NFP/Eionet meeting 22-23 October 2014, Bratislava

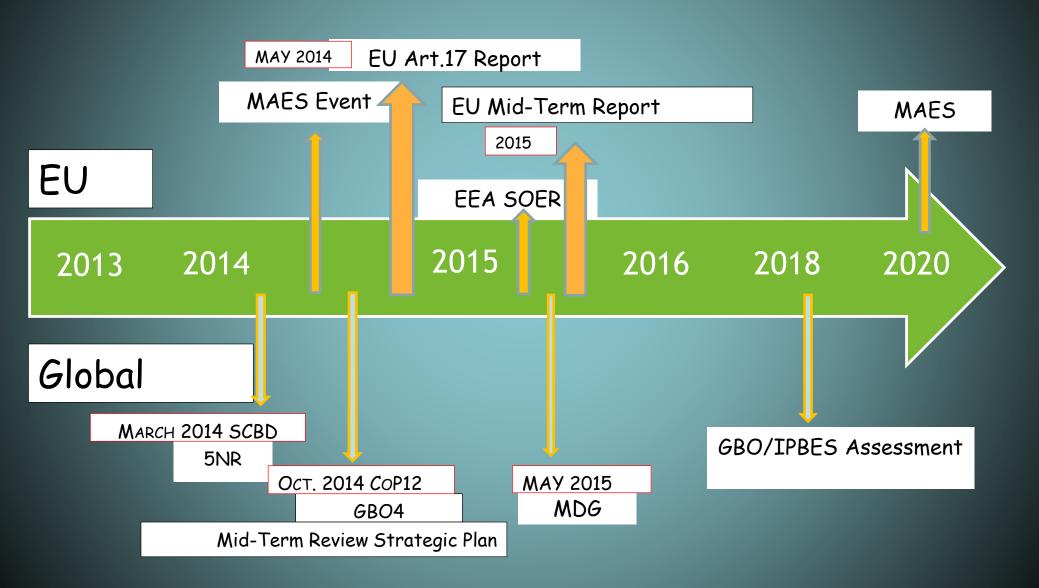
Workshop on Ecosystems and their services; assessments and beyond

EEA work on mapping and assessment of ecosystems - overview of progress' - Ronan Uhel

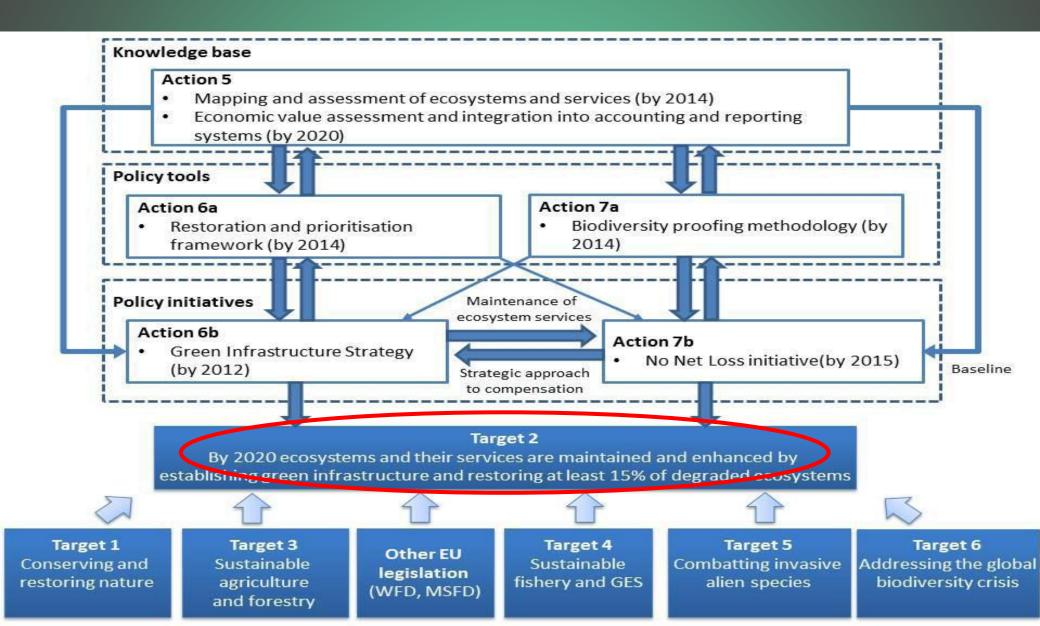
<u>Reference</u>: EU Biodiversity Strategy 2020 and corresponding Common Implementation Framework - Target 2 Actions 5 (+6)

