



DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS
STATISTICS DIVISION
UNITED NATIONS

SEEA Revision
Issue 9
Outcome Paper

Outcome Paper for Global Consultation

Issue #9: Classification of natural resource use and management activities and expenditures¹

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¹ This outcome paper has been prepared by the SEEA Editor. It is based on papers presented to the London Group of Experts on Environmental Accounting and discussions among those experts. Investigation and research for this outcome paper was led by Federico Falcitelli and Cesare Costantino of the Italian National Statistical Office (Istat).

A. Introduction

1. In the revision of the 2003 System of Environmental and Economic Accounts (SEEA-2003), the area of natural Resource Use and Management Expenditure Accounts (RUMEA), and in particular the relevant classifications, has been determined to be an important issue. In general it is considered that the underlying accounting logic for the compilation of RUMEA should be consistent with the accounting logic that has been well developed in the area of Environmental Protection Expenditure Accounts (EPEA). This outcome paper therefore focuses on proposing a classification for use in the compilation of RUMEA.

2. The Italian National Statistical Office, Istat, developed a classification for RUMEA purposes – called CRUMA (Classification of natural Resource Use and Management Activities and expenditures). With this experience Istat took the lead within the London Group to develop an internationally agreed classification in consultation with a range of other interested countries and international agencies. Various papers were presented to London Group meetings and a proposed classification was taken to the UN Expert Group on International Economic and Social Classifications (Expert Group on Classifications).

3. The Expert Group on Classifications essentially endorsed the proposed CRUMA classification with some suggested clarifications. Part of the proposal emerging from the London Group discussion was the combination of the proposed CRUMA with the existing Classification of Environmental Protection Activities (CEPA) to create a single overarching Classification of Environmental Activities (CEA). This combination of classifications was endorsed by the Expert Group on Classifications.

4. The paper is structured to discuss:

- i. The context for defining environmental activities and their classifications
- ii. Scope of natural resource use and management activities
- iii. A classification of resource use and management activities
- iv. Boundary cases between resource management and environmental protection

5. Recommendations for the revised SEEA are presented in a final section.

B. The context for environmental activities and classifications

6. The definition and identification of environmental activities has been a focus of environmental accounting for many years. The SEEA-2003 identifies four groups of environmental activities or, more strictly, activities with an environmental purpose. They are:

- Environmental protection activities
- Natural resource management and exploitation activities
- Environmentally beneficial activities
- Minimisation of natural hazards (SEEA-2003, paragraph 5.26)

7. While there is no intention to change the overall scope of the environmental activities as presented in SEEA-2003, the groupings have been generally renamed and the following four environmental activities are more commonly referred to:

- Environmental protection
- Resource management
- Resource use
- Minimisation of natural hazards

8. Most work has been undertaken on identifying transactions relating to environmental protection activity. The first full articulation of Environmental Protection Expenditure Accounts (EPEA) was presented in the SERIEE 1994², repeated in the SEEA-2003. This was followed by the development of the Classification of Environmental Protection Activities (CEPA) which was finalised in 2000.

9. Accounts for expenditure on resource use and management activities (RUMEA) have been defined in general terms but not fully articulated and no international classification comparable to CEPA have been adopted.

² SERIEE is the French acronym for the 1994 Eurostat publication *The European System for the Collection of Information on the Environment – SERIEE 1994*.

10. This paper presents a proposal for a Classification of natural Resource Use and Management Activities and expenditures (CRUMA) to cover the environmental activities of resource use and resource management. As will be described, one element of this classification is the ability to clearly separate these two types of activities.

11. One example of the importance of making this separation is the requirement for classifications in the development of Environmental Goods and Services Sector (EGSS) statistics. The coverage of EGSS is environmental protection activity (covered by CEPA) and resource management activity. Thus, for EGSS purposes another classification, the Classification of Resource Management Activities (CReMA) has been constructed based on the use of CRUMA classes excluding those related to resource use. It is noted that both CRUMA and CReMA do not overlap with the CEPA.

12. Finally, an overarching classification of all environmental activities is proposed in this paper. It has been termed the Classification of Environmental Activities (CEA) and is the combination of CEPA and CRUMA.

13. All of these classifications are types of purpose based or functional classifications which seek to classify transactions on the basis of the intent behind the transaction rather than by the characteristics of the product being transacted or the producing units involved in the transaction. Other examples of this type of classification are the Classification of Individual Consumption by Purpose (COICOP) and the Classification of Functions of Government (COFOG).

C. Scope of resource use and management activities

Rationale for defining environmental activities

14. In the SEEA-2003, a range of environmental assets are defined within the asset boundary. These are grouped into the following broad categories:

- Natural resources:
 - Mineral and energy resources;
 - Soil resources;
 - Water resources;
 - Biological resources;
- Land and associated surface water;
- Ecosystems. (SEEA-2003 paragraph 2.125)

15. These environmental assets are defined by their delivery of the following environmental functions.

- **Resource functions** cover natural resources drawn into the economy to be converted into goods and services for the benefit of mankind. Examples are mineral deposits, timber from natural forests, and deep sea fish.
- **Sink functions** absorb the unwanted by-products of production and consumption; exhaust gases from combustion or chemical processing, water used to clean products or people, discarded packaging and goods no longer wanted. These waste products are emitted into the air, water (including sea water) or are buried in landfill sites. These three destinations are often referred to as “sinks”.
- **Service functions** provide the habitat for all living beings including mankind. Some aspects of habitat are essential, such as air to breathe and water to drink. These are called *survival functions*. If the quantity and quality of survival functions are diminished, biodiversity of species is threatened, not excluding the human species. Some service functions are not essential in the same way but improve the quality of life, for example by providing a pleasing landscape for leisure purposes. These are called *amenity functions* and affect mankind only (or at least are the only ones measurable to us in human terms. (SEEA-2003 paragraph 1.23)

16. By considering different kinds of environmental assets and different kinds of environmental functions, different kinds of environmental activities can be defined. Three kinds of environmental activity are of particular interest in the development of relevant classifications.

Environmental Protection (EP) activities and expenditures, as defined according to CEPA2000, preserve and maintain the sink and service functions provided by all kinds of environmental assets covered by the SEEA, except for the mineral and energy resources which are mainly relevant from the point of view of their resource functions.

EP activities and expenditures can be carried out by all economic and institutional sectors, as principal, secondary or ancillary activities.

Resource Management (RM) activities and expenditures aim at preserving and maintaining the stock of natural resources safeguarding against depletion and degradation. They relate to the resource functions of all natural resources covered by the SEEA except for soil resources which are mainly protected through EP activities.

