

# The frontiers of the debate on Payments for Ecosystem Services

A proposal for innovative future research

Gert **Van Hecken**  
Johan **Bastiaensen**  
Catherine **Windey**



**IOB**

Institute of Development Policy and Management  
University of Antwerp

Comments on this Discussion Paper are invited.  
Please contact the authors at: [gert.vanhecken@uantwerpen.be](mailto:gert.vanhecken@uantwerpen.be)  
While the Discussion Papers are peer-reviewed, they do not constitute publication and do not limit publication elsewhere. Copyright remains with the authors.

Instituut voor Ontwikkelingsbeleid en -Beheer  
Institute of Development Policy and Management  
Institut de Politique et de Gestion du Développement  
Instituto de Política y Gestión del Desarrollo

Postal address:	Visiting address:
Prinsstraat 13	Lange Sint-Annastraat 7
B-2000 Antwerpen	B-2000 Antwerpen
Belgium	Belgium

Tel: +32 (0)3 265 57 70  
Fax: +32 (0)3 265 57 71  
e-mail: [iob@uantwerp.be](mailto:iob@uantwerp.be)  
**<http://www.uantwerp.be/iob>**

**DISCUSSION PAPER / 2015.05**

# **The frontiers of the debate on Payments for Ecosystem Services. A proposal for innovative future research**

Gert **Van Hecken**<sup>1,4</sup>

Johan **Bastiaensen**<sup>2,4</sup>

Catherine **Windey**<sup>3</sup>

August 2015

- 1 Post-doctoral Researcher (FWO – Flemish Fund for Scientific Research), Institute of Development Policy and Management (IOB), University of Antwerp, Belgium
- 2 Professor, Institute of Development Policy and Management (IOB), University of Antwerp, Belgium
- 3 Doctoral Researcher, Institute of Development Policy and Management (IOB), University of Antwerp, Belgium
- 4 Associate Researcher, Instituto Nitlapan-Universidad Centroamericana (UCA), Nicaragua

## TABLE OF CONTENTS

<b>ABSTRACT</b>	<b>5</b>
<b>KEYWORDS</b>	<b>5</b>
<b>ACKNOWLEDGEMENTS</b>	<b>5</b>
<b>1. INTRODUCTION</b>	<b>6</b>
<b>2. CAPTURING DIFFERENT PERSPECTIVES IN THE PES DEBATE – A LITERATURE REVIEW</b>	<b>10</b>
<b>2.1. MAINSTREAM OR ENVIRONMENTAL ECONOMICS/COASEAN APPROACH TO PES</b>	<b>10</b>
<b>2.2. A RECONCEPTUALIZATION OF PES: BETWEEN SKEPTICISM AND PRAGMATISM</b>	<b>12</b>
2.2.1. GREEN NEOLIBERALISM AND ITS DISCONTENTS: CRITIQUES FROM PES SCEPTICS	14
2.2.2. BEYOND MARKET RHETORIC: PES AS A NEOLIBERAL TROJAN HORSE OR AS A VULNERABLE STRAW MAN?	16
2.2.3. BEYOND EFFICIENCY: THE ECOLOGICAL ECONOMICS APPROACH TO PES	18
<b>3. QUALIFYING COMMON ASSUMPTIONS UNDERLYING CURRENT PES APPROACHES</b>	<b>22</b>
<b>3.1. SOCIAL-ECOLOGICAL SYSTEMS AND THE ILLUSIVE QUEST FOR INSTITUTIONAL ‘FIT’</b>	<b>23</b>
<b>3.2. KNOWLEDGE, FRAMING AND POWER: DISCURSIVE BATTLES AT THE HUMAN-ENVIRONMENT NEXUS</b>	<b>25</b>
<b>3.3. ROMANTICIZING RESISTANCE: AGENCY AND THE SOCIAL EMBEDDEDNESS OF ‘NEOLIBERALISM’</b>	<b>29</b>
<b>4. ENGAGING WITH SOCIAL DIVERSITY AND LOCALIZED ENCOUNTERS: TOWARDS A SOCIALLY-INFORMED AND POWER-SENSITIVE ANALYSIS OF PES</b>	<b>31</b>
<b>4.1. CAPTURING POWER AND INSTITUTIONAL CHANGE THROUGH ‘SOCIAL CAPITAL’?</b>	<b>31</b>
<b>4.2. UNDERSTANDING PES THROUGH AN ‘INSTITUTIONAL BRICOLAGE’ LENS</b>	<b>33</b>
<b>5. CONCLUSIONS: RECASTING THE PES RESEARCH AGENDA</b>	<b>37</b>
<b>REFERENCES</b>	<b>39</b>

## **ABSTRACT**

This paper offers a review and analysis of the key issues and different perspectives in the Payments for Ecosystem Services (PES) debate. We discuss how the current debate has to a certain degree moved beyond ‘neoliberal’ vs. ‘non-neoliberal’ discussions, instead recognizing the variegated ways in which this policy tool plays out in the field. We argue, however, that despite this progress PES research remains weakly theorized in social and political terms, resulting in only superficial understanding of the role of culture, agency, social diversity and power relations in the shaping of PES institutions and their outcomes. Building on insights from other fields and disciplines in the social sciences –in particular critical institutionalism, social anthropology and political ecology-, we subject some of the common assumptions underlying mainstream and alternative conceptualizations of PES and identify the main issues that, we believe, deserve more attention in future research. More specifically, we explore three key challenges in current PES research related to the tendency (1) to assume that institutions can be designed in order to make them ‘fit’ specific human-nature problems; (2) to oversimplify culture and social diversity through the apolitical concept of ‘social capital’; and (3) to conceptualize human agency, collective action, and institutional change through either overly-rational or overly-structuralist models. We argue that an expanded actor-oriented, socially-informed and power-sensitive conceptualization of PES can help generate novel insights in the power geographies underlying institutional logics, and thus the complex ways in which PES policies are shaped and experienced in the field.

