# Classification of Environmental Protection Activities and Expenditure (CEPA) and Classification of Resource Management Activities (CReMA) - Explanatory notes

Version: December 2020

# Contents

# I. Classification of Environmental Protection Activities and Expenditure (CEPA)

# Introduction

This note presents updated guidance on the Classification of Environmental Protection Activities (CEPA), an established international classification since 2000[1]. CEPA 2000 is a generic, multi-purpose, functional classification used for classifying **activities**, **products**, **expenditure** and other transactions related to environmental protection.

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.

Environmental protection products include i) goods and services produced, designed and manufactured for purposes of environmental protection and ii) cleaner (adapted) products. Expenditure for environmental protection consists of the following transactions related to environmental activities and products:

- inputs for environmental protection activities (energy, raw materials and other intermediate inputs, wages and salaries, taxes linked to production, consumption of fixed capital);
- capital formation and acquisitions less disposals of land (investments);
- household expenditure on environmental protection products;
- transfers for environmental protection (subsidies and other current transfers (e.g., regular payments to support international aid programmes), investment grants, international aid, taxes earmarked for environmental protection, etc.).

The level 1 structure of CEPA (the 1-digit) are the CEPA classes. CEPA classes 1 to 7 are also called (environmental) domains.

CEPA is complemented by the Classification of Resource Management Activities (CReMA) that breaks down environmental activities aimed at preserving and enhancing the stock of natural resources.

With the start of the mandatory reporting for monetary-environmental accounts in 2017[2], questions about how to classify certain goods, services, and expenditures emerged. Soon it became apparent that the available guidance required clarification and more in-depth explanation to ensure that in the compilation of monetary-

[1] CEPA is available from https://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=CEPA_2000&StrLanguageCode=EN&IntPcKey=&StrLayoutCode=HIERARCHIC

[2] Mandated by Regulation (EU) No 691/2011 (https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02011R0691-20140616&from=EN)

environmental accounts, countries record activities and transactions in a harmonised manner.

The updated explanations and examples presented in this document reflect the discussions in the MESA working group, the task force on the classification of environmental activities and the feedback from countries during the 2017 and 2018 monetary environmental accounts data reporting.

The list of activities included and excluded in the introduction of each CEPA class is not exhaustive. More examples and details are provided at the level 2 structure of CEPA (the 2-digit). In addition Annex A presents recommendations for the treatment of specific borderline cases.

Eurostat's notes providing guidance on the treatment of specific activities and products and/or addressing related methodological or compilation questions ('Guidance notes'), and published alongside these CEPA explanatory notes, shall also be consulted and taken into consideration. Annex B provides a list of Guidance Notes and related links.

# CEPA 1. PROTECTION OF AMBIENT AIR AND CLIMATE

*Protection of ambient air and climate* comprises measures and activities aimed at reducing emissions into the ambient air or reducing concentrations of air pollutants. This includes measures and activities aimed at the control of emissions of greenhouse gases, air pollutants and gases that adversely affect the stratospheric ozone layer.

It includes:

- electric and hybrid cars, buses and other cleaner and more efficient vehicles as specified in the Eurostat Guidance Note[3]***;***
- charging stations and other essential infrastructure for recharging electric road vehicles;
- catalytic converters and particle filters.

[3]https://ec.europa.eu/eurostat/documents/1798247/12177560/Guidance+note+on+electric+transport+equipment+-+technical+note.pdf/2ddec6dc-8ca9-1736-0f36-18ed2233af0b?t=1609859296315

It excludes:

- measures undertaken for energy saving reasons (see CReMA13B);
- climate change adaptation measures (e.g. disaster prevention expenditure dedicated to extreme weather events such as storms, heat waves, droughts, flood, etc.);
- production of renewable energy (see CReMA 13A).

## CEPA 1.1. Prevention of pollution through in-process modifications

Activities and measures aiming to eliminate or reduce the air pollution through In-Process Modifications (IPMs) related to:

- cleaner production processes and other technologies (cleaner technologies);
- the consumption or use of 'cleaner' (adapted) products.

It includes:

- replacing existing production processes by new processes designed to reduce the generation of air pollutants 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.

Expenditure under this position includes the (extra) costs of investments into cleaner technologies and of the use of cleaner products (e.g., electrified road vehicles).

Category 1.1 is split into the two underlying categories:

- prevention of pollution through IPMs for the protection of ambient air (1.1.1);

- prevention of pollution through IPMs for the protection of climate (1.1.2).

Electric and more efficient vehicles are to be reported as cleaner products under category 1.1.1 by convention.

## CEPA 1.2. Treatment of exhaust gases and ventilation air

Activities involving the installation, maintenance and operation of end-of-pipe equipment for the removal and reduction of emissions of particulate matter or other air-polluting substances either from the combustion of fuels or from processes. Examples include filters, de-dusting equipment, catalytic converters, post-combustion and other techniques. Also included are activities aiming to increase the dispersion of gases so as to reduce concentrations of air pollutants.

*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.

