Accounting needs for European environmental policies

9th UNCEEA Meeting

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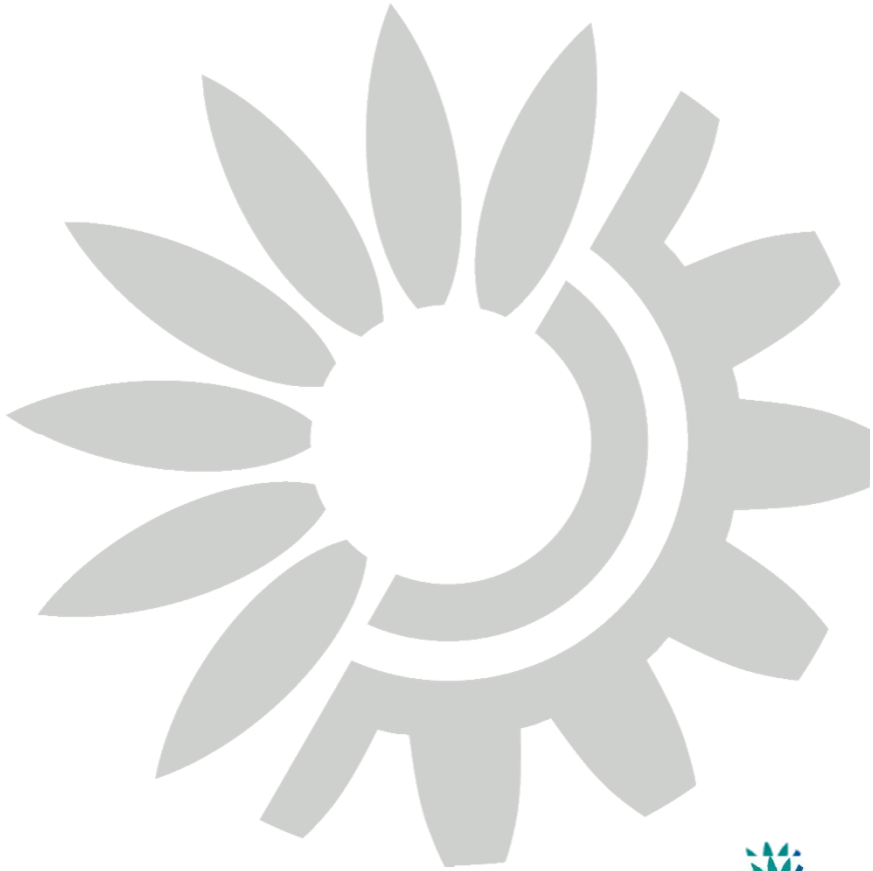
European Environment Agency (EEA)



