



System of
Environmental
Economic
Accounting

Environmental activity accounts

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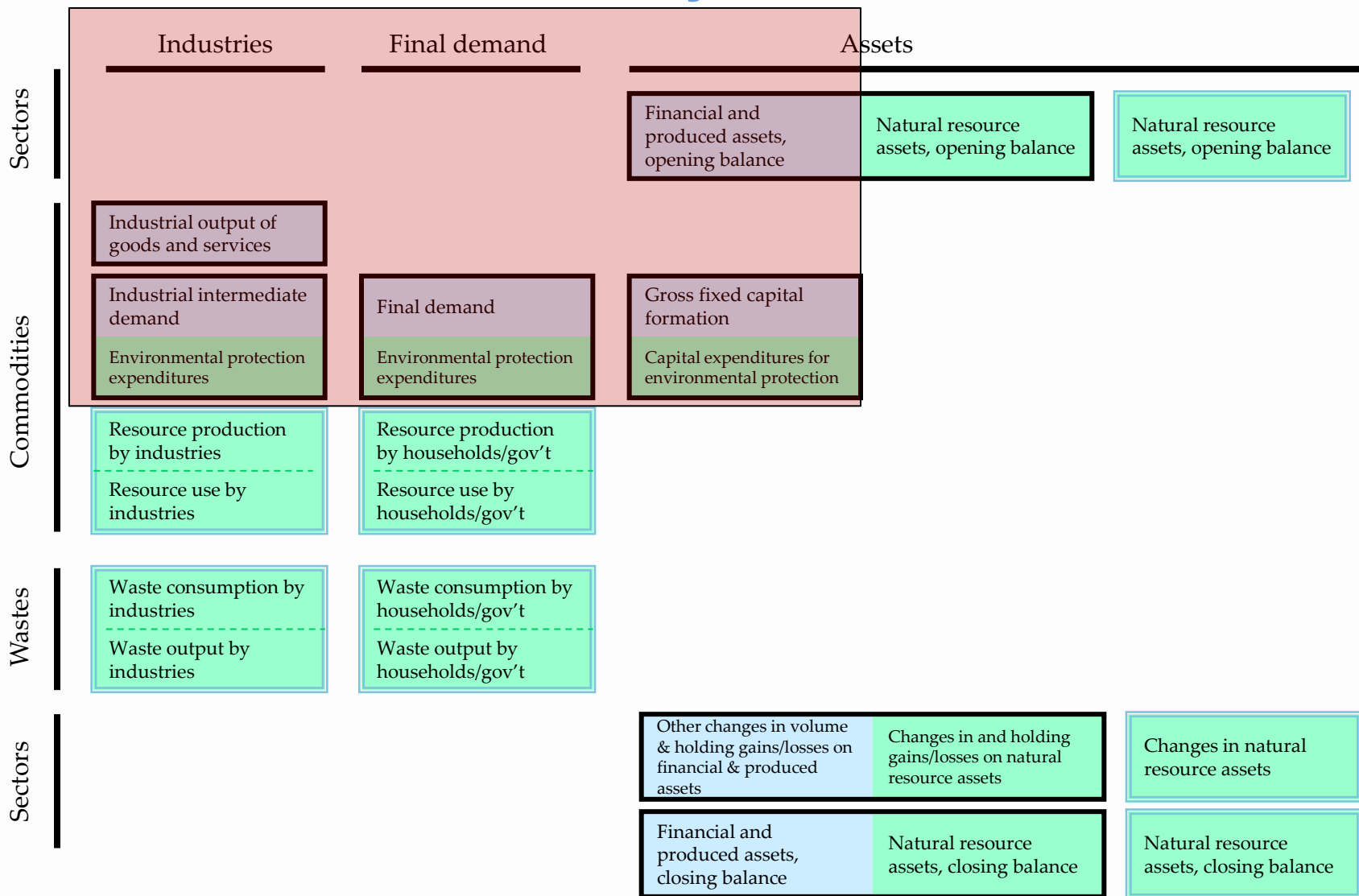
United Nations

