

Natural Capital Accounting – Building bridges between policy, welfare economics and accounting –

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**Expert meeting on Ecosystem Valuation in the context of
Natural Capital Accounting, 24th – 26th April 2018, Bonn**



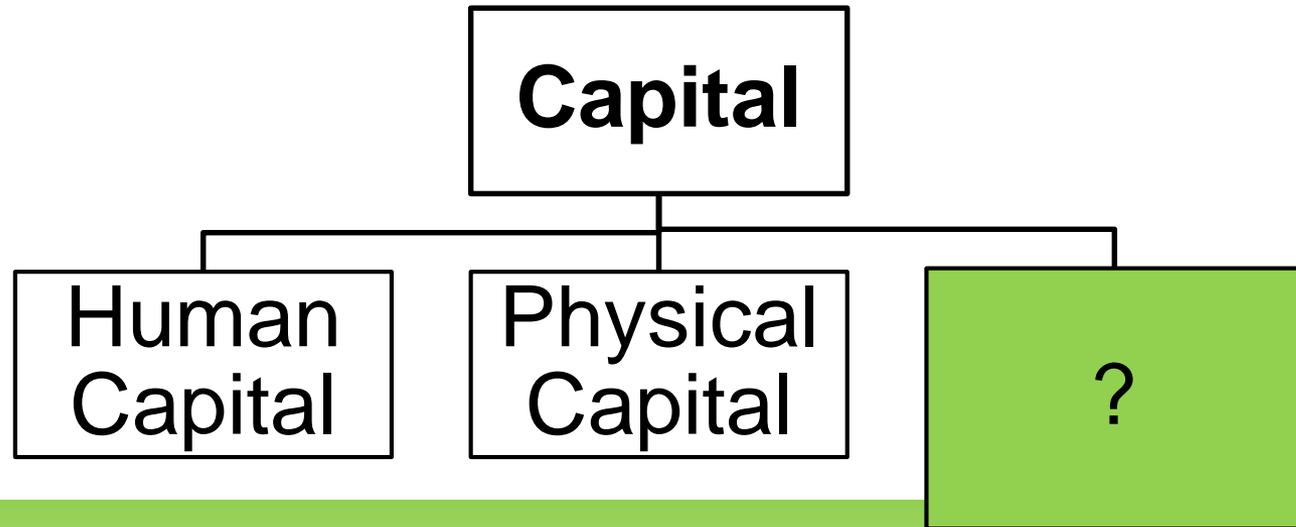
Federal Agency for Nature Conservation (BfN) – Who we are



BfN is the German Government's scientific authority with responsibility for national and international nature conservation.

- **Advice:** providing the German Government (i.e. Ministry for the Environment) with the scientific basis for decisions and advice on all aspects of national and international nature conservation
- **Funding:** supporting the implementation of large-scale conservation, research and pilot projects as well as projects under the Federal Programme for Biodiversity and by NGOs
- **Enforcement:** national enforcement agency for CITES and marine conservation in the economic exclusive zone and involved in the approval of GMOs
- **Information and education:** comprehensive information and publicity work, International Nature Conservation Academy

