



HAL
open science

Private Sector Involvement in the Millennium Ecosystem Assessment: Using a UN platform to promote market-based instruments for ecosystem services

Marie Hrabanski

► **To cite this version:**

Marie Hrabanski. Private Sector Involvement in the Millennium Ecosystem Assessment: Using a UN platform to promote market-based instruments for ecosystem services. *Environmental Policy and Governance*, 2017, 27 (6), pp.605-618. 10.1002/eet.1780 . hal-02958744

HAL Id: hal-02958744

<https://hal.umontpellier.fr/hal-02958744>

Submitted on 7 Oct 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Environmental Policy and Governance

Incorporating *European Environment*

Volume 27 Number 6 November – December 2017



Discover this journal online at
Wiley Online Library
wileyonlinelibrary.com/journal/epg

ISSN 1756-932X



WILEY

ENVIRONMENT



Private sector involvement in the Millennium Ecosystem Assessment: Using a UN platform to promote market-based instruments for ecosystem services

Marie Hrabanski

Abstract

The article analyses the implication of private sector representatives in the Millennium ecosystem assessment (MEA) (2001-2005). The article shows that, prior to this international biodiversity assessment, firms were involved in three coalitions: the greenhouse gas pro-trading coalition, the voluntary private standard coalition and the payment for environmental services coalition. These three coalitions all advocated a particular style of regulation that awarded an overwhelming place to market-based policy instruments. Corporate experts from the three coalitions identified were recruited to participate in the MEA. Thanks to the political visibility given to the ecosystem services concept by the MEA, private industry had an occasion to strengthen and legitimize their actions in favour of market-based environmental governance. At the same time, associating private sector representatives with the Millennium ecosystem Assessment process made it easier to disseminate the concept of ecosystem services.

Keywords:

Ecosystem services, private sector, market based instruments, biodiversity, global governance, Millennium Ecosystem Assessment (MEA).

1. Introduction

The business sector has long had a hand in formulating international standards and policies. This was achieved in part through its lobbying of national governments and in part through the participation of business representatives in commissions of international organizations. Industry has often been represented by groups largely opposed to stronger international environmental protection policies. However, in the 1990s the nature of the commitment of multinationals changed (Le Prestre, 2005). The participation of private companies in the 1992 United Nations Conference on Environment and Development (UNCED), also known as the Rio Earth Summit, marked the official arrival of business in international environmental politics.

Among its various outputs¹, the conference helped to firmly anchor climate and biodiversity issues on the international political agenda, by adopting the United Nations Framework Convention on Climate Change (UNFCCC) and the Convention on Biological Diversity (CBD). While business quickly showed an interest in climate change matters, it was much slower to embrace biodiversity questions as a global issue. Nevertheless, a movement began to emerge in the early 1990s, notably around certain market instruments for biodiversity conservation such as voluntary standards and compensation mechanisms. This movement continued and, by the end of the 1990s, the literature and initiatives proclaiming market-based instruments (MBI) were thriving, despite some confusion surrounding the concept of MBIs² (Broughton & Pirard, 2011). A few multinationals became interested in the political and financial opportunities positive incentive measures seemed to offer (and not negative price signal such as taxes), but such approaches remained sectoral and not widespread.

It was in this context that private companies became associated with the United Nations Millennium Ecosystem Assessment (MEA) at the end of the 1990s (Pesche et al., 2013). Beyond delivering a shattering analysis of the degradation of ecosystems worldwide, the MEA brought into politics a reference that has become unavoidable in public environmental and agricultural policies internationally: the ecosystem service concept (Méral, 2012).

The private sector was involved in the MEA through the intermediary of the WBCSD (World Business Council on Sustainable Development), a transnational group of companies working for sustainable development. One of the main problems was to develop the credibility of the process by basing it on scientific expertise and at the same time to involve stakeholders to legitimate and disseminate knowledge and norms produced by this assessment. Thus, the MEA can be regarded as a formal effort to assemble selected knowledge in order to make it publicly available in a form useful for decision making (Mitchell et al. 2006). In this way, Mitchell et al. think that global environmental assessments should be seen as social processes rather than simply in terms of the documents they produce. It is therefore a matter of precisely analysing the implications of private sector representatives in this international biodiversity assessment. Thus, there are two research questions explored in this paper: How were private

¹ Governments adopted three main documents, the “Rio Declaration”, a detailed action plan called “Agenda 21” and a “Declaration of Principles, not legally binding but conferring authority for world-wide consensus on the management, conservation and ecologically viable exploitation of all types of forests” (Forest Principles). The Rio summit was also the occasion for the signing of the CBD and the UNFCCC.

² Broughton and Pirard (2011) highlight the confusions surrounding the concept of market-based instruments (MBI) and show that there is no archetypal market instrument, but rather possible derivatives of it, with highly variable characteristics.

sector representatives involved in the MEA? And what business interests were served by their involvement in the MEA? With the answers to these questions, this article complements the existing explanations of the building of environmental global governance by focusing on the key role played by business in promoting MBIs for biodiversity and ecosystem services.

In the following, the argument regarding the role of business representatives in the diffusion of market based instruments in biodiversity unfolds in four steps. First, there is an analysis of the links between the concepts of ecosystem services (ES), payments for environmental services (PES), and market-based instruments during the MEA. In the next part, the idea of an “advocacy coalition framework” (ACF, Sabatier & Jenkins-Smith, 1993) is introduced as a conceptual lens for studying business involvement in the MEA, and the methodology is presented. Thereafter, the findings to the above research questions about the involvement of business representatives in the MEA and the underlying business interests are developed.

2. The Millennium Ecosystem Assessment

Since the 1992 Rio summit, global environmental changes have become a growing preoccupation and global scientific assessments have become more and more frequent. These assessments, like the Millennium ecosystem assessment, can be regarded as a formal effort to assemble selected knowledge in order to make them publicly available in a form useful for decision making (Mitchell, Clark, Cash, & Dickson, 2006).

While the MEA formally took place from 2001 to 2005, preparations were already under way in late 1998. A preliminary exploratory committee, set up on the initiative of the US-based World Resources Institute (WRI), the World Bank and the United Nations Development Programme (UNDP), operated from 1998 to 1999. Its composition was a good reflection of the nature of the process, with fairly balanced representation between noted scientists (some with political or institutional responsibilities), representatives of international organisations – the World Bank, UNDP, the United Nations Environment Programme (UNEP), and the Food and Agriculture Organization (FAO), and more specifically members of the secretariats of relevant multilateral environmental agreements – the Convention on Biological Diversity (CBD), the UN Convention to Combat Desertification (UNCCD), and the UN Framework Convention on Climate Change (UNFCCC).

