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# ZEF

# Policy Brief No. 8

Biodiversity conservation: Accounting for  
the diversity of values in nature and society

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# MAIN FINDINGS

## Main messages

**1** Biodiversity loss and ecosystem degradation have led to economic losses which dwarf the losses of the current financial crisis. Biodiversity loss involves high risks and irreversibilities for current and future generations. Adequate attention must therefore be given to questions of whose values count and how to take these values into account.

**2** The “economic compass” is not defective but works in the way it has been designed, based on a simple mechanistic view of man interacting with nature, excluding the complexities of both. Biodiversity loss cannot be solved in the framework of an economic system which defined the very rules and incentives which caused it.

**3** Market failure is just one reason for biodiversity loss along with institutional and policy failure. The economic values of ecosystems and biodiversity therefore need to be socially contextualized by integrating them in societal decision-making systems which are part of the policy process.

**4** Re-defining the relationship between man and nature, by other than only economic value articulating institutions, will allow for the accounting of other than just monetary values and designing an economy which takes man’s and nature’s household into account beyond mere chrematistics.

**5** Deliberative decision tools, like citizen juries and roundtables, are complementary to economic and multi-criteria decision support tools and enable society to engage in stewardship strategies for biodiversity loss, guided by norms and principles.

## Costly biodiversity loss

It is not only since the Millennium Ecosystem Assessment Report that we are aware of the negative consequences of biodiversity loss and ecosystem degradation. The Millennium Assessment, however, has brought the topic back to the top of the agenda of public concern. Those 150 countries that have ratified the Convention on Biological Diversity (CBD) are especially concerned. They signed up to conserve, sustainably use and share the benefits of using the earth’s biodiversity.

A study on "The Economics of Ecosystems and Biodiversity" (TEEB) was presented to the public at this year's 9<sup>th</sup> Meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD). The study was initiated by the meeting of the environment ministers of the G8 countries and the five major newly industrializing countries (G8+5) that took place in Potsdam in March 2007. During that meeting, the German government proposed a study on 'The economic significance of the global loss of biological diversity' as part of the so-called 'Potsdam Initiative' for biodiversity. This proposal was endorsed by the G8+5 leaders at the Heiligendamm Summit on June, 6–8 2007.

The TEEB calculates the economic losses of biodiversity from global deforestation to be between 2 and 5 trillion USD – an amount that dwarfs the cost of the current banking crisis. Further, the study predicts that nature loss could halve living standards for the world's poor by 2050.



What is the economic value of the decomposition service provided by a bug?



The economic losses of biodiversity from deforestation alone, have been estimated between 2–5 trillion.

## Defective navigation tools and antiquated worldviews

The TEEB aims at helping policy makers as well as stakeholders from business, administration and others in the struggle to find an economic value for ecosystems and biodiversity (nature). Many of nature's values bypass the market and have no price. This undervaluation of biodiversity is seen as the underlying reason for the loss of biodiversity. The authors of the TEEB report refer to it as the "defective economic compass", which leads us to make wrong decisions regarding biodiversity because some values are not detected by the market.

This is also referred to as a problem of market failure and externalities: markets fail to include the public goods and services of nature. Why then don't people just value biodiversity more and higher? They do! Many people are willing to pay more for the conservation of biodiversity – more than is reflected by its price. But even if they were to pay, they could not be sure of what they would get and whether others might free-ride on their good will. So, in order to keep things simple, mainstream



People waste biodiversity if it is for free - but only if incentives motivate them to do so.

economics perceives people as being egoistic and utility-maximizing. They will waste biodiversity if it is for free. This behavior actually occurs and has been described as the "tragedy of the commons". However, we have known for a long time that people are also able to organize themselves collectively, are not just greedy and egoistic, but are also altruistic and able to cooperate to manage common resources.

The defective economic compass also tells us that value is not the same as price. While the price is what we pay, the value of something can be higher if people are willing to pay more. It's the value we get after paying the price. So the willingness to pay is the "real" economic value of something, even it is not used today. However, what the economic compass does not tell us is that although the price does not reflect the "true" value of something, nor does the "real" economic value because people also believe that nature has a value in its own

right – independent of its usefulness or people's willingness to pay for it. Intrinsic value, which is not recognized by economics, also makes a difference in conserving biodiversity as a means towards a higher end of well-being (viewed as being economically rational) and conserving biodiversity simply for its own sake (economically irrational).