- MAES EU Working Group on Mapping and Assessments of Ecosystems and their Services
- EEA support to BD20 Mid-Term review (<u>several different contributions!</u>)
- EEA AWP2015 delviverables and MAWP2014-18

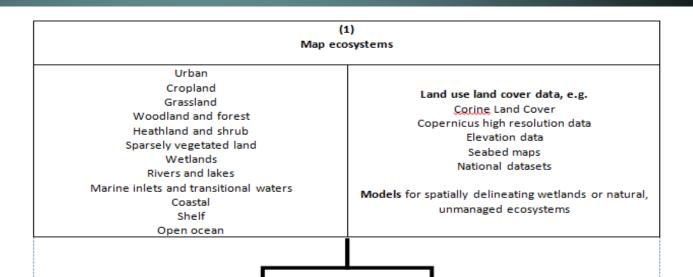
EU and global biodiversity reporting schedule



Common Implementation Framework of the Biodiversity Strategy 2020



MAES information base for assessment



(2) Assess the condition of ecosystems

Indicators	Data		
Conservation status of	Art 17 assessment		
habitats and species	Art.17 assessment		
Ecological status of water	WFD assessment		
bodies	WFD assessment		
Environmental status of	MSFD assessment		
seas	WISPD assessment		
Ecosystem status and biodiversity	data including air pollutant concentration, habitat connectivity, land use change, soil degradation,		

(3) Assess the ecosystem services delivered by ecosystems (<u>rubicode</u> matrix)

Indicators	Data and models	
Supply indicators: Indicators for stock and flow of ecosystem functions and ecosystem services	Different sources of environmental data and models	
Demand indicators: Indicators for the human demand for ecosystem services	Different socio- economic statistics	





(4)

Integrated ecosystem assessment

How does condition relate to service provision? (cross tabulate the condition of ecosystems with the services they provide) How do the various ecosystem types interact to provide their services?

4 steps of implementation

By 2014:

- I. Biophysical baseline mapping and assessment of the state of major ecosystems; -> EEA track
- II. Biophysical baseline mapping and assessment of defined ecosystem services; -> JRC track

2015-2020:

- I. Alignment of ecosystem service assessments with scenarios of future changes; -> JRC modelling, NoNetLoss initiative (2015)
- II. Valuation of ecosystem services for baseline and contrasting scenarios and integration into environmental and economic accounting.

-> Natural Capital Accounting



Key challenge: Ecosystem conditions

MAES Analytical framework

http://biodiversity.europa.eu/maes

Specific methodologies e.g. crosswalks between European marine habitat typologies

http://biodiversity.europa.eu/maes/crosswalks-between-european-marine-habitat-

typologies_10-04-14_v3.pdf

EU-wide assessment of ecosystems and conditions (MAES approach)