From 2000 on, the MEA process was managed by a Board that reflected the concern to mobilise different stakeholder categories around the issue of assessing ecosystem degradation: it had the same participant profiles as the exploratory committee, with the addition of

representatives of governments, NGOs and the private sector. This multistakeholder aspect of the MEA process gave it legitimacy and was undeniably a factor in disseminating the knowledge produced, via the various networks involved (Pesche et al., 2013). The process has mobilized nearly 1,360 experts from science, governments, international organizations, NGOs and companies for more than four years, both to contribute to drafting the assessment documents and to their proofreading.

Ultimately, there were relatively few private sector representatives among the experts involved in the MEA. However, they were present in all the most influential bodies of the process. These include the Board: three representatives out of forty-nine members come from private sector; and the MEA scientific networks, notably the team that drafted one of the synthesis reports of the MEA, because eight authors out of sixteen come from private sector.

Altogether, the outputs of the MEA included a general overview and five synthesis reports, each targeting a specific audience: biodiversity, desertification, wetlands, the private sector, and the health sector. The work of the ecosystem services promoters did not end with the publication of the MEA reports in 2005 (Pesche, Méral, Hrabanski, & Bonnin, 2013): the “MEA coalition” in favour of ecosystem services approach remained active and gradually changed to address the dissemination of the ideas developed during the MEA. The ES concept was progressively incorporated in international and national arenas (Hrabanski, Bidaud, Le Coq, & Méral, 2013). Among the MEA's most significant contributions was the proposal of an analytical framework incorporating ES, now embedded in the scientific literature³ (Jeanneaux & Aznar, 2010) and in public policy, and to draw the international community's attention to the monetary value of ecosystems and the economic costs of inactivity. The main event illustrating this trend is the emergence of The Economics of Ecosystems and Biodiversity (TEEB) initiative.

2.1 Connections and controversies between the concepts: “ecosystem services”, “payments for environmental services” and “market-based instruments”

The MEA promoted the concept of ecosystem services into the national and global realm of environmental governance. However, during the MEA, the private sector did not attempt to spell out all conceptual dimensions of ecosystem services, but focused mainly on the economic opportunities offered by a payment for environmental services approach and

³ A bibliometric analysis from Aznar and Jeanneaux (2010) shows a continuous increase of scientific publications on the topic of ecosystem services/environmental services between 1999 and 2009.

market-based instruments more generally. The links between these different concepts need to be clarified.

At the end of the 1990's, the MEA sponsors shared the conviction that highlighting the idea that ecosystems produce services was a strong argument for changing decision makers' thinking with regard to the growing environmental degradation which by then was receiving increasing attention from the media. They argued that to improve human wellbeing, the supporting services (e.g. nutrient cycling, soil formation), provisioning services (e.g. food, timber, fuel), regulating services (e.g. climate, flood regulation), and cultural services (e.g. recreation) provided by ecosystems must be taken into account.

Recent studies on the history of ecosystem services (ES) and payment for environmental services (PES) conceptualize payments for environmental services as policy implementation of the ES concept in a global process of commodification (Gómez-Baggethun, de Groot, Lomas, & Montes, 2010). According to the canonical definition by Wunder (2005:3), a PES is “a voluntary transaction where a well-defined ecosystem service (or a land-use likely to secure that service), (...) is being ‘bought’ by a (minimum one) ES buyer, from a (minimum one) ES provider, if and only if the ES provider secures ES provision (conditionality)”. This definition was taken up and commented on in numerous subsequent publications (Engel, Pagiola, & Al, 2008; Farley & Costanza, 2010; Muradian, Corbera, & Al, 2010). In this way, PES are now understood as a consequence of the MEA process in mainstreaming ES into conservation and environmental policy (Redford & Adams, 2009). However, Pesche et al. (2013) explored the relationship between ecosystem services and payments for environmental services more precisely and showed that two relatively independent and contemporary processes, at least during the 1990s decade, led to the emergence of the ecosystem services concept on one hand and the payment for environmental services concept on the other (Pesche et al., 2013): Whereas the concept of ES is closely linked to a desire of ecologists (e.g., Ehrlich & Ehrlich 1981) to attract official attention to the threats to ecosystems posed by human pressures, the concept of payments for environmental services seems to have stemmed from a concern to ensure funding for conservation in tropical countries over the long term (Landell-Mills & Porras, 2002; Wunder, 2005). During the MEA, the ES and PES epistemic configurations drew closer. The private sector and NGOs were more sensitive to the operational side of PES. One of the ideas developed in the MEA was to counter ecosystem degradation through “greater use of economic instruments and market-based approaches” including taxes and user fees, creation of markets, payments for ecosystem services and

certification (MEA, 2005: 21-22). At first largely independent of practical experiments with payments for environmental services (PES) or PES-like instruments, the concept of ecosystem services is now closely involved in decision makers' growing interest in the idea of market-based-instruments for ecosystem services. Thus, market-based instruments for ecosystem services consist in a large array of policy instruments designed to modify the behavior of land users or natural resource managers in ways that maintain or promote ecosystem services.

There are lots of controversies around these three notions (Barnaud & Antona, 2014). Indeed, several papers in the recent critical geography literature have analyzed various PES programs and pointed out that, although PES are commonly considered a paradigmatically neoliberal market-based conservation mechanism, most of these programs actually do not strictly follow the pure neoliberal vision (Dempsey & Robertson, 2012; Fletcher & Breitling, 2012; Shapiro-Garza, 2013). Beyond that, there are controversies around the very use of monetized and market-based mechanisms to deal with conservation matters (Maris, 2014).

One can argue that this is not specific to ecosystem services – some environmental market-based mechanisms existed before the launch of the concept of ES into policies. However, ecosystem services are nowadays commonly associated with the idea of payments for environmental services, and more generally with a neoliberal vision of conservation. Matulis also claims that “The proliferation of market-based approaches to conservation is, in many ways, antithetical to ensuring social and ecological well-being” (Matulis, 2014:156). However, first, Corbera (Corbera, 2015) explains that PES are very rarely implemented to result in markets (Schomers & Matzdorf, 2013) and, even when they involve private and other non-state parties, they should probably be regarded as “contractual” transactions at best (Wunder, 2005). If PES rely on state budgets and operate as subsidies, we are dealing with a public policy aimed at changing the relative costs and benefits of land-use options, rather than with a new market. Furthermore, Market based instruments constitute an extremely heterogeneous group that makes little sense from an economic theory perspective. MBIs as a category look more like an asylum country for all tools with a price component (Boisvert, Méral, & Froger, 2013; Pirard, 2012b). Second, Sikor, who seeks to reconcile positions of critics and proponents of ecosystem services, suggests that both should think of environmental management as creating justices and injustices simultaneously (Sikor, 2013).