## **KEYWORDS**

Payments for Ecosystem Services (PES), neoliberal conservation, power, critical institutionalism, institutional bricolage, agency, environmental governance.

## **ACKNOWLEDGEMENTS**

This research was funded by a postdoctoral grant of the Flemish Fund for Scientific Research (FWO). We thank Jennifer Casolo, Oscar Coppieters, Frédéric Huybrechts, Vijay Kolinjivadi, Pierre Merlet, Jean Carlo Rodríguez-de-Francisco, Sam Wong, and two anonymous reviewers for very useful comments on earlier drafts of this document. The responsibility for the positions expressed as well as any remaining errors is exclusively ours.

## 1. INTRODUCTION

Current conservation strategies are increasingly drawing on economic metaphors in order to communicate environmental concerns to society. In particular the metaphor of ecosystem stocks as the producers of environmental or ecosystem services (ES) (Costanza and Daly, 1992; Daily, 1997; MEA, 2005) has proven to be a very powerful one<sup>1</sup>. It seems pretty obvious: human beings have a demand for clean air, water, and other services supplied by nature, but at the same time they are destroying the resource bases that are responsible for supplying these services. In fact, the metaphor is so powerful that it has started developing a life of its own, making it increasingly difficult to disentangle the ecological, socio-political and economic arguments underlying current environmental policies (Norgaard, 2010; Raymond et al., 2013; Winthrop, 2014). Moreover, it has exceeded its original aim of evoking public interest in environmental problems, and is now widely used as the underlying framework for policy instruments that aim to offer financial incentives for the provision of ecosystem services (Fisher and Brown, 2014; Gómez-Baggethun et al., 2010). These instruments are founded on the belief that environmental degradation is mainly caused by a general failure of conventional markets to account for the many public goods or positive externalities that ecosystems provide to society. From this perspective, the idea of ‘Payments for Ecosystem (or Environmental) Services’ (PES) is one of the policy tools that has attracted growing attention among a wide audience of scholars as well as conservation and development practitioners<sup>2</sup>.

The core idea of PES is that land users, who tend to be poorly, if at all, motivated to protect ‘nature’ on their land, can be encouraged to do so through direct economic incentives from ecosystem service beneficiaries in return for adopting environmentally-sound land use practices that secure ecosystem conservation and/or restoration (Engel et al., 2008; Wunder, 2005). PES schemes are thus generally considered as novel institutional arrangements attempting to compensate those who produce positive externalities. The approach has mainly emerged from a general dissatisfaction with traditional governmental regulatory approaches or more community-based integrated conservation and development projects (ICDPs), which are often deemed to be ineffective in halting further degradation (Ferraro, 2001; Ferraro and Kiss, 2002; Pagiola et al., 2002). Rather than ineffective sanctioning of ‘bad behavior’ through punitive approaches or promoting ‘conservation by distraction’ by redirecting local livelihoods away from activities that degrade ecosystems, the PES approach seeks to reconcile environmental and developmental trade-offs through direct and conditional payments (Wunder, 2005). PES theory thus generally builds on a market-governance model, as it aims to change individual decision making by means of price incentives<sup>3</sup>. Moreover, it is held that direct incentives through con-

---

[1] For an excellent critical overview of the evolution and variants of the ecosystem services framework, please refer to Lele (2013)

[2] The literature on PES refers to both payments for ‘ecosystem’ services and payments for ‘environmental’ services. Although some authors make a clear distinction between ‘environmental’ and ‘ecosystem’ services — the former emphasising the enhancement of ‘nature’ services, while the latter also encompass amenities provided by the ‘built’ or ‘actively-managed’ environment (Bulte et al., 2008; Muradian et al., 2010; Wunder, 2015) — we will in this work use both terms interchangeably.

[3] In this work we will use the terms ‘market-based’ and ‘market-governance’ models to indicate a governance model that mainly builds upon the belief that compliance and individual or collective action should be accomplished through the use of decentralised and individual price incentives. More specifically, the use of the terminology is based upon Uphoff (1993), who distinguishes between three main governance models (bureaucratic or command-and-control models, market-based models, and community-based or voluntary action models), which each use different instruments and underlying philosophies to stimulate compliance and collective action. As noted by Uphoff (1993): in the market-based model ‘decisions are left to individuals to calculate private advantage without reference to broader interests of the public good’ (ibid: 610). It is important to note that market-based models do not necessarily require the presence of a functioning market. Nevertheless, mainstream PES advocates often refer to the market as the ideal scenario in which PES would flourish (e.g. Wunder et al., 2008), and they generally use the market (and the related

ditional contracts will not only lead to expanded opportunities for private conservation funding, but will also lead to the most efficient allocation of scarce conservation funds (Ferraro and Simpson, 2002, Pagiola and Platais, 2007; Pattanayak et al., 2010; Wunder, 2013). This paradigm shift is increasingly reflected in global debates on climate change, for example through the idea of conditional payments to forest users for ‘Reducing Emissions from Deforestation and Forest Degradation’ (REDD+) (Corbera, 2012), and has led to growing research and implementation of PES initiatives in the field.

