Trends in policy relevant European environmental information systems
Background – recent and current drivers

Shared Environmental Information System (SEIS)

Open Data

Active dissemination

Copernicus

FP5,6,7
Horizon 2020

The „environmental aquis“

Fitness for purpose
e Reporting

INSPIRE

SDGs

Aarhus convention
EEA’s knowledge management based on the MDIAK model

- (M) Monitoring
- (D) Data
- (I) Indicators
- (A) Assessments
- (K) Knowledge, understanding, action

In-situ monitoring, surveys, satellite observations
Local, National, European, Global, statistics
Indicators, environmental accounting, information
Integrated assessments across scales
Communities and academies
Evolution of environmental monitoring, data and indicators – some keywords

MDIAK From monitoring to knowledge

DPSIR Drivers – Pressures – State – Impact - Response

Eionet EEA European network of 39 Member Countries

Copernicus paradigm shift in data availability

large amounts fo data how to stay policy relevant

Open data, INSPIRE ... New infrastructures for data

Reportnet systematic data collections

Indicators one bridge from data to knowledge

Sustainable development Goals Todays new policy driver
Growth in reporting environmental data

Annual number of Reportnet deliveries
(until 21.02.2017)
## EEA’s core set of indicators

<table>
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<tr>
<th>Focus / Type</th>
<th>Driving forces</th>
<th>Pressure</th>
<th>State</th>
<th>Impact</th>
<th>Response</th>
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Systemic assessment and an extended knowledge approach

Systemic analysis further enhanced in SOER 2020

Broaden the base of stakeholder and partners
Part 1

Integrated assessments from a thematic perspective
Environmental acquis

Themes*
Biodiversity & nature
Freshwater
Marine
Climate change
Air pollution
Waste & resources
Chemicals & health

Sectors
Fisheries & aquaculture
Forestry
Agriculture
Energy
Transport
Industry

Human health & well-being

Natural capital

Resource efficiency

Integrated assessments from a cross-cutting perspective
Sectors, 7th EAP objectives, summary assessment

* Alternative option: replace Land & soil with two themes: agri-ecosystems, and forest-ecosystems
Part 2

Context: Europe’s sustainability goals and long-term challenges e.g.
- 7EAP, SDGs
- Global megatrends
- Planetary boundaries

Integrated assessment of priority production-consumption systems
- Resource flows and impacts
- Actors and economic dimensions

Integrated assessment from a cross-cutting systems perspective
- Interactions of systems and GMTs
- Resource nexus
- Governance/knowledge for transitions
The evolution of the EU institutional structure towards a knowledge approach

Environment *acquis*

Knowledge architecture

Group of Four (G4)
- Governance
  - Demand: ENV
  - Supply: EEA, JRC, ESTAT
  - Project driven

Instruments
- EDC
- Established processes related to *acquis*

7th EAP Acquis/vision/PO5

Knowledge architecture

Environmental Knowledge Community (EKC)
- Governance
  - Network approach
  - Core Group: ENV, CLIMA, RTD, ESTAT, JRC, EEA
  - Programme approach

Instruments
- Data-platform
- Established processes
- Knowledge Innovation Projects

G4 reflections; Directors’ meeting; Dimesa seminar.
Data management, „big data” and the impact on the information system

The EEA functional system and beyond

The growing role of „big data“

Changing role of data centres
Highlighted components for management of multi-source data flows in EEA
„Big data“ and EEA

- **Volume**
  - Reporting data
  - Copernicus

- **Variety**
  - Research
  - Citizen science
  - Industry data

- **Velocity**
  - Near real time

- **Veracity***
  - Systems
  - Complex relations

- **Variability***
  - Data quality issues
  - Fitness for purpose
Information technology and tool related challenges

A flexible and integrated system of software components

Software as a service

Cloud storage and processing

The ICT security challenge
Summary of key trends and responses

- Significant data evolution
- More systematic analysis and key integrative projects
- Deeper integration between EU level information systems
- Stronger emphasis on data management (at EEA)
- More modular software solutions (at EEA)
Farewell

Thank You and Enjoy Zadar!

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