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Resource Mobilisation for Aichi Targets: ambiguous lessons from research on market-based instruments

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Valuations, Markets and Policies for Biodiversity & Ecosystem Services

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MARKET-BASED INSTRUMENTS (MBIs) IN THE CONTEXT OF THE CBD STRATEGY FOR RESOURCE MOBILISATION

Attempts to compare existing finance flows for biodiversity conservation at the global level and funding needs to achieve the Aichi targets in 2020 are being carried out systematically for the first time.[1] While these exercises are showing the limits and circumstantial nature of costing conservation efforts, figures will probably show a need to multiply finance flows by one order of magnitude, a slightly milder "bill" than expected.[2] Yet, these amounts are large enough to constitute a clear justification for Innovative Finance Mechanisms (IFMs), as the public budget crisis in OECD countries preempts any major increase in Overseas Development Assistance (ODA) flows. However, in the run-up to the CDB COP11 negotiations have not yet resulted in any firm decision in this regard. Indeed many G77 countries are suspecting IFMs to make up for contracting ODA[3] and for OECD countries to escape their historical and economic responsibilities. While 2012 has seen a number of efforts to weave G77—and especially ALBA[4]–and OECD positions back together[5], this has mostly been at the cost of excluding market-based instruments (MBIs) within IFMs, while favoring green taxes on businesses and their combination with rights-based approaches.[6] We argue that intense debates on the role of

1. See UNEP/CBD/COP/11/14/ADD2 and UNEP/CBD/COP/11/15/REV2
2. See UNEP/CBD/COP10/INF/22: Global Monitoring Report 2010 CBD / Innovative Financing for Biodiversity; page 52: estimates range from appropriate funding of existing conservation tools (a few tens of bn US$ per year) to the need of global conservation across the globe (a few hundreds of bn US$).
3. The World Bank / Global Monitoring Report 2012 mentions a contraction of bilateral ODA flows in 2011 for the first time in recent years.
4. The Bolivarian Alliance for the Peoples of Our America, bringing together the countries of Latin America and the Caribbean led by socialist governments.
5. See "Scaling up Biodiversity Finance; Dialogue Seminar / Quito / 6-9 March, 2012; www.dialogueseminars.net/
6. Admittedly this policy brief addresses the issue of market-based instruments from an economic perspective, and thus leaves little space to other equally (if

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these policy instruments for resource mobilisation have so far generated lots of confusion, to the detriment of establishing well-informed and consensual policy options.

It is urgent to overcome extreme statements such as "markets don't fail, political-legal institutions do" or "commodification of nature hands every tree, plant, drop of water over to the dictatorship of the market". Our ambition is thus to provide an economist's view that can serve as a compass for decision makers, practitioners and scientists in this jungle of concepts (a multitude of terms coexist) and thus favor a more informed debate at COPII on IFMs and especially on MBIs. Far from denying the validity of opposite but equally legitimate views, we wish to clarify the terms of the debate and hence contribute to preventing misunderstandings and downplaying conflicting views whenever possible.

A ROUGH GUIDE TO THE MBIs JUNGLE

In this context, we have identified several large groups of instruments with similar economic characteristics (figure 1). These groups are defined as categories and must be consistent enough to (i) cover the broad spectrum of MBIs and (ii) discriminate between instruments that operate with contrasted logics or objectives. In other words:

- each category includes comparable instruments yet possibly applied in different fields: for instance the application of "mitigation banking" for wetlands, and the application of Individual Transferable Quotas (ITQs) for fisheries. In both cases, the shared fundamental economic characteristic is to create a market for a commodity (either biodiversity offsets or fishing quotas) based on prior decision that limits production and extraction (either the maintenance of a given amount of wetland services, or fish stocks available for fishing);
- two categories differ substantially and hardly compare: for instance the establishment of agro-environmental measures in Europe that operate like subsidies for adopting eco-friendly agricultural practices have little common ground with private initiatives to establish eco-labelling schemes for organic farming.

While we think that these categories constitute a useful tool to help stakeholders navigate in the myriad of terms and instruments—i.e. being a "rough guide to the MBIs jungle"— they are surely subject to debate. We thus do not intend to impose them against other similar attempts that would base a typology on other criteria (e.g. institutional requirements or level of commodification). One important point to make in this regard is that policy instruments are complex, hybrid and multi-dimensional objects that hardly fit in boxes. Categories thus need to be seen as ensembles with rather porous frontiers and devoid of complete exclusiveness in practice, notwithstanding our attempts to have them as separate as possible.