The huge popularity of this simple idea and the mushrooming of new initiatives all over the globe illustrate that a large part of the scientific and political community has been gradually embracing and adopting PES as a promising way forward, especially for halting further agricultural land expansion and promoting restoration through agroforestry and eco-agriculture in the developing world, where most of the world’s remaining biodiversity is located. Several multilateral organizations, such as the World Bank and the Global Environment Facility (GEF), and global conservation NGOs, such as the International Union for Conservation of Nature (IUCN) and the World Wildlife Fund (WWF) are perceived as being the main driving forces behind the current global discourse of substituting unattractive and state-regulated conservation projects for PES-inspired programmes (Ervine, 2010; McAfee, 1999; 2012). The presumed superiority of PES over other conservation mechanisms is, however, not unequivocal, to say the least. While empirical case research is growing (see e.g. Schomers and Matzdorf, 2013 for a recent overview), evidence from ongoing PES projects often points to doubtful results both in terms of environmental and development outcomes (e.g. Adhikari and Agrawal, 2013; Pattanayak et al., 2010). Moreover, in many cases the promised efficiency gains of PES have been proven hard to demonstrate (Muradian et al., 2010). The rather uncritical promotion of the concept makes one suspect that its popularity is mainly based on ideological grounds, rather than on practical experiences (e.g. Büscher, 2012). Redford and Adams (2009), for example, note how the seductive idea of PES is ‘being adopted with great speed, and often without much critical discussion, across the spectrum of conservation policy debate and developing a life of its own independent of its promulgators’ (ibid: 785). Muradian et al. (2010) and Büscher (2014), in turn, argue that a large part of the existing PES literature is written by market instrument proponents who often take the creation of markets as desirable in itself.

As we will argue in section 2 of this paper, a large part of PES research has indeed been guided by a rather narrow and ‘managerial’ research agenda, mainly defined by environmental economists, who focus on the potential efficiency gains that can be obtained by harnessing market forces and offering individual price incentives. This perspective mainly refers to a specific interpretation of the Coase theorem (Coase, 1960), which holds that ‘socially suboptimal situations (e.g., too little provision of environmental services) can be resolved through voluntary market-like transactions, provided that transaction costs are low and property rights are clearly defined and enforced’ (Pattanayak et al., 2010: 256). This dominant perspective on PES has resulted in a vast body of fairly technical-managerial studies on optimization models related to ‘efficiency-enhancing’ institutional design of so-called ‘Coasean’ PES schemes (e.g. Engel et al., 2008), with only limited reflection on cultural and socio-political issues surrounding these policy instruments.

The Coasean approach to PES and the associated research agenda has, however, been increasingly criticized during the past few years. As we will discuss in section 2, some criti-

---

efficiency criterion) as the model legitimising PES (Vatn, 2010; 2014), a point which will be further discussed in section 2.2.2 of this paper.

cal scholars are either largely rejecting PES as improper neoliberal commoditization projects (e.g. Büscher, 2012; McAfee, 1999; Robertson, 2004), while others rather call for conceptual modifications of the mainstream PES approach, mainly by adopting a broader and more hybrid institutional or 'ecological economics' governance perspective to PES (e.g. Farley and Costanza, 2010; Muradian et al., 2010; Tacconi, 2012). Indeed, from this latter perspective it is hoped that a broader and more socially-attuned conceptual framework could possibly inform scientists and policy-makers on how to build appropriate institutional arrangements that could close the 'major gaps between the predictions made by theorists of PES and the outcomes that PES projects generate' (Adhikari and Agrawal, 2013: 372).

While the 'PES sceptics' position has drawn attention to crucial questions related to power, inequality and commodification issues surrounding PES projects, in this paper we argue that the widespread/predominant tendency to adopt a rather conceptually inflexible, essentialist stance has somewhat foreclosed a more constructive debate on the potential of some underlying ideas of PES. More specifically, we argue that the broad-brush abstraction of PES as an inherently neoliberal hegemonic project largely overlooks the agency -or the existing margins of manoeuvre- of 'subordinated' groups, which are too readily considered to be either passive 'victims' or 'fierce resisters' of these neoliberal ideologies (Castree, 2007; Higgins et al., 2008). Such an abstraction leaves only limited space for contestation, resistance and development of alternatives (Benediktsson, 2014), and risks overlooking the many divergent ways in which neoliberal projects are locally reshaped, reworked or adapted through complex micro-scale and place-specific dynamics (Hart, 2006; Katz, 2005; Sparke, 2008). Indeed, this kind of approach largely disregards how local actors value or opportunistically reshape certain underlying elements of the PES idea, and how these policies can in some cases even 'open up new spaces for participation and negotiation over rights' (McElwee et al., 2014: 436; see also Shapiro-Garza, 2013a, Higgins et al., 2012).

