901 R&D for noise and vibration

R&D related to the reduction and abatement of industrial and transport noise.

070902 R&D for radiation

R&D related to the reduction or elimination of the negative consequences of particle radiation emitted from any source.

08 Cross-cutting and other environmental purposes

All ETIGA activities, expenditures and products related to environmental protection and resource management in the case that they cannot be classified in CEP 01 to 06.

It includes:

• activities aimed at the general support of decisions taken in the context of resource management activities by government or non-government bodies, for example: preparation of declarations or requests for permission, internal resource management, environmental certification processes (ISO 14000, environmental management), activities of units specialised in consultancy, supervision and analysis, regulation, in the case that they cannot be classified in CEP 01 to 06;

• education, training and information, for example: high school programs, university degrees or special courses specifically aimed at training for resource management, in the case that they cannot be classified in CEP 01 to 06;

• international financial aid where it may be difficult for the donor countries to attribute related expenditure to individual CEP classes.

0801 Environmental education and training

080100 Environmental education and training

Activities, expenditures and products aimed at providing general environmental education or training and disseminating environmental information not elsewhere classified.

It includes:

• high school programs related to environmental protection and resource management;

• university degrees or special courses specifically aimed at training for environmental protection and resource management;

• continuing education programmes aimed at training for environmental protection and resource management;

• environmental reports, environmental training tools (including web sites or platforms).

0802 General environmental administration, management, regulation, dissemination and consultancy

080200 General environmental administration, management, regulation, dissemination and consultancy

Administration, management and support to decisions regarding environmental protection and resource management by government and non-government bodies.

It includes:

- regulation by the government;
- preparation of declarations or requests for permission;
- internal environmental management;
- environmental certification processes (ISO 14000, environmental management);
- activities of units specialised in environmental consultancy, supervision and analysis.

0803 Other environmental purposes

080300 Other environmental purposes

This position groups together all environmental protection and resource management activities, measures and products that cannot be classified under other CEP classes.

It includes:

- international financial aid due to difficulties in attributing international aid to individual classes.

Acronym

ETIGA: Education, Training, Information provision and General Administration

IPM: In-Process Modification

M&M: Monitoring and Measurement and similar

RM: Resource and Management

R&D: Research and Development

Treatment of borderline cases

CEP 0201 vs CEP 0401 [Production of biogas and biofuels from waste]

Production of biogas and biofuels from waste is reported under CEP 0201. When different data sources and consequently different classifications are used, issues of double counting may arise.

In this specific case, double counting occurs if:

• waste management output is estimated based on NACE classification

(38.1+38.2 NACE rev.2 groups) and

• production of biogas and biofuels from waste is estimated based on CPA.

Double counting occurs because NACE 38.2 rev.2 already covers production of biogas from waste. To avoid double counting, production of biogas and biofuels must be deducted from total waste management output in CEP 0401.

CEP 0201 and CEP 0202 vs CEP 0401 [Production of energy through incineration of waste]

Production of energy through incineration of biodegradable and non-biodegradable waste is reported under CEP 0201 and CEP 0202 respectively. When different data sources and consequently different classifications are used issues of double counting may arise.

In this specific case, double counting occurs if

• waste management output is estimated based on NACE classification (38.1+38.2 NACE rev.2 groups) and

• production of energy from incineration of waste is estimated based on CPA.

Double counting occurs because NACE 38.2 rev. 2 covers incineration of waste regardless of whether energy is produced. To avoid double counting, production of energy from waste (biodegradable and non-biodegradable) must be deducted from total waste management output in CEP 0401.

CEP 0402 Materials recovery and savings

Materials recovery activities can be allocated at the third level split by type of material. If for some "residual" materials recovery activities no information is available to estimate the split by type of material, they should be distributed by convention according to the shares of recovery activities already allocated. If no materials recovery activities can be assigned to a specific material

(wood/plastic/minerals/textiles...) and there is no information in available sources for the calculation of relevant shares, the total value of the materials recovery activities must be reported by convention under CEP 040205. This rule applies only if no additional information can provide a proxy for a split between the pertinent CEP classes.

CEP 05 Soil, surface and groundwater, biodiversity and forest

The broad definition of the scope of CEP 05 can lead to some overlapping at the second level split between CEP 0501, CEP 0502 and CEP 0503, since forest resources and soil, groundwater and surface water are part of the landscapes. Arguably, in a specific area there can occur activities to preserve groundwater, to protect biodiversity or to avoid depletion of forest resources. Depending on the characteristics of the areas, the activities could have one, two or even three different purposes.

In such cases the operational rule will be the following:

• allocation to CEP 0501 if it can be proved through laws, programmes or any other evidence that the activity has as its main environmental purpose the protecting of soil, groundwater and surface water;

• allocation to CEP 0502 if it can be proved through laws, programmes or any other evidence that the activity has as its main environmental purpose the protection of biodiversity and landscapes or if there is no clear evidence in favour of the other two environmental domains (i.e., CEP 0501 or CEP 0503);

• allocation to CEP 0503 if it can be proved through laws, programmes or any other evidence that the activity has as its main environmental purpose the managing of forest resources.

CEP 0601 Protection against noise and vibration

Noise abatement measures and activities are often also related to insulation and therefore energy saving. As an operational rule, activities are classified in CEP 0601 only if the laws or programs (public or private) governing these activities mention noise (or vibration) abatement as their single main objective. In all other cases, they should be classified under CEP 0202.