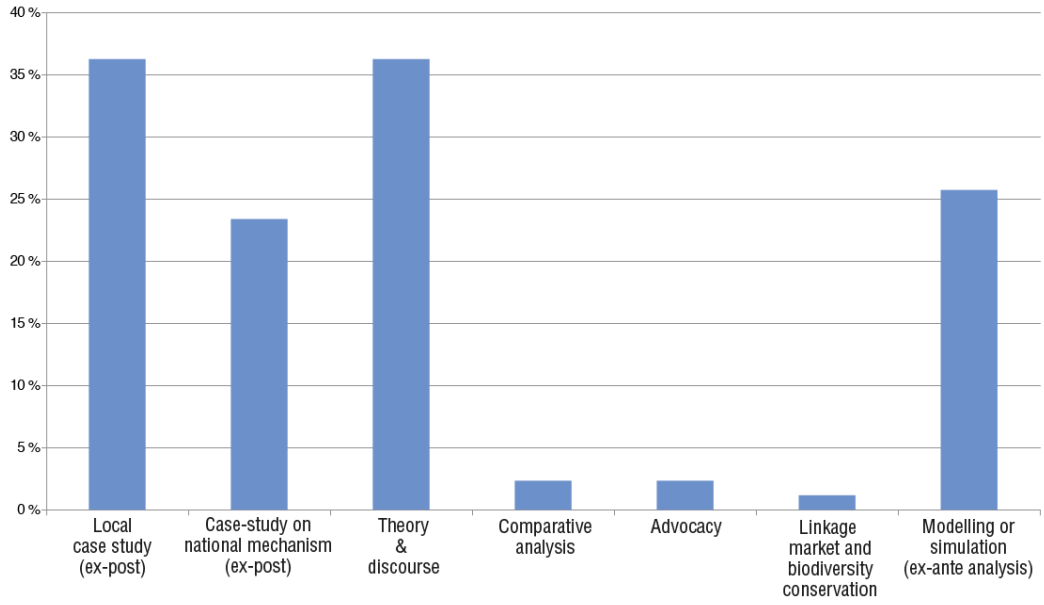
Figure 1. Categories of market-based instruments for biodiversity

Category	Description	Illustrations
Direct markets	A market where an environmental product is directly traded with the explicit intention to conserve or sustainably manage biodiversity	Genetic resources, non-timber forest products (NTFP), eco-tourism
Tradable permits	An ad-hoc market designed to serve a clear environmental objective, where users of an environmental resource need to purchase "permits" (notion of policy-induced scarcity) that are exchanged among resource users	Mitigation banking, Individual Transferable Quotas for fisheries, tradable development rights for land
Auctions	A mechanism whereby candidates to ecosystem service provision set the level of payment as a result of competition. Usually part of governmental programs but also applied in local experiments	BushTender in Australia, Conservation Reserve Program in the US
Coasean-type agreements	Consists in contracts resulting from negotiations between a limited number of stakeholders to exchange rights in response to a common interest (ideally free of public intervention)	Direct payment schemes (PES definition in Engel et al 2008), conservation easements, conservation concessions
Regulatory price changes	Consists in regulatory measures that lead to higher or lower relative prices or production costs, e.g. as part of a fiscal policy	Eco-tax, agro-environmental measures
Voluntary price signals	Consists in schemes whereby producers signal positive environmental impacts to consumers, and get price premiums and/or increased market shares	Forest certification, labels for organic agriculture, norms (self-produced before certification)

Source: Adapted from Pirard (2012).

not more) relevant and legitimate concerns. Therefore, rights-based approaches (e.g. tenure rights or the status of indigenous peoples) have been left aside here, although the need to combine them with economic instruments has been a key conclusion in the Quito Seminar.

Figure 2. Methodologies in the literature to discuss market-based instruments



Source: Lapeyre and Pirard (forthcoming).

A REVIEW OF MBIs FOR BIODIVERSITY IN THE SCIENTIFIC LITERATURE

In order to investigate the real nature of market-based instruments, we carried out a systematic literature review using the interdisciplinary Social Sciences Citation Index' (SSCI) on the authoritative 'Web of Sciences' (WoS). We searched all references including in their topic and/or title words such as 'market-based', 'market', 'biodiversity', 'ecosystem/environmental services', as well as 'payments for ecosystem/environmental services'. The resulting corpus includes 171 peer-reviewed scientific articles.