The 'ecological economics' approach to PES, on the other hand, applies a somewhat more pragmatic, though still critical position. It calls for an expanded PES research agenda, one that broadens the narrow focus on efficiency to encompassing other criteria such as equity, justice and ecological sustainability, and one that is more sensitive to the inevitable challenge to socially embed and analyze PES within the different institutional contexts in which these schemes are implemented (Farley and Costanza, 2010; Muradian et al., 2010). However, and as we will argue in section 3, the latter approach –while raising very relevant and stimulating research questions- is faced with important conceptual and epistemological challenges. While the ecological economics approach to PES covers a multitude of (multidisciplinary and still evolving) perspectives, we argue that it remains rather weakly theorized in social and political terms. Its (implicit) belief in institutional design principles and the frequent recurrence to 'social capital' as an apolitical approach to explaining agency, result in only superficial understanding of the role of culture, social diversity and power relations in the shaping of institutions. These limitations, we argue, provide us with only limited explanatory power for disentangling the complex socio-political and socio-ecological challenges occurring in the 'messy' reality.

Building on the strengths and limitations of these alternative perspectives to analyzing PES and drawing on insights from different fields in the social sciences, in section 3 we seek to construct a more socially-informed, actor-oriented and politically-sensitive approach to analyzing PES. To this end, we start with a brief reflection on the fundamental epistemological challenges involved in responding to our increasing awareness of the interrelation between social and ecological problems. As has been extensively argued by scholars from different



disciplines this cannot be done by attributing an ontological 'real' status to the problems of nature as if they could be separated from particular socio-cultural human framings, and as if the dictates of this exogenous 'reality of nature' would allow us to objectively define objectives that would guide our design of institutional arrangements to achieve 'institutional fit' (Young, 2002a). Consequently, this implies the need of an analytical shift in social-ecological studies from a rather apolitical and ahistorical managerial focus on 'peeling the onion, or analyzing the environment by peeling off successive layers of causation' to 'who is holding the knife' (Blaikie, 1999). In other words, the power processes surrounding the social construction and domination of particular narratives that frame environmental problems and solutions (such as PES) in particular ways deserve much closer attention (Adger et al., 2001; Blaikie, 1999; Leach et al., 2010).

In our call for a more explicit focus on power we should, however, be aware that contestations and discursive struggles occur at all scales, 'from disputes within and between households and communities to those between local, national and global priorities' (Leach et al., 2010: 43). A more balanced focus on the dynamic interplay between agency and structure, which recognizes the 'diversity in social phenomena, the potentially creative effects of individual agency and highlights the enduring influence of social structures in shaping individual behaviour and in the patterning of outcomes' (Cleaver, 2012: 13), incites us to be sufficiently sensitive to social diversity and cultural styles, and to the visible and invisible workings of power. We show how insights from 'critical institutionalist' scholarship on natural resource management (e.g. Cleaver, 2012; Hall et al., 2014) are particularly relevant to understanding the multiple ways in which PES interventions are locally adapted, re-crafted, and embedded in everyday social and cultural practices. We believe these ideas can help us recast the PES research agenda towards developing more reflexive, historical and adaptive approaches for exploring and explaining the dynamic social and political processes surrounding individual and collective action (Cleaver, 2012; Hall et al., 2014; Leach et al., 1999; 2010). An explicit focus on power, closely related to knowledge, meaning and inequality, -we hope- will allow to de-fetishize and re-politicize PES, and allow for a more meaningful understanding and negotiation of how designed policy interventions are locally adapted, and therefore often turn out in unexpected and variegated ways.

## **2. CAPTURING DIFFERENT PERSPECTIVES IN THE PES DEBATE – A LITERATURE REVIEW**

The academic literature on Payments for Ecosystem Services has boomed during the past decade (Schomers and Matzdorf, 2013; Wunder, 2015). In order to capture the emergence of and main currents of thinking around PES, in this section we offer a simplified typology of the main theoretical perspectives to PES and discuss the key points of discussion between them. We start with a short review of the main theoretical underpinnings of PES as conceptualized by the environmental economics or ‘Coasean’ approach (Coase, 1960). We then focus on some of the critiques this mainstream perspective has received from critical scholars pertaining to the ‘PES sceptics’ perspective. Finally, we discuss the ‘ecological economics’ approach to PES, which adopts a pragmatic, though still critical position.

### **2.1. Mainstream or environmental economics/Coasean approach to PES**

The ‘mainstream’ approach to PES, can be traced back to Wunder’s (2005) influential CIFOR paper in which he provides a first definition of PES as ‘a voluntary transaction where a well-defined ES (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)’ (ibid: 3). This definition and the corresponding framework of analysis are largely based on an environmental economics approach (see e.g. Engel et al., 2008; Pagiola et al., 2002; Pattanayak et al., 2010; Wunder, 2005), which is rooted in theoretical economic perspectives that are mainly concerned with the potential efficiency gains that can be obtained by harnessing market forces and offering individual price incentives<sup>4</sup>. The main underlying logic usually goes as follows: Since ecosystem services such as carbon sequestration, biodiversity conservation or watershed protection are mostly public or club goods, i.e. externalities or unintended by-products of economic activity for which there is usually no market, so that beneficiaries only rarely pay, society is systematically underprovided with these services (Engel et al., 2008; Pagiola et al., 2002; Pattanayak et al., 2010). However, the costs of ‘environmentally-bad’ practices imposed on potential ES beneficiaries can be higher than the land users’ conservation opportunity cost. Should this be the case, payments by the service users can be the right incentive for making conservation the more attractive option for potential providers (Engel et al., 2008).

