Environmental Protection Expenditure Accounts Introduction

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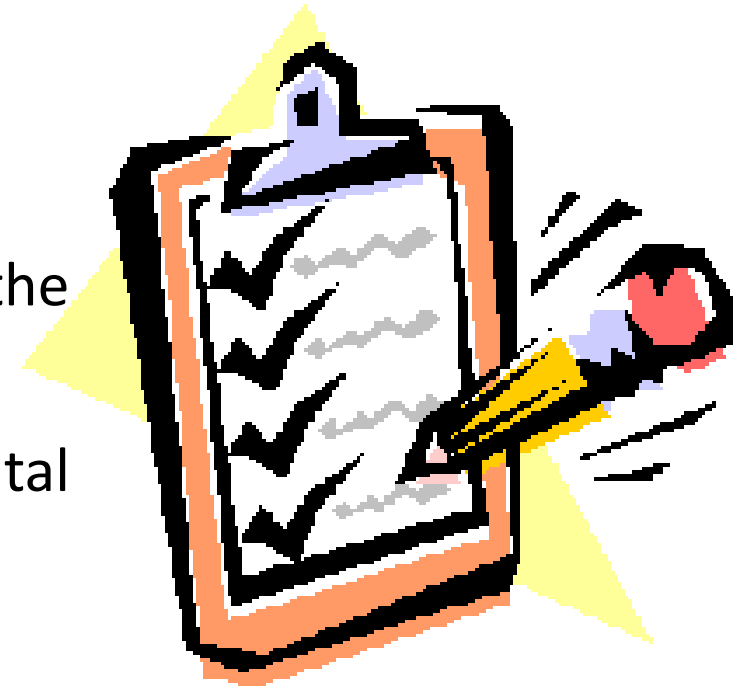
Outline

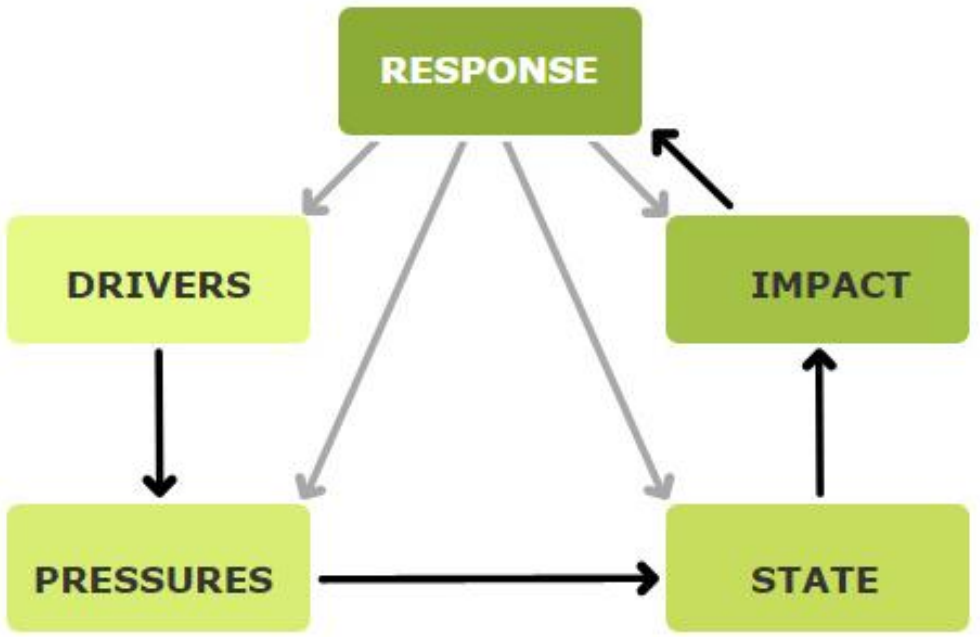
- Drivers – Pressures – State – Impact – Response (DPSIR) Framework
- What is environmental accounts?
- Types of SEEA-CF Accounts
- What are the building blocks of the foundation for SEEA-CF
- What can you do with environmental accounts?



DPSIR framework

Drivers – Pressures – State – Impact - Response (DPSIR)

Social and economic developments (drivers) exert pressure on the environment and, as a consequence, the state of the environment changes.