Confronting this literature to our typology of MBIs (Figure 3), Coasean-type agreements (21%) and tradable permits (20%) are the most represented. Other categories are less visible: regulatory price changes (14%), direct markets (8%), auctions (6%) and voluntary price signals (4%). Besides, the substantial number of articles (28%) that remain general and do not define the instruments under discussion (i.e. they cannot fit in any given category), is an indicator of the lack of precision of many scientific analyses on the topic.

Three main arguments are proposed in the literature to justify the use of these policy instruments and their alleged superiority over others: provision of incentives (61%), better resource allocation (28%), and the capacity to address the funding gap for conservation (17%)[7].

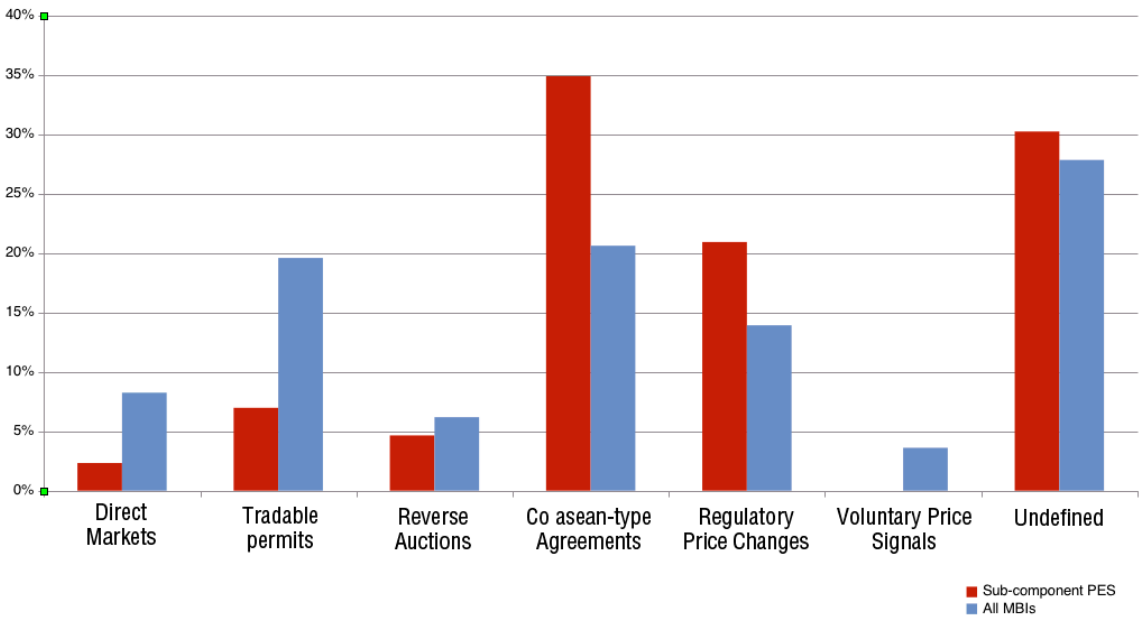
A diversity of research methods and evaluation criteria are mobilized to assess impacts and policy-relevance (Figure 2). Regarding methods, while around one third of articles present general and theoretical discourses (36%), an equivalent proportion provides empirical data and results collected at household and community levels. Articles applying *ex-ante* modeling and simulation exercises for the prediction of general economic and environmental impacts account for 26%, whereas 23% of them analyze governance and institutional aspects of a mechanism designed at a larger scale (e.g. national schemes in Costa Rica, Mexico or China).

Regarding evaluation criteria (Figure 4), although more than a third of the articles assess instruments' environmental effectiveness and about one fifth do focus on their cost-effectiveness (efficiency), many other criteria are applied: contribution to poverty alleviation (12%), equity (9%), participation (9%), feasibility (6%), legitimacy (2%), sustainability (2%), contribution to development, governance, food security, freedom of choice, adaptation capacity to climate change (all accounting for 1%), etc.

Overall, this heterogeneity in terms, research methods and evaluation criteria does not really contribute to clarifying the debate on the definition, legitimacy and usefulness of MBIs for biodiversity. **In this context, we could not find any clear evidence of positive or negative trends emerging from the literature: scientific articles presenting positive, negative, and mixed results**

7. More than one can be mentioned per article, hence total percentages exceed 100%.

Figure 3. Distribution of PES relatively to other MBIs in the typology



Source: Lapeyre and Pirard (forthcoming).

were found in almost similar proportions in our review of the 171 references.