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The EEA's Mission

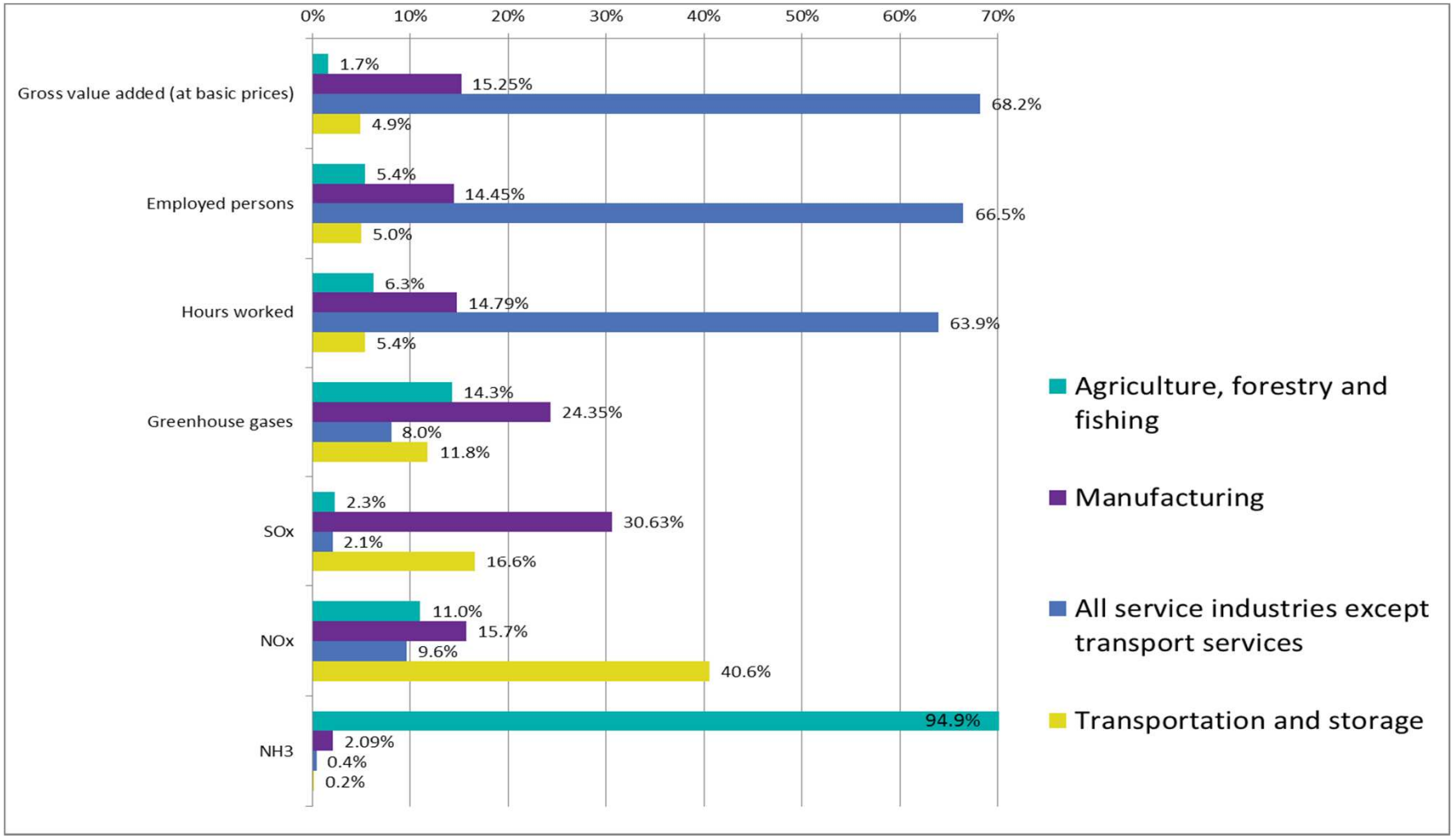
What?

The provision of timely, targeted, relevant and reliable information to policy-making agents and the public.

Why?

To help achieve significant and measurable improvements in Europe's environment and to support sustainable development.

We need much better sectoral accountability



Source: Eurostat

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Policy references on natural capital accounting

At global level:

- Rio +20 communiqué on natural capital accounting
- World Bank WAVES initiative
- 2012 Aichi targets under Convention on Biological Diversity

At EU level:

- 7EAP – Objective 1 focuses on natural capital
- EU Biodiversity Strategy to 2020 -> 'MAES' process
- EU Resource efficiency strategy

EU policies and ecosystem accounting

Action 5 under target 2 of the EU Biodiversity Strategy to 2020 states that:

”Member States, with the assistance of the Commission, will map and assess the state of ecosystems and their services in their national territory by 2014,

assess the economic value of such services, and promote the integration of these values into accounting and reporting systems at EU and national level by 2020.”

EU 'MAES' process

Support to implementation of Action 5 under target 2: 'Mapping and Assessment of Ecosystems and their Services'

5 pilot studies completed:

- Protected areas
- Agriculture ecosystems
- Forest ecosystems
- Freshwater ecosystems
- Marine ecosystems

Ongoing: pilot study on Natural Capital Accounting

http://ec.europa.eu/environment/nature/knowledge/ecosystem_assessment/pdf/MAESWorkingPaper2013.pdf

