The green economy in the EU: implications for information and knowledge management

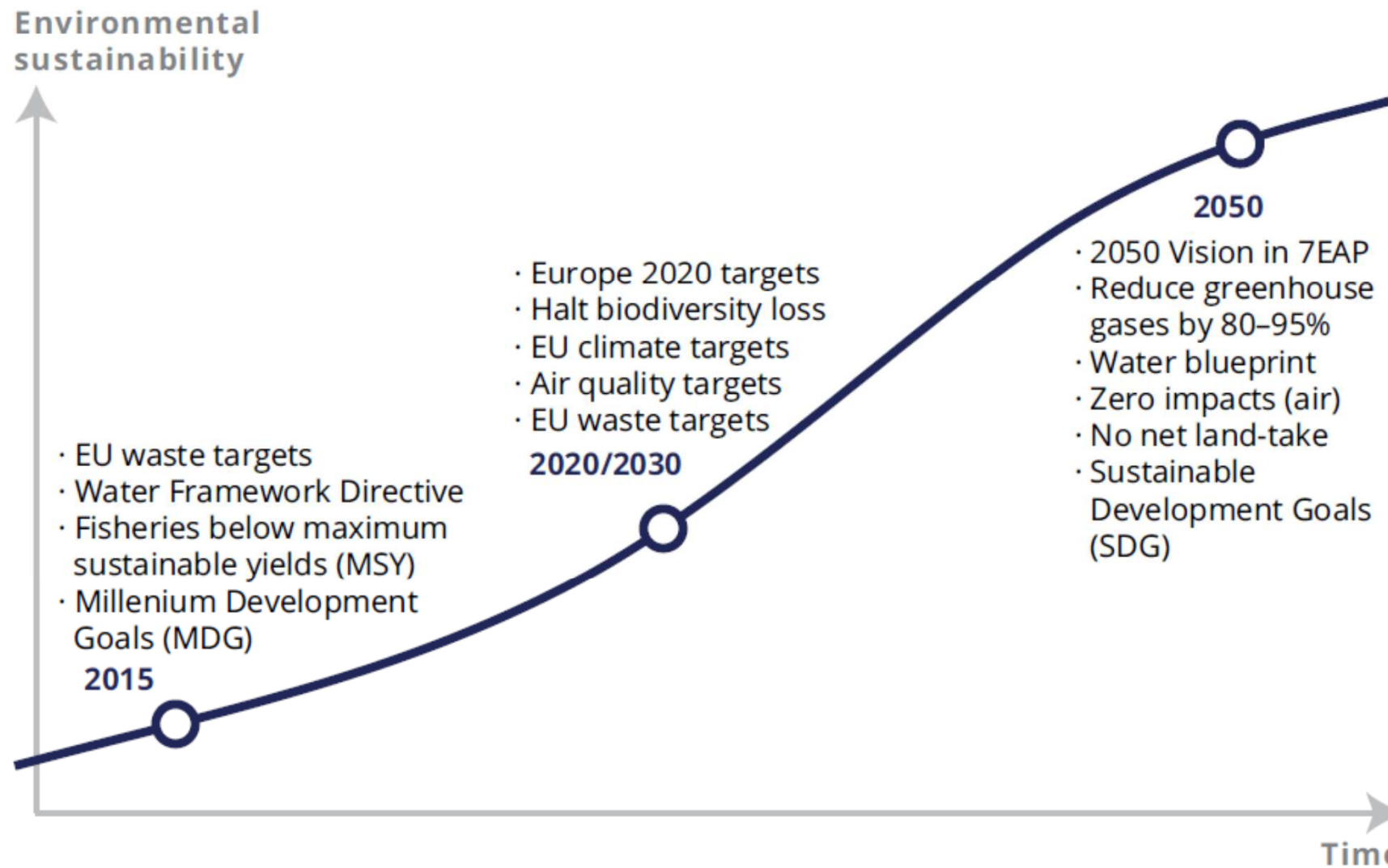**Dr Hans Bruyninckx**
EEA Executive Director

The European Environment Agency

The European Environment Agency:

- is based in Copenhagen, Denmark

- is established by EEC regulation

- is an independent information provider

- builds bridges between science and policy

- comprises 33 member countries, plus 6 cooperating countries

- depends upon strong networks to carry out its work

- has c 210 staff and an annual budget of €42 million

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Implementation of policies drives knowledge management approaches and investments

Environmental sustainability

· EU waste targets
· Water Framework Directive
· Fisheries below maximum sustainable yields (MSY)
· Millenium Development Goals (MDG)

2015

· Europe 2020 targets
· Halt biodiversity loss
· EU climate targets
· Air quality targets
· EU waste targets