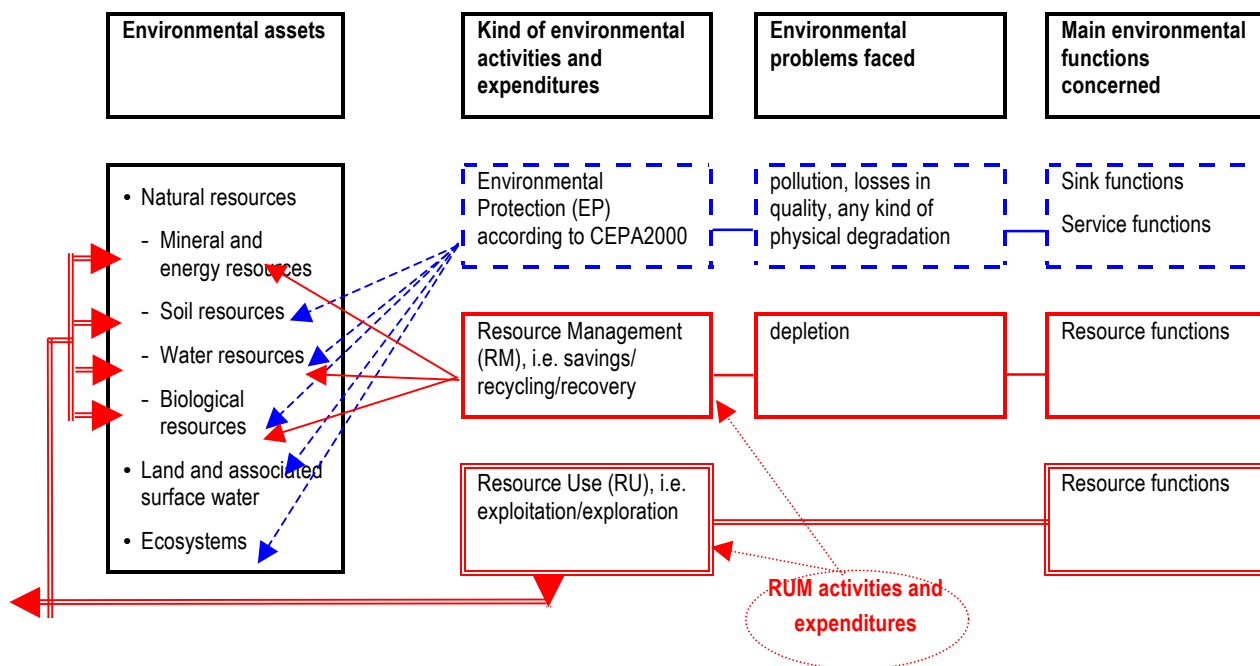
RM activities and expenditures can be carried out by all economic and institutional sectors, as principal, secondary or ancillary activities.

Resource Use (RU) activities include abstraction, harvesting and extraction of natural assets, including exploration and development. The standard classification of economic activities (ISIC) includes several activities that are typically resource-related industries, such as fisheries, forestry, mining and water supply. These industries carry out RU activities as their main activity. RU activities can be also carried out as secondary or ancillary activities.

17. A given environmental asset can be preserved through different kinds of activities depending on the functions to be protected, for example, natural forests can be protected from a qualitative point of view (EP activities) in order to preserve their sink functions (carbon binding) or service functions (protection of biodiversity and landscapes); the same environmental assets can also be protected from a quantitative point of view (RM activities) in order to preserve their stock against depletion (resource functions). Separating the different activities aimed at preserving the various functions of a natural asset is not always easy.

18. Figure 1 is understood as representing an association between environmental activities and environmental functions of natural assets according to the main purpose criterion³.

Figure 1: Environmental assets and expenditures



³ This is the criterion used for classifying EP activities according to CEPA.

Scope of natural resource use and management activities

19. The main kinds of activities identified by SEEA-2003 are:

- research for new resources,
- withdrawals from existing resources,
- activities aimed at reducing withdrawals (recovery, recycling, saving or substitutions of resources),
- administration and regulatory activities and in general activities of natural resource management authorities,
- monitoring, control and surveillance, data collection and statistics,
- R&D activities in the field of natural resource use and management.

20. There are four specific issues that need to be considered to define the scope:

(i) The scope of natural resource use and management activities (RUM) should be identified in reference to the scope of environmental protection activities (EP), making sure that any overlap between the two fields is avoided. Boundary issues are considered in more detail in section E.

(ii) Consistent with the picture given in Figure 1, in the SEEA-2003 four main categories of natural resources are identified as relevant for RUM purposes: sub-soil assets, inland waters, forest resources, wild flora and fauna. As far as biological resources are concerned, the categories identified as relevant for RUM purposes relate only to non-cultivated resources⁴. This restriction stems from the main policy issue to which the development of RUMEA is connected, i.e. the need of more efficient use and sustainable management of natural resources, given their scarcity and related depletion problems.

However, resource use and management-type activities may be carried out for environmental assets other than natural resources. For example land is used, is preserved (often through environmental protection activities falling within CEPA) and is managed (in some countries, the general government allocates land to farmers). Nevertheless for the time being it seems reasonable to limit RUM to non-produced natural resources, since most of the activities for managing other environmental assets (land, ecosystems) is covered by CEPA.

(iii) Within the RUM, activities for reducing the intake of natural resources should be accounted for separately from exploration and exploitation activities. The two groups of activities have a different relevance from an environmental perspective and can be linked to different types of physical data (e.g. in the case of inland waters, mobilization expenditures could be linked to physical data on uses, while saving or recharging expenditures could be linked to data on the gross increase in proven reserves).

(iv) Activities and transactions specific to environmental protection, for example management of protected forests, are not included (they are included under environmental protection expenditure activities). Similarly, qualitative protection activities of natural resources, for example activities for biodiversity and landscape protection or activities aimed at preserving certain functions or the quality of the natural environment (air, water, soil and groundwater), are also included under environmental protection (SEEA-2003 paragraph 5.39).

21. Based on this discussion it is concluded that the scope of RUM is clearly and consistently defined by the SEEA in terms of kinds of natural resources and broad categories of RUM activities and actions. Two key features are that (i) RUM are limited to activities relating to non-produced natural resources and (ii) RUM should be defined with no overlap with EP. Overall, there is general agreement on considering the list of activities and actions of Table 1 (below) as appropriate for defining the RUM scope. It is emphasised that RM activities should be kept separate from the RU ones; and among the RU activities, exploration and exploitation activities should also be kept separate.

⁴ For example, in the SERIEE: “Only those natural resources corresponding to non-produced natural assets whose use takes the form of goods, are dealt with in the natural resource use and management account. Hence, produced natural resources (livestock, plants) are excluded as well as those environmental services which result from uses of certain functions of natural assets (assimilation of pollutants, aesthetic value, etc.)” (SERIEE 1994 §§ 10043-10045).