PAYMENTS FOR ECOSYSTEM SERVICES (PES) ARE VERY SPECIFIC MBIs

The next step is to narrow the analysis down to the sub-component 'payments for ecosystem services', which was justified by two observations. First, PES is the only "innovative financial mechanism" and "incentive measure" explicitly mentioned in the report of COP10 in Nagoya[8] and for that reason deserves specific attention to inform policies. Second, PES occupy a particular position in the realm of MBIs, which is demonstrated, *inter alia*, by the tiny overlap between both streams of scientific literature (Lapeyre and Pirard, *forthcoming*).

Figure 3 gives clear evidence that **PES schemes suit specific categories of the typology relatively to other MBIs.** Indeed, PES mainly fit as Coasean-type agreements and regulatory price changes, and their presence in other categories is anecdotal. This distribution is consistent with previous conceptualizations of PES as bilateral agreements between providers and beneficiaries of ES (Engel *et al.* 2008); nevertheless, for logistics and transaction cost reasons, PES also extend their realm of implementation to more government-financed schemes as with the Costa Rica emblematic case.

Methodologically, scientific literature focusing on PES tends to rely more on case studies to assess household impacts at the local level (43%). As a corollary, it focuses much more on poverty issues (18%), equity (10%) and local participation (10%) criteria (Figure 4) in developing countries (78% of all PES studies take place in Latin America, Asia and Africa). However, **the literature on PES exhibits heterogeneous research methodologies and assessment criteria (Figure 4). As a result, general lessons on PES impacts are also difficult to draw for policy-makers and practitioners.**

DO NOT MISTAKE CONTRACTUAL PAYMENTS FOR COMMODITY MARKETS

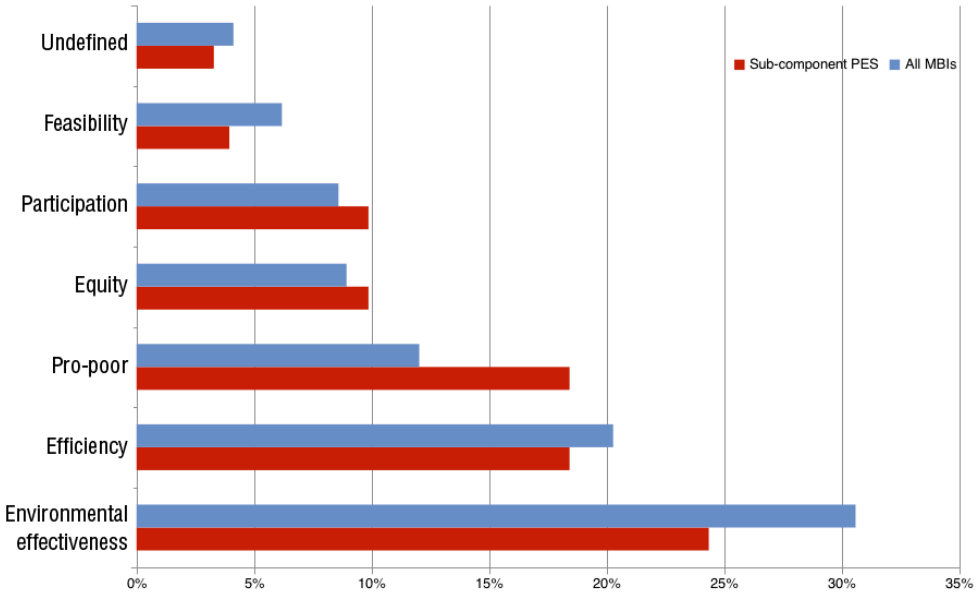
Beyond the several categories on which we based our analysis so far, **it appears very promising and policy-relevant to eventually oppose two broad and contrasted conceptions of markets**. Indeed, we can build on the seminal work by Williamson (1979) and his theory of transaction costs to characterize market-based instruments as governance structures, where governance is "an effort to craft order, thereby to mitigate conflict and realise mutual gains".

Therefore we propose to differentiate market governance and bilateral governance structures:

- the former is "the classic nonspecific governance structure within which faceless buyers

8. See UNEP/CBD/COP/10/27: REDD+ is also mentioned, but it is at an international scale and refers to a framework for action and funding rather than to concrete means of action. Indeed, PES can be part of REDD+ for ensuring forest conservation on the ground.

