

Ecosystem Science for Policy & Practice

Natural Capital Accounting and Policy

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IEEP

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EU Experts Workshop -

Advancing together on Biodiversity Resource Mobilization and preparing the CBD COP PyeongChang

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Policy commitments & accounting related activities

Strategic Plan for Biodiversity 2011-2020: Target 2

Rio+20 Conference: 57 countries – call to strengthen NCA implementation

Global

'Beyond GDP' & 'Stiglitz-Sen-Fitoussi Commission' & OECD's Better Life Initiative

UN System of Environmental and Economic Accounting (SEEA)

Global Partnership for Ecosystem Valuation and Wealth Accounting (WAVES)

EU

EU Biod. Strat. : Action 5: promote integration of values in accounting by 2020

7th Environmental Action Programme (7th EAP)

Mapping and Assessment of Ecosystems and their Services (MAES) initiative

EEA Ecosystem Capital Accounts

Regulation on National Environmental Economic Accounts (Regulation (EU) 691/2011)

Practical need for accounts to help implement Water Framework Dir. (2000/60/EC)

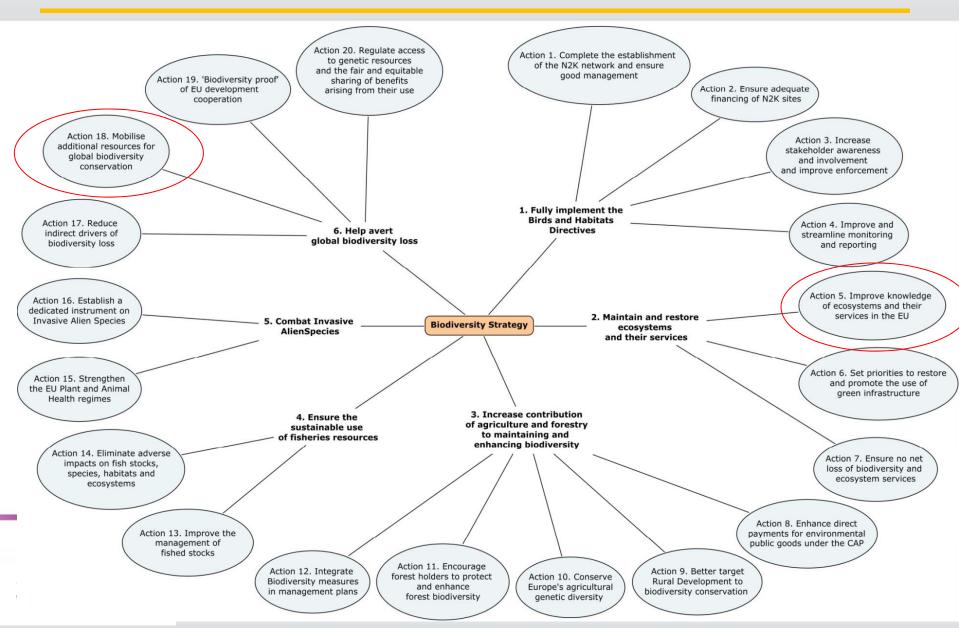
NBSAPs – National Biodiversity Strategies and Action Plans

Member States: Range of national commitments and (experimental) accounts



Policy Commitments: EU Biodiversity Strategy

Action 5: promote integration of values in accounting by 2020



Accounting tools – what do they focus on?