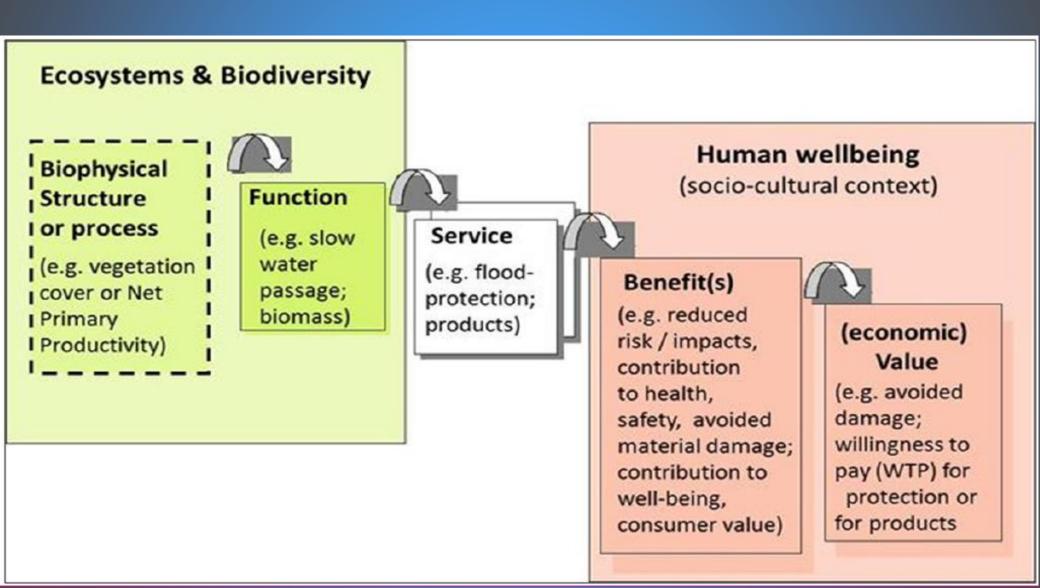
http://biodiversity.europa.eu/maes/mapping-ecosystems/eu-wide-assessment-of-ecosystems-

Relevance and main data gaps for ecosystems assessment

	Ecosystem condition	Major drivers of ecosystem change				
Ecosystem type (e.g. FOREST, RIVERS& LAKES, MARINE)	Condition	Habitat change	Climate change	Overexploitation (unsustainable management)	Invasive species	Pollution and Nutrient Enrichment
					E E	ny iran mant Agan