2.2 Analytical perspectives: The advocacy coalition framework in global environmental politics

How can we make sense of the role played by business in producing international policies? In political sciences, the “Advocacy Coalition Framework“ (ACF) develops a micro-level view on the role of stakeholders (including business) in international politics, in order to avoid decontextualizing the research on international environmental regimes. Peter Haas’s study on epistemic communities⁴ (Haas, 1992), inspired by regime theory (Krasner, 1983), allows the consideration of the role of businesses as knowledge-brokers, co-constructing what is and what is not policy-relevant knowledge. But much of the epistemic community research focuses on scientific expertise as an objective form of knowledge capable of reducing the uncertainty that characterizes environmental problems, and building consensus in favor of international cooperation (Levy & Newell, 2005). Haas neglects to analyze the contested nature of knowledge, where private companies and NGOs are actively engaged in supporting particular interpretations of scientific evidence (Orsini, 2010). In this paper, it is assumed that corporate expertise is an important currency for gaining political access, and that corporate expertise can be a way to represent interests (Coen, 2005; Grossman & Saurugger, 2006; M Hrabanski, 2010).

Regime theory remains macro-level views, and it is important to complement it from a micro-level perspective to better understand the concrete mechanisms at work when companies engage in international politics. The Advocacy Coalition Framework proposed by Jenkins and Sabatier (Sabatier & Jenkins-Smith, 1993) allows reconciling macro- and micro-level views. The approach is defined as including “people from various governmental and private organizations who both share a set of normative and causal beliefs and engage in a non-trivial degree of coordinated activity over time” (Sabatier & Jenkins-Smith, 1993). By this way, the coalition is a group of actors that are bind by a similar belief system and promoting a same policy option. The policy changes are then the results of the balance of power between different coalitions of actors within a policy system, and/or the learning process inside dominant coalition. In addition, unlike the “epistemic community” concept of Peter Haas (Haas, 1992), Sabatier and Jenkins favoured the coalition notion over the term “epistemic community”: while the latter suggests the idea of a closed shop, the former places more emphasis on the open and moving dimensions of the configuration. In other words, from this perspective, business participation in the MEA was a way for the private sector to be in the science policy arena and to pool frames of reference with decision-makers, scientific experts,

⁴ P. Haas uses the epistemic community concept to highlight the sharing of beliefs of a scientific type over principles and causalities, but also a convergence of interests within a group of heterogeneous stakeholders mobilized with a view to influencing political processes (Haas 1992).

NGOs, etc. The ACF highlights the role of people in these dynamics. In the MEA configuration, private sector representatives presented not their companies but themselves and were presented by others as “experts”, just like all other MEA experts. Some of the private sector experts involved later even moved on to a position in a major NGO, or within an administration. Finally, the Advocacy Coalition Framework enables us to consider the representation of interests as a long-term process which consists of constructing and sharing common references with multiple stakeholders. Where applicable, this kind of advocacy coalition is a way for business to be involved in biodiversity policies. This literature highlights the importance of the cognitive dimensions of stakeholders and also of looking at the earlier processes through which the stakeholders within the advocacy coalition were selected or excluded.

3. Methods

This article is based on a broad methodological framework from two scientific projects (SERENA⁵ and INVALUABLE projects) which deal with the genesis and the implementation of ecosystem services approaches and market based instruments for biodiversity. More than 70 experts (International organization, NGOs, think tanks, governments...) were interviewed. A part of the study was about the role of private sector in these dynamics and more precisely, we use several methods to analyse the participation of private sector representatives in the MEA. Initially, we interviewed eighteen key stakeholders of the Millennium process from January 2010 to January 2012. During its tenure, the MEA mobilized more than 1360 “experts” around the world, but an analysis of the overlapping responsibilities and varied degrees of involvement points to the core author team of the synthesis report on “Opportunities and Challenges of Business and Industry”. Among these sixteen authors, eight come from private sector, six of which we interviewed. We also interviewed three representatives of international organisations and nine of scientific communities, who were on the MEA’s Board or in one of the scientific bodies (assessment panel and editorial team). These eighteen semi-structured expert interviews allowed analysing the trajectories of the MEA process, the motivations of the people involved as well as technical issues such as the methods of recruitment to the MEA.

Thanks to access provided by members of the MEA Board, we also analysed the archives of the MEA and many documents produced by the MEA to analyse the different positions

⁵ <http://www.serena-anr.org/> and <http://invaluable.fr/>

around MBIs for ecosystem services. Finally, an analysis of grey literature from the WBCSD, and notably of the WBCSD's fifteen publications produced on biodiversity between June 1997 and October 2010, was the basis for analysing how the WBCSD as an important business organisation involved in the MEA process appropriated the ecosystem service concept in a selective way.

4. Results

Based on empirical research, this paper shows that at the time of the MEA, an advocacy coalition emerged in favour of market-based instruments for ecosystem services and biodiversity. This coalition was composed of stakeholders from multiple social worlds (NGOs, national administrations, the private sector and international organizations) who were attempting to develop market-based regulation mechanisms in the biodiversity sector. The empirical framework also highlights that prior to the MEA, the private sector representatives belonged to three pre-existing coalitions already interested in incentive mechanisms for environmental policy. We show that with the advent of MEA, the pre-existing coalitions persist but a new coalition of heterogeneous stakeholders, based on the three pre-existing coalitions, participated in spreading the concept of ES and market-based instruments to promote the introduction of ecosystem services markets.

4.1 Some mentors of business involvement in the MEA: advocacy coalitions promoting market-based instruments in the 1990's

Already after Rio in 1992 quite a number of companies got involved in environmental issues. The companies involved were based on business models that depended heavily on natural resources, and they gradually started to take part in the international biodiversity assessment in promoting some kinds of market based instruments (MBIs).

4.1.1 From the greenhouse gas “pro-trading coalition” to the international biodiversity assessment of the MEA

Of the eight business members of the team that drafted the MEA's “Opportunities and Challenges of Business and Industry” synthesis report, two came from the GHG pro-trading coalition, notably the former CEO of BP Americas. During the international climate change negotiations of the 1990s, a business-NGO coalition emerged that promoted emissions-trading –an emblematic market-based mechanism (OECD, 1997, 2003, 2007; Pirard, 2012a). Meckling use the advocacy coalition approach to describe business involvement in climate

issues in the 1990s (Meckling, 2011). The author shows how, prior to 1990, the dividing line between the coalitions had been between “anti-regulation coalitions” and “coalitions in favour of command and control type measures” (ibid, p43). Meckling shows how a third coalition appeared at the beginning of the 1990s, the “pro-trading coalition” in favour of carbon trading. This last coalition encompassed NGOs and business, and was a more powerful lobby group in the Kyoto climate negotiations than in the EU. The members of the coalition gradually relied on scientific experts and on allies from national administrations (US) and supranational administrations (EU) to develop a market-based regulation of greenhouse gas (GHG) mitigation. This coalition was based on a shared preference for a type of market-based GHG governance as the lesser evil compared to a regulatory approach, and on a will to develop carbon market instruments, such as greenhouse gas emission quotas, by influencing decision-makers. The leaders of this coalition included BP and Dupont. In our interview with the former CEO of BP Americas, he stated, “When I was with BP we were, you may recall, or maybe you don’t recall, we were very active on the issue of climate change. And we were instrumental at developing internal trading regimes to help us reduce our own emissions. I got involved with MBI approaches to solving environmental problems back in the 90s with BP”⁶. Another expert⁷ from private sector was also involved in the Kyoto climate negotiations and he also stated “market-based instruments are more efficiently and more flexible, that is why it’s better for us because we are involved in favour of sustainable development”.