2020/2030

2050

· 2050 Vision in 7EAP
· Reduce greenhouse gases by 80–95%
· Water blueprint
· Zero impacts (air)
· No net land-take
· Sustainable Development Goals (SDG)
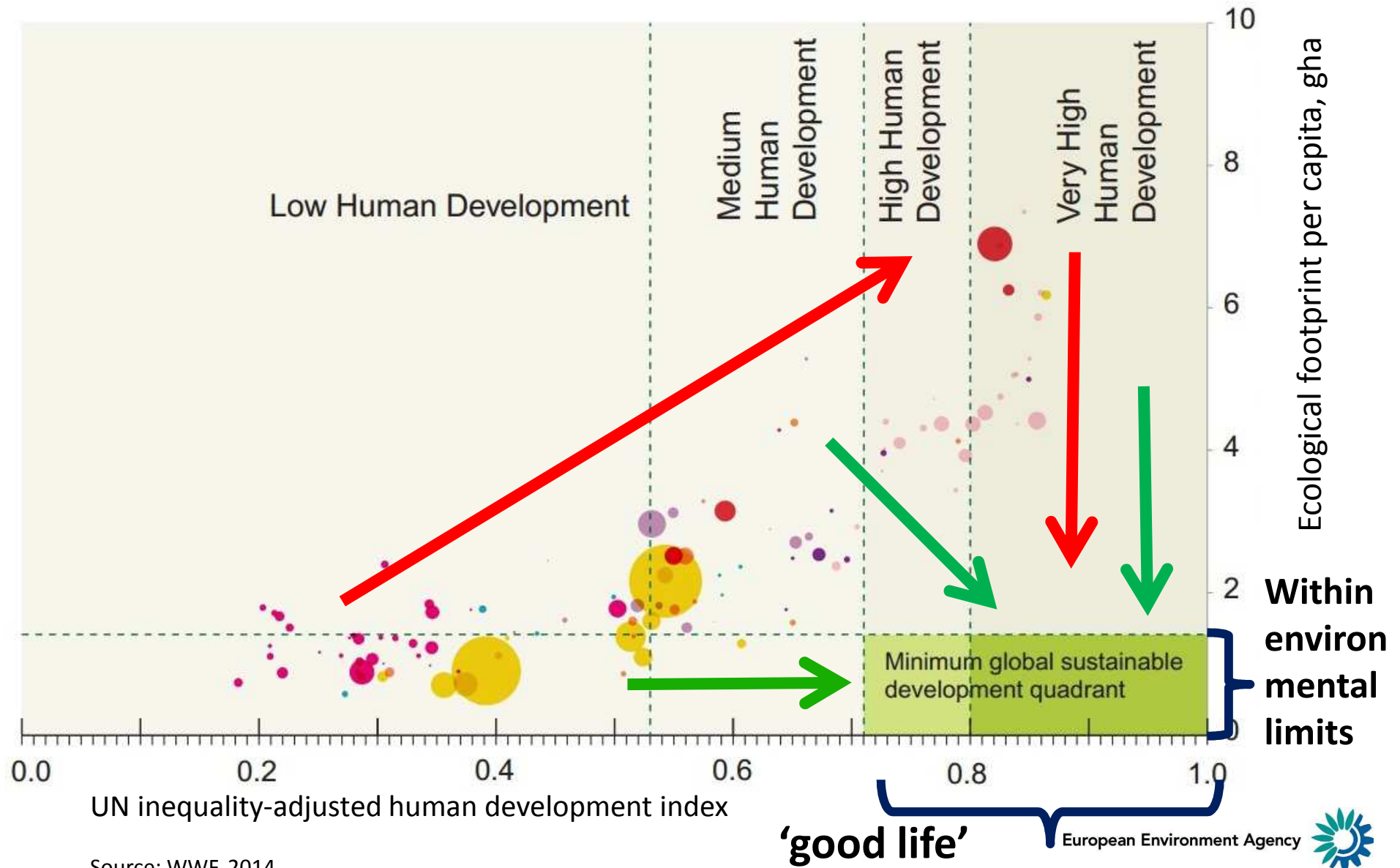
Time

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The 7th EAP: a long term vision of sustainability

"In 2050, **we live well, within the planet's ecological limits**. Our prosperity and healthy environment stem from an innovative, **circular economy** where nothing is wasted and where natural resources are managed sustainably, and **biodiversity is protected, valued and restored** in ways that enhance our society's **resilience**. Our **low-carbon growth** has long been decoupled from resource use, setting the pace for a global, safe and sustainable society."

