EXPERT GROUP MEETING ON THE REVISIONS OF THE FRAMEWORK FOR THE DEVELOPMENT OF ENVIRONMENT STATISTICS (FDES)

(New York, 8-10 November 2010)

The interface between core environmental statistics and other information systems: which interaction is important?

The role of sector statistics, environmental monitoring and geographical information systems

Jean-Louis Weber

Special adviser on economic-environmental accounting

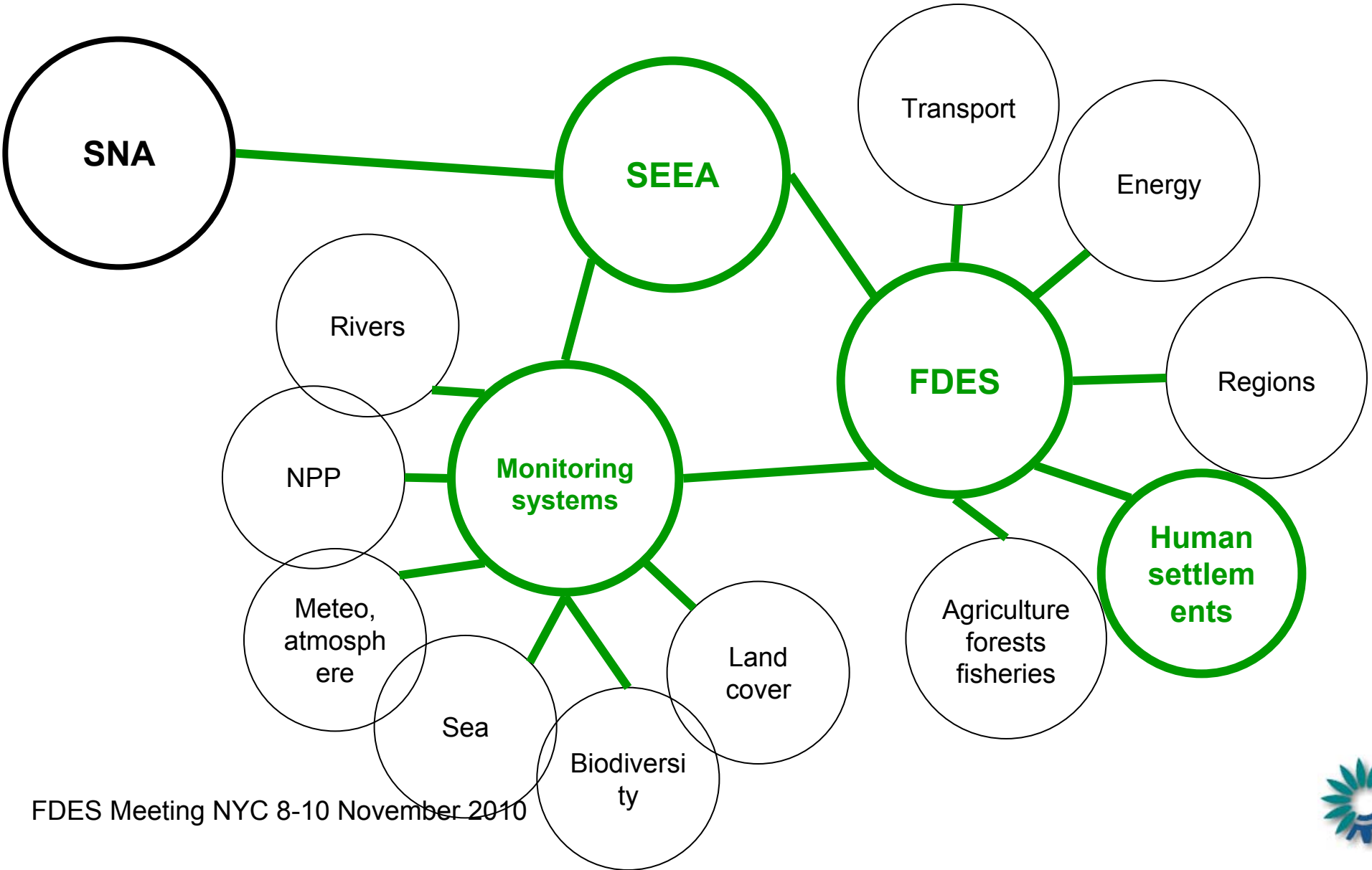
European Environment Agency

The Environment is about interactions…

- Interaction between domains/ subjects/ issues/ policies
- Interaction between statistics and various monitoring networks
- Interactions between statistical domains

- ➔ the FDES as a hub

❑ FDES as a hub


SNA
SEEA
Transport
Energy
Rivers
FDES
Regions
NPP
Monitoring systems
Human settlements
Meteo, atmosphere
Agriculture forests fisheries
Land cover
Sea
Biodiversity

Environmental statistics interact with

1. compliance reporting, national and international
2. monitoring networks and databases
3. scientific programmes and modelling
4. geographical information systems (location and scales…)
5. sector statistics
6. national accounts.

