Code and location in the 2013 MDEA					
Component	Sub- component	Торіс	Codes of environmental statistics		
6. Protection, management and environmental commitment	6.1 Expenditure on environment al protection and resource management	6.1.1 Expenditure on environment al protection and resource management of the General Government.	6.1.1.a.Expendituresonenvironmentalprotectionandresource management of the GeneralGovernment6.1.1.a.1AnnualexpenditureonenvironmentalprotectionoftheGeneral Government.6.1.1.a.2Annualexpenditureonresourcesmanagementonresourcesmanagementonresourcesmanagementononresourcesmanagementononresourcesmanagementononceneral Government.		

Expenditures on Environmental Protection and Resource Management

Environment Protection and Resource Management Expenditure



Content

- Introduction
- Definition of variables
- Classifications, international reccomendations, sources of information
- Transforming data into environmental statistics
- Uses and dissemination





Introduction



Environmental Protection Expenditures (EPE) measures the efforts to protect the environment. The FDES mentions that "expenditure on environment protection and resource management can be used as one measure of the public and private engagement in protecting, restoring and managing the environment towards its more sustainable use".

Similarly, the System of Environmental Economic Accounting -Central Framework (SEEA-CF, 2012) explains that these expenditures are made by different economic units to finance activities whose primary purpose is the prevention, reduction and elimination of pollution and other forms of environmental degradation.



This methodology sheet discusses environment statistics contained in topic 6.1.1 Government environment protection and resource management expenditure. With that respect, it is well known that governments are the largest investors in EPE and that it is crucial the intensification in such investments, particularly after the adoption of the 2030 agenda for Sustainable Development, Transforming our World (2015), where it is recognize that each country has primary responsibility for its own economic, social and environmental development. That includes the mobilization of public finances, both domestic and international, for the provision of essential services and public goods and in catalysing other sources of finance.





Definitions of variables



Environmental protection activities

"Are those whose primary purpose is the prevention, reduction and elimination of pollution and other forms of environmental degradation. These activities include the protection of air-environment and climate; wastewater management and waste; protection and remediation of soil, groundwater and surface water; abatement of noise and vibration; protection of biodiversity and landscapes; radiation protection; research and development to protect the environment; and other environmental protection activities"



Resource management activities

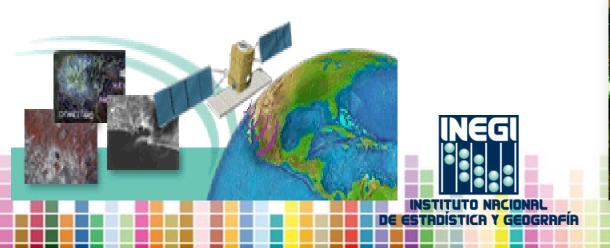
"Are those activities whose primary purpose is preserving and maintaining the stock of natural resources and hence safeguarding against depletion. These activities include, but <u>are not limited to</u>, **reducing the withdrawals of natural resources; restoring natural resource stocks; the general management of natural resources; and the production of goods and services used to manage or conserve natural resources**. They cover the management of mineral and energy resources; timber resources; aquatic resources; other biological resources; water resources; research and development activities for resource management; and other resource management activities"



Government units

Are unique kinds of legal entities established by political processes that have legislative, judicial or executive authority over other institutional units within a given area. Viewed as institutional units, the principal functions of government are to assume responsibility for the provision of goods and services to the community or to individual households and to finance their provision out of taxation or other incomes, to redistribute income and wealth by means of transfers, and to engage in non-market production. System of National Accounts 2008, 4.117, pp 78.

The general government sector consists of resident institutional **units of central, state or local government**.