In this philosophy, PES can -under certain circumstances- create parallel markets where service providers could sell the positive externalities of managing their land ‘adequately’. As such, the PES approach moves beyond the Pigouvian philosophy of taxing negative or subsidising positive externalities within existing commodity markets (Van Hecken and Bastiaensen, 2010a). In theory it creates new transaction mechanisms that pay separately for the provision of positive ES. It attempts to put in practice the Coase theorem, which asserts that on the condition of sufficiently low transaction costs and clearly defined and enforced property rights, the problems of external effects can be overcome through private negotiation between affected parties (Coase, 1960, as cited by Engel et al., 2008). As Wunder (2015) notes, conditionality ‘is the single most important PES feature’ (ibid: 242) and makes PES ‘the frontrunner of a new paradigm of contractual conservation’ (ibid: 241). In other words, from this perspective environmental governance mainly is a matter of correcting for environmental externalities by ‘getting the

---

[4] The aim of this section, however, is not to try to neatly classify PES as belonging to one clearly-defined school of thought. PES have grown out of various other conceptual approaches, such as new institutional economics (North, 1990), free-market economics (Anderson and Leal, 2001) and contract theory (Bolton and Dewatripont, 2005). Yet, most of the mainstream literature on PES uses a Coasean framework to explain and legitimise PES.

prices right' (McAfee and Shapiro, 2010; Muradian et al., 2010; Wunder, 2015).

The explicit focus on positive externalities results in a shift from the commonly applied 'Polluter Pays Principle' (PPP) to a 'Beneficiary Pays Principle' (BPP) or 'Provider Gets Principle' (PGP) (Mauerhofer et al., 2013; Pagiola et al., 2002; Van Hecken and Bastiaensen, 2010a). Land users are now seen not as polluters, but as potential service providers who are presented with an opportunity to add an ES to their production portfolio. Furthermore, reliance on direct payments should secure the basic economic premise of efficiency optimization of scarce conservation funds (Ferraro, 2001; Ferraro and Simpson, 2002), by taking advantage of the land users' knowledge of the cost of ES provision and seeking out the low-cost providers or concentrating on the higher-benefit cases (Engel et al., 2008; Pagiola et al., 2005; Wunder, 2013).

From this mainstream perspective, poverty alleviation is not considered as the main objective of PES schemes (Wunder, 2007; 2013; 2015). This follows from the Coasean approach, which maintains that Pareto efficiency requires determining which party could change behavior most cheaply (Vatn and Bromley, 1997). As such, 'what really matters is the aggregate gains and losses by different economic agents and not how they are distributed in society' (Pascual et al., 2010: 1237). Nevertheless, the revenue flow made possible by selling ES is believed to contribute to local development and thus poverty alleviation, prompting some researchers to devote more attention to the potential 'pro-poor side-effects' of PES (Bulte et al., 2008; Milder et al., 2010; Pagiola et al., 2005; Wunder, 2008a; 2013). The purported pro-poor potentials make PES an attractive way of achieving a double dividend, meeting both social and environmental objectives, making it increasingly popular among international aid agencies and private donors (Bulte et al., 2008; Muradian et al., 2013), but also with national governments who often need to justify government expenditure on environmental programmes in economic and social terms (Chisholm, 2010; Shapiro-Garza, 2013a). Empirical assessment of poverty alleviation, however, still remains very limited, but most of the available studies suggest that PES programmes are usually not capable of simultaneously addressing both poverty and environmental issues (Adhikari and Agrawal, 2013; Pattanayak et al., 2010; Wunder, 2008a; Zilberman et al., 2008).

It is important to stress that mainstream PES scholars clearly have indicated the potential limitations of their proposed instrument. They stress that the scope for application of PES is 'to a narrow set of problems: those in which ecosystems are mismanaged because many of their benefits are externalities from the perspective of ecosystem managers' (Pagiola and Platais, 2007, as cited by Engel et al., 2008: 665). This means that in the case of privately-beneficial internalizations of externalities, in which land managers themselves reap the benefits, PES are not an adequate policy tool (Wunder and Wertz-Kanounnikoff, 2009; Wunder, 2015). Moreover, 'among the threatened externalities, there will only be payments for those that are most valuable, with the condition that ES buyers' willingness to pay has to exceed ES sellers' willingness to accept' (ibid: 578). Wunder (2008b; 2013) mentions other necessary preconditions for the functioning of PES schemes, mostly related to 'social capital' conditions, such as cultural (e.g. social appropriateness of cash or in-kind payments), institutional (e.g. existence of trust between service users and providers), and informational characteristics (e.g. transaction costs should be manageable). In order to fulfil its promises of superiority over other instruments, PES should also demonstrate compliance with various generally-accepted (efficiency-related) principles, such as additionality (i.e. payments should only be made for activities that would not have occurred otherwise), conditionality (i.e. payments should only be made on the condition of 'contract' fulfilment), and non-leakage (i.e. payments for activities in a specific area should not lead to the shifting of environmentally-damaging activities to elsewhere in space) (Engel et al.,

2008; Wunder, 2005; 2015).

