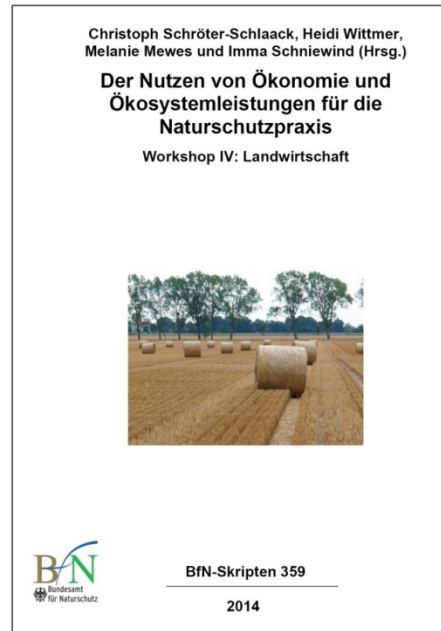
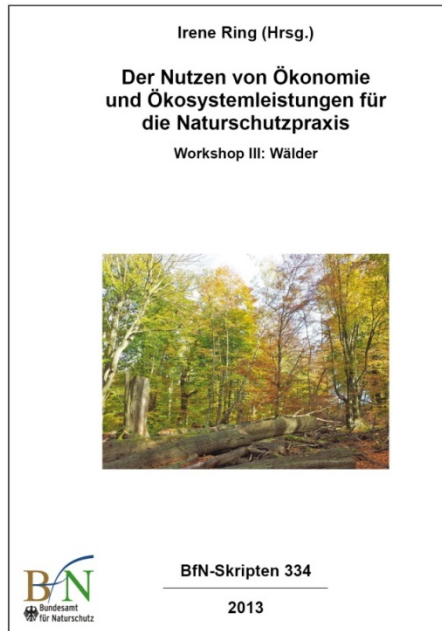
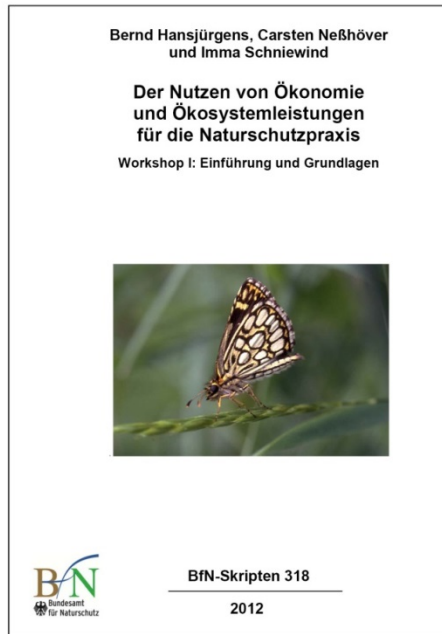


# Short Report

## Research and development project „Communicating the concept of ecosystem services on the basis of the TEEB study “



**Researcher:**  
Helmholtz Centre for Environmental Research – UFZ  
Permoserstr.15; 04318 Leipzig; Germany

**Project time:**  
August 2011 – February 2014

Supported by the German Federal Agency for Nature Conservation (BfN) with funds from the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB)

**Contents**

- 1. The purpose of the project .....3
- 2. The course of action of the project .....4
- 3. Contents discussed, insights offered .....4
- 4. Achievements of the project .....5
- 5. Outlook.....6

## The purpose of the project

The series of workshops dealing with the topic „The usefulness of economics and the concept of ecosystem services for practical nature conservation“ was conducted as a cooperation of the Helmholtz Centre for Environmental Research (UFZ) and the Federal Agency for Nature Conservation (BfN), in order to explore and enhance the options and the potential of an economic perspective on nature conservation. Four workshops and subsequent scripts aimed at (i) presenting the ecosystem services approach and different methods of economic assessment and valuation as well as options for integrating ecosystem services into decision making and (ii) discussing their suitability and helpfulness for German nature conservation practice. By doing so, the project was meant to facilitate science-policy as well as science-society interaction.

Why is it important to be concerned about these matters?