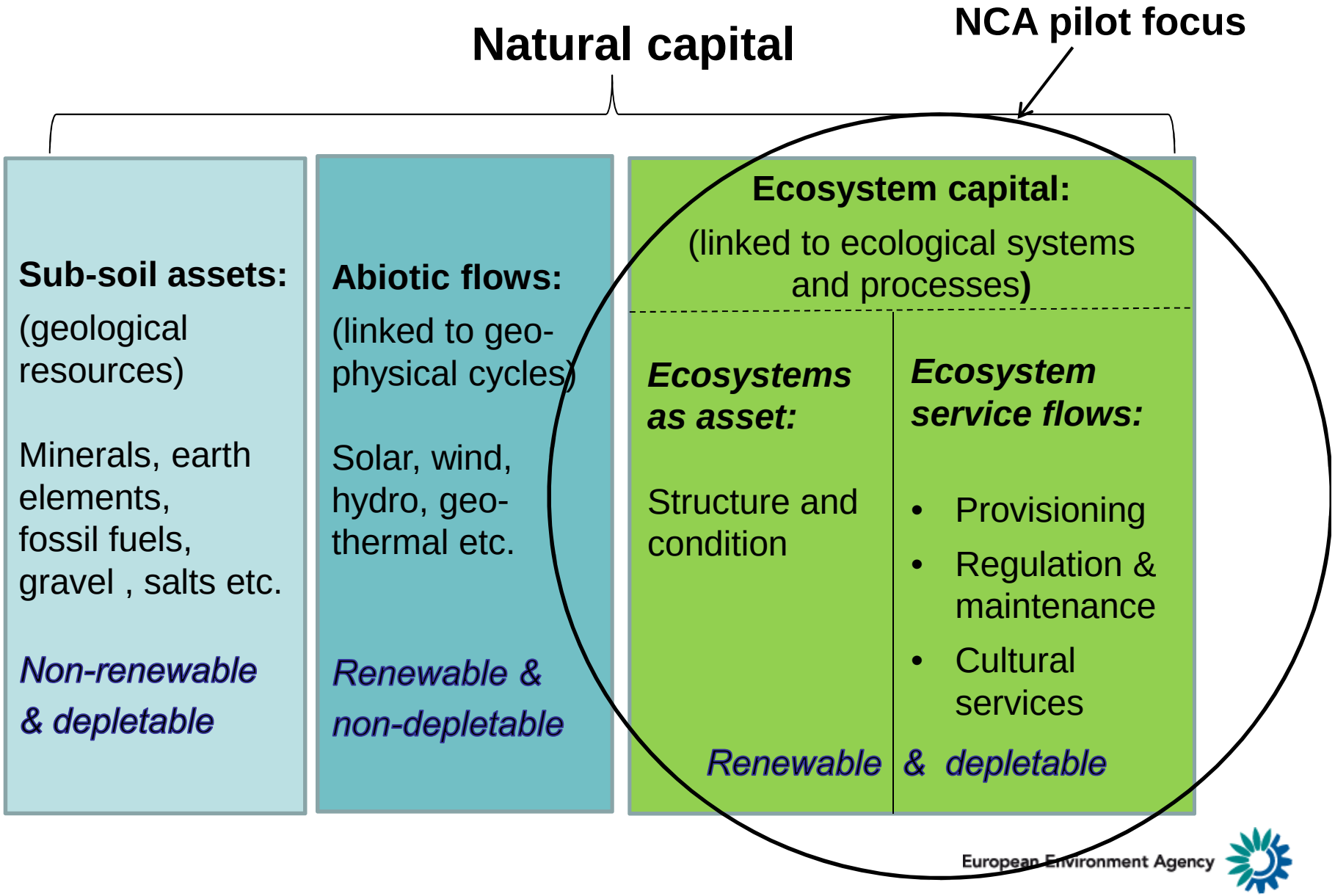
MAES project on natural capital accounting

Support implementation of the EU Biodiversity Strategy by:

- Reviewing the concept of natural capital & its components
- Evaluating methodological options for accounting for natural capital, both for physical accounts and valuation
- Providing concrete examples of methodological approaches
- Gather information on available experience and organisational set-up in EU Member States

=> Come up with a concrete methodological guidance that acts as reference document for implementation in EU MS