Topic 6.1.1. Government environment protection and resource management expenditure

6.1.1.a. Government environment protection and resource management expenditure

The environmental protection (EP) and resource management (RM) expenditures of the general government covers expenditure on all goods and services used for environmental protection and preserving and maintaining the stock of natural resources, including (a) expenditure on environmental protection specific services; (b) expenditure on environmental protection connected products; and (c) expenditure on adapted goods. (SEEA 4.62)



- environmental protection specific services are environmental protection services produced by economic units for sale or own use (SEEA 4.53);
- environmental protection connected products include septic tanks, maintenance services and other products for septic tanks, catalytic converters for vehicles, trash bags, bins, rubbish containers and compost containers. (SEEA 4.65), and
- environmental protection adapted goods include desulphurized fuels, mercury-free batteries and CFC-free products. Only the extra costs paid in order to acquire adapted goods are considered environmental protection expenditure. (SEEA 4.67)



6.1.1.a.1. Annual government environment protection expenditure

Value of general government's expenditure on prevention, reduction and elimination of pollution as well as any other degradation of the environment

Analysis of these reports is useful because it allows:

- Have a source for the description of the environment sector, identification of environmental legislation and classification of environmental activities and other units;
- Distribute more detailed and accurate the spending exercised by the government between environmental protection activities and issues;
- Evaluate the use of subsidies and other transfers paid by the Central Government;
- Assign specific tax receipts and other income related to environmental protection.

6.1.1.a.2. Annual government resource management expenditure

The value of general government's expenditure on **preserving and maintaining the stock of natural resources** safeguarding against depletion phenomena. **This includes recovery, reuse, recycling, savings, and substitution of natural resources**, as well as restoring natural resource stocks See Activities in 3A1



Classifications, international reccomendations and sources of information



3A Classifications and groupings

3A1 Classification of Environmental Activities (CEA) of UNSD

The Classification of Environmental Activities and expenditures (draft CEA2011) is composed of three "groups" of activities and expenditures: A. Environmental Protection (EP) B. Natural Resource Management (RM) C. Natural Resource Use (RU)

Each group is subdivided into "classes" (1-digit categories). Classes are in turn subdivided into 2-digits and 3-digits categories. Selected 2-digits and 3-digits categories may also be used for data collection and coding as well as for reporting purposes.

Group	Class (1 digit)	Category (2 digits)	
А	9	46	
В	7		
С	5		

A. Environmental Protection (EP)

1 PROTECTION OF AMBIENT AIR AND CLIMATE
1.1 Prevention of pollution through in-process modifications
1.1.1 for the protection of ambient air
1.1.2 for the protection of climate and ozone layer
1.2 Treatment of exhaust gases and ventilation air
1.2.1 for the protection of ambient air
1.2.2 for the protection of climate and ozone layer
1.3 Measurement, control, laboratories and the like
1.4 Other activities



2 WASTEWATER MANAGEMENT

- 2.1 Prevention of pollution through in-process modifications
- 2.2 Sewerage networks
- 2.3 Wastewater treatment
- 2.4 Treatment of cooling water
- 2.5 Measurement, control, laboratories and the like
- 2.6 Other activities



3 WASTE MANAGEMENT

- 3.1 Prevention of pollution through in-process modifications
- 3.2 Collection and transport
- 3.3 Treatment and disposal of hazardous waste
 - 3.3.1 Thermal treatment
 - 3.3.2 Landfill
 - 3.3.3 Other treatment and disposal
- 3.4 Treatment and disposal of non-hazardous waste
 - 3.4.1 Incineration
 - 3.4.2 Landfill
 - 3.4.3 Other treatment and disposal
- 3.5 Measurement, control, laboratories and the like
- 3.6 Other activities



4 PROTECTION AND REMEDIATION OF SOIL, GROUNDWATER AND SURFACE WATER

- 4.1 Prevention of pollutant infiltration
- 4.2 Cleaning up of soil and water bodies
- 4.3 Protection of soil from erosion and other physical degradation
- 4.4 Prevention and remediation of soil salinity
- 4.5 Measurement, control, laboratories and the like
- 4.6 Other activities



5 NOISE AND VIBRATION ABATEMENT (excluding workplace protection)

- 5.1 Preventive in-process modifications at the source
 - 5.1.1 Road and rail traffic
 - 5.1.2 Air traffic
 - 5.1.3 Industrial and other noise
- 5.2 Construction of anti noise/vibration facilities
 - 5.2.1 Road and rail traffic
 - 5.2.2 Air traffic
 - 5.2.3 Industrial and other noise
- 5.3 Measurement, control, laboratories and the like
- 5.4 Other activities



