Biodiversity and Ecosystem Services: Arguments for our Future Environment

What kind of information on ecosystem services is relevant for decision making, and how can we incorporate it in the decision making process?

The issue

Both the *Millennium Ecosystem Assessment* (MA 2005) and the *The Economics of Ecosystems and Biodiversity* study (TEEB 2010) have shown that Ecosystem Services are of great value to mankind and that satisfying future demands for ES depends on the sustainable use of natural resources. It is therefore of crucial importance to our economy and well-being to incorporate all relevant ES information in decision making. However, which information is relevant to incorporate depends to a large extent on the decision making context: the general value of biodiversity for humans is, for instance, not very likely to play an important role in decision making at the local or regional scale levels. An important question therefore is what influence factors like governance scale, policy contexts etc. have in determining what information is exactly relevant and how it could or should be incorporated.

What ES information is relevant, and how can it be incorporated?

The first question for any particular decision making context, therefore, is to identify what ES information will be useful. The second question is then how to get that information incorporated in the process in the right way. This is a question of timing and framing.

The BESAFE project investigates how effective different types of arguments for biodiversity protection (e.g. economic, ethical, intrinsic) are in different decision making contexts. In a number of case studies, the differences in effectiveness between arguments used at different governance scales, policy contexts and stages of the policy cycle are analysed (general setup illustrated in Figure 1). Arguments are based on information, for instance, on values (in any sense), goods and benefits and are used in a decision process in a certain manner. BESAFE results will add to our knowledge on what information is important where and when, as well as what the effect of the form in which it is used . Although BESAFE is not just about Ecosystem Services, but about the wider importance of biodiversity too, it is concerned with what matters to humans. Its results will, therefore, be relevant for placing ES in a broader context.

