## REVISION OF THE SYSTEM OF ENVIRONMENTAL - ECONOMIC ACCOUNTS (SEEA)

## **United Nations Committee of Experts on Environmental Economic Accounting** (UNCEEA)

Statistics Division / Department of Economic and Social Affairs, United Nations

## Supporting material for selected classifications and lists in the SEEA

This document is intended to provide supporting material for selected classifications and lists presented in the draft version of the SEEA released for global consultation in October 2011. The draft SEEA contains a range of classifications and lists to support understanding of the relevant concepts and compilation of relevant statistics. Some of the detail of these classifications and lists is greater in some cases than in others. None of these classifications and lists should be considered as mandatory for reporting purposes.

The selected classifications and lists in this document are those for which more detailed description of classes and categories are available. However, this material is not of the same level of sophistication in each case and, generally, the material should not be considered to be finalised. The exception is the description of the classes relating to environmental protection in the Classification of Environmental Activities (CEA). The content relating to these classes is from the Classification of Environmental Protection Activities (CEPA) that has been an established classification since 2000. It is also noted that the coding proposed in this attachments is not finalised and has been included to aid understanding of the various hierarchies.

Feedback and questions regarding this supporting material is welcome although it is noted that most interest at this stage is on the higher level classes and the overall structures of the classifications and lists as presented in the main draft of the SEEA.

The classifications and lists contained in the documents are those for

1. Classification of Environmental Activities

**Environmental Protection** 

Resource Management

- 2. Classification of Land Use
- 3. Listing of Land Cover Types
- 4. List of Solid Waste Categories

## **Classification of Environmental Activities (CEA)**

## I: ENVIRONMENTAL PROTECTION

Environmental protection activities are those activities whose primary purpose is the prevention, reduction and elimination of pollution as well as any other degradation of the environment. This includes measures taken in order to restore the environment after it has been degraded due to the pressures from human activities. To be included under environmental protection, actions and activities must satisfy the primary purpose criterion, i.e. that environmental protection is their prime objective. Actions and activities which have a favourable impact on the environment but which serve other goals do not come under environmental protection. Hence, excluded from the field of environmental protection are activities that, while beneficial to the environment, primarily satisfy technical needs or the internal requirements for hygiene or security of an enterprise or other institution.

Activities like the saving of energy or raw materials are generally excluded from environmental protection and included instead under resource management (below). However, such activities are considered environmental protection activities to the extent that they mainly aim at environmental protection. An important example is recycling which is included to the extent that it constitutes a substitute for waste management (1994 SERIEE § 2008), or the energy saving which is included when its main purpose is the reduction of air pollution.

## 1 Protection of ambient air and climate

Protection of ambient air and climate comprises measures and activities aimed at the reduction of emissions into the ambient air or ambient concentrations of air pollutants as well as measures and activities aimed at the control of emissions of greenhouse gases and gases that adversely affect the stratospheric ozone layer. *Excluded* are measures undertaken for cost-saving reasons (for example, energy saving).

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

This encompasses activities and measures aimed at the elimination or reduction of the generation of air pollutants through in-process modifications related to:

- (a) Cleaner and more efficient production processes and other technologies (cleaner technologies);
- (b) Consumption or use of "cleaner" (adapted) products.

Cleaner technologies: Prevention activities consist of replacing an existing production process by a new process designed to reduce the generation of air pollutants during production, storage or transportation (for example, fuel combustion improvement, recovery of solvents, prevention of spills and leaks through improving airtightness of equipment, reservoirs and vehicles etc.

*Use of cleaner products*: Prevention activities consist of modifying facilities so as to provide for the substitution of raw materials, energy, catalysts and other inputs by non- (or less) polluting products, or of treating raw materials prior to their use in order to make them less polluting (for example, desulphuration of fuel). Expenditure under this heading also includes the extra cost of the use of cleaner products (low sulphur fuels, unleaded gasoline, clean vehicles etc.).

#### 1.11 for the protection of ambient air

## 1.12 for the protection of climate and ozone layer

## 1.2 Treatment of exhaust gases and ventilation air

These activities involve 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 using filters, dedusting equipment, catalytic converters, and post-combustion and other techniques. Also included are activities aimed at increasing 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, arising from the combustion of fossil fuels. Ventilation air is the exhaust from air conditioning systems of industrial establishments.

## 1.21 for the protection of ambient air

#### 1.22 for the protection of climate and ozone layer

## 1.3 Measurement, control, laboratories and the like

These activities are aimed at monitoring the concentrations of pollutants in exhaust gases, the quality of air etc. Included are services for measurement of exhaust gases from vehicles and heating systems and the monitoring related to the ozone layer, greenhouse gases and climate change. Weather stations are excluded.

#### 1.4 Other activities

These encompass all other activities and measures aimed at the protection of ambient air and climate, including regulation, administration, management, training, information and education activities specific to CEPA 1, when they can be separated from other activities related to the same class and from similar activities related to other environmental protection classes.

#### 2 Wastewater management

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 sea water. It includes the collection and treatment of wastewater including monitoring and regulation activities. Septic tanks are also included. Excluded are actions and activities aimed at the protection of groundwater from pollutant infiltration and the cleaning up of water bodies after pollution (see CEPA 4).

## 2.1 Prevention of pollution through in-process modifications

This encompasses activities and measures aimed at reducing the generation of surface water pollutants and wastewater through in-process modifications related to:

- (a) Cleaner and more efficient production processes and other technologies (cleaner technologies);
- (b) Consumption or use of "cleaner" (adapted) products.

Cleaner technologies: Prevention activities consist of replacing an existing production process by a new process designed to bring about a reduction of water pollutants or wastewater generated during production. It includes separation of networks, treatment and reuse of water used in the production process etc.

*Use of cleaner products:* Prevention activities consist of modifying an existing production process so as to provide for the substitution of raw materials, catalysts and other inputs by non- (or less) water polluting products.

## 2.2 Sewerage networks

This encompasses activities aimed at the operation of sewerage networks, that is, the collection and transport of wastewater from one or several users, as well as rain water, by means of sewerage networks, collectors, tanks and other means of transport (sewage vehicles etc.), including maintenance and repair.

Sewerage networks are the systems of collectors, pipelines, conduits and pumps designed to evacuate any wastewater (rain water, domestic and other wastewater) from the points of generation to either a sewage treatment plant or to a point where wastewater is discharged into surface water.

#### 2.3 Wastewater treatment

Wastewater treatment designates any process designed to render wastewater fit to meet applicable environmental standards or other quality norms. Three broad types of treatment (mechanical, biological and advanced treatment) are specified below. Alternative definitions of types of treatment may be used, for example, based on removal rates for biochemical oxygen demand (BOD).

The term *mechanical treatment* of wastewater designates processes of a physical and mechanical nature that result in decanted effluent and separate sludge. Mechanical processes are also used in combination and/or conjunction with biological and advanced unit operations. Mechanical treatment is understood to include at least such processes as sedimentation, flotation etc. The activity is aimed at separating materials in suspension by the use of screens (large solids) or through sedimentation eventually assisted by chemicals or flotation (elimination of sand, oil, part of the sludge etc.).

Equipment includes screens for large solids, biological plants, equipment for filtration, flocculation, sedimentation; separation of oils and hydrocarbons; separation using inertia or gravity, including hydraulic and centrifugal cyclones, diaphragm floats etc.

The term *biological treatment* of wastewater designates processes that employ aerobic or anaerobic micro-organisms and result in decanted effluent and separate sludge containing microbial mass together with pollutants. Biological treatment processes are also used in combination and/or conjunction with mechanical and advanced unit operations. This activity is designed to eliminate pollution from oxidizable materials through the use of bacteria: activated sludge technique or anaerobic treatment for specific concentrated wastewater. Biodegradable materials are treated through the addition of bacteria-enriched sludge in open or closed tanks.

Treatment of wastewater by advanced technologies designates processes capable of reducing the concentration of specific constituents in wastewater not normally achieved by other treatment options. Covers all unit operations that are not considered to be mechanical or biological, including, for example, chemical coagulation, flocculation and precipitation; break-point chlorinating; stripping; mixed media filtration; microscreening; selective ion exchange; activated carbon absorption; reverse osmosis; ultrafiltration; elector flotation. Advanced treatment processes may be used in combination and/or conjunction with mechanical and biological unit operations. This activity is aimed at eliminating oxidizable non-biodegradable matter at a higher level, as well as metals, nitrate, phosphorus etc. by using powerful biological or physical and chemical action. Special equipment is required for each operation of depollution.

