

Rio+20, biodiversity marginalized

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Title: Rio+20, biodiversity marginalized

Abstract: At the Rio+20 Conference (June 2012), the biodiversity conservation agenda was been subsumed into broader environmental issues like sustainable development, “green economy”, and climate change. This shoehorning of biodiversity issues is concomitant with a trend towards biodiversity governance based on market-based instruments and on standardized biodiversity assessment and monitoring. Here, we raise concerns that these trends can marginalize important and specific aspects of biodiversity governance, including other policy tools and regionally contextual socio-ecological environments. Among other things, this contributes to the marginalization of agroecosystems as habitat and matrix for biodiversity. Such agroecosystems, however, can have a major impact on conservation outcomes as they comprise a major part of terrestrial lands. If the biodiversity crisis is to be curbed, special attention must be given to societies, institutional approaches, and environments that are currently marginalized in conservation policies.

Authors: Stéphanie M. Carrière¹, Estienne Rodary^{1*}, Philippe Méral¹, Georges Serpantié¹, Valérie Boisvert¹, Christian Kull², Guillaume Lestrelin¹, Louise Lhoutellier¹, Bernard Moizo¹, Georges Smektala¹, Jean-Christophe Vandavelde¹

Affiliations: ¹ IRD, UMR GRED, 911, avenue Agropolis, BP 664501, 34394 Montpellier cedex 5, France, ² School of Geography and Environmental Science, Monash University, Building 11, Melbourne, VIC 3800, Australia, *Corresponding author.

Author's Emails: Stéphanie M. Carrière (stephanie.carriere@ird.fr), Estienne Rodary (estienne.rodary@ird.fr), Philippe Méral (philippe.meral@ird.fr), Georges Serpantié (georges.serpantie@ird.fr), Valérie Boisvert (valerie.boisvert@ird.fr), Christian Kull (christian.kull@monash.edu), Guillaume Lestrelin (g.lestrelin@gmail.com), Louise Lhoutellier (louise.lhoutellier@gmail.com), Bernard Moizo (bernard.moizo@ird.fr), Georges Smektala (georges.smektala@agroparistech.fr), Jean-Christophe Vandavelde (jcvandavelde@yahoo.fr).

Correspondence: Estienne Rodary, IRD, UMR GRED, 911 avenue Agropolis, BP 664501, 34394 Montpellier cedex 5, France, Tel: +33 4 67 63 69 74; fax: +33 4 67 63 87 78. Email: estienne.rodary@ird.fr.

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Introduction

Despite decades of conservation action, the biodiversity crisis is continuing and cumulative (Butchart et al. 2010; CBD 2010; Laurance et al. 2012). However, it did not receive much attention at the recent Rio+20 Conference, despite having been a central plank of Rio 1992. Policy and scientific choices over the past 20 years have led biodiversity conservation to be displaced by and subsumed under broader fields such as climate change and green economy. This mainstreaming of biodiversity into these currently “hot” fields tends to marginalize the specificity of biodiversity conservation issues, making them subsidiary to other concerns and of lower visibility and priority as it was during Rio+20. Furthermore, the focus on global-scale issues (like climate change) and particular policy approaches (like green economy) contributes to an on-going marginalization within biodiversity conservation of local and regional specificity, of approaches other than market-based policy instruments, and of non-“wild” ecosystems such as agroecosystems. We believe that effective biodiversity conservation policies should re-focus attention on local and regional practices and institutions, on diverse ecological habitats, and on their interactions. These down-to-earth, regionally-specific components of socioecological systems are vital to the sustainability of conservation.

Today’s global conservation policies lead us to overlook critically important domains, particularly with respect to the diversity of ecological and social settings, of institutional contexts, and of economic or methodological approaches. Mainstream global solutions to the biodiversity crisis, as promoted by global-scale organizations like the Convention on Biological Diversity (CBD), international conservation organizations, and the newly established Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), generally focus on homogenizing knowledge and conservation instruments (Brooks et al. 2006; Salafsky et al. 2008), coordinating policies (Bode et al. 2011; Mace et al. 2000), reinforcing policies and increasing funding (Rands et al. 2010). Indeed, the fact that socio-ecological systems have become global in scope demands a form of global governance for the Earth (Biermann et al. 2012). However, these efforts should not impede our capacity to perceive and work with diversity, whether this diversity is ecological, social, institutional, economic or methodological (Sutherland et al. 2009). A focus on diversity can bring to the fore fields of research, methods, disciplines and action that are marginalized today.

The article presents how biodiversity governance is currently eroding our ability to tackle diversity and to identify emerging issues in biodiversity conservation. This is because of the strong focus of biodiversity governance on market-based instruments and on standardization of biodiversity assessment, monitoring and conservation tools. Secondly, the article illustrates how, *inter alia*, this standardization leads to the marginalization of agroecosystems as habitat and matrix for biodiversity conservation. This can have a major impact on conservation results as agroecosystems comprise 30% of Earth’s surface (Altieri 1991).