The Advocacy Coalition Framework puts forward the notion of “coalition” as a group of actors that are bound by a similar belief system and promote the same policy options. Through these two interviews, we can observe that both representatives of the private sector share the belief that “the private sector is a part of the solution for climate change, and my firm must be involved in the climate negotiations”, as well as the same policy option which is the use of tradable permits for greenhouse gases. They share the same values and the same belief in the efficiency of tradable permits and more generally of market-based instruments. In other words, in being involved in the Millennium Ecosystem Assessment, the greenhouse gas pro-trading coalition introduced a learning process inside the coalition in favor of the ecosystem services approach which consisted in promoting environmental market-based approaches. Furthermore, Meckling shows that, although business could not prevent the control of emissions, it could influence the type of regulation in favour of market-based regulation. Business therefore had a considerable influence over the style of political

⁶ Interview with the former CEO of BP Americas, April 2011.

⁷ This expert wants to be anonymous.

regulation, and recruitment of the members of this coalition to the MEA was bound to facilitate the transfer of public policy solutions from the climate regime (Dahan Damedico & Guillemot, 2006; Paterson, 1993; Stephens, Hansson, Liu, De Coninck, & Vajjhala, 2011) to the biodiversity regime (Ezzine-de-Blas et al., 2016).

4.1.2 From the transnational coalition of voluntary private standards to ecosystem services

The second coalition from which private sector representatives were recruited to the MEA was the transnational coalition of voluntary private standards. Voluntary private standards belong among “voluntary price signals” which according to Pirard are a category of MBIs that “consists in schemes whereby producers send a signal to consumers that environmental impacts are positive (in relative terms) and consequently gain a premium on the market price” (Pirard, 2012a: 65). Fouilleux showed that since the end of the nineties, a coalition on voluntary private standards comprised “collective and individual stakeholders, mobilized by a certain number of common beliefs and values, who interacted around the promotion and gradual adjustment of voluntary certification mechanisms as efficient regulation instruments to oversee globalization” (Fouilleux, 2010). Four representatives from pioneering companies in certification matters were included into drafting the Synthesis MEA on business: for instance, among the MEA experts, the chairman of Unilever, at the end of the 1990s, had been personally involved in founding the Marine Stewardship Council (MSC), based on the model of the Forest Stewardship Council (FSC)⁸. Being head of the Unilever “ice cream and frozen foods” division and notably in charge of the “fish” operations during the 1990s, the FSC inspired him. It was a means to counter the erosion of fish stocks worldwide which threatened to put Unilever’s fish line out of business (Wolff & Schmitt, 2009). So Unilever created, in partnership with World wild fund (WWF), the MSC which as of 1999 internationally certified seafood products from comparatively healthy fisheries. Another MEA expert was a representative from mining multinational Rio Tinto, one of the largest mining companies in the world. He had been particularly interested in initiatives to preserve biodiversity, notably through compensation and certification. Rio Tinto led international certification initiatives in the metals and mining equipment sector within the International Council on Mining and Metals (ICMM), launched in 2006 jointly with the International union for the conservation of

⁸ The FSC is a certification mechanism created in 1993 following the Rio Summit, governed by civil society groups, ecologists and private firms with a view to ensuring that the production of wood-based products respects procedures designed to guarantee sustainable forest management.

the nature (IUCN). The Rio Tinto representative stated: “ To make sustainable development attractive to corporate mindset, we proposed some kind of trade-off between economic, social and environmental dimensions of sustainable development, and these kinds of trade-offs, such as ICMM could become a model for environmental governance”. The ICMM is also based on the FSC model. Representation of the Syngenta Foundation fits in with the same approach, with the foundation taking an active part in international forest certification. Lastly, while the Swedish multinational construction and development company Skanska does not depend directly on natural resources, it introduced certified environmental management systems as early as 1998 and their vice-chairman and head of the company’s environmental affairs launched some quite similar initiatives. At the time of the MEA, Skanska was the largest company in Sweden to have its own certified environmental management system. These four experts are involved in favour of similar belief: “private sector is a part of the solution, and my firm must be involved in the environmental negotiation” and the same policy option, which is the use of certified environmental management, a kind of market based instrument. These experts in favour of voluntary private standards are involved in a learning process inside the coalition in favour of ecosystem services approaches which consists in promoting environmental market based approaches.

To sum up: all corporate experts involved in the author team of the “Opportunities and Challenges of Business and Industry” synthesis report had histories in creating voluntary private standards, a kind of MBI.

4.1.3 From the coalition of payments for environmental services to the MEA

Lastly, the third coalition from which private sector representatives were recruited into the MEA process operated in favour of PES. Before the MEA, most PES promoters belonged to quite restricted circles of people from the private sector and public sector working in intertropical forest zones on forest conservation and exploitation matters (Pesche et al., 2013). Of the eight private sector representatives co-authoring the Millennium Assessment synthesis report on “Business and Biodiversity”, two had their origins in the PES coalition. The first comes from Rio Tinto and was involved with the Katoomba group, an organization founded in 2000 to produce scientific data on PES, and now mandated more broadly to promote environmental MBIs. At the same time, this individual was also involved in the voluntary private standards coalition. The second company representative was directly involved in the forestry sector to implement payment for environmental services for a timber industry. Both

were members of the WBCSD. One of the contributors to the “Opportunities and Challenges of Business and Industry” synthesis report was Stefano Pagiola, member of the World Bank's environment department and leading promoter of PES. His presence on the editorial board for the "ES and industry" report was a factor in aligning ES and PES instruments more closely in the MEA. At the interface between the science world and the international arena, Stefano Pagiola has acted as a broker for the idea of PES⁹. In the late 1990s he was working with Michael Jenkins, then senior forestry adviser to the World Bank. In 1998 he founded the NGO Forest Trends which was to give rise to a number of "incubator" organisations that favored Market based instruments, such as the Katoomba group (2000), BBOP (2005), Ecomarketplace, SpeciesBanking.com, ForestCarbonPortal.com, the Chesapeake Fund. Some of these incubators work to produce scientific data on PES (Katoomba). Pagiola and Wunder are involved. The findings are fed to the satellite organisations working to set up MBI instruments that particularly interest some companies and public authorities. As the two previous coalitions, the coalitions in favor of payment for environment services share some beliefs “market is more efficient to solve environmental problems” and the same policy options which are PES and more generally market based instruments.