Category 1.2 is split into the two underlying categories:

- for the protection of ambient air (1.2.1);
- for the protection of climate (1.2.2).

## CEPA 1.3. Monitoring and measurement and similar

Activities aimed at monitoring pollutant concentrations in exhaust gases and the quality of air, etc.

It includes:

- measurement services of exhaust gases from vehicles and heating systems
- the monitoring related to the ozone layer, greenhouse gases and climate change

It excludes:

- activities of weather stations

## CEPA 1.4. Other activities

All other activities and measures aimed at the protection of ambient air and climate.

It includes:

- regulation;
- Education, Training, Information provision and General Administration (ETIGA) specific to CEPA 1. ETIGA should be reported here when they can be separated from other activities belonging to CEPA 1 and from similar activities related to other environmental protection classes.

# CEPA 2. WASTEWATER MANAGEMENT

*Wastewater* is defined as water that is of no further immediate value for the purpose for which it was used or in the pursuit of which it was produced because of quality, quantity, or time of its occurrence.

*Wastewater management* comprises activities and measures 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, treatment of wastewater;
- monitoring and regulation activities;
- septic tanks.

*Septic tanks* are settling 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 excludes:

- actions and activities aiming to protect groundwater from pollutant infiltration and the cleaning up of water bodies after pollution (see CEPA 4).

## CEPA 2.1. Prevention of pollution through in-process modifications

Activities and measures aimed at reducing the generation of wastewater through IPMs related to:

- cleaner and more efficient production processes and other technologies (cleaner technologies);
- the consumption or use of ‘cleaner’ (adapted) products.

It includes:

- replacing existing production processes with new 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.

## CEPA 2.2. Sewerage networks

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

*Sewerage networks* 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.

## CEPA 2.3. Wastewater treatment

*Wastewater treatment* is the process which bring wastewater up to environmental standards or other 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

1. *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.).

2. *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.

3. *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[4]. 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.

Septic tanks, their maintenance and emptying and other products for septic tanks (biological activators, etc.) are included.

Construction and operation of sewage treatment plants, and the treatment of sewage sludge for disposal or other uses (e.g. agriculture, incineration with energy recovery and biogas production) are also included.

## CEPA 2.4. Treatment of cooling water

*Treatment of cooling water* designates processes which bring cooling water up to environmental standards before releasing into the environment. Cooling water is used to remove heat. This can involve air cooling (extra cost compared with water cooling), 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, closed cooling circuits (extra cost), circuits for use of cooling water for heating purposes (extra cost).

Activities associated with the reduction of the use of cooling water and more efficient water cooling in the energy sector are included.

[4] Advanced treatment includes, for example, chemical coagulation, flocculation and precipitation; break-point chlorinating; stripping; mixed media filtration; micro-screening; selective ion exchange; activated carbon absorption; reverse osmosis; ultra-filtration; elector flotation.

## CEPA 2.5. Monitoring and measurement and similar

Activities 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 (analysis and measurement of pollutants, etc.).

## CEPA 2.6. Other activities

All other activities and measures aimed at wastewater management, including regulation and ETIGA activities specific to CEPA 2, when they can be separated from other activities belonging to CEPA 2 and from similar activities related to other environmental protection classes.

# CEPA 3. WASTE MANAGEMENT

*Waste* is any substance or object which the holder discards or intends or is required to discard[5]. 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.

This class concerns both non-hazardous and hazardous waste (with the exception of high level radioactive waste (CEPA 7)).

*Waste management* refers to activities and measures which prevent the generation of waste and reduce the harmful effects of waste on the environment.

It includes:

- collection, treatment and disposal of waste including low-level radioactive waste;
- monitoring and regulation activities;
- street cleaning and the collection of public litter.

*Treatment of waste* refers to processes 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. A particular waste may undergo more than one treatment process.

Composting activities are included.

*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.

It excludes:

- materials recovery including processing of waste into secondary raw materials (see CReMA 11B/13B or 14);

[5] Directive 2008/98/EC Article 3(1)

- production of biogas and biofuels from waste (see CReMA 13A);
- production of energy through incineration of waste (see CReMA 13A, from bio-degradable waste or CReMA 13B, from non-biodegradable waste and where bio-degradable and non-biodegradable waste fractions cannot be separated);
- environmental protection measures and activities related to discharging of waste materials directly into ambient water (included in CEPA 2 or CEPA 4) or air (included in CEPA 1);
- collection and treatment of high level radioactive waste (included in CEPA 7);
- snow and ice removal (outside the scope of CEPA or CReMA).

## CEPA 3.1. Prevention of pollution through in-process modifications

Activities and measures aimed at eliminating or reducing the generation of solid waste through IPMs related to:

- cleaner and more efficient production processes and other technologies (cleaner technologies);
- the consumption or use of 'cleaner' (adapted) 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 re-processing (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).

## CEPA 3.2. Collection and transport

*Collection and transport of waste* is defined as the 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.

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 (this is neither an EP nor an RM activity).