Table 1: Natural resource use and management activities identified for defining RUM

<p>“RM activities”</p> <p>Activities aimed at preserving natural resource stocks</p>		<ul style="list-style-type: none"> - activities aimed at reducing withdrawals: recovery, reuse, recycling, savings, substitution of natural resources - replenishment activities: increases/ recharges of natural resource stocks (for renewable resources, i.e. inland waters, forest and wild flora and fauna) - natural resource administration and regulation activities carried out by the general government (including e.g. the elaboration of plans, the release of any kind of licenses and permits for exploiting resources, the enforcement of quotas, ...) - monitoring, control and surveillance (including the control on the observance of licenses, permits, quotas, ...), measurement, inventories, data collection and the like - teaching, training, information and communication activities - R&D activities in the field of natural resource use and management
<p>“RU activities”</p> <p>Activities relating to exploration, withdrawals and distribution of natural resources</p>	<p>Exploration</p>	<ul style="list-style-type: none"> - research and exploration for new reserves and resources
	<p>Withdrawals and distribution</p>	<ul style="list-style-type: none"> - withdrawals from existing resources - management and maintenance activities carried out by the public or private authorities in charge of the direct management and exploitation of the reserves of natural resources - distribution of natural resources (only for inland waters)

D. Classification of natural resource use and management activities and expenditures

22. Through the appropriate definition of the scope of natural resource use and management activities a base is formed for the construction of a standard classification of RUM activities, which is complementary, comparable and consistent with CEPA. This section describes the proposed classification.

Classification criteria and principles

23. A classification of RUM activities that is complementary, comparable and consistent with CEPA should comply with a number of criteria and principles that characterize the CEPA itself:

- it should be a classification of the economic activities carried out for RUM purposes, regardless of the institutional sector or industry classification which the producers belong to, i.e. a classification of “characteristic” activities concerning the RUM field (*economic activities for RUM purposes, “characteristic” activities*);
- even though defined in terms of economic activities, RUM categories should be general enough as to allow the use of the classification as a functional classification, i.e. a tool suitable for classifying not only activities but also products, producers, actual outlays and any kind of transactions (*functional multi-purpose classification*);
- the classification should be built according to the “main purpose” principle, to be identified taking into account the technical nature and the policy purpose of an action or activity, as appropriate, as well as the characteristics of the territorial context where an action or activity is carried out. The main purpose is not be identified based on the subjective intention of the actor who carries out the action or activity, neither just on the existence of any possible positive effect on the environment: for example, activities which have a favourable impact on the environment but which serve other goals do not come under environmental protection (*“main purpose” classification principle, emphasis on the technical nature of the activity*);
- it should have no overlapping with CEPA; if the application of the “main purpose” criterion is not sufficient for avoiding overlapping, classification rules should be established, possibly without

changing those of CEPA in order to avoid breaks in the existing time series (*no overlapping with CEPA*);

- it should have the same structure and organization of CEPA in order to maximize the consistency between the two classifications and to make it possible to apply the classification of RUM activities on the basis of the same practical experience acquired until now by using CEPA (*same structure and organization of CEPA*).

Defining the Classification of natural Resource Use and Management Activities and expenditures (CRUMA)

24. Based on these criteria and principles the Classification of natural Resource Use and Management Activities and expenditures (CRUMA) is proposed.

25. CRUMA is made up of 7 classes of activities (numbered from 10 to 16, continuing the numbering of CEPA). The classification⁵ is reported in Annex 2. CRUMA is developed by complying with all the criteria and principles described above and following the same approach that had been used for setting up CEPA2000.

26. The main characteristics of CRUMA, which is structured and organized similarly and consistently with CEPA, are as follows (see Table 2):

- each of the first five classes (10-14) groups together all the RUM activities related to one specific natural resource, except for R&D-type activities
- all R&D activities with RUM purposes are allocated to CRUMA 15, similarly to those with EP purposes which in CEPA2000 are classified all together within CEPA 8
- all the cross-cutting activities other than R&D activities, i.e. administration and management as well as education, training and information, should, to the extent possible, be allocated to the 'Other' positions in CRUMA 10-14. When these activities concern simultaneously two or more natural resources they should be allocated respectively to 16.1 or 16.2 positions (this rule is derived – *mutatis mutandis* – from CEPA rules)
- each of the first five classes (10-14) includes the following kinds of categories :
 - activities aiming at reducing the intake of the natural resource upstream;
 - activities aiming at reducing the intake of the natural resource downstream;
 - replenishment activities (increases/recharges), only for renewable resources;
 - direct management of natural resource stocks (exploitation, exploration, extraction, treatment, distribution, etc.);
 - measurement and control activities.

⁵ So far it has been applied in Italy in its complete version (classes 10-16) to the general government sector; for the class 10 (use and management of water resources) data are produced also for the whole economy (GG, Enterprises, Households, NPISHs).

Table 2: CEPA2000 and CRUMA

CEPA2000	<ul style="list-style-type: none"> 1 Protection of ambient air and climate 2 Wastewater management 3 Waste management 4 Protection and remediation of soil, groundwater and surface water 5 Noise and vibration abatement (excluding workplace protection) 6 Protection of biodiversity and landscapes 7 Protection against radiation (excluding external safety) 8 Research and development for environmental protection 9 Other environmental protection activities for environmental protection <ul style="list-style-type: none"> 9.1 General environmental administration and management 9.2 Education, training and information 9.3 Activities leading to indivisible expenditure 9.4 Activities not elsewhere classified
CRUMA	<ul style="list-style-type: none"> 10 Use and management of water resources 11 Use and management of natural forest resources 12 Use and management of wild flora and fauna 13 Use and management of fossil energy 14 Use and management of minerals 15 Research and development activities for natural resource use and management 16 Other natural resource use and management activities <ul style="list-style-type: none"> 16.1 General administration of natural resources 16.2 Education, training and information 16.3 Activities leading to indivisible expenditure 16.4 Activities not elsewhere classified

27. The content of each class is defined as consistently as possible with the other international frameworks relevant for the production and reporting of data on natural resources. For example the CRUMA class “11 Use and management of natural forest resources” covers activities and actions concerning not only wooded resources but also non-wooded forest products, consistently with the FAO Global Forest Resources Assessment and the European Framework for Integrated Environmental and Economic Accounting for Forests (IEEAF). This implies, for example, that the production of recycled products which reduce the intake of wooded and non-wooded forest products is classified within CRUMA “11 Use and management of natural forest resources”.

28. In general, all types of activities (at least within the first five CRUMA classes) are classified by natural resource without creating specific categories for homogenous kinds of activities (for example, a category concerning all the activities for the production of recycled products regardless of the natural resource concerned).

29. The complete list of CRUMA categories is reported in Annex 2. The content of each category is described by providing explanatory notes that, in some cases, are derived – *mutatis mutandis* – from those concerning analogous categories of CEPA; in most cases explanatory notes and examples are derived from international manuals (like e.g. 1994 SERIEE manual, the Eurostat IEEAF manual or the FAO/UN manual on Integrated Environmental and Economic Accounting for Fisheries,) as well as from Eurostat standard tables.

E. Boundary cases between EP and RUM activities

30. There are a few cases of activities for which the allocation to environmental protection or resource management and use activities is not necessarily straightforward and requires careful understanding of the main purpose.

