



MAES workshop in Cyprus
04-05/12/2018

MAES support to EU Biodiversity Policy

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EU Biodiversity policy

EU Biodiversity Strategy

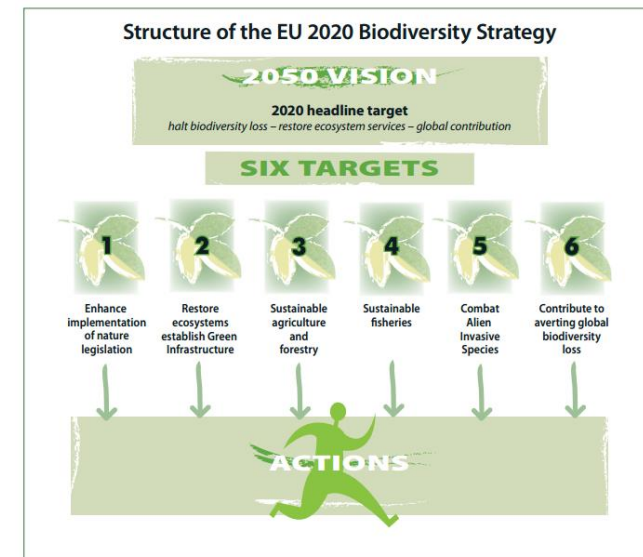
→ Halt the loss of biodiversity and ecosystem services in the EU and globally

Target 2

→ Maintain ecosystem services and restore ecosystems

Action 5

→ **Map and Assess Ecosystems and their Services (MAES)** in the entire EU territory; economic valuation; develop natural capital accounts



Objective of an EU wide ecosystem assessment

- To evaluate the state of Europe's ecosystems and their services based on an analysis of available data

Policy requests

- To provide an evaluation of Target 2 of the EU Biodiversity Strategy to 2020
 - *Have ecosystems and their services been maintained and restored?*
- To support the final evaluation of the whole strategy
- To provide support to the definition of smarter targets under the post-2020 biodiversity policy

MAES working streams

Member States

- Mapping and assessment at national scale
- Work is ongoing in many countries

MAES working group

- MAES reports provide guidance
- Thematic pilots to test the guidance

ENV Support contracts (MESEU/TRAIN/T2)