Components of Natural Capital



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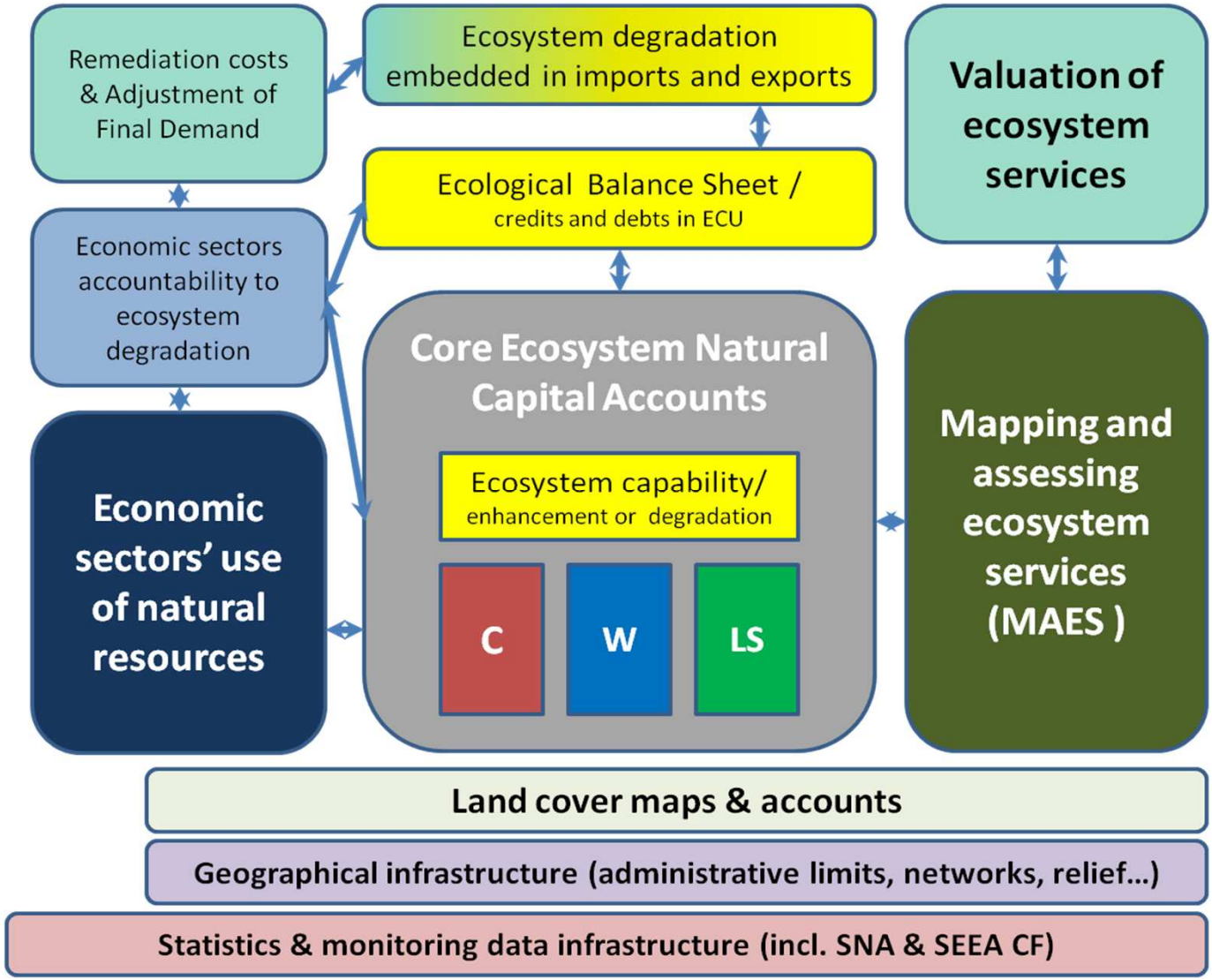
Key issues for accounting in MAES

- Develop a suitable conceptual framework (e.g. CICES, SEEA – Vol. 2 on exp. ecosystem accounting)
- Accounting for stocks ('capital') and flows ('service')
- Accounts need to be complete and consistent
- Avoid double counting – between ecosystems and between different service categories
- Organise data framework / data sets so that accounts can be developed at relevant spatial & temporal level
- The long-standing debate on valuation of ecosystems and their services