6 PROTECTION OF BIODIVERSITY AND LANDSCAPES

6.1 Protection and rehabilitation of species and habitats6.2 Protection of natural and semi-natural landscapes6.3 Measurement, control, laboratories and the like6.4 Other activities



7 PROTECTION AGAINST RADIATION (excluding external safety)

- 7.1 Protection of ambient media
- 7.2 Transport and treatment of high level radioactive waste
- 7.3 Measurement, control, laboratories and the like
- 7.4 Other activities



8 RESEARCH AND DEVELOPMENT

8.1 Protection of ambient air and climate

8.1.1 Protection of ambient air

- 8.1.2 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

- 9.1 General environmental administration and management
 - 9.1.1 General administration, regulation and the like
 - 9.1.2 Environmental management
- 9.2 Education, training and information
- 9.3 Activities leading to indivisible expenditure
- 9.4 Activities not elsewhere classified



B. Natural Resources Management (RM)

10 MANAGEMENT OF WATER RESOURCES

- 10.1 Reduction of the intake of water resources
- 10.2 Reduction of water losses and leaks, water reuse and savings
- 10.3 Replenishment of water stocks
- 10.4 Measurement, control, laboratories and the like related to water resources
- 10.5 Other activities for the management of water resources



11 MANAGEMENT OF NATURAL FOREST RESOURCES

11.1 Reduction of the intake of natural forest resources

11.2 Reduction of the consumption of forest (wood and non wood)-related products

- 11.3 Reforestation and afforestation
- 11.4 Forest fires

11.5 Measurement, control, laboratories and the like related to natural forest resources

11.6 Other activities for the management of natural forest resources



12 MANAGEMENT OF WILD FLORA AND FAUNA

- 12.1 Reduction of the intake of wild flora and fauna
- 12.2 Replenishment of wild flora and fauna stocks
- 12.3 Measurement, control, laboratories and the like related to wild flora and fauna
- 12.4 Other activities for the management of wild flora and fauna



13 MANAGEMENT OF FOSSIL ENERGY

- 13.1 Reduction of the intake of fossil energy
- 13.2 Reduction of heat and energy losses, and energy savings
- 13.3 Measurement, control, laboratories and the like related to fossil energy
- 13.4 Other activities for the management of fossil energy



14 MANAGEMENT OF MINERALS

14.1 Reduction of the intake of minerals

14.2 Reduction of minerals use through the reduction of scraps and the production and consumption of recycled materials and products

14.3 Measurement, control, laboratories and the like related to minerals

14.4 Other activities for the management of minerals



15 RESEARCH AND DEVELOPMENT ACTIVITIES FOR NATURAL RESOURCE MANAGEMENT

- 15.1 Water resources
- 15.2 Natural forest resources
- 15.3 Wild flora and fauna
- 15.4 Fossil energy
- 15.5 Minerals
- 15.6 Other R&D activities for natural resource management



16. OTHER NATURAL RESOURCE MANAGEMENT ACTIVITIES

16.1 General administration of natural resources

- 16.1.1 General administration, regulation and the like
- 16.1.2 Environmental management
- 16.2 Education, training and information
- 16.3 Activities leading to indivisible expenditure
- 16.4 Activities not elsewhere classified



C. Natural Resources Use (RU)

17 USE OF WATER RESOURCES

17.1 Exploitation of water resources including water supply and distribution17.2 Exploration and development of water resources

18 USE OF NATURAL FOREST RESOURCES

18.1 Exploitation of natural forest areas (as a resource and not as a habitat)18.2 Exploration of natural forest areas

19 USE OF WILD FLORA AND FAUNA

19.1 Exploitation of wild flora and fauna stocks19.2 Exploration and research of new reserves

20 USE OF FOSSIL ENERGY

20.1 Exploitation of the stocks of non-renewable energy sources20.2 Exploration and discovery of new fossil energy reserves

21 USE OF MINERALS

21.1 Exploitation of mineral stocks

21.2 Exploration and discovery of new mineral reserves

3A2 Classification of the Functions of Government (COFOG),

COFOG is used to distinguish between the individual and collective services provided by general government and identifies consumption expenditures that benefit individual households.