Septic tanks are settling tanks through which wastewater is flowing and where the suspended matter is decanted as sludge. Organic matter (in the water and in the sludge) is partly decomposed by anaerobic bacteria and other micro-organisms. Maintenance services of septic tanks (emptying etc.) and other products for septic tanks (biological activators etc.) are included.

## 2.4 Treatment of cooling water

Treatment of cooling water encompasses processes that are used to treat cooling water to meet applicable environmental standards before releasing it into the environment. Cooling water is used to remove heat. Means, methods, facilities used may be: air cooling (extra cost compared with that of water cooling), cooling towers (to the extent that they are required to reduce pollution, as distinct from technical needs), cooling circuits for processing water from work sites and for condensing released vapour, equipment for enhancing the dispersion of cooling water on release, closed cooling circuits (extra cost), and circuits for use of cooling water for heating purposes (extra cost).

#### 2.5 Measurement, control, laboratories and the like

This comprises activities aimed at monitoring and controlling the concentration of pollutants in wastewater and the quality of inland surface water and marine water at the place where wastewater is discharged (analysis and measurement of pollutants etc.).

#### 2.6 Other wastewater management activities

This encompass all other activities and measures aimed at wastewater management, including regulation, administration, management, training, information and education activities specific to CEPA 2, when they can be separated from other activities related to the same class and similar activities related to other environmental protection classes.

## 3 Waste management

The term *waste management* refers to activities and measures aimed at the prevention of the generation of waste and the reduction of its harmful effect on the environment, inter alia, the collection and treatment of waste, including monitoring and regulation activities. It also includes recycling and composting, the collection and treatment of low-level radioactive waste, street cleaning and the collection of public litter.

Waste comprises materials that are not prime products (that is, products made for the market) for which the generator has no further use for own purposes of production, transformation or consumption, and that he wishes to dispose of. Wastes 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. Residuals recycled or reused at the place of generation are excluded. Also excluded are waste materials that are directly discharged into ambient water or air.

*Hazardous waste* is waste that, owing to its toxic, infectious, radioactive, flammable or other character defined by the legislator, poses a substantial actual or potential hazard to human health or living organisms. For the purposes of this definition, "hazardous waste" comprises for each country all

those materials and products that are considered to be hazardous in accordance with that country's practices. Low-level radioactive waste is included, whereas other radioactive waste is excluded (see CEPA 7). Low-level radioactive waste is waste that, because of its low radionuclide content, does not require shielding during normal handling and transportation.

*Treatment* of waste encompasses refers to any process designed to change the physical, chemical, or biological character or composition of any waste in order to neutralize it, render it non-hazardous, safer for transport, or amenable to recovery or storage, or to reduce its volume. A particular waste may undergo more than one treatment process.

Composting and recycling activities for the purpose of environmental protection are included. Often, composting constitutes a waste treatment method and the resulting compost provided free of charge or at a very low price. The manufacture of compost classified in division 24 of ISIC/NACE (in particular class 2412, Manufacture of fertilizers and nitrogen compounds) is excluded.

In division 37 of ISIC Rev 3.1, *recycling* is defined as "the processing of waste and scrap and other articles, whether used or not, into secondary raw material. A transformation process is required, either mechanical or chemical. It is typical that, in terms of commodities, input consists of waste and scrap, the input being sorted or unsorted but normally unfit for further direct use in an industrial process, whereas the output is made fit for direct use in an industrial manufacturing process. The resulting secondary raw material is to be considered an intermediate good, with a value, but is not a final new product."

Compost and secondary raw materials (as well as products made of secondary raw materials) are not considered environmental protection products. Their use is excluded.

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

## 3.1 Prevention of pollution through in-process modifications

This encompasses activities and measures aimed at eliminating or reducing the generation of solid waste through in-process modifications related to:

- (a) Cleaner and more efficient production processes and other technologies (cleaner technologies);
- (b) Consumption or use of "cleaner" (adapted) products.

Cleaner technologies: Prevention activities consist of replacing an existing production process by a new process designed to reduce the toxicity or volume of waste produced during the production process, including by separation and reprocessing.

*Use of cleaner products:* Protection activities consist of modifying or adapting the production process or facilities so as to provide for the substitution of raw materials, catalysts and other intermediate inputs by new, "adapted" inputs the use of which produces less waste or less hazardous waste.

#### 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 their transport to the place of treatment or disposal, including the separate collection and transport of waste fractions so as to facilitate recycling and the collection and transport of hazardous waste. Street cleaning is included for the part relating to public litter and collection of garbage from the streets. Excluded are winter services.

## 3.3 Treatment and disposal of hazardous waste

Treatment of hazardous waste comprises the processes of physical/chemical treatment, thermal treatment, biological treatment, conditioning of wastes, and any other relevant treatment method. Disposal of hazardous waste comprises landfill, containment, underground disposal, dumping at sea, and any other relevant disposal method.

#### 3.31 Thermal treatment

Thermal treatment of hazardous waste refers to any process for the high-temperature oxidation of gaseous, liquid or solid hazardous wastes, converting them into gases and incombustible solid residues. The flue gases are released into the atmosphere (with or without recovery of heat and with or without cleaning) and any slag or ash produced is deposited in the landfill. The main technologies employed in the incineration of hazardous waste entail the use of the rotary kiln, liquid injection, incinerator grates, multiple chamber incinerators, and fluidized 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 electric energy.

### 3.32 Landfill

*Landfill* is an activity encompassing final disposal of hazardous waste in or on land in a controlled way that meets specific geologic and technical criteria.

#### 3.33 Other treatment and disposal

Other treatment and disposal of hazardous waste may consist of chemical and physical treatment, containment and underground disposal.

Chemical treatment methods are 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, for example, to reduce water solubility or to neutralize acidity or alkalinity.

Physical treatment of hazardous waste: includes various methods of phase separation and solidification whereby the hazardous waste is fixed in an inert, impervious matrix. Phase separation encompasses the widely used techniques of lagooning, sludge drying in beds, and prolonged storage in tanks, air flotation and various filtration and centrifugation techniques, adsorption/desorption, and vacuum, extractive and azeotropic distillation. Solidification or fixation processes, which convert the waste into an insoluble, rock-hard material, are generally used as pre-treatment prior to landfill disposal. These techniques employ blending the waste with various reactants or organic polymerization reactions or the mixing of the waste with organic binders.

Containment is the retention of hazardous material in such a way as to effectively prevent its dispersing into the environment, or affect its release

only at an acceptable level. Containment may occur in specially built containment spaces.

Underground disposal includes temporary storage or final disposal of hazardous wastes underground that meets specific geologic and technical criteria.

## 3.4 Treatment and disposal of non-hazardous waste

*Treatment* of non-hazardous waste comprises the processes of physical/chemical treatment, incineration of waste, biological treatment, and any other treatment method (composting, recycling etc.).

*Disposal* of non-hazardous waste comprises landfill, dumping at sea, and any other disposal method.

#### 3.41 Incineration

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

#### 3.42 Landfill

## 3.43 Other treatment and disposal

#### 3.5 Measurement, control, laboratories and the like

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

## 3.6 Other waste management activities

Encompasses all other activities and measures aimed at waste management, including administration, management, training, information and educational activities specific to the class, when they can be separated from other activities related to the same class and from similar activities related to other environmental protection classes.

## 4 Protection and remediation of soil, groundwater and surface water

Protection and remediation of soil, groundwater and surface water encompass 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 as well as from salinization. Monitoring, control of soil and groundwater pollution is included. Excluded are wastewater management activities (see CEPA 2), as well as activities aimed at the protection of biodiversity and landscape (see CEPA 6).

## 4.1 Prevention of pollutant infiltration

This comprises activities and measures aimed at the reduction or elimination of polluting substances that may be applied to soil, or percolate into groundwater or runoff to surface water. Included are activities related to sealing of soils of industrial plants, installation of catchment for pollutant run-offs and leaks, strengthening of storage facilities and transportation of pollutant products.

## 4.2 Cleaning up of soil and water bodies

This comprises processes to reduce the quantity of polluting materials in soil and water bodies either in situ or in appropriate installations. It includes soil decontamination at former industrial sites, landfills and other "black spots", dredging of pollutants from water bodies (rivers, lakes, estuaries etc.), and decontamination and cleaning up of surface water following accidental pollution (for example, through collection of pollutants or through application of chemicals), as well as cleaning up of oil spills on land, inland surface waters and seas including coastal areas. Excludes the liming of lakes and artificial oxygenation of water bodies (see CEPA 6), and civil protection services.

