The ecosystem-based approach to adaptation: Concepts and implementation

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Overview

- Introduction/Definition
- Methodological steps
- Two project examples
- Actors and sectors involved
- Costs and Benefits
- Barriers to implementation at project level
- EbA in EU policies
- Recommendations

Study carried out by:

Ecologic Institute and the Environmental Change Institute

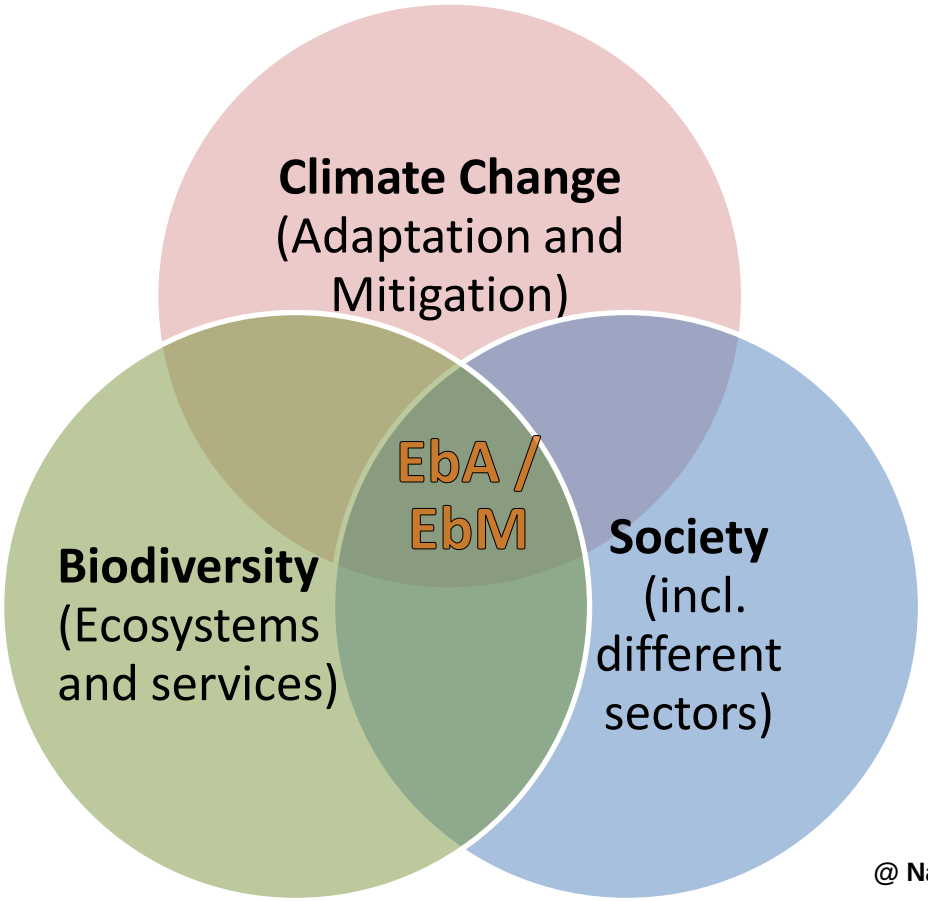
In 2011

Introduction: EbA and EbM ("working with nature")

- CBD definition: "The **ecosystem approach** is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way" (CBD decision V/6 2000)
- Ecosystem based approaches address **crucial links between climate change, biodiversity, ecosystem services and sustainable resource management**
  - i) **Ecosystem-based Adaptation (EbA)**: maintain and increase resilience, reduce vulnerability of ecosystems and people, help to adapt to climate change impacts through the use of biodiversity and ecosystem services
  - ii) **Ecosystem-based Mitigation (EbM):** enhance carbon sequestration, maintain existing carbon stocks, increase carbon storage through the use of ecosystems

Ecosystem-based approaches delivering multiple objectives

→ Panacea for wide range of environmental objectives/ policies (?)



@ Naumann (2013)

Methodological steps in the project

- **Project database** (161 projects) assembling parameters on project identification, scope and operation
- **5 in-depth case studies** in BY, NL, SE, CZ, UK for a more detailed assessment of the initiation and implementation of the respective projects, their costs and benefits, and the barriers experienced in the implementation of the project
- **Screening** and assessment of EU strategies/ policies and selected NAS and **interviews with EC officials**


Retrofit SUDS, SE


Restoring peatlands, Belarus


Wallasea Island, UK


De Doorbraak, NL


Sumava/Krkonose NP, CZ

Biotope Area Factor Programme (Berlin, Germany)

- **Objective**: re-regulate urban planning to achieve a certain proportion of green space in urban areas
- **Activities**: decentralized development of green infrastructure at individual building scale; monitoring
- **Results**:
  - Improved regulation of urban climate
  - Decreased run-off
  - Improved urban ecology, species diversity and water quality

Source: Doswald and Osti (2011),
http://www.stadtentwicklung.berlin.de/umwelt/landschaftsplanung/bff/de/ziele.shtml