Marginalization of non-market-based measures

Conservation approaches have undergone several shifts in the last half-century (Adams 2004), responding to political and social currents and evolving scientific knowledge. In the past decade, after a period where community-based approaches flourished, there has been a move to multi-level biodiversity policies (Ferraro & Kiss 2002). Furthermore, conservation adopted a number of market-based instruments (MBI), notably payments for ecosystem services (PES) (Jack et al. 2008), and has been marked by a trend towards standardization in biodiversity policies (Salzman and Ruhl 2000).

The current preference for MBIs seems to be the result of an idealized model of biodiversity conservation based on the economic value of biodiversity and ecosystem services (Brockington 2011). This focus on MBI risks marginalizing other tools, and tends to remove complexity from public policy reflections (Kosoy and Corbera 2010). For instance, a recent article on payments for ecosystem services in Madagascar—in which rural farmer's livelihoods and social issues are reduced to opportunity costs from a coarse global model, and which summarily excludes non-forest areas from consideration—relegates to the final paragraph several crucial variables such as government capacity, policy environment, and land tenure (Wendland et al. 2010).

Proponents of MBIs tend to recognize, at least on paper, that such tools need to be implemented not in isolation, but in combination with other policy instruments. For example, the Green Economy report issued by UNEP for Rio+20 asserted that “Although PES will not be the only strategy used by governments to achieve forest-based emission reductions, it is likely to be important.” (UNEP 2011) Likewise PES experts Engel, Pagiola and Wunder (Engel et al. 2008) state that PES approaches should be made in conjunction with existing policies and institutions. However, these caveats are often forgotten or overlooked in the rhetoric surrounding MBIs. The Wendland et al. (2010) article cited above is typical in reserving mention of other political and social contextual factors to the last paragraph of the conclusion. Indeed, market instruments are rarely developed in isolation of other approaches. Costa Rica's PES program is held up as a model for market approaches, yet it was developed within a legal framework (thus, a regulatory approach) and over half of its funding comes from petroleum royalties (which is a fiscal approach) (Blackman and Woodward 2010).

Furthermore, these instruments are not applied within an institutional vacuum (Vatn 2010). They are developed and implemented within specific local, regional and (inter-)national realities that are shaped by power relations between actors and pre-existing formal and informal institutions. In seeking more efficient biodiversity governance, the MBIs effectively aim to change attitudes towards the environment. Their efficiency therefore largely depends on the adherence of stakeholders like the above mentioned actors and institutions. Thus, the extent to which these instruments are coherent with the practices and strategies of the stakeholders is critical for conservation (Muradian et al. 2010). One cannot just analyze MBIs in terms of their fiscal, economic, or ecological logic, but one must also investigate the full social dimensions of their implementation.

Ultimately, MBIs should become part of the institutional diversity that exists rather than being devised as a model in isolation from other tools and policies (Muradian et al. 2010). In this respect, advances in our understanding of complex, multi-level, institutional and ecological synergies (Hirsch et al. 2011; Oldekop et al. 2010; Ostrom et al. 1999; Persha et al. 2011) should also encompass financialization mechanisms of global conservation. Rather than taking a pro or con position on market instruments, one should analyze their actual role, their interactions with other instruments, and the reconfigurations of public actions induced by them.

Marginalizing diversity

The current trend towards standardization of biodiversity assessment and monitoring aims at improving policy effectiveness (Kapos et al. 2008; Salafsky et al. 2008). While in the domain of climate change the development of a general equivalent among greenhouse gases allows emissions to be compared, the standardization or reduction of the elements constituting biodiversity into homogeneous categories is more problematic.

Standardization is applied to habitats and species through the establishment of indices, typologies (like ecoregions) and prioritizations (Hotspots, Red List, Global 200, etc.) (Brooks et al. 2006; . This creates numerous artificial homogenous categories or models that can be weighed against each other or that can tend to the marginalization of some categories of biodiversity (Martín-López et al. 2011; Orme et al. 2005), or the marginalization of species that are not directly useful for human (McCauley 2006). For instance, biodiversity hotspots focus on species levels (Myers et al. 2000), which may under-represent rare, endemic, threatened and genetically distinct species and over represent widespread species (Moritz 2002; Orme et al. 2005). With these instruments, there is still a need for a set of indices that can capture the changing state of nature and its implications for human well-being. The focus on pristine environments also marginalizes “ordinary”, less remarkable, and less unique bits nature such as agroecosystems (see below) (Perfecto and Vandermeer 2008) . It also prevents the generalization of other conservation approaches or tools of ecological engineering, such as ecosystems restoration (Aronson et al. 2006). The pressure to standardize comes from its perceived utility in helping policymakers and activists at broad national or global scales prioritize actions, budgets, and campaigns. It thus facilitates the application of MBIs, creating commodifiable units that can be “sold” on the market, thereby marginalizing other possible biodiversity governance approaches (Robertson 2006). Standardization models tend to overlook the practical economic and political context in which those models are supposed to be used (Holmes et al. 2012), not to mention problems of coordination between NGOs (Balmford et al. 2009; Kareiva and Marvier 2007; Mace et al. 2000).

