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Should the ecosystem services concept be used in European Commission impact assessment?

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ABSTRACT

Integrated impact assessment (IA) of policies in the European Commission takes place in an environment of competing problem frames, contested policy objectives and a multitude of interested actors. This paper sets out to discuss the potential value of integrating the ecosystem services (ESS) concept for improving the consideration of environmental benefits and values during framing and appraisal of new policies at European level. The discussion was based on a workshop conducted with experts encompassing their disciplinary fields to the science–policy interface. A review of recent literature and impact assessment reports from policy science and ecosystem services research allowed for a two-way contemplation. The potential integration of concepts was analysed for conceptual, technical, ethical and pragmatic aspects. It was found that indicator sets applied in the impact assessment reports follow a much less formalised structure than the reports or the procedure. An integration of the ecosystem services concept would enhance the requisite variety of indicators used, and thus contribute to the overall goal for sustainable development. Potentials for improving IA lie particularly in the up- and downscaling of benefits and values, policy relevant comparative studies and the prospective possibilities for innovation in indicator development. Based on this rationale of improving requisite variety for future decision making, the emphasis lies on a further development of the ESS concept along two pathways of operationalisation: the translation of the concept for a comprehensive approach at a higher level of abstraction (soft application), and the application of the concept for providing aggregated, quantitative and unit-based information at different steps of an IA (hard application).

> Les uns ont, ce me semble, beaucoup d'instruments et peu d'idées; les autres ont beaucoup d'idées et n'ont point d'instruments.
> Denis Diderot (1713–1784). De l'interprétation de la nature.

1. Introduction

Sustainability may be a critical concept, but it seems likely to abide as long as real problems demand attention to intertwined socio-economic, political and biophysical considerations in a long-term planning perspective (Gibson, 2006). The concern articulated in policy planning is that current strategies for sustainable development do not decelerate the depletion of natural resources, and that the time has come to consider structural changes in governance (OECD, 2012; Biermann et al., 2012). Implementation deficits can be ascribed to the sectoral organisation of government (Jacob and Volkery, 2004), use of knowledge in hierarchical governance arrangements (Atkinson and Klausen, 2011), the neglect of needs of future generations or a dominance of short termism (Siebenhüner et al., 2013).

The consideration of environmental issues requires a routine and systematic check of policies of all sectors. The commitment to evidence-based policy making is considered one approach to enable the consideration of side effects on the environment early on in the process, and provide legitimacy to policy makers (Hertin et al., 2008). However, while it is argued that there are enough scientifically sound indicators (e.g. Jesinghaus, 2012; Von Stackelberg, 2013) an assessment regime that is applicable to a broad range of political undertakings is missing (Hertin et al., 2009).

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It is argued that the ecosystem services concept as described in the Millennium Ecosystem Assessment (MEA, 2005) is one scientifically respected framework capturing environmental concerns in ecological and socio-economic terms (Braat and de Groot, 2012; TEEB, 2009, 2010). Ecosystem services (ESS) are defined as the contributions of ecosystem structure and function to human well-being. ESS and the natural assets that produce them, represent a significant contribution to sustainable development that is increasingly recognised (Burkhard et al., 2012a).

Much of today's ESS science and the framework's further development for decision making is based on works done in the MEA that was called for by the United Nations in 2000 and was supported by 1360 experts from 95 countries (MEA, 2005). It had the overarching goal to synthesise information about the environmental status and trends, as well as the dependence of human well-being on natural capital, ecosystems and the services they provide. The ESS concept has since contributed to overall policy strategies such as the EU Biodiversity strategy to 2020, the EU Habitats Directive and the EU Blueprint to safeguard Europe's Waters. Strengths of the ESS framework are seen in cross-sector cooperation and the handling of ESS trade-offs and synergies at a landscape level, in the integrative character of the concept across environmental compartments, and in its applicability in communication processes as well as stakeholder-oriented valuation and weighting (Burkhard et al., 2012a; Geneletti, 2011). Eppink et al. (2012) describe the potential asset in policy design in addressing welfare gains and losses, but highlight the need for a common assessment framework with comparable data sets. Maes et al. (2013) ascertain that including the ESS concept into all social and economic policies would allow for a systematic review of consequences beyond conventional environmental assessments. This development calls for a debate on the incorporation of the ESS concept into effective and enduring institutions to manage and monitor the societal values of ecosystem services.

