

INTEGRATING BIODIVERSITY CONSERVATION AND CLIMATE CHANGE - PERCEPTIONS AMONG EUROPEAN STAKEHOLDERS

- Results from a preceding German case study -

Martin Hirschnitz, Franz Badeck

Global Change & Natural Systems, Potsdam Institute for Climate Impact Research, Germany, *martin.hirschnitz@pik-potsdam.de

Abstract

According to scientific studies climate change (CC) is assumed to become the major driver of biodiversity (BD) loss in the near future and therefore must be integrated into nature conservation. In order to be effectively integrated, several influential actors have to be considered. Their perception of BD and its conservation is crucial for finding areas of commonality on which to engage into action and support implementation. In a range of telephone interviews with relevant German stakeholders data on CC perception as well as on common interests in BD and its conservation were gathered. Quantitative and qualitative analysis revealed CC as the most threatening driver. This was also found for the majority of subdivided stakeholder categories. Common interests existed with regard to perceiving BD as a basis for institutional well-being and performance and its conservation crucial for maintaining the beneficial services of BD. Several specific conservation targets were named with relatively high percentage of common interest. With CC identified as a major issue for BD, its integration into nature conservation appears advocated. If it furthermore could be assumed that an interest in BD and its conservation translated into support for CC integrated nature conservation strategies (CCS), then those commonalities could act as a basis and incentive for effective implementation of CCS.

Introduction

The global state BD is deteriorating continuously (MA 2005).. A variety of direct drivers (DDs), according to scientific literature primarily land use change, CC, invasive alien species, overexploitation and pollution, is underlying this loss (MA 2005, Sala et al. 2000). Some studies suggest that CC will even become the major driver of change in the near future (MA 2005, Thomas et al. 2004). Therefore, it must be integrated into nature conservation (Hannah et al. 2002, Doyle & Ristow 2006). In order to be effectively implemented, several influential actors have to be considered, such as people in charge of or involved in implementation and others whose activities affect BD conservation (Agrawal & Ostrom 2001, SRU 2002). Their perception of BD and its conservation is crucial for finding areas of commonality on which to establish support for implementation (Jasanoff 1998, Davis et al. 2005).

Results

Across all respondents, CC was perceived as most threatening to BD, followed by land use change, over-exploitation and use of chemicals (see Figure 1). The last rank - with a distinct increase in the distance to the other estimates - is occupied by invasive alien species. Not only does climate change ranks first on the threat scale but also do the answers show the lowest standard deviation (SD) compared to the remaining four DDs. At the level of stakeholder subcategories (see Figure 2) a more diverse but still supportive pattern emerges, with three out of five subcategories ranking CC as greatest threat.

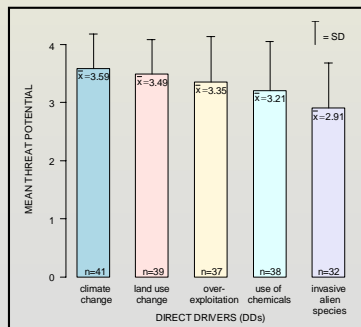


Figure 1: mean perception of threat potential of DDs of BD loss; n = 50

Method

In this study data were collected among relevant German stakeholders via telephone interviews following a pre-tested questionnaire with open and closed questions. Relevant stakeholders were selected from the fields of administration, politics, NGOs as well as industry and trade. Quantitative data were gathered using a scale from 1 (low) to 4 (high) and analysed with descriptive statistical procedures using the software R. For qualitative data a structuring content analysis was applied in Atlas.Ti, which allowed for clustering responses and detecting collective findings.

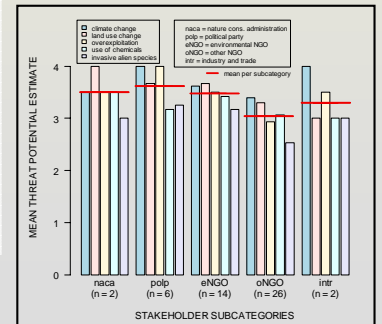


Figure 2: mean perception of threat potential of DDs of BD loss per stakeholder subcategory; n = 50

When confronted with three statements on the meaning of BD, strongest agreement has been detected with BD as a subject of research and information activities (see Figure 3). Somewhat lower the provision of genetic information and of resources was valued. Regarding statements on the purpose of BD conservation, highest agreement was reached on maintaining the resources on which life depends. Second ranked maintaining BD's intrinsic value. Table 1 shows a range of common interests in BD and its conservation. Here, several commonalities of different magnitude exist with regard to certain meanings of BD, certain purposes of its conservation and specific conservation targets. Those commonalities might constitute a basis for support of strategies for the conservation of the specified aspects. Finally, they may act as an improvement of implementation.