- production of energy from renewable resources and energy saving. These activities can be carried out for the main purpose of reducing air pollution (if so they should be classified within CEPA 1) or for the main purpose of reducing the intake of fossil energy resources (if so they should be classified within the RUM field). In order to establish the main purpose of such activities, specific features of the economy should be considered, as well as the main policy concern: e.g. for countries endowed with fossil energy resources, the depletion of their own stocks could be the main concern, while the reduction of pollution could be the main purpose in countries where energy is obtained mostly from imports. Accordingly, the production of energy from renewable resources and energy saving activities should be classified as CRUMA 13.1 and 13.2 respectively, only if their main purpose is the reduction of the intake of energy resources; if the main purpose is the reduction of pollution, instead, the same activities should be classified as CEPA 1⁶.
- recycling. According to the explanatory notes of CEPA, recycling activities should be classified within CEPA 3 to the extent that they substitute waste management activities (collection, transport and disposal). Only the processing of waste and scrap aimed at transforming them into new raw materials and production of recycled goods represent RUM activities aiming at reducing the intake of raw materials. These activities are classified according to the natural resource concerned as follows:
 - within CRUMA 11.2 if they concern natural forest materials (e.g. recycled paper);
 - within CRUMA 14.2 if they concern minerals (e.g. recycled glass);
 - within CRUMA 12.1 if they concern non-cropped resources (non fossil organic materials) (e.g. recycled natural textile fibres);
 - within CRUMA 13.1 if they concern fossil organic material (i.e. oil) (e.g. recycled plastic);
- waste incineration. According to the International Energy Agency (IEA) renewable energy includes the energy produced from burning wastes⁷. If the main purpose of waste incineration is energy production then it should be classified within CRUMA 13.1; if the main purpose is waste disposal and treatment it should be classified within CEPA 3.3 or 3.4⁸;
- other cases for which the main purpose (EP versus RUM) often needs to be identified by considering the specific features of the territory where the activities are carried out
 - some activities aimed at the replenishment of water stocks (CRUMA 10.3) in certain territories can have the main purpose of protecting the soil against erosion (CEPA 4.3) or improving water quality or fighting salinity (CEPA 4.4);
 - activities for protecting forests against fires (CRUMA 11.4) or managing forest areas (CRUMA 11.5) should be classified within CEPA 6 if the forest areas concerned are mainly relevant from the point of view of landscape and biodiversity (e.g. protected areas) and not for their “resource functions”;

⁶ So far, production of energy from renewable resources and energy saving actually have been classified as CEPA in many cases. For example at the European level, as far as general government is concerned, the Eurostat discussion group on COFOG and the Eurostat Task Force on general government and specialised producers’ EPE agreed upon a general rule: to classify, by convention, energy conservation and renewable energy sources as COFOG 5.3 – Pollution abatement (corresponding to CEPA 1). As matter of fact, for most European countries this turns out to be a proper application of the main purpose criterion.

⁷ OECD/IEA (2007), *Renewables in global energy supply*.

⁸ For example, at European level the waste incineration activities for the purpose of waste treatment and for the purpose of energy production are separately identified by means of specific codes according to the Directive 2006/12/EC.

- some activities aimed at the replenishment of wild flora and fauna stocks (CRUMA 12.2) in some cases can have the protection of biodiversity as their main purpose (CEPA 6.1), not the replenishment or maintenance of the resource stock per se;
- cross-cutting activities:
 - R&D activities: they should be classified within CEPA 8 if their main purpose relates to pollution and degradation issues (EP), while they should be classified in the RUM field if they relate mainly to natural resource use and depletion issues (class 15 of the Italian CRUMA). For some (multi-purpose) R&D projects that relate to both EP and RUM issues, there is no way to identify a main purpose (or to distribute the activities and the expenditure between the different purposes).⁹;
 - General administration activities: they should be classified within CEPA 9.1 if their main purpose is EP, while they should be classified in the RUM field if their main purpose is the management of natural resources (CRUMA 16.1). Often general administration activities can involve several environmental aspects, belonging to both EP and RUM fields, and there is no way to identify a main purpose.¹⁰;
 - Education, training and information: here the same classification principles as for general administration activities apply (in this case the choice is between CEPA 9.2 and CRUMA 16.2).

Based on discussion this presentation of borderline cases is considered exhaustive.

⁹ Istat classifies such multi-purpose projects by convention within CEPA 8, based on the consideration that in the absence of an official classification of RUM activities they are probably classified within CEPA 8 in any case.

¹⁰ In the Italian CRUMA, in the absence of an official classification of RUM activities, the following rule has been adopted: if the general administration activities concern both environmental protection and use and management of natural resources, they should be broken down between CRUMA 16.1 and CEPA 9.1; if this is impossible, they should be classified in CRUMA 16.1 or alternatively in CEPA 9.1. according to the “main purpose” criterion; if this is impossible as well, they should be classified within CEPA 9.1, given that in other countries they are probably classified within CEPA 9.1.

F. Recommendations

31. Based on the discussion in the preceding sections the following series of recommendations are made in relation to the revised SEEA.

32. The final recommendation is made based on the fact that the existing CEPA and the proposed CRUMA are mutually distinct classifications. Therefore, it seems reasonable in the context of the SEEA to construct a classification that covers all environmental activities of interest in the SEEA. Thus a Classification of Environmental Activities (CEA) is proposed which is a combination of the CEPA and the CRUMA and covers the environmental activities of environmental protection, resource use and resource management. It is observed that the proposed CEA excludes activities related to the minimisation of natural hazards as there has been insufficient work completed to date in this area the context of environmental accounting to permit them to be included in the CEA at this stage.

Recommendation 9.1: That in the revised SEEA the scope of RUM should be defined consistently with the SEEA-2003 noting the limitation of coverage to only non-produced natural resources.

Recommendation 9.2: That the classification of natural resource use and management activities and expenditures (CRUMA) as presented in Table 2 should be adopted in the revised SEEA noting that it is to be complementary, comparable and consistent with the existing Classification of Environmental Protection Activities (CEPA) and that resource management and resource use activities are to be clearly separated.

Recommendation 9.3: That the treatment of borderline classification cases between environmental protection activities and resource use and management activities outlined in paragraph 30 of the outcome paper should be adopted in the revised SEEA.

Recommendation 9.4: That an overarching Classification of Environmental Activities (CEA) should be established which combines CRUMA and CEPA while ensuring that these two classifications are separable.