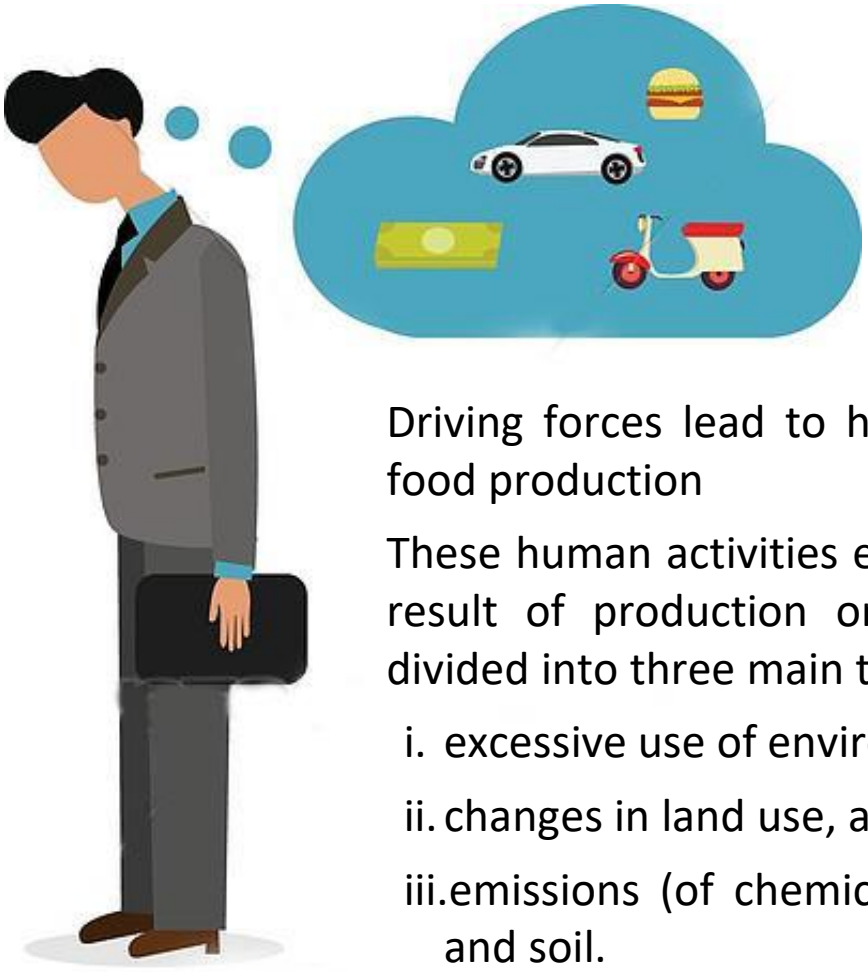
DPSIR framework

According to the DPSIR framework there is a chain of causal links between

- "driving forces" (economic sectors, human activities)
- "pressures" (emissions, waste)
- "states" (physical, chemical and biological)
- "impacts" on ecosystems, human health and functions,

eventually leading to political "responses" (prioritization, target setting, indicators).

DPSIR framework



A “driving force” is a need.

- Primary: shelter, food and water
- Secondary:mobility, entertainment and culture

Driving forces lead to human activities such as transportation or food production

These human activities exert “pressures” on the environment, as a result of production or consumption processes, which can be divided into three main types:

i. excessive use of environmental resources,

ii. changes in land use, and

iii. emissions (of chemicals, waste, radiation, noise) to air, water and soil.

DPSIR framework

As a result of pressures, the “state” of the environment is affected; that is, the quality of the various environmental compartments (air, water, soil, etc.)

The “state of the environment” is thus the combination of the physical, chemical and biological conditions.

DPSIR framework

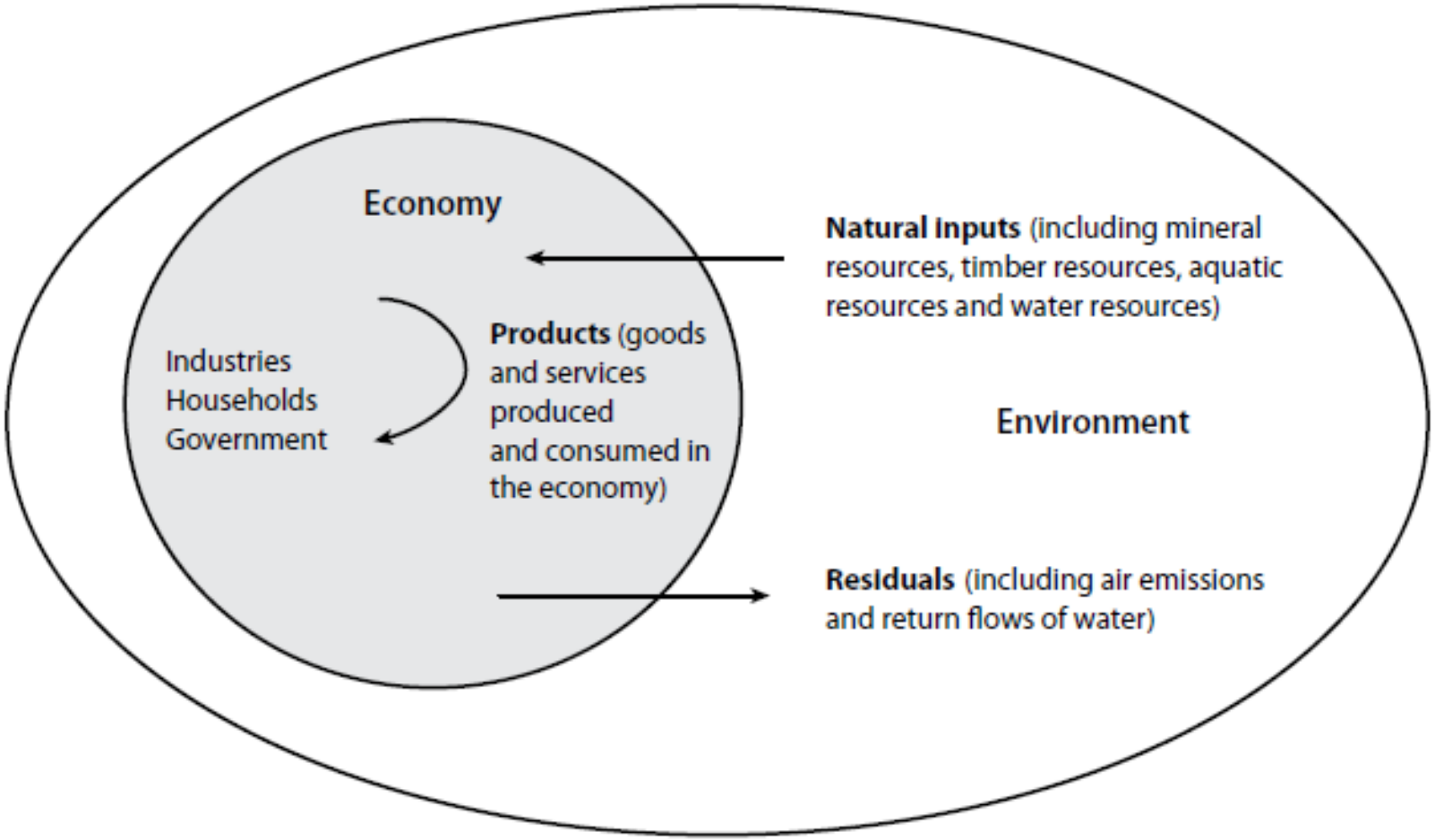
- The changes in the physical, chemical or biological state of the environment determine the quality of ecosystems and the welfare of human beings.
- In the state may have environmental or economic 'impacts' on the functioning of ecosystems, their lifesupporting abilities, and ultimately on human health and on the economic and social performance of society.