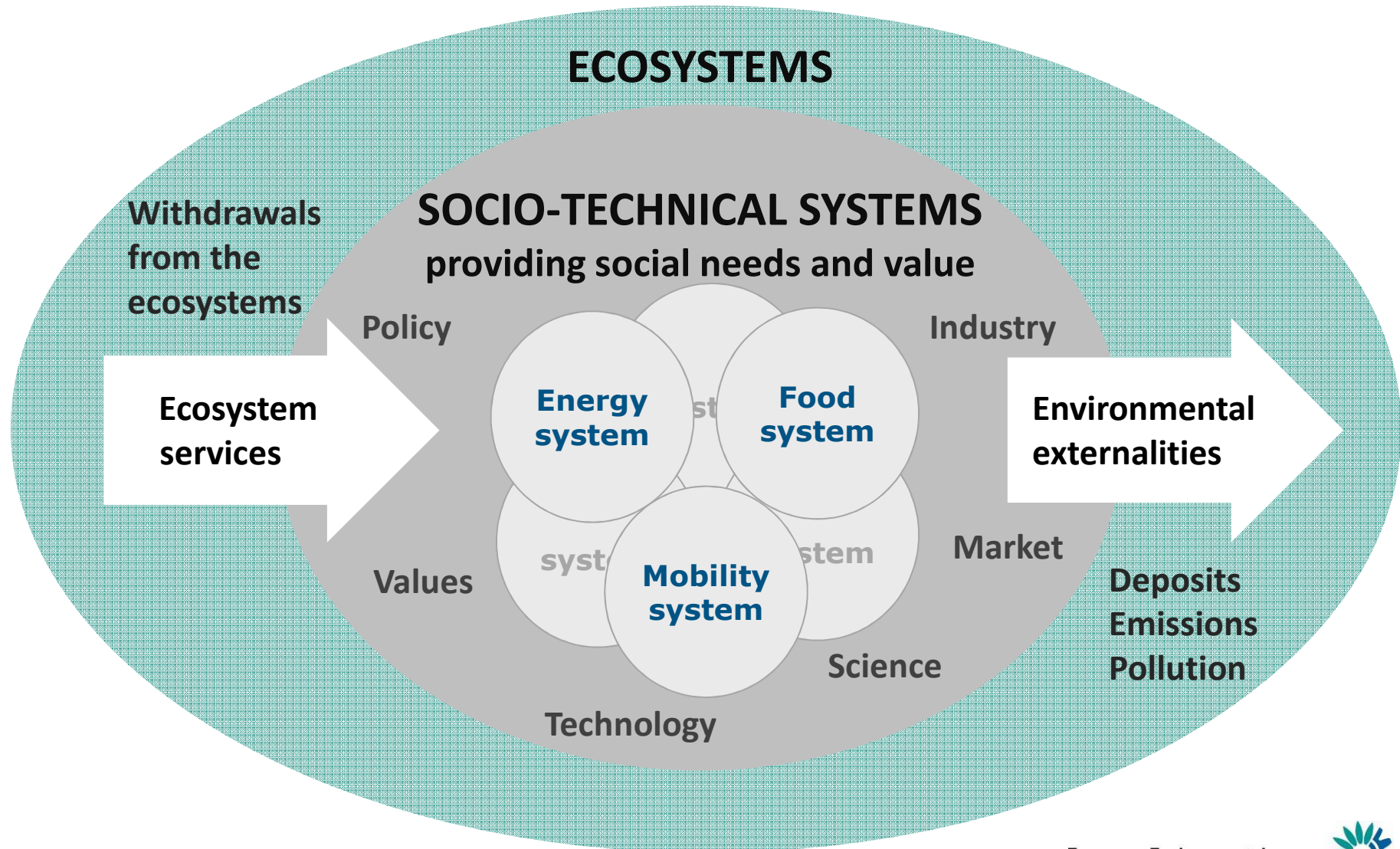*Source: 7th Environmental Action Programme*

Other EU policies offer <u>similar perspectives</u>: Europe 2020 Strategy, EU Energy Roadmap 2050, Roadmap to a Resource Efficient Europe, Roadmap for a competitive low-carbon economy in 2050, etc.
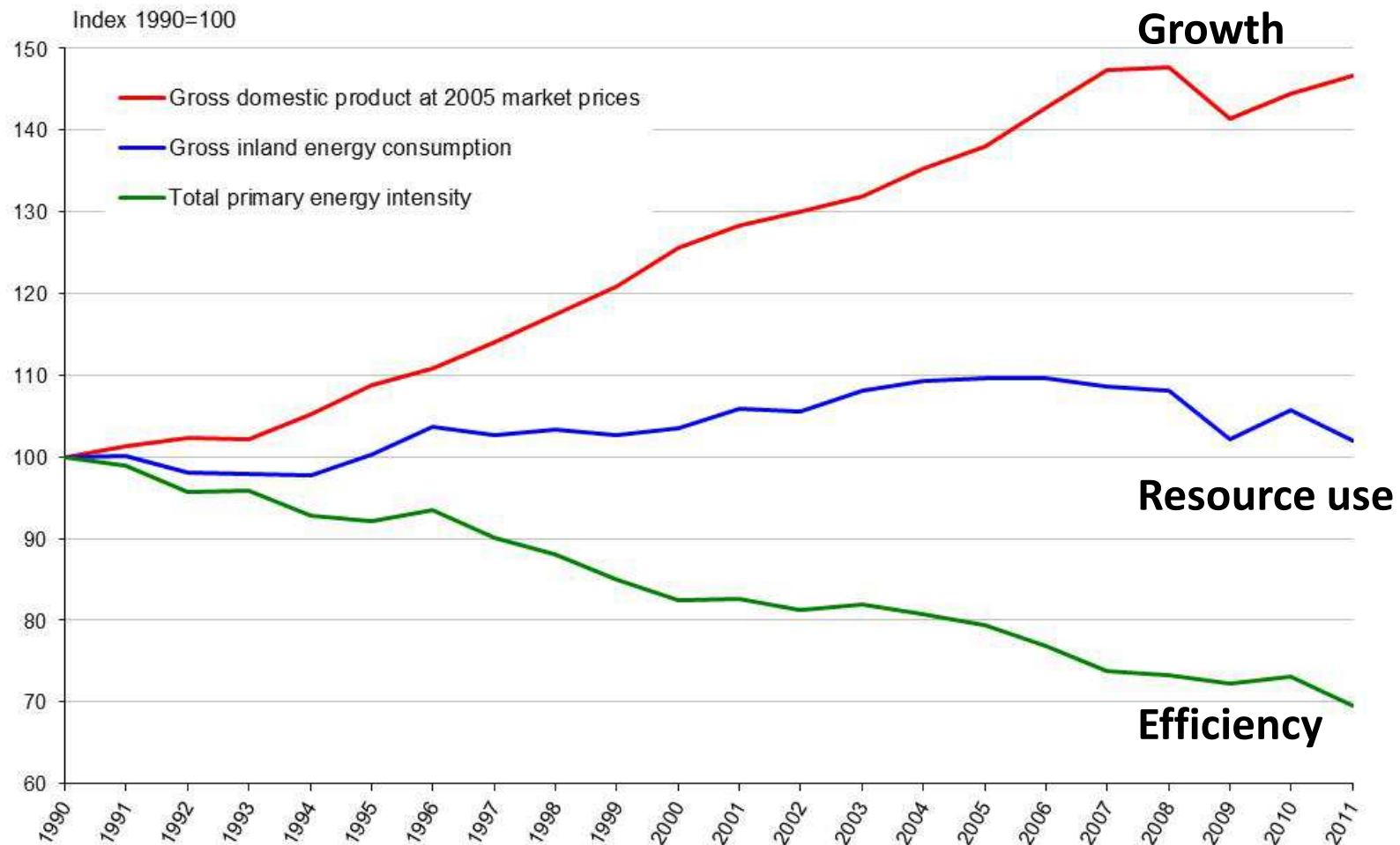
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Why? The twin challenge