## CEPA 3.3. Treatment and disposal of hazardous waste

*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 as defined by Annex III of EU Directive 2008/98/EC.

This category includes *low-level radioactive waste*, defined as waste which does not require shielding during normal handling and transportation due to its low radionuclide content.

*High level radioactive* waste is excluded (see CEPA 7).

It includes:

- physical/chemical, thermal and biological treatment;
- conditioning of wastes, and any other relevant treatment method;
- landfill;
- containment;
- underground disposal, and any other relevant disposal method excluding dumping at sea.

*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 the production of steam, hot water, or electricity.

*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.

## CEPA 3.4. Treatment and disposal of non-hazardous waste

It includes:

- treatment of non-hazardous waste:
  - physical/chemical treatment;
  - biological treatment;
  - any other treatment method (such as composting);
- disposal of non-hazardous waste:
  - incineration in the case of non-energy use;
  - landfill;
  - any other disposal method.

Backfilling using demolition waste is excluded (CReMA14)

*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.

Production of energy from incineration of waste is excluded (it is recorded under CReMA 13A if the energy is produced from bio-degradable waste or under CReMA 13B if from non-biodegradable waste and where bio-degradable and non-biodegradable waste fractions cannot be separated).

## CEPA 3.5. Monitoring and measurement and similar

Activities and measures aimed at monitoring the generation and storage of waste, their toxicity, etc.

## CEPA 3.6. Other activities

All other activities and measures aimed at waste management, including ETIGA activities specific to CEPA 3 (e.g. campaigns to inform and encourage waste reduction, implementation of guidelines for waste prevention), when they can be separated from other activities belonging to CEPA 3 and from similar activities related to other environmental protection classes

# CEPA 4. PROTECTION AND REMEDIATION OF SOIL AND WATER

*Protection and remediation of soil and water* concerns surface water, groundwater and marine waters. It refers to measures and activities 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. Monitoring of soil and groundwater pollution is included as well as activities for protection and remediation of marine environment.

Excluded are wastewater management activities (see CEPA 2), activities of soil protection in forests (CReMA 11A) as well as activities aimed at the protection of biodiversity and landscape (see CEPA 6).

Aquaculture is outside the scope of environmental activities with the exception of organic aquaculture[6], included under CEPA 4.3.

## CEPA 4.1. Prevention of pollutant infiltration

Activities and measures 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;
- transportation of pollutant products.

[6] The recommendations hold for different kinds of aquaculture: marine, estuarine and inland/freshwater aquaculture, and especially the organic strand.

## CEPA 4.2. Cleaning up of soil and water bodies

Processes to reduce the quantity of pollutants in soil and water bodies either in situ or in appropriate installations[7].

It includes:

- soil decontamination at former industrial sites, landfills and other black spots;
- 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:

- the liming of lakes and artificial oxygenation of water bodies (see CEPA 6);
- civil protection services (classified outside of CEPA and CReMA).

## CEPA 4.3. Protection from erosion and other degradation of soil and water

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

It includes:

- activities intending to restore the protective vegetal cover of soils;
- construction of anti-erosion walls;

[7] Activities may consist of: 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..

- organic farming as well as agricultural and grazing practices less harmful for soils and water bodies;
- organic aquaculture.

It excludes:

- conventional agricultural production (outside the scope of CEPA or CReMA);
- protection of settlements against natural hazards such as landslides (outside the scope of CEPA or CReMA).

*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).

## CEPA 4.4. Prevention and remediation of soil and groundwater salinity

Activities and measures 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.

It excludes:

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

## CEPA 4.5. Monitoring and measurement and similar

All activities and measures 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.

## CEPA 4.6. Other activities

All other activities and measures aimed at protecting and remediating soil, groundwater, surface water and marine waters. It includes ETIGA activities specific to the CEPA 4, when they can be separated from other activities belonging to CEPA 4 and from similar activities related to other environmental protection classes.

# CEPA 5. NOISE AND VIBRATION ABATEMENT

*Noise and vibration abatement* refers to measures and activities aimed at the control, reduction and abatement of industrial and transport noise and vibration.

It includes:

- activities for the abatement of neighbourhood noise (soundproofing of dancing halls, etc.);
- activities for the abatement of 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 (outside the scope of CEPA or CReMA).

Noise abatement measures and activities are often also related to insulation and therefore energy saving. As an operational rule, activities are classified in CEPA 5 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 CReMA 13B.

## CEPA 5.1. Preventive in-process modifications at the source

Activities and measures 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.

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.

## CEPA 5.2. Construction of anti-noise/anti-vibration facilities

Activities and measures aimed at installing and managing anti-noise / anti-vibration facilities.

It includes:

- 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.

## CEPA 5.3. Monitoring and measurement and similar

Activities and measures aimed at monitoring the level of noise and vibration such as installation and operation of stationary measurement and monitoring sites or mobile equipment in urban areas, observation networks, etc.

## CEPA 5.4. Other activities

All other activities and measures aimed at noise and vibration abatement.