DPSIR framework

A “response” by society or policy makers is the result of an undesired impact and can affect any part of the chain between driving forces and impacts.

- Taxes
- Fees/charges
- Deposit schemes (for example, for bottles, cars)
- Regulations
- Voluntary agreements in reduction of emissions
- Emissions trading systems (SO_2 and CO_2)
- Subsidies

What is environmental accounts?



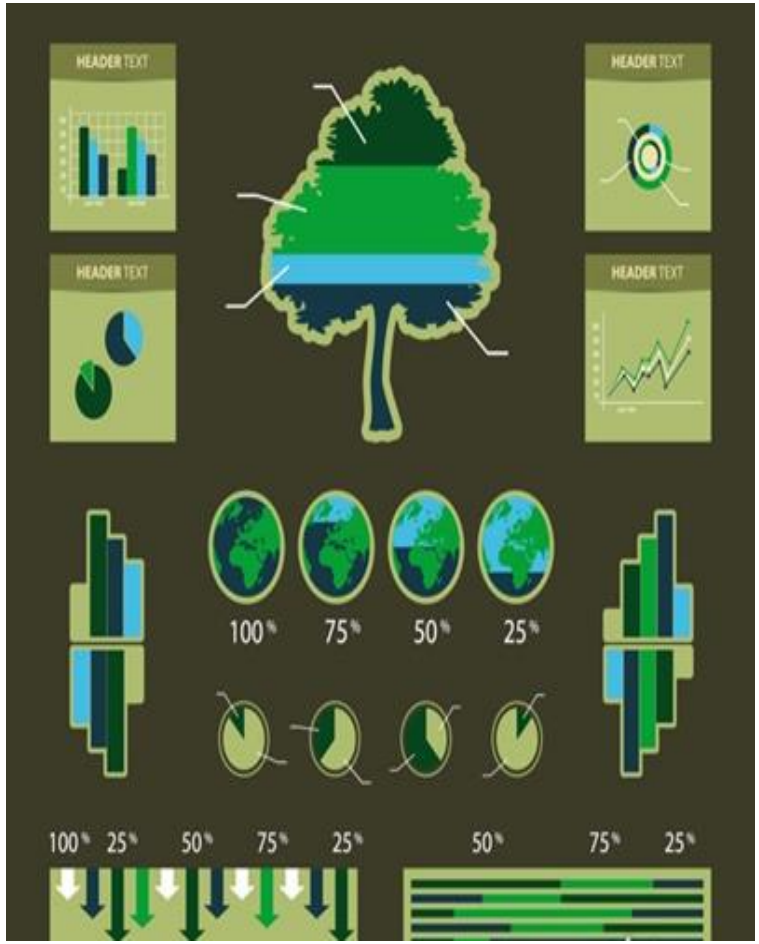
What is environmental accounts?