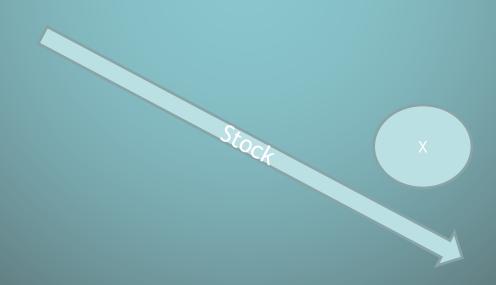


The value chain...societal health and wellbeing



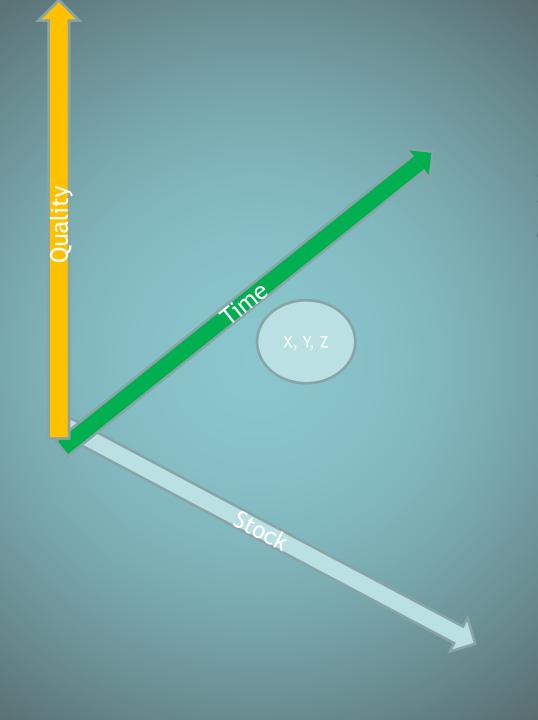
3 dimensions of ecosystems mapping

Spatial extent mapping

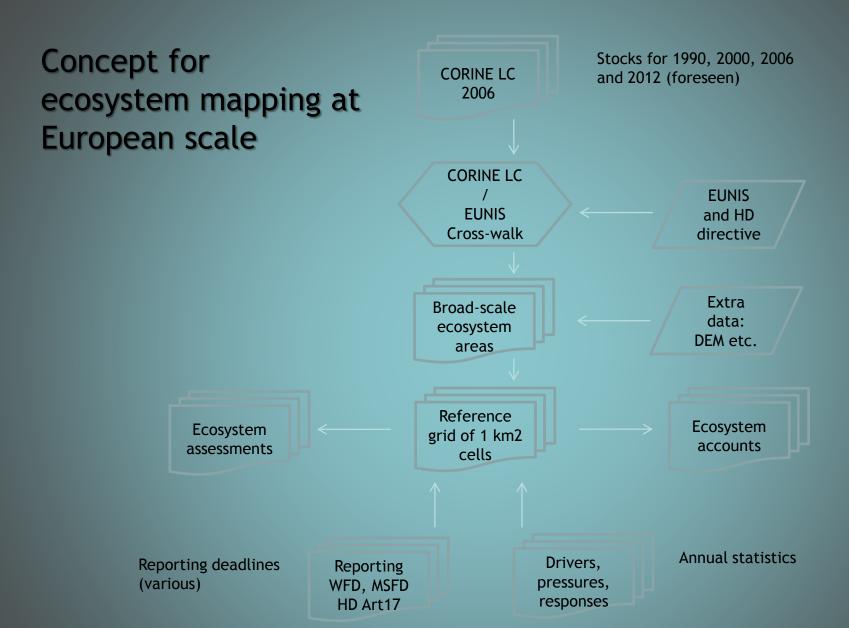


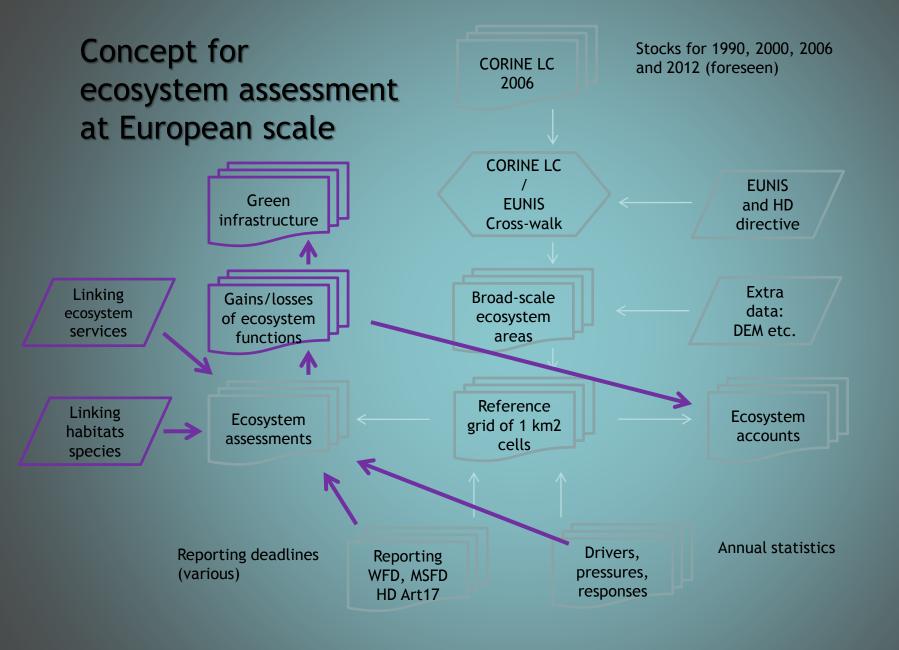


Basic change detection (a la CORINE LC)



Change detection in policy context of the BD Strategy 2020





Matrix approach: streamline information from reported data / information and on-going ecosystem assessment work

	Terrestrial (e.g. agro- ecosystems, forests, semi-natural lands)	Freshwater (e.g. rivers and lakes, wetlands)	Marine (including EEZs and DOMs)	Atmosphere
Provisioning				
Nutrition				
Materials				
Energy				
Regulating				
Wastes				
Flow regulation				
Physical				
environment				
Biotic environment				
Cultural				
Symbolic				
Intellectual and				
experiential				
Conservation				