In his book "Collapse – How societies choose to fail or succeed", Jared Diamond provides examples of cultures which fail to survive because they choose to cling to old beliefs and values in new and changing circumstances. The staggering fact is not so much the failure, but the choice societies have and make despite clear warning signs. It would not be surprising if we were to experience societal collapse if we choose to cling to economics as our only value-articulating system for navigation – a navigation system which clearly shows that it is using defective devices.

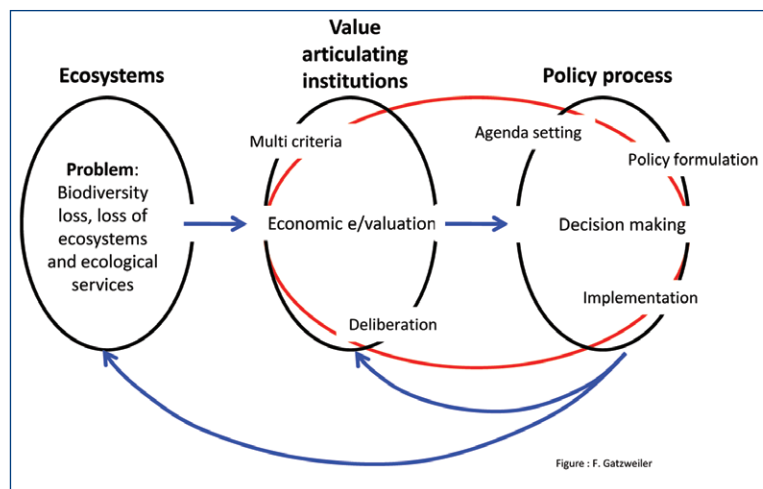


Figure 1: Economic valuation as one of various valuation methods integrated in the policy cycle.

Apart from the diagnosis that markets fail to and are unable to capture the full value of ecosystems and biodiversity, there are other

reasons for failure: institutional and policy failures. Institutional failure is actually built into market failure as the economic actor is only equipped with the values of greed and egoism.

Institutions guide the way people express norms and values, make choices and behave. Institutional failure occurs when the full set of human values is not elicited by the valuation method, and when economic



Markets fail to capture the full value of ecosystems and biodiversity.

values are not realized because of a lack of or adverse incentive structures – incentive structures, which mostly consist of monetary incentives, re-enforcing people's egoistic behavior. Policy failure occurs when government policies fail to correct market failures. In order to be effective and relevant, economic valuation obviously needs to be placed in the context of a societal process (Figure 1) by making use of the entire range of methods for valuation and decision making: economic, multi-criteria and deliberative methods.

## Making use of societal navigation tools

However, the question of how to value and decide in favor of sustainable ecosystems and biodiversity is not merely one of value plurality met by a diversity of appropriate valuation methods. It is also one of system complexity. Expert valuations (like Cost-Benefit Analysis) are insufficient and unsatisfactory for public and private decision-making, especially with regard to issues of high-risk and irreversibilities. Such decisions, however, must be taken with some urgency, if they are not to occur by default. The inadequacy of expert valuations is demonstrated by a historical record of public and scientific controversies, e.g. over nuclear waste disposal and reactor safety, genetically modified organisms, the health and environmental risks of pesticide residues, deforestation and biodiversity. These types of problems, which are characterized by high system complexity and high value plurality, make monetary valuation tools less relevant for policy (Figure 2).

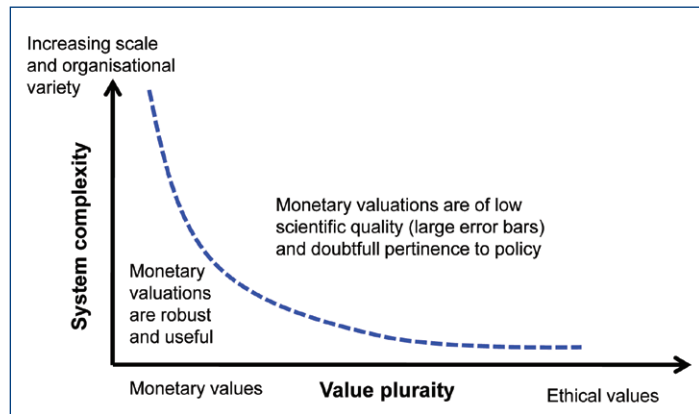


Figure 2: With increasing system complexity and value plurality, monetary valuations become of low scientific quality and doubtful policy relevance (Source: Redrawn from O'Connor, 2008: In a Wilderness of Mirrors).