Source: WWF, 2014.

Green economy: Living well within ecological limits

ECOSYSTEMS

Withdrawals from the ecosystems

SOCIO-TECHNICAL SYSTEMS
providing social needs and value

Policy

Industry

Ecosystem services

Energy system

Food system

Environmental externalities

Values

Mobility system

Market

Deposits Emissions Pollution

Science

Technology

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Indicators: in Europe we are far from achieving a low-carbon green economy

Index 1990=100

- Gross domestic product at 2005 market prices
- Gross inland energy consumption
- Total primary energy intensity

Growth

Resource use

Efficiency

Source: EEA (CSI 028)

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Knowledge co-creation, sharing and use at the EEA
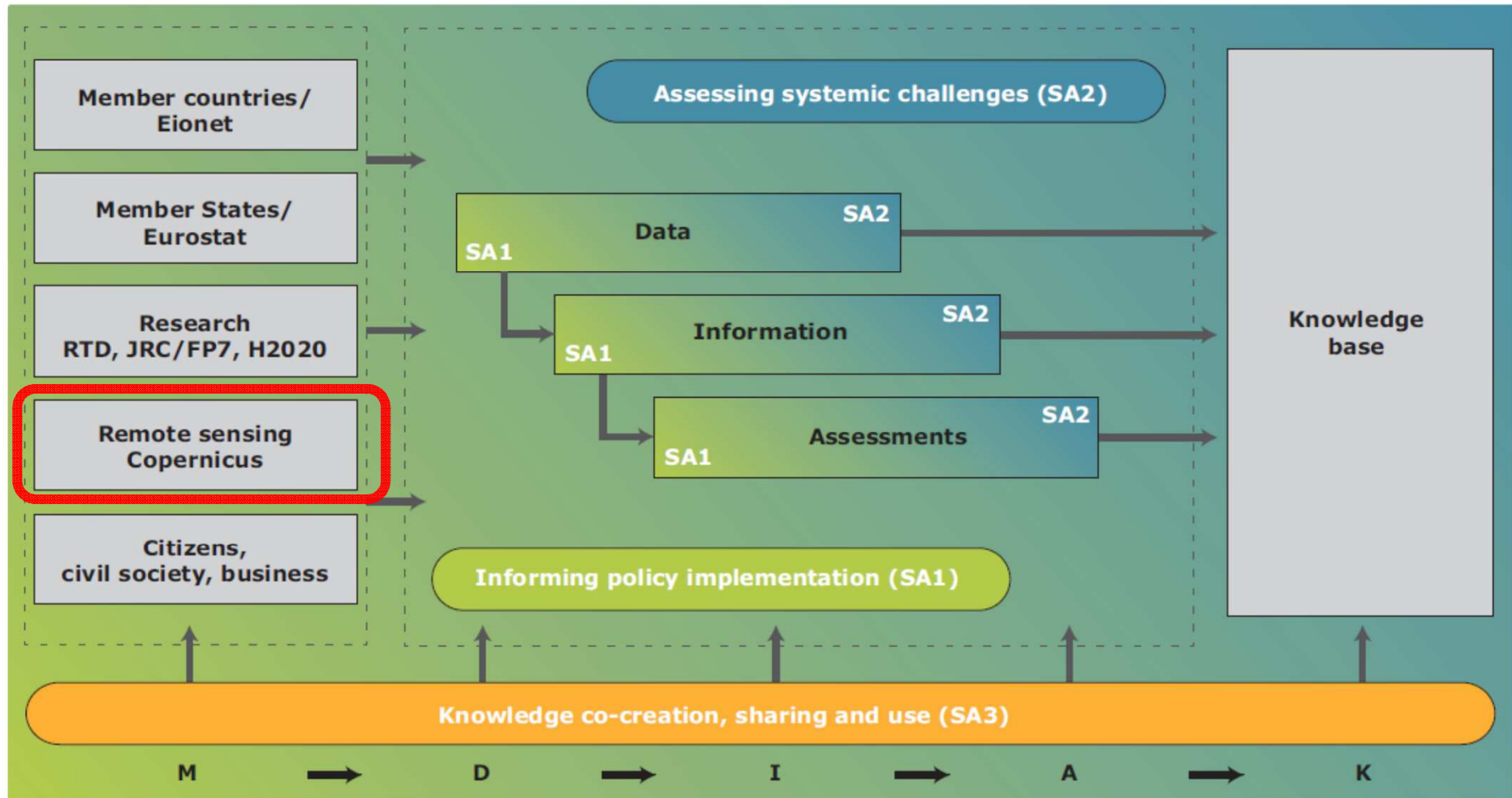
Source: EEA Multi-Annual Work Programme 2014 to 2018