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Annexes

Annex 1 The Classification of Environmental Protection Activities and expenditures – CEPA2000

Table 1 The Classification of Environmental Protection Activities and expenditures – CEPA2000

<p>1 PROTECTION OF AMBIENT AIR AND CLIMATE</p> <p>1.1 Prevention of pollution through in-process modifications</p> <p> 1.1.1 for the protection of ambient air</p> <p> 1.1.2 for the protection of climate and ozone layer</p> <p>1.2 Treatment of exhaust gases and ventilation air</p> <p> 1.2.1 for the protection of ambient air</p> <p> 1.2.2 for the protection of climate and ozone layer</p> <p>1.3 Measurement, control, laboratories and the like</p> <p>1.4 Other activities</p> <p>2 WASTEWATER MANAGEMENT</p> <p>2.1 Prevention of pollution through in-process modifications</p> <p>2.2 Sewerage networks</p> <p>2.3 Wastewater treatment</p> <p>2.4 Treatment of cooling water</p> <p>2.5 Measurement, control, laboratories and the like</p> <p>2.6 Other activities</p> <p>3 WASTE MANAGEMENT</p> <p>3.1 Prevention of pollution through in-process modifications</p> <p>3.2 Collection and transport</p> <p>3.3 Treatment and disposal of hazardous waste</p> <p> 3.3.1 Thermal treatment</p> <p> 3.3.2 Landfill</p> <p> 3.3.3 Other treatment and disposal</p> <p>3.4 Treatment and disposal of non-hazardous waste</p> <p> 3.4.1 Incineration</p> <p> 3.4.2 Landfill</p> <p> 3.4.3 Other treatment and disposal</p> <p>3.5 Measurement, control, laboratories and the like</p> <p>3.6 Other activities</p> <p>4 PROTECTION AND REMEDIATION OF SOIL, GROUNDWATER AND SURFACE WATER</p> <p>4.1 Prevention of pollutant infiltration</p> <p>4.2 Cleaning up of soil and water bodies</p> <p>4.3 Protection of soil from erosion and other physical degradation</p> <p>4.4 Prevention and remediation of soil salinity</p> <p>4.5 Measurement, control, laboratories and the like</p> <p>4.6 Other activities</p>	<p>5 NOISE AND VIBRATION ABATEMENT (excluding workplace protection)</p> <p>5.1 Preventive in-process modifications at the source</p> <p> 5.1.1 Road and rail traffic</p> <p> 5.1.2 Air traffic</p> <p> 5.1.3 Industrial and other noise</p> <p>5.2 Construction of anti noise/vibration facilities</p> <p> 5.2.1 Road and rail traffic</p> <p> 5.2.2 Air traffic</p> <p> 5.2.3 Industrial and other noise</p> <p>5.3 Measurement, control, laboratories and the like</p> <p>5.4 Other activities</p> <p>6 PROTECTION OF BIODIVERSITY AND LANDSCAPES</p> <p>6.1 Protection and rehabilitation of species and habitats</p> <p>6.2 Protection of natural and semi-natural landscapes</p> <p>6.3 Measurement, control, laboratories and the like</p> <p>6.4 Other activities</p> <p>7 PROTECTION AGAINST RADIATION (excluding external safety)</p> <p>7.1 Protection of ambient media</p> <p>7.2 Transport and treatment of high level radioactive waste</p> <p>7.3 Measurement, control, laboratories and the like</p> <p>7.4 Other activities</p> <p>8 RESEARCH AND DEVELOPMENT</p> <p>8.1 Protection of ambient air and climate</p> <p> 8.1.1 Protection of ambient air</p> <p> 8.1.2 Protection of atmosphere and climate</p> <p>8.2 Protection of water</p> <p>8.3 Waste</p> <p>8.4 Protection of soil and groundwater</p> <p>8.5 Abatement of noise and vibration</p> <p>8.6 Protection of species and habitats</p> <p>8.7 Protection against radiation</p> <p>8.8 Other research on the environment</p> <p>9 OTHER ENVIRONMENTAL PROTECTION ACTIVITIES</p> <p>9.1 General environmental administration and management</p> <p> 9.1.1 General administration, regulation and the like</p> <p> 9.1.2 Environmental management</p> <p>9.2 Education, training and information</p> <p>9.3 Activities leading to indivisible expenditure</p> <p>9.4 Activities not elsewhere classified</p>
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Remarks

- **General classification principles**

Classification should be made according to the main purpose taking into account the technical nature as well as the policy purpose of an action or activity. Multi-purpose actions, activities and expenditure that address several CEPA classes should be divided by these classes. Classification under the heading 'indivisible expenditure and activities' should only be made as a last resort.

- **Classification of transversal activities and expenditure**

Transversal activities are R&D, administration and management as well as education, training and information.

All R&D should be allocated to CEPA 8.

Administration and management as well as education, training and information should, to the extent possible, be allocated to the 'Other' positions in CEPA 1-7. When these activities concern simultaneously two or more environmental domains they should be allocated respectively to 9.1 or 9.2 positions.

Table 2 CEPA2000: overview

Type of activity	Environmental Domain: type of environmental media or type of pollution-nuisance-degradation						
	Air pollution (and related climatic risks)	Surface water pollution	Waste	Soil and ground water pollution, erosion and other physical degradation of soil	Noise and vibration	Degradation of biodiversity and landscape	Radiation
Pollution/degradation prevention activities	1.1 Prevention of pollution through in-process modifications	2.1 Prevention of pollution through in-process modifications	3.1 Prevention of pollution through in-process modifications	4.1 Prevention of pollutant infiltration 4.3 Protection of soil from erosion and other physical degradation 4.4 Prevention and remediation of soil salinity	5.1 Preventive in-process modifications at the source	6.1 Protection and rehabilitation of species and habitats 6.2 Protection of natural and semi-natural landscapes	7.1 Protection of ambient media
Pollution/degradation reduction activities:	1.2 Treatment of exhaust gases and ventilation air	2.2 Sewerage networks 2.3 Wastewater treatment 2.4 Treatment of cooling water	3.2 Collection and transport 3.3 Treatment and disposal of hazardous waste 3.4 Treatment and disposal of non-hazardous waste	4.2 Cleaning up of soil and water bodies 4.3 Protection of soil from erosion and other physical degradation 4.4 Prevention and remediation of soil salinity	5.2 Construction of anti noise/vibration facilities		7.2 Transport and treatment of high level radioactive waste
- reduction of emissions and discharges	1.2 Treatment of exhaust gases and ventilation air	2.3 Wastewater treatment 2.4 Treatment of cooling water	3.3 Treatment and disposal of hazardous waste 3.4 Treatment and disposal of non-hazardous waste				
- reduction of pollution levels and degradation of environmental media		2.2 Sewerage networks	3.2 Collection and transport	4.2 Cleaning up of soil and water bodies 4.3 Protection of soil from erosion and other physical degradation 4.4 Prevention and remediation of soil salinity	5.2 Construction of anti noise/vibration facilities	6.1 Protection and rehabilitation of species and habitats 6.2 Protection of natural and semi-natural landscapes	7.2 Transport and treatment of high level radioactive waste
Measurement and control activities	1.3 Measurement, control, laboratories and the like	2.5 Measurement, control, laboratories and the like	3.5 Measurement, control, laboratories and the like	4.5 Measurement, control, laboratories and the like	5.3 Measurement, control, laboratories and the like	6.3 Measurement, control, laboratories and the like	7.3 Measurement, control, laboratories and the like
Research and development activities	8.1 R&D for protection of ambient air and climate 8.8 Other research on the environment	8.2 R&D for protection of water 8.8 Other research on the environment	8.3 R&D for waste 8.8 Other research on the environment	8.4 R&D for protection of soil and groundwater 8.8 Other research on the environment	8.5 R&D for abatement of noise and vibration 8.8 Other research on the environment	8.6 R&D for protection of species and habitats 8.8 Other research on the environment	8.7 R&D for protection against radiation 8.8 Other research on the environment
Teaching and training activities	1.4 Other activities 9.2 Education, training and information	2.6 Other activities 9.2 Education, training and information	3.6 Other activities 9.2 Education, training and information	4.6 Other activities 9.2 Education, training and information	5.4 Other activities 9.2 Education, training and information	6.4 Other activities 9.2 Education, training and information	7.4 Other activities 9.2 Education, training and information
Administrative activities	1.4 Other activities 9.1 General environmental administration and management	2.6 Other activities 9.1 General environmental administration and management	3.6 Other activities 9.1 General environmental administration and management	4.6 Other activities 9.1 General environmental administration and management	5.4 Other activities 9.1 General environmental administration and management	6.4 Other activities 9.1 General environmental administration and management	7.4 Other activities 9.1 General environmental administration and management