Activities may consist of: measures for separating, containing and recovering deposits, extraction of buried casks and containers, decanting and restorage, 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 chemistry techniques such as pervaporation and extraction using supercritical fluids, injection of neutral gases or bases to stifle internal fermentation etc.

## 4.3 Protection of soil from erosion and other physical degradation

This comprises activities and measures aimed at the protection of soil from erosion and other physical degradation (compacting, encrusting etc.). They may consist of programmes intended to restore the protective vegetal cover of soils, construction of anti-erosion walls etc. Measures may also consist of subsidising agricultural and grazing practices less harmful for soils and water bodies. *Excluded* are activities carried out for economic reasons (for example, agricultural production or protection of settlements against natural hazards such as landslides).

## 4.4 Prevention and remediation of soil salinity

This comprises activities and measures aimed at the prevention and remediation of soil salinity. Concrete actions will depend on climatic, geologic and other country-specific factors. Included are actions to increase groundwater tables, for example, through increased freshwater infiltration so as to avoid infiltration of sea water into groundwater bodies, lowering of groundwater tables (when groundwater contains high levels of salts) through long-term revegetation programmes, changes in irrigation practices etc. *Excluded* are measures that respond to economic purposes (agricultural production, reclamation of land from the sea etc.).

## 4.5 Measurement, control, laboratories and the like

This comprises all activities and measures aimed at controlling and measuring the quality and pollution of soils, groundwater and surface water, measuring the extent of soil erosion and salinization etc. Includes the operation of monitoring systems, inventories of black spots, maps and databases of groundwater and surface water quality, of soil pollution, erosion and salinity etc.

## 4.6 Other activities

These encompass all other activities and measures aimed at the protection and remediation of soil, groundwater and surface water, including administration, management, training, information and educational activities specific to the class, when they can be separated from other activities related to the same class and from similar activities related to other environmental protection classes.

## 5 Noise and vibration abatement (excluding workplace protection)

The term "noise and vibration abatement" refers to measures and activities aimed at the control, reduction and abatement of industrial and transport noise and vibration. Activities for the abatement of neighbourhood noise

(soundproofing of dancing halls etc.) as well as activities for the abatement of noise in places frequented by the public (swimming pools etc.) are included. *Excluded* is the abatement of noise and vibration for purposes of protection at the workplace.

## 5.1 Preventive in-process modifications at the source

These comprise activities and measures aimed at the reduction of 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. Includes the 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 etc. Includes also 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, equipment and machines conceived or constructed for low noise or vibrations, low-noise-level flares and burners etc.

Other preventive activities consist of noise abatement through the modification of surfaces. As noise emissions from motors, engines, exhaust systems and brakes are lowered, those from other sources becomes more important, in particular noise that originates from the contact between tyres and road surfaces. Activities consist of substituting silent asphalt, multilayered surfaces etc. for concrete.

- 5.11 Road and rail traffic
- 5.12 Air traffic
- 5.13 Industrial and other noise

## 5.2 Construction of anti noise/vibration facilities

These comprise activities and measures aimed at the installation and management of anti-noise facilities. These may be screens, embankments or hedges. They may consist of covering sections of urban motorways or railroads. In respect of industrial and vicinity noise, they may also consist of add-on facilities, covering and soundproofing of machines and piping, fuel regulation systems and sound absorption, noise screens, barriers, soundproofing of buildings, noise protective windows etc. in order to limit noise perception.

- 5.21 Road and rail traffic
- 522 Air traffic
- 5.23 Industrial and other noise

### 5.3 Measurement, control, laboratories and the like

These comprise activities and measures aimed at controlling the level of noise and vibration: installation and operation of stationary measurement and monitoring sites or mobile equipment in urban areas, observation networks etc.

## 5.4 Other activities

These comprise all other activities and measures aimed at noise and vibration abatement, including administration, management, training, information and educational activities specific to the class, when they can be separated from other activities related to the same class and from similar activities related to other classes.

They also include, when separable, traffic management with noise abatement purposes (for example, lowering of speed limits, improvement of traffic flows), introduction of time and geographical restrictions for noisy vehicles, traffic detours at a distance from residential areas, creation of pedestrian areas, creation of construction-free buffer zones, restructuring of modal split (improvement of public transportation, use of bicycles). This covers a potentially large set of administrative measures that raise serious identification problems given their incorporation in integrated programmes of traffic control and urban planning and the difficulty of separating that part of measures and expenditure that, in these programmes, concern noise and vibration abatement from expenditure related to air pollution control, improvement of the living environment and traffic security.

In addition to regulation, other measures may consist of: financial incentives for the production and use of low-noise vehicles, labelling or information programmes for consumers so as to encourage the use of low-noise vehicles and the adoption of quiet driving behaviour.

## 6 Protection of biodiversity and landscapes

Protection of biodiversity and landscape encompasses measures and activities aimed at the protection and rehabilitation of fauna and flora species, ecosystems and habitats as well as the protection and rehabilitation of natural and semi-natural landscapes. The effecting of separation between "biodiversity" and "landscape" protection may not always be practical. For example, maintaining or establishing certain landscape types, biotopes, ecozones and related issues (hedgerows, lines of trees to re-establish "natural corridors") have a clear link to biodiversity preservation.

Excluded are the protection and rehabilitation of historic monuments or predominantly built-up landscapes, and the control of weed for agricultural purposes as well as the protection of forests against forests fire when this predominantly responds to economic factors. The establishment and maintenance of green spaces along roads and recreational structures (for example, golf courses, other sports facilities) are also excluded.

Actions and expenditure related to urban parks and gardens would not normally be included but may be related in some cases to biodiversity; in such cases, the activities and expenditure should be included.

## 6.1 Protection and rehabilitation of species and habitats

These comprise activities and measures aimed at the conservation, reintroduction or recovery of fauna and flora species, as well as the restoring, rehabilitation and reshaping of damaged habitats for the purpose of strengthening their natural functions, including conserving the genetic heritage, re-colonizing destroyed ecosystems, and placing bans on exploitation, trade etc. of specific animal and plant species, for protection purposes. Also includes censuses, inventories, databases, creation of gene reserves or banks, improvement of linear infrastructures (for example, underground passages or bridges for animals at highways or railways, etc.), feeding of the young, and management of special natural reserves (botany conservation areas etc.). Activities may also include the control of fauna and flora to maintain natural balances, including reintroduction of predator species and control of exotic fauna and flora that pose a threat to native fauna, flora and habitats.

Main activities are the management and development of protected areas, whatever the denomination they receive, that is, areas protected from any economic exploitation or

in which the latter is subject to restrictive regulations whose explicit goal is the conservation and protection of habitats. Also included are activities for the restoration of water bodies as aquatic habitats: artificial oxygenation and limeneutralization actions. When they have a clear protection of biodiversity-related purpose, measures and activities related to urban parks and gardens are to be included. Purchase of land for the purpose of protecting species and habitats is included.

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

This comprises activities and measures aimed at the protection of natural and seminatural landscapes so as to maintain and increase their aesthetic value and their role in biodiversity preservation. Included are the preservation of legally protected natural objects, expenditures incurred for the rehabilitation of abandoned mining and quarrying sites, renaturalization of river banks, burying of electric lines, maintenance of landscapes as the result of traditional agricultural practices that are threatened by prevailing economic conditions etc. For biodiversity and landscape protection related to agriculture, the identification of specific State aid programmes to farmers may be the only data source available. Protection of forests against forest fires for landscape protection purposes is included.

*Excluded* are measures taken in order to protect historic monuments, and measures to increase aesthetic values for economic purposes (for example, re-landscaping to increase the value of real estate) as well as protection of predominantly built-up landscapes.

#### 6.3 Measurement, control, laboratories and the like

These encompass measurement, monitoring and analysis activities that are not classified under the preceding items. In principle, inventories of fauna and flora are not covered, since they are classified under protection of species.

#### 6.4 Other activities

These comprise all other activities and measures aimed at the protection of biodiversity and landscape. It includes administration, training, information and educational activities specific to the domain, when they can be separated from other activities related to the same domain and similar activities related to other classes.

## 7 Protection against radiation (excluding external safety)

Protection against radiation encompasses activities and measures aimed at the reduction or elimination of the negative consequences of radiation emitted from any source. Included are the handling, transportation and treatment of high-level radioactive waste, that is, waste that, because of its high radionuclide content, requires shielding during normal handling and transportation.

