SUSTAINABLE LAND MANAGEMENT

SUSTAINABLE LAND MANAGEMENT

GLUES

Rationale and motivation

for the G L U E S Synthesis Workshop

April 16th-18th, 2012

in Berlin (Hotel Abion)

Alt-Moabit 99, 10559 Berlin, Germany

Rationale and motivation for the workshop

The GLUES-Synthesis Workshop on Ecosystem Services has the aim to provide a platform for exchange between the regional projects (RPs) of the Sustainable Land Management Programme on the approaches of assessing ecosystem services and, where it is appropriate and applicable, to identify common strategies and methodologies for the assessment of ecosystem services. The ultimate goal is to identify options within the Sustainable Land Management Programme for the synthesis and comparison of results across all regional projects. Such framework will allow identifying key findings on sustainable land management, which are of global relevance and help to inform international processes and policies such as those under the UNFCCC, CBD, and the creation of IPBES.

Why analysing ecosystem services?

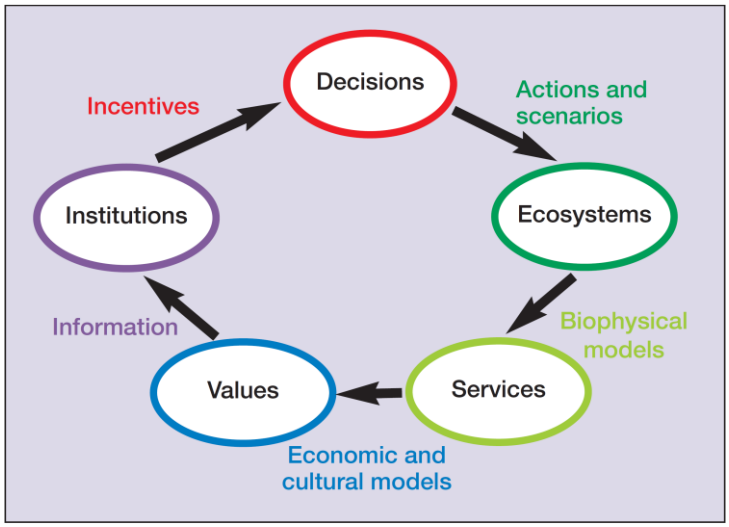
Over the past decades the concept of Ecosystem Services was developed for better understanding, classification, assessment, communication and management of the benefits that biodiversity and ecosystems provide to our society and economy (e.g. Daily 1997, MA 2005, TEEB 2010). Based on assessments in about 30 regions around the world and the review of the scientific literature the Millennium Ecosystem Assessment (MA) compiled compelling evidence, that biodiversity and ecosystems provide a great range of ecosystem services that are essential for human wellbeing at the local, regional and global scale (MA 2005).

People directly or indirectly utilize the goods and services that biodiversity and ecosystems provide. Such ecosystem services include, e.g. food, clean drinking water, building material and carbon sequestration provided by forest ecosystems, the erosion and flood control provided by wetlands, and cultural services, such as the beauty of landscapes or the values that people associate with certain species. Ecosystem services are in many cases of great relevance to economic development at local, regional, national and global scales as shown by the study on The Economics of Ecosystems and Biodiversity (TEEB 2010). Therefore, ecosystem services are particularly relevant for analysing and informing decisions and strategies for sustainable land management.

Developing common approaches to the assessment of ecosystem services

Daily et al. (2009) developed a conceptual framework visualising how ecosystem services are linking the natural environment, consisting of ecosystems and biodiversity, with the human dimension of institutions and decisions that deal with land use. The value that people attach to ecosystems and their services play an important role in translating the benefits and dependencies of local stakeholders, businesses and economies on nature into meaningful information for decision making. Thereby all forms of values, including intrinsic and monetary values, are relevant and expressed either in qualitative or quantitative terms.

Understanding the natural environment with its functions and limits in delivering ecosystem services as well as the human dependencies on, benefits of, and preferences for ecosystem services can help to identify opportunities and trade-offs in decisions on the management of natural resources. For informed sustainable land management strategies it is therefore critical to understand what are the services that ecosystems deliver, who are the stakeholders that benefit from these ecosystem services, where are synergies and possible trade-offs, and what information on ecosystems, their services and values is needed in order to inform decisions and policies (see TEEB Approach in TEEB Quick Guide 2010).



Framework by Daily et al. (2009) illustrating the role of ecosystem services in decision making in ecosystem management. Source: Daily et al. (2009)

As assessments are often very resource intensive (time and money), it is pivotal to target the assessment at the components and processes where additional information is adding value to decisions on sustainable land management. Therefore, clearly identifying the problem and opportunities where information on ecosystem services can be of relevance for better informed decisions is crucial for designing an ecosystem service assessment.

The benefit of a common approach for the Sustainable Land Management Programme

The regional projects of the Sustainable Land Management Programme are undertaking research and assessments in more than a dozen regions around the world for better understanding the link between ecosystems and the services they provide for human well-being in order to inform sustainable land management strategies. This wealth of place-based studies is a unique opportunity for identifying and synthesizing knowledge and information that is of relevance beyond the regional scale. In fact, the sum of the knowledge and expertise of the regional projects can be of great relevance for developing frameworks, tools and strategies that allow the synthesis of interdisciplinary knowledge on biodiversity and ecosystem services from local to global scale.

Methods and frameworks for up- and downscaling information on biodiversity on ecosystem services between local, national and global scales is of great relevance for decision making in policy and practice. For example the role of ecosystem services in local development and international climate mitigation strategies is becoming more recognized while the trade-offs and synergies involved in these strategies still remain obscure. The network GEO BON (→) and the current process of establishing IPBES (→) have the aim of addressing these issues and the Sustainable Land Management Programme can provide important insights to these processes.