It includes, when earmarked for noise abatement purposes:

- ETIGA activities specific to CEPA 5, when they can be separated from other activities belonging to CEPA 5 and from similar activities related to other environmental protection classes, 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;
- other measures such as 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.

# CEPA 6. PROTECTION OF BIODIVERSITY AND LANDSCAPES

Biological diversity means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems[8].

*Protection of biodiversity and landscape* refers, accordingly, to measures and activities 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 landscapes. Such measures and activities are included regardless of whether they occur in areas which are classified as protected areas.

The environmental rehabilitation of abandoned mining and quarrying sites and related expenditure are included; while activities related to soil cleaning are to be reported under CEPA 4.

It excludes:

- 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';
- farming and gardening activities, (outside the scope of CEPA or CReMA with the exception of organic farming included under CEPA 4).

Protection against forest fires falls under the scope of environmental activity.

By convention, all activities and measures against forest fires are to be reported under CReMA 11A[9].

---

[8] Convention on Biodiversity, Article 2, https://www.cbd.int/convention/text/

[9] Conceptually they should be reported under CEPA 6 if related to protected forest and under CReMA 11 if related to non-protected forests. The majority of countries are not able to provide this detail based on

# CEPA 6.1. Protection and rehabilitation of species and their habitats

Activities and measures aimed at the conservation, reintroduction or recovery of wild fauna and flora, and the restoration, rehabilitation and reshaping of damaged habitats for the purpose of strengthening their natural functions. All activities and measures aimed at maintenance and replenishment of all species of wild flora or fauna (irrespective of whether threatened by extinction), including maintenance of their habitats, are covered. Activities aimed at the minimisation of the intake of wild flora and fauna (wild growing forest products are excluded) for the production purposes, through IPMs, are also covered, with the exception of activities aimed at the minimisation of the intake wild growing forest products (CReMA 11).

Management and development of protected areas, whatever their denomination, is included, i.e. areas in which economic exploitation is prohibited or in which it is subject to regulatory restrictions whose explicit goal is the conservation and protection of habitats.

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.);
- re-introduction of native species and control of invasive alien species that pose a threat to native fauna, flora and habitats;
- restoration activities (replenishment of wild flora and fauna stocks).
  For example: repopulation of stocks of wild fauna by introducing new individuals;

- 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.

---

available data, consequently it was agreed to have them, as a matter of convention, reported only under CReMA 11A.

## CEPA 6.2. Protection of natural and semi-natural landscapes

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

It includes:

- the preservation of legally protected natural objects;
- expenditures incurred for the environmental rehabilitation of abandoned mining and quarrying sites;
- renaturalisation of river banks;
- burying electricity lines;
- maintenance of landscapes that are the result of traditional agricultural practices threatened by prevailing economic conditions, etc.;
- activities for the restoration of water bodies as aquatic habitats: artificial oxygenation and lime-neutralisation actions*;*
- biodiversity and landscape protection related to agriculture.

It excludes:

- measures taken in order to protect historic monuments, measures to increase aesthetic values for economic purposes (e.g., re-landscaping to increase the value of real estates);
- protection of predominantly built-up landscapes.

## CEPA 6.3. Monitoring and measurement and similar

Monitoring, analysis and inspection activities which are not classified under the preceding items. Censuses, inventories, databases of flora and fauna are included.

## CEPA 6.4. Other activities

All other activities and measures aimed at protecting species and habitats and landscapes. It includes ETIGA activities specific to CEPA 6, when they can be separated from other activities belonging to CEPA 6 and from similar activities related to other environmental protection *classes.*

For example: general government activities for preserving stocks through the enforcement of quotas, regulation, monitoring, control for e.g. fishing activities, the management of wild game reserves which preserves resource functions.

# CEPA 7. PROTECTION AGAINST PARTICLE RADIATION (excluding external safety)

*Protection against particle radiation* refers to activities and measures 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

- handling, transportation and treatment 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 measures related to the prevention of technological hazards (e.g. external safety of nuclear power plants) (outside the scope of CEPA or CReMA);
- protection measures taken at workplaces (outside the scope of CEPA or CReMA);
- activities related to collection and treatment of low-level radioactive waste (see CEPA 3);
- activities and measures relating to electromagnetic and acoustic radiation (outside the scope of CEPA or CReMA).

## CEPA 7.1. Protection of ambient media

Protection of soil, air and water and other ambient media from radiation.

It includes protection measures such as screening, creation of buffer zones, etc.

## CEPA 7.2. Transport and treatment of high-level radioactive waste

Any process designed for the transport, conditioning, containment or underground disposal of high-level radioactive waste.

*Collection and transport of high-level radioactive waste* consists of the collection of high-level radioactive waste, generally by specialised firms and their transport to the place of treatment, conditioning storage and disposal.

*Conditioning of high-level radioactive waste* consists of activities that transform high level radioactive waste into a suitable condition for transport and/or storage and/or disposal. Conditioning may occur as part of ISIC/NACE 24.46 (processing of nuclear fuel) activities.