- Contracts DG ENV
- Guidance and training at MS level

ESMERALDA

- Horizon 2020
- Flexible approach to mapping and assessment

IPBES

- Regional assessments

KIP-INCA

- Integrated system of Natural Capital Accounts
- Depends heavily on MAES inputs

MAES working group oversees the implementation of Action 5

Research community
H2020 projects

www.esmeralda-project.eu

European Commission,
European Environment Agency

Cities and regions
Stakeholders

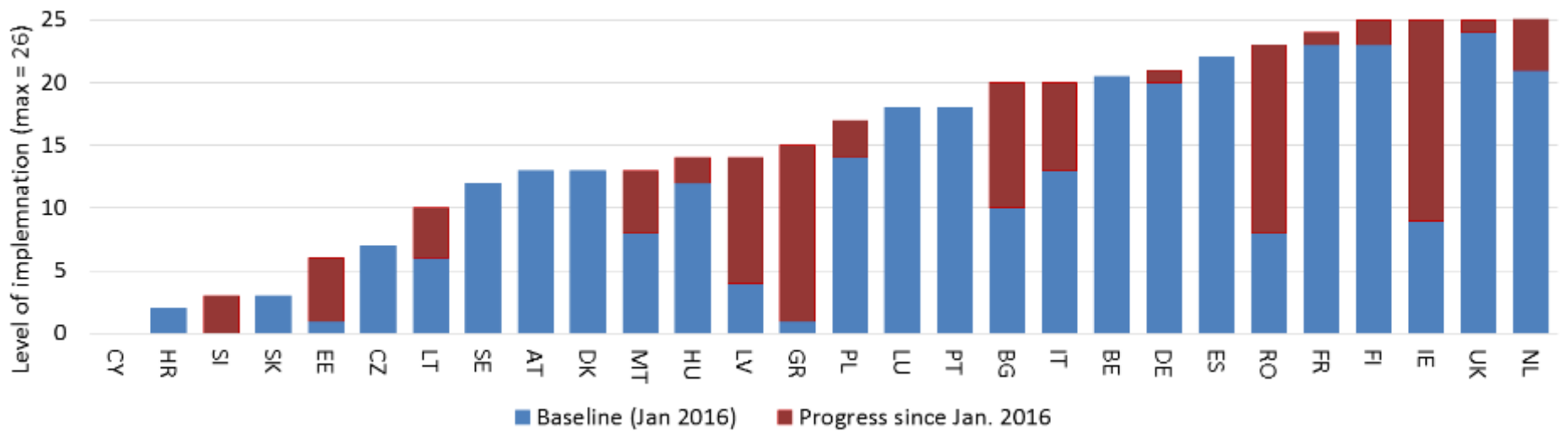
EU Member States
and other countries



TASKS of the Working group

1. *Guidance for Member States*
2. *Common ecosystem assessment pilots*
3. *EU wide assessments*

Successful implementation in EU Member States



Source: ESERALDA project (www.esmeralda-project.eu); MS reports available on <http://biodiversity.europa.eu/maes>

Guidance documents (MAES reports)

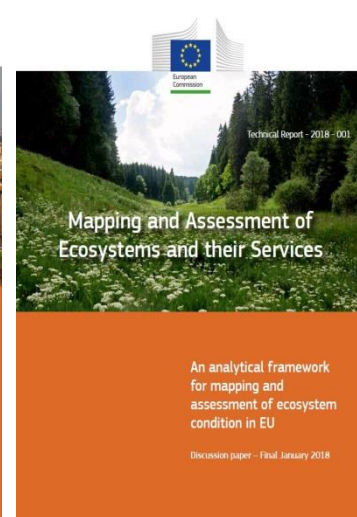
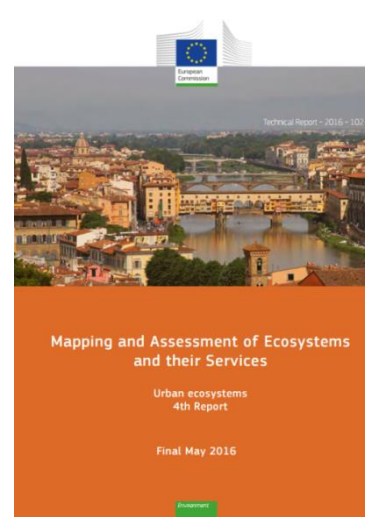
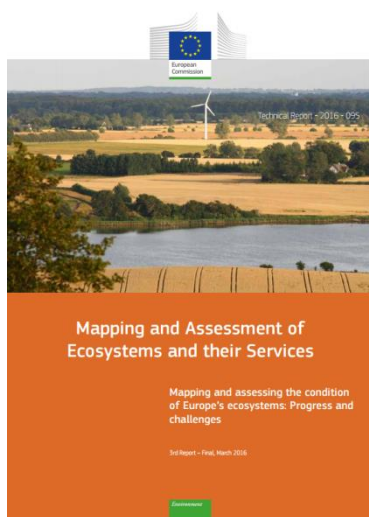
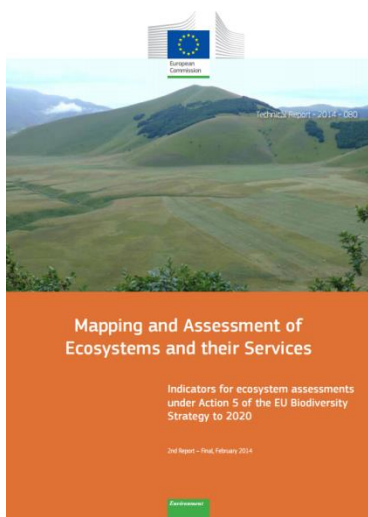
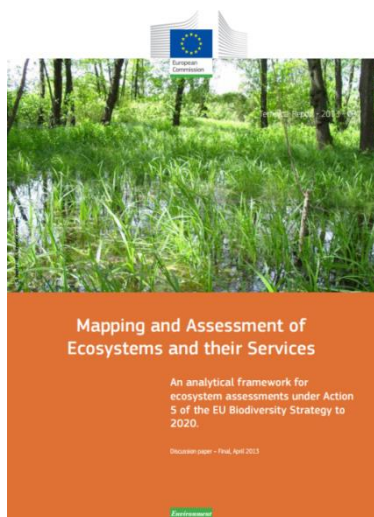
Conceptual framework and typologies

