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Strategies for sustainable policy design: Constructive assessment of biodiversity offsets and banking

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ABSTRACT

To successfully shape future policies and new forms of governance for biodiversity conservation and ecosystem services, careful assessment is needed at an early stage of policy development. This paper describes the concepts and first application for a constructive assessment of biodiversity offsets and banking schemes: the Challenging Futures approach. The approach builds on insights in the area of technology assessment which seek to open innovation processes to related societal concerns to bring about sustainable improvement.

As its main objective, Challenging Futures endeavors to create a more inclusive discourse about biodiversity offsets and banking, that is, to make issues of their design, functions, and implications more debatable, especially for new actors such as outsiders and critics. Based on a set of future scenarios for biodiversity offsets and banking, workshop participants identified, debated, and described critical issues and challenges, some of which have been backgrounded in the course of policy developments. One basic finding from the workshop is that although the design of biodiversity offset approaches and valuation methods is predominantly framed in functional and methodological terms, it is almost always linked to more fundamental philosophies, worldviews, and different rationalities concerning how to see, use, and value nature. The design and implementation of biodiversity offset and banking schemes are thus as much a political as a technical issue, a matter of concern and judgment, fact and functionality. It therefore requires an open, anticipatory, reflexive, and contested debate to make sound, that is a broader acceptance of decisions about the design and use of new biodiversity conservation approaches before certain designs are implemented over a range of different socio-ecological and cultural contexts.

This paper summarizes the issues and challenges discussed by workshop participants in relation to the future development of biodiversity offsetting. These assessment results feed back into the design and development of policy approaches. More robust and socially embedded, and hence sustainable, policy solutions are the desired result. In the course of the paper, the political and societal implications for the future development of biodiversity offset and banking approaches are discussed and the chances and limitations for using the Challenging Futures assessment approach highlighted.

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1. Biodiversity offsets as a promising policy solution

The search for new pathways to nature protection, biodiversity conservation, and ecosystem services (ES) provision is closely related to the search for new forms of governance. The mainstreaming of biodiversity and ecosystem services concepts has resulted in a political and ethical paradigm shift over the past decades. Instead of conserving nature for its own sake, the trend has shifted towards an emphasis on its anthropocentric and instrumental values, with a focus on measuring nature in

economic and physical terms (e.g., Costanza et al., 1998; Jax et al., 2013). As a result, various approaches have been articulated and implemented to remake the governance of biodiversity which employ neo-liberal conservation policies and methods to commodify nature (Adger et al., 2003; Scherr et al., 2004). Proponents argue that these new modes of governance are better equipped to deal with today's global ecological problems, reduce regulatory costs, mobilize private capital, harmonize regulatory frameworks, and increase awareness by enlisting a range of new actors in the policy process (e.g., Haddad, 1997; Jordan et al. 2003, 2005; Mead, 2008; Tommel and Verdun, 2008).

Biodiversity offsets has been widely heralded as a new and promising but also challenging approach for confronting biodiversity loss and growing development pressure (e.g., McKenney and

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Kiesecker, 2010: 165; Quétier and Lavorel, 2011: 7). At their core, offsetting schemes allow ecological impacts occurring in one place to be compensated by conservation or restoration measures implemented in another. The main proviso is that stricter mitigation measures – such as avoidance or reduction – are not feasible, a framework that ultimately institutes a ‘mitigation hierarchy’ (Ten Kate et al., 2004). Compensation can happen on a case-by-case basis, by offsetting the impacts of specific development projects through additional protection measures at a different site. It may also take the form of ‘biodiversity credits’ for protection measures, which can be issued in advance and independently of impacts, and later used to compensate biodiversity losses accruing from other projects. The latter form can be linked to regulations that provide for private conservation or habitat banks to generate and offer credits on a commercial basis. This approach operates under various labels, including ‘habitat banking’, ‘mitigation banking’, and ‘conservation trading schemes’ (TEEB, 2008). Offsetting aims to achieve ‘no net loss’ in terms of biodiversity and the approach is based on standardized metrics for its valuation. Today, the scientific as well as political discourse on how to design and use offsetting systems, as well as questions of how to govern them is largely open, and many issues still need to be addressed (see Fox and Nino-Murcia (2005) and Wilcove and Lee (2004)).