The services of ecosystems and biodiversity are at the core of our current economy and society, even though that may often not be visible at first sight. The concept of ecosystem services was developed in order to make the huge variety of ecosystem services and the relevance of biodiversity visible and to identify and assess them systematically. It is essential to allocate an appropriate value to these services and to integrate them in decision making. This includes their assessment using various methods (qualitative, quantitative or monetary). However, politicians, administrators, businessmen, consumers and other stakeholders will only take them into account, if the values are explicitly included into the setting of their decision-making. There are numerous means of incorporating these values and thus including the benefits of biodiversity and ecosystem services into decisions concerning manner, magnitude and intensity of the use of natural resources. Germany's conservation law, land-use planning and local politics already provide many options to consider ecosystem services in decision-making. Economics adds two further options to this: the means to identify the values and to set incentives in a way that these values will be better taken into account in decision-making processes.

Nevertheless many German conservationists are skeptical when it comes to using economic concepts; it seems inappropriate to them to set a “price” for nature. But the economic perspective on nature does not want to stick price-tags on nature, to price nature as in its entirety; rather it wants to help evaluate changes in the state and the quality of nature. Thus an economic assessment can support decision-making by contributing information on actual costs and benefits of alternative land-use options.

The concept of ecosystem services has already entered the daily routine of nature conservation in Germany as part of several proposals and approaches to addressing nature conservation problems (such as the German National Strategy on Biological Diversity and the Biodiversity Strategy of the EU for 2020). Increasing attention is also devoted to assessing the economic significance of ecosystems and biodiversity and understanding current economic incentives, most recently by the international TEEB-initiative „The Economics of Ecosystems and Biodiversity“ (2007–2011). There are follow-up actions to TEEB all over the world, the main German effort being „Naturkapital Deutschland – TEEB DE“.

This project, consisting of four workshops and four scripts, has a communicative and knowledge imparting character and as such serves the above mentioned strategies. It wants to enhance a well-founded debate on the concept of ecosystem services and on the economic approach to assess nature and its possibilities and limitations. It cannot be overemphasized that this perspective wants to complement other currently used arguments and concepts and not replace them. As it is not always sufficient to rely on ethics and regulatory policy in order to protect nature, further arguments are needed, including also those gained by an economic perspective. Only if the economic approach is well understood

and appropriately integrated and used, it can be helpful and deliver additional arguments for nature conservation.

## **The course of action of the project**

The workshops:

- I. „Introduction, basics“ (2011/11)
- II. „Waterbodies, wetlands and peatlands“ (2012/4)
- III. „Forests“ (2012/9)
- IV. „Agriculture“ (2013/4)

consisted of presenting and discussing the concept of ecosystem services and different approaches to economic assessment and integrating economic arguments and values into decision making. A further objective was to exchange information and share experiences between scientists and practitioners from the field of nature conservation and other concerned fields and to envisage possible further applications. The presentation of case-studies was an important means of achieving this goal.

All workshops introduced the participants to a general understanding of the concept of ecosystem services, economic valuation and the application of economic instruments. While the first workshop focused on basic concepts, workshops II–IV emphasized particular fields of application by discussing case-studies presented by the participants and exchanging their experiences. The content of the workshops is presented in the [scripts I–IV](#). They discuss in detail the significance and added value of an economic perspective and present the concept of ecosystem services and the most common and feasible methods for assessing the services nature provides. Using concrete examples they also depict how the value of such services has actually been or might be incorporated in decision making.

## **Contents discussed, insights offered**

Why does it help to look at ecosystem services, in which cases are assessments worthwhile and why does it make sense to seek to include hidden or neglected values into decisions?

As the ecosystem services concept is clearly anthropocentric, it is well suited to make stakeholders and/or the general public aware of the numerous benefits humankind derives from nature and to analyze these benefits. The concept can contribute to identifying promising mechanisms to incorporate value of these services in decision making as it can detect the wide range of benefits as well as the respective beneficiaries. The benefits individuals can obtain from nature often imply costs to society as a whole. The concept of ecosystem services is well suited to identify and describe such divergences between private and societal interests.

Nature and environment protection, human well-being and economic development may be discussed in a realigned manner using the ecosystem services concept. Society urgently requires decisions on questions like: what exactly are we talking about, when talking about „nature“, why nature is worth our while and in what ways is it valuable to us? What benefits do we derive from nature, what do we expect from it and how can we make sure that we will be able to continue to use these services in the future?

These questions require significant awareness of the general public. The quality of decisions can be improved by identifying relevant stakeholders, the most urgent challenges, and potential synergies as well as conflicts.