Annex 2 The draft Classification of natural Resource Use and Management Activities and expenditure – CRUMA 2009

Table 3 The draft Classification of Resource Use and Management Activities and expenditure – CRUMA 2009

Code	Description	Explanatory notes/Examples
10	Use and management of water resources	All the activities and actions aiming at minimising the intake of water resources through in-process modifications as well as reuse, recycling, savings and the use of substitutes of fresh water resources. Activities aiming at the replenishment of water stocks are included as well exploitation, exploration and distribution activities. All the activities and actions concerning measurement, control, laboratories and the like are also included as well as education, training and information and administration and regulation activities.
10.1	Reduction of the intake of water resources	Reduction of the intake through in-process modifications related to the reduction of the water input for the production process. It includes all the kinds of replacement or adjustment of production processes aiming at reducing the water input needed for producing a certain output. Desalinisation of sea water is included.
10.2	Reduction of water losses and leaks, water reuse and savings	Reduction of water use through the reduction of water losses and leaks, the installation of facilities for water reuse and savings, etc.
10.3	Replenishment of water stocks	Increase of water available in water stocks. The following activities are included: recharge of groundwater bodies to increase/restore water stocks (not to improve water quality or fight salinity → CEPA 4.4); land improvement, development of vegetal cover in order to increase water infiltration and recharge phreatic water bodies (not for the protection of soil against erosion → CEPA 4.3)
10.4	Direct management of water stocks	Exploitation, management and maintenance of water resources and exploration for new stocks. Distribution of water. It includes for example water abstraction, conduction and distribution (waterworks), including water use for irrigation; lakes and reservoirs regulation; etc. The management and maintenance activities carried out by the public or private authorities in charge of the direct management and exploitation of water stocks are included, while the administration and regulation activities carried out by the General Government are excluded → CRUMA 10.6
10.5	Measurement, control, laboratories and the like related to water resources	Activities aimed at measuring, controlling and monitoring the use and the level of water stocks. The following activities are excluded: measurement, monitor and control of the concentration of pollutants in wastewater and the quality of the inland water and marine water at the place wastewater is discharged → CEPA 2.5; measurement, monitor and control of the quality of surface and ground water → CEPA 4.5
10.6	Other activities for the use and management of water resources	All other activities and measures aimed at the use and management of water resources. It includes regulation, administration, education, training and information activities specific to the class when they can be separated from other activities related to the same class and from similar activities related other classes. It includes for example: information campaigns to encourage water savings; release of licences for water abstraction; General Government units or part thereof which administrate and regulate the use of water resources or are responsible for water saving policies. It excludes public or private bodies which carry out e.g. water abstraction, conduction and distribution activities → CRUMA 10.4
11	Use and management of natural forest resources	All the activities and actions aiming at minimising the intake of natural forest resources through in-process modifications as well as recovery, reuse, recycling, savings and the use of substitutes of forest products. Replenishment activities like reforestation and afforestation are included when concern natural forest as well as the management and exploitation activities of natural forest areas. All the activities and actions concerning measurement, control, laboratories and the like are also included as well as education, training and information and administration and regulation activities. Natural forests are virgin forests and, in general, non-cultivated forests. All the activities and actions related to cultivated forests are excluded.
11.1	Reduction of the intake of natural forest resources	Reduction of the intake through in-process modifications related to the reduction of the input of forest resources for the production process. It includes all the kinds of replacement or adjustment of production processes aiming at reducing the input of forest (wood and non wood)-related products needed for producing a certain output. The substitution of forest products with other material and substances is included.
11.2	Reduction of the consumption of forest (wood and non wood)-related products	Recycling, reuse or savings of forest products and by-products (wood, paper, etc.).
11.3	Reforestation and afforestation	Replenishment of existing natural wooded areas or development of new wooded areas.
11.4	Forest fires	Prevention and control of natural forest fires (concerning forest areas relevant mainly as economic resource and not as habitats → CEPA 6.2). It includes for example: development of fireballs, mobilisation of fire fighting means or measures aimed at the prevention of fires in forest areas.
11.5	Direct management of forest areas (as a resource and not	Exploitation, management and maintenance of natural forest areas and exploration for the use of forest areas previously not exploitable. The management and maintenance activities carried out by