Matrix approach: streamline information from reported data / information and on-going ecosystem assessment work

2014-2015	Terrestrial (e.g. agro- ecosystems, forests, semi-natural lands)	Freshwater (aquatic ecosystems e.g. rivers and lakes)	Marine ecosystems (transitional, coastal and EEZs waters)	Atmosphere
Ecosystem mapping (spatial modelling)				
Land cover as base layer				
EUNIS nomeclature				
Enhancements (data)				
Ecosystem condition (assessment)				
Reporting data: status & state				
Linking to CICES				
Linking habitats & species to ecosystems				
Impacts: gains/losses of ecosystem functions				
Pressures on ecosystems (proxy for degradation)				
Pollution				
(Over)harvesting				
Disturbing / structural			European i	

Proposal for outline of EEA report on ecosystem assessment

Section 1 Introduction

- 1.1 Setting of the scene
- 1.2 Data availability at EU level

Section 2 Ecosystem mapping

- 2.1 Spatial delineation
- 2.2 Towards functional mapping of ecosystems

Section 3 Assessing the condition of broad ecosystems

- 3.1 Condition of ecosystems current state-of-art
- 3.2 Pressures on ecosystems proxy for assessing ecosystem degradation
- 3.3 Outlook and climate change impacts on ecosystems

Section 4 Potential for Green infrastructure implementation and restoration

- 4.1 Role of Green infrastructure analysis
- 4.2 What-if analysis of possible decisions related to ecosystems

Section 5 Link to ecosystem capital accounting

Assets management: accounting for our natural capital

Components of Natural Capital:

Natural capital

Sub-soil assets:

(geological resources)

Minerals, earth elements, fossil fuels, gravel, salts etc.

Non-renewable & depletable

Abiotic flows:

(linked to geophysical cycles)

Solar, wind, hydro, geothermal etc.

Renewable & non-depletable

Ecosystem capital:

(linked to ecological systems and processes)

Ecosystems as asset:

Structure and condition

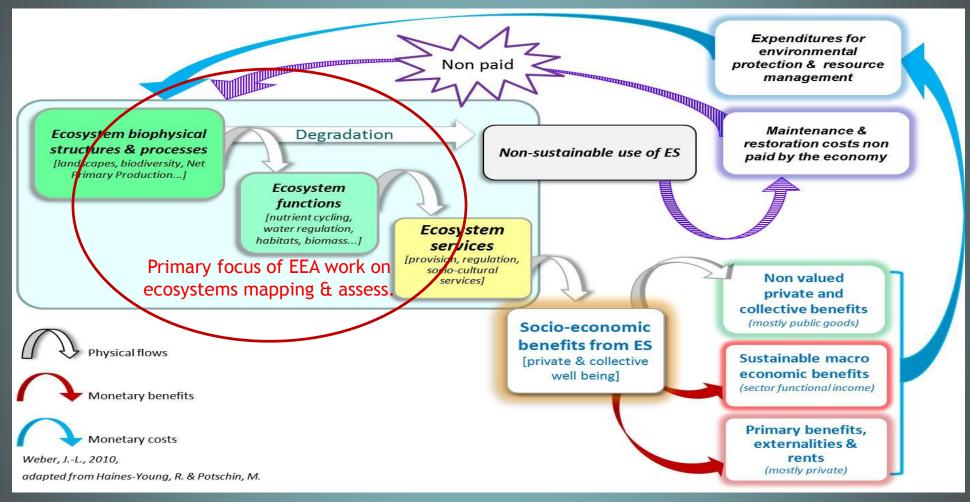
Ecosystem service flows:

- Provisioning
- Regulation & maintenance
- Cultural services

Renewable & depletable



EEA methodological approach: ecosystem accounts to inform on natural capital management



Accounts allow for e.g. measurement of key ecosystem structures, functions & services in physical units, and measurement of ecosystem state and degradation



Thank you