From this perspective, PES research has been largely guided by managerial planning approaches with a strong prescriptive emphasis on efficiency gains that can be enhanced through transaction costs-reducing institutional design, often by employing or designing a range of technical-managerial optimization instruments (see also Kolinjivadi et al., 2014). This focus mainly translates into research on optimization models for contract and payments design (e.g. Ajayi et al., 2012; Cranford and Mourato, 2014; Ferraro, 2008; Kroeger, 2013; Persson and Alpízar, 2013); ES mapping (e.g. Daily et al., 2009; Zhang and Pagiola, 2011); specific property right structures (e.g. Bremer et al., 2014; Engel and Palmer, 2008; Landell-Mills, 2002); spatial targeting for the selection of ES providers (Alix-Garcia et al., 2008; Engel and Palmer, 2008; Schomers et al., 2015; Wünscher et al., 2008); cross-farm cooperation incentives among ES providers (Horan et al., 2008; Parkhurst and Shogren, 2007); and institutional design focused on stimulating pro-poor side-effects among ES providers (Antle and Stoorvogel, 2008; Pagiola et al., 2005; Zilberman et al., 2008). Nevertheless, the empirical basis for attributing environmental impacts to PES programmes remains rather limited (Miteva et al., 2012). Furthermore, this apolitical and managerial focus overviews a range of crucial issues important to environmental governance, a critique to which we turn now.

## **2.2. A reconceptualization of PES: Between skepticism and pragmatism**

For some time now, the mainstream concept of Coasean PES schemes has been the subject of criticism from various angles. Some authors either largely reject PES (e.g. Büscher, 2012; 2014; Büscher et al., 2012; Kosoy and Corbera, 2010; McAfee, 1999; 2012; McCauley, 2006; Robertson, 2004), while others rather draw attention to some of its limitations and conceptual flaws, and therefore advocate conceptual modifications to the mainstream PES approach (e.g. Corbera et al., 2009; Farley and Costanza, 2010; Muradian and Gómez-Baggethun, 2013; Muradian et al., 2010; 2013; Tacconi, 2012; Vatn, 2010). These different views are probably best understood if they are framed in three broad approaches to analyzing PES. With the risk of oversimplification, Table 1 sketches a simplified and descriptive typology of different conceptual approaches to PES. We depart from earlier exercises aimed at categorizing perspectives to PES undertaken by Farley and Costanza (2010) and Tacconi (2012), but complement these by qualifying and expanding some of the main underlying assumptions in each approach. This exercise should not be interpreted as an attempt at an all-encompassing format of the different perspectives in the PES debate, but rather as a tool for positioning and highlighting the main points of divergence and convergence within the ongoing academic debates on PES.

**Table 1. Typology of PES approaches<sup>1</sup>**

	<b>PES-scepticism perspective</b>	<b>Ecological economics (EE) perspective</b>	<b>Environmental economics/ Coasean perspective</b>
<b>Main research focus</b>	<ul style="list-style-type: none"> <li>- PES and ES concept as commodity fetishism and ‘green neoliberalism’</li> <li>- PES as inappropriate ecological fix of extractive capitalist expansion</li> </ul>	<ul style="list-style-type: none"> <li>- PES not restricted to markets</li> <li>- PES as part of hybrid governance in broader rural development strategy</li> <li>- Critical role of institutions that enhance equity and ecological sustainability in developing incentives for collective action</li> </ul>	<ul style="list-style-type: none"> <li>- PES as efficient solution to missing markets or market failure</li> <li>- Emphasis on economic value of ES, as non-accounted for economic externalities</li> <li>- Focus on Coasean negotiation between ES providers and beneficiaries</li> </ul>
<b>Main underlying conceptual framework</b>	<ul style="list-style-type: none"> <li>- (Neo-)Marxism</li> <li>- Political ecology</li> </ul>	<ul style="list-style-type: none"> <li>- Ecological economics</li> <li>- (New) institutional economics</li> <li>- Institutional ecological economics</li> </ul>	<ul style="list-style-type: none"> <li>- Environmental economics</li> <li>- Transaction cost economics</li> </ul>
<b>Principal assumptions human behaviour</b>	<ul style="list-style-type: none"> <li>- Structuralist perspective: human agency restricted by structural conditions (capitalism)</li> <li>- Institutional design has no meaning if capitalist superstructure is not questioned</li> </ul>	<ul style="list-style-type: none"> <li>- Bounded rationality model of human agency (people not only driven by self-interest and profit-maximization)</li> <li>- Institutions mediate human actions and motivations for collective action</li> </ul>	<ul style="list-style-type: none"> <li>- Economic rationality model of human agency (people as profit-maximizing actors, primarily driven by self-interest)</li> <li>- Institutions mediate human actions through minimization of transaction costs</li> </ul>
<b>Principal assumptions social-ecological systems</b>	<ul style="list-style-type: none"> <li>- Capitalism has deep-rooted ecological contradictions that make them inherently anti-ecological and anti-social</li> </ul>	<ul style="list-style-type: none"> <li>- ‘Getting the institutions right’</li> <li>- Design of institutional arrangements that lead to optimal ES provision and enhanced social equity through hybrid governance models</li> </ul>	<ul style="list-style-type: none"> <li>- ‘Getting the prices right’</li> <li>- Ecosystems should be managed through the provision of economic incentives</li> <li>- Social dimensions not priority (potential side-effect)</li> </ul>
<b>Key references</b>	<ul style="list-style-type: none"> <li>- Büscher, 2012</li> <li>- Büscher et al., 2012</li> <li>- Kosoy &amp; Corbera, 2010</li> <li>- McAfee, 1999</li> <li>- McAfee, 2012</li> </ul>	<ul style="list-style-type: none"> <li>- Corbera et al., 2009</li> <li>- Farley &amp; Costanza, 2010</li> <li>- Muradian et al., 2010</li> <li>- Tacconi, 2012</li> <li>- Vatn, 2010</li> </ul>	<ul style="list-style-type: none"> <li>- Engel et al., 2008</li> <li>- Ferraro &amp; Simpson, 2002</li> <li>- Pagiola et al., 2005</li> <li>- Wunder, 2005</li> <li>- Wunder, 2015</li> </ul>