Environmental Accounts;

- Brings together 2 areas of statistics: Economic statistics and environment statistics
- Identifies the “environment” already included in existing statistics
- Connect the environmental consequences to the economic activity – at a detailed industry level – to allow further analyses

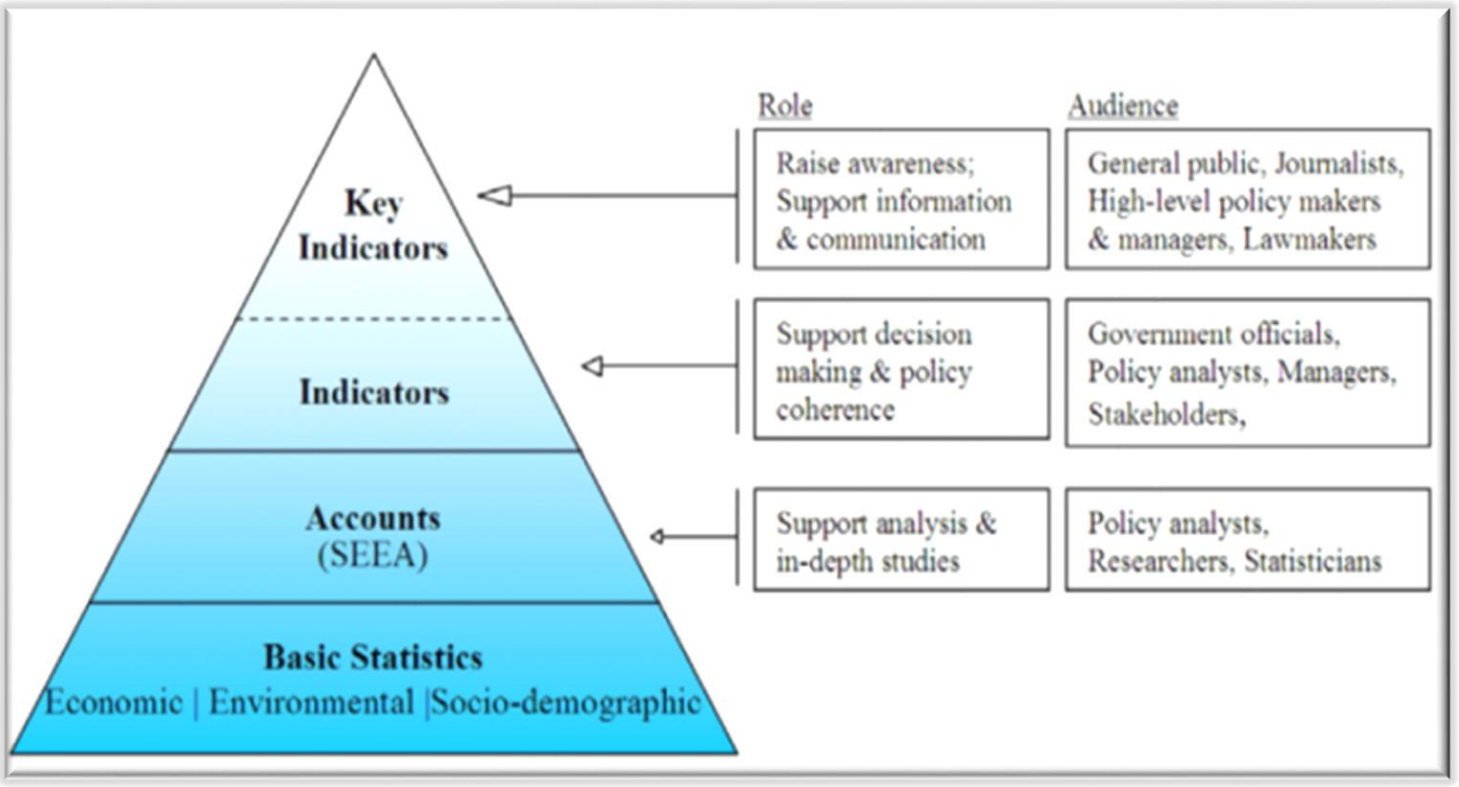
What is environmental accounts?

- Assemble data from primary statistics e.g. structural business statistics, transport, agriculture, surveys etc.
- Adjust data to align with national accounts concepts
- Enrich basic environmental and economic statistics through common framework to measure the contribution of the environment to the economy and the impact of the economy on the environment



What is environmental accounts?

Support the development and monitoring of the environmental policies.



What is environmental accounts?

National accounts (NA, macroeconomic accounts)

- Statistics focusing on the structure and evolution of economies (region, a country, group of countries)
- Describe and analyze, in an accessible and reliable way, the economic interactions (transactions) within an economy
- There are an almost unimaginable large number of transactions