The careers of some of the MEA report's authors do not only reflect the connections between the conservation economics world, the international political arena and the private sector (WBCSD, Rio Tinto, Unilever etc.), so facilitating the circulation ideas on voluntary private standards, PES instruments, and tradable permits in different circles. They also reflect growing interactions between the ES and the three coalitions within the MEA process. These connections intensified during the MEA because voluntary private standards, PES and more generally MBI type instruments could achieve more media coverage and reach other stakeholders who might be interested in the approach.

4.2 Corporate involvement in the Millennium Ecosystem Assessment

4.2.1 The catalytic role of the WBCSD in international environmental governance

From the beginning of the Millennium Ecosystem Assessment preparatory committees, two foundations financially backed the initiative on a large scale, notably the Packard Foundation

⁹ S Pagiola also participated upstream in designing the MA's analytical framework.

(0.35 million dollars) and the Avina Foundation (0.6 million dollars between 1998 and 1999) (GEF, dec.2001). The first followed a tradition of research patronage in the US. The second, Avina, is a philanthropic foundation created in 1994 by Stephan Schmidheiny, who several months after founding Avina established the World Business Council for Sustainable Development (WBCSD). Other foundations contributed to the Millennium process in a less sustained manner.

To understand the outstanding role of the WBCSD in these dynamics, we need to return to its creation. In 1992, Maurice Strong, who was Secretary General of the United Nations Conference on Environment and Development (Earth Summit, Rio de Janeiro) and a former director of petroleum and hydraulic corporations, teamed up with Stephan Schmidheiny, a wealthy Swiss businessman, to develop links between the international environment community and the private sector. Strong awarded him the post of Principal Advisor to the Secretariat for Business and Industry at the Earth Summit. In 1990, during preparations for the Summit, Schmidheiny founded the “Business Council for Sustainable Development” (BCSD), a precursor to the WBCSD, to promote sustainable development in the business world. He published, in 1992, the “Changing Course” report signed by the BCSD and the World Industry Council for the Environment (WICE) (which at the time represented the International Chamber of Commerce/ ICC). The report enshrined the role of business in environmental governance, but especially pleaded in favour of self-regulation by business. According to Maurice Strong, the Secretary General of the Earth Summit, the report was one of the most influential documents at the Summit, and more generally the idea was very warmly welcomed by decision-makers (Le Prestre 2005). The report highlighted various advantages that could arise from environmental initiatives, since whatever the examples or approaches taken by the study, and those that it inspired, environmental challenges seemed most of the time to be a way of improving company productivity and competitiveness (Boiral, 2005). In addition, “Changing Course” highlighted the capacities of companies to self-regulate, which was in line with the suppression a few months before Rio of a binding international code of conduct for businesses, the UN Centre on Transnational Corporations (UNCTC) code. The idea of such a code had initially been launched at the end of the 1970s but was abandoned under pressure from the ICC and the USA. In its place, the BCSD approached the ICC, and they both proposed a voluntary code of conduct for companies based on the reconciliation of economic interests and environmental interests, as promoted by the sustainable development concept (Jennifer Clapp, 2005). Beyond the charters that preceded the Earth Summit, the challenge for the BCSD and the ICC was to develop regulatory

methods that would take into account environmental challenges while being primarily oriented towards the market and based on self-regulation (Jennifer Clapp, 2005; Jennifer Clapp & Dauvergne, 2005). Following a merger between the WICE and the BCSD in 1995, the WBCSD was founded and promoted the internationalization of business alliance dynamics in favour of sustainable development. Links were woven at the time between the carbon pro-trading coalition and the WBCSD. In line with this constellation, the first Executive Secretary of the WBCSD was Rodney F. Chase, Deputy Group Chief Executive of BP. Vormedal argues that one of the objectives of the WBCSD is to establish flexible regulation by the market (Vormedal, 2008), and in this respect, the WBCSD proves to be particularly averse to the quantification of environmental objectives and to restrictive regulation like the pro-trading coalition founded by BP (Meckling, 2011). In other words, the dynamics of self-regulation studied here were the fruit of coalitions and of specific strategies implemented by business in favour of flexible types of regulation.

4.2.2 Recruitment of corporative representatives to the MEA

According to the interviews conducted, it was the WRI that was in charge of recruiting private sector representatives¹⁰. Jonathan Lash, who was the chairman of the WRI during the MEA process, also presided over the US President's Council for Sustainable Development (PCSD). This task force launched by Bill Clinton had met regularly between 1993 and 1999, produced many publications, and became strongly involved in the MEA. Meckling shows how, by publicizing ambitious environmental objectives, the Clinton administration became a natural ally for partisans of the companies in favour of market-based regulation assembled within the International Climate Change Partnership (ICCP), which was the first business organization to advocate market mechanisms as part of a climate treaty (Meckling, 2011). The ICCP's role was closely linked to the emergence of BP as an outspoken advocate for market mechanisms (Ibid). Our empirical researches show that the business representatives involved in the PCSD were those who were also called upon in the MEA. For instance, the ex-CEO of BP Americas, who co-chaired the PCSD task force on climate change and who was the leader of ICCP, was approached by Jonathan Lash and John Ehrman (Meridian) to become vice-chairman of the MEA "Opportunities and Challenges of Business and Industry" synthesis reporting group.

Two essential ideas arise. The first is that the recruitment process shows the importance of national dynamics, especially at US-level, in the international assessment process. The second aspect is that the presence of the selected business representatives in the MEA arose from a

¹⁰ Jointly with the Meridian Institute.

targeted selection processes: only individuals from companies promoting a certain framing of environmental issues, notably in favour of market instruments, were included. As Meckling shows, the other companies which were in favour of command and control type measures, or against all forms of regulation, or were not affected by environment issues, were excluded. Business involvement in the MEA was by invitation, based on the companies' support for market environmentalism.

4.2.3 The MEA process: A consensus on market mechanisms between corporate experts

The private sector showed interest in all those economic instruments providing positive incentives, and was more sensitive to the operational dimension than the conceptual dimension of ecosystem services. In the early 2000s, major multinationals expressed increased interest in market-based instruments for protecting biodiversity, and even during the MEA process some were active in setting up PES mechanisms and market-based instruments. The companies Lafarge and Rio Tinto, for example, were leaders in the field of ecological compensation mechanisms. From the outset, the private sector actively supported the initiative via the Avina Foundation which became one of the MEA's first financial partners.

Although the number of individuals from the business sector was not large in the MEA (to recap: three in the board, eight in the synthesis "Ecosystem and Human well-being: Opportunities and Challenges of Business and Industry"), the depth of their involvement demonstrates the relative importance given to the MEA by leading proponents of market mechanisms. The two co-chairs of the MEA synthesis reports, "Ecosystem and Human well-being: Opportunities and Challenges of Business and Industry" were the ex-CEO of BP Americas and Jane Lubchenko. The latter was on the WRI Board and was well-known for her publications on climate change and appearances in the United States Congress. She is known to promote the links between science and business to develop a green economy.