Content

- A. What are environmental activity accounts
- B. Scope and definition of environmental activities
- C. Environmental Goods and Services Sector (EGSS)
- D. Exercise

A. Environmental activity accounts

Environmental activity accounts



Why environmental activity accounts in SEEA

- Identify economic transactions within the SNA that may be considered environmental
 - > Concern activity undertaken to preserve and protect the environment
 - > Record government efforts to influence the producers and consumers behaviour with respect to the environment (e.g. taxes and subsidies)
- Recognize environmental transactions and provides appropriate definitions and accounts for the organization of information on environment

Environmental activity accounts in SEEA-CF

- Environmental protection expenditure accounts (EPEA)
- Environmental goods and service sector (EGSS)
- Environmental taxes
- Environmental subsidies and similar transfers
- Environmental permits

Activity/purpose accounts

Monetary flow accounts	<i>Topics covered (detailed definition)</i>
Environmental protection expenditure accounts (EPEA)	Output of EP services in economy and expenditures on EP goods and services by resident units (CF 4.45)
Resource use and management accounts (RUMEA)	Production, supply and use, expenditures on and financing of resource management (CF 4.121)
Environmental goods and services sector (EGSS)	Characteristics of all producers of products intended for environmental protection and resource management (CF 4.95)
Environmentally related payments by government	Environmental subsidies, social benefits to households, investment grants and other current and capital expenditures (CF 4.138)
Environmentally related payments to government	Environmental taxes (taxes on products, production and income; other current taxes and capital taxes) and other payments to government (rent, sales of some goods and services, some fines and penalties) (CF 4.149, CF 4.159)
Permits and licenses to use environmental assets	Permits to extract and harvest natural resources (CF 4.174)
Emissions permits	Permits for the use of the environment as a pollution sink (emissions permits) (CF 4.182)
Costs related to termination of fixed assets	Environmental consequences of disposing of fixed assets (nuclear power plants, oil rigs and other equipment, landfills, mines, etc.) (CF 4.194)

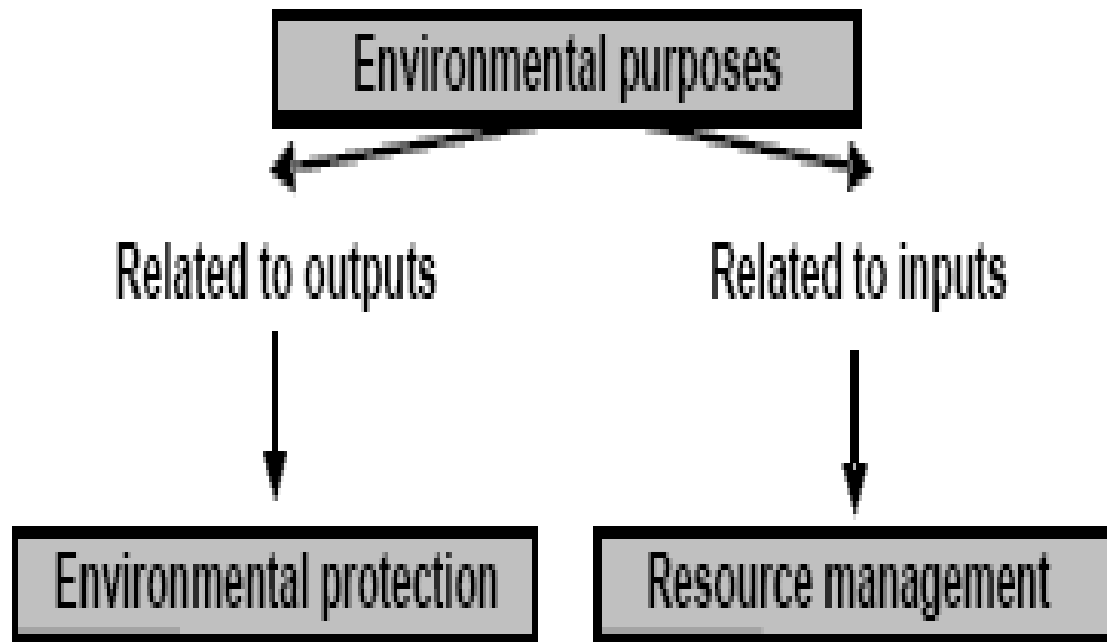
B1. Environmental protection and resources management activities