[1] We are aware that this schematic typology is overly simplistic and that in practice many authors recombine different ideas from the three ‘types’ of PES-approach in variegated ways. Therefore, we do not present this table as an exhaustive categorization, but rather as a general heuristic tool that captures framings and key ideas.

### 2.2.1. **Green neoliberalism and its discontents: Critiques from PES sceptics**

At the right-hand side of Table 1, we find the environmental economics or Coasean perspective, which could be considered the mainstream approach to PES. As already indicated in the previous section, it is largely from this perspective that the PES idea and logic emerged. The approach prioritizes economic efficiency within a positive externality framework, and mainly focuses on Coasean-inspired principles and conditions for the institutional design of PES (clearly-defined property rights, low transaction costs, and private negotiations, leading to Pareto efficiency). It largely does so by forcing (or at least theoretically conceptualizing) ecosystem services into the utilitarian economic model (Farley and Costanza, 2010), and therefore assumes that individual price signals are the most appropriate incentive to induce pro-environmental behavioral change. It also devotes increasing attention to the potential of PES for poverty alleviation, though often only on condition that inclusion of the poor does not imply efficiency losses (Bulte et al., 2008; Engel et al., 2008; Pagiola et al., 2005; Wunder, 2013).

At the opposite side are the PES sceptics, who largely reject PES, and even the notion of ecosystem services, as improper commodification processes that attempt to cash ecosystem services on new markets. This PES-skeptical approach is mainly rooted in a still-expanding body of critical literature concerned with ‘neoliberal conservation’ or ‘green neoliberalism’ (e.g. Bakker, 2005; Büscher, 2010; Castree, 2003; McAfee, 1999), and describes PES and the concept of ES as phenomena that are firmly within the neoliberal project of capitalist societies. Although there is no clear and coherent consensus of the exact meaning of ‘neoliberalism’ in this context, and whether it is indeed the appropriate terminology to describe the ongoing processes of conservation (Bakker, 2010; Benediktsson, 2014; Castree, 2006), the concept is broadly understood as an ideology that ‘largely discounts the state as a viable environmental administrator’ (McCarthy, 2005: 1007) and that aims to reconfigure political, social and ecological governance to ‘self-regulating’ capitalist market dynamics (Büscher, 2008; Büscher et al., 2012; McCarthy, 2005). This perspective associates the growing popularity of PES with the rise of neoliberal discourse in supranational environmental policy-making institutions, and some of the most influential conservation NGOs (Ervine, 2010; McAfee, 1999; 2012). Through the elaboration of influential managerial discourses (Adger et al., 2001; Van Hecken et al., 2015) and a one-size-fits-all universal blueprint, which a priori defines the causes of biodiversity loss in market-related narratives, these institutions are believed to peddle market-based approaches as universal solutions to environmental problems (Büscher, 2014; Büscher et al., 2012; Ervine, 2010; Leach et al., 2010; Matulis, 2013; McAfee, 2012).

Some authors (e.g. Brockington et al., 2008; McCarthy, 2005; Tickell and Peck, 2003), however, qualify this rather broad ‘neoliberalization’ process by referring to the shift from ‘rollback’ neoliberalism of the 1980s, which was characterized by ‘undisguised hostility towards the state and efforts to roll it back in various ways during neoliberalism’s first control over state apparatuses during the 1980s’ (McCarthy, 2005: 998), to a hybrid ‘rollout’ neoliberalism from the mid-1990s onwards. The latter recognizes the need for the state in order to rebalance ‘unfettered markets’ with ‘society’, but in more neoliberal forms by turning ‘Polanyi’s criticism of neoclassical economics on its head as it is based on the need to embed society and the environment into the economy, into business priorities’ (De Angelis, 2007: 98). This has resulted in a new governance discourse about ‘public-private partnerships organized according to market models, a discursive focus on empowering local governments rather than on slashing the central government, and reforms framed as technocratic searches for best practices rather than as the enactment of rigid ideological principles’ (McCarthy, 2005: 998). From this perspective, the PES

concept also perfectly ties in with the ruling development paradigms, which emphasize market principles besides processes of decentralization, capacity-building and community empowerment as the new guiding principles in development policy. McCarthy (2005) and Ervine (2010), for example, illustrate how different actors perceive PES as a new opportunity to promote decentralized environmental governance and create 'market citizenship', by asserting a close cooperative relationship between markets and civil societies or communities, which are both 'the aggregate results of free individuals voluntarily entering into contracts and associational life, free of coercion from the sovereign' (McCarthy, 2005: 999). This approach clearly goes beyond the traditional 'state versus market' dichotomy and draws attention to the fact that any real world neoliberal project always needs to be embedded in local societies and political systems (Benediktsson, 2014).