Indicators for ecosystem services

Ecosystem condition assessment

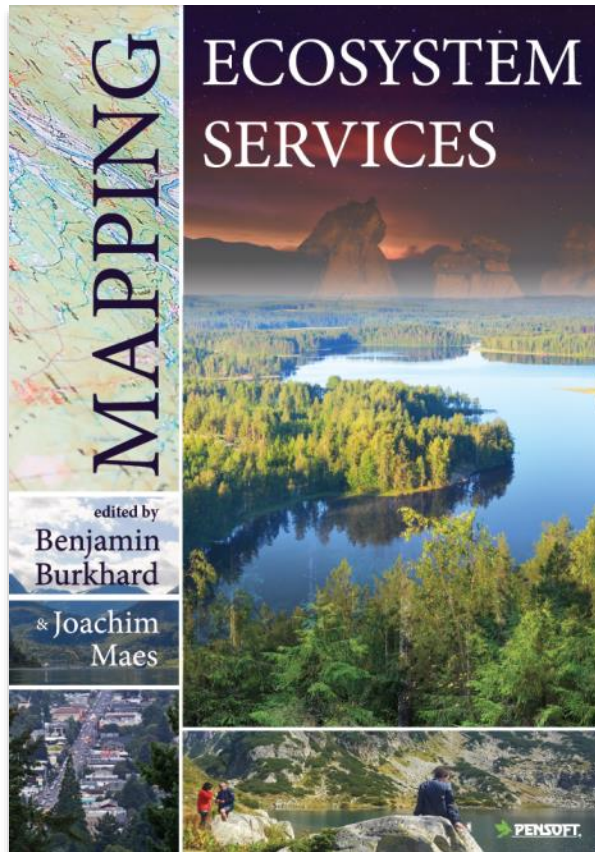
Urban ecosystems

Indicators for ecosystem condition



<http://biodiversity.europa.eu/maes>

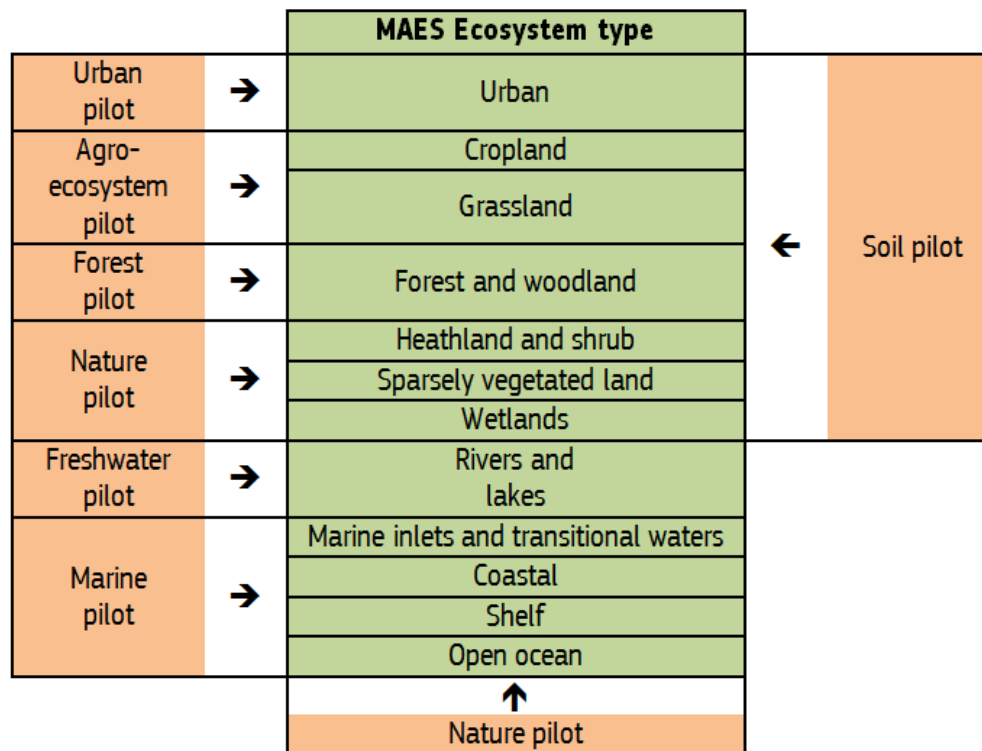
Research support (ESMERALDA)