Excluded are activities and measures related to the prevention of technological hazards (for example, external safety of nuclear power plants), as well as protection measures taken at workplaces. Also excluded are activities related to collection and treatment of low-level radioactive waste (see CEPA 3).

Definition of radioactive waste: Radioactive waste is any material that contains or is contaminated by 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.

#### 7.1 Protection of ambient media

Protection of ambient media groups together activities and measures undertaken in order to protect ambient media from radiation. It may consist of protecting measures such as screening, creation of buffer zones etc.

#### 7.2 Transport and treatment of high level radioactive waste

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

Collection and transport of high-level radioactive waste consist of the collection of high-level radioactive waste, generally by specialized 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 so that it is in proper and fit condition for transport and/or storage and/or disposal. Conditioning may occur as part of ISIC/NACE 23 (Class 2330, Processing of nuclear fuels) activities.

Containment of high-level radioactive waste designates the retention of radioactive waste in such a way as to effectively prevent its dispersal into the environment, or effect its release 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 geologic and technical criteria.

## 7.3 Measurement, control, laboratories and the like

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

### 7.4 Other activities

These comprise all other activities and measures aimed at the protection of ambient media against radiation, and transport and treatment of high-level radioactive waste, including administration, training, information and educational activities specific to the domain, when they can be separated from other activities related to the same class and similar activities related to other environmental protection classes.

## 8 Research and development for environmental protection

Research and development (R&D) comprises 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 (see OECD, 1994b) in the field of environmental protection.

The class regroups all R&D activities and expenditure oriented towards environmental protection, encompassing identification and analysis of sources of pollution, and mechanisms of dispersion of pollutants in the environment as well as their effects on human beings, the species and the biosphere. This heading covers R&D for the prevention and elimination of all forms of pollution, as well as R&D oriented towards developing equipment and

instruments of pollution measurement and analysis. When separable, all R&D activities, even when referring to a specific class, have to be classified under this heading. Environmental R&D is further classified in accordance with the 1993 NABS. Excluded are R&D activities related to the management of natural resources.

- 8.1 Protection of ambient air and climate
  - 8.11 Protection of ambient air
  - 8.12 Protection of atmosphere and climate
- 8.2 Protection of water
- 8.3 Waste
- 8.4 Protection of soil and groundwater
- 8.5 Abatement of noise and vibration
- 8.6 Protection of species and habitats
- 8.7 Protection against radiation
- 8.8 Other research on the environment

### 9 Other environmental protection activities

Other environmental protection activities comprise all environmental protection activities that take the form of general environmental administration and management activities or training or teaching activities specifically oriented towards environmental protection or that encompass public information, when they are not classified elsewhere in the CEPA. They also include activities leading to indivisible expenditure, as well as activities not elsewhere classified

## 9.1 General environmental administration and management

General administration of the environment designates any identifiable activity that is directed towards the general support of decisions taken in the context of environmental protection activities, whether by governmental or by non-governmental units.

#### 9.11 General administration, regulation and the like

This encompasses any identifiable activity within general government and non profit institutions serving households (NPISH) units that is directed towards the regulation or administration of the environment and the support of decisions taken in the context of environmental protection activities. When possible, such activities should be allocated to other classes. If this is impossible, they should be included under this heading of the classification.

## 9.12 Environmental management

This encompasses any identifiable activity of corporations that is directed towards the general support of decisions taken in the context of environmental protection activities, including the preparation of declarations

or requests for permission, internal environmental management, and environmental certification processes Internal Organization for Standardization (ISO) 14000, European Eco-Management and Audit Scheme (EMAS), as well as the recourse to environmental consultancy services. Activities of units specializing in environmental consultancy, supervision and analysis are included. When possible, such activities should be allocated to other CEPA classes.

## 9.2 Education, training and information

These comprise activities that aim at providing general environmental education or training and disseminating environmental information. Included are high school programmes, university degree programmes or special courses specifically aimed at training for environmental protection. Activities such as the production of environmental reports, environmental communication etc. are also included.

## 9.3 Activities leading to indivisible expenditure

These comprise environmental protection activities that lead to indivisible expenditure, that is, those that 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 two-digit heading under CEPA 9 could be adequate for national purposes.

#### 9.4 Activities not elsewhere classified

This heading groups together all these environmental protection activities that cannot be classified under other headings of the classification.

## II: RESOURCE MANAGEMENT (RM)

Resource Management includes all actions and activities that are aimed at preserving and maintaining the stock of natural resources and hence safeguarding against depletion. This includes actions and activities aiming at reducing the withdrawals of natural resources (recovery, reuse, recycling, substitution of natural resources) as well as restoring natural resource stocks (increases/ recharges of natural resource stocks).

To be included under resource management, actions and activities or parts thereof must satisfy the primary purpose criterion, i.e. that resource management is their prime objective.

## 10 Management of mineral and energy resources

All the activities and actions aiming at minimising the intake of mineral and energy resources through in-process modifications, the recovery, reuse, recycling, savings and the use of substitute mineral resources, the production of energy from renewable sources and any other kind of measure. 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 mineral and energy resources

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 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  $\rightarrow$  CEA 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  $\rightarrow$  CEA 3.3 or 3.4).

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.

# 10.2 Reduction of minerals use through the reduction of scraps and the production and consumption of recycled materials and products and 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  $\rightarrow$  CEA 1.1).

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 → CEA 3.2, 3.3 and 3.4)

## 10.3 Measurement, control, laboratories and the like related to mineral and energy resources

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.

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.

#### 10.4 Other activities for the management of mineral and energy resources

All other activities and measures aimed at the management of mineral and 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 to other classes of the RM group. 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 resources.

## 11 Management of timber resources

All the activities and actions aiming at minimising the intake of natural timber 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 they concern natural forests. 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. Exploitation and exploration activities of natural timber resources are excluded.

All the activities and actions related to cultivated timber resources are excluded.

#### 11.1 Reduction of the intake of timber resources

Reduction of the intake through in-process modifications related to the reduction of the input of timber 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 forest areas or development of new forest areas.

#### 11.4 Forest fires

Prevention and control of natural forest fires (concerning forest areas relevant mainly as economic resource and not as habitats  $\rightarrow$  CEA 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 Measurement, control, laboratories and the like related to natural timber resources

Activities aimed at measuring, controlling and monitoring the use and the consistency of timber resource stocks. It includes for example inventories and assessments of timber 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  $\rightarrow$  CEA 6.1 and census of natural forest protected areas  $\rightarrow$  CEA 6.2.

### 11.6 Other activities for the management of timber resources

All other activities and measures aimed at the management of natural timber 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 to other classes of the RM group. 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.

## 12 Management of aquatic resources

All the activities and actions aiming at minimising the intake of wild fish and other aquatic 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 fish stocks are included when aiming at maintaining/increasing the consistency of stocks (not the biodiversity  $\rightarrow$  CEA 6). 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 fish are stocks and reserves of non-cultivated fish and other aquatic resources. The class includes all the activities and actions with the purpose of managing, maintaining and increasing the stock of wild fish resources. The protection of biodiversity of wild fish resources is excluded ( $\rightarrow$  CEA 6).

## 12.1 Reduction of the intake of aquatic resources

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 fish 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 aquatic resources stocks

Increase of the number of individuals of aquatic resources stocks. It includes for example breeding for the replenishment of stocks for fishing (for restocking purposes and not for protection of biodiversity  $\rightarrow$  CEA 6.1).

## 12.3 Measurement, control, laboratories and the like related to aquatic resources

Activities aimed at measuring, controlling and monitoring the use and the consistency of wild fish stocks. It includes for example: inventories and assessment of aquatic resources stocks; control on the observance of licences, quotas, temporary or permanent fishing bans. Measurement, controlling and monitoring activities related to the protection of biodiversity and landscape are excluded like e.g. inventories of threatened species  $\rightarrow$  CEA 6.1.

## 12.4 Other activities for the management of aquatic resources

All other activities and measures aimed at the management of aquatic 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 to other classes of the RM group. It includes for example: release of fishing licences, enforcement and administration of quotas, enforcement and regulation of temporary or permanent fishing bans; General Government units or part thereof which administrate and regulate the exploitation of wild fish resources or are responsible for wild fish management policies.

## 13 Management of other biological resources (excl. timber and aquatic resources)

All the activities and actions aiming at minimising the intake of biological resources other than timber and fish 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  $\rightarrow$  CEA 6). 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.