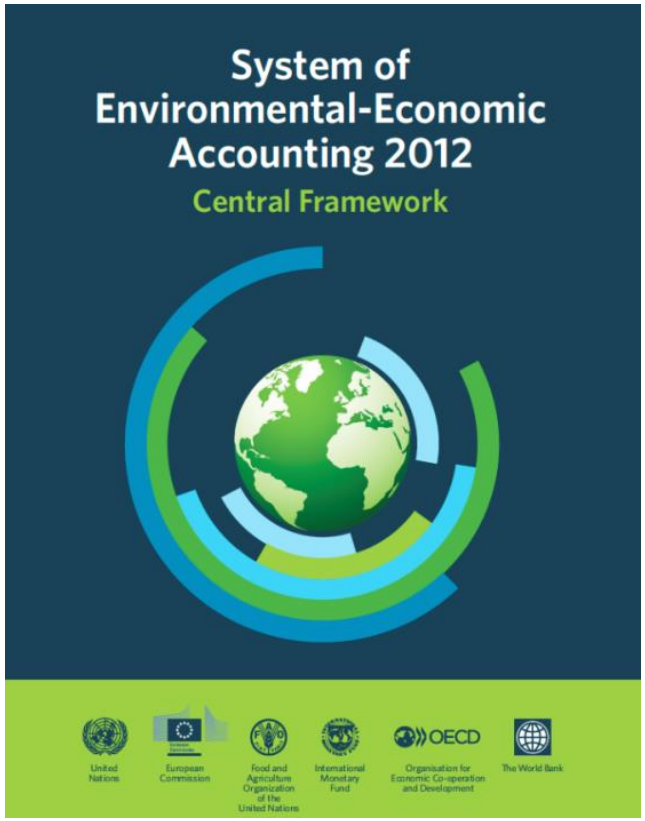
What is environmental accounts?

National accounts (NA, macroeconomic accounts)

- Provide systematic and detailed economic data useful for economic analysis to support the development and monitoring of policy-making
- Serve as the foundation of a broader statistical system. This is the case for social and economic statistics in general, and for **satellite accounts** in particular

Types of SEEA-CF accounts

- Physical flow accounts
- Monetary (flow) accounts
- Asset accounts – both physical and monetary
- "Hybrid" / "NAMEA" / "Combined"
  - Where physical flows are connected to economic data



Types of SEEA-CF accounts

Physical Flow Accounts:

- Energy
- Water
- Air emissions
- Economy-wide material flows

Types of SEEA-CF accounts

Monetary environmental accounts

- Environmental protection expenditure account (EPEA)
- Environmental goods and services sector accounts (EGSS)
- Environmental taxes by economic activities (ETEA)
- Environmental subsidies and similar transfers (ESST)
- Resource management expenditure account (ReMEA)

Types of SEEA-CF accounts

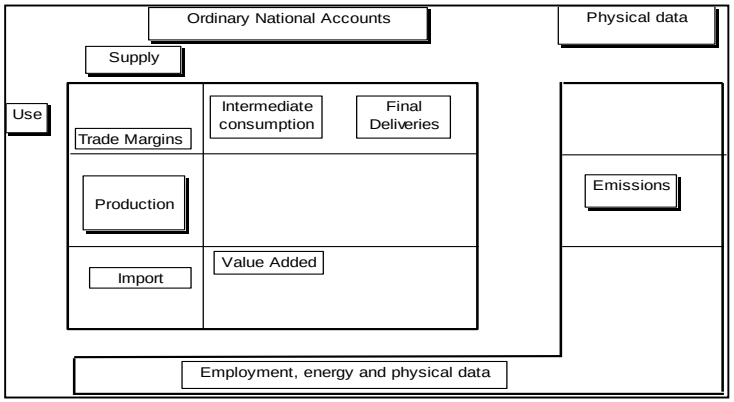
Natural Capital Assets: Calculate values of natural resources (minerals, energy resources, timber, fish, etc.)

- Physical asset accounts
- Convert from physical units to monetary units by assigning a value to the estimates of the stocks/reserves of physical natural resources using net present value calculations

Types of SEEA-CF accounts

"Hybrid" or "Combined" or "Integrated" Accounts (also called "NAMEA" in Europe)

- Combines economic data and environment data into integrated data systems
- Typically uses National Accounting Matrix of economic data by industry (often the SUT) and adds environment data around the "NAM"
- NAMEA = National Accounting Matrix including Environmental Accounts



What are the building blocks of the foundation for SEEA-CF

- One of the most important features of the environmental accounts is their capacity to organize and present coherently information in both:
  - physical terms (often for the environment)
  - **monetary terms** (often for the economy)

What are the building blocks of the foundation for SEEA-CF

Why do we need Environmental – Economic *Accounting*?

- Aren't statistics enough?
- Consider an example from economic statistics:

Industry Statistics

- Turnover
- Investment
- Operating costs
- Employment
- Exports

No information on…

- Government expenditures
- Household expenditures

National Accounts

- Integrates statistics from many different sources – covers the whole economy.
- Provides an overall picture – no missing pieces.
- Know what can be found & where in accounts

What are the building blocks of the foundation for SEEA-CF

Statistics are…

- Often developed to answer one particular question or problem.
- Difficult to figure out if all information is included.
- Not always easy to see the whole picture, or how it relates to other things.

