

# Arguments for biodiversity: a literature review



The BESAFE project explored the meanings associated with the term biodiversity and the components of arguments for biodiversity through a literature review. The aim was to create a framework for recording and evaluating a wide range of arguments made in different contexts.

The review showed that arguments for biodiversity were multifaceted and that the authors of arguments often did not define the term biodiversity itself. The provisional framework provided here is an interactive document for the duration of the BESAFE Project.

## Why this review?

The recent emergence of ecosystem service thinking in public policy narratives has given rise to many challenges concerning its contribution to biodiversity protection. Examples include:

-  A low level of awareness of the links between biodiversity and the provision of ecosystem services (required in order to make arguments for the instrumental value of biodiversity);
-  Balancing values that are clearly defined in markets with non-market and non-use benefits that are harder to measure;
-  Balancing immediate or short-term benefits with longer-term values. The latter may be discounted in current decision-making and/or highly uncertain scenario dependent.

An important milestone in the BESAFE project has therefore been to characterize how people understand biodiversity and the spectrum of arguments for biodiversity that is available to develop policy for biodiversity protection.

## How do people understand biodiversity?



Public attitudes toward biodiversity and measures to protect it drive public policy that influences biodiversity. While the BESAFE project builds on the understanding that people usually consider biodiversity a desirable feature or component of nature people may in some cases consider specific components of biodiversity harmful. Whether or not people view a component of biodiversity as positive may depend on their values and positions.

Meanwhile, the term biodiversity has been defined in many different ways and the spectrum of interpretations of the concept has been described to span from “strict and prescriptive” (science based) to “pluralistic – in the eye of the beholder” [1]. The left end of the spectrum thus characterizes biodiversity as “diversity of the different levels of understanding living organisms”, whereas the right end of the spectrum defines biodiversity as “everything that is valuable about ecosystems”.

Hence, biodiversity may mean many things to the person making an argument for its protection, as well as the person receiving the argument. For instance, biodiversity can be used as:

-  A desirable outcome that is valued in its own right and for its own sake. It can for example be considered a service [2];
-  A property of nature that, to some extent, enables it to provide services and maintain ecological functions;
-  Specific features within the natural environment (which may be significantly influenced by humans) such as forests. It may also be used loosely as a synonym for nature itself and in

some cases, even individual components of biodiversity such as a species, may be used as representative of the whole [3].

## Arguments for biodiversity in the literature

The examination of 582 items of peer reviewed as well as grey literature demonstrated that arguments for the protection of biodiversity varied greatly in their level of specificity. Some authors appealed to generic moral viewpoints and relate to all biodiversity, while others relate to particular functions of a selected group of organisms in delivering a particular benefit. While related arguments for biodiversity were usually multifaceted, the majority of individual texts within the literature examined did not contain all components of a full logical argument (premise – inference – conclusion, and opportunity costs where applicable). Especially specific premises indicating why biodiversity was seen as valuable were often missing. In addition, 34% of the cases did not contain any clear statement as to the authors' understanding of what biodiversity was.

## Conclusions

A set of 31 types of premise statements was derived from the literature review providing a provisional framework, which could allow for the analysis and potential identification of distinctive trains of thought in argumentation in the BESAFE case studies. Broader categories were defined as follows:

Main category	Sub-category	Explanation / interpretation
Instrumental	Economic	Explicit reference to the conventional microeconomic or macroeconomic system a country or region.
	Social	Reference to utilitarian criteria which are not recognised in the conventional economic system - legal, political, moral, well being of specific communities.
Non-instrumental	Inherent	Rights of non-humans as recognised by humans, with no other end point.
	Human happiness	Human happiness / flourishing (Greek: 'eudaimonia'). No end point other than well being for its own sake. General to the whole human race.
Goal not expressed		n/a (author does not provide information that supports a firm conclusion as to whether the premise is for instrumental or non-instrumental ends).

The full BESAFE literature review can be downloaded from [www.besafe-project.net](http://www.besafe-project.net)

## References

[1] MACLAURIN, J. AND STERELNY, K. (2008) What is biodiversity? University of Chicago Press. 224pp.

[2] MACE G. M.; NORRIS K. AND FITTER A. (2012) Biodiversity and ecosystem services: a multilayered relationship. Trends in Ecology and Evolution, 27(1): 19-26.

[3] HAMILTON, A. J. (2005) Species diversity or biodiversity. Journal of Environmental Management, 75: 89-92.