Scope of environmental activities

- **The scope of environmental activities** *include those economic activities whose primary purpose is to reduce or eliminate pressures on the environment or to make more efficient use of natural resources.*
 - Environmental protection
 - Resource management
- **Primary purpose criterion**
 - > Environmental Protection (EP)
 - Primary purpose : prevention, reduction and elimination of pollution and other forms of degradation of the environment
 - > Resource Management (RM)
 - Primary purpose : preserving and maintaining the stock of natural resources and hence safeguarding against depletion

Concept of primary purpose

- The concept of primary purpose matters in classification of environmental activities
- Many environmental activities are multi-purpose
- Environmental activities
 - > Classified according to primary purpose
 - > Primary purpose must be applied to particular transactions as recorded in the accounts
 - > In determining the primary purpose, a variety of motivation for undertaking the activity may be relevant



Exercise

- Please state whether the following are environmental protect or resource management activities

Activities	Environmental Protection	Resource Management
Treatment of wastewater		
Collection and transportation of waste		
Water recycling		
Construction of anti- noise facilities		
Tree planting		
Monitoring the air quality		
Data collection on natural resource		

B2. Classification of Environmental Activities (CEA)

Classification of Environmental Activities (CEA)

- Functional classification used to classify environmental activities, environmental products, and environmental expenditures and other transactions
- Structured into 2 groups
 - > Environmental protection
 - > Resource management

Classification of environmental activities

Group	Classes
I: Environmental protection (EP)	1 Protection of ambient air and climate
	2 Wastewater management
	3 Waste management
	4 Protection and remediation of soil, groundwater and surface water
	5 Noise and vibration abatement (excluding workplace protection)
	6 Protection of biodiversity and landscapes
	7 Protection against radiation (excluding external safety)
	8 Research and development for environmental protection
	9 Other environmental protection activities
II: Resource management (RM)	10 Management of mineral and energy resources
	11 Management of timber resources
	12 Management of aquatic resources
	13 Management of other biological resources (excluding timber and aquatic resources)
	14 Management of water resources
	15 Research and development activities for resource management
	16 Other resource management activities

Classification of Environmental Activities

- Structure

- First group – Environment Protection
 - > Classified by environmental domain such as air, waste, and water
- Second group – Resource Management
 - > Classified by types of resources such as mineral and energy resources, timber resources and aquatic resources
- Activities that are broad ranging are allocated to classes at the end of each group
 - > E.g. Management and research

Classification of environmental activities

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I: Environmental protection (EP)	1 Protection of ambient air and climate
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	13 Management of other biological resources (excluding timber and aquatic resources)
	14 Management of water resources
	15 Research and development activities for resource management
	16 Other resource management activities

By environmental domains

By resources types

CEA – a particular boundary issue

- Treatment of activities associated with
 - > Energy production from renewable sources
 - > Energy saving
- The principle of allocation of these activities should be based on primary purpose
- However, in some cases there may be analytical interest in classifying such activities under resource management, regardless of the primary purpose, to facilitate international comparison

Classification – Research agenda

- Further testing and development of these classes is required
 - > Part of the SEEA Central Framework research agenda
- Specifically, the CEA with regard to resource management activities

B3. Other environmentally-related economic activities

Other environmentally-related economic activities

- Involves the extraction, harvesting and abstraction of natural resources, including exploration and development
- of particular importance in the compilation of environmental asset accounts

• Other economic activities related to the environment

1. Natural resource use activities
2. Activities associated with the minimization of the impact of natural hazards
3. Activities aimed at avoiding or treating damage resulting from an already polluted area

- These activities are **not** considered environmental but may of particular interest in environmental assessment and development of environmental policy

Of particular interest in

- understanding the economic response to natural hazards
- Providing indicators of the economic impacts of changes to landscape and water systems, including environmental changes due to climate change

Little development of functional classifications or accounts in this area

Examples include expenditure/activity

- Associated with avoiding local noise of air pollution by moving house
- On cleaning and restoring buildings damaged by air pollution
- Hospital treatment for people adversely affected by poor quality environments

These activities/expenditure relate to protecting and managing the impact of environmental changes on people and produced assets rather than protecting and managing the environment itself.