Other biological resources are stocks and reserves of non-cultivated animals

and plants (excluding timber and fish resources). The class includes all the activities and actions with the purpose of managing, maintaining and increasing the stock of the resources. The protection of biodiversity of wild flora and fauna is excluded ( $\rightarrow$  CEA 6).

## 13.1 Reduction of the intake of biological resources (excl. timber and fish resources)

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.

The use of alternative resources is included, i.e. the substitution of natural inputs with alternative inputs.

### 13.2 Replenishment of biological resources stocks (excl. timber and fish resources)

Increase of the number of individuals of other biological resources stocks. It includes for example breeding for the replenishment of stocks for hunting (for restocking purposes and not for protection of biodiversity  $\rightarrow$  CEA 6.1).

## 13.3 Measurement, control, laboratories and the like related to biological resources stocks (excl. timber and fish resources)

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 hunting bans. Measurement, controlling and monitoring activities related to the protection of biodiversity and landscape are excluded like e.g. inventories of threatened species  $\rightarrow$  CEA 6.1.

## 13.4 Other activities for the management of biological resources (excl. timber and fish resources)

All other activities and measures aimed at the management of other biological 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 to other classes of the RM group. It includes for example: release of 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.

## 14 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. 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. Exploitation, exploration and distribution activities are excluded.

## 14.1 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. De-salinisation of sea water is included.

#### 14.2 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.

## 14.3 Replenishment of water resources

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  $\rightarrow$  CEA 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  $\rightarrow$  CEA 4.3).

#### 14.4 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  $\rightarrow$  CEA 2.5; measurement, monitor and control of the quality of surface and ground water  $\rightarrow$  CEA 4.5.

### 14.5 Other activities for the management of water resources

All other activities and measures aimed at the 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 to other classes of the RM group. 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.

#### 15 Research and development activities for resource 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  $\rightarrow$  CEA 8.

#### 15.1 Mineral and energy resources

R&D activities exclusively related to energy sources (non-renewable and renewable) and minerals.

## 15.2 Timber resources

R&D activities exclusively related to natural timber resources.

## 15.3 Aquatic resources

R&D activities exclusively related to aquatic resources.

## 15.4 Other biological resources

R&D activities exclusively related to other biological resources (excl. timber and aquatic resources).

## 15.5 Water resources

R&D activities exclusively related to water resources.

### 15.6 Other R&D activities for natural resource management

## 16 Other resource 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 management whether by governmental or by nongovernmental units.

## 16.11 General administration, regulation and the like

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 management activities. When possible such activities should be allocated to CEA classes 10-14 (within the "other activities..." category). If this is impossible, they should be included under this position of the classification.

If the general administration activities concern both environmental protection and management of natural resources, they should be broken down between this position and the corresponding CEA category of the EP group ( $\rightarrow$  CEA 9.1.1). If this is impossible, they should be classified in this position or alternatively in the one of the EP group according to the "main purpose" criterion; if this is impossible as well, they should be classified within the corresponding category of the EP group ( $\rightarrow$  CEA 9.1.1)

## 16.12 Environmental management

Any identifiable activity of corporations that is directed at the general support of decisions taken in the context of natural resource 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 CEA classes 10-14 (within the "other activities..." category). If this is impossible, they should be included under this position of the classification.

If the general administration activities concern both environmental protection and management of natural resources, they should be broken down between this position and the corresponding category of the EP group ( $\rightarrow$  CEA 9.1.2). If this is impossible, they should be classified in this position or alternatively in the one of the EP group according to the "main purpose" criterion; if this is impossible as well, they should be classified within the corresponding category of the EP group ( $\rightarrow$  CEA 9.1.2).

### 16.2 Education, training and information

Activities that aim at providing general environmental education or training and disseminating information on natural resource management. Included are high school programs, university degrees or special courses specifically aimed at training for natural resource management. Activities such as the production of environmental reports, environmental communication, etc. are also included. When possible such activities should be allocated to CEA classes 10-14 (within the "other activities..." category). If this is impossible, they should be included under this position of the classification.

If the general education, training and information activities concern both environmental protection and management of natural resources, they should be broken down between this position and the corresponding category of the EP group ( $\rightarrow$  CEA 9.2). If this is impossible, they should be classified in this position or alternatively in the one of the EP group according to the "main purpose" criterion; if this is impossible as well, they should be classified within the corresponding category of the EP group ( $\rightarrow$  CEA 9.2).

## 16.3 Activities leading to indivisible expenditure

Natural resource management activities that lead to indivisible expenditure, i.e. which cannot be allocated to any other class of the RM group.

## 16.4 Activities not elsewhere classified

This position groups together all the natural resource management activities that cannot be classified under other positions of the RM group.

## **Classification of Land Use**

## 01 LAND

## 011 Agriculture

The total of areas under "Land under temporary crops", "Land under temporary meadows and pastures", "Land with temporary fallow", "Land under permanent crops", "Land under permanent meadows and pastures", and "Land under protective cover".

This category includes tilled and fallow land, and naturally grown permanent meadows and pastures used for grazing, animal feeding or agricultural purpose. Scattered land under farm buildings, yards and their annexes, permanently uncultivated land, such as uncultivated patches, banks, footpaths, ditches, headlands, and shoulders are traditionally included.

#### 0111 Land under temporary crops

Land used for crops with a less than one-year growing cycle, which must be newly sown or planted for further production after the harvest. Some crops that remain in the field for more than one year may also be considered as temporary crops e.g. asparagus, strawberries, pineapples, bananas and sugar cane.

Excludes: Herbaceous forage crops.

## 01111 Cereals

Land used for the growing of cereals e.g. wheat, rice, maize, sorghum, barley, rye, oats, millets etc.

## 01112 Vegetables and melons

Land used for the growing of vegetables and melons.

## 01113 Temporary oilseed crops

Land used for the growing of oilseeds crops e.g. soya beans, groundnuts, castor bean, linseed, mustard seed, niger seed, rapeseed, safflower seed, sesame seed, sunflower seed, other oil seeds etc.

## 01114 Root/tuber crops with high starch or inulin content

Land used for the growing of roots and tubers e.g. potatoes, sweet potatoes, cassava, yams etc.

## 01115 Temporary spice crops

Land used for the growing of temporary spices e.g. chilies and peppers, anise, badian, fennel etc.

## 01116 Leguminous crops

Land used for the growing of leguminous crops e.g. beans, broad beans, chick peas, cow peas, lentils, lupins, peas, pigeon peas etc.

## 01117 Sugar crops

Land used for the growing of sugar crops e.g. sugar cane and sugar beet.

## 01118 Other temporary crops

Land used for the growing of other temporary crops not elsewhere classified

#### 0112 Land under temporary meadows and pastures

Land cultivated with temporary herbaceous forage crops for mowing or pasture. A period of less than five years is used to differentiate between temporary and permanent meadows.

## 0113 Land with temporary fallow

Agricultural land that is not seeded for one or more growing seasons. The maximum idle period is usually less than five years. Land remaining fallow for too long may acquire characteristics requiring it to be reclassified, such as 017 - "Land not in use". This land may be in the form sown for the exclusive production of green manure.

## 0114 Land under permanent crops

Land cultivated with long-term crops which do not have to be replanted for several years (such as cocoa and coffee); land under trees and shrubs producing flowers (such as roses and jasmine); and nurseries (except those for forest trees, which should be classified under 0121 - "Forest land"). Land under permanent meadows and pastures are excluded from "Land under permanent crops."

Excludes: Herbaceous forage crops.

#### 01141 Fruit and nuts

Land used for the growing of trees and bushes of fruit (e.g. grapes, tropical and subtropical fruits, citrus fruits, pome fruits and stone fruits) and nuts (e.g. almonds, cashew nuts, chestnuts, hazelnuts, pistachios, walnuts etc).

#### 01142 Permanent oilseed crops

Land used for the growing of oleaginous fruits e.g. coconuts, olives, oil palms etc.

## 01143 Beverage and permanent spice crops

Land used for the growing of beverage crops (e.g. coffee, tea, mate, cocoa etc.) and of permanent spices (e.g. nutmeg, mace and cardamoms, cinnamon, cloves, ginger, vanilla etc.).

## 01144 Other permanent crops

Land used for the growing of other perennial crops (including rubber and Christmas trees).

#### 0115 Land under permanent crops

Land used to grow permanent (five years or more growth cycle) herbaceous forage crops through cultivation or naturally (wild prairie or grazing land). Permanent meadows and pastures on which trees and shrubs are grown should be recorded under this heading only if the growing of forage crops is the most important use of the area. Measures may be taken to keep or increase productivity of the land (i. e. use of fertilizers, mowing or systematic grazing by domestic animals.)

