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

Assessment of the potential of ecosystem-based approaches to climate change adaptation and mitigation in Europe
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 (?)
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**
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 CO₂ 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 CO₂/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)
- Enhance eco-tourism and sustainable nature tourism
- River and floodplain renaturation/restoration
- Forest conservation, restoration, reforestation

Graph showing the percentage of projects per sector:
- Nature Protection
- Water
- Agriculture
- Urban & Regional Planning
- Forestry
- Built Environment
- Tourism
- Energy
- Fishery
- Health
- Transport

Percentage of projects per sector
Cost and benefits

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

<table>
<thead>
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<th>Phase</th>
<th>Section</th>
<th>Implementation</th>
<th>Development costs [€ million]</th>
<th>Land purchase costs [€ million]</th>
<th>Total costs per phase [€ million]</th>
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- 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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