Ecosystem Capital Accounting (ECA) and MAES



(Simplified) ECA for Europe

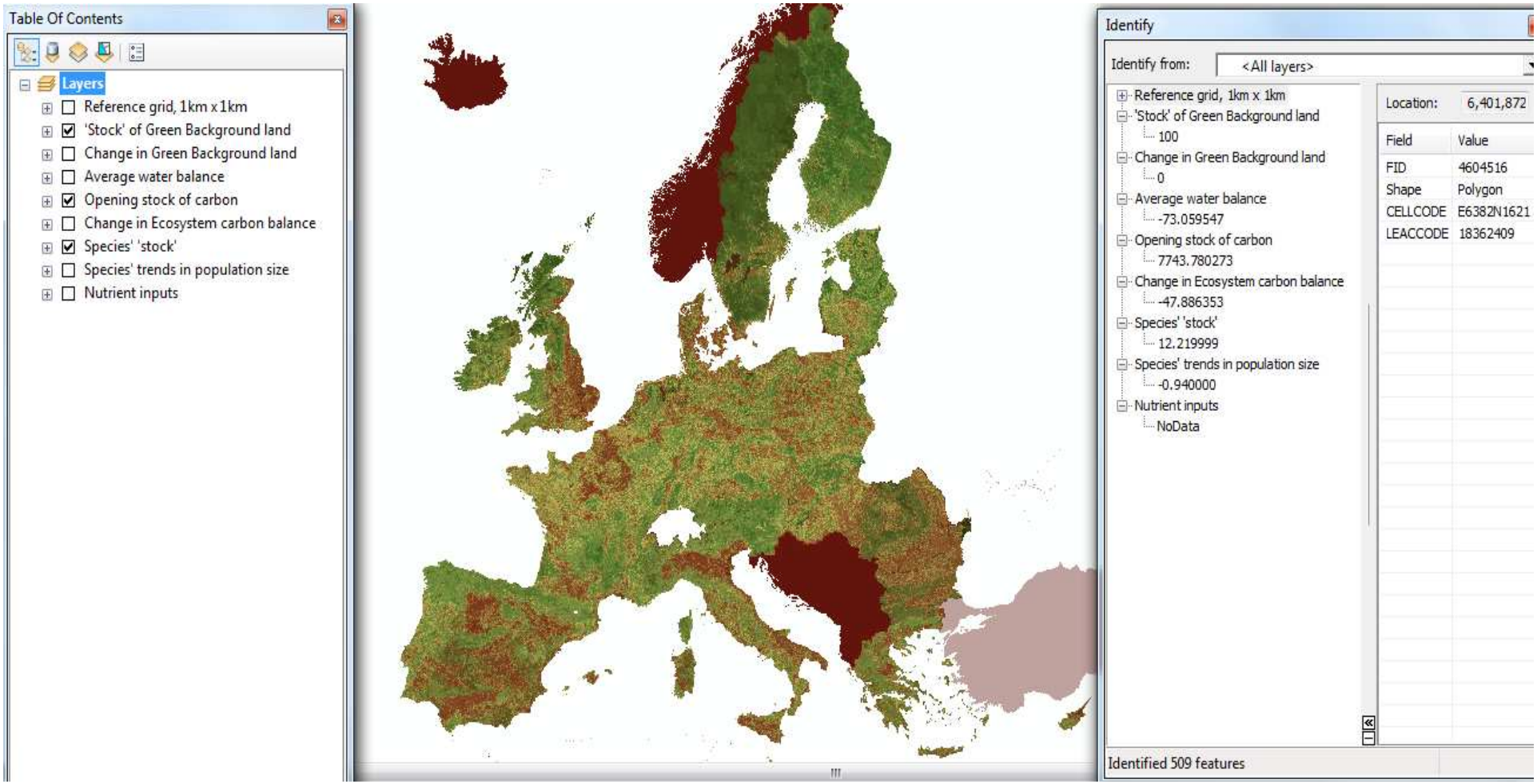
a) With Eurostat and Joint Research Centre support

b) Physical accounts for land, carbon, water and landscape services computed and documented

c) Composite index of overall ecosystem capability in physical terms being computed – ecological debt

d) Integrated assessment being prepared for 2015 mid-term review of EU biodiversity strategy

Coverage and type of data for estimating sECA



EU-27 countries only
Data arranged on 1km grid

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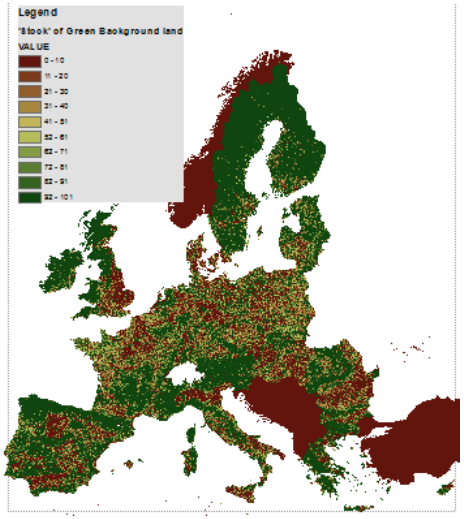
Ecosystem land accounts 2000-2006: stocks & change