The Classification of the Functions of Government (COFOG) classifies government expenditure into ten main categories (divisions), these divisions are further broken down into 'groups'.



For Division: 05 - Environmental protection, the groups are:

- 05.1 Waste management
- 05.2 Waste water management
- **05.3 Pollution abatement**
- **05.4 Protection of biodiversity and landscape**
- **05.5 R&D Environmental protection**
- **05.6 Environmental protection**

The breakdown of environmental protection is based upon the Classification of Environmental Protection Activities (CEPA) as elaborated in the European System for the Collection of Economic Information on the Environment (SERIEE) of the Statistical Office of the European Communities (Eurostat).

(https://unstats.un.org/unsd/cr/registry/regcs.asp?Cl=4&Lg=1&Co=05)



<u>3A3 International Standard Industrial Classification of All Economic Activities, Rev.4</u> (ISIC Rev. 4.)

Many activities of SITC Rev. 4. should apply for environmental protection and resource management activities, however the most important EP services provided by institutional units with activities fall under Section E Water supply; sewerage, waste management and remediation activities

Table 2 Kinds of environmental activities considered for identifying CEA categories

Kinds of EP ad	tivities	pollution/degradation prevention activities pollution/degradation reduction activities: reduction of emissions and discharges reduction of pollution levels and degradation of environmental media measurement and control activities research and development activities in the field of environmental protection teaching and training activities administrative activities
Kinds of RM a	ctivities	 activities aimed at reducing withdrawals: recovery, reuse, recycling, savings, substitution of natural resources of natural resources increases/ recharges of natural resource stocks (for renewable resources, i.e. inland waters, forest and wild flora and fauna) monitoring, control and surveillance (including the control on the observance of licenses, permits, quotas,), measurement, inventories, data collection and the like R&D activities in the field of natural resource management teaching, training, information and communication activities natural resource administration and regulation activities carried out by the general government (including e.g. the elaboration of plans, the release of any kind of licenses and permits for exploiting resources, the enforcement of quotas,)
Kinds of RU activities	Withdrawals and distribution	 withdrawals from existing resources management and maintenance activities carried out by the public or private authorities in charge of the direct management and exploitation of the reserves of natural resources distribution of natural resources (only for water resources)
	Exploration	 research and exploration for new reserves and resources

Table 3 Environmental domains and natural resources considered for identifying CEA categories

Environmental domains (for EP activities), i.e. type of environmental media or type of pollution-nuisance-degradation	 Air pollution (and related climatic risks) Surface water pollution Waste Soil and ground water pollution, erosion and other physical degradation of soil Noise and vibration Degradation of biodiversity and landscape Radiation
Natural resources (for RM and RU activities)	Water resources Natural forest resources Wild flora and fauna Fossil energy Minerals

These classifications are detailed within:

- Environmental Protection Expenditure Accounts (SERIEE, 2000): http://ec.europa.eu/eurostat/documents/3859598/5859597/KS-BE-02-001-EN.PDF/20b5bc1cbd94-457e-8ca7-9a1fe869a37f?version=1.0;
- Environmental Expenditure Statistics: General Government and Specialized Producers data Collection Handbook (2007): <u>http://ec.europa.eu/eurostat/documents/3888793/5840631/KS-RA-07-012-EN.PDF/b3a162ac-</u> 8cdc-4897-85f7-b10312752ecf?version=1.0;
- Classification of Environmental Activities (CEA, 2011): <u>http://unstats.un.org/unsd/class/intercop/expertgroup/2011/AC234-29.PDF</u>
- System of Environmental-Economic Accounting 2012: <u>http://unstats.un.org/unsd/envaccounting/seeaRev/SEEA_CF_Final_en.pdf</u>



- International Standard Industrial Classification of all Economic Activities (ISIC Rev. 4): <u>http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=27;</u>
- Classification of the Functions of Government (COFOG): <u>http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=4</u>.
- Classification of environmental protection activities (CEPA)
 <u>http://ec.europa.eu/eurostat/statistics-explained/index.php</u>

A feature of statistics on environmental protection and resource management expenditures is that the results can be presented with different approaches: functional, economic, administrative, and more.