What are the building blocks of the foundation for SEEA-CF

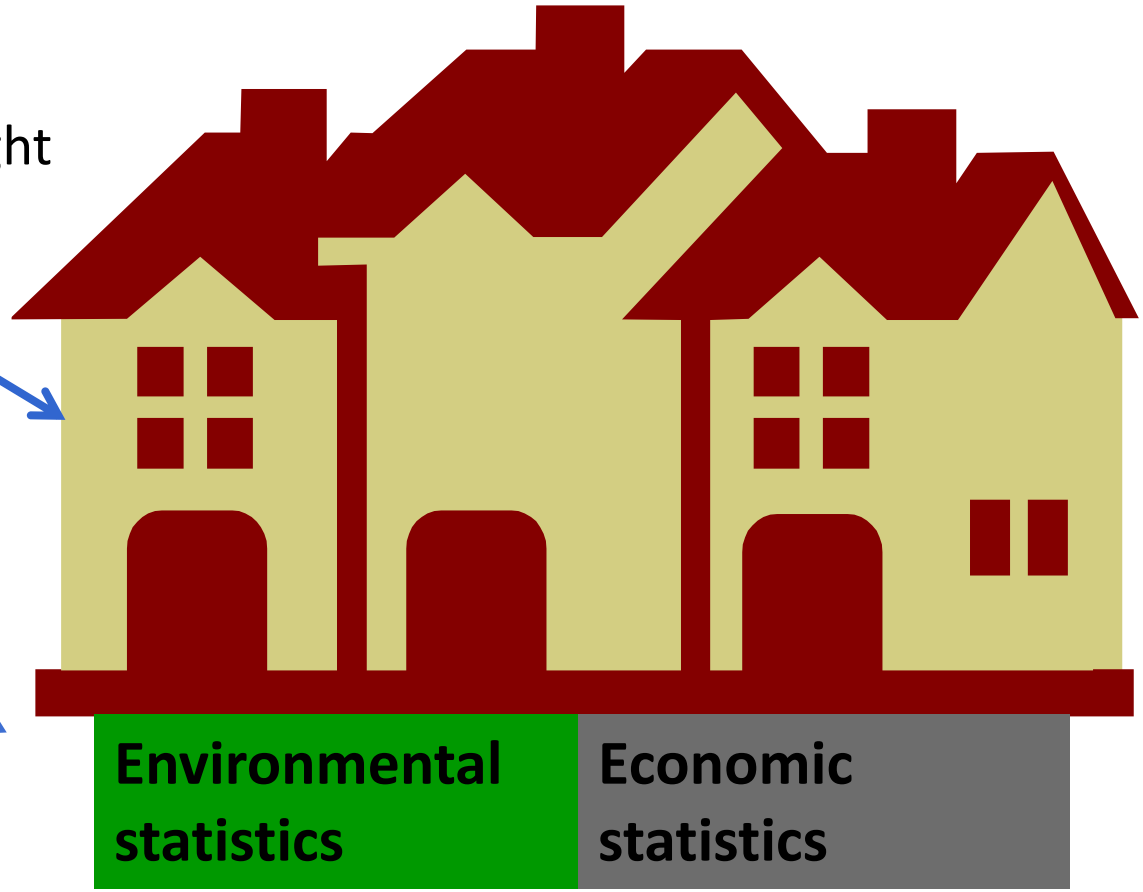
Environmental accounts

- Helps to make sense of the larger picture.
- Helps to identify pieces that are missing
- Can make connections to other statistics - especially economic statistics