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Role of the EEA in the Copernicus Programme

satellite component

in-situ component
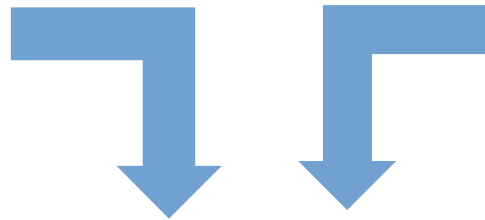
service operators

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1
2
3

Copernicus
The European Earth Observation Programme

Air pollution, transport and noise

Industrial Pollution

Climate change mitigation and energy

Climate change impacts, vulnerability and adaptation

Marine and maritime, fisheries and coastal

Water management, resources and ecosystems

Biodiversity, ecosystems, agriculture and forests

Urban, land use and soil

Waste and material resources

users

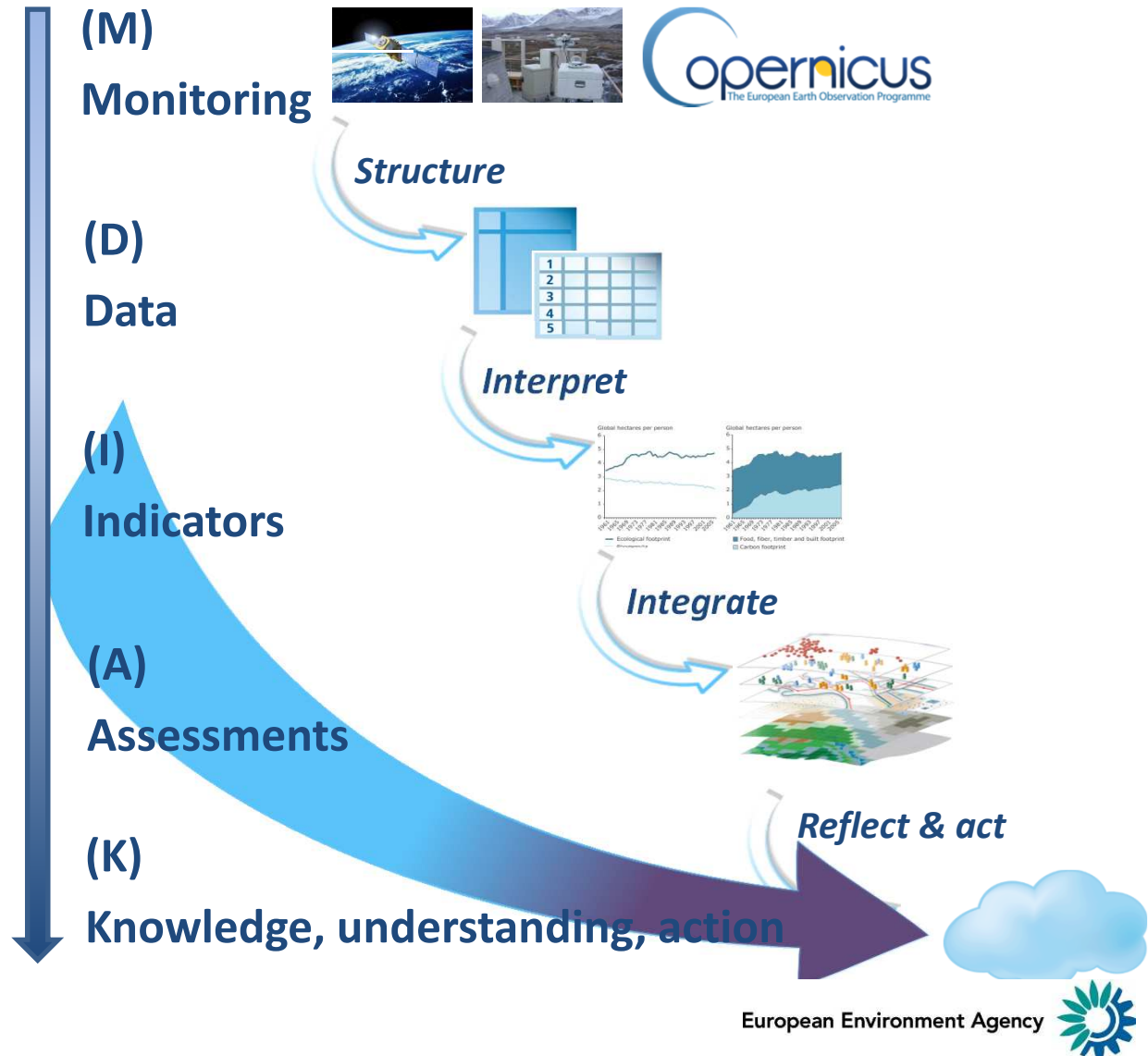# Knowledge base management at the EEA
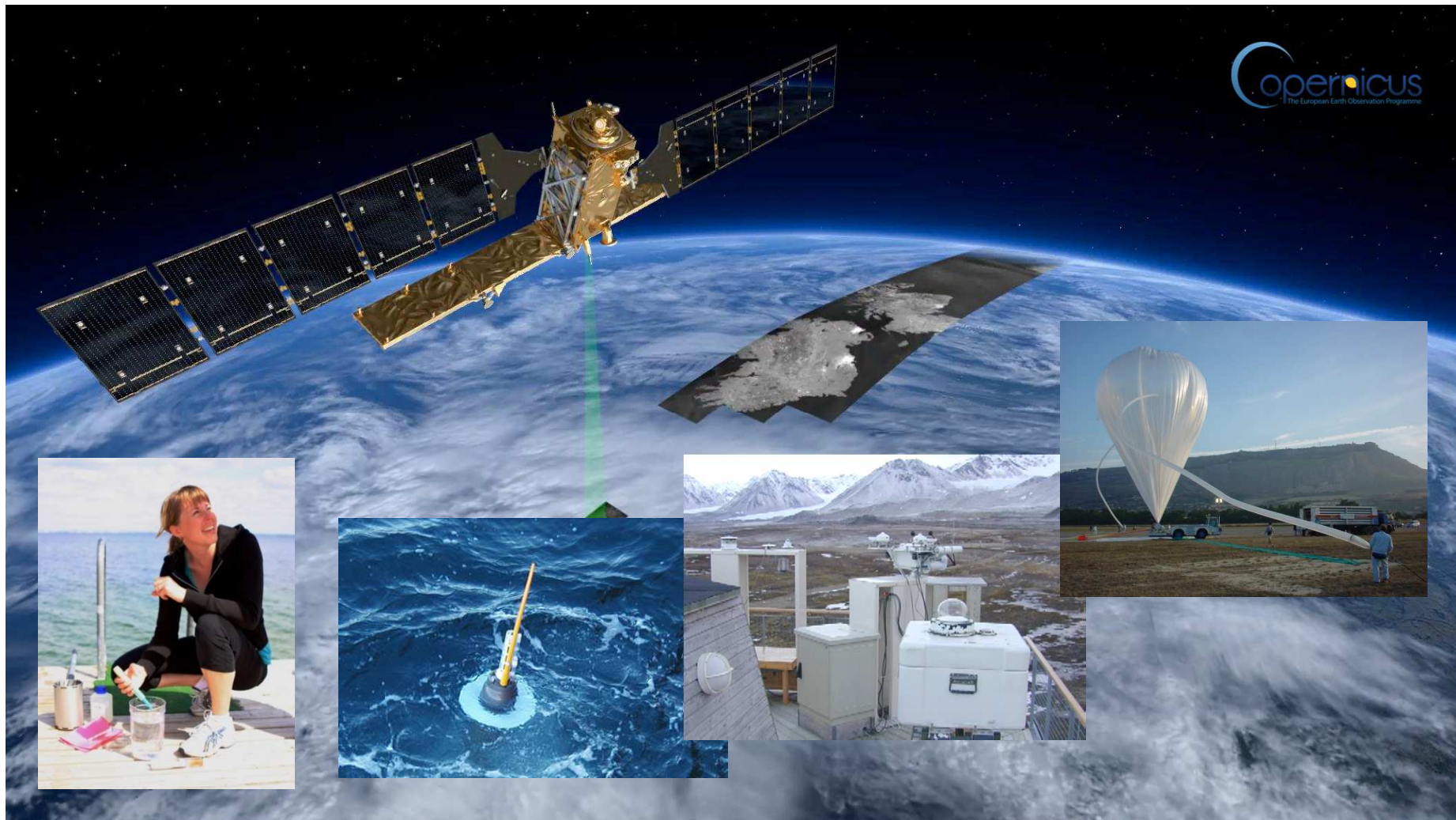
Satellite data, in-situ monitoring, statistics

European data centres,

Indicators, environmental accounting, ...