This class includes:

- Grazing in wooded areas (agro-forestry areas, for example).
- Grazing in shrubby zones (heath, maquis, garigue).
- Grassland in the plain or low mountain areas used for grazing: land crossed during transhumance where the animals spend a part of the year (approximately 100 days) without returning to the holding in the evening:

mountain and sub-Alpine meadows and similar; steppes and dry meadows used for pasture.

## 01151 Cultivated permanent meadows and pastures

Land under permanent meadows and pastures that is managed and cultivated.

## 01152 Naturally grown permanent meadows and pastures

Land under naturally grown permanent meadows and pastures used for grazing, animal feeding or agricultural purpose.

### 0116 Agricultural land under protective cover

Surfaces occupied by dwellings on farms etc.: dwellings, operating buildings (hangars, barns, cellars, green houses, silos), buildings for animal production (stables, cow sheds, pig sheds, sheep pens, poultry yards), family gardens, farmyards.

Excludes buildings for agro-food manufacture ( $\rightarrow$ 0143) and buildings in rural areas for exclusive residential purpose ( $\rightarrow$ 0148).

## 012 Forestry

Land used for forest or other wooded land.

Excludes land that is predominantly under agricultural or urban use.

#### 0121 Forest land

Land spanning more than 0.5 hectares with trees higher than 5 m and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ. Excludes land that is predominantly under agricultural or urban land use.

Explanatory notes:

- Forest land is determined both by the presence of trees and the absence of other predominant land uses. The trees should be able to reach a minimum height of 5 m in situ.
- Includes areas with young trees that have not yet reached but which are expected to reach a canopy cover of 10 percent and tree height of 5 m. It also includes areas that are temporarily unstocked due to clear-cutting as part of a forest management practice or natural disasters, and which are expected to be regenerated within 5 years. Local conditions may, in exceptional cases, justify that a longer time frame is used.
- Includes forest roads, firebreaks and other small open areas; forest in national parks, nature reserves and other protected areas such as those of specific environmental, scientific, historical, cultural or spiritual interest.
- Includes windbreaks, shelterbelts and corridors of trees with an area of more than 0.5 hectares and width of more than 20 m.
- Includes abandoned shifting cultivation land with a regeneration of trees that have, or is expected to reach, a canopy cover of 10 percent and tree height of 5 m.
- Includes areas with mangroves in tidal zones, regardless whether this area is classified as land area or not.
- Includes areas with bamboo and palms provided that land use, height and canopy cover criteria are met.
- Some agroforestry systems such as the "Taungya" system where crops are grown only during the first years of the forest rotation should be classified as forest.

Excludes: tree stands in agricultural production systems, such as fruit tree plantations

( $\rightarrow$ 01141), oil palm plantations, rubber and Christmas trees ( $\rightarrow$ 01144) and agroforestry systems when crops are grown under tree cover ( $\rightarrow$ 0115).

#### 01211 Primary regenerated forest

Naturally regenerated forest of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.

Some key characteristics of primary forests are:

- They show natural forest dynamics, such as natural tree species composition, occurrence of dead wood, natural age structure and natural regeneration processes;
- The area is large enough to maintain its natural characteristics;
- There has been no known significant human intervention or the last significant human intervention was long enough ago to have allowed the natural species composition and processes to have become re-established.

### 01212 Other naturally regenerated forest

Forest where there are clearly visible indications of human activities.

#### Includes:

- Selectively logged-over areas, areas regenerating following agricultural land use, areas recovering from human-induced fires, etc;
- Forests where it is not possible to distinguish whether planted or naturally regenerated;
- Forests with a mix of naturally regenerated trees and planted/seeded trees, and where the naturally regenerated trees are expected to constitute more than 50% of the growing stock at stand maturity;
- Coppice from trees established through natural regeneration;
- Naturally regenerated trees of introduced species.

### 01213 Planted forest

Forest predominantly composed of trees established through planting and/or deliberate seeding. This means that the planted/seeded trees are expected to constitute more than 50% of the growing stock at maturity. This includes coppice from trees that were originally planted or seeded.

Excludes: self-sown trees of introduced species, tree stands in agricultural production systems, such as fruit tree plantations, oil palm plantations and agroforestry systems when crops are grown under tree cover, and land that is predominantly under agricultural or urban use.

## 0122 Other wooded land

Land not classified as "Forest land", spanning more than 0.5 hectares; with trees higher than 5 meters and a canopy cover of 5-10 percent, or trees able to reach these thresholds in situ; or with a combined cover of shrubs, bushes and trees above 10 percent.

The definition above has two options:

- (a) The canopy cover of trees is between 5 and 10 percent; trees should be higher than 5 meters or able to reach 5 meters in situ.
- (b) The canopy cover of trees is less than 5 percent but the combined cover of shrubs, bushes and trees is more than 10 percent. Includes areas of shrubs and bushes where no trees are present.

#### Includes:

- Areas with trees that will not reach a height of 5 meters in situ and with a canopy cover of 10 percent or more, e.g. some alpine tree vegetation types, arid zone mangroves, etc.
- Areas with bamboo and palms provided that land use, height and canopy cover criteria are met.

Excludes land that is predominantly under agricultural or urban land use.

## 013 Land used for aquaculture

Land used for aquaculture facilities and fish farming activities.

Aquaculture refers to the farming of aquatic organisms: fish, molluses, crustaceans, aquatic plants, crocodiles, alligators, turtles, and amphibians. Farming implying some form of intervention in the rearing process to enhance production, such as regular stocking, feeding, protection from predators, etc.

#### 0131 Land used for hatcheries

Housing facilities for breeding, nursing and rearing seed of fish, invertebrates or aquatic plants to fry, fingerlings or juvenile stages.

#### 0132 Managed grow-out sites on land

Land with aquaculture facilities other than "Hatcheries" e.g. ponds and tanks (artificial units of varying sizes constructed above or below ground level capable of holding and interchanging waters), raceways and silos (artificial units constructed above or below ground level capable of high rate of water interchange in excess of 20 changes per day).

## 014 Use of built up and related areas

Land affected or adapted by man, under buildings, roads, mines and quarries and any other facilities, including their auxiliary spaces, deliberately installed for the pursuit of human activities. Included are also certain types of open land (non-built- up land), which are closely related to these activities, such as waste tips, derelict land in built-up areas, junk yards, city parks and gardens. Land under closed villages or similar rural localities are included.

## 0141 Mining and quarrying

Land mainly occupied by mines and quarries including installations for the extraction of solid fuels, petroleum, natural gas, minerals, salt, construction stone, and sand and clay; including their associated areas (slag heaps, dumps and storage areas, loading and unloading sites, shafts or head gear).

### 0142 Constructions

Land mainly occupied by construction building sites including abandoned areas (residential, industrial, commercial, infrastructures, and burned areas), tips and manmade wasteland.

## 0143 Manufacturing

Land occupied by activities of manufacturing including heavy industries. This category includes coking plants, cracking and refining of petroleum, installations for producing and processing of metals, installations producing non-metallic minerals; industrial installations in the field of basic chemistry, agro-chemistry, the production

of synthetic and artificial fibres and other products; installations working in the fields of agro-food products, beverages and tobacco, textile manufacturing, leather, footwear and clothing manufacturing, wood, paper and production of paper articles, rubber and transformation of plastics, as well as construction companies and public works

Excludes: actual construction sites ( $\rightarrow$ 0142) and harbour areas and their storage facilities ( $\rightarrow$ 0145).

#### 0144 Technical infrastructure

Land occupied by technical installations for the generation, distribution, and transmission of electrical energy; the distribution of hydro-carbons, including oil and gas pipelines, and water; the recovery and purification of water; the collection and treatment of waste; Land occupied by telecommunications networks, such as relay stations, TV aerials, radio telescopes, radars, and major protective works, e.g. water retention dams, protective dykes. Included is also the land used for related offices and other service buildings and installations, as well as any space needed, according to national practices, for the operation of such technical infrastructure.

#### 0145 Transport and storage

Land occupied by infrastructures and service enterprises in the field of transport and storage. Includes transport infrastructures for road traffic; rail networks; airport installations; installations connected with river and maritime transport. Included is also the land used for transport-related offices and other service buildings and installations, such as stations, airport buildings, storage facilities for equipment and repair workshops, space used for sidewalks, grass slopes along railways, windshelter belts along roads, open noise abatement areas round airports as well as any other space needed, according to national practices, for the provision of the related infrastructure.

