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Assessment of the potential of ecosystem-based approaches to climate change adaptation and mitigation in Europe

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Table of content

Introduction

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"

- Ecosystem approach address the crucial links between **climate change, biodiversity, ecosystem services and sustainable resource management**
- Issues covered in **Ecosystem-based adaptation (EbA)/ ecosystem-based mitigation (EbM)** : maintain existing carbon stocks, regulate water flow and storage, maintain and increase resilience, reduce vulnerability of ecosystems and people, help to adapt to climate change impacts, improve biodiversity conservation and livelihood opportunities and provide health and recreational benefits.
- ➔ Panacea for wide range of environmental objectives/policies

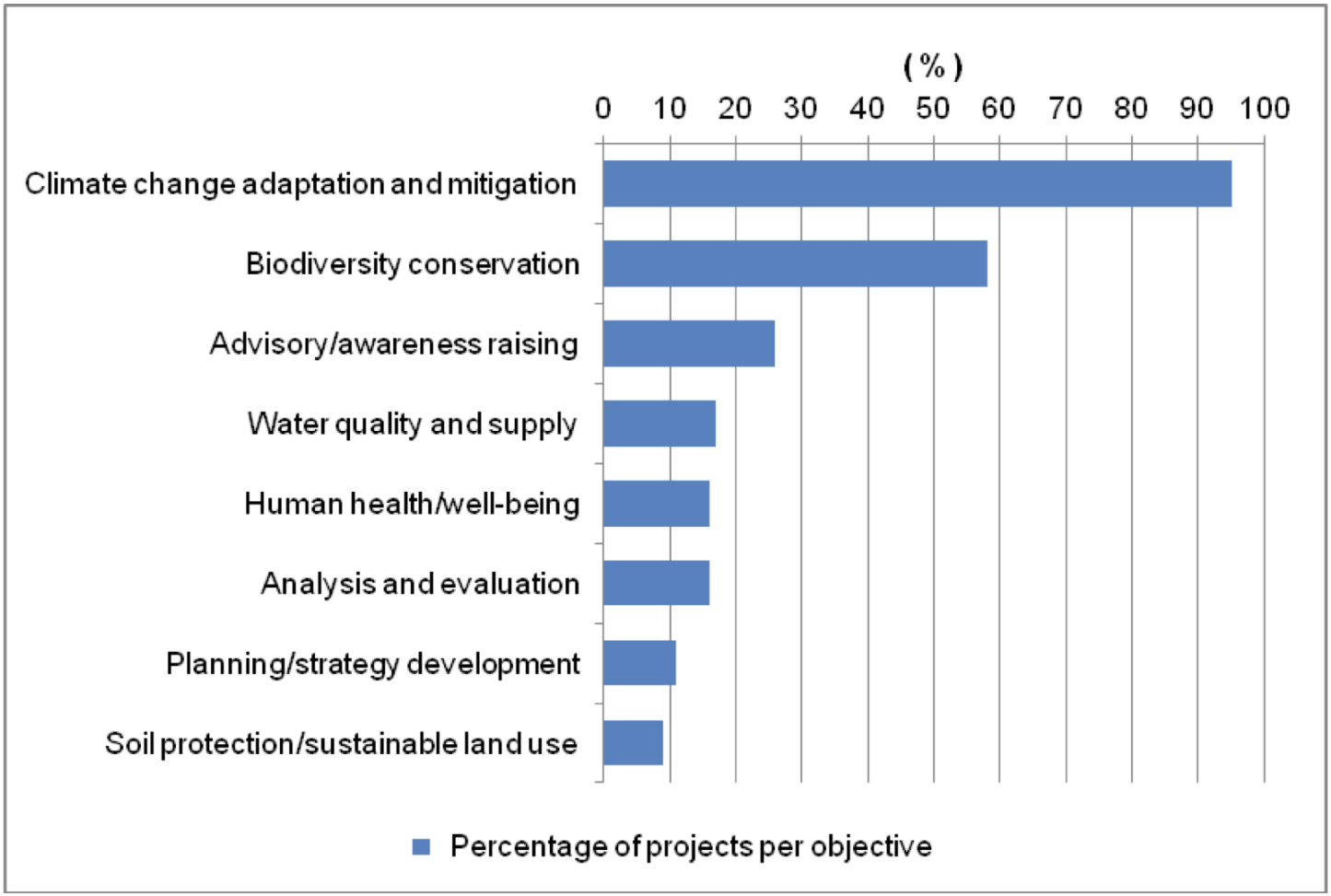
Perception and application of the concept