Nature and Economy – Back to the Roots



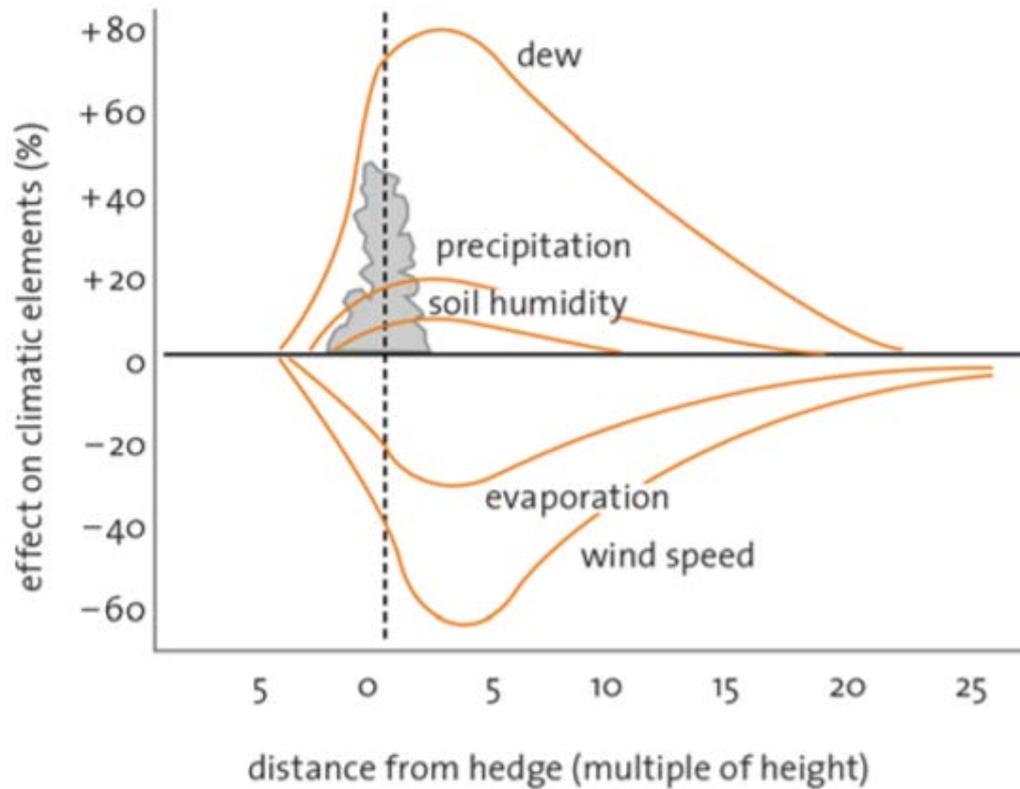
Source: v. d. Decken



Source: Ekinci

Multifunctionality of Nature and the Relevance of the Economic Perspective

Example: Benefits of hedges in agricultural landscapes



Source: According to MLR, 1987

► **Pollination**



Source: Bonardelle/Fotolia

► **Pest Control**



Source: Prspics

► **Beneficial
micro climate**



Source: v. d. Decken

► **Erosion
Reduction**



Source: W. Schäfer

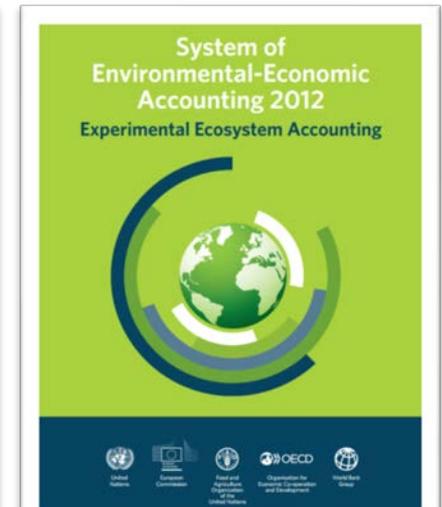
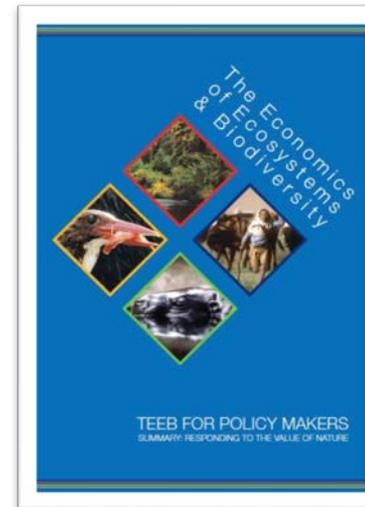
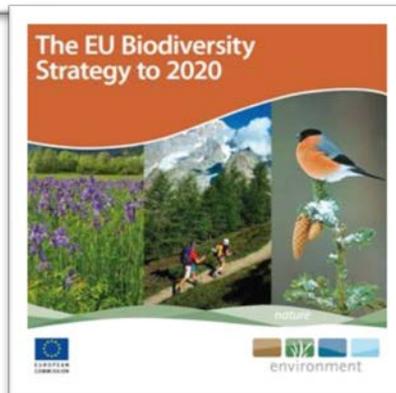
Some Benefits of Ecosystem Accounting ...

- Valuable link from nature conservation into all sectors that may affect or depend on nature → chance for mainstreaming ecosystem services
- Better base for informed political decisions, for instance on the allocation of funds
- Insights into the interactions between condition of ecosystems and their functions for society
- Feeding scientific knowledge into decision-making processes and bridging policy, welfare economics and accounting



International Obligations and Initiatives regarding Natural Capital Accounting

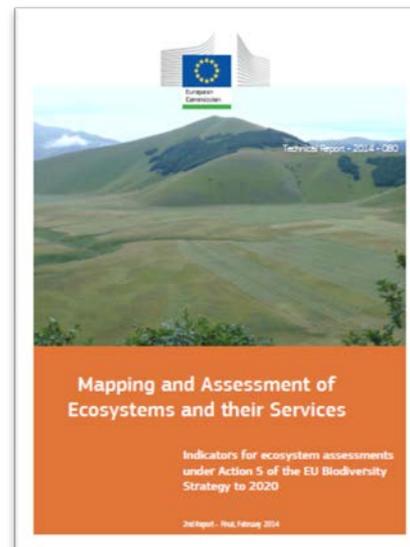
- Convention of Biodiversity: Aichi Target 2
- EU Biodiversity Strategy: Action 5
- TEEB International and TEEB Germany
- System of Environmental Economic Accounting - Experimental Ecosystem Accounting (SEEA EEA)