1. Environmental statistics from compliance reporting

- Administrative data, legal basis, QA/QC, policy effect
- Limitations: focus on target values ➔ not always fit for monitoring real environmental trends
- Need to be integrated with other datasets ➔ possible problems (e.g. ratio GHGs/ GDP)

2. Monitoring networks and databases and environmental statistics

- Monitoring networks: much more than compliance data

- 2 strategies for data collection:
  - questionnaires
  - direct extraction/ sampling of monitoring databases (“virtual private networks”)

3. Scientific programmes & modelling and environmental statistics

- Often scientific programmes lack continuity: space or/and time
- But they are unique sources in important domains (e.g. biodiversity…)
- ➔ need for statistical methodologies, standards
  - Stratification and sampling
  - Standard classification for streamlining data collected during research programmes: e.g. SEEA-land use classification, SEEA-land cover classification, Common International Classification of Ecosystem Services…

+ Easy access of environmental researchers/ modelers to socio-economic statistics

4. Geographical information systems and environmental statistics

- GIS technology powerful and accessible (open source); more and more data (not all…) are free ➔ important source for statistics

- Important Earth Observation by satellite programmes, with an in situ monitoring component: GEO/GEOSS

In & out of Europe: ESA, NASA, …, and the Group on Earth Observation

Earth observation programmes are numerous and deliver abundant data on land over and biomass, as well as many climate change variables. In Europe, ESA and GMES are an important source of data for land & ecosystem accounting.

The GlobCorine project of ESA is aimed at supporting land cover accounting

EO is coordinated at the global level by the **GEO Secretariat** in which participate 81 countries (of which 18 African countries) and the European Commission.

GEO Biodiversity Observation Network
The Group on Earth Observations Biodiversity Observation Network – **GEO BON** – is the biodiversity arm of the Global Earth Observation System of System of Systems (**GEOSS**). Some 100 governmental and non-governmental organizations are collaborating through GEO BON.

Jean-Louis Weber, CBD Conférence, Libreville, 16 Septembre 2010

➔ Statisticians need to express their requests to the EO community (e.g. genuine monitoring of change, annual updates…)

5. Contribution of sector statistics to environmental statistics

- Most, if not all statistical domains contain important information for the environment: population censuses, national accounts (protection expenditure), health, agriculture, forestry, fisheries, transport, local settlements, tourism and other statistics.

- Environmental assessment require some spatial distribution: incl. for sector statistics (e.g. agriculture, forestry, tourism…), regions, grids…

- Possibility to use existing surveys directly or by marginal extensions – 2 examples:
  - Use of household budget surveys
  - Use of agriculture statisitcs

5.a. Use of household budget surveys for environmental statistics

- Household budget surveys are sample surveys broadly used, in particular in developing and transition countries
- HBS can be used beyond their primary purpose (e.g. FAO and food security)
- Example of use of HBS in Moldova, 1999-2001
  - Actual ecological problems of the population of the country,
  - Population's attitude to problems,
  - Level of environment pollution directly caused by households,
  - Use of water resources by type (distribution system, wells…)
  - Volume of consumed water
  - Quality of drinking water
  - Influence of water to human health status.

➔ outcome: revision of the optimistic figures of "access to safe drink water" from 92% down to 66%.

5.b. Agriculture statistics and the environment (1)

Agriculture interacts with the environment in multiple ways:

- soil conservation
- biocapacity
- carbon sequestration
- water use and conservation
- sustainable agricultural landscape
- biodiversity conservation
- conversion of marginal land to agriculture
- conversion of forest to agriculture
- conversion of agriculture land to artificial land cover
- farmland abandonment
- desertification
- dependency from inputs (chemicals, water, labour, genetic resources...)
- dependency from (external) markets
- resilience to pests
- capacity of feeding of local populations

5.b. Agriculture statistics and the environment (2)

- Main areas of agriculture statistics prone at delivering useful data for environmental statistics:

  - **Agriculture (and forest and fisheries) products, yields**
  - **Land use**
  - **Virtual land use and footprint**
  - **Soil resilience**
  - **Water use**
  - **Biodiversity**
  - **External inputs (fertilisers, pesticides, water, energy, genes…)**
  - **Capacity of agro-systems to support healthy populations**

6. National accounts and environmental statistics

- The volume 1 of the SEEA rev. 2012 presents for a large part the SNA satellite account = extraction of environmental flows and assets embedded in SNA tables + physical flows embedded into economic transactions

- The volume 2 on ecosystem capital and valuation will mostly supplement the SNA regarding elements which are for the economy “external” and not valued.

- The way environmental statistics support/ participate in economic-environmental accounting is in the background of FDES

Thank you!

jean-louis.weber@eea.europa.eu

jlweber45@gmail.com