Conservation practices are also experiencing standardization. They are re-assessed and gauged in reference to benchmarks or “good practices” that determine eligibility criteria for funding and policy priorities. The private sector commitment to biodiversity conservation, for instance, is assessed by the Ecosystem Services Benchmark (Grigg et al. 2009). Some cases and practices are set up as examples and turned into templates, which might obscure the diversity of both ecosystems and local institutions. For instance, community-based natural resource management programs have occasionally been reduced to a collection of well-trodden examples of pilot projects and success stories (the archetype being Zimbabwe’s Campfire (Hulme and Murhpre 2001)) whose legitimacy is applied far out of the local contexts that shaped their success. Similarly, PES are today promoted without clear evidence of their actual achievements beyond repeated references to a few assumed success stories (Ferraro 2011).

Agroecosystems marginalized

The current focus on standardized assessments of biodiversity and practices, as outlined in the previous section, means that less attention goes to other resources and practices that are, in consequence, marginalized. Agroecosystems are one example of such a “margin” that could prove to be of vital importance for the future of global biodiversity (Scherr and McNeely 2008; Wright et al. 2012). They are marginalized because standardized assessments—by their very design—find more value in “wild” areas, with, for example, larger numbers of endemic species.

Although agriculture, pastoral lands and novel ecosystems cover the major portion of the Earth (Ellis et al. 2010; Lindenmayer et al. 2008), they receive little attention or funding from conservation programs (Altieri 2002). Advocates of “land sparing” argue that it is better to concentrate agricultural land use in smaller, intensively used areas, and thereby leave more “wild” lands untouched (Fischer et al. 2011). Yet in many areas, agroecosystems still have heterogeneous ecological habitats and are favorable to high and potentially sustainable levels of biodiversity (Martin et al. 2012; Perfecto and Vandermeer 2008). In these spaces, diversity—whether of cultivated species, non-domesticated species, or auxiliary species for farmers—ensures a good ecosystem adaptability and resilience (Perfecto and Vandermeer 2010) particularly in a context of climate change (Lin 2011). The diversity of practices and of biophysical conditions contributes to a huge diversity of agroecosystems around the world. With most natural habitats already fragmented it is important to ensure that organisms living within those fragments can migrate through a biodiversity-friendly matrix.

Certain agroecosystems effectively offer a double advantage: they are rich in both endemic and introduced species biodiversity due to the spatial heterogeneity maintained by the diversity of production and risk management practices (Perfecto and Vandermeer 2010), and they offer ecosystem services, notably food and cultural services, that can be very important for a large number of farmers (Jackson et al. 2007). Examples might include the domestic forests of southeast Asia (Michon et al. 2007), or the cocoa agrosystems in Latin America, Africa and Asia (Schroth and Harvey 2007). As sustainable food production was one of the major themes of the Rio+20 Conference, it should not be forgotten that biodiversity (both agrodiversity and associated wild biodiversity) is essential for the productivity, sustainability and resilience of sustainable food systems (Jackson et al. 2007; Frison et al. 2011). The conservation community should have engaged more with this aspect of the conference.

The maintenance of ecologically friendly agroecosystems calls not only for an extension of protected areas as they are defined today, but also for innovative forms of governance at the interface of production and conservation (Scherr and McNeely 2008) and governance that strengthens the connections of MBIs with other tools and policies (Engel et al. 2008). While the importance of those new forms of governance has already been acknowledged in the literature, the policy implications are still in their infancy. Effectively implemented, such innovative governance would open an immense field that could provide protection for a biodiversity that to date has been protected as little as its importance is great.

Conclusion

Biodiversity governance has undergone considerable change over the past few years. The number of protected areas has grown; PES has formalized a link between ecology, economics and politics; and the standardization of monitoring and assessment tools has allowed our knowledge of biodiversity to be deepened. However, the fact that biodiversity is still threatened and disappearing should lead us to question our concepts and methods. First, while standardized metrics have a role to play, they should not be used to shy away from transparent debates between actors over conservation priorities. As Bottrill et al. (Bottrill et al. 2012) argue, social interactions and networking are just as valuable as the hard data. They represent the political coalface of biodiversity management. Instead of just forming priorities from top-down assessments, there should remain room for bottom-up initiatives and concerns that reflect local and regional social, political, and ecological contexts. Second, MBIs can be useful tools, yet they should never be referred to or implemented in absence of other policy instruments and the general policy context in particular places. Third, conservation practitioners to not forget the value of anthropogenic landscapes like agroecosystems and traditional agroforests.

In effect, we are arguing for the importance of a science that is able both to engage in global issues and to deal with local, distinctive situations. Such articulation between global standards, instruments and categories on the one hand, and local, specific, “not-fitting-in” contexts on the other hand is a challenge for science not only in its theoretical internal practice but also when it engages with practitioners and policy-makers. Rather than concentrating our efforts in a single, standardized direction, as justified as it may be, we believe that special attention must urgently be given to societies and environments that are currently marginalized. Their incorporation into conservation efforts is crucial, and indeed indispensable, if the biodiversity crisis is to be soon brought under control.

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