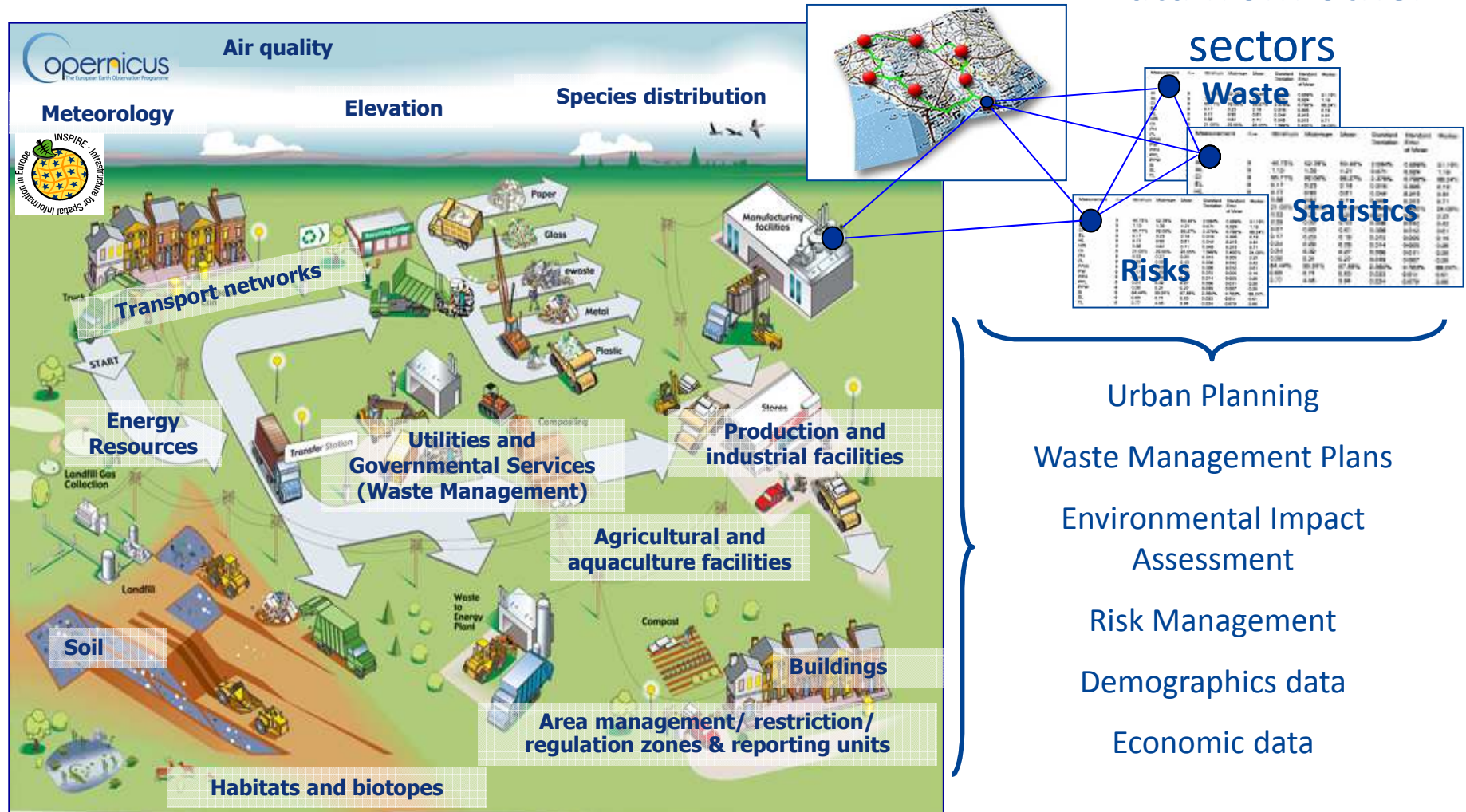Integrated assessments across scales

Communities and academies

(M) Monitoring

(D) Data

(I) Indicators

(A) Assessments

(K) Knowledge, understanding, action

Structure

Interpret

Integrate

Reflect & act

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The monitoring challenge: integration of satellite based observations and in-situ monitoring

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The data challenge: cross-sector operability

Data from other sectors

Waste

Statistics

Risks

Urban Planning

Waste Management Plans

Environmental Impact Assessment

Risk Management

Demographics data

Economic data

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Knowledge base for the long-term
- How can we improve?