Trade-offs that arise between different overall targets or different goals of a specific use of natural resources often trigger the questions above. Choosing one way of using land and natural resources and thus choosing to benefit from an ecosystem in a specific way

influences or even impedes a different use and the availability of other ecosystem services. Each way of using ecosystems, even each way of managing a certain land use entails different bundles of ecosystem services. These trade-offs are often not taken into account at all or not given high priority in decisions on land use and resource management. The concept of ecosystem services enables decision makers to include all these implications into their decisions as it points out, which land use practices foster or restrict the provision of which services and which stakeholders benefit from their use or suffer from their absence. Furthermore the pros and cons of conserving biodiversity and of managing ecosystems in a sustainable manner - and again: the winners and losers of such actions - can be identified, thus supporting holistic decisions and a realistic appraisal of the consequences.

## **Achievements of the project**

The experiences and expectations of the participants of the workshops ranged from the hope to receive substantial arguments in favor of nature conservation by economic analyses and especially by monetary assessments to a general skepticism towards the usefulness of the concept up to even the concern that the new perspective might do nature conservation a disservice.

During the course of each workshop the different positions converged, as it was made clear that „assessment“ is not congruent with „integrating ecosystem services into decision making“ and that in Germany many aspects of the concept of ecosystem services are already being taken into account – often under a different label – in the current debate on nature conservation. Often participants were impatient to get to know valuation methods quickly in order to be able to calculate their specific problem. But in the end they realized that first of all a monetary assessment does not always make sense and that, even if it does, it is always embedded in a specific context and that this context has to be analyzed and communicated meticulously in order to make the assessment viable.

The workshops disclosed the fact, that adequate boundaries for an analysis are usually not immediately evident and that determining them is far from trivial. Often different interests are affected by measures and these different interests hold different views on the framing of the analysis. So each analysis has to define – and, very important for the acceptance of the results of the assessment by the stakeholders: to communicate – which effects of measures will be taken into account, e.g. with regard to the temporal and spatial scale to be considered. Measures in one sector and one region may have effects on other sectors or regions by transferring problems from one location to another. For this, but also for systematically specifying and structuring the issues to be analyzed, and determining the information needs, the “TEEB-Six-Steps-Approach” was presented at the workshops and proved very helpful (see Herkle in script II and both Schröter-Schlaack and Berghöfer in script IV).

Valuation can express the importance of nature and its preservation in monetary terms. This makes it possible to compare these numbers to monetary values of other possible uses of natural resources (e.g. regional value added, turnover, employment etc.). In this way economic assessments can influence political decisions, especially the design of political strategies, legal regulations and payment-programs to enhance nature conservation. Such studies make it possible to analyze whether land-use- and nature-conservation-measures are sensible from an economic perspective.

In order to generate such information cost-benefit-analyses are conducted. If private benefits exceed private costs of a sustainable land-use-management it may be sufficient to make the user of the land aware of this. A rationally deciding land-user will adjust his management accordingly, otherwise administrative law can enforce this way of action in favor of the provision of valuable ecosystem services. If the private costs of supplying ecosystem services are higher than the private benefits but lower than the benefits for society, it is

reasonable to compensate the land-users for providing society with the ecosystem services and thus to „integrate ecosystem services into decision making“, to ensure that the value of these ecosystem services is taken into account by the land-user, even though he is not the (only) beneficiary. Different methods, some of them rather complex and possibly generating only approximate results are used to determine ‘adequate’ compensation-payments (effective without being unnecessarily high). Thus when judging the relevance of the results of an assessment and their significance for decision-making processes the method used has to be taken into account just as the range of stakeholders included in the study and the specific goods to be evaluated. The latter may in one case be the benefits derived, and in other cases the costs of securing or the costs of increasing the provision of ecosystem services, the distinctions being essential, especially when making comparisons.

The instruments actually designed in order to integrate the values of ecosystem services into decisions always have an implicit distributive effect: who pays, who earns, who is compensated, who benefits? Choosing specific instruments thus defines property rights while at the same time existing differences in the distribution of property rights make it necessary to offer different recommendations for different sectors and regions. At the Isle of Vilm, where the workshops took place, it had to be emphasized frequently, that monetary valuation in no way directly implies (public) funding of potential measures. The monetary assessment may serve as a substantial argument pro-funding, but entails no claims whatsoever.