Figure 4. Evaluation criteria used in the literature (among others): MBIs and the sub-component PES



Source: Lapeyre and Pirard (forthcoming).

and sellers meet for an instant to exchange standardized goods at equilibrium prices» (Williamson 1979); here the medium in the exchange remains the 'sale' rather than the 'contract' and the identity of parties is almost of negligible importance;

- at the opposite, the "bilateral governance" applies to transactions with rather specific, non-transferable investments in physical and human assets. In this case, the non-standard and ill-defined nature of the good and service concerned makes market governance hazardous and recurrent transactions justify the costs of additional governance mechanisms (more complex contracts with direct and recurrent payments).

These insights resonate with other propositions to distinguish between markets for ES (MES) and payments for ES (PES) (Corbera et al. 2007, Vatn 2010). Others make a similar point when they plead for a distinction between rewards, incentives and markets along a commodification gradient, and ask for hybrid regimes that would be more suitable to the challenge of governing ecosystem services than "pure markets or hierarchies" (Muradian and Rival 2012).

An illustration of policy instruments operating like markets is our category "tradable permits" where commodities such as biodiversity offsets or Individual Transferable Quotas for fisheries are traded in order to reach an optimal allocation of costs and efforts. And an illustration of those operating like bilateral payments is our category "Coasean-type agreements" where beneficiaries of given ecosystem services (or their intermediaries) do negotiate with providers. Flat subsidies in the category "regulatory price changes" are another illustration.

Having separate groups of instruments is not only useful from a heuristic point of view; we argue that it is also crucial for policy makers to understand these differences because the environmental and socio-economic impacts of each of these groups have no reason to be similar. Instruments operating like markets can be expected to induce better resource allocation, which may be translated as "efficiency". Critiques may see here negative impacts related to the commodification of nature, as fluid markets certainly need a higher degree of commodification of goods and services.

In contrast, instruments operating as payments may mostly deliver in terms of incentives, which may be translated as "environmental effectiveness": service providers are assumed to more likely make the desired decisions when incentivized than with coercion. Critiques may see here a potential for the destruction of intrinsic motivations and social norms in favour of biodiversity conservation, or even a waste of financial resources when there is little additionality.

MORE CONSISTENT RESEARCH FRAMEWORKS ARE REQUIRED TO INFORM POLICY-MAKING

This policy brief has shown that scientific research on market-based instruments for biodiversity, and

more generally on innovative financial mechanisms, is heterogeneous at various levels: terms used by authors, evaluation criteria, methodologies and approaches to undertake assessments. **In this context, confusion might remain, leaving space for ideological views;** at this point, it is then a hard task, if possible, to draw lessons for policy makers on what works, in what environment, for what reasons and with which associated risks.

While multi-disciplinary research is essential to apply different but complementary scientific approaches, there is a need for more comparative and cross-scale research that enable take-home lessons to be provided to policy-makers. **It is our contention that research methods require improved consistency within a set of comparable methodological frameworks, even if they build on several disciplines.** This translates into similar terms to be used for similar objects (e.g. 'direct negotiated payments for ecosystem services delivery' instead of the generic and broad 'payments for ecosystem services'), systematic replication of analyses in many sites using the same research tools (e.g. household surveys, lab and field experiments, randomized-control trials, qualitative focus group discussions), and undertaking of research that covers the range of evaluation criteria of relevance for policy-making (e.g. equity, effectiveness, efficiency, legitimacy, etc.).

The mobilisation of Innovative Finance Mechanisms and market-based instruments in the national Resource Mobilisation Strategies will require that their distributional and socio-political implications at local and international levels be clearly evaluated and established, building on existing experience. As the debates in Quito[9] have shown, this is indeed a necessary condition for their acceptability in many developing as well as developed contexts.

The challenges ahead thus lie in finding a balance between preserving independency of research and the expression of creativity and multi-disciplinary approaches on one hand, and structuring research funding in order to secure the production of comparable assessments for informing decision-making on the other hand. We believe that if choices had to be made, priority should be given to the latter direction assuming that research will always find ways to innovate on its own. **Only such consistent and systematic research projects will allow the clarification of terms and the comparison of different policies based on objective and ideology-free impact assessments that contribute to meeting the Strategic Plan for Biodiversity 2011-2020 and achieving the Aichi Biodiversity Targets.**

9. See footnote 5.

FURTHER READING

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