- **EU level documents** show little specific mention of ecosystem-based actions although there was recognition that ecosystem-based actions often provide multiple benefits including mitigation (except for CFP and the Marine Strategy FD)
  - **EU communication "Roadmap to a Resource Efficient Europe**" states that the Commission *will* "significantly strengthen its efforts to integrate biodiversity protection and ecosystem actions in other Community policies with a particular focus on agriculture and fisheries (continuous)"
- **Country and sector documents:** creating or maintaining protected areas; ecological connectivity; using ecosystems as carbon stores.
- Evidence of concrete adaptation actions was found in just less than half of the **country level reports,** mitigation was given in the majority of cases

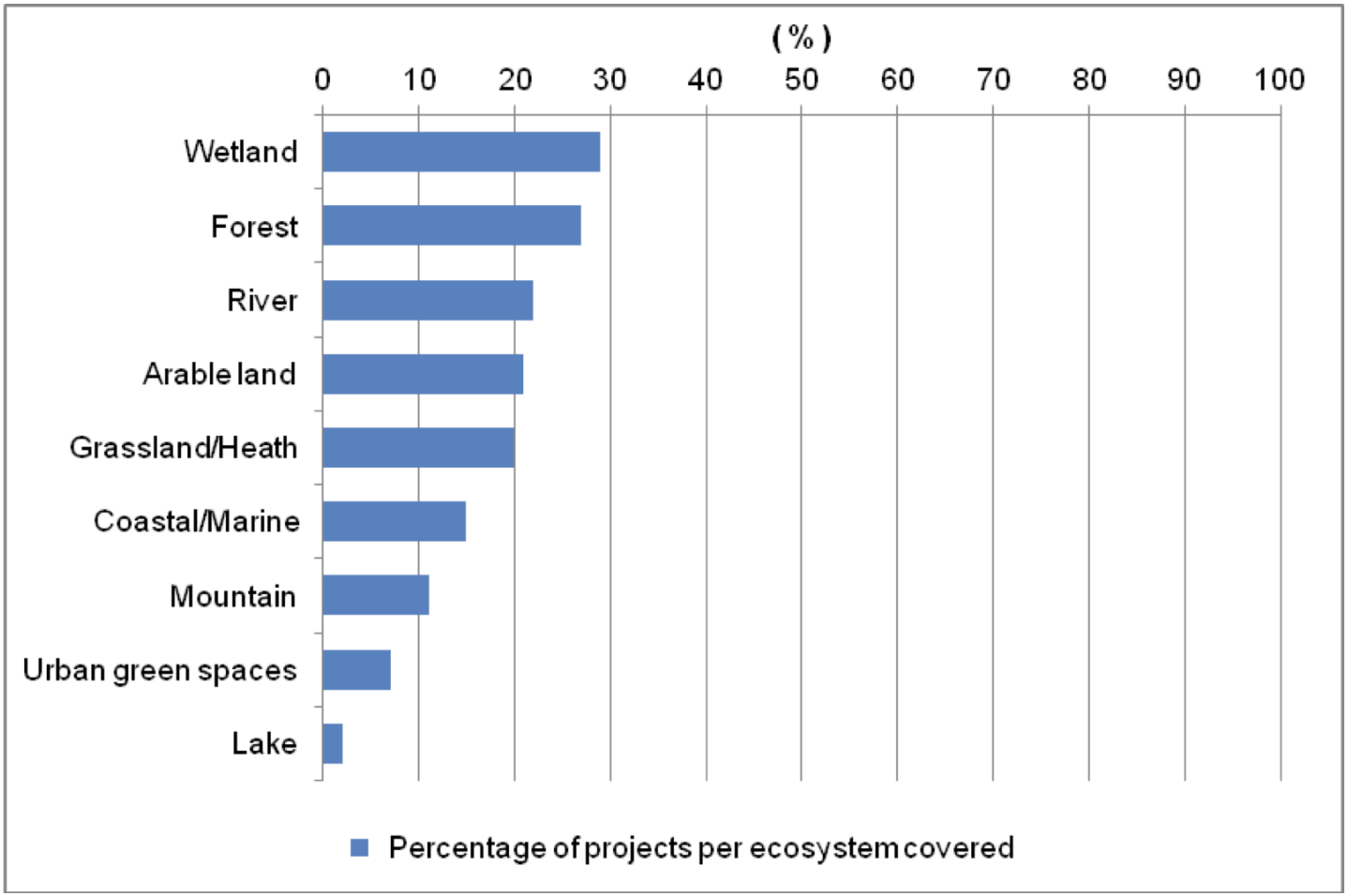
Methodological steps

- **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
- **Interviews with EC officials**