EU and national initiatives regarding Natural Capital Accounting

- Knowledge Innovation Project on an Integrated system of Natural Capital and ecosystem services Accounting (KIP INCA)
- Mapping and Assessment of Ecosystems and their Services (MAES)
- BfN R&D project on ecosystem accounting (ongoing)

KIP INCA involves:
DG ENV,
EUROSTAT, EEA,
JRC, DG RTD, +
linking with MS
activities and MAES



R&D project:



Valuation Techniques in the context of Ecosystem Accounting

Table 3.1 Comparison of valuation methods

Group	Methods	Summary	Statistical analysis?	Which services valued?
1. Direct market prices	Market prices	Observe market prices	Simple	Provisioning services
2. Market alternative	i. Replacement costs	Finding a man-made solution as an alternative to the ecosystem service	Simple	Pollination, water purification
	ii. Damage cost avoided	How much spending was avoided because of the ecosystem service provided?	Simple	Damage mitigation, carbon sequestration
	iii. Production function	How much is the value added by the ecosystem service based on its input in production processes?	Complex	Water purification, freshwater availability, provisioning services
3. Surrogate markets	i. Hedonic Price Method	Consider housing market and the extra amount paid for higher environmental quality	Very complex	Use values only, recreation and leisure, air quality
	ii. Travel Cost Method	Costs of visiting a site: travel costs (gas, car use etc.) and also value of leisure time expended	Complex	Use values only, recreation and leisure
4. Stated preference	i. Contingent valuation method	How much is the survey respondent willing-to-pay to have more of a particular ecosystem service?	Complex	All services
	ii. Choice experiments	Given a 'menu' of options with differing levels of ecosystem services and differing costs, which is preferred?	Very complex	All services
5. Participatory	Participatory environmental valuation	Asking members of a community to determine the importance of a non-marketed ecosystem service relative to goods or services that are marketed	Simple	All services
6. Benefits transfer	Benefits transfer (mean value, adjusted mean value, benefit function)	'Borrowing' or transferring a value from an existing study to provide a ballpark estimate for current decision	Can be simple, can be complex	Whatever services were valued in the original study

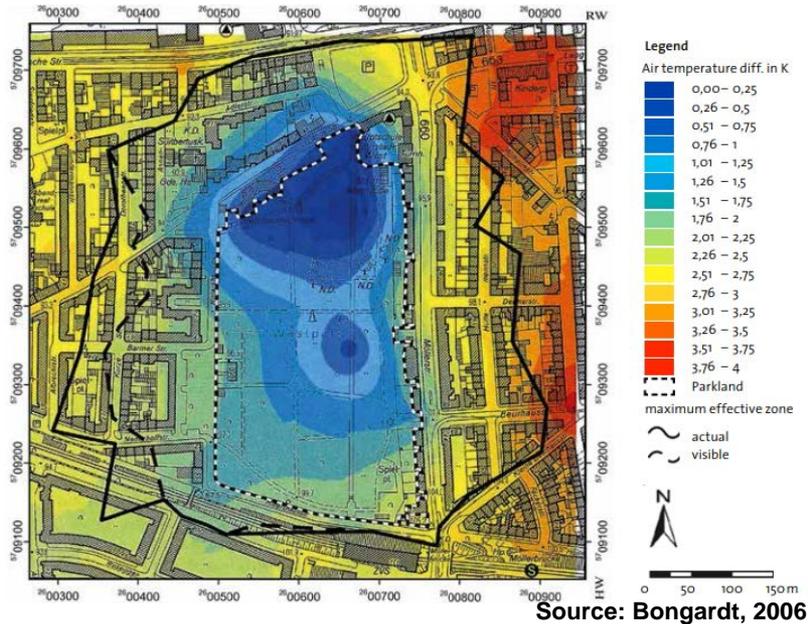
Source: TEEB (2010)

... but the System of National Accounting has strict rules!

Various valuation techniques exist ...



Urban Green – An example from Germany



- Life satisfaction gained from 1 hectare of additional green space = an additional individual income of **276 Euro / year**



- Average number of inhabitants in a radius of 1,000 meters ~ approx. **1 million Euro / year**



Conclusions and objectives of the meeting



Overall conclusion: The integration of ecosystems and their services into the national accounting systems would provide important **added values**.

Our Meeting ...

- ... aims to contribute to the achievement of the **Sustainable Development Goals** as well as the **Aichi Targets** and the **EU Biodiversity strategy**
- ... aims to support the advancement of the research agenda for the **revision** of the **SEEA EEA**
- ... aims to foster a **mutual understanding** of the application of various valuation techniques

Many thanks for your kind attention!

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