7EAP objective 5: *'improve the knowledge and evidence base'*

66. Based on monitoring, data, indicators & assessment

67. Improve science-policy & citizen engagement (Eionet, EEA)

68. Establish understanding of future trends & uncertainties

69. Continue investing into data collection & information systems (Copernicus)

70. Common approaches & standards (e.g. SEIS, INSPIRE, Copernicus)

71. Attention to specific gaps (systems, health, …)

72. Risk management & broader explicit societal debate

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Knowledge base for the long-term
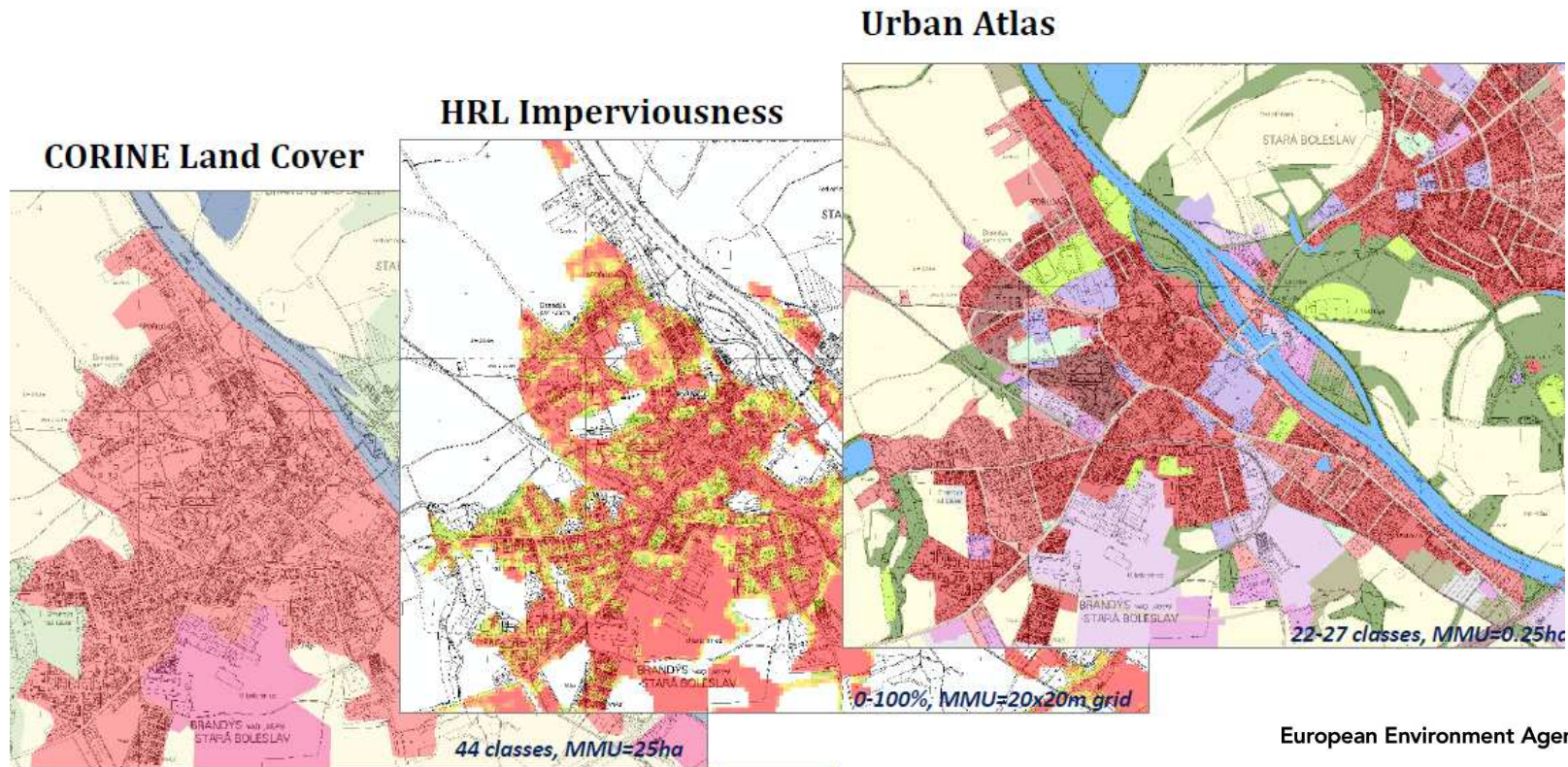## - Example: Copernicus land monitoring services

- **Support both strategic and operational level**

- **Facilitate comparison and knowledge exchange**

- **Secured long term time series**

- **Harmonized**

- **Up-to-date**

- **Freely available**

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Knowledge base for the long-term
- Example: Copernicus land monitoring services

Living in an urban world - http://land.copernicus.eu/

- Pan-European component e.g. CORINE Land Cover - 1990, 2000, 2006, 2012, ongoing

- Specific land characteristics e.g. imperviousness - 2006, 2009, 2012, 2015, ongoing

- Local component e.g. Urban Atlas - 2006, 2012, ongoing

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Knowledge base for the long-term
- Example: Copernicus land monitoring services

Maintaining green infrastructure
to provide multiple functions for a green economy

The European Environment State and outlook 2015: suite of product across issues and scales

Synthesis Report

Part 1

– Setting the scene

Part 2

– Assessing trends

Part 3

– Looking ahead

Global Megatrends

- Diverging global population trends
- Towards a more urban world
- Changing dsease burdens and risk of pandemics
- Accelerating technological change
- Continued economic growth?
- An increasingly multipolar world
- Intensified global competition for resources
- Growing pressures on ecosytems
- Increasingly severe consequences of climate change
- Increasing environmental pol
- Diversifying appr to governance

Thematic Briefings

- Air pollution
- Biodiversity
- CC impacts & adapt. ..
- Mitigating Climate...
- Forests
- Freshwater
- Marine
- Noise
- Soil
- Waste
- Agriculture
- Consumption
- Energy
- Industry
- Maritime
- Tourism
- Transport
- Health
- Resource efficiency
- Air & climate system
- Land systems
- Hydrological systems
- Urban systems
- Natural capital
- Green economy

Cross-Country Comparisons

- Air pollution (focus on selected pollutants)
- Biodiversity (focus on protected areas)
- Climate Change (focus on greenhouse gases)
- Freshwater (focus on nutrients in rivers)
- Waste (focus on municipal solid waste)
- Agriculture (focus on organic farming)
- Energy (focus on energy consumption and renewables)
- Transport (focus on passenger transport)
- Resource efficiency (focus on material resources)

Country Briefings

A set of 39 four-page briefings which summarise the state and outlook of the environment in each of 39 European countries.

- 33 EEA Member Countries
- 6 Cooperating Countries in the Western Balkans.

In addition, 3 regional four-page briefings give an overview of the main environmental challenges in neighbouring areas:

- The Arctic region
- The Black Sea region
- The Mediterranean Sea region

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