*Containment of high-level radioactive waste* designates the retention of radioactive waste which effectively prevents it from dispersing into the environment, or facilitates dispersion only at an acceptable level. Containment may occur in specially built containment spaces.

*Underground disposal of high-level radioactive waste* is the temporary storage or final disposal of high-level radioactive waste in underground sites that meet specific geological and technical criteria.

## CEPA 7.3. Monitoring and measurement and similar

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

## CEPA 7.4. Other activities

All other activities and measures aimed at protecting ambient media against radiation, and transport and treatment of high-level radioactive waste. It includes ETIGA

activities specific to CEPA 7, when they can be separated from other activities belonging to CEPA 7 and from similar activities related to other environmental protection classes.

# CEPA 8. RESEARCH AND DEVELOPMENT

This class covers R&D for the prevention and elimination of all forms of pollution and R&D oriented towards equipment and instruments for pollution measurement and analysis. When separable, all R&D activities even when referring to a specific class have to be classified under CEPA 8.

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, mechanisms of dispersion of pollutants in the environment as well as their effects on human beings and the biosphere.

It excludes:

- R&D activities related to the management of natural resources (see CReMA 15).

# CEPA 9. OTHER ENVIRONMENTAL PROTECTION ACTIVITIES

*Other environmental protection activities* refer to regulation and ETIGA activities related to environmental protection that cannot be classified elsewhere. When possible such activities should be allocated to other classes.

It includes:

- activities aimed at the general support of decisions taken in the context of environmental protection activities by government or non-government bodies;
- regulation by government bodies;
- environmental management by businesses;
- activities not elsewhere classified.

## CEPA 9.1. General environmental administration, management and regulation

It includes:

- the administration, management and support to decisions regarding environmental protection by government and non-government bodies. In turn, this includes:
  - preparation of declarations or requests for permission;
  - internal environmental management;
  - environmental certification process (ISO 14000, environmental management) ;
  - activities of units specialised in environmental consultancy, supervision and analysis;
- regulation by the government.

## CEPA 9.2. Education, training and information

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

It includes:

- high school programs related to environmental protection;
- university degrees or special courses specifically aimed at training for environmental protection;
- environmental reports, environmental communication, etc. are also included.

## [*9.3 Activities leading to indivisible expenditure*] – obsolete, to be discontinued

*Environmental protection activities that lead to indivisible expenditure, i.e. which cannot be allocated to any other CEPA class. International financial aid may be a case in point as it may be difficult for the donor countries to attribute international aid to individual classes. If international aid is important in volume and/or of specific political interest, a separate 2-digit heading under CEPA 9 could be adequate for national purposes*.

## CEPA 9.4. Activities not elsewhere classified

This position groups together all environmental protection activities that cannot be classified under other CEPA classes.

It includes international financial aid where it may be difficult for the donor countries to attribute related expenditure to individual CEPA classes. If international aid is important in volume and/or of specific political interest, a separate 2-digit heading under CEPA 9 could be adequate for national purposes.

# II. Classification of Resource Management Activities (CReMA)

# Introduction

This note presents definitions, explanations, and examples of resource management activities, that is, economic activities aimed at preserving and enhancing the stock of natural resources. Relevant activities are herein classified according to a generic Classification of Resource Management Activities (CReMA) developed by Eurostat Task Forces10.

Resource Management activities include the preservation, maintenance and enhancement of the stock of natural resources and therefore the safeguarding of those resources against depletion.

Resource management expenditure includes:

- the domestic use of resource management products, both for final and intermediate consumption;
- gross capital formation for resource management activities (investments);
- transfers for resource management.

CReMA classifies resource management activities into seven main categories, and is complemented by the Classification of Environmental Protection Activities (CEPA) that classifies activities aimed at preventing, reducing and eliminating pollution or any other environmental degradation.

With the start of the mandatory reporting for monetary-environmental accounts in 2017[11], questions about how to classify certain goods, services, and expenditures emerged. Soon it became apparent that the available guidance requires clarification and more in-depth explanation to ensure that activities and transactions are recorded in a harmonised manner across countries.

This document presents an updated guidance on how to classify and determine the scope of resource management activities for compiling and reporting of environmental monetary accounts. The explanations and examples reflect the discussions in the MESA working group, the task force on the classification of environmental activities and the feedback from countries during the 2017 and 2018 data collections.

---

[10] Important inputs to develop the CReMA also came from work by Istat (Ardi, C. and Falcitelli, F., The Classification of Resource Use and Management Activities (CRUMA) and Expenditure, Istat, Rome, 2007)

[11] Mandated by Regulation (EU) No 691/2011 (https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri= CELEX:02011R0691-20140616&from=EN)

The list of activities included and excluded in the introduction of CReMA classes that are further broken down (i.e. CReMA 11, 13) is not exhaustive.

Annex A presents recommendations for the treatment of specific borderline cases. Eurostat's notes providing guidance on the treatment of specific activities and products and/or addressing related methodological or compilation questions ('Guidance notes'), and published alongside these CReMA explanatory notes, shall also be consulted and taken into consideration.