GLUES would like to partner with and include interested experts from the regional projects in this endeavour of identifying and synthesising knowledge and information on ecosystem services from the regional projects. Our aim is to develop common strategies for the assessment of ecosystem services and produce joint products, e.g. in the form of **joint publications**, that can inform international processes in science and policy and help to make land management more sustainable. This provides the opportunity that regional findings could be integrated into a larger effort of generating knowledge on ecosystem services relevant at a global scale.

Below please find an annotated selection of literature on the assessment of ecosystem services which is not only relevant for the workshop but also useful for designing the assessments in your projects. To our experience, Daily et al. 2009, de Groot et al. 2010 and the Manual for Assessment Practitioners (2010) developed by the Millennium Ecosystem Assessment could be particularly useful for designing a successful assessment of ecosystem services.

We are looking forward to an enriching and fruitful collaboration in this exciting endeavour.

Your GLUES-team at the UFZ

Recommended literature

The framework from Daily et al. 2009 and the paper by de Groot et al. 2010 provide overarching ideas on the role of ecosystem services in the decision making on sustainable land management strategies:

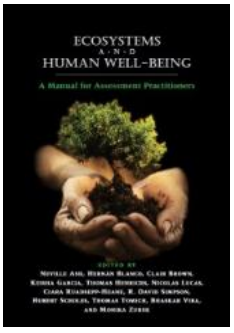
- **Daily et al. (2009). Ecosystem services in decision making: time to deliver.** Frontiers in Ecology and the Environment 7(1): 21–28. URL: http://www.esajournals.org/doi/pdf/10.1890/080025
- **de Groot et al. (2010). Challenges in integrating the concept of ecosystem services and values in landscape planning, management and decision making.** Ecological Complexity, 7, 260-272. URL: http://dx.doi.org/10.1016/j.ecocom.2009.10.006

On the development of indicators for ecosystem services UNEP-WCMC published the following report based on the experience of the Millennium Ecosystem Assessment (MA) and other initiatives:

- **UNEP-WCMC 2011**. Developing ecosystem service indicators: Experiences and lessons learned from sub-global assessments and other initiatives. Secretariat of the Convention on Biological Diversity, Montréal, Canada. Technical Series No. 58, 118 pages. URL: http://www.cbd.int/doc/publications/cbd-ts-58-en.pdf

The UK National Ecosystem Assessment (UK NEA) was accomplished recently and provides very useful information on ecosystem services in general and for specific biomes in particular.

- UK NEA: http://uknea.unep-wcmc.org/Home/tabid/38/Default.aspx



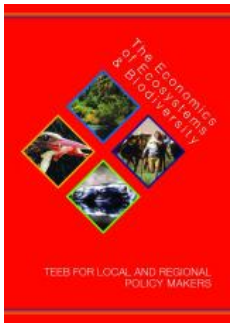
The **Millennium Ecosystem Assessment (MA)** (http://www.maweb.org/) undertook more than thirty sub-global assessments and assessed global scientific knowledge on the state of ecosystems and the ecosystem services they provide to human-wellbeing. The **MA Manual for Assessment Practitioners** offers a great wealth of information on the design of an interdisciplinary and integrated assessment of ecosystem services and shares experiences and lessons learned from both the regional and global assessments:

- **MA Ecosystems and Human Well-Being: A Manual for Assessment Practitioners (2010):** http://www.unep-wcmc.org/medialibrary/2010/10/31/90af3045/EcosystemsHumanWellbeing.pdf
- **MA Sub-global Assessments:** http://www.maweb.org/en/Multiscale.aspx
- **MA Assessment Report (2005):**
  - Chapter 3: Linking Ecosystem Services and Human-Wellbeing http://www.maweb.org/documents/document.341.aspx.pdf
  - Chapter 6: Assessment Process http://www.maweb.org/documents/document.344.aspx.pdf
  - Chapter 12: Reflections and Lessons Learned http://www.maweb.org/documents/document.350.aspx.pdf

The following two papers examine the state of the art approaches, shortcomings and the road ahead of the "ecosystem services" concept and suggest a general framework for the reporting on case studies of ecosystem service assessments:

- **Seppelt et al. (2011). A quantitative review of ecosystem service studies: approaches, shortcomings and the road ahead.** Journal of Applied Ecology, 48, 630-636. URL: http://dx.doi.org/10.1111/j.1365-2664.2010.01952.x
- **Seppelt et al. (2011). Form follows function? Proposing a blueprint for ecosystem service assessments based on reviews and case studies.** Ecological Indicators, in press. URL: http://dx.doi.org/10.1016/j.ecolind.2011.09.003

TEEB-The Economics of Ecosystems and Biodiversity (2010) provides a range of reports on the economic significance of ecosystem services for society from the local, to the national and global level: http://www.teebweb.org/InformationMaterial/TEEBReports/tabid/1278/Default.aspx



- **TEEB for Local and Regional Decision Makers – Quick Guide (2010)** provides a brief introduction to the economics of ecosystem services at the local level. The six steps of the TEEB Approach is illustrated with a brief example: http://www.teebweb.org/Portals/25/Documents/TEEB%20for%20Local%20and%20Regional%20Policy/TEEB%20Loc%20Pol%20QG%20English.pdf
- **TEEB for Local and Regional Decision Makers – the full report (2010)** is available at: http://www.teebweb.org/ForLocalandRegionalPolicy/LocalandRegionalPolicyMakersChapterDrafts/tabid/29433/Default.aspx

The World Resources Institute (WRI) has published a range of reports and guides on the assessment of ecosystem services for decision making in public and business.

- **World Resources Institute (WRI) Ecosystem Services: A Guide for Decision Makers (2008):** http://pdf.wri.org/ecosystem_services_guide_for_decisionmakers.pdf