Exercise:

Which of the following activities are environmental?

- Installation of solar panels to generate electricity
- Buying equipment to measure pollution
- Buying an apartment in an area with less pollution
- Buying mercury free batteries

C1. Environmental Goods and Services Sector (EGSS) - Concepts

EGSS

- **Supply side** of environmental activities → production of environmental goods and services
- **Aim:** assessing the contribution of EGSS to the total economy and its employment potential
- **Key indicators:**

Total production, total employment, total value added, total exports, total gross fixed capital

Scope

The EGSS consists of producers of all environmental goods and services → Thus, all products that are produced, designed and manufactured for purposes of environmental protection and resource management are within scope of the EGSS.

- Environmental specific services, connected products, adapted goods and environmental technologies
- 'Main purpose' criterion (technical nature of product or activity / intension of the producer)

Four types of environment goods and services in EGSS

1. Environment specific services
2. Environmental sole-purpose products
3. Adapted goods
4. Environmental technology
 - > End-of-pipe (pollution treatment) technologies
 - > Integrated (pollution prevention) technologies

1. Environmental specific services

- Environmental specific services comprise environmental protection and resource management that are “characteristic” of those activities
- They are environmental protection and resource management specific services produced by economic units for sale or own-use
- Examples
 - > Water and wastewater management and treatment services, energy and water saving activities

1. Environmental specific services (contd.)

- Services that have main purposes of
 - i. Preventing or minimizing pollution, degradation, or natural resources depletion (including the production of energy from renewable sources)
 - ii. Treating and managing pollution, degradation, and natural resource depletion
 - iii. Repairing damage to air, soil, water, biodiversity, and landscape
 - iv. Carrying out other activities such as measurement and monitoring, control, research and development, education, training, information, and communication related to environmental protection or resource management

2. Environmental sole-purpose products

- Environmental sole-purpose (connected) products are goods or services
 - > whose use directly serves an environmental protection and resource management purpose, and
 - > that have no use except for environmental protection or resource management
- Examples
 - > Catalytic converters, septic tanks, installation of renewable energy production technology

3. Adapted goods

- Adapted goods are goods
 - > that have been specifically modified to be more “environmental friendly” or “cleaner” and
 - > whose use is therefore beneficial for environmental protection and resource management
- For EGSS purpose, they are either:
 - i. Cleaner goods – that help to prevent pollution
 - ii. “Resource efficient” goods – that help prevent natural resource depletion in the production and/or in the use stage

3. Adapted goods (contd.)

- Examples
 - > Mercury-free batteries, hybrid cars, recycled paper and renewable energy, solar panels, water saving devices
- Environmental protection and resource management purpose are not the primary reasons for the production of adapted goods
 - > E.g. The primary purpose for a manufacturing bus with lower emission is transportation

4. Environmental technologies

- Environment technologies are technical processes, installations and equipments (goods), methods or knowledge (services) whose technical nature or purpose is environmental protection or resource management
- Two types
 - i. End-of-pipe (pollution treatment) technologies
 - ii. Integrated (pollution prevention) technologies