## Valuation and the growth delusion

Two frequent mantras heard especially in developing countries are that "biodiversity needs to be put into use" for the sake of increasing incomes and that "one needs to be able to afford biodiversity conservation". Income creation and the growth of an economy are seen as prerequisites for biodiversity conservation and as the indisputable rights of developing countries.



Economic growth feeds on biodiversity and ecosystem health.

However, although we know that economic growth feeds on biodiversity and ecosystem health, that continued growth does not increase people's happiness beyond a threshold and that growth even increases income disparities, the belief in growth is so strongly built into the current economic system that even today as we receive ever more news of the consequences of the financial crisis, people choose to believe in growth. This belief is re-enforced by ever more conventional economic valuation studies.

Attaching economic values to biodiversity and ecosystems may result in greener accounts and is possible to translate ecological losses

into "virtual economic losses" as Prof. Joan Martinez-Alier says in *Economic & Political Weekly* (Nov 2008); however, it says little about the dependence of people on the environment. Especially the poor suffer from biodiversity and ecosystem losses, as they are the most direct beneficiaries and losses are felt directly as losses of the green proportion of their livelihood incomes.

Understanding the relationship and dependence between the economy and the environment is essential for an awakening from the growth delusion. Re-defining the relationship between man and nature will allow for the accounting of other than just monetary values and designing an economy which takes man's and nature's household into account beyond mere chrematistics.

To escape the re-enforcement of values by applying the same value articulating institutions, it is necessary to also make use of deliberative valuation tools like citizen juries, roundtables, or consensus conferences. These constitute a different set of value articulating institutions, with no pre-defined sets of values, enabling stakeholder dialogue and the emergence and expression of other values than economic values. Social decision support tools do not eliminate the problem and require technical and scientific input – also from economics. However, instead of following a course which is informed by out-dated navigation tools, society has the choice to use methods to better represent society's relationship to nature. As Alejandro Nadal, who chairs an IUCN working group on macroeconomics and the environment said during the meeting of the world conservation union (IUCN), the crisis "may raise awareness of the perils of continuing in this trajectory of consumption, social inequality, and concentration of wealth."

## Conclusions

Christopher Columbus had little more than some poor maps and a compass to calculate his course. Using a sextant (Figure 3), which was adopted a few centuries later, it became possible to calculate latitude, and with a marine chronometer one could calculate longitude. If Columbus had been given a sextant or, even better, a satellite-supported computerized navigation system and the knowledge of how to use it – would he have chosen to keep using the compass? This is a metaphor for the attempt to

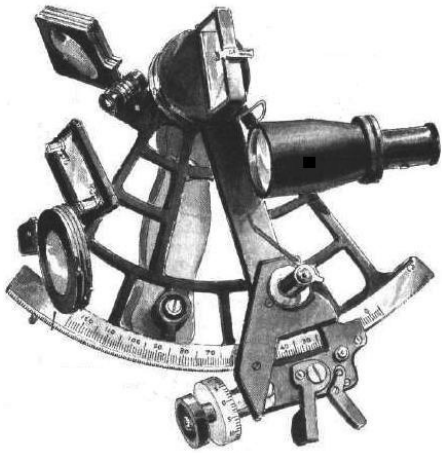


Figure 3: Together with a compass the sextant revolutionized navigation

repair the economic compass by means of additional economic valuation studies which are guided by the same underlying behavioral assumptions, instead of making use of additional societal navigation tools. Seeing the environment differently makes people relate to it differently as well. The same economic system which has helped to generate the problem of biodiversity loss will not help to solve the problem if its underlying values and belief in growth remains unchanged.

Clinging to antiquated navigation tools and belief systems, will prevent us from responding adequately to biodiversity loss beyond generating ever more monetary values for nature – beyond chrematistics.

Conserving biodiversity therefore demands not only taking care that natural environments are protected, but also that societies develop democracies which are able to mobilize their collective intelligence, provide creative responses and make adjustments that integrate diverse value perceptions for the benefit of all – economic values are (only one) part of that.

## ZEF Policy Brief

For the purpose of applied research the ZEF Policy Briefs mainly address decision makers and practitioners of development cooperation with pointed comments on current and emerging topics. The ZEF Policy Briefs are published sporadically. They are complementary to ZEF's more extensive Discussion Papers that intend to stimulate discussion among researchers and practitioners.



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