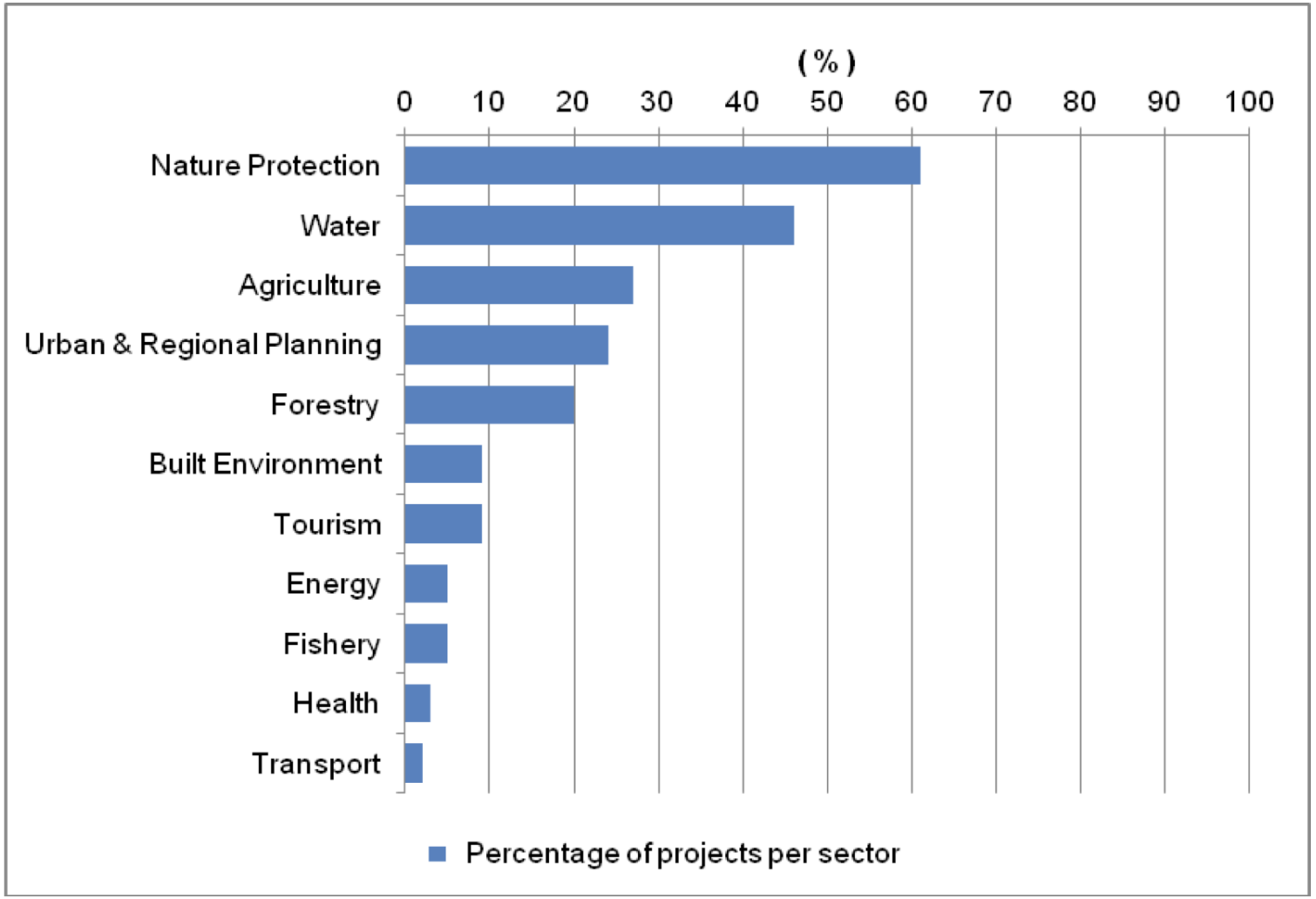
Project objectives



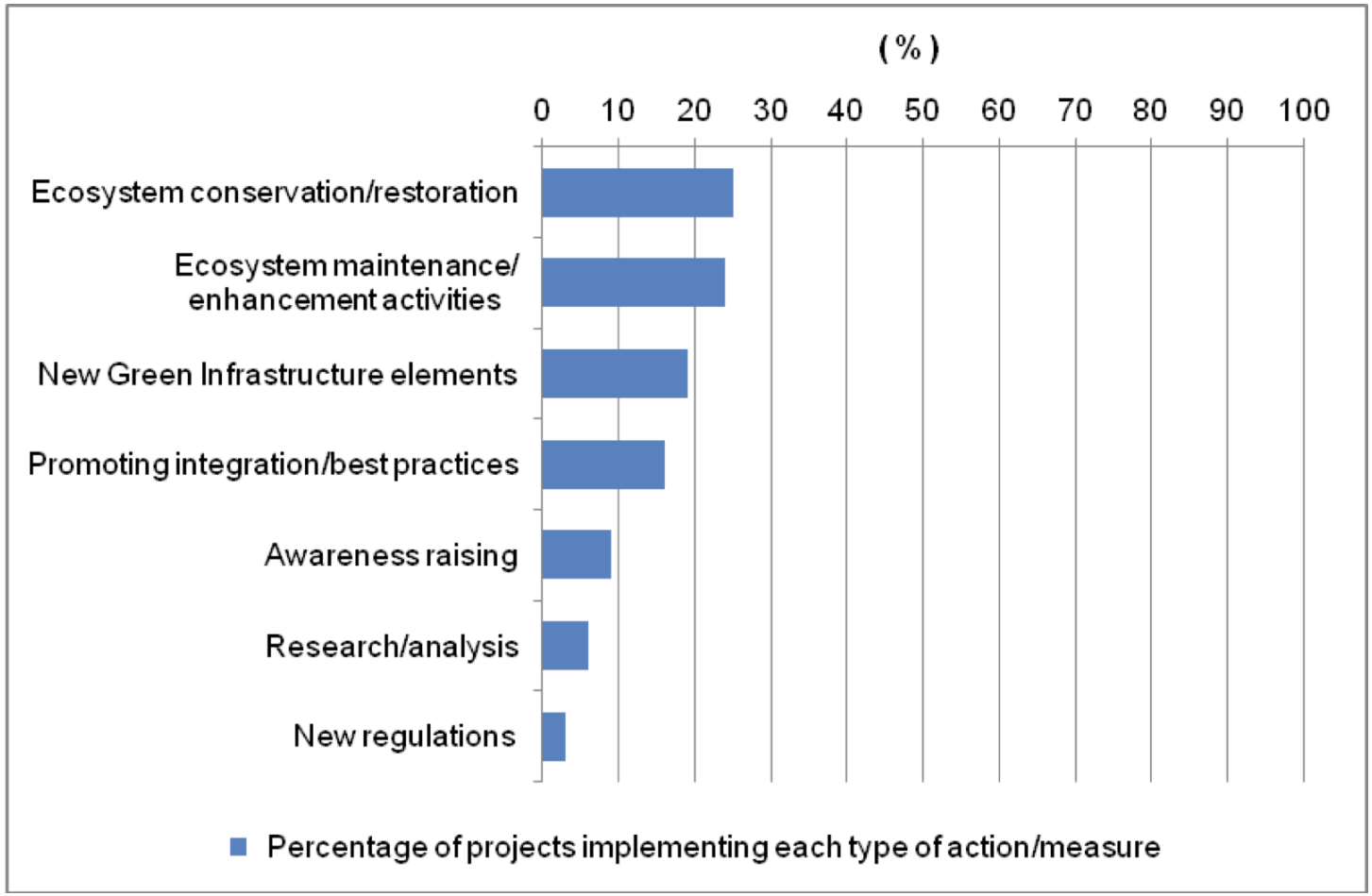
Ecosystems covered



Sector


(%)
0
10
20
30
40
50
60
70
80
90
100
Nature Protection
Water
Agriculture
Urban & Regional Planning
Forestry
Built Environment
Tourism
Energy
Fishery
Health
Transport
Percentage of projects per sector

Actions/measures



Barriers of implementation

- a lack of **financial sufficiency** and **predictability**;
- limits to **technical expertise** and **awareness**;
- organizational and institutional **complexity** arising out of the diversity and number of **partners** that must be engaged in projects;
- antecedent **regulatory or legislative** decisions that inhibit landscape-scale decision-making and the creative provision of funds, materials, and expertise; and
- limited **public awareness** about the multiple benefits associated with ecosystem-based approaches.

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 to do so

Conclusions

- useful examples of ecosystem-based approaches to adaptation and mitigation exist
- examples represent integrated approaches, which can address the objectives of several EU policies simultaneously
- concept of ecosystem-based approaches has not yet been taken up by decision-makers in a meaningful manner

Recommendations

- raise awareness about ecosystem-based approaches and their multiple functions and benefits for climate change mitigation and adaptation
- existing financing opportunities (including EU funds, national/regional possibilities and private financing) need to be highlighted
- cross-sectoral integration
- exchange best practices coordinated at EU level

To be discussed: What can we expect from such a concept?

- Is the ecosystem based approach **"too integrated"** for a political environment which is divided in sectors and competencies?
- How can actors be trained to obtain a more **holistic view** on conservation and environmental protection?
- How should **financing measures** look in order to be attractive for applicants of broad and integrated projects (flexibility, requirements, budgets)?
- How can we find the right **balance** between integrated and specific projects to achieve objectives in environmental policies?

Thank you for listening.

Timo Kaphengst (on behalf of the authors...)

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