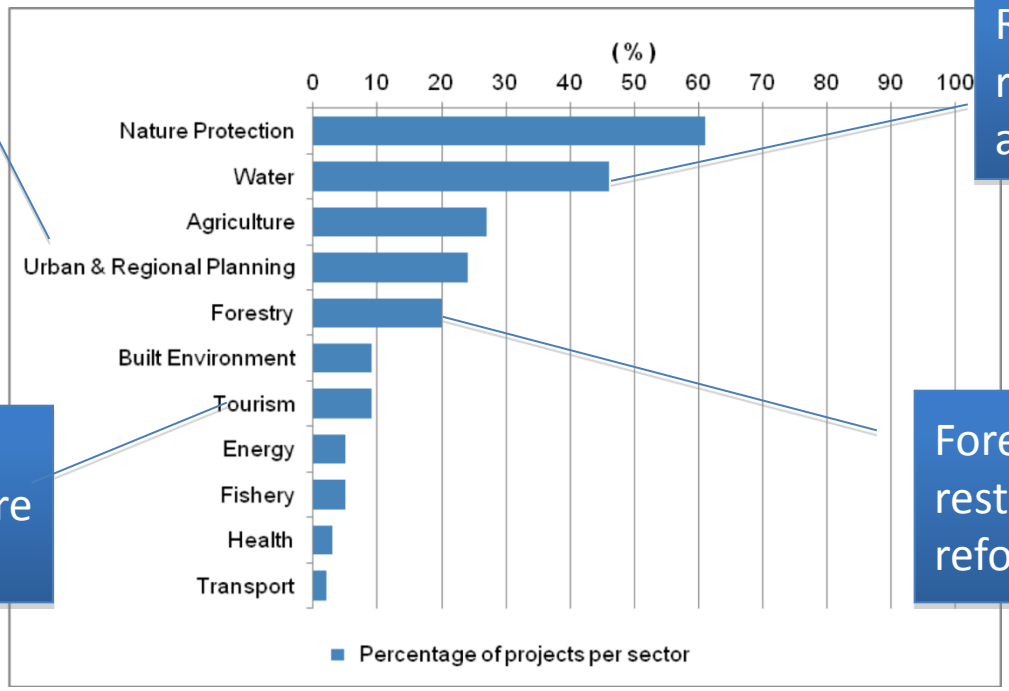
Restoration and sustainable management of peatlands (Belarus)

- **Objectives**: increase carbon storage capacity and reduce CO_2 emissions; increase number and abundance of wetland species
- **Activities**: rewetting of six depleted/degraded peatland sites up to 14.000 ha

- **Results**:
  - Estimated carbon reduction: 2,9 t CO_2/ha/yr
  - Re-establishment of basic ecosystem functions
  - Formation of ecological corridors and reservoirs
  - Micro-climate regulation, benefiting neighbouring agricultural lands

Ecosystem based approaches – addressing various sectors

Increase green and blue infrastructure and spaces (e.g. green roofs, parks, lakes)



River and floodplain renaturation/restoration

Enhance eco-tourism and sustainable nature tourism

Forest conservation, restoration, reforestation

Cost and benefits

- Lack of quantitative data made it difficult to fully assess costs and benefits

Phase	Section	Implementation	Development costs [€ million]	Land purchase costs [€ million]	Total costs per phase [€ million]
1	Mokkelengoor	2002 - 2005	ca. 6	ca. 2	ca. 8
2	Bornerbroek	2006 - 2008	ca. 7	ca. 4	ca. 11
3	Tusveld	2009 - 2011	ca. 7	ca. 4	ca. 11
4	het Fleer	2012 - 2013	ca. 7,2	ca. 3,6	ca. 10,8
Total		**2002 - 2013**	**ca. 27,2**	**ca. 13,6**	**ca. 40,8**

- Benefits are largely expressed in qualitative terms (e.g. habitat protection, recreational opportunities etc.)
- Projects using ecosystem-based approaches potentially more cost-effective than traditional engineered approaches
- Need for detailed assessments at the local scale and a standardised methodology

Barriers to implementation at project level

- Lack of **financial sufficiency** and predictability
- Lack of **quantitative data** on benefits
- Limits to **technical expertise**
- Organizational and institutional **complexity** arising out of the diversity and number of **partners**
- Antecedent **regulatory conditions** inhibit landscape-scale decision-making and the creative provision of funds, materials, and expertise
- Limited **public awareness** about the multiple benefits

EbA in EU policies

- **European Adaptation Strategy (April 2013)**
  - acknowledges EbA as being “usually cost- effective, easily accessible and provide multiple benefits “
  - Action 7: Ensuring more resilient infrastructure
    - Commission will in 2013 explore the need for additional guidance (…) to ensure the full mobilisation of ecosystem-based approaches to adaptation
- **Strategy for Green Infrastructure (May 2013)**
  - “are among the most widely applicable, economically viable and effective tools to combat the impacts of climate change”
  - EbA use GI when appropriate

Recommendations to foster EbA

- **Raise awareness** about ecosystem-based approaches and their multiple functions and benefits for adaptation and mitigation
- Make **financing opportunities** (including EU funds, national/regional possibilities and private financing) more flexible for projects
- Facilitate **cross-sectoral** integration
- Exchange **best practices**

One last remark: Project questionnaire on EbA projects still online until end July 2013. In German language only.

Thank you.

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