Theory and practice of mapping and quantifying ecosystem services

- Mapping techniques
- Different methods and approaches
- Scales, tiers
- Uncertainty
- Applications and case studies

2. Ecosystem assessment pilots



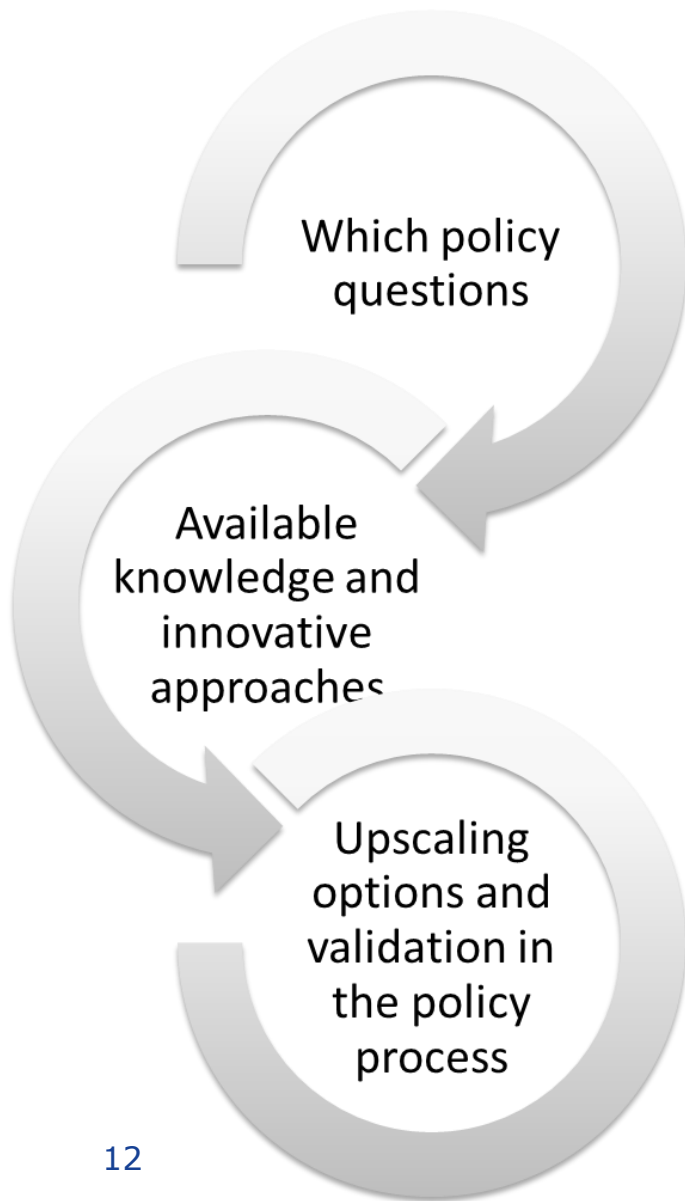
Organisation of the MAES work into **pilots** (pools of expertise) and **ecosystem types**

Links to other indicator frameworks and ensuring policy relevance

- Streamlined with 19 specific (environmental) policies or existing indicator frameworks of the European Commission
 - SEBI: Streamlined European Biodiversity Indicators
 - AEI: Agri-Environment Indicators
 - MSFD descriptors
 - Sustainable development goals



