

Accounting for biodiversity: Beyond the dollar - II

(See Monday, June 18 for panel abstract)

“Public opinions on biological diversity: Politics, science and culture”

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Abstract:

Biodiversity loss is one among several complex environmental issues. This goes for what the issue of biodiversity actually includes (“the term given to the variety of life on Earth and the natural patterns it forms” (Chivian et al. 2008)), how it affects people, how the importance of the issue is justified (ecosystem services or natural capital?), how knowledge on the issue is produced and communicated, how it is perceived by different social groups, who is affected by a loss of biodiversity and how it is framed politically. Moreover, the issue of biodiversity loss implies many of the same “action problems” as climate change and other environmental problems; the action of each and one actor – to build a new road, hunting of unfriendly animals in local communities – is rational, but the overall outcome works against the common good. The common solution to the challenges associated with biodiversity protection – in a democratic setting – is to develop policies to overcome these obstacles. A decisive component in such democratic policies is the understanding of environmental issues among elites, politicians and in the general population: without understanding and knowledge on these issues in the general population, sustainable democratic policies might be difficult to envision and implement.

Reflecting this request for knowledge, the Norwegian Government in 2005 decided that more information and knowledge was needed for better biodiversity policies. The result of this decision was presented September 2010: A new Nature Index containing information on the situation and development with respect to biodiversity in nine “larger ecosystems”. Research has shown that there is no easy and straight way from scientific knowledge to politics: we know that more available information not necessarily means that people in general or politicians in special, will take well informed decisions reflecting this knowledge. Knowledge is given meaning in light of persons’ social background, political sympathies and stances on similar issues. Nevertheless, the extent to which an effective and legitimate policy on biodiversity develops will depend on the more general public opinion on the question of biodiversity. A vital question then becomes what the public understanding of biodiversity looks like, and perhaps just as important, which factors that makes for differences in this understanding. This last aspect is vital for the question of how an issue is communicated. Accordingly, in this paper, we will look into what the Norwegian public opinion on biodiversity look like: How concerned are people with biodiversity and how is it possible to explain differences with respect to levels of concern?

To answer these questions, this paper is structured as follows. First, we will take a brief look at the topic of biodiversity, and especially the question of how people in general attach meaning to such complex, abstract and scientifically mediated issues. On the background of such theories, we will present a set of hypotheses regarding how concern for biodiversity might be explained. Thereafter a section on data (representative sample of Norwegian population) and methods follows. Results are presented in two sections. First we look into some of the variables going into the more composite analyses which are of interest in themselves: How biodiversity is understood, what kind of views of nature that might matter for this understanding, and the way trust in science seems important for how biodiversity is considered, as well as support for local vs. central decision-making. Then the main analyses are outlined: How concerned are people with biodiversity, and how do these understandings depend on social background, political orientations and other ideological proclivities. We wind up the article with a discussion of how biodiversity fare as a political issue and how one might communicate on issues of these types in order to strengthen the knowledge basis for environmental management and policy and

enhance public engagement and participation in broad-based policy for biodiversity and sustainability.

“Potential for integrating biodiversity measurements, assessments and policy responses in a global ecosystem capital accounting framework”

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Abstract:

Degrading the ability of ecosystem capital to provide services to the economy as well as to the society is consumption, a consumption of capital. This is an unpaid consumption, which by accounting measures automatically generates a debt, in all societies and at all times – in this case an ecological debt. The recording of natural capital degradation and correlated depreciation and the accounting of depreciation counterpart as an ecological debt is a matter of fairness and equity.

The presentation discusses possible ways in which biodiversity values can be incorporated into ecosystem capital accounting frameworks to help reach the global Aichi Target 2 (CBD,2010). Biodiversity and natural resources planning over time requires assessing where progress is being made, or where negatives outweigh positives. Although several indicators of biodiversity loss have been proposed (cf. e.g. Butchart et al. 2004, 2005; Loh et al. 2005, EEA 2009, 2010), they have not been tested as applicable to ecosystem capital accounting, meaning that they are scalable and accessible to countries outside of Western Europe and North America.

We will discuss the making of the Landscape Ecological Potential Index and a Species Intactness Index and their use in approximating the state of systemic services (regulating and socio-cultural) in the pilot project on Ecosystem Capital Accounting in Europe (Weber 2008, Weber & Martin 2010). This project is in line with the evolution of environmental-economic accounts as represented by the UN manual known as the SEEA (System of Environmental-Economic Accounts) 2003.

In the European pilot project, these two indices are built using data reported by countries on protected areas and protected species. Undoubtedly other species should also be integrated in the indices, but there is a noted lack of data outside certain areas of the world. To address this gap, which is essential for enabling global ecosystem capital accounts, we are suggesting to use Ecological Niche Modelling (ENM) approaches which offer a more flexible and broadly applicable alternative to global status lists or complex indices (Jimenez-Valverde et al. 2010). ENM approaches are integrated with multi-temporal land cover and climate estimates, and range loss or gain is tracked via integration through time. The result is a simple and highly accessible approach that can track single species or customized sets of species, globally or within particular regions, and thus is much more adaptable to feed into an accounting framework.

We will further explore the design of a global biodiversity intactness metric, starting with a specific taxonomic group of interest such as birds. Occurrence data for the taxon of interest and environmental data on global scales for relevant parameters would be accumulated. On the basis of these we will develop summaries of predicted (based on ecological niche model estimates) and known (based on recent occurrence records) distributions -mismatches between these two data sets would signal biodiversity losses, which could be summarized across species and over geography to produce an intactness index. This quantity would provide an excellent metric not just of biodiversity potential, but also of the degree to which that potential has been damaged and rarefied.

“Economic valuation and the commodification of ecosystem services”

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Abstract:

In the last decade a growing number of environmental scientists have advocated economic valuation of ecosystem services as a pragmatic short-term strategy to communicate the value of biodiversity in a language that reflects dominant political and economic views. This paper revisits the controversy on economic valuation of ecosystem services in the light of two aspects that are often neglected in ongoing debates. First, the role of the particular institutional setup in which environmental policy and governance is currently embedded in shaping valuation outcomes. Second, the broader economic and socio-political processes that have governed the expansion of pricing into previously non-marketed areas of the environment. Our analysis suggests that within the institutional setup and broader socio-political processes that have become prominent since the late 1980s economic valuation is likely to pave the way for the commodification of ecosystem services with potentially counterproductive effects in the long term for biodiversity conservation and equity of access to ecosystem services benefits.