One difficulty with biodiversity offsets and in particular credit trading compared to emissions trading is that establishing commensurable units of biodiversity seems to be far more complex and place-specific than defining comparable emissions, at least in case of carbon. Open issues in this regard are how to measure and evaluate functional (in-kind/out-of-kind) or spatial (on-site/off-site) equivalence or, more generally, what can be counted as equivalent in terms of destroying versus conserving nature. As a result, an accepted universal design for biodiversity offsetting schemes is not yet discernible. Despite the general focus on seemingly functional and methodological issues concerning how to setup and operate offset systems, more fundamental questions about their suitability and governance still remain (e.g., Robertson, 2004, 2006; Sullivan, 2012).

The capacity of market-oriented solutions and commercial banking to deal with environmental degradation caused by economic development is often viewed with skepticism. Whether governments can successfully counterbalance and regulate economic dynamics and the power amassed in the process is also a matter of concern, not to mention their capacity to equitably distribute economic and social benefits (Corbera et al., 2007). This is particularly relevant from an international perspective for countries with less institutionalized forms of democratic governance and in the absence of intergovernmental frameworks. The appropriate role and degree of state oversight and control thus remain an ambiguous topic. What is more, a general lack of accepted information about ecological, social, political, and cultural impacts and effects of offsetting schemes create more uncertainty than certainty (e.g., Wilcove and Lee, 2004). However, despite all these open issues related to biodiversity offsets, their presence on policy agendas continues to rise, with governments and private companies all around the world increasingly searching for biodiversity offsetting policies to meet international commitments for tackling biodiversity loss and at the same time to meet demands of investors who promise to generate economic growth (e.g., Eftcc et al., 2010; Madsen et al., 2011).

These developments, such as biodiversity offsets and banking schemes as a vast spreading innovation and framed as a promising policy solution on the one hand, and the many unresolved issues of whether and how to design biodiversity offsets and banking as a new form of governance on the other, describe the starting point to engage with ongoing design discourses and stimulate a critical debate about future challenges.

With this orientation, the Innovation in Governance Research Group studied the historical and ongoing innovation processes of the development of offsetting schemes with regard to underlying dynamics, mechanisms, and tensions. In this course an extensive literature review was conducted over a period of three years. This review covered literature on broader political trends in environmental policy, policy instruments involved in conservation and impact mitigation, and related problems and issues. Further statutes, agency reports, position papers, protocols, and evaluations of instrument performance were reviewed to identify the pros and cons of different instrument designs. In addition, a total of 36 expert interviews were carried out with actors involved in the design and implementation of environmental markets and conservation trading policy in particular to shed light on a number of strategies for instrument design and use. Building on these insights the Challenging Futures workshop format was conceptualized. The format builds on a set of future scenarios that highlight different pathways of development and challenges to trigger a critical discussion for the future of biodiversity offset and banking approaches. In a workshop, academic researchers, regulators, and business makers that make up a substantial part of the biodiversity offset design and policy community were brought together with affected societal actors, including skeptics and advocates of alternative policy approaches to identify and discuss critical issues and challenges. These issues ranged from specific technical questions to fundamental philosophical assumptions and the overall purpose of such offset designs. Our approach aims to introduce the results of this debate into societal and policy discourses on biodiversity conservation with the goal of improving sustainable policy development.

This paper is structured as follows. Following the introduction, I outline the development of biodiversity offsets and banking in Section 2, and highlight respective innovation dynamics and problems for policy design. In Section 3, concepts for the Challenging Futures workshop are then highlighted, aiming at the incorporation of societal concerns in the design work of new policies. In Section 4, the workshop results are presented, including a description and interpretation of identified issues and challenges for the future of biodiversity offsets. As a conclusion, arguments for more participatory and reflexive approaches to policy assessment and a better embedding of biodiversity conservation schemes in their implementation contexts are presented in Section 5. This extends to methodological reflections on the Challenging Futures format, its potential and limits in relation to policy design work for biodiversity conservation and ecosystem services provision.

2. Biodiversity offsets and banking as a policy innovation

Offset programs for biodiversity protection emerged at a time when environmental policy was starting to shift towards flexible approaches after having long been characterized by strict federal command-and-control regulations, in particular for water, air, and species conservation (Dryzek et al., 2002; Klyza and Sousa, 2010; Meidinger, 1985). Due to land use conflicts that helped shape policy agendas and deadlocked urban and industrial planning in many states, the Environmental Protection Agency (EPA) started experimenting with flexible mitigation mechanisms in the early 1980s (Robertson, 2004). These mitigation mechanisms introduced a hierarchical sequence of steps for assessing development projects, ranging from impact avoidance and minimization to the possibility of directly offsetting losses through mitigation banking as a last resort (Hough and Robertson, 2009). In 1991, the idea of commercializing impact mitigation emerged through regulatory arrangements allowing private firms to provide land and/or carry

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