Annex B provides a list of Guidance Notes and related links.

# CReMA 10. MANAGEMENT OF WATER

Management of water comprises activities aimed at the minimisation of intake from inland waters and activities aimed at increasing stocks of water.

It includes:

- activities aimed at reducing the intake of water per unit of output through IPMs. This includes all kinds of adjustment of technologies.
  *For example*: cultivation of plants that use less water for agriculture and the construction and installation of drip irrigation systems;
- activities aimed at the reduction of water losses and leaks, water reuse and savings.
  *For example*: 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 white goods or installations;
- activities aimed at increasing water stocks (other than the activities with the primary purpose of prevention and remediation of soil and groundwater salinity; see CEPA 4.4).
  *For example*: recharge of groundwater bodies through infiltration systems, development of vegetal cover and landscape works to increase water infiltration;
- activities aimed at measuring and monitoring the use and the level of water stocks.
  *For example:* M&M, manufacture of electric contact gauge or pressure probes;

- other activities and measures aimed at managing water resources. These include regulation and ETIGA activities specific to the CReMA 10 when they can be separated from other activities belonging to CReMA 10 and from similar activities related to other classes.
  *For example:* information campaigns to encourage water savings, release of licences for water abstraction, general government units or parts thereof that administer and regulate the use of water resources or are responsible for water saving policies.

It excludes:

- activities of collection, treatment and distribution of water other than the ones mentioned above (e.g. construction of dams and reservoirs on rivers for the purposes of increasing water stocks);
- activities related with the maintenance of the quality of water bodies (see CEPA 4);
- activities related to the restoration of aquatic habitats (see CEPA 6);
- activities 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 (CEPA 4.4) or protection of soil against erosion e.g. in mountainous areas (CEPA 4.3);
- activities associated with the reduction of the use of cooling water and more efficient cooling in the energy sector (see CEPA 2);
- M&M related to monitoring pollutant concentrations in wastewater and water quality at the place wastewater is discharged (see CEPA 2);
- M&M related to the monitoring of surface water quality and groundwater and marine waters (see CEPA 4);
- activities related to dykes and embankments (e.g. damming activities) as they are related to natural risk management and protection of human property.
  .

# CReMA 11. MANAGEMENT OF FOREST RESOURCES

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[12] It includes activities related to the preservation and replenishment of timber stocks and sustainable management of forests while activities related to roundwood production (both industrial roundwood and fuelwood) and extraction of non-wood forest products are excluded.

It includes:

- sustainable management of forest areas (CReMA 11A);
- minimisation of the intake of timber resources (CReMA 11B).

It excludes:

- extraction of wood (logging) and wild growing non-wood forest products. Non-wood forest products are mushrooms, truffles, berries, nuts, balata and other rubber-like gums, cork, lac and resins, balsams, vegetable hair, eelgrass, acorns, horse chestnuts, mosses and lichens;
- production of fuel wood (see CReMA 13A).

## CReMA 11A. Sustainable management of forest areas

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.

[12] Protected areas" include areas designated under both national and EU legislation, i.e. both national parks (other relevant protected areas existing under national legislation) and Natura 2000 areas

*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;

- M&M;
- ETIGA activities linked to the management of forests.

Protection against forest fires falls under the scope of environmental activity.

By convention, all activities and measures against forest fires are to be reported under this CReMA class.

Afforestation, reforestation with invasive alien tree species or management of invasive alien tree species for timber production is outside of scope of CReMA 11A. These activities should be excluded if data sources allow. Control of invasive alien tree species is to be reported in CEPA 6.1.

It excludes:

- activities of soil protection outside forest areas (CEPA4);
- 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 fires.

## CReMA 11B. Minimisation of the intake of timber resources

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, reuse or savings of forest products and by-products.
  *For example:* reuse of timber products.

# CReMA 12. MANAGEMENT OF WILD FLORA AND FAUNA STOCKS

*[This classification heading is obsolete; all relevant activities are to be reported under Protection of biodiversity and landscape (CEPA6)]*

# CReMA 13. MANAGEMENT OF ENERGY RESOURCES

Management of energy resources comprises activities aimed at the minimisation of the intake of fossil resources through the production of energy from renewable sources, heat/energy saving and management and the minimisation of the intake of fossil resources for uses other than energy production. Exploitation and management of the stocks of non-renewable energy sources (including exploration and discovery of new reserves) are excluded. Also excluded are measures that improve the efficiency of extraction of energy resources.

## CReMA 13A. Production of energy from renewable sources

It concerns the production of energy from renewable sources, as well as the related activities of:

- monitoring of renewable energy production;
- inventories of the potential for renewable energy production and similar;
- administration, and information provision etc.

Sources[13] for the production of renewable energy are:

- Wind
- Solar
- Aero-thermal
- Geothermal
- Hydrothermal and ocean energy
- Hydropower, excluding pump storage stations (which is to be recorded in CReMA 13B)
- Biomass (including biogas and biofuels)[14]
- Landfill gas
- Sewage treatment plant gas and biogas.