Stock in 2000



Green background stock and change per country

COUNTRY	sum GB (ha)	GB %	sum change GB	Change (%)
Czech Republic	4098400	52.0	228327	2.9
Portugal	6295290	68.5	52049	0.6
Germany	18919900	52.9	36661	0.1
Lithuania	4044940	62.3	4032	0.1
Greece	9902320	74.8	4271	0.0
Bulgaria	6420100	57.9	3497	0.0
Slovakia	2922550	59.6	1252	0.0
United Kingdom	16568000	67.6	2201	0.0
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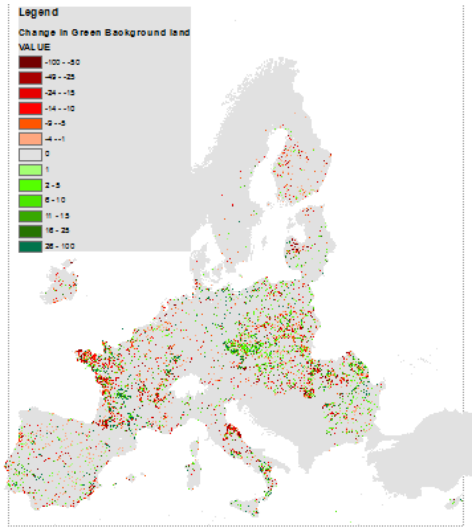
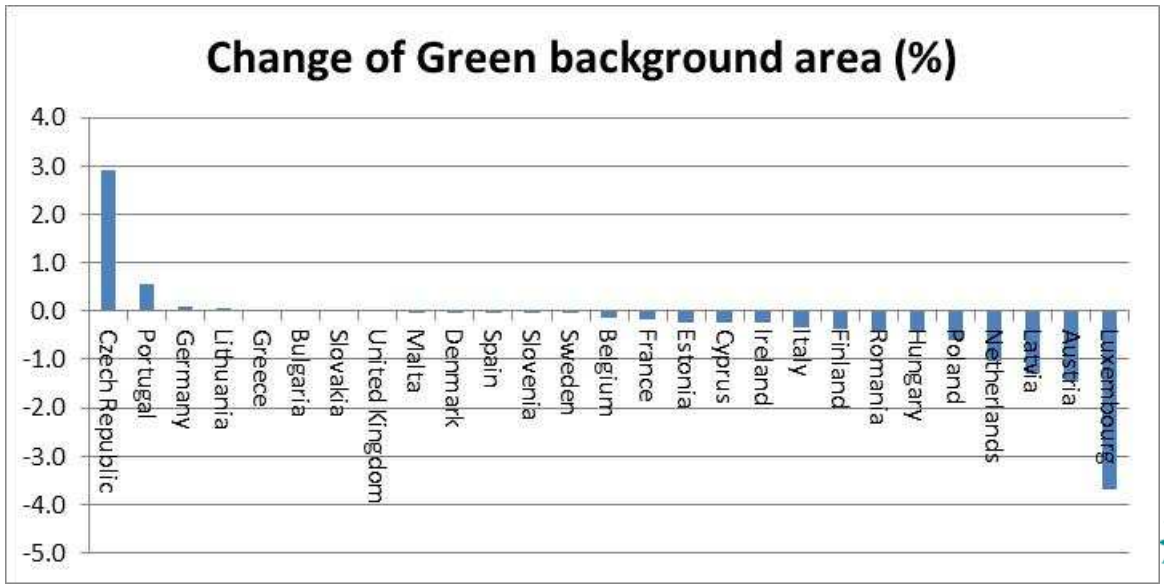
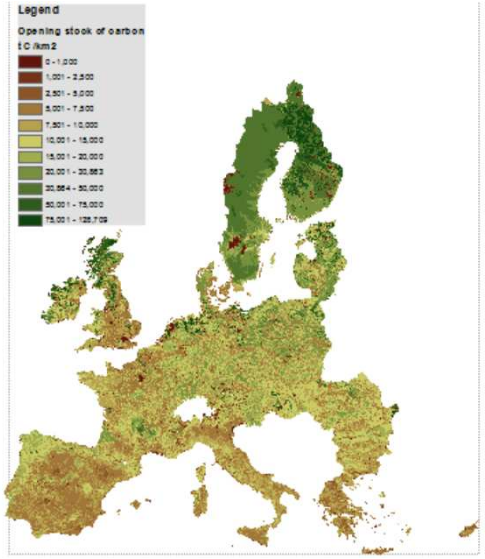
Change 2000-2006



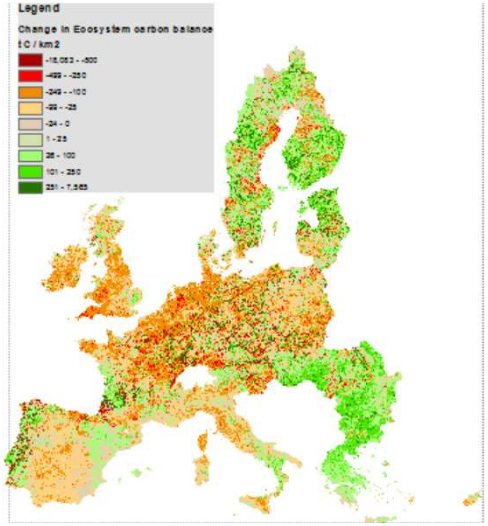


Ecosystem carbon accounts 2000 – 2006: stocks & change

Opening stock in 2000



Change of balance 2000-6



Opening stock in 2000 and net change per country

COUNTRY	Opening stock (t)	Net change (t)	% from opening
Austria	1161340000	10620600	0.91
Belgium	950349000	8353820	0.88
Bulgaria	3046660000	14422600	0.47
Cyprus	1322580000	5772670	0.44
Czech Republic	1393250000	5883290	0.42
Denmark	1556020000	4763130	0.31
Estonia	907488000	1027110	0.11
Finland	14426700000	15485500	0.11
France	14781100000	6340850	0.04
Germany	1324560000	-610308	-0.05
Greece	530034000	-1379340	-0.26