Code	Description	Explanatory notes/Examples
	as a habitat)	the public or private authorities in charge of the direct management and exploitation of natural forest are included, while the administration and regulation activities carried out by the General Government are excluded → CRUMA 11.7. Examples: management and maintenance of non-cultivated forest areas available for felling and logging activities (except for reforestation and afforestation activities → CRUMA 11.3); monitoring and control activities carried out by forest rangers on forest areas as economic resources (not to protect forest habitats or the biodiversity of flora and fauna species living in forest areas → CEPA 6.1 or 6.2)
11.6	Measurement, control, laboratories and the like related to natural forest resources	Activities aimed at measuring, controlling and monitoring the use and the consistency of forest resource stocks. It includes for example inventories and assessments of forest resources. Measurement, controlling and monitoring activities related to the protection of biodiversity and landscape are excluded like e.g. inventories of flora and fauna species living in natural forest areas → CEPA 6.1 and census of natural forest protected areas → CEPA 6.2.
11.7	Other activities for the use and management of natural forest resources	All other activities and measures aimed at the use and management of natural forest resources. It includes regulation, administration, education, training and information activities specific to the class when they can be separated from other activities related to the same class and from similar activities related other classes. It includes for example: the release of logging licences; General Government units or part thereof which administrate and regulate the use of natural forest resources or are responsible for forest management policies. It excludes public or private bodies which carry out the direct management of forest areas → CRUMA 11.5.
12	Use and management of wild flora and fauna	All the activities and actions aiming at minimising the intake of wild flora and fauna resources through in-process modifications as well as the use of alternative resources and any other kind of measure. Replenishment activities like repopulation of wild flora and fauna stocks are included when aiming at maintaining/increasing the consistency of stocks (not the biodiversity → CEPA 6). Management and exploitation activities are also included. All the activities and actions concerning measurement, control, laboratories and the like are also included as well as education, training and information and administration and regulation activities. Wild flora and fauna are stocks and reserves of non-cultivated animals and plants. The class includes all the activities and actions with the purpose of managing, maintaining and increasing the stock of wild flora and fauna. The protection of biodiversity of wild flora and fauna is excluded (→ CEPA 6).
12.1	Reduction of the intake of wild flora and fauna	Reduction of the intake through in-process modifications. It includes all the kinds of replacement or adjustment of production processes aiming at reducing the input of wild flora and fauna resources needed for producing a certain output. It includes for example vessel buy-back programmes for the introduction of more efficient fishing fleets and equipments. The use of alternative resources is included, i.e. the use of renewable resources or the substitution of natural inputs with alternative inputs.
12.2	Replenishment of wild flora and fauna stocks	Increase of the number of individuals of wild flora and fauna stocks. It includes for example breeding for the replenishment of stocks for fishing or hunting (for restocking purposes and not for protection of biodiversity → CEPA 6.1)
12.3	Direct management of wild flora and fauna stocks	Exploitation, management and maintenance of wild flora and fauna stocks. The management and maintenance activities carried out by the public or private authorities in charge of the direct management and exploitation of wild flora and fauna stocks are included, while the administration and regulation activities carried out by the General Government are excluded → CRUMA 12.5. Examples: management of fish and game reserves.
12.4	Measurement, control, laboratories and the like related to wild flora and fauna	Activities aimed at measuring, controlling and monitoring the use and the consistency of wild flora and fauna stocks. It includes for example: inventories and assessment of wild fauna stocks; control on the observance of licences, quotas, temporary or permanent fishing/hunting bans. Measurement, controlling and monitoring activities related to the protection of biodiversity and landscape are excluded like e.g. inventories of flora and fauna threatened species → CEPA 6.1
12.5	Other activities for the use and management of wild flora and fauna	All other activities and measures aimed at the use and management of wild flora and fauna resources. It includes regulation, administration, education, training and information activities specific to the class when they can be separated from other activities related to the same class and from similar activities related other classes. It includes for example: release of fishing and hunting licences, enforcement and administration of quotas, enforcement and regulation of temporary or permanent fishing/hunting bans; General Government units or part thereof which administrate and regulate the exploitation of wild flora and fauna resources or are responsible for wild flora and fauna management policies. It excludes public or private bodies which carry out the direct management of wild flora and fauna reserves → CRUMA 12.3.
13	Use and management of fossil energy	All the activities and actions aiming at minimising the intake of fossil energy resources through in-process modifications as well as savings, the production of energy from renewable sources and any other kind of measure. Management and exploitation of fossil energy stocks as well as exploration and discovery of new reserves are included. All the activities and actions concerning measurement, control, laboratories and the like are also included as well as education, training and information and administration and regulation activities.
13.1	Reduction of the intake of fossil energy	Reduction of the intake through in-process modifications related to the reduction of the input of non-renewable energy sources for the production process. It includes all the kinds of replacement or adjustment of production processes aiming at reducing the input of energy resources needed for

Code	Description	Explanatory notes/Examples
		producing a certain output. This category includes the production of energy from renewable sources when it has the primary purpose of reducing the exploitation of non-renewable energy sources (the production of energy from renewable sources mainly aimed at reducing air pollution is excluded → CEPA 1.1). All kinds of renewables are included according to the International Energy Agency definition of renewables, i.e. hydropower, solar, wind, tidal, biogas, geothermal or biomass sources as well as the production of energy from the combustion of any kind of waste (the incineration of waste carried out for the main purpose of waste treatment and disposal is excluded → CEPA 3.3 or 3.4)
13.2	Reduction of heat and energy losses, and energy savings	Reduction of the use of non-renewable energy sources through the minimisation of heat and energy losses and through energy savings (energy savings mainly aimed at reducing air pollution is excluded → CEPA 1.1)
13.3	Direct management of the stocks of non-renewable energy sources	Exploitation, management and maintenance of the stocks of non-renewable energy sources including exploration and discovery of new reserves. The management and maintenance activities carried out by the public or private authorities in charge of the direct management, exploitation and exploration of energy reserves are included, while the administration and regulation activities carried out by the General Government are excluded → CRUMA 13.5. Distribution of electricity is excluded.
13.4	Measurement, control, laboratories and the like related to fossil energy	Activities aimed at measuring, controlling and monitoring the use and the consistency of fossil energy stocks as well as the production of energy from renewable sources. It includes for example: assessment and reassessment of existing reserves; assessment of the importance of the production of energy from renewable sources on total energy production.
13.5	Other activities for the use and management of fossil energy	All other activities and measures aimed at the use and management of energy resources. It includes regulation, administration, education, training and information activities specific to the class when they can be separated from other activities related to the same class and from similar activities related other classes. It includes for example: release of licences for energy sources abstraction; General Government units or part thereof which administrate and regulate the exploitation of energy resources or are responsible for energy savings policies. It excludes public or private bodies which manage, exploit and explore energy reserves → CRUMA 13.3.
14	Use and management of minerals	All the activities and actions aiming at minimising the intake of mineral resources through in-process modifications as well as recovery, reuse, recycling, savings and the use of substitutes mineral resources. Management and exploitation of mineral resources as well as exploration and discovery of new reserves are included. All the activities and actions concerning measurement, control, laboratories and the like are also included as well as education, training and information and administration and regulation activities.
14.1	Reduction of the intake of minerals	Reduction of the intake through in-process modifications related to the reduction of the raw material input for the production process or the consumption or use of resource-efficient products.
14.2	Reduction of minerals use through the reduction of scraps and the production and consumption of recycled materials and products	Production and use of secondary raw materials or final products obtained from recovered and recycled materials and waste. It includes for example: processing of waste and scrap into a form which is readily transformed into new raw materials, production of recycled goods (recycling activities insofar as they constitute waste collection, transport, treatment or disposal activities are excluded → CEPA 3.2, 3.3 and 3.4)
14.3	Direct management of mineral stocks	Exploitation, management and maintenance of the stocks of mineral resources including research and exploration activities; management of quarrying sites (activities for the rehabilitation of abandoned mining and quarrying sites are excluded → CEPA 6.2). The management and maintenance activities carried out by the public or private authorities in charge of the direct management, exploitation and exploration of mineral stocks are included, while the administration and regulation activities carried out by the General Government are excluded → CRUMA 14.5.
14.4	Measurement, control, laboratories and the like related to minerals	Activities aimed at measuring, controlling and monitoring the use and the consistency of mineral stocks. It includes for example: inventories and assessment of mineral stocks.
14.5	Other activities for the use and management of minerals	All other activities and measures aimed at the use and management of mineral resources. It includes regulation, administration, education, training and information activities specific to the class when they can be separated from other activities related to the same class and from similar activities related other classes. It includes for example: release of licences for mining and quarrying activities; General Government units or part thereof which administrate and regulate the exploitation of mineral resources or are responsible for material savings and recycling policies. It excludes public or private bodies which manage, exploit and explore mineral reserves → CRUMA 14.3.
15	Research and development activities for natural resource use and management	Creative work undertaken on a systematic basis in order to increase the stock of knowledge and the use of this knowledge to devise new applications in the field of natural resource management and savings. Excluded are R&D activities related to environmental protection → CEPA 8
15.1	Water resources	R&D activities exclusively related to water resources
15.2	Natural forest resources	R&D activities exclusively related to natural forest resources
15.3	Wild flora and fauna	R&D activities exclusively related to wild flora and fauna resources
15.4	Fossil energy	R&D activities exclusively related to energy sources (non-renewable and renewable)