Most of the case-studies discussed at the workshops showed impressively that analyzing the ecosystem services involved in a case helps to gain important information on many different aspects of very complex situations. Gaining insights into the interdependencies of the ecosystem at stake allows us to take a comparative look at different land-use and management options. Looking at impacts of measures via the ecosystem services concept enriches the understanding of the complexity of nature. And as human beings and their claims on nature are fundamental to the concept, looking at ecosystems and their services to humankind reveals conflicts between different claims that are so far at best globally but not explicitly accounted for in planning law. This perspective also helps to analyze the often very close interrelation of nature and human use of nature, and to systematize other currently used concepts of nature conservation.

We hope that the project has enhanced the awareness for the multiple values of nature and that this contributes to securing these values via better inclusion in private, entrepreneurial and political decisions in the future. To this effect it can be expected that the participants of the workshops will serve as multipliers. The editors hope the scripts will reach a broad audience and are doing their best to make them available to readers interested in these matters. Promising examples have shown how relevant decision-makers in German politics and economy have succeeded in preserving nature while achieving economic development at the same time.

## **Outlook**

The project has confirmed that studies valuing ecosystem services are scarce and that standardized and rapidly conducted assessments are rarely appropriate to inform complex decisions. Thus it is always a balancing act for scientists and practitioners to improve assessment methods theoretically while keeping their application as standardized and feasible as possible. A great deal of pragmatism is necessary when applying assessment methods, while at the same time there are constraints to this pragmatism, as the viability of the results has to be ensured. A lot of experience and diligence will be necessary when conducting an assessment, so as to decide prudently on which aspects of a complex setting to include and which to omit without risking the validity of the results. Similarly, context-sensitive, regionally restricted and flexible policies are most promising but might prove inappropriately expensive.

Despite of these challenges most workshop participants felt the concept has potential. By disclosing the numerous benefits of nature for human well-being and economic development, the concept holds the potential to kindle the interest of stakeholders who are to date not particularly concerned with environmental matters. This opens prospects for a broader and more adequate consideration of environmental issues in policy-making, hopefully in many different fields. To this end it is very valuable, that German planning-law already comprises the participation of different societal stakeholders for important land-use decisions. In order to further improve the setting of rules and incentives and to learn from successes and failures of political measures in the past, it is useful to closely analyze the policies of recent years.

It seems likely that the concept of ecosystem services gains further acceptance in the political arena, as it is part of discussions not only on the national but also on the European and international levels. The ideas embedded in the concept of ecosystem services have already influenced nature conservation strategies and agreements like the Convention on Biological Diversity and the German National Strategy on Biological Diversity but also have contributed to the discussions of more economic concepts like Green Economy and Green Infrastructure. But they are not only discussed but already taken into account and applied in policies of EU member states and the United Nations. The former are for example mapping and assessing their ecosystems and ecosystem services, the latter are endeavoring to include ecosystem services into national accounting.

While looking at ecosystem services and considering (monetary) assessment something very essential can be achieved: the stakeholders involved are encouraged to communicate with each other. In this process societal and individual interests and also the manner in which values are determined or established are revealed and may thus be taken into account. As the manner in which values are expressed and imparted has a large influence on the way we handle and cherish valued objects, it may be important to understand more clearly, on which sort of information valuations are based in order to challenge them when indicated. Is nature conservation seen as an inevitable cause of higher costs, or is it an entrepreneurial challenge or rather a contribution to intergenerational justice? Raising these crucial questions seems much more relevant than monetary calculations. Nevertheless the latter is the topic practitioners are most eager to know more about. When both aspects are combined: essential questions raised and assessments calculated, current routines may be supplemented and adjusted in order to include services accounted for too little to date.

Essentially the debate within society about biodiversity and ecosystem services should discuss the question: „How do we want to live with regard to nature and how do we want our children to be able to live?“ If this question is not addressed explicitly for society at large, answers will be ensued implicitly through sectorial decisions on the use of natural resources. The complex consequences and the aggregated impact of individually sensible decisions are difficult to estimate and therefore rarely taken into account. The ecosystem services concept can contribute to more conscious decision-making and thus help to appraise the importance of certain services of nature for human well-being and economic development more precisely.

In addition to existing ethical, esthetical and emotional arguments it opens new and interesting perspectives on known data on nature and natural resources and constitutes a platform for further societal debate. The project has strengthened the nature conservation network of both practitioners and scientists and by doing so will encourage and support further discussion; more workshops of similar nature are planned as part of “Naturkapital Deutschland – TEEB DE”.