4. Environmental technologies (contd.)

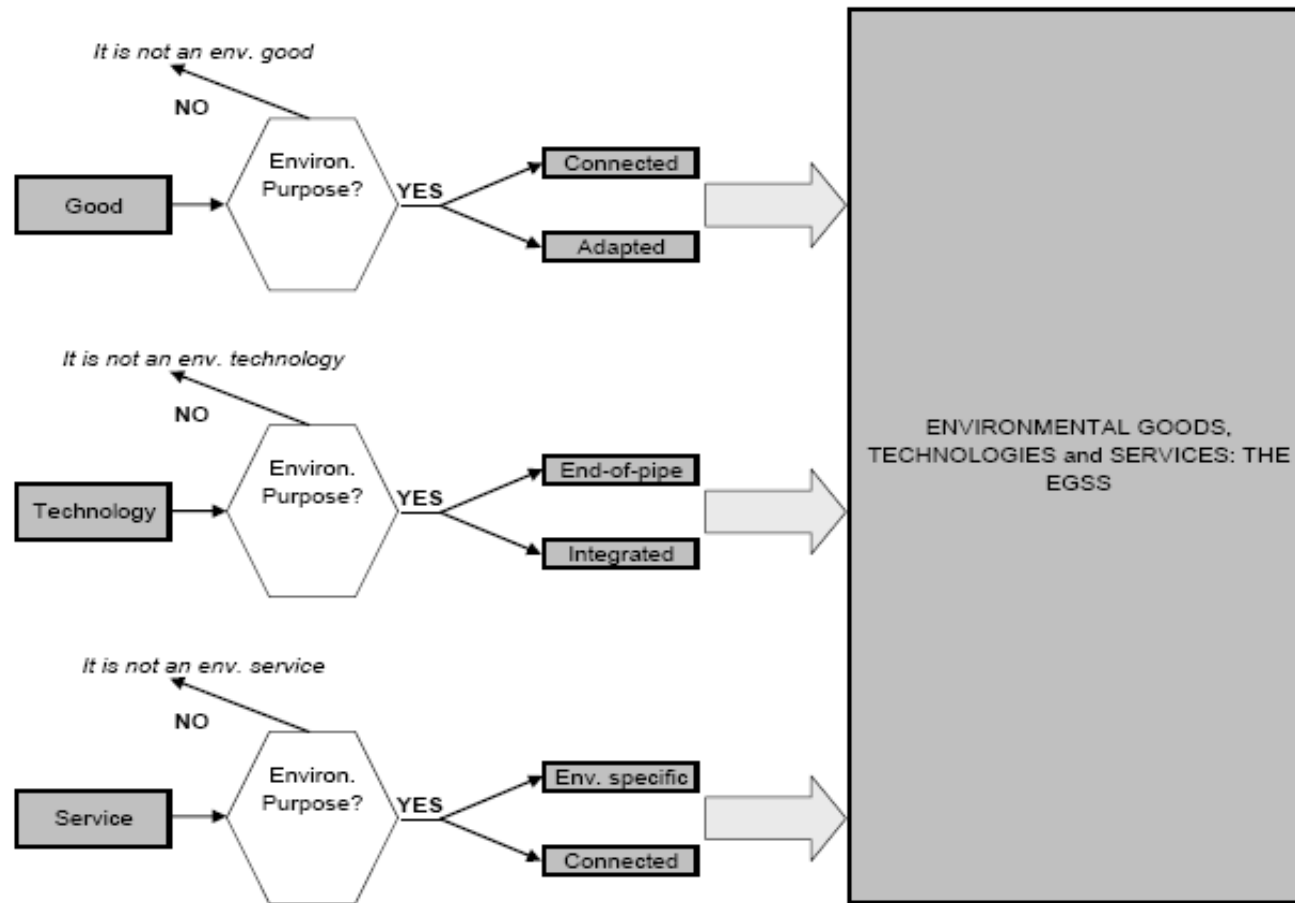
- i. End-of-pipe (pollution treatment) technologies
 - > Technical installations and equipment produced for measurement, control, treatment and restoration/correction of pollution, environmental degradation , and/or resource depletion
 - > Examples:
 - plants to treat sewage, equipment to measure air pollution, facilities for the containment of high-level radioactive
- ii. Integrated (pollution prevention) technologies
 - > Technical process, methods or knowledge used in production process that are less polluting and less resource intensive than the equivalent “normal” technology used by other producers
 - > Their use is less environmentally harmful than relevant alternatives

Exclusion from the scope of EGSS

Exclude goods and services for the purpose

- primarily for technical, human, and economic needs or that are requirement of health and safety
- Related to minimizing the impact of natural hazards and those related to the extraction, mobilization and exploitation of natural resources