#### Excludes:

- military aerodromes (→0146)
- dockyards (→0143)

### 0146 Commercial, financial, and public services

Land mainly used for commerce, trade, and related services, public administrations and judicial services, public order and safety services, social security and social work services, professional and trade associations; including private roads and other auxiliary spaces located in the areas concerned. This category includes wholesale and retail trade; hotel and catering services; banks and insurance; personal services; installations for national defence; education and research/development; land occupied by religious buildings.

#### 0147 Recreational facilities

Land developed for and occupied by leisure or recreational purposes, including cultural sites: archaeological sites; historic sites, classified monuments, ruins and stately homes; museums, libraries, media centres; concert halls and theatres; cemeteries, and associated areas (water, wooded areas, lawns, gardens) sport facilities: public beaches and swimming pools, gymnasiums, sports halls; stadiums and games fields; assembly and dancing halls; golf courses; riding tracks; car racing circuits; green or leisure areas: urban parks, public gardens, zoological and botanical gardens, hobby gardening; major burial grounds used as walking places with considerable vegetation; facilities for tourism: camping and caravanning sites; amusement parks, circuses, youth hostels and country centres; marinas; secondary residences or vacation houses; and casinos.

Excludes areas that can be used for recreation if this is not the main utilization.

#### 0148 Residential

Land mainly covered by residential buildings, irrespective of whether they are actually occupied or temporarily vacant, including residential land attached private gardens and small green areas and parking facilities and small playgrounds mainly reserved and used by the inhabitants of the buildings.

This category includes:

- Continuous and dense residential areas (dense to very dense urban core where a large proportion of the buildings are higher than three stories);
- Continuous residential areas of moderate density (suburban kind, found commonly in old villages attached to a town.);
- Discontinuous residential areas of moderate density ("housing area" type, formed by individual houses);
- Isolated residential areas (hamlets, groups of a few houses, small villages, isolated buildings);
- Collective residential areas (collective dwellings generally higher than three stories).

Excludes: land used for purposes specified elsewhere even if it is mainly used by the local population.

## 015 Land used for maintenance and restoration of environmental functions

This class includes protected areas as defined by IUCN, i.e. a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.

Protected areas should aim to:

- Conserve the composition, structure, function and evolutionary potential of biodiversity;
- Contribute to regional conservation strategies (as core reserves, buffer zones, corridors, steppingstones for migratory species etc.);
- Maintain diversity of landscape or habitat and of associated species and ecosystems;
- Be of sufficient size to ensure the integrity and long-term maintenance of the specified conservation targets or be capable of being increased to achieve this end;
- Maintain the values for which it was assigned in perpetuity;
- Be operating under the guidance of a management plan, and a monitoring and evaluation programme that supports adaptive management;
- Possess a clear and equitable governance system.

Protected areas should also aim, where appropriate, to:

- Conserve significant landscape features, geomorphology and geology;
- Provide regulatory ecosystem services, including buffering against the impacts of climate change;
- Conserve natural and scenic areas of national and international significance for cultural, spiritual and scientific purposes;
- Deliver benefits to resident and local communities consistent with the other objectives of management;
- Deliver recreational benefits consistent with the other objectives of

management;

- Facilitate low-impact scientific research activities and ecological monitoring related to and consistent with the values of the protected area;
- Use adaptive management strategies to improve management effectiveness and governance quality over time;
- Help to provide educational opportunities (including about management approaches);
- Help to develop public support for protection.

## 016 Other uses of land, n.e.c.

Land used for uses not elsewhere classified.

#### 017 Land not in use

Areas where there are no clearly visible indications of human activities or institutional arrangements put in place for the purpose of economic production or the maintenance and restoration of environmental functions and where ecological processes are not significantly disturbed.

This category includes:

- Land with trees not used for the purpose of agriculture and not classified as Forest and other wooded land;
- Bushes and shrub not used for the purpose of agriculture and not classified as Other wooded land;
- Open areas with low vegetation of the herbaceous type, not used for agricultural purposes;
- Natural and non-built-up land surface with little or no vegetation, which precludes its inclusion in other categories of the classification; included are old quarries and abandoned sandpits.
- Bare soils (areas where bedrock crops out) including rocks and scree, and dunes and sand and pebble beaches.
- Land covered by glaciers (generally measured at the time of their greatest expansion in the season) or eternal snow; and burned areas.
- Flooded land or likely to be so over a large part of the year by fresh, brackish or saline, or stagnating water, bearing a vegetation cover of the low shrub, semi-woody or herbaceous type (bogs and marshes); and occupied by intermediate zones between the solid and liquid state, among which blanket or raised peat lands, such as peat bogs (moors).

Excludes: peat bogs in use for fuel harvesting ( $\rightarrow$ 0141) and protected areas ( $\rightarrow$ 015)

## **02 INLAND WATER**

Inland waters are areas corresponding to natural or artificial water courses, serving to drain natural or artificial bodies of water, including lakes, reservoirs, rivers, brooks, streams, ponds, inland canals, dams, and other land-locked (usually freshwater)

waters. The banks constitute limits whether the water is present or not.

## 021 Inland water used for aquaculture or holding facilities

Inland water area which are used for aquaculture facilities including supporting facilities. Aquaculture refers to the farming of aquatic organisms: fish, molluscs, crustaceans, aquatic plants, crocodiles, alligators, turtles, and amphibians.

Aquaculture facilities include enclosures and pens (water areas confined by net, mesh and other barriers allowing uncontrolled water interchange), cages (open or covered enclosed structure constructed with net, mesh or any porous materials allowing natural water interchange), barrages (semi-permanent or seasonal enclosures formed by impervious man-made barriers and appropriate natural features), and rafts, ropes, stakes (raft, long lines or stakes used to culture shellfish and seaweeds).

## 022 Inland water used for maintenance and restoration of environmental functions

Protected inland water areas as defined in 015. This class includes enhanced areas (areas with enhancement including stocking, fertilization, engineering, predator control, habitat modifications, and/or access limits.)

This class includes enhanced areas (areas with enhancement including stocking, fertilization, engineering, predator control, habitat modifications, and/or access limits). The class excludes protected wetlands ( $\rightarrow$ 015) and protected coastal waters ( $\rightarrow$ 032).

## 023 Other uses of inland waters, n.e.c.

Inland water areas used for uses not elsewhere classified.

#### 024 Inland water not in use

Inland water areas not used for human activities or for the maintenance and restoration of environmental functions.

## Classes for analysis of coastal waters and EEZ areas

The following classes may be used if extended analysis of a country's economic territory (i.e. beyond land and inland water) is being undertaken.

### **03 COASTAL WATERS**

Coastal waters equate to Internal waters as defined by the UN Convention on the Law of the Sea (UNCLOS, 1982). Waters of the sea on the landward side of the baseline used by the national authorities of the coastal country to measure further seawards the width of the territorial sea and any adjacent marine waters, whether salt, brackish, or fresh in character. Such "internal" marine waters are found, for instance, when the baselines are drawn across the mouths of bays or along a "curtain" of islands lying close off the coast.

## This category includes:

- Water surfaces in estuaries (the wide portion of rivers at their mouths subject to the influence of the sea into which the water course flows;
- Lagoons (cut off from the sea by coastal banks or other forms of relief with, however, certain possible openings).

Excludes: ports ( $\rightarrow$ 0145) and marinas ( $\rightarrow$ 0147)

## 031 Coastal waters used for aquaculture or holding facilities

Coastal waters which are used for marine aquaculture facilities including supporting facilities. Aquaculture refers to the farming of aquatic organisms: fish, molluscs, crustaceans, aquatic plants, crocodiles, alligators, turtles, and amphibians. Aquaculture facilities include enclosures and pens (water areas confined by net, mesh and other barriers allowing uncontrolled water interchange), cages (open or covered enclosed structure constructed with net, mesh or any porous materials allowing natural water interchange), barrages (semi-permanent or seasonal enclosures formed by impervious man-made barriers and appropriate natural features), and rafts, ropes, stakes (raft, long lines or stakes used to culture shellfish and seaweeds).

#### This category includes:

- Oyster beds and other types of shellfish (mussels, clams, abalones, scallops);
- Bodies of water used for seaweed production;
- Bodies of water used for fish rearing.

## 032 Coastal waters used for maintenance and restoration of environmental functions

Protected internal water marine areas as defined in 015. This class includes enhanced areas (areas with enhancement including stocking, fertilization, engineering, predator control, habitat modifications, and/or access limits.)