EnRoute approach

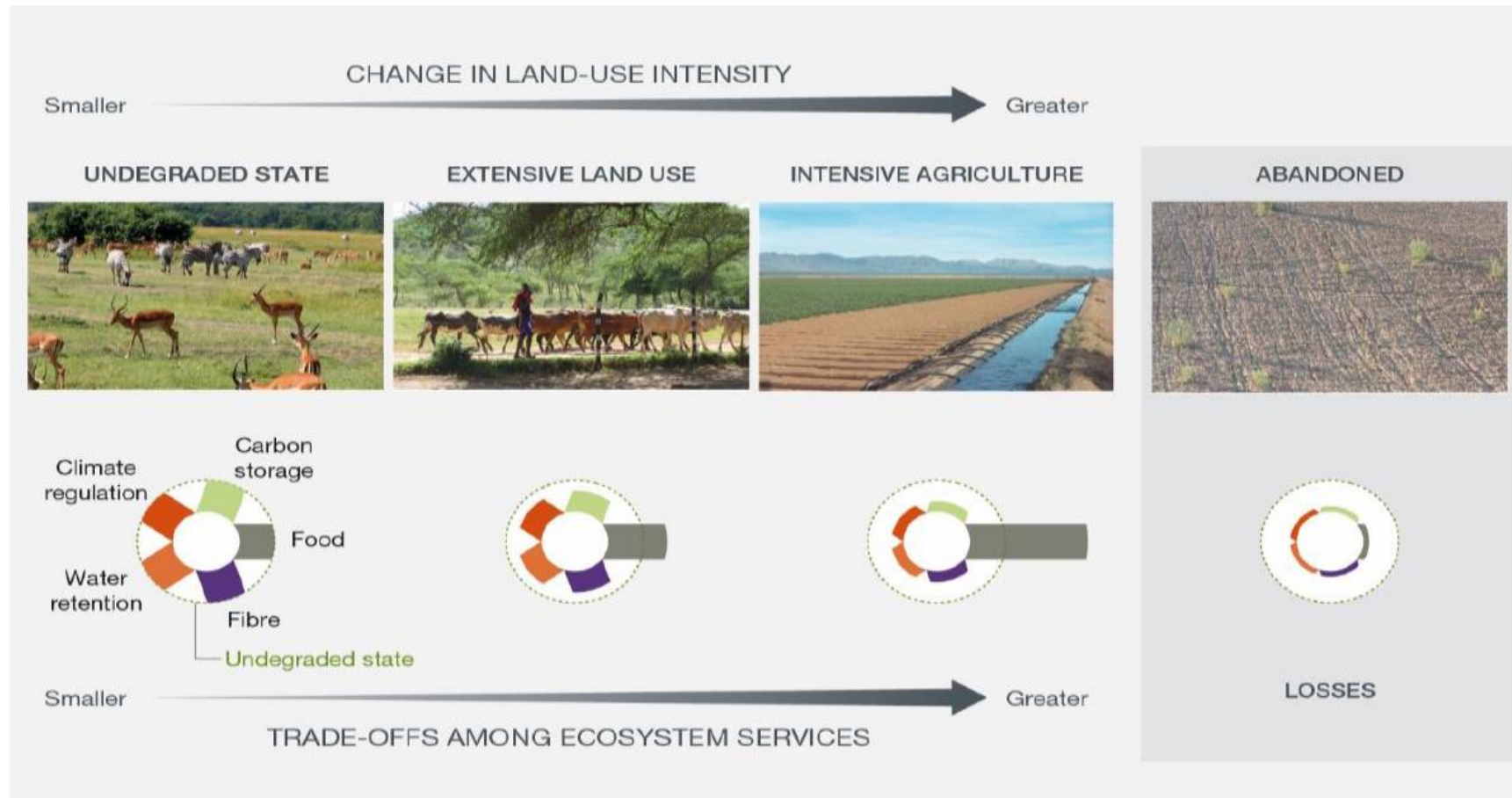


EnRoute cities formulate key policy questions

EnRoute scientists map and assess indicators of urban green space and ecosystem services

Comparing outcomes between cities and across scales

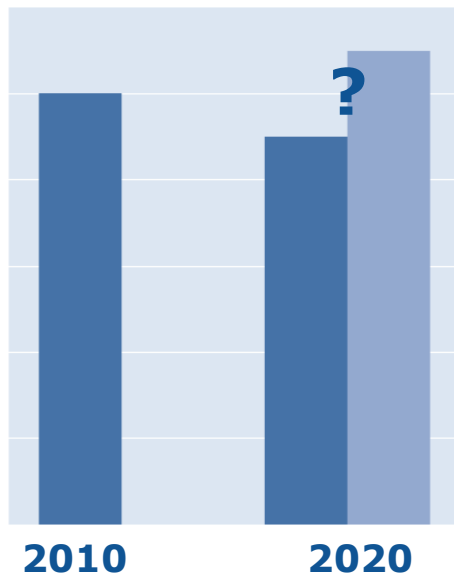
Land use intensity and ecosystem services