Environmental technologies, goods and services within the scope of EGSS



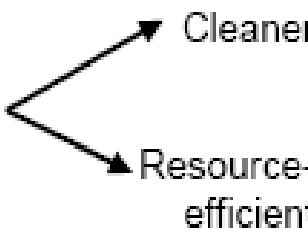
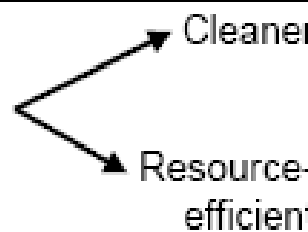
		Environmental Protection	Resource Management
Technologies	<i>Integrated</i> 	Cleaner	X
		Resource-efficient	
	<i>End-of-pipe</i>	X	X
Goods	<i>Adapted</i> 	Cleaner	X
		Resource-efficient	
	<i>Connected</i>	X	X
Services	<i>Environmental specific</i>	X	X
	<i>Connected</i>	X	X

Figure 2.3. Environmental and Resource Management Impacts of Technology, Goods and Services

C2. Environmental Goods and Services Sector (EGSS) – Example

Methodology: activity approach versus product approach

- **Product approach:** → Identify environmental goods and services in source data
- **Activity approach:** → Identify environmental activities in source data
- **Data sources:** surveys (new or already existing), statistics, SNA, external reports
- **Examples: EGSS in Netherlands:**
 - > Many different environmental activities have been identified by Statistics Netherlands as EGSS activities
 - > For every activity a specific methodology has been developed in order to compile the data

Overview: activities in EGSS

- 1) Sewage and refuse disposal services (ISIC 37-39)



- 2) Recycling (ISIC 38.3)