What are the building blocks of the foundation for SEEA-CF

If environmental accounts are thought of as a house

These are the foundations



What are the building blocks of the foundation for SEEA-CF

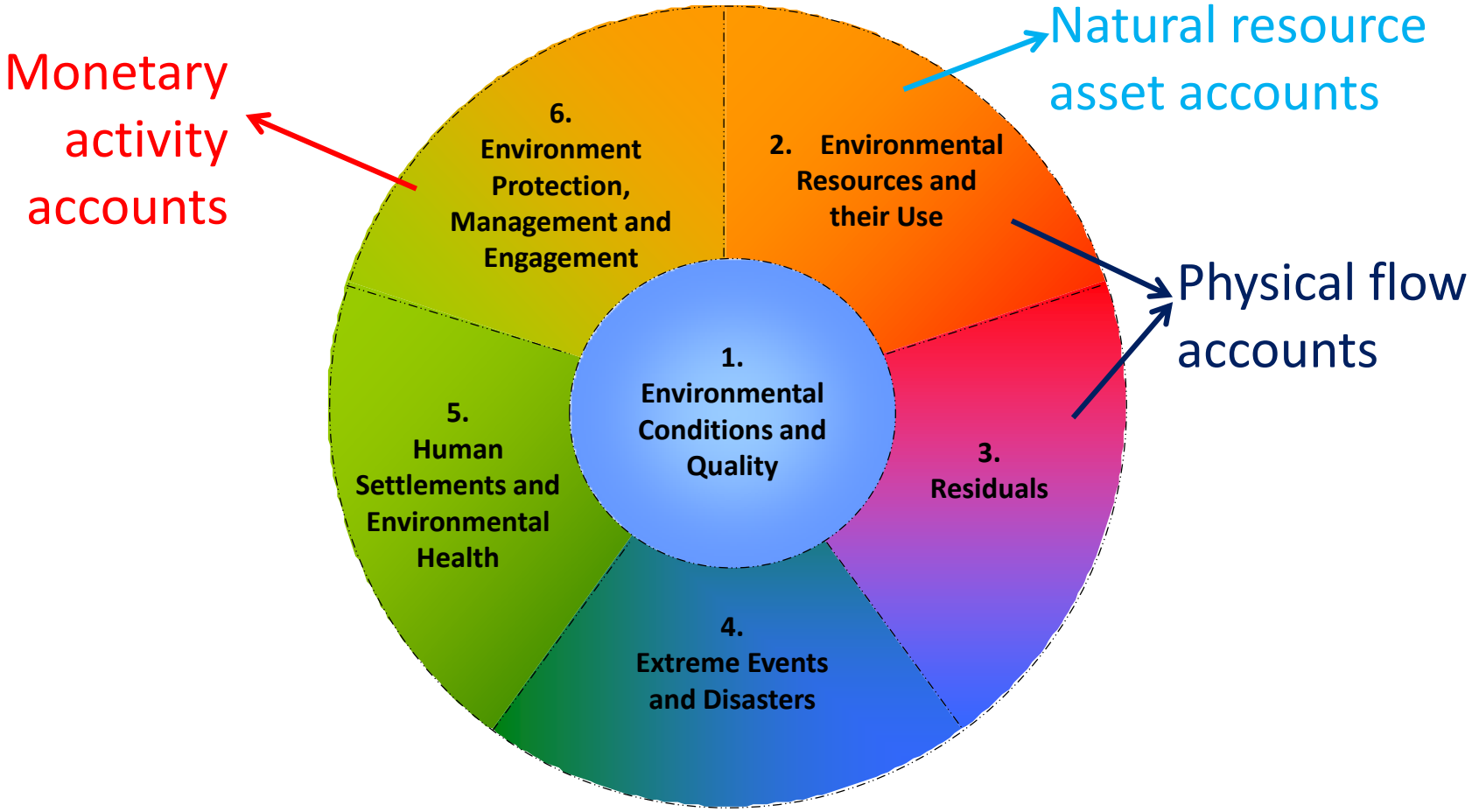
- Information from the national accounts by detailed industry:
  - Value added
  - Intermediate consumption
  - Employment
- Also important are the supply and use Tables – at their most detailed level

What are the building blocks of the foundation for SEEA-CF

Framework for the Development of Environment Statistics (FDES)

- At the center of the FDES: Environmental conditions and quality
- All of the components relate to each other
- Multi-layered (component, sub-component, topic, individual statistics)

What are the building blocks of the foundation for SEEA-CF



What are the building blocks of the foundation for SEEA-CF

Challenges…

Lack of data and/or details

- Not enough detail in the national accounts
- Details lost or not obtained from source data
- Need to implement COFOG and use other relevant classifications when collecting data and producing statistics

What can you do with environmental accounts?

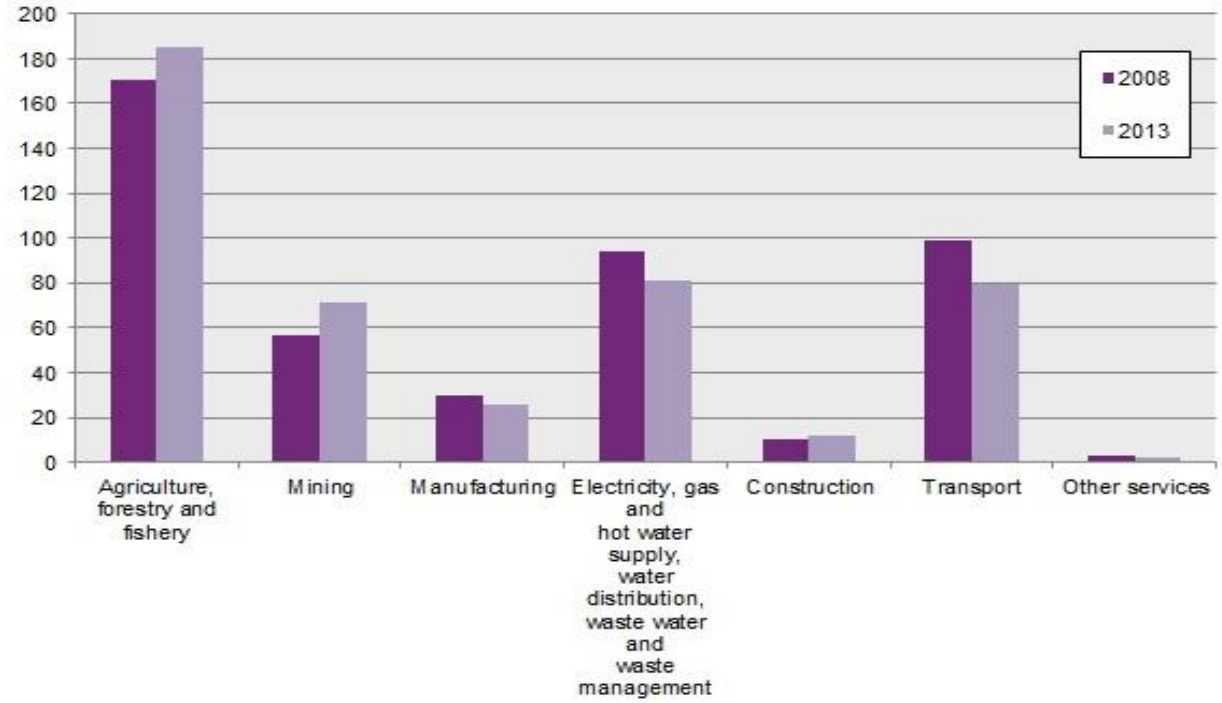
With Environmental - Economic Accounts;

- Indicators
- Analyses
- Statistical tables and graphs

What can you do with environmental accounts?