Asset accounts (SEEA Vol.1)

(biophysical and, where possible, monetary indicators) e.g. minerals, energy, land

Physical flow accounts (SEEA Vol. 1) e.g. MFA, water, air emissions



Environment

Direct benefit from

ecosystem services

Society

The Economy

Abiotic subsoil assets

Abiotic resources

e.g. mineral, fossil fuels, construction materials

Abiotic flows

e.g. solar energy, wind

e.g. water

Other Resource flows

e.g. provisioning, cultural, & regulating services

Ecosystem services

Biodiversity (Ecosystems, Species, Genes)

Inputs from Human and Social Capital Labour, institutions

Natural resources and ecosystem services

Inputs from Natural Capital

Economic Sectors

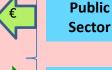
(examples)

- Agriculture, hunting, forestry & fishing
- Oil and gas; mining & quarrying
- Wood and wood products
- Food products, beverages & tobacco
- Textiles, textile products & leather
- Pulp, paper & paper products
- Rubber & plastics products
- Research & development Outputs from one sector can be intermediate inputs to another









System of National Accounts

(SNA)



Exports

Households



Man-made capital

(inc. financial capital)

Monetary accounts (SEEA Vol.1)

e.g. Environmental Protection Expenditures; environmental taxes; environmental subsidies

Ecosystem Capital asset accounts (SEEA Vol.2; EEA's ECA)

(biophysical and, where possible, monetary indicators)

e.g. ecosystem accounts: spatially detailed accounts for particular ecosystems (e.g. building on habitat classes) & cross-cutting carbon, water, biodiversity accounts

Ecosystem service accounts (SEEA Vol.2; EEA's ECA)

(biophysical and, where possible, monetary indicators) Provisioning, regulating, cultural ES

EU's Natura 2000 network: 26,000 sites ~ 18 % of EU

Funding a challenge

Costs ~ 5.8 bnEUR/yr

Source: Gantioler et al 2010

Natura 2000 benefits

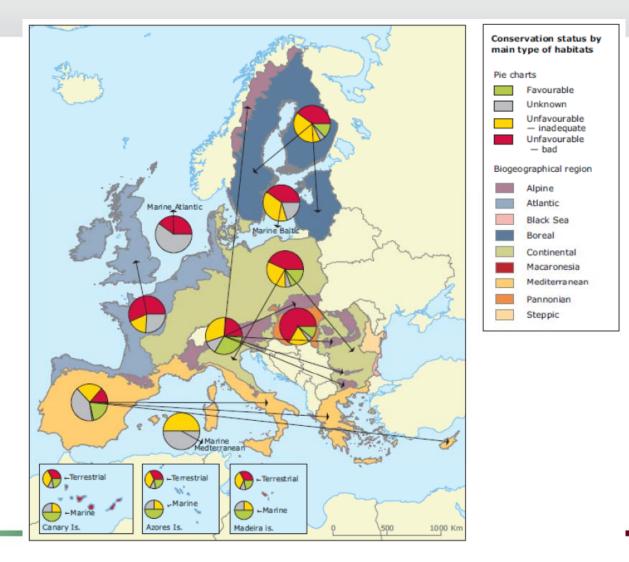
Illustrative value of between €200-300 bn/yr

ten Brink et al. (2012)

Carbon Value:

Natura 2000 network stores ~ 9.6 btC (equiv. 35 bt CO2), Worth ~ €607bn-€1,130bn (stock value in 2010)

Markandya & Ding in ten Brink et al., 2012





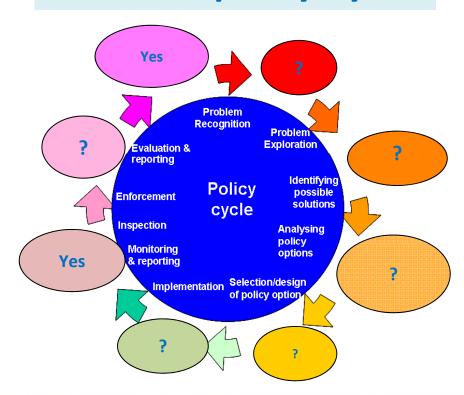
Source: SOER 2010

What problem / needs can NCAs address?

Policy Areas

- Biodiversity
- Water
- Climate mitigation & adaptation
- Cohesion policy
- Agriculture
- Forestry
- Fisheries
- Energy
- Resource efficiency
- Green economy

Points in policy Cycle



Accounts can be of use to many policy areas and across the policy cycle

Added value depends on quality of data, maturity of accounts and alternative info sources

Accounting for biodiversity, natural capital and ESS

What can be covered?