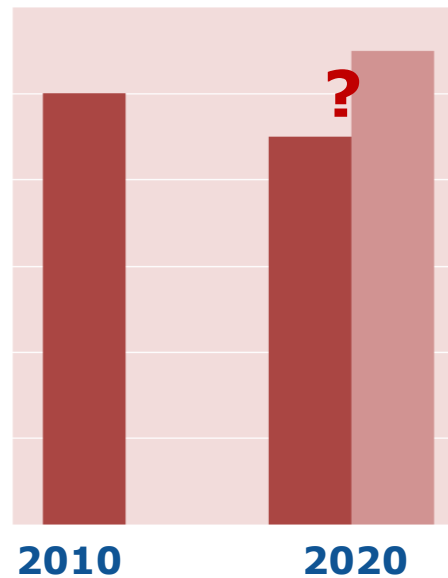
Source: Adapted from Van der Esch et al. (2017).⁶

Questions EU wide assessment

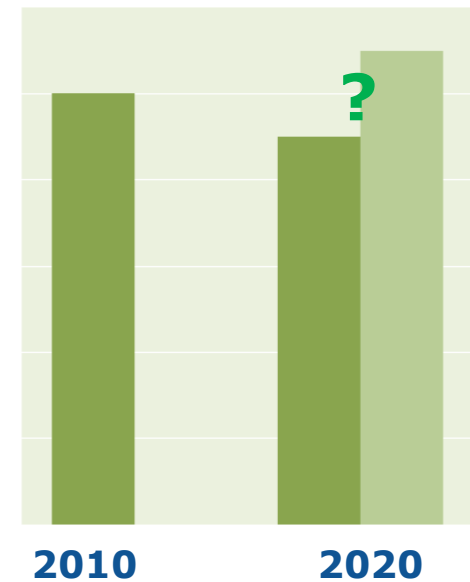
Ecosystem condition



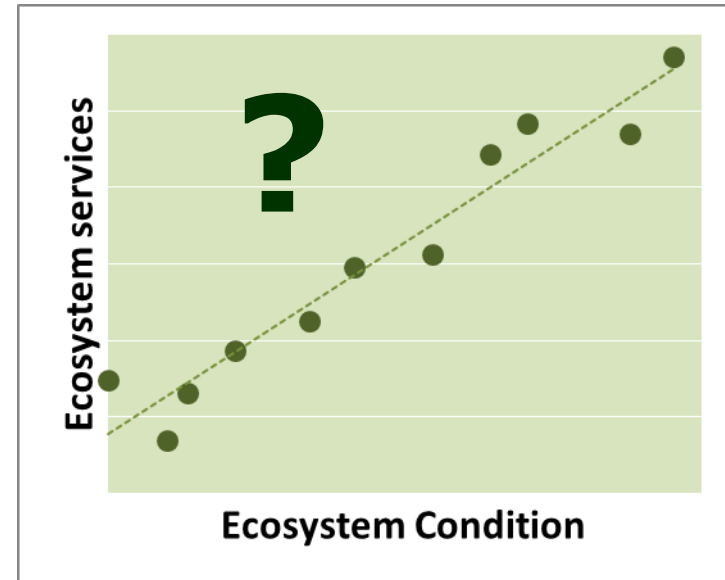
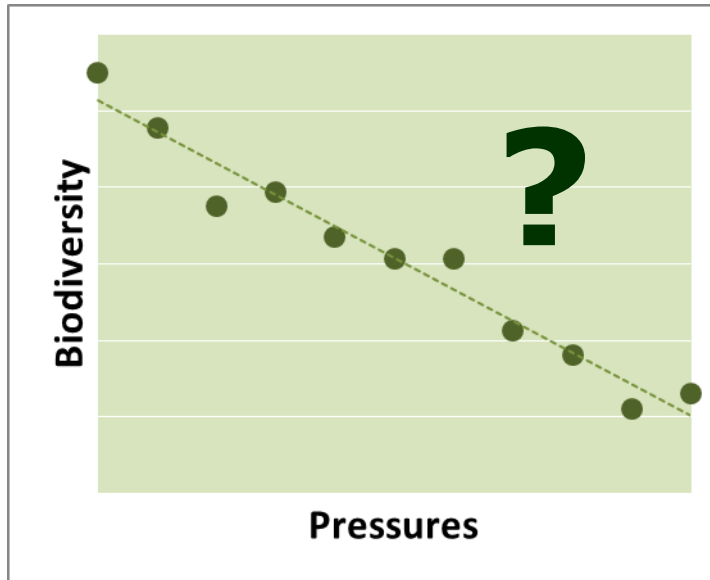
Pressures