3B Reference to international statistical recommendations, frameworks and standards

International organizations have developed guidance documents and have established standards to collect data on environmental protection and resource management expenditures; for example, the measurement of environmental protection national expenditures:

- United Nations Statistical Division (UNSD):
 - System of Environmental–Economic Accounting 2012-Central Framework (SEEA-CF):http://unstats.un.org/unsd/envaccounting/seeaRev/SEEA_CF_Final_en.pdf;
 - System of National Accounts (SNA, 2008): <u>http://unstats.un.org/unsd/nationalaccount/sna2008.asp;</u>
- Eurostat:
 - Environmental Protection Expenditure Accounts (SERIEE); http://ec.europa.eu/eurostat/documents/3859598/5859597/KS-BE-02-001-EN.PDF/20b5bc1c-bd94-457e-8ca7-9a1fe869a37f?version=1.0
 - Environmental Expenditure Statistics: General Government and Specialized Producers, Data Collection Handbook. <u>http://ec.europa.eu/eurostat/en/web/products-statistical-working-papers/-/KS-RA-07-012</u>



3C Sources of global and regional environment statistics and indicators series

Some regional and international bodies publish statistics and indicators on environmental protection and resource management expenditures in order to monitor the implementation of specific laws or monitoring of strategies of expenditure policy.

- Government expenditure by function (COFOG): <u>https://stats.oecd.org/Index.aspx?DataSetCode=SNA_TABLE11</u>
- Government expenditure on environmental protection: <u>http://ec.europa.eu/eurostat/statistics-</u> <u>explained/index.php/Government_expenditure_on_environmental_protection</u>
- Environmental protection expenditure in Europe detailed data: <u>http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_ac_exp1r2&lang=en</u>
- Environmental protection expenditure: <u>http://ec.europa.eu/eurostat/statistics-explained/index.php?title=Environmental_protection_expenditure&oldid=300613</u>



- Environmental protection expenditure accounts: <u>http://ec.europa.eu/eurostat/statistics-</u> <u>explained/index.php/Environmental_protection_expenditure_accounts</u>
- Environmental Indicators (reply to impacts): http://unstats.un.org/unsd/environment/indicators.htm
- Gross Domestic Expenditure on Research & Development by sector: <u>http://stats.oecd.org/Index.aspx?DataSetCode=BERD_INDUSTRY</u>





Transforming data into environmental statistics



4A Data collection and sources of data

For the measurement of environmental protection and resource management expenditures, the countries may have different sources of information containing data on general government expenses, its budget, accounting records, among others. Some of these sources include:

- Public finance and administrative records;
- Censuses and surveys;
- Other.



Public finance and administrative records

Individual and integrated data on financial activities (budgetary outturn, balances, financial accounts) of different government entities should be available.

Such information is considered as a main source for the measurement of environmental protection and natural resources management expenditure, since the expense report is made with a level of detail that identifies the amounts incurred in environmental activities.

Censuses and surveys

Economic censuses that include specific modules on environment or specific surveys on expenditure of the general government units may be one of the tools to provide specific and comprehensive information to measure the environmental protection and resource management expenditures.

Survey results should also help to make further breakdown (eg. CEA) of data derived from administrative records.

4B Data compilation (procedures and instruments) and transformation into environment statistics series

Data collected from the sources of information described above, need to be processed to obtain the environmental protection and resource management expenditures as part of the statistics of the environment. However, the quality of the data set can be decisive for the compiler to use a specific procedure when calculating the environmental expenditures of the General Government. An example of this, it can consider the processes of identification, estimation and aggregation of data; and validation is carried out to detect and correct errors and inconsistencies, including double counting, handling of non-responses (in the case of surveys) and the differences between the data sets and output concepts, including other.



Statistical population

Units dealing with environmental protection often operate as part of general government activity. It may be difficult to separate these operations from the broader general government unit by which they are managed. Nonetheless, given the importance of these activities, it is recommended that all possible efforts be made to identify these activities separately within the broader suite of general government activities. (based on SEEA, 3.253)

Measurement unit

The unit of the measurement to be used for all categories of environmental protection and resource management expenditures is the national currency.





Uses and dissemination



Tabular

In relation to the presentation of results or the forms of delivery can integrate various elements, one of them, tabular with statistical information detailed according to different economic or functional areas.