Code	Description	Explanatory notes/Examples
15.5	Minerals	R&D activities exclusively related to minerals
15.6	Other R&D activities for natural resource use and management	Other R&D activities concerning other natural resources (not specified)
16.	Other natural resource use and management activities	
16.1	General administration of natural resources	Any identifiable activity that is directed at the general support of decisions taken in the context of natural resource use and management whether by governmental or by non-governmental units.
16.1.1	General administration, regulation and the like	<p>Any identifiable activity within general government and NPISH units that is directed towards the regulation, administration of the environment and the support of decisions taken in the context of natural resource use and management activities. When possible such activities should be allocated to other CRUMA classes (within the "other activities..." category). If this is impossible, they should be included under this position of the classification.</p> <p>If the general administration activities concern both environmental protection and use and management of natural resources, they should be broken down between this position and the corresponding CEPA category (→ CEPA 9.1.1). If this is impossible, they should be classified in this position or alternatively in the CEPA one according to the "main purpose" criterion; if this is impossible as well, they should be classified within the corresponding CEPA category (→ CEPA 9.1.1)</p>
16.1.2	Environmental management	<p>Any identifiable activity of corporations that is directed at the general support of decisions taken in the context of natural resource use and management activities. It includes the preparation of declarations or requests for permission, internal environmental management, environmental certification processes (ISO 14000, EMAS), as well as the recourse to environmental consultancy services. Activities of units specialised in environmental consultancy, supervision and analysis are included. When possible such activities should be allocated to other CRUMA classes (within the "other activities..." category). If this is impossible, they should be included under this position of the classification.</p> <p>If the general administration activities concern both environmental protection and use and management of natural resources, they should be broken down between this position and the corresponding CEPA category (→ CEPA 9.1.2). If this is impossible, they should be classified in this position or alternatively in the CEPA one according to the "main purpose" criterion; if this is impossible as well, they should be classified within the corresponding CEPA category (→ CEPA 9.1.2)</p>
16.2	Education, training and information	<p>Activities that aim at providing general environmental education or training and disseminating information on natural resource use and management. Included are high school programs, university degrees or special courses specifically aimed at training for natural resource use and management. Activities such as the production of environmental reports, environmental communication, etc. are also included. When possible such activities should be allocated to other CRUMA classes (within the "other activities..." category). If this is impossible, they should be included under this position of the classification.</p> <p>If the general education, training and information activities concern both environmental protection and use and management of natural resources, they should be broken down between this position and the corresponding CEPA category (→ CEPA 9.2). If this is impossible, they should be classified in this position or alternatively in the CEPA one according to the "main purpose" criterion; if this is impossible as well, they should be classified within the corresponding CEPA category (→ CEPA 9.2)</p>
16.3	Activities leading to indivisible expenditure	Natural resource use and management activities that lead to indivisible expenditure, i.e. which cannot be allocated to any other CRUMA class
16.4	Activities not elsewhere classified	This position groups together all the natural resource use and management activities that cannot be classified under other positions of the classification

Remarks

- **General classification principles**

Classification should be made according to the main purpose taking into account the technical nature as well as the policy purpose of an action or activity. Multi-purpose actions, activities and expenditure that address several CRUMA classes should be divided by these classes. Classification under the heading 'indivisible expenditure and activities' should only be made as a last resort.

- **Classification of transversal activities and expenditure**

Transversal activities are R&D, administration and management as well as education, training and information.

All R&D should be allocated to CRUMA 15.

Administration and management as well as education, training and information should, to the extent possible, be allocated to the 'Other' positions in CRUMA 10-14. When these activities concern simultaneously two or more natural resources they should be allocated respectively to 16.1 or 16.2 positions.

Table 4 CRUMA: overview

Type of activity	Natural resource				
	Water resources	Natural forest resources	Wild flora and fauna	Fossil energy	Minerals
Reduction of the intake of natural resources through preventive in-process modifications	10.1 Reduction of the intake of water resources	11.1 Reduction of the intake of natural forest resources	12.1 Reduction of the intake of wild flora and fauna	13.1 Reduction of the intake of fossil energy	14.1 Reduction of the intake of minerals
Use of alternative resources: use of renewable resources or substitution of natural inputs with alternative inputs					
Reduction of losses, leaks and scraps	10.2 Reduction of water losses and leaks, water reuse and savings	11.2 Reduction of the consumption of forest (wood and non wood)-related products		13.2 Reduction of heat and energy losses, and energy savings	14.2 Reduction of minerals use through the reduction of scraps and the production and consumption of recycled materials and products
Reduction of the intake of natural resources indirectly through the reduction of the consumption of natural resource-related products (energy savings, water savings, etc.)					
Reuse, recycling					
Increase/recharge of natural resource stocks	10.3 Replenishment of water stocks	11.3 Reforestation and afforestation	12.2 Replenishment of wild flora and fauna stocks		
Direct management of natural resource stocks (exploitation, exploration, extraction, treatment, distribution, etc.)	10.4 Direct management of water stocks	11.4 Forest fires 11.5 Direct management of forest areas (as a resource and not as a habitat)	12.3 Direct management of wild flora and fauna stocks	13.3 Direct management of the stocks of non-renewable energy sources	14.3 Direct management of mineral stocks
Measurement and control activities	10.5 Measurement, control, laboratories and the like related to water resources	11.6 Measurement, control, laboratories and the like related to natural forest resources	12.4 Measurement, control, laboratories and the like related to wild flora and fauna	13.4 Measurement, control, laboratories and the like related to fossil energy	14.4 Measurement, control, laboratories and the like related to minerals
Research and development activities	15.1 R&D for use and management of water resources 15.6 Other R&D activities for natural resource use and management	15.2 R&D for use and management of natural forest resources 15.6 Other R&D activities for natural resource use and management	15.3 R&D for use and management of wild flora and fauna 15.6 Other R&D activities for natural resource use and management	15.4 R&D for use and management of fossil energy 15.6 Other R&D activities for natural resource use and management	15.5 R&D for use and management of minerals 15.6 Other R&D activities for natural resource use and management
Teaching and training activities	10.6 Other activities 16.2 Education, training and information	11.7 Other activities 16.2 Education, training and information	12.5 Other activities 16.2 Education, training and information	13.5 Other activities 16.2 Education, training and information	14.5 Other activities 16.2 Education, training and information
Administrative activities	10.6 Other activities for the use and manag. of water resources 16.1 General administration of natural resources	11.7 Other activities for the use and manag. of natural forest resources 16.1 General administration of natural resources	12.5 Other activities for the use and manag. of wild flora and fauna 16.1 General administration of natural resources	13.5 Other activities for the use and manag. of fossil energy 16.1 General administration of natural resources	14.5 Other activities for the use and manag. of minerals 16.1 General administration of natural resources