What can't be covered?

Biodiversity (species, genes, ecosystem)

Ecosystem-biodiversity: extent & quality for some habitats & indicators

Some links at most to certain species indicators (outside of core accounts)

Some implicit links to species element of BD via ecosystem accounts, natural capital & ESS

Ecosystem Condition

ecosystems, species, genes

Complexity of

Natural capital (stock)

Fish resources, timber stock, agricultural land

Water quantity

condition?

Carbon in soil; carbon in vegetation

Water quality?

Marine ecosystem

Ecosystem services (flow)

Carbon sequestration (terrestrial)

Fish, timber harvest, food production

Value of wild pollinators?

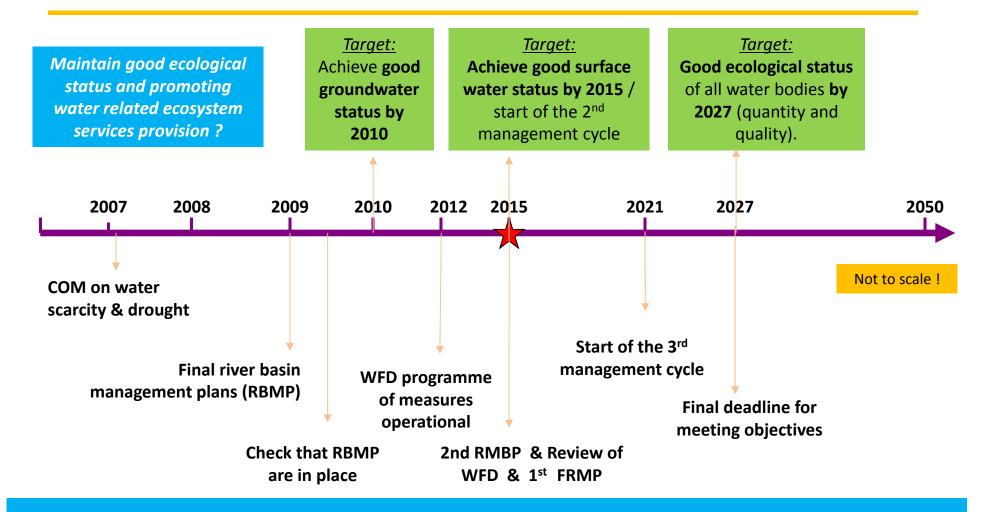
Recreation and landscape value (at local scale)

Many cultural values (at national scale)

Site specific values: e.g. water quality (only in local accounts) – difficult for many regulating services

What can and cannot be integrated depends both on data and methods. What are your experience / perspective? National variations? Future developments?

Water Policy



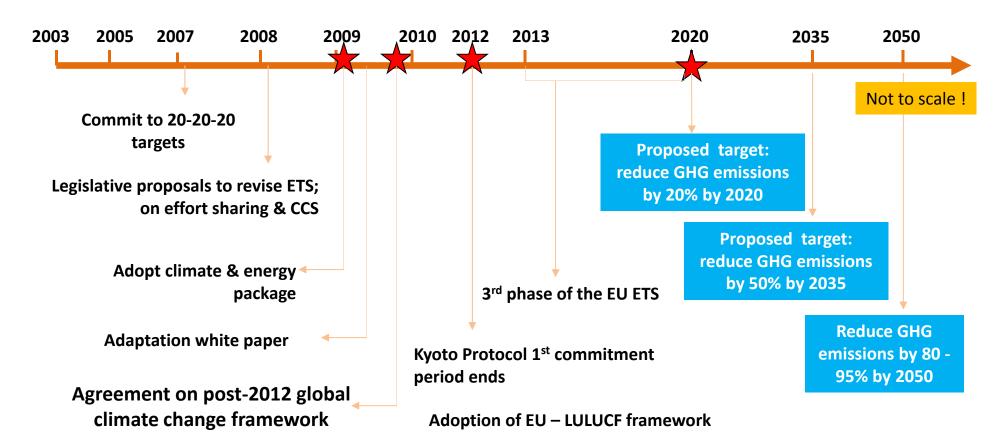
Water & Ecosystem Cap. Accounts (ecosystem/habitat accounts & integrated land, water, biomass accounts):

valuable evidence base

Water stock (aquifers, soil water, rivers, lake and dams) and changes; Annual water flows, Net Ecosystem Accessible Water Surplus – at national and river basin level. Water Quality issues will require accounts development.