- 3) Wholesale in waste and scrap



Overview: activities in EGSS

4) Renewable energy production



5) Production of energy saving and sustainable energy systems



6) Insulation activities

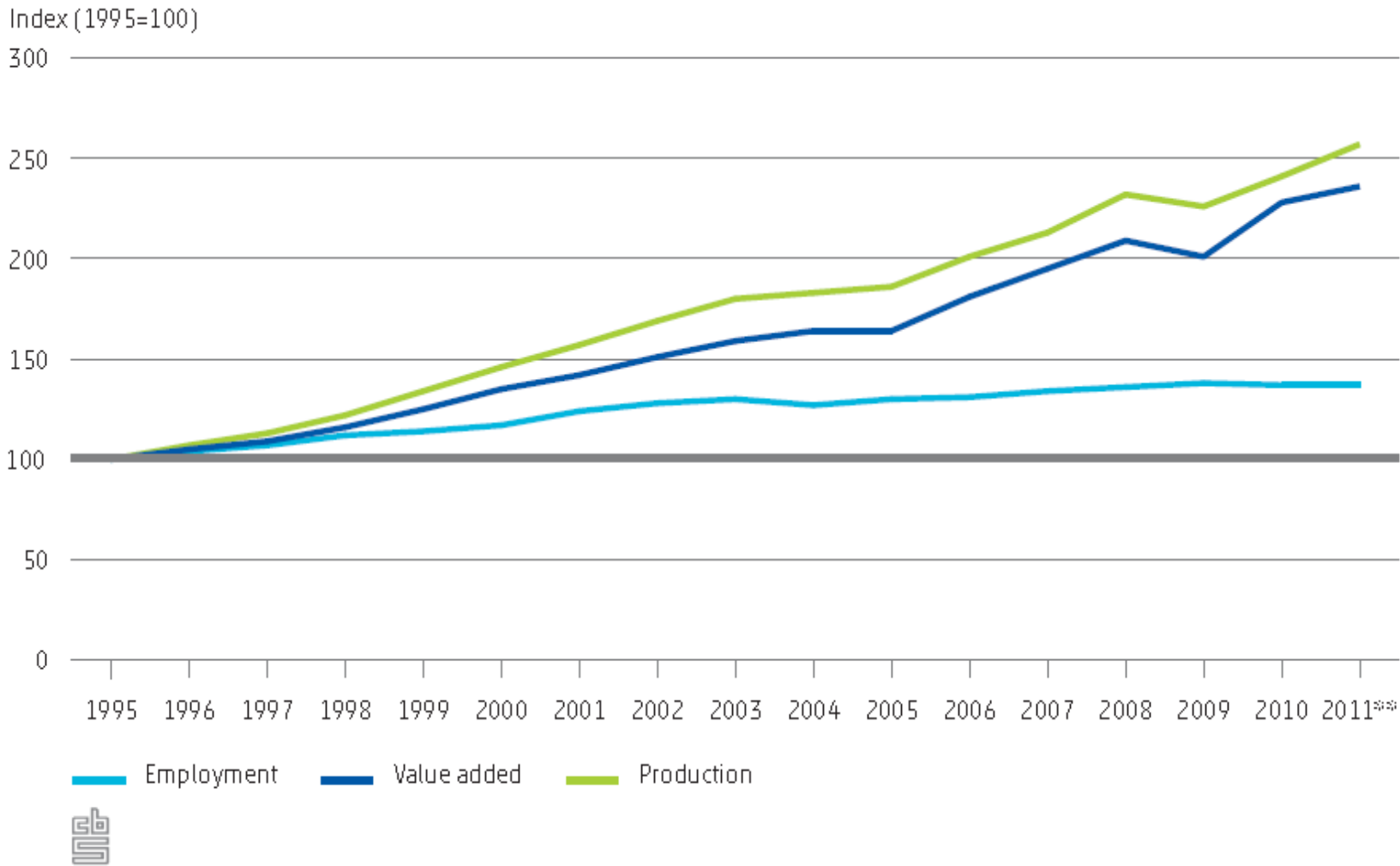
Overview: activities in EGSS

- 7) Production of environmental equipment
- 8) Environmental advise, environmental engeneering
- 9) Environmental technical Construcion
- 10) Environmental related inspection
- 11) Second hand shop
- 12) Organic agriculture
- 13) Own account activities
- 14) Government governance related to the environment
- 15) Environmental non profit organisations
- 16) Environmental education