In particular, the statistics of the environmental protection and resource management expenditures may be presented by government level, by sector of economic activity (according to the industrial classifier used), by institutional sector as recommended by the SNA; by groups of environmental activities, by producers, among others.

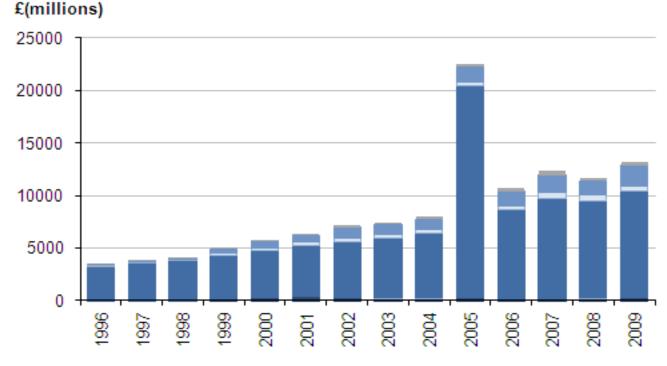


Infographics and charts

Infographics recently applied in the presentation of results of environmental accounts in Mexico, in addition to the charts and graphs are a tool to didactically describe the results in terms of environmental protection expenditures and other environmental issues.



Distribution of environmental expenditures by environmental activities. Public sector environmental protection expenditure by domain 2009



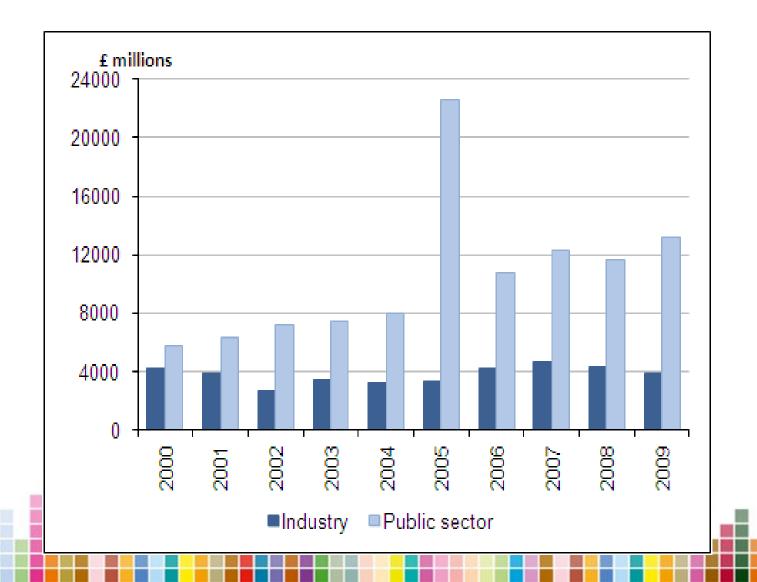
Pollution abatement
 Waste management
 Other abatement activities

Waste water management
 Protection of bio-diversity and landscape
 Research and development

Source: Office for National Statistics, Treasury (Her Majestys) http://webarchive.nationalarchives.gov.uk/20160105160709/http://www.ons.gov.uk/ons/dcp171766_251491.pdf



Environmental protection expenditure by the public sector and selected industries