According to the interviews, the different members of this author team had very few interactions, and the report was mainly written by the two co-chairs. One private sector representative related, "one of the co-chair required some sections about the corporate image, the reputation and the brand risk, so I sent several elements... In the same way, I told them that it's was important to be concrete, because the report should be useful for firms, and all authors team were agree... You have surely seen that in the report there are lots of maps and

figures and some others graphical things... And all these elements were proposed by the chairs, so for us it was very easy, they were very proactive, for us, it was just to confirm and to precise some details...". According to the ex-CEO of BP Americas, "there was quite a bit of consensus on the substance. So there wasn't a lot of tension during the drafting of the synthesis, between the authors' team and between the reviewers, it was very easy, the tension came earlier in the MEA". The impact of the coalitions in favor of MBIs and the representatives they sent to the board had an indirect impact on the framing and the scientific discussions within the MEA. These people were not involved in the scientific discussions but in the synthesis which deals with the business opportunities. In being involved in producing a synthesis, they indirectly influenced the framing of the scientific discussions. They used the concept of ES immediately as a way to develop market based instruments and in this way they influenced the scientific debates. Indeed, the synthesis came after the decision to concentrate on ideas that could be useful to business. The two main topics marked with tension had emerged earlier in the process.

The first of these topics, which created tensions between members of the environmental community and economists was about the wisdom of the ecosystem services concept.¹¹ The second was the basic question "of whether or not you best solve problems through strict regulation or (...) by using market mechanisms" (ex-CEO of BP Americas interview). This question was not debated among business representatives involved in the synthesis, but before, among the MEA's board and scientific panels. In these discussions the idea prevailed that the MBI model could be more effective, and this result was reflected in the synthesis report. The concept of market-based instruments implicitly acknowledges companies as legitimate stakeholders, as illustrated by the statement of a BCSD representative and MEA Board member: "For us it was to show, it was important to show that people could trust us, we had understood that we were concerned and we have to be responsible¹²". At the same time, for the promoters of the MEA it was necessary to include private sector participation to emphasise the multi-actor aspect of the MEA and enhance legitimacy, which became an undeniable factor in disseminating the knowledge produced, via the private sector networks involved.

¹¹ According to some ecologists, the ecosystem services concept was not really relevant in scientific terms. It was more a strategic concept to alert politics rather than a scientific concept. Some scientists were also worried about the commodification of the nature which is implied in the concept.

¹² Interview of the BCSD's representative in Brazil, member of the author team, in April 2011.

4.3 Selective appropriation of the ES concept by WBCSD businesses: Production and transformation of an ES stance

In the following we show how the WBCSD as a particularly relevant business organisation in the sustainability context over time appropriated the ecosystem service concept and how it took part in promoting the concept, or more precisely, certain dimensions of the concept in the aftermath of the MEA.

The analysis of the above WBCSD publications reveals a rise in the influence of the ecosystem services concept beginning in 2006. In the 1997 document, no mention is yet made of the ecosystem services concept; the text is more targeted towards inviting companies to play a greater role in international environmental governance. In November 2006, the WBCSD published a fourth report that marked the take-off of the ES concept – it figured in the report title, and occurred approximately thirty times in the text. The document, which was jointly drafted with the WRI, the Earthwatch Institute, the IUCN and the WBCSD, took up some of the results of the MEA, notably the four types of ES and the 24 sub-services. However, the ES concept, such as it is presented in WBCSD publications after 2006, has evolved when compared to the definition proposed in the MEA report.

Three major cases of creep are identified. The first concerns the systematic association of the ES concept with monetary valuation, an idea that according to our interviews was controversial within the MEA. But the WBCSD was concerned with giving real substance to the ecosystem services concept, and monetization enabled such concretization. It assembled a set of actions under the ecosystem umbrella, some of which had not previously been associated with any ecosystem approach. Under this umbrella certain companies saw their initiatives, such as certification and compensation systems, and measures in favour of ecotourism and reforestation, re-qualified as measures promoting ecosystem services. Even cultural services, the fourth type, which tended to be overlooked in the early WBCSD publications on ecosystem services (focussed on regulation and supply services), eventually come to the fore when the economic opportunities offered by ecotourism are highlighted.

The second example of creep arises from the first, insofar as the emphasis on ES monetization gradually and “naturally” opened up the way for genuine ES markets. In the 2007 report, entitled “Market for ecosystem services: New challenges and opportunities for business and the environment”, the WBCSD clearly emphasizes the association between ecosystems and their monetization, and supports the emergence of some ecosystem services markets, to complement the existing carbon market. The authors use the term of ‘ES’ almost sixty times

and propose three ways of helping to develop an ecosystem services market. The first is to draw up incentives for managers to provide more ES, thereby becoming aware of producing them. The second is to establish tradable permits, and the third avenue to be explored is certification. In the report, the authors even go as far as to identify the five stages that enable one to become “a good trader of ecosystem service.”

We find a third case of creep in the framing of biodiversity challenges and ES. While the 2003 report emphasizes the role of nature as a free provider of ecosystem services, in the 2007 report it is no longer nature that provides ES. Instead, the report places the emphasis on economic operators on those able to provide such services. They, hence, must be remunerated, thereby opening the way for a biodiversity market. In this perspective, large companies become purveyors of ES subject to remuneration (clean water market, sludge treatment market, ecotourism market, etc.), thereby echoing the discourse on environmental goods and services (EGS) that OECD governments and parties to the World Trade Organization (WTO) wish to liberalize.

5. Conclusions

This article contributes to the debate on ecosystem services notions and its implementation. The debate is whether the predominance of monetary and market-based tools is inherent in the concept of ecosystem service or whether it is simply related to how the concept is used. Opinions diverge (Barnaud & Antona, 2014; Esteve Corbera, 2015; E. Corbera, Brown, & Adger, 2007; Maris, 2014; Matulis, 2013, 2014; Muradian, Corbera, Pascual, & Kosoy, 2010). Some argue that the concept did not originally have a monetary or market connotation but was appropriated by economic actors. Others consider instead that the word ‘service’, in today’s world, unavoidably echoes a market relationship, which is then inherent in the concept of ecosystem service. In this way, ‘ecosystem services’ is a concept to develop MBI. In this article, we showed that business actors were mobilized in favor of ecosystem services as a concept to develop market based instrument.

The preceding analysis shows the role played by businesses in promoting market-based instruments for ecosystem services. The involvement of industry in the international biodiversity assessment appears to be a part of a strategy to promote market-based instruments. Prior to the MEA, companies were involved in three coalitions: the greenhouse

gas pro-trading coalition, the voluntary private standard coalition and the payment for environmental services coalition. They all advocated a particular style of regulation that awarded an overwhelming place to the private sector and market-based policy instruments. WBCSD representatives and corporate experts from the three coalitions identified were recruited to participate in the MEA. Thanks to the political visibility given to the ES concept by the MEA, private industry had an occasion to strengthen and legitimize their actions in favour of market-based environmental governance. Associating private sector representatives with the Millennium Assessment process made it easier to disseminate the concept, and at the same time these business representatives, by appropriating it, have been able to modify the concept so that ecosystem services have become more and more tightly linked to market mechanisms – in line with their vision of the world, their beliefs and strategies.