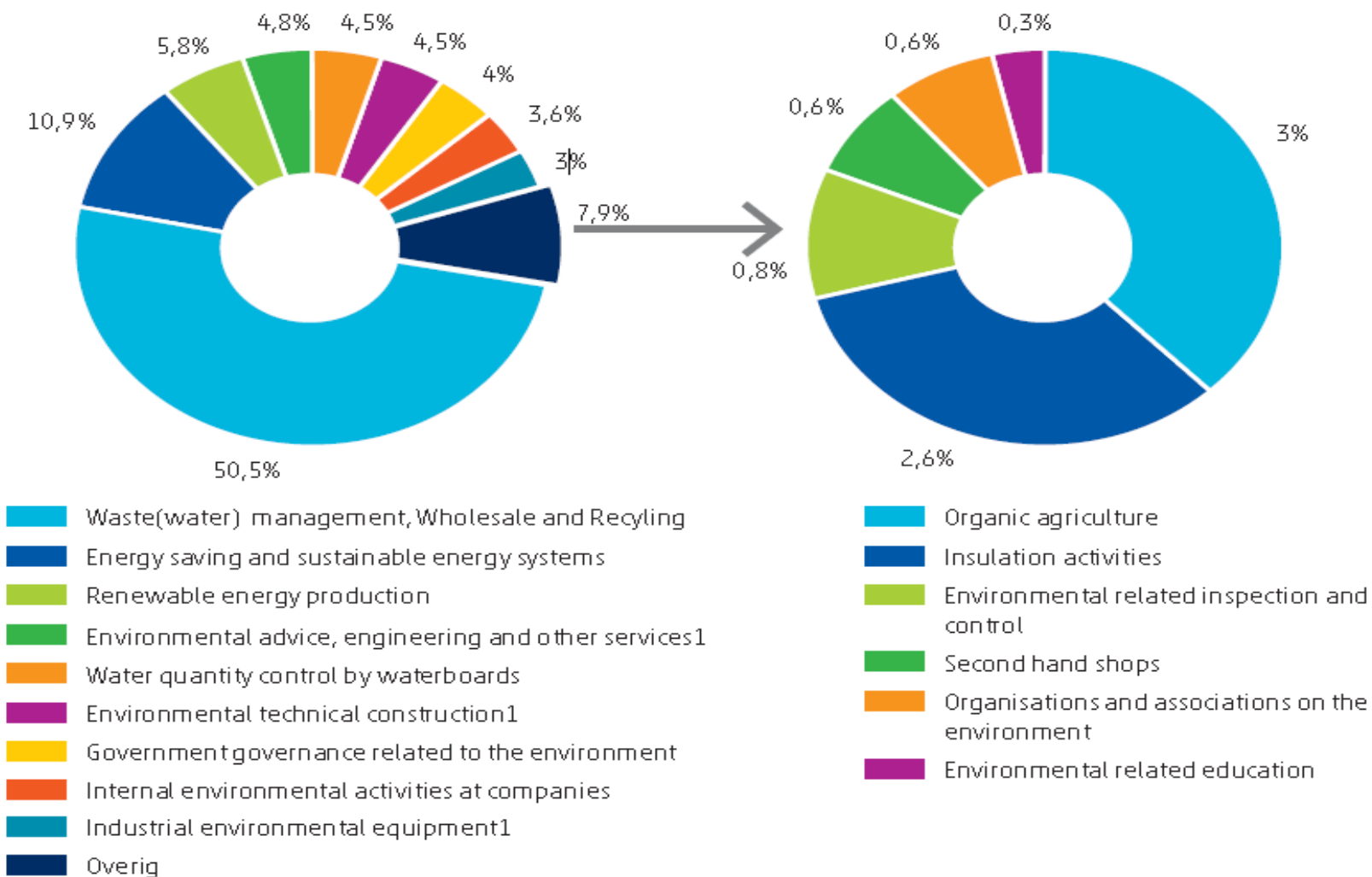
Example: Environmental Goods and Services Sector (EGSS) in Netherlands

Activity	Main source
Sewage and refuse disposal services	National accounts, supply and use tables
Wholesale in waste and scrap	National accounts, supply and use tables
Environmental related inspection and control	Employment registers
Government governance related to the environment	Environmental Statistics, EPE statistics
Organisations and associations on the environment	Employment registers and business register
Internal environmental activities at companies	Environmental Statistics, EPE statistics
Renewable energy production	Energy Statistics, Renewable energy statistics
Energy saving and sustainable energy systems	Own constructed database and Production Statistics
Insulation activities	National accounts
Organic agriculture	Agriculture statistics, area of organic agriculture
Recycling	National accounts, supply and use tables
Second hand shops	Production Statistics
Water quantity control by waterboards	National accounts, Government accounts
Environmental advice, engineering and other services ¹	Own constructed database and Production Statistics
Industrial environmental equipment ¹	Own constructed database and Production Statistics
Environmental technical construction ¹	Own constructed database and Production Statistics
Environmental related education	Education statistics

Employment, production and value added in the EGSS in Netherlands



Distribution of value added EGSS over different activities in Netherlands, 2011



Many different data sources.....

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Second hand shops	Production Statistics
Water quantity control by waterboards	National accounts, Government accounts
Environmental advice, engineering and other services ¹	Own constructed database and Production Statistics
Industrial environmental equipment ¹	Own constructed database and Production Statistics
Environmental technical construction ¹	Own constructed database and Production Statistics
Environmental related education	Education statistics

Most important data sources

- **SNA** data → environmental services
- Own constructed data base of environmental companies plus **production statistics** (PRODCOM), international trade statistics etc.
- Government statistics
- Agricultural statistics
- Labour registers
- EPEA

Some key issues.....

- International comparison data
 - Scope
 - Methodology
 - Data sources
 - The more effort, the larger the EGSS ?
- Cleaner goods / resource efficient goods
- Integration in EPEA / ReMEA
- Dissemination of the results

Acknowledgement

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THANK YOU

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