[13] Directive 2018/2001 of the European Parliament and of the Council of 11 December 2018.

[14] 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.

It includes:

- production of electricity, heat and fuels from renewable sources.
  *For example:* production of electricity from wind, 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[15];
- production of energy through incineration of biodegradable waste;
- production of energy from cogeneration plants using renewable fuels for this purpose;
- specific equipment for the production of energy from renewable sources and integrated technologies.
  *For example:* solar panels, photovoltaic cells, hydraulic turbines, wind turbines, fire wood and other biomass boilers;
- 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);
- activities and products concerning M&M.
  *For example*: inventories and assessments of the potential for renewable energy production. Regulation and ETIGA activities concerning renewable energy when they can be separated from other activities in CReMA 13A and from similar activities related to other resource management classes.

It excludes:

- waste incineration without energy production recovery (CEPA 3);
- waste incineration with energy recovery from non-biodegradable waste where bio-degradable and non-biodegradable waste fractions cannot be separated (CReMA 13B);
- exploitation, management and maintenance of the stocks of non-renewable energy sources, including exploration and discovery of new reserves;
- activities aimed at the use of renewable energy (e.g. distribution);

[15] According to NACE Rev. 2 (see paragraph 53 d): “production of energy ... even if the whole output is consumed by the parent unit” is not to be considered as ancillary production. Therefore renewable energy production of enterprises for auto consumption should be accounted for as secondary production.

- production of biogas from sewage sludge (by convention all activities related to treatment of sewage sludge are classified under CEPA 2.3).

## CReMA 13B. Heat/energy saving and management

It includes:

- activities and products aiming at minimising the intake of energy from non-renewable energy sources through IPMs. These activities are often carried out as ancillary or own-final-use activities.
  *For example:* replacement or adjustment of production processes (including energy production processes), equipment for heat and electricity cogeneration from non-renewable sources, manufacturing and installation of cogeneration plants and their components; reducing losses in energy transportation, improvement of energy efficiency, pumped-storage hydropower (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 the purpose of storing energy produced from renewable sources, are also included;
- activities and products aiming at minimising heat and energy losses and maximisation of energy recovery.
  *For example:* insulation of buildings, production (recovery) of energy from non-biodegradable waste, use of pressure differences with e.g. expansion turbines, exhaust air afterburning;
- activities and products concerning M&M related to energy saving.
  *For example:* audits, production of energy performance certificates and assessments of energy savings potentials;
- ETIGA linked to the management and saving of heat and energy.

It excludes:

- the production of energy, both from renewable sources (CReMA 13A) and fossil fuels (outside the scope of CEPA and CReMA); operation of cogeneration plants that use renewable fuels as a specific example of production of energy from renewable sources (CReMA 13A);
- activities mainly aimed at reducing air pollution. By convention, electric and more resource efficient vehicles are to be reported as cleaner products under CEPA 1.

## CReMA 13C. Minimisation of the intake of fossil energy resources as raw material

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. These activities are mainly carried out as ancillary or own-final-use activities.
  *For example:* replacement or adjustment of technologies;
- recovery of materials made from fossil energy resources.
  *For example:* processing of petro-based waste into secondary raw materials (plastic recovery); 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:

- waste management activities (CEPA 3).

# CReMA 14. MANAGEMENT OF MINERALS

Minerals are naturally occurring substances which are generally solid, inorganic and a-biogenic.

Mineral raw materials are subdivided into metallic (e.g. iron, aluminium) and non-metallic (e.g. potash, rock salt) raw materials.

It includes:

- activities aimed at minimising the intake of minerals through e.g. IPMs These activities are (mainly carried on as ancillary or own-final-use activities
  *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. 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:*
  - 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 and similar related to the reduction of minerals use;
- ETIGA activities linked to the management of minerals.

It excludes:

- activities related to the management of biological natural resources, water, and fossil energy resources;
- 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 (CEPA 3);
- the production of energy from waste (CReMA 13A and 13B);

# CReMA 15. RESEARCH AND DEVELOPMENT ACTIVITIES FOR RESOURCE MANAGEMENT

Research and development activities for resource management comprise creative work and systematic work undertaken in order to increase the stock of knowledge and to devise new applications of available knowledge in the field of resource management.

It includes:

- R&D for renewable energy;
- R&D for energy and minerals savings;
- R&D for timber savings, etc.

It excludes:

- R&D activities related to environmental protection (see CEPA 8).

# CReMA 16. OTHER RESOURCE MANAGEMENT ACTIVITIES

Other resource management activities refer to all regulation and ETIGA activities related to resource management in the case that they cannot be classified elsewhere. When possible, such activities should be allocated to other classes.