The European Commission policy impact assessment (IA) is a requirement for all major policy initiatives and therefore appears as a promising venue for an incorporation of ESS into decision making. Its intention is to consider all major impacts of planned policies on economy, environment and social aspects in order to maximise the benefits and minimise unwanted side effects. Furthermore, it is considered as an approach to ensure the coherence of policies with the overarching strategies of the European institutions.

During the past ten years, the relevance of IA has increased considerably: Commission directorates have set up support units, while consultants and researchers have been awarded framework contracts for supportive action, and training courses for officers have been developed. Furthermore, the process has been reviewed and evaluated. The Joint Research Centre (JRC) of the European Commission has set up a modelling group for IAs and a number of projects have been funded to develop models and data formats for the specific context of IA (Podhora et al., 2013; Radaelli and Meuwese, 2010; Lee and Kirkpatrick, 2006). As a result of this capacity development and learning, IA of policies has gained in terms of quality of the analysis and increased in importance for the decision making process. While the economic parts of the assessments were found to have improved over the years (Cecot et al., 2008), environmental impacts and benefits from environmental protection are still considered undervalued, particularly from the viewpoint of nature conservation (Jacob et al., 2011). Problems of data availability and stakeholder opinion remain, in particular for those impact areas that do not have an explicit market value, such as biodiversity or climate change (EC, 2013).

The overall question is, whether the ESS concept can be conceptually and technically integrated into European Commission impact assessment procedures at an operational level (van Wensem and Maltby, 2013; Jordan and Russel, 2014; Dunbar et al., 2013). A workshop conducted in Vigoni, Italy in October 2012 presented an opportunity to bring together scientific experts that encompassed their disciplinary field of research to address the interface with European level decision-making and decision support. The aim was to reach a deeper understanding of the potentials of an integration of ESS indicators in the decision making process by taking a dual perspective from policy sciences and environmental ecosystem research.

The objective of this paper is to take a forward looking perspective to reflect whether the concept of ESS should be used in European policy IA. Based on the workshop discussion, a review of the procedure and outcome of recent assessment reports as well as current literature addressing the link between ESS and decision making on the European level, the following questions will be addressed:

- Is the EC *ex ante* impact assessment procedure a suitable instrument to integrate the ESS concept?
- Can the ESS concept comply with the requirements and demands of an actual European impact assessment process in order to be operational?

By analysing the requirements of IA towards qualifying the process as suitable for an integration of the ESS concept, we aim to contribute to the ongoing discussion in the ESS research community on the potentials of the concept to "deliver" (Daily et al., 2009) at a European level of decision making.

2. The European Commission policy impact assessment process

Integrated policy impact assessment (IA) was introduced by the European Commission in 2003 to be conducted for all policy proposals as an obligatory activity in the EU legislative procedure *ex ante* actual implementation (EC, 2002). Motivated by an action plan for better regulation standards in 2001, the European Commission was determined to employ new instruments within the policymaking process in order to achieve the policy goals set down in the Lisbon agenda (Renda, 2006; Mandelkern Report, 2011). At the same time, the European Council agreed on the implementation of a European strategy for sustainable development (Göteborg European Council, 2001). An integrated assessment was to contribute to sustainable development by considering and comparing economic, social and environmental aspects for a set of strategic policy options during the formulation of new regulations.

The introduction of IA replaced a number of specific requirements for policy assessment in terms of environmental impacts, health or the competitiveness of small and medium enterprises. The development of one single and integrated procedure was to give the process more relevance at the political level, to avoid unnecessary additional burdens for policy makers, and to allow for an analysis of potential trade-offs between impact dimensions.

Planning of an IA in the Commission starts at an early stage of policy formulation. As soon as a policy initiative is published in the Commission's work program, the responsible policy unit initiates the IA. The Commission's guidelines for IA suggest inviting other Commission services to an inter-service steering committee if impacts can be expected in the domains of other directorates. Furthermore, it is a requirement to consult with stakeholders throughout the process. Thereby, the analysis should take into account all relevant aspects. A draft document is first reviewed by the Impact Assessment Board (IAB), composed of senior officers from various directorates. The IAB makes suggestions for including additional aspects or methodological improvements in the analysis. The IA report is then published together with the policy proposal

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