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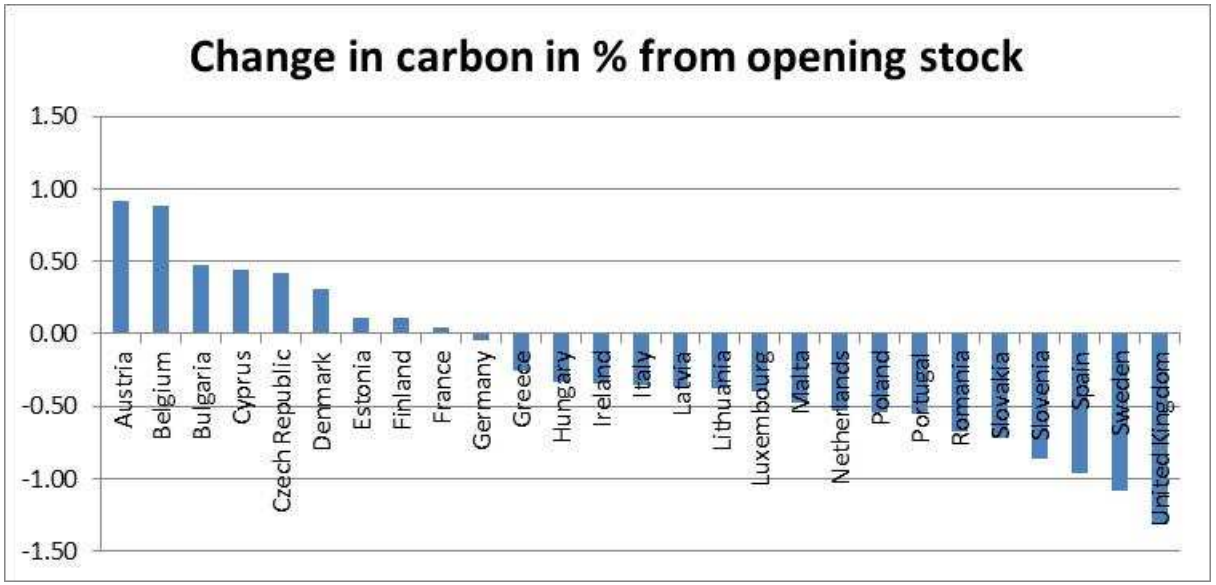
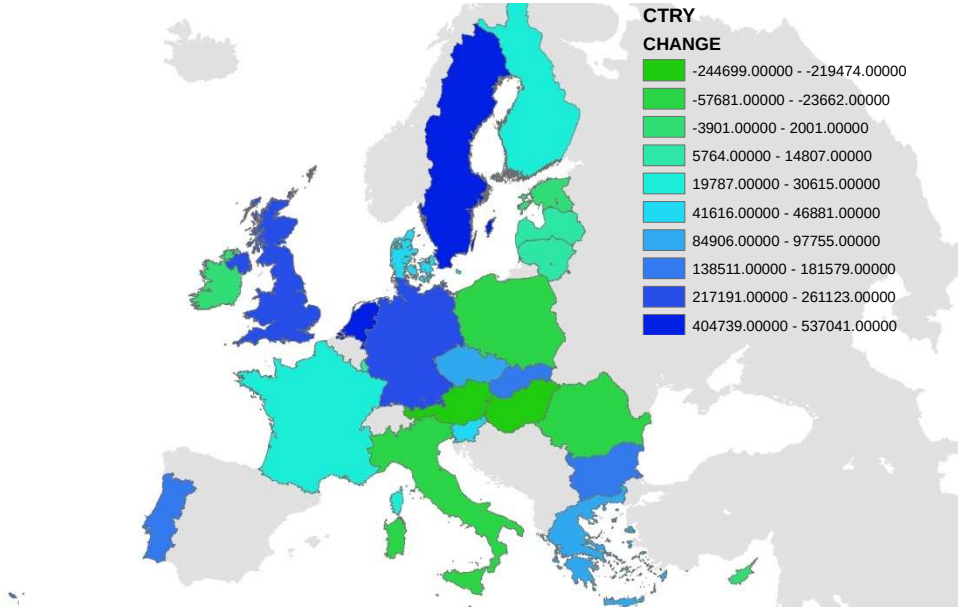
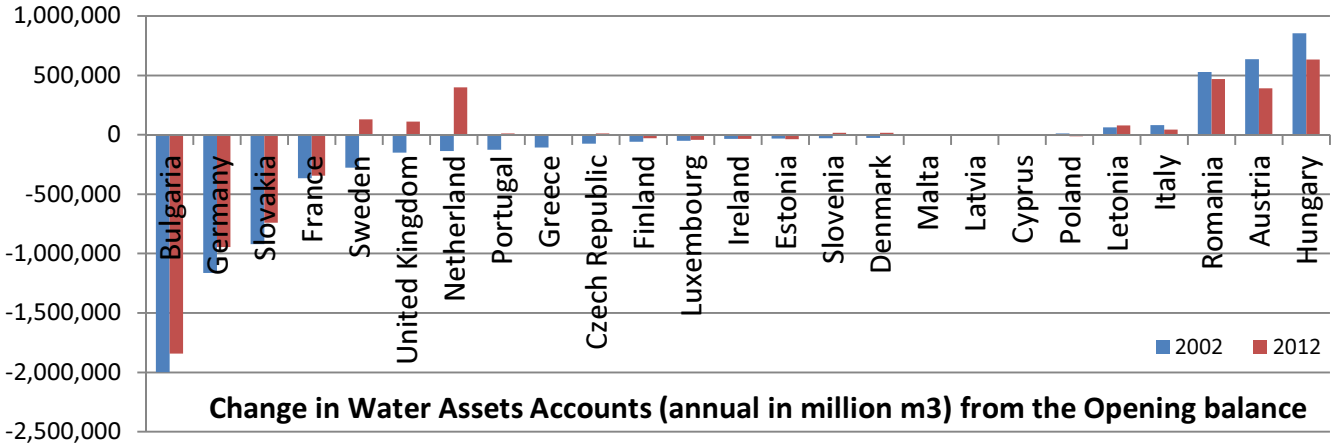