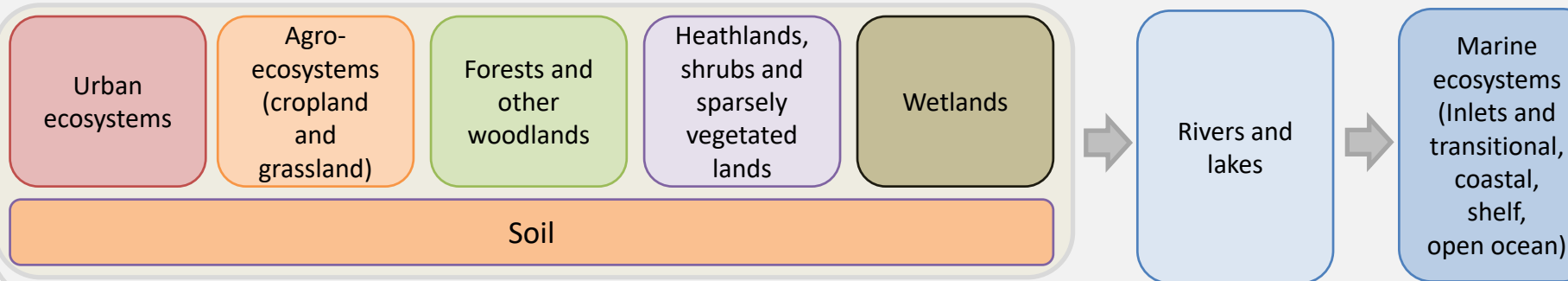
Ecosystem services



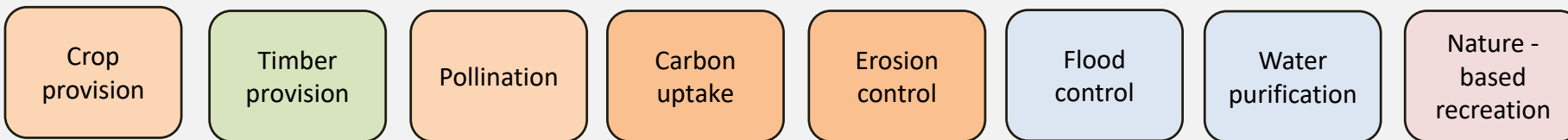
Questions EU wide assessment



a) Thematic ecosystem assessments

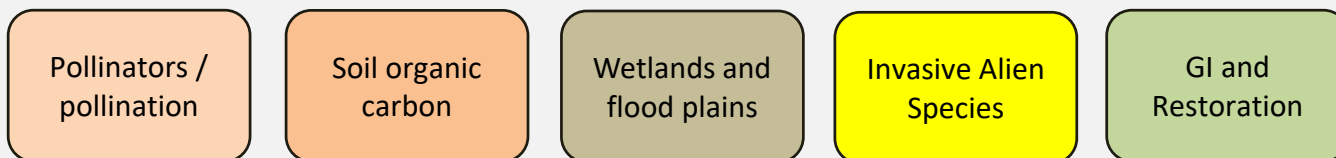


b) Ecosystem services assessments



c) Integrated ecosystem assessment Ecosystem condition and ecosystem services

d) Integrated narratives on key policy issues



Challenges

- Ensuring policy relevance of the assessment
- Supporting information system
- Aggregation of ecosystem condition indicators

Examples of analysis and reporting

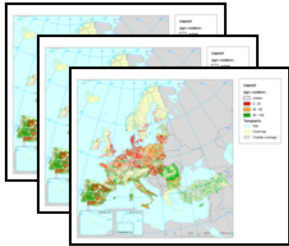
- **Analysis:** How to integrate information of pressures, biodiversity, condition and services for policy support
- **Reporting:** How to report the condition of ecosystems

Mapping

1. Mapping ecosystems



2. Mapping ecosystems condition



composite map



3. Mapping ecosystems services



composite map



Making scientific evidence understandable for policy and decision-making

Assessment

Ecosystem services (TESI)