## 033 Other uses of coastal waters, n.e.c.

Coastal waters used for uses not elsewhere classified.

## 034 Coastal waters not in use

Coastal waters not used for human activities or for the maintenance and restoration of environmental functions.

## 04 EXCLUSIVE ECONOMIC ZONE (EEZ)

EEZ as defined by the UN Convention on the Law of the Sea (UNCLOS, 1982). Sea area over which a state has special rights over the exploration and use of marine resources, including fishing, production of energy from water and wind. It stretches from the seaward edge of the state's territorial sea out to 200 nautical miles from its coast.

## **O41 EEZ** areas used for aquaculture or holding facilities As defined in 031.

- **O42** EEZ areas used for maintenance and restoration of environmental functions As defined in 032.
- Other uses of EEZ areas, n.e.c. As defined in 033.
- **O44** EEZ areas not in use As defined in 034.

## **Listing of Land Cover Types**

The following descriptions of different land cover types are based on the FAO Land Cover Classification System (LCCS).

## 01 Artificial surfaces (including urban and associated areas)

The class is composed of any type of areas with a predominant artificial surface. Any urban or related feature is included in this class, for example urban parks (parks, parkland and laws). The class also includes industrial areas, waste dump deposit and extraction sites.

## 02 Herbaceous crops

The class is composed of a main layer of cultivated herbaceous plants (graminoids or forbs). It includes herbaceous crops used for hay. All the non-perennial crops that do not last for more than two growing seasons and crops like sugar cane where the upper part of the plant is regularly harvested while the root system can remain for more than one year in the field are included in this class.

## 03 Woody crops

The class is composed of a main layer of permanent crops (trees or shrub crops) and includes all types of orchards and plantations (fruit trees, coffee and tea plantation, oil palms, rubber plantation, Christmas trees etc.).

## 04 Multiple or layered crops

This class combine two different land cover situations:

- Two layers of different crops: A common case is the presence of one layer of woody crops (trees or shrubs) and another layer of herbaceous crop, such as for wheat fields with olive trees in the Mediterranean area and intense horticulture, oasis or typical coastal African agriculture were herbaceous fields are covered by palm trees, etc.
- Presence of one important layer of natural vegetation (mainly trees) that cover one layer of cultivated crops: A typical example are coffee plantations shadowed by natural trees in the equatorial area of Africa.

## 05 Grassland

This class includes any geographic area dominated by natural herbaceous plants (grasslands, prairies, steppes and savannahs) with a cover of 10% or more, irrespective of different human and/or animal activities, such as: grazing, selective fire management etc. Woody plants (trees and/or shrubs) can be present assuming their cover is less that 10%.

## 06 Tree covered area

This class includes any geographic area dominated by natural tree plants with a cover of 10% or more. Other types of plants (shrubs and/or herbs) can be present, even with a density higher than trees. Areas planted with trees for afforestation purposes and forest plantations are included in this class. This class includes areas seasonally or permanently flooded with fresh water. It excludes coastal mangroves (→07).

## 07 Mangroves

This class includes any geographical area dominated by woody vegetation (trees and/or shrubs) with a cover of 10% or more that is permanently or regularly flooded by salt and/or brackish water located in the coastal areas or in the deltas of rivers.

## 08 Shrub covered area

This class includes any geographical area dominated by natural shrubs having a cover of 10% or more. Trees can be present in scattered form if their cover is less than 10%. Herbaceous plants can also be present at any density. The class includes shrub covered areas permanently or regularly flooded by inland fresh water. It excludes shrubs flooded by salt or brackish water in coastal areas ( $\rightarrow$ 07).

## 09 Shrubs and/or herbaceous vegetation, aquatic or regularly flooded

This class includes any geographic area dominated by natural herbaceous vegetation (cover of 10% or more) that is permanently or regularly flooded by fresh or brackish water (swamps, marsh areas etc.). Flooding must persist for at least 2 months per year to be considered regular. Woody vegetation (trees and/or shrubs) can be present if their cover is less than 10%

## 10 Sparsely natural vegetated areas

This class includes any geographic areas were the cover of natural vegetation is between 2% and 10%. This includes permanently or regularly flooded areas.

#### 11 Terrestrial barren land

This class includes any geographic area dominated by natural abiotic surfaces (bare soil, sand, rocks, etc.) where the natural vegetation is absent or almost absent (covers less than 2%). The class includes areas regularly flooded by inland water (lake shores, river banks, salt flats etc.). It excludes coastal areas affected by the tidal movement of salt water  $(\rightarrow 14)$ .

## 12 Permanent snow and glaciers

This class includes any geographic area covered by snow or glaciers persistently for 10 months or more

### 13 Inland water bodies

This class includes any geographic area covered for most of the year by inland water bodies. In some cases the water can be frozen for part of the year (less than 10 months). Because the geographic extent of water bodies can change, boundaries must be set consistently with class 11 according to the dominant situation during the year and/or across multiple years.

## 14 Coastal water bodies and inter-tidal areas

The class is defined on the basis of geographical features of the land in relation to the sea (coastal water bodies, i.e. lagoons and estuaries) and abiotic surfaces subject to the water persistence (Inter-tidal areas, i.e. coastal flats and coral reefs).

## **List of Solid Waste Categories**

The following listing of solid waste categories has been developed for explanation of concepts in the SEEA. It is based on the European Waste Classification – Statistical presentation (EWC-Stat). It is not intended as a reporting format for solid waste statistics.

#### 01 Chemical and healthcare waste

This class includes:

- Spent solvents
- Acid, alkaline or saline wastes
- Acid, alkaline or saline wastes (hazardous)
- Used oils (hazardous)
- Chemical wastes
- Chemical wastes (hazardous)
- Industrial effluent sludges
- Industrial effluent sludges (hazardous)
- Sludges and liquid wastes from waste treatment
- Sludges and liquid wastes from waste treatment (hazardous)
- Health care and biological wastes
- Health care and biological wastes (hazardous)

#### 02 Radioactive waste

## 03 Metallic waste

This class includes:

- Metallic wastes, ferrous
- Metallic wastes, non-ferrous
- Metallic wastes, mixed ferrous and non-ferrous

## 04 Other recyclables

The class includes:

- Glass wastes (hazardous)
- Glass wastes
- Paper and cardboard wastes
- Plastic wastes
- Wood wastes
- Wood wastes (hazardous)
- Textile wastes
- Rubber wastes

## 05 Discarded equipment and vehicles

This class includes:

- Waste containing PCB (hazardous)
- Discarded equipment (excluding discarded vehicles, batteries and accumulators wastes)
- Discarded equipment (excluding discarded vehicles, batteries and accumulators wastes) (hazardous)
- Discarded vehicles
- Discarded vehicles (hazardous)
- Batteries and accumulators wastes
- Batteries and accumulators wastes (hazardous)

## 06 Animal and vegetal wastes

This class includes:

- Animal and mixed food waste
- Vegetal wastes
- Animal faeces, urine and manure

## 07 Mixed residential and commercial wastes

This category refers to other ordinary wastes produced by households, offices, and similar economic units. In principle, the waste classification suggested here is not a classification according to the origin or producer of the waste, but according to the material itself. However, this category corresponds with the mixed waste that is usually collected by municipal waste collection schemes, mainly from households, though not exclusively. This mixed waste can originate as well from all economic activities. All wastes in this category are considered non-hazardous. Being mixed waste, it does not include separately collected waste fractions such as glass, plastic and paper. In summary, this category covers mixed municipal waste, bulky waste, street-cleaning waste and waste from markets, except separately collected fractions. They originate mainly from households but can also be generated by all economic sectors, e.g. in canteens and offices, as consumption residues.

This class includes:

- mixed municipal waste,
- waste from markets
- bulky waste and
- street cleaning residues

#### 08 Mineral wastes and soils

This class includes:

- Mineral waste from construction and demolition
  - Mineral waste from construction and demolition (hazardous)
  - Other mineral wastes
- Other mineral wastes (hazardous)
- Soils
- Soils (hazardous)
- Dredging spoils
- Dredging spoils (hazardous)
- Mineral wastes from waste treatment and stabilised wastes
- Mineral wastes from waste treatment and stabilised wastes (hazardous)

## 09 Combustion wastes

This class includes:

- Combustion wastes
- Combustion wastes (hazardous)

### 10 Other wastes

This class covers all other wastes not covered elsewhere, including:

- Mixed and undifferentiated materials
- Mixed and undifferentiated materials (hazardous)
- Sorting residues
- Sorting residues (hazardous)
- Common sludges