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;
- education, training and information.
  *For example*: high school programs, university degrees or special courses specifically aimed at training for resource management;

- activities not elsewhere classified.
  All resource management activities that cannot be classified elsewhere are reported here.
  *For example:* international financial aid due to difficulties in attributing international aid to individual classes. If international financial aid is important in volume and/or of specific political interest, a separate 2-digit heading under CReMA 16 could be adequate for national purposes.

# Acronyms

ETIGA: Education, Training, Information provision and General Administration

IPM: In-Process Modification

M&M: Monitoring and Measurement and similar

RM: Resource Management

RU: Resource Use

R&D: Research and Development

# Annex A: Operational rules for boundary cases

This Annex presents recommendations for the treatment of specific cases[16].

## CEPA 3/CReMA [Waste recovery and waste management]

Waste management and materials recovery activities have to be classified under CEPA 3 and CReMA (i.e. 11B, 13C or 14) respectively. Classification of products by activity (CPA) is the best reference classification to separate out these activities. However, if information based on CPA is not available, the classification of economic activities (NACE) can be used by convention to split waste management and materials recovery activities. The output of NACE groups 38.1 (waste collection) and 38.2 (waste treatment and disposal) should be allocated to CEPA 3 and output of NACE 38.3 (Materials recovery) should be allocated to the correct CReMA category (i.e. 11B, 13C or 14).

Obviously the method using only NACE without taking into account the products resulting from the activity (CPA classification) is a simplification which results in possible over-/underestimation of output allocated to CEPA 3 and CReMA.

To illustrate the point, you might consider a unit classified under NACE group 38.2+38.1 that carries out other activities in addition to the principal ones, e.g. crashing and cleaning of glass (materials recovery). Output of this secondary activity will be recorded under CEPA 3 according to the simplified approach, i.e., where only NACE classification is used. This will result in an overestimation of output of CEPA 3 and underestimation of output of CReMA 14. For this reason, the simplified approach - based only on NACE classification -should be used when no detailed information (breakdown by CPA in macro-economic statistics and/or from other sources, e.g. through specific surveys information) is available.

[16] The technical recommendations are the results of discussion of TF on Classification of environmental activities.

# CReMA 13A / CEPA 3 [Production of biogas and biofuels from waste]

Production of biogas and biofuels from waste is reported under CReMA 13A. 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 groups) and
- production of biogas and biofuels from waste is estimated based on CPA.

Double counting occurs because NACE 38.2 already covers production of biogas from waste[17]. To avoid double counting, production of biogas and biofuels has to be deducted from total waste management output in CEPA 3.

# CReMA 13A and 13B / CEPA 3 [Production of energy through incineration of waste]

Production of energy through incineration of waste is reported under CReMA 13A (from bio-degradable waste) and CReMA 13B (from non-biodegradable waste). 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 groups) and
- production of energy from incineration of waste is estimated based on CPA.

Double counting occurs because NACE 38.2 covers incineration of waste regardless of whether energy is produced[18]. To avoid double counting, production of energy from waste (biodegradable and non-biodegradable) has to be deducted from total waste management output in CEPA 3.

[17] NACE 38.21 includes: "[…] disposal of non-hazardous waste by combustion or incineration or other methods, with or without the resulting production of electricity or steam, compost, substitute fuels, biogas, ashes or other by-products for further use etc. […]"

[18] See footnote 16

# CReMA 11B/13C/14 [Allocation of “indivisible” materials recovery activities]

Materials recovery activities have to be allocated to the correct CReMA categories, i.e. CReMA 11B or 13C or 14 based on the relevant data sources available.

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 11B, 13C and 14 in recovery activities already allocated.

If no materials recovery activities can be assigned to a specific material (wood/plastic/minerals) and there is no information in available sources for the calculation of relevant shares, the total value of the materials recovery activities has to be reported by convention under CReMA14. This rule applies only if no additional information can provide a proxy for a split between the pertinent CReMA categories.

# CEPA 4/CEPA 6/CReMA 11 A.

The broad definition of the scope of CEPA 6 can lead to some overlapping with CEPA 4 and CReMA 11 A, 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, apart from the specific conventions established in each environmental domains, the operational rule will be the following:

- allocation to CEPA 4 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 CReMA 11 A 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;
- allocation to CEPA 6 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., CEPA 4 or CReMA 11A).

# Annex B: Eurostat Guidance Notes accompanying the CEPA and CReMA explanatory notes

Eurostat Guidance Note '*Reporting of energetic refurbishment and construction of new energy-efficient buildings in EGSS accounts'*
***[https://ec.europa.eu/eurostat/documents/1798247/12177560/Guidance+note+on+energy+efficient+buildings+-+technical+note.pdf/8ab3d765-b6b7-a8b4-bef3-5ef2d5c1d145?t=1609859263907]***

Eurostat Guidance '*Reporting of electric and more resource-efficient transport equipment in EPEA and EGSS accounts*'
***[https://ec.europa.eu/eurostat/documents/1798247/12177560/Guidance+note+on+electric+transport+equipment+-+technical+note.pdf/2ddec6dc-8ca9-1736-0f36-18ed2233af0b?t=1609859296315]***