Total environmental expenditure by CEPA/CReMA and COFOG, Mill NOK. 2013

	01 - General public services	04 - Economic affairs	05 - Environmental protection	06 - Housing and community amenities	Total EE
CEPA 1 -Protection of ambient air and climate	0.404				
	2 131	93	1 041	0	3 265
CEPA 2 -Wastewater management	68	0	9 407	0	9 476
CEPA 3 - Waste management	20	0	4 359	0	4 379
CEPA 4 - Protection and remediation of soil,					
groundwater and surface water	0	6	67	0	73
CEPA 5 - Noise and vibration abatement	-	-	-	-	-
CEPA 6 - Protection of biodiversity and					
andscapes	93	4	1 185	0	1 282
CEPA 7 - Protection against radiation	0	0	13	0	13
CEPA 8 - Environmental research and					
levelopment	0	696	2 192	0	2 889
CEPA 9 - Other environmental protection					
activities	0	115	1 287	0	1 402
CREMA 10 - Management of water	18	0	31	1 893	1 942
CREMA 11A - Management of forest areas	34	0	0	0	34
CREMA 11B - Minimization of the intake of		-	-	-	
orest resources	214	0	307	0	521
CREMA 12 - Management of wild flora and		-		-	
auna	0	0	465	0	466
CREMA 13A - Production of energy from	-	-		-	
enewable resources	5	29	1 574	0	1 608
CREMA 13B - Heat/energy saving and	-			-	
nanagement	129	23	551	22	725
CREMA 13C -Minimisation of the use of fossil					
energy as raw materials	-	-		-	
CREMA 14 - Management of minerals					
CREMA 15 - Research and development					
activities for resource management	0	972	0	0	972
CREMA 16 - Other resource management		372	v	0	312
activities	0	116	503	0	619
fotal EE	2 713	2 054	22 982	1 915	29 664
E share of TE	1%	2 054	94 %	9%	23 004

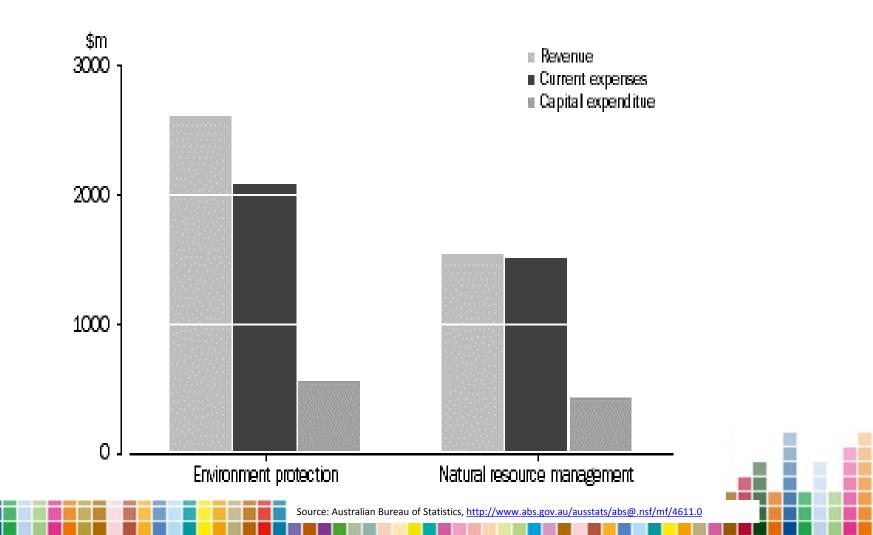
¹ Total expenditure is the sum of current expenditure and net acquisitions of non-financial assets.

Source: Statistics Norway, https://www.ssb.no/natur-og-miljo/artikler-og-publikasjoner/ attachment/209618? ts=14a103f46b0

i j

Australian Bureau of Statistics

Environment Expenditure, Local Government, Australia, 2002-03



5B Commonly used indicators that incorporate this statistic

Some of the key indicators generated with the statistics on environmental protection and natural resource management expenditure, as well as other issues concerning the comparison of total expenditure as a proportion of Gross Domestic Product (GDP) of the country of reference. However other indicators such as the level of environmental expenditure in respect of national public spending could be calculated; or to compare environmental expenditure with the cost of depletion and degradation.

It is noteworthy that at the international level, the main indicator on environmental protection expenditures is the proportion of this expenditure to GDP, and similarly, one could obtain the proportion who keeps management resources expenditures to GDP.



United Nations Sustainable Development Goals (SDGs)

11.4.1 Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed and World Heritage Centre designation), level of government (national, regional and local/municipal), type of expenditure (operating expenditure/investment) and type of private funding (donations in kind, private non-profit sector and sponsorship)

15.a.1 Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems



5C SEEA accounts/tables that use this statistic

The statistics of government environment protection and resource management expenditure is used for the compilation of 'Environmental protection expenditure accounts' (Chapter 4.3.2) and 'Accounts for resource management expenditures' (Chapter 4.3.4) of the SEEA CF.





Many thanks

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