In this way, a comprehensive analysis of business involvement in the MEA contributes to a better understanding of the politics on market-based instruments for ecosystem services. Our hypothesis is confirmed because we showed that the process by which information is generated and delivered affects the potential of that information process to influence outcomes. We demonstrated that businesses influenced the discourse on styles of regulatory policies. Also, the perspective of advocacy coalitions has proven to be helpful in analyzing the engagement of business in global environmental politics and more particularly in scientific global arenas such as the MEA and soon in the Intergovernmental platform on biodiversity and ecosystem services (IPBES)(Hrabanski and Pesche, 2016). Transnational coalitions have become an important vehicle to represent the interests of companies in global environmental politics. By exploring the political and discursive dimensions of market-based instruments for ecosystem services, this research has demonstrated the influence of powerful stakeholders in promoting a concept that is presently becoming central to public policies. Having shown how the link between “ecosystem services” and incentive mechanisms is socially constructed, in line with the strategies and interests of corporate actors, our examination contributes to a better understanding of the introduction and implementation of MBIs for ecosystem services.

Annexes

Table 1: The WBCSD’s publications on biodiversity between 1997 and 2010

Publication date	Title	Authors

1/June 1997	Business & biodiversity: a guide for the private sector	IUCN/ WBCSD
2/July 2002	Business and biodiversity: Handbook for corporate action	WBCSD, sources IUCN, WBCSD and Earthwatch Institute Europe
3/May 2003	Cross-cutting themes	WBCSD
4/November 2006	Business and ecosystem: ecosystem challenges and business implications	Earthwatch Institute, IUCN, WBCSD, WRI
5/October 2007	Market for ecosystem services: New challenges and opportunities for business and the environment	WBCSD and IUCN
6/November 2007	Biofuels issue brief (publication transversal: ecosystem, energy and climate, forest products, mobility).	WBCD
7/March 2008	Corporate ecosystem service review (ESR), guidelines for identifying business risks and opportunities arising from ecosystem change	WRI, WBCSD and Meridian Institute
8/April 2008	Sustainable Procurement of Wood and Paper-based Products Guide and Resource Kit	WBCSD and WRI
9/July 2008	Agricultural ecosystems: facts and trends	IUCN and WBCSD
10/May 2009	Corporate Ecosystem Valuation: Issue Brief Corporate Ecosystem Valuation: A Scoping Report	WBCSD
11/October 2009	Corporate Ecosystem Valuation - Building the Business Case	WBCSD
12/Dec. 2009	Tackling climate change on the ground - Corporate case studies on land use and climate change,	WBCSD

13/September 2010	Business, biodiversity and ecosystem services: the interdependence story	WBCSD
14/October 2010	Responding to the biodiversity challenge: Business and ecosystem services are inextricably linked	WBCSD
15/October 2010	How to value ecosystem services impacts and opportunities	WBCSD

Source: own compilation.

Bibliography

- Barnaud, C., & Antona, M. (2014). Deconstructing ecosystem services: Uncertainties and controversies around a socially constructed concept. *Geoforum*, 56, 113-123.
- Boiral, O. (2005). Concilier environnement et compétitivité, ou la quête de l'éco-efficience *Revue française de gestion*, 5(158), 163-186. doi: 10.3166/rfg.158.163-186.
- Boisvert, V., Méral, P., & Froger, G. (2013). Market-based instruments for ecosystem services: institutional innovation or renovation? *Society & Natural Resources*, 26(10), 1122-1136.
- Broughton, E., & Pirard, R. (2011). What's in a name? Market-based instruments for biodiversity. *Health and Environment reports*, 8.
- Clapp, J. (2005). Global environmental governance for corporate responsibility and accountability. *Global Environmental Politics*, 5(3), 23-34. doi: 10.1162/1526380054794916
- Clapp, J., & Dauvergne, P. (2005). *Paths to a Green World : The Political Economy of the Global Environment*. Cambridge: Mass., MIT Press.
- Coen, D. (2005). Environmental and business lobbying alliances in Europe: Learning from Washington? . In D. L. Levy & P. J. Newell (Eds.), *The Business of Global Environmental Governance* (pp. 197-222). Cambridge, Massachusetts
London, England: The MIT Press.
- Corbera, E. (2015). Valuing nature, paying for ecosystem services and realizing social justice: A response to Matulis (2014). *Ecological Economics*(0). doi: <http://dx.doi.org/10.1016/j.ecolecon.2014.12.017>
- Corbera, E., Brown, K., & Adger, W. N. (2007). The Equity and Legitimacy of Markets for Ecosystem Services. *Development and Change*, 38, 587-613.
- Dahan Damedico, A., & Guillemot, H. (2006). Changement climatique: dynamiques scientifiques, expertise, enjeux politiques. *Revue de sociologie du travail*, 48(3), 412-432. doi: <http://dx.doi.org/10.1016/j.sotra.2006.05.001>
- Dempsey, J., & Robertson, M. M. (2012). Ecosystem services Tensions, impurities, and points of engagement within neoliberalism. *Progress in Human Geography*, 36(6), 758-779.
- Dolowitz, D., & Marsh, D. (1996). Who learns from whom: A review of the Policy Transfer Literature. *Political Studies*, 44 (3). doi: 10.1111/j.1467-9248.1996.tb00334.x