Ecosystem water quantity accounts 2000 – 2012

Opening balance in 2000





Output table: per country

Country	2002	2012	Change
Bulgaria	-1998272	-1840676	157596
Germany	-1162381	-945190	217191
Slovakia	-921998	-740419	181579
France	-364885	-345098	19787
Sweden	-276103	128636	404739
United Kir	-149684	111439	261123
Netherlan	-138253	398788	537041
Portugal	-126353	12158	138511
Greece	-107121	-9366	97755
Czech Rep	-74334	10572	84906
Finland	-59197	-28582	30615
Luxembou	-49849	-42443	7406
Ireland	-33733	-35140	-1407
Estonia	-32586	-36487	-3901
Slovenia	-30428	16453	46881
Denmark	-25615	16001	41616
Malta	275	307	32
Latvia	1146	6910	5764
Cyprus	1931	3932	2001
Poland	10602	-13060	-23662
Letonia	63641	78448	14807
Italy	80382	44597	-35785
Romania	528026	470345	-57681
Austria	634855	390156	-244699
Hungary	853634	634160	-219474

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Connecting accounting modules: a systemic approach (DPSIR)

	Driving forces	Pressures	State	Impacts	Responses
Accounting frameworks	SEEA Central Framework – physical flow and asset accounts SNA 2008 EU Regulation 691/2011 on environmental economic accounts		SEEA Central Framework –asset accounts SEEA Vol.2 – experimental ecosystem accounts **Ecosystem capital accounts**		SEEA Central Framework – monetary flow accounts EU Regulation 691/2011 on environmental economic accounts
Individual accounts	Economy-wide Material Flow Accounts GHG/Air emissions Products (raw material equivalents) Energy (due 2017) Water flow Waste (?)		**Land** **Carbon** **Water** Forest Biodiversity (?) Nutrients (?)		Environmental taxes Environmental protection expenditure (due 2017) Environmental goods and services (due 2017) Environmental subsidies and similar transfers Resource use and management expenditure
Related statistics and Data	Population Economic growth		Human health and wellbeing Air quality Noise		
EU-27 Supply Use Input-Output Table extensions	Material resources GHG emissions Air pollutant emissions Energy (due 2014) Water (?) Waste (?)		Land Carbon Water Nutrients (?)		Linked to labour, taxes, subsidies and expenditure

Thank you