

synthèses

BIODIVERSITY

N° 01/11 JUNE 2011

What's in a name? Market-based instruments for biodiversity

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We recapitulate in this article¹ several key messages that support our **main conclusion** on the nature and the role of market-based instruments (MBIs) for the conservation of biodiversity and provision of ecosystem services: **MBIs are a highly heterogeneous group with loose links to markets as defined by economic theory, but with close ties to public policies and legal frameworks as they represent a prominent policy tool for the environment.** Ties with public authorities are strong and the common rule for MBIs is to rely on the regulatory framework provided by states. Some could even argue that they constitute a new form of regulation. Only archetypal coasean-type agreements such as Payments for Ecosystem Services (PES) as defined by Wunder, ideal-type certification schemes, or specific markets for environmental products, stand as exceptions with respect to the links between MBIs and public authorities.

1. This policy brief is a synthesis of an analysis published by IDDRI: Pirard, R. and E. Broughton, 2011, "What's in a name? Market-based Instruments for Biodiversity", *Analyses* 03/11, Institute for Sustainable development and International Relations, Paris.

All other MBIs stand as policy tools in the hands of policy-makers, with a shift in decision-making only happening for actors at the on-the-ground level.

Their main common characteristic is to **use monetary values in one way or another (change relative prices, use economic incentives) through a commodification process** – to be understood here as considering nature from a utilitarian perspective with associated monetary values, not as creating commodities with standard units – but ironically and in many cases without either conducting proper economic valuations or revealing information about economic values. It is worth noting that putting a price or value on nature does not need to be done through MBIs only: for example, before enacting a law in the United States, compulsory cost-benefit analyses are carried out that may include monetary valuations of nature and ecosystem services when necessary.²

Heterogeneity is striking when one starts investigating the broad range of mechanisms labelled "MBIs". The market terminology seems to have

2. Ruhl, J. B., S. E. Kraft, C. L. Lant, *The law and policy of ecosystem services*, Washington, Island Press, 2007.

been adopted by default, as a way of making a distinction with all other approaches that do not put a price on nature. Our interpretation is that the term “MBI” serves as an asylum for all instruments with a price component that, in many instances, have only minor or even no real links with markets as defined in economic handbooks. This point is extremely important for a number of reasons, but particularly for **one can hardly expect that environmental management will benefit from the assumed advantages of markets just by picking-up MBIs**. Information on the economic values associated with the environment are poorly revealed as many of these instruments do not imply sufficiently frequent transactions between buyers and sellers. Some of these instruments do imply the revelation of information but not specifically on the costs of degrading an ecosystem or on the benefits of providing new services. As some of these instruments are directly managed and funded by the state and the national budget, tax payers rather than specific beneficiaries commonly contribute to their functioning – a fact which may constitute an absurdity from a market perspective.

Such heterogeneity pleads for a better categorisation of the MBIs based on their theoretical (e.g., relation to markets or ability to reveal information) and operational (e.g., institutional requirements or potential for replication) characteristics. Worth noting, **this heterogeneity disqualifies any statement that MBIs are good or bad, efficient or not, or any assessment that would apply to the whole range of approaches**. While we did not study the emergence of MBIs in discourses and in the literature in a systematic manner (e.g., with bibliometric analysis, which we strongly encourage social scientists to do), we consider it probable that ideology has played a role in the popularity of such a large basket of instruments explicitly linked to markets. Taking stock of this heterogeneity, we decided to distinguish six broad categories:

- The first category consists in market creation for goods and services derived from biodiversity and ecosystem services. This category includes, for instance, non-timber forest products and genetic resources.
- The second category consists in market creation for the management of biodiversity and ecosystem services, where standard products are exchanged at the initiative and under the close control of public authorities. Carbon

markets under cap-and-trade systems and mitigation banking are the emblematic examples. A sub-category includes similar markets but at the initiative of the private sector or beyond the control of public authorities: e.g., voluntary carbon markets.