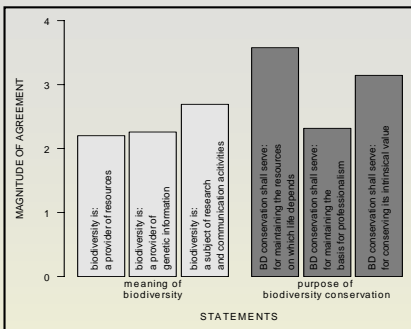


Figure 3: agreement on statements 'meaning of BD' (light gray) and 'its conservation' (dark gray); n = 50

common interests in BD	and its conservation, which supports	specific conservation targets
BD provides services such as ecosystem and climate stability or recreational value [40 %]	maintenance of provision of ecosystem goods & services [43 %]	conserve genetic potential of: indigenous species [25 %], useful species [25 %], unprotected species [25 %]
BD as an asset (financial, cultural, political, intrinsic) [29 %]	maintenance of assets (financial, cultural, political, intrinsic) [17 %]	conserve specific animal and plant species: useful species [23 %], endangered species [38 %], indigenous species [13 %], charismatic / flagship species [15 %], key stone species [6 %]
BD is a source for emotional well-being [11 %]	achievement of sustainability and justice (future value) [22 %]	conserve specific ecosystems: forest ecosystems [34 %], alpine & low mountain ranges [14 %], marine & coastal ecosystems [17 %], freshwater & wetland ecosystems [21 %], cultivated & open landscapes [21 %]

Table 1: table of common interests in biodiversity and its conservation; [%] specifies the percentage of stakeholders out of those giving answers to the respective questions

Conclusion

The results of the study prove that among the interviewees CC is considered as the most important issue driving BD loss. Since the SD of the estimates on CC is lowest of all five specified DDs, highest homogeneity in the answers and therefore the least doubts in how to assess CC can be assumed. Hence, it can be argued for approval of its integration into nature conservation by relevant actors. Given the variety of common interests in BD and its conservation across the respondents, commonalities could be identified. They strongly link BD and its conservation with institutional well-being and performance. Therefore, they might act as a basis and incentive for collectively supporting CCS. However, whether they would translate into effective implementation of the strategies remains to be further investigated. Here, actual CCS could be identified and discussed with a wider set of European BD experts.



Martin Hirschnitz
PhD student, Potsdam Institute for Climate Impact Research PIK, Research Domain II Climate Impacts and Vulnerabilities
Telegrafenberg A62, 14473 Potsdam, Germany
martin.hirschnitz@pik-potsdam.de
www.pik-potsdam.de

References:

- Agrawal & Ostrom (2001). Collective Action, Property Rights, and Devolution of Forest and Protected Area Management. In: Meinzen-Dick, R., Knox, A. and Di Gregorio, M. (eds). Collective Action, Property Rights and Devolution of Natural Resource Management: Exchange of Knowledge and Implications for Policy. Puerto Azul, The Philippines, 75-109.
- Davis et al. (2005). *Social Movements and Organization Theory*. Cambridge, Cambridge University Press
- Doyle & Ristow (2006). Biodiversitäts- und Naturschutz vor dem Hintergrund des Klimawandels. *Naturschutz und Landschaftspflege*, 38 (4):101-107.
- Hannah et al. (2002). Climate change-integrated conservation strategies. *Global Ecology and Biogeography*, 11 (6):485 - 495.
- Jasanoff (1998). The political science of risk perception. *Reliability Engineering and System Safety*, 59:91-99
- MA (2005). Ecosystems and human well-being: biodiversity synthesis. Washington, D.C.: World Resources Institute
- Sala et al. (2000). Global Biodiversity Scenarios for the Year 2100. *Science*, 287 (5459):1770-1774
- SRU (2002). Für eine Stärkung und Neuorientierung des Naturschutzes. Sondergutachten. Bundestags-Drucksache 14/9852 vom 05. August 2002
- Thomas et al. (2004). Extinction risk from climate change. *NATURE*, 427 (6970):145 - 148.

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