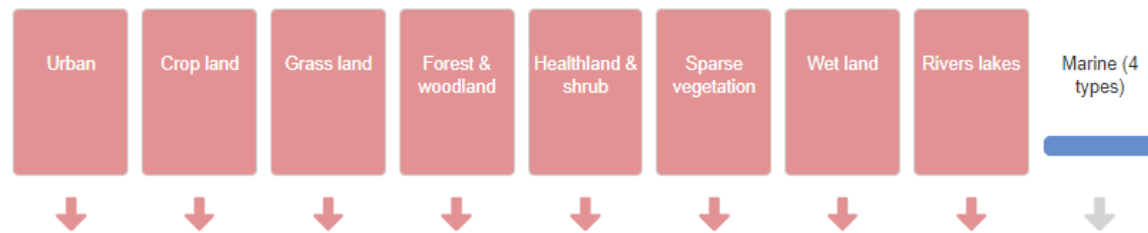
Ecosystem condition (ECI)

		Ecosystem services (TESI)		
	<i>Grassland</i>	Low	Medium	High
Poor		5%	10%	3%
Moderate		8%	15%	7%
Good		9%	20%	10%
Excellent		3%	4%	2%

Share of ecosystem surface area (%)

Mapping and Assessment of Ecosystems and their Services (MAES)

Reset



Pressure

Pressure on ecosystem →

Ecosystem condition

Environmental quality →

Structural ecosystem attributes (general) →

Structural ecosystem attributes based on species diversity and abundance →

Structural ecosystem attributes monitored under the EU nature directives →

Structural soil attributes →

Functional soil attributes →

Class	Indicator	U	C	G	F	H	S	W	RL
Habitat conversion and degradation (land conversion)	Land take* (conversion of the ecosystem type into another type, mostly artificial area)	●	●	●	●	●	●	●	●
	Intensification / extensification (AEI12)		●	●					
	Change in forest extent							●	
Climate change	n.a								
Pollution and nutrient enrichment	Emissions of NO2, PM10, PM2.5	●							
	Formation of tropospheric ozone (ground level ozone)				●				
Over-harvesting in forests	Gross nitrogen balance (SEBI 019) (AEI15)		●	●					●
	Critical load exceedance of nitrogen(SEBI 009)				●	●	●		●
	Gross phosphorus balance (AEI16)		●	●					●
Over-harvesting in forests	Long term ratio of annual fellings to net annual increment (SEBI 017)				●				
Introductions of invasive alien species	Number of annual introductions of invasive alien species** (number/year)	●	●	●	●	●	●	●	●

Table 5.1. Core set of pressure indicators for terrestrial and freshwater ecosystem types - 5th MAES Condition Report

Ecosystem services

MAES on BISE (in progress)

<https://biodiversity.europa.eu/maes/maes-presentation>

Roadmap

- **End 2018:** Reality check with ENV policy units
- **March 2019:** 17th MAES working group meeting
- **June 2019:** Stakeholders workshops on thematic assessments (inc. pressures)
- **September 2019:** 18th MAES working group
- **End 2019:** chapters are ready for publication on BISE with supplement information and data
- **4th quarter 2020:** Summary for policy as part of a Biodiversity “Communication package”

Interaction with Member States

- Comments, advice, examples, review
- Participation in June workshop
- Validation of outcomes of assessment based on EU quantified data and indicators
- Publication on BISE
- Areas under single or multiple designation (nature, water, marine, air quality legislation).
 - Can MAES help member states to develop joint up approaches and joint up approaches on monitoring?

Biodiversity timeline

Tentative timetable and milestones for biodiversity to 2020 and beyond

	2018				2019				2020				2021			
Key milestones and input opportunities	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Publication of evaluation roadmap for online feedback from MS and stakeholders		█	█													
Evaluation support study tender and contracting				█	█											
EU and MS submission of 6NR to CBD																
Stakeholder conference to launch consultation on evaluation and global process (date tbc)						█										
Consultation through targeted interviews of MS and stakeholders on the implementation of the EU 2020 BDS						█	█									
12-week online consultation of MS and stakeholders on the implementation of the EU 2020 BDS (tbc)						█	█									
IPBES global assessment of biodiversity and ecosystem services							█									
EU MAES assessment of ecosystems and their services								█								
Conference on emerging findings from the final evaluation of EU BDS and global discussions on post-2020 (date tbc)										█						
EU MAES (Report)																
EU State of Nature 2020 (2013-2018)																
EU Report on the final evaluation of EU 2020 Biodiversity Strategy																
Adoption of follow-up to the global strategic plan for biodiversity																
Adoption of the EU post-2020 biodiversity policy framework (subject to validation)																



Thanks for your attention

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