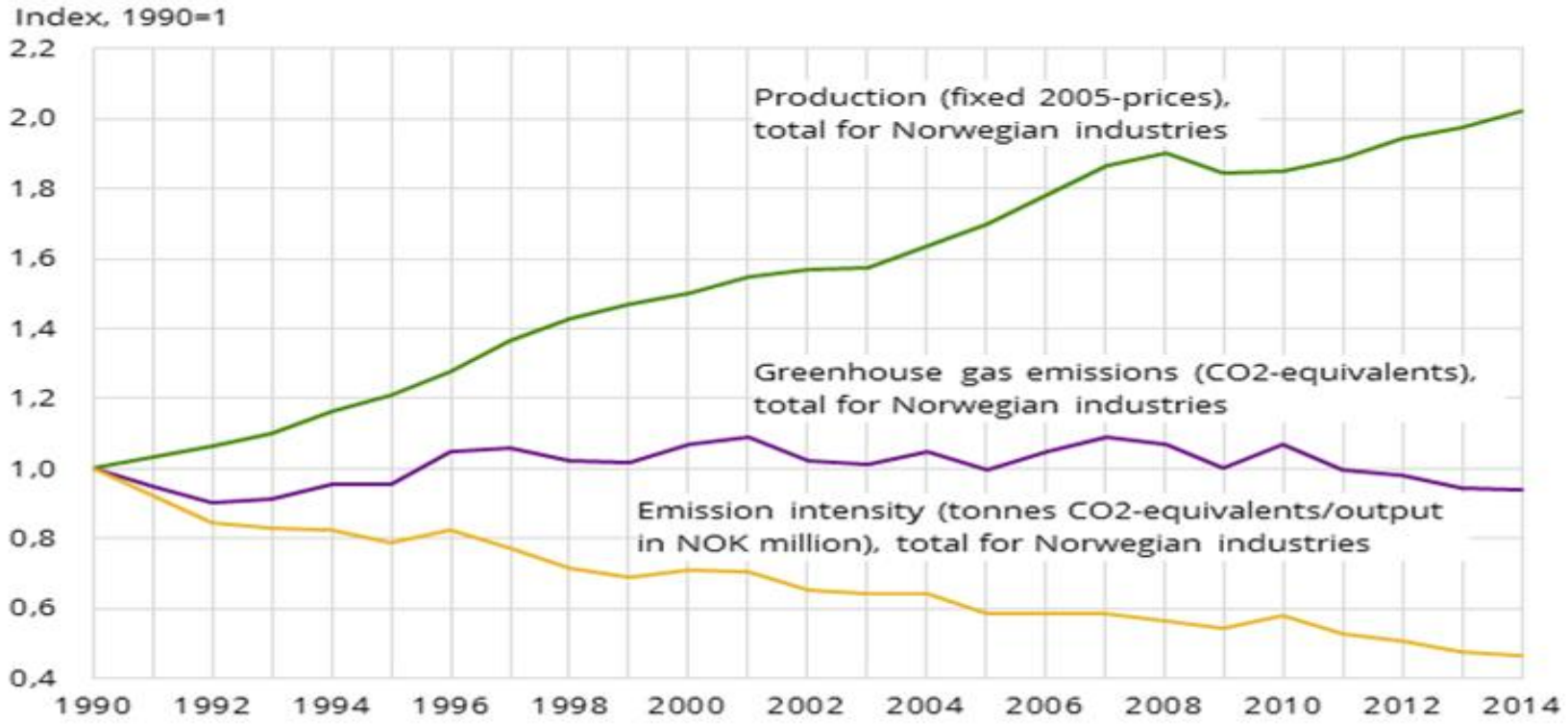
Intensity / Efficiency indicators

Intensities: Emissions of greenhouse gases in tonnes carbon dioxide equivalents per million value added (2010 prices)



What can you do with environmental accounts?

Total greeehouse gas emissions (CO2-equivalents), output (constant 2005-prices) and emission intensity for economic activity (excluding households)



What can you do with environmental accounts?

Main challenge in developing Environmental – Economic Accounts

- Getting the two types of statistics aligned so they can be matched up and connected
- Can seem like solving a jigsaw puzzle

What can you do with environmental accounts?

- Environmental statistics are often classified by geographic areas (municipalities, counties, watersheds, etc.) or non-standard industrial groupings (branches, associations).

BUT…

- Economic statistics are classified by industries (NACE or ISIC)
- Need to convert from geographic areas to industries, **i.e. from «where» to «who» is polluting**

Təşəkkürlər