Climate Change

Move to ecosystem based mitigation and adaptation to climate change?



Ecosystem accounts and linked air & carbon biomass accounts: valuable evidence base.

Stock of carbon in soil, trees and shrubs and changes in stocks;

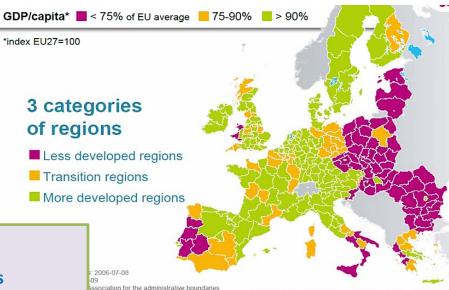
Net Ecosystem Carbon Balance; HANPP; Net Ecosystem Accessible Carbon Surplus.

Env tax, subsidies/transfers and env expenditure accounts useful: re drivers/response: ETR/EFR et al Already int. accounting on GHG emissions and LULUCF: some areas less added-value from accounts.

Cohesion Policy

EC proposals: 2014-2020 EU Cohesion Policy:

- Overall budget €336 billion (33% of MFF) & retains main funds: ERDF, Cohesion Fund and ESF
- EC proposal 20%+ MFF allocated to climate related activities = €200 billion for 2014-2020



11 thematic objectives, including:

Supporting the shift towards low-carbon economy in all sectors

Promoting climate change adaptation, risk prevention & management

Protecting the environment, and promoting resource efficiency

Potential for accounts:

Ecosystem/habitat accounts to assess baseline of a region's natural assets/wealth and changes over time.

Carbon biomass accounts for commitments on GHG mitigation;

Land & water accounts: areas at risk from climate change - water scarcity, flooding et al.;

Regional accounts: carbon intensity, resource efficiency, regional planning and assessments;

Local accounting for decision making regarding investments.

Need experimentation, improved data & capacity building.

Challenges for accounting and their development

- Understanding what accounts can really offer
 - Identifying and communicating added-values of accounts in light of what can be said now,
 - What could be said in the future and
 - How this compares to other sources of evidence.
- Improving data availability obtaining resources, data & political commitment
- Developing the different accounts (e.g. ecosystem capital accounts on ecosystem condition) and linking the accounts (integrated accounts across env issues & to social & economic accounts) to get the whole picture / maximum realistic added value
- Specific challenges for ongoing development of NCA
 - Scale and needed granularity for utility
 - Data & appropriate modelling
 - Ground-truthing and relevance
 - Coverage and representativeness
 - Trade
 - Monetary valuation

Also some important interpretation challenges: meaning of values in light of data availability, issues covered and also meaning of value used (exchange values in accounts not same as econ. assessments of value). Requires consideration of what is "fit-for-purpose".

Summary

- Environmental and economic accounts have the potential to help in creating a paradigm shift in evidence, awareness, policy making and impact.
- Increasing commitments at global and national levels
- Range of potential benefits across policy areas and policy cycle
- Level of benefits depends on type of data, quality of data & regularity of data
 reporting as well as availability of alternative information sources
- Policy benefits will grow as accounts mature and policy makers' awareness of the instrument grows – further application, method advances and investment needed
- Interpretation of meaning is also key (e.g. what is included/not and hence what do numbers mean, defining 'fit-for-purpose')
- Some major issues remain: e.g. monetisation and integration of biodiversity

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