- The third category consists in the implementation of regulations that change relative prices of goods and services on existing markets according to their positive or negative environmental externalities and at the initiative of public authorities. Taxes and subsidies belong to this category.
- The fourth category consists in the creation of mechanisms that change relative prices of goods and services on existing markets according to their positive environmental externalities and at the initiative of private actors. These mechanisms allow virtuous producers to capture a premium with a higher sale price for their products. Forest certification and labels for organic agriculture belong to this category. This category deserves to be separated from the previous one, as its scope of application is far more limited (of a different order of magnitude) as is the premium captured by private companies.
- The fifth category is defined by the contractual agreements between beneficiaries (or their representatives) and providers of ecosystem services according to the Coasean paradigm, based on mutual interest and usually assuming that property rights are thoroughly recognised. Payments for Ecosystem Services as defined by Wunder are an emblematic example of such an approach (but more an archetype than a real practice), for instance when a hydroelectric plant designs contracts with uphill land users.
- Lastly, reverse auctions (alternatively called procurement auctions) refer to secret offers by sellers in response to a specific demand. The rationale is to reveal information about willingness to receive, which is all the more justified with publicly financed environmental programs with limited financial resources at their disposal, and to spend public money as efficiently as possible. The BushTender program is an example in Australia, where landholders submit bids with detailed management plans that are then assessed against indicators of Biodiversity and Habitat services.

Our findings gain from being put into perspective with two important research results presented in

the literature a while ago already. **First**, Sartori³ developed a theory of comparative studies that helps determine whether objects (in our case MBIs) deserve to be compared in order to control (confirm or infirm) the validity of generalisations (in our case whether MBIs should be put under one unique category or label). In order for one category to be valid, its various components should at least have properties that exclude them clearly from other categories. The only such property that we found among MBIs is that of putting a price on nature in one way or another, but these “ways” vary a great deal. In our opinion, it is highly questionable that this is sufficient to justify lumping all of these instruments into such a category, and thus informing the choice of instruments in policy-making. As a consequence, **we tend to disqualify the appellation of the MBIs as a category of policy instruments.**

Second, the poor use of markets as defined by economic theory for the design and implementation of MBIs resonates very well with findings presented in Hahn.⁴ This author investigated the implementation of MBIs such as tradable permits and environmental fiscal regimes. He concluded that implementation was extremely different from what economists would want it to be, based on sound economic theory: “[experience] shows how the actual use of these tools tends to depart from the role which economists have conceived for them”. Several factors can explain this situation, and, among these factors, the necessity to adapt to specific contexts due to differences in political objectives. This is an essential reason that we need to be cautious about if we want to avoid a mismatch between high expectations and actual outcomes for the preservation of biodiversity and the maintenance of ecosystem services. This is also why one should pay attention not only to such statements: “Compared to previous approaches to forest conservation, market-based mechanisms promise increased efficiency and increased effectiveness, as well as increased equity in the distribution of costs and benefits”, but also to the following; “such policies, **if carefully designed and**

implemented, can achieve environmental goals at significantly less cost [...]”⁵ (emphasis added). **The devil is clearly in the details.**

Several years ago, Wunder and Vargas stated that, “Except for the emerging carbon markets, it seems incorrect to constantly refer to some of these schemes as ‘markets for environmental services’ [...] since spatial specificities usually restrict or eliminate any of the competitive forces so fundamental to [their] proper functioning”.⁶ Our review and analysis confirm this statement and the abuse of the market terminology to the detriment of a good understanding of what is at stake. Our interpretation is that commodification is taking place rather than market development. Some authors have pointed to this process: “PES disregard ecosystems complexity in order to facilitate market transactions based on a single exchange-value, thus imposing a trend towards monetary, market-driven conservation.”⁷ Notwithstanding the confusion in their use of the term “market” in light of our previous assessment, and our slightly different understanding of the term “commodification” that we associate more to the use of monetary values than the creation of standard commodities, we subscribe to this analysis. The commodification process here means that monetary values are attributed to the environment in order to trigger better management. But trade is another stage that is not yet reached, or even targeted, for many of the MBIs.

Instead, the ambition to create incentives or sources of funding is at the heart of the development of MBIs. The largest on-going initiative at the moment, the REDD+ mechanism to finance reduced tropical deforestation for the sake of climate regulation, illustrates this. By putting a value on forests based on their carbon stocks – an easily defined and measured environmental commodity compared to most ecosystem services – the international community agrees that forests can be kept standing as they may become profitable in economic terms. Furthermore, it assumes that developing countries will make decisions

3. Sartori, G., “Comparing and miscomparing”, *Journal of Theoretical Politics*, vol. 3, n° 243, 1991.

4. Hahn, R.W., “The impacts of economics on environmental policy”, *Journal of Environmental Economics and Management*, vol. 39, 2000, pp. 375-399, “Economic prescriptions for environmental problems: how the patient followed the doctor’s orders”, *The Journal of Economic Perspectives*, vol. 3, n° 2, 1989, pp.95-114.