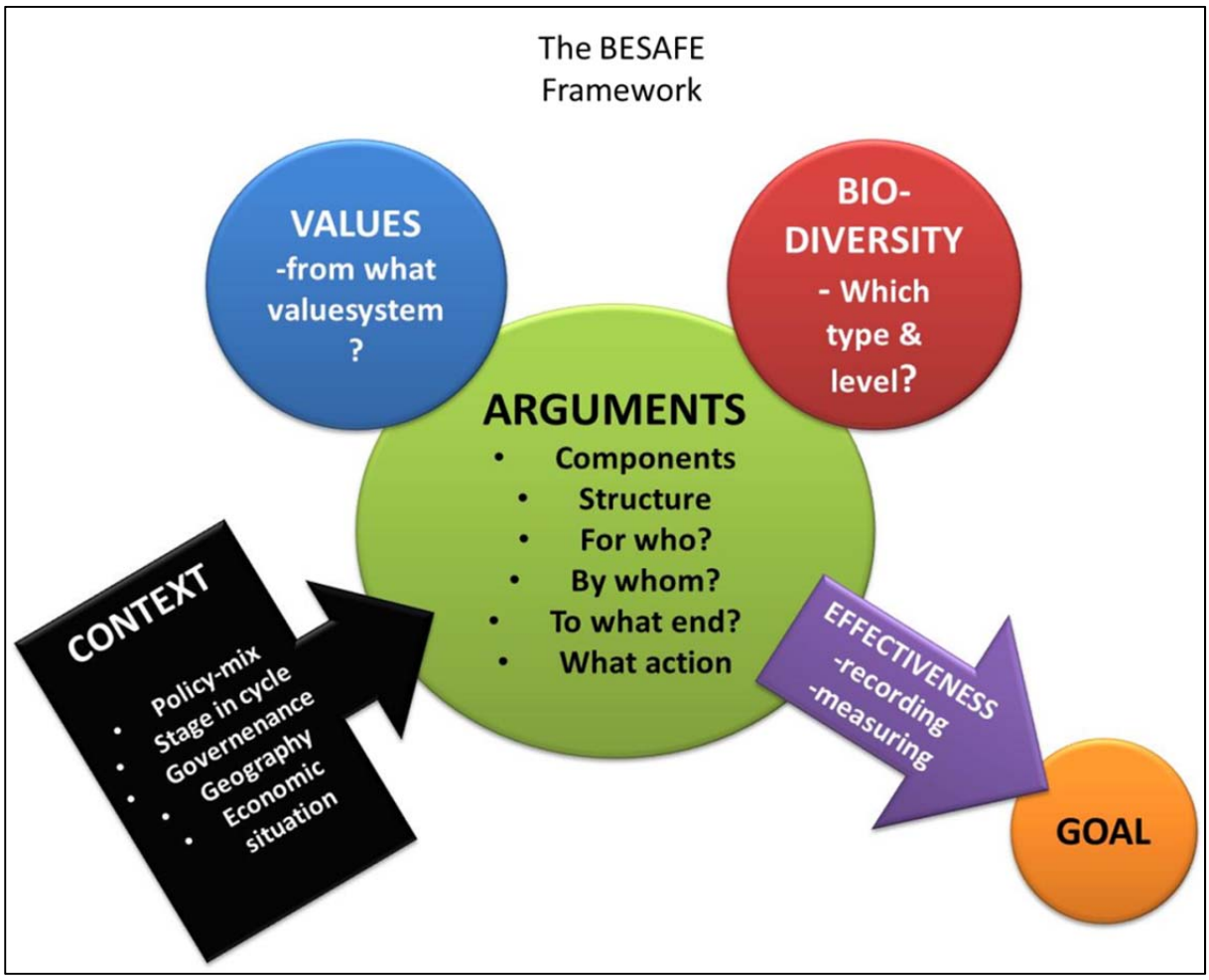

Figure 1. the BESAFE framework for analysing the effectiveness of arguments for biodiversity protection.

Some preliminary results, from a comparison of the use of arguments in biodiversity policy documents at the global and EU level, in the 1990s and currently, can serve to illustrate some of the important aspects of relevance (Figure 2). A striking change between the 1990s and the present at both governance scales is the shift from precaution to ES and climate change as arguments for protection. Also, while apparently there was not much difference between the arguments used in the 1990s at the global and European scale, they now have differentiated. This shows that, due to progress in knowledge, insight and awareness, other types of information can become relevant at a next step in a policy cycle and that, in this case, the information that has the most relevance became more context dependent.