- Engel, S., Pagiola, S., & Al. (2008). Designing payments for environmental services in theory and practice: An overview of the issues. *Ecological Economics*, 65(4), 663-674.
- Ezzine-de-Blas, D., Hrabanski, M. & Le Coq, J.-F. (2016). Payment for environmental services in climate change policies. *Climate Change and Agriculture Worldwide*. Springer.
- Farley, J., & Costanza, R. (2010). Payments for ecosystem services: From local to global. *Ecological Economics*, 69(11), 2060-2068. doi: doi:10.1016/j.ecolecon.2008.03.011.
- Fletcher, R., & Breitling, J. (2012). Market mechanism or subsidy in disguise? Governing payment for environmental services in Costa Rica. *Geoforum*, 43(3), 402-411.
- Fouilleux, E. (2010). Entre Internationalisation et privatisation des politiques agricoles. In B. Hervieu, N. Mayer, P. Muller, F. Purseigle & J. Rémy (Eds.), *Les mondes agricoles en politique*. Paris Presses de sciences-po.
- GEF. (dec.2001). *Global: Millenium assessment of the state of the World's Ecosystem*. Washington: GEF.
- Gómez-Baggethun, E., de Groot, R., Lomas, P. L., & Montes, C. (2010). The history of ecosystem services in economic theory and practice: From early notions to markets and payment schemes. *Ecological Economics*, 69(6), 1209-1218. doi: <http://EconPapers.repec.org/RePEc:eee:ecolec:v:69:y:2010:i:6:p:1209-1218>
- Grossman, E., & Saurugger, S. (2006). *Les groupes d'intérêt. Action collective et stratégies de représentation*. Paris: Armand Colin.
- Haas, P. M. (1992). Introduction: Epistemic Communities and International Policy coordination. *international organization*, 46(1), 1-35. doi: <http://dx.doi.org/10.1017/S0020818300001442>
- Hrabanski, M. (2010). Les groupes d'experts de la DG Agri: Diversité des usages de l'expertise et socialisation aux normes d'action publique de l'Union européenne. *Politique européenne*, 32, 99-123. doi: I.S.B.N. 9782296139459
- Hrabanski, M., Bidaud, C., Le Coq, J.-F., & Méral, P. (2013). Environmental NGOs, policy entrepreneurs of market-based instruments for ecosystem services? A comparison of Costa Rica, Madagascar and France. *Forest Policy and Economics*, 37, 124-132. doi: 10.1016/j.forpol.2013.09.001
- Hrabanski, M. & Pesche, D. (2016). *The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES): Meeting the challenge of biodiversity conservation and governance*, Routledge.
- Jeanneaux, P., & Aznar, O. (2010). Analyse bibliométrique de la notion de service environnemental *Note de synthèse WPI et WP2, document de travail n° 2010-02: Projet Serena*.
- Krasner, S. D. (1983). *International Regimes*. Ithaca, NY: Cornell University Press.
- Landell-Mills, N., & Porras, T. (2002). *Silver bullet or fools gold? A global review of markets for forest environmental services and their impact on the poor*. London: International Institute for Environment and Development (Instruments for sustainable private sector forestry series).
- Le Prestre, P. G. (2005). *Protection de l'environnement et relations internationales*. Paris Dalloz.
- Levy, D. L., & Newell, P. (2005). Introduction. The Business of Global Environmental Governance. In D. L. Levy & P. Newell (Eds.), *The Business of Global Environmental Governance*. Cambridge: MIT Press.
- Maris, V. (2014). *Nature à vendre: Les limites des services écosystémiques*: Editions Quae.
- Matulis, B. S. (2013). The narrowing gap between vision and execution: Neoliberalization of PES in Costa Rica. *Geoforum*, 44, 253-260.

- Matulis, B. S. (2014). The economic valuation of nature: A question of justice? *Ecological Economics*, 104, 155-157.
- Meckling, J. (2011). The globalization of Carbon Trading: Transnational business Coalition in Climate politics. *Global Environmental Politics*, 11(2), 26-50. doi: 10.1162/GLEP_a_00052
- Méral, P. (2012). Origine et portée du concept de service écosystémique en économie. *Nature, sciences et sociétés*, 20(1), 3-15.
- Mitchell, R. B., Clark, W. C., Cash, D. W., & Dickson, N. M. (2006). *Global Environmental Assessments : Information and Influence* Cambridge: MIT Press.
- Muradian, R., Corbera, E., & Al. (2010). Reconciling theory and practice: An alternative conceptual framework for understanding payments for environmental services. *Ecological Economics*, 69(6), 1202-1208.
- Muradian, R., Corbera, E., Pascual, U., & Kosoy, N. i. P. (2010). Reconciling theory and practice: An alternative conceptual framework for understanding payments for environmental services. *Ecological Economics*, 69(1202-1208).
- OECD. (1997). *Evaluating Economic instruments for environmental policy*. Paris: OECD Publishing.
- OECD. (2003). *Harnessing markets for biodiversity: Towards conservation and sustainable use*: OECD.
- OECD. (2007). *Business and the Environment: Policy Incentives and Corporate Responses*. Paris: OECD.
- Orsini, A. (2010). *La Biodiversité sous influence ? Les lobbies industriels face aux politiques internationales de l'environnement*. Bruxelles: Editions de l'Université libre de Bruxelles.
- Paterson, M. (1993). The Politics of Climate Change after UNCED. *Environmental Politics*, 2(4), 174-190. doi: 10.1080/09644019308414108
- Pesche, D., Méral, P., Hrabanski, M., & Bonnin, M. (2013). Ecosystem services and payments for environmental services: two sides for the same coin? . In R. Muradian & L. Rival (Eds.), *Governing the provision of ecosystem services*: Springer.
- Pirard, R. (2012a). Market-based instruments for biodiversity and ecosystem services: A lexicon. *Environmental Science and Policy*, 19-20(May-June 2012), 59-68. doi: <http://www.sciencedirect.com/science/article/pii/S1462901112000214>
- Pirard, R. (2012b). Market-based instruments for biodiversity and ecosystem services: A lexicon. *Environmental Science & Policy*, 19-20(0), 59-68. doi: <http://dx.doi.org/10.1016/j.envsci.2012.02.001>
- Redford, K. H., & Adams, W. M. (2009). Payment for ecosystem services and the challenge of saving nature. *Conservation Biology*, 23, 785-787. doi: 10.1111/j.1523-1739.2009.01271.x
- Sabatier, P. A., & Jenkins-Smith, H. C. (1993). *Policy Change and learning. An advocacy coalition approach*. Westpoint: Boulder.
- Schomers, S., & Matzdorf, B. (2013). Payments for ecosystem services: a review and comparison of developing and industrialized countries. *Ecosystem services*, 6, 16-30.
- Shapiro-Garza, E. (2013). Contesting the market-based nature of Mexico's national payments for ecosystem services programs: Four sites of articulation and hybridization. *Geoforum*, 46, 5-15.
- Sikor, T. (2013). *The justices and injustices of ecosystem services*: Routledge.
- Stephens, J. C., Hansson, A., Liu, Y., De Coninck, H., & Vajjhala, S. (2011). Characterizing the international carbon capture and storage community. *Global Environmental Change*, 10(1016). doi: <http://dx.doi.org/10.1016/j.gloenvcha.2011.01.008>

- Vormedal, I. (2008). The Influence of Business and Industry NGOs in the Negotiation of the Kyoto Mechanisms: the Case of Carbon Capture and Storage in the CDM. *Global Environmental Politics*, 8(4), 36-65. doi: http://muse.jhu.edu/journals/global_environmental_politics/v008/8.4.vormedal.html
N1
- Wolff, F., & Schmitt, K. (2009). In hunt for sustainable seafood: sustainability effects of CSR in three fish processing companies. In R. Barth & F. Wolff (Eds.), *Analysing Corporate Social Responsibility in Europe: Rhetoric and Realities* (pp. 157-189). Cheltenham: Edward Elgar.
- Wunder, S. (2005). *Payment for environmental services: some nuts and bolts*. Bogor (Indonesia): CIFOR.