5. Pagiola, S., Bishop, J. and N. Landell-Mills (Eds.), *Selling Forest Environmental Services: Market-Based Mechanisms for Conservation and Development*, London, James & James/Earthscan, 2002.

6. Wunder, S., M. T. Vargas, *Beyond “markets”: Why terminology matters March 2005*, Guest Editorial, the Ecosystem Marketplace, Katoomba Group, 2005.

7. Kosoy, N., E. Corbera, “Payments for ecosystem services as commodity fetishism”, *Ecological Economics*, vol. 69, n° 6, 2010, pp. 1228-36.

favouring their conservation and sustainable management. In addition, carbon markets have been presented as being the most sustainable source of funding (a view to which we do not subscribe) and the most politically acceptable as tax payers do not need to be tapped directly. But the underlying assumptions are debated, as well as its feasibility and effectiveness.⁸

The emphasis that is put on the capacity of carbon markets to constitute a sustainable financing source is certainly not disconnected from the belief that they can create the right incentives, but also reveal information on the costs and benefits of various environmental decisions. These are two extremely useful characteristics if they were to be verified. This ability to reveal information is central to understanding the advantage of using MBIs as policy tools and identifying which ones really add value to other policy tools that can be classified as purely regulatory instruments or coercive or prescriptive instruments.⁹ In addition, we assessed a lack of capacity to reveal information for many, if not most, of these MBIs in practice. The very nature of biodiversity and ecosystem services makes it an impossible goal for most valuations because of the complexity of the relations between a given state of the environment and the provision of services.¹⁰ This challenge has been addressed in prominent recent studies such as TEEB¹¹ and Chevassus-au-Louis *et al*¹² without

conclusive progress being made in this regard. The complexity of the ecosystem services from an ecological point of view, the challenge of dividing ecosystems in order to avoid the conflicts between services that are bound to emerge, the inherent limitations of economic valuations methodologies to capture economic values of ecosystems, and finally the high transaction costs that this exercise entails if one ambitions to achieve a satisfactory level of accuracy are doomed to remain major obstacles.

French philosopher Joseph de Maistre said that he had never seen Men, but that he had met with Frenchmen, Italians, and Russians, each bound by their own cultures, politics, languages and rules of conduct.¹³ **We have met, in the course of our research, with Payments for Ecosystem Services, fiscal systems, and tradable right systems, but have we seen MBIs as an homogeneous and thus relevant category?** It seems we did not encounter an archetypical MBI, but rather possible derivatives with widely varying characteristics. If this archetypical MBI were to exist, one could describe it as an instrument based on the transformation of certain properties or ecosystem services provided by biodiversity into standard commodities, as a way of stimulating the emergence of an exchange system. This system would be developed enough so that the confrontation of the willingness-to-pay and the willingness-to accept of actors would reveal the value of commodities and make way for their optimal management. ■

8. Pirard, R., A. Karsenty, "Climate Change Mitigation: Should "Avoided Deforestation" Be Rewarded?", *Journal of Sustainable Forestry*, vol. 28, n° 3-4, 2009.

9. Admittedly most MBIs rely on regulations, either for their creation, monitoring, enforcement, or effectiveness. The term "regulatory instrument" in this document refers to regulations that impose decisions instead of influencing decisions through economic incentives.

10. Ruhl, J. B., S. E. Kraft, C. L. Lant, *The law and policy of ecosystem services*, Washington, Island Press, 2007.

11. TEEB, *The Economics of Ecosystems and Biodiversity for National and International Policy Makers – Summary: Responding to the Value of Nature*, 2009.

12. Chevassus-au-Louis, B., J-M. Salles, S. Bielsa, D. Richard, G. Martin, J-L. Pujol, *Approche économique de la biodiversité et des services liés aux écosystèmes. Contribution à la décision publique*, Paris, Centre d'Analyse Stratégique, 2009.

13. "Il n'y a point d'homme dans le monde. J'ai vu dans ma vie des Français, des Italiens, des Russes [...] mais quant à l'homme je déclare ne l'avoir rencontré dans ma vie ; s'il existe c'est bien à mon insu" in *Considérations sur la France*, 1796.