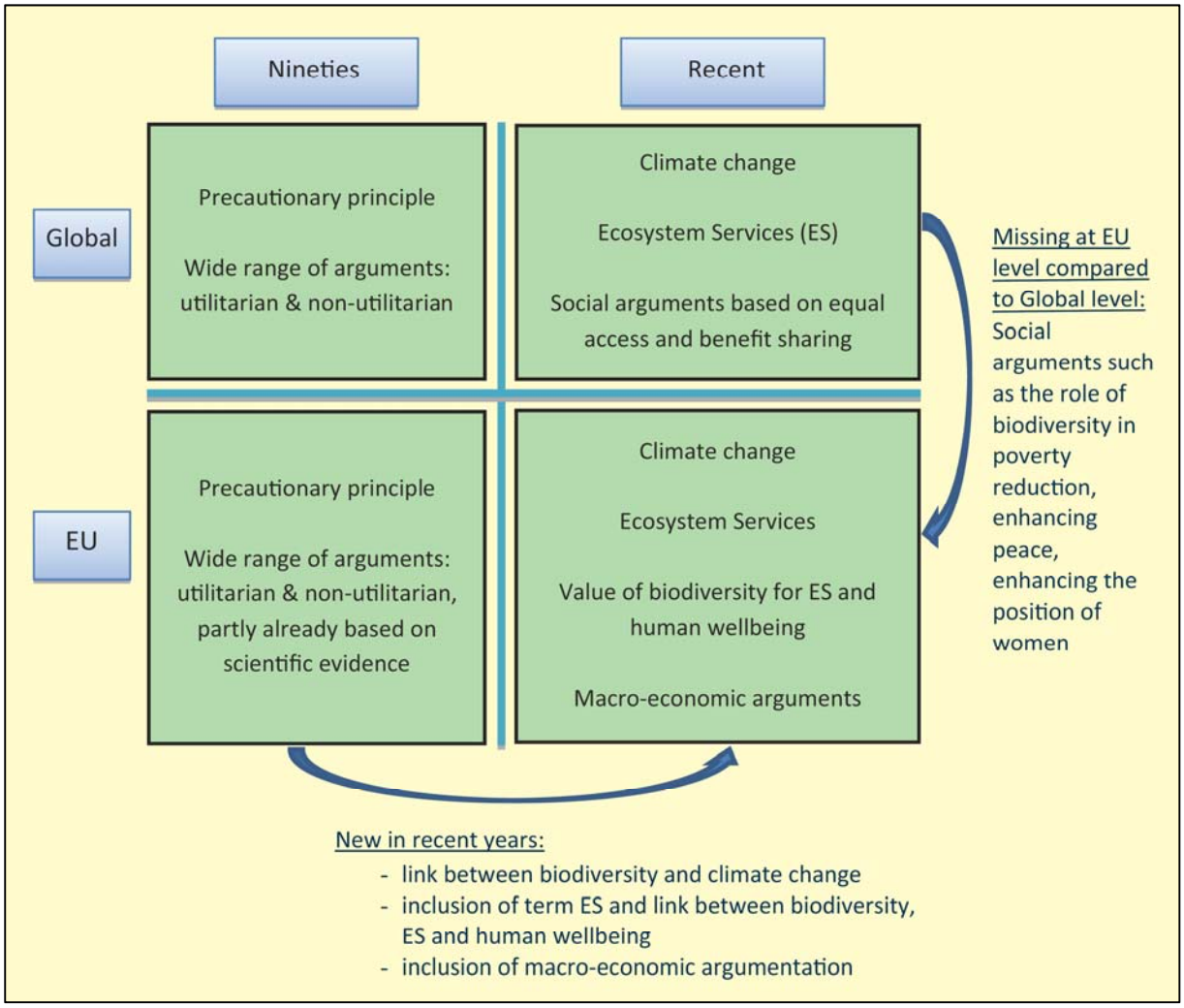

Figure 2. Differences in arguments and the values they are based on between the global and the European governance scales, and the changes in them between the nineties and the present.

As a first step in determining what types of arguments (and therefore: types of information) are relevant in decision making, we carried out a literature review of the arguments for biodiversity protection, using sources ranging from peer-reviewed papers to websites. The wide range of arguments we found, could be summarised into 15 types, based on different underlying values:

1. Recognising rights / values of nature itself, for itself.
2. Ethical, moral and religious views providing obligations to nature.
3. Poverty alleviation, subsistence, security for disadvantaged
4. Sustainable development, obligations or values for future generations
5. Social / cultural / heritage / collective well-being and welfare.
6. Psychological / spiritual / individual well-being. (also biophilia, intellectual, education)
7. Human health / reduction in disease risk.
8. Recreation, tourism, aesthetic experience.

9. Productivity, resources, industrial use of nature, market products,
10. Regulating services, carbon, nutrients, water - functions leading to indirect benefits
11. Livelihoods, employment
12. Precaution, risk reduction, resilience of services
13. Options for future use, bioprospecting
14. Reputation, looking good, winning customers/staff/voters
15. Legal obligation

How the use and relevance of these 15 value types in argumentation is linked to policy context is currently under investigation in our case studies.

Apart from the availability of the relevant information at the right time, there is also the question of how it should be used in (incorporated into) the policy process in order to ensure that it is effectively used. At a consultation workshop in May 2013, our stakeholders unanimously emphasised the importance of the right framing. Not only is it very important to use the terminology and language fitting the situation (i.e. that the stakeholders understand), but also to frame the importance of biodiversity in a positive way, emphasising the advantages instead of the limitations resulting from protection. In that light, Ecosystem Services can often be perfect additional arguments for explaining the need for biodiversity protection.

The use of future results

BESAFE is committed to make information on the effectiveness of arguments available through a web tool. The tool is aimed at predominantly biodiversity policy makers and NGOs who would profit most from access to information on which arguments –or their underlying values- are likely to be the most relevant in a certain situation, or what alternative arguments might be possible. To guarantee its usability, this web tool will be developed in close cooperation with the 'users' from the target groups mentioned above.

Knowledge constraints on more informed decision making

It is important to realise that identifying what information would be relevant in a decision making process is only part of what is required for that information to have a real impact. The fact that information would be relevant does not automatically mean that it is available or used. At the moment, much research addresses the link between biodiversity, ecosystem functions and ecosystem services because this information has already been identified as very relevant in a host of decision making processes. The work that BESAFE is doing in this respect is addressed in a separate policy brief. On the other hand, information on services often needs to be available before decision makers become aware that it is important. Knowledge constraints on identification and availability of relevant information therefore often will go hand in hand.

References

MA (2005) Ecosystems and human well-being: synthesis. Millennium Ecosystem Assessment, Island Press, Washington, DC.

TEEB (2010) The Economics of Ecosystems and Biodiversity: Mainstreaming the Economics of Nature: A synthesis of the approach, conclusions and recommendations of TEEB.