The main critiques that emanate from this skeptical approach to PES can be encapsulated in three major points. First, PES instruments are perceived to be inappropriate and even perverse as they purport to present a market-based solution to environmental problems which -ironically- the very same mechanism of market capitalism has played a role in creating (Bakker, 2010; Brockington et al., 2008; Büscher et al., 2012; McAfee, 1999). It purposely uses popular win-win discourses on the compatibility of economic growth and environmental protection and thereby creates the belief that the underlying ecological contradiction of capitalism can be resolved through the same mode of operation that produced it in the first place (Büscher et al., 2012). In this way, PES are thus not so much about saving nature, but rather about finding new arenas for markets to operate in (ibid). It holds that we can reach a sustainable economy through marginal 'quick ecological fixes' without major structural change (Lohmann, 2009; Norgaard, 2010). The use of economic language and market-based blueprints stimulate the image that political and moral decision-making can be guided by simple economic trade-offs in the form of standard cost-benefit analyses (Büscher et al., 2012; Van Hecken and Bastiaensen, 2010a). Clements (2010) and Redford and Adams (2009) underline the risk that a single economic justification for acting upon environmental concerns may outweigh non-economic justifications and thus can make nature vulnerable to conversion to other more profitable land-uses, changes in carbon prices or international politics. In this way, commodification and monetary compensations entail the risk of eroding the socio-cultural basis for alternative human-nature relationships (Heyman and Ariely, 2004; Martin et al., 2008; Muradian et al., 2013).

Secondly, the anthropocentric ecosystem services approach and the associated commodification of nature (McCauley, 2006) disguise the inherent complex nature of social-ecological systems, which contains a number of social-political and ecological risks (Norgaard, 2010). The utilitarian framing of ecosystems as producers of marketable benefits to human society implicitly ignores the existence value of nature, as it requires that a single and uniform exchange value is adopted for making nature's value explicit to human beings (Castree, 2003; Kosoy and Corbera, 2010). The impression is then created that ecosystem protection is only important in as far as it directly sustains human economic development (Swart, 2003). Furthermore, the 'itemization' (Vatn, 2005a), 'iconification' (Brockington et al., 2008) or 'cutting up' of connections and relationships within and between ecosystems, in order to produce, sell and consume their constituent elements in the form of ES, creates the illusion that, instead of being complex flows of information, ecosystems and their ES are easily convertible into separate entities (Brockington et al., 2008; Büscher et al., 2012; Robertson, 2006). Indeed, the fragmented focus on single-service provision has already led to the creation of novel ecosystems conceived for delivering specific critical services (such as carbon sequestration), at times even to the det-

ment of additional services (such as biodiversity and watershed protection) (Caparrós et al., 2010; Chisholm, 2010; German et al., 2009; Kareiva et al., 2007; Lohman, 2006). Büscher (2010) goes even further and refers to the concept of ‘derivative nature’, whereby nature and ‘the poor’ are the underlying assets upon which marketable images and perceptions are built in order to attract interested buyers<sup>5</sup>. The implication is that ‘localised realities of nature and poverty are allowed to be alienated and forgotten as complex and contradictory spaces that deserve actual long-term engagement, human interaction and critical understanding’ (ibid: 272).

This leads us to the third major critique, which relates to the unequal social consequences of PES mechanisms. Kosoy and Corbera (2010) explain this by referring to Marx’ concept of ‘commodity fetishism’, which they understand as ‘the masking of the social relationships underlying the process of production’ (Kosoy and Corbera, 2010: 1229). Rather than delivering on its pro-poor or ‘no social harm’ promises (e.g. Pagiola et al., 2005; Wunder, 2013), the fetishist character of PES conceals underlying power asymmetries masking important issues concerning global environmental justice likely to contribute to the reproduction of existing inequalities in the access to natural resources (Kosoy and Corbera, 2010; Martin et al., 2014; Sikor and Newell, 2013; Van Hecken and Bastiaensen, 2010a). At the local level, this can result in increased competition for control over valuable flows of services and the ecosystems that provide them (Redford and Adams, 2009). As has been argued by various authors, market creation will favor those with economic and social power (McAfee, 1999; O’Neill, 2001; Vatn, 2010) and harm the poor, as the latter are in a disadvantaged position because access to these services is largely mediated through property rights and other institutional means (Kosoy and Corbera, 2010). This strengthens the fear among some authors that PES could eventually lead to a ‘tragedy of enclosure’ (Ervine, 2010; Peterson et al., 2010; Rodriguez-de-Francisco et al., 2013) through processes of ‘green grabbing’ (Fairhead et al., 2012), and further dispossession of poor communities (Hall and Lovera, 2009). The fetishist character of PES also disguises global structural poverty issues, as the ‘lower cost of conservation’ economic argument offers the opportunity to buy conservation at a bargain price in developing countries, where local populations are compensated according to their current poverty level (Karsenty, 2007). Payments for ‘renouncing development’ among ‘the poor who sell cheap’ (Martínez-Alier, 2004) raise important fundamental ethical questions that compromise potential win-win synergies of PES at both social and ecological grounds.

### **2.2.2. Beyond market rhetoric: PES as a neoliberal Trojan horse or as a vulnerable straw man?**

Discourses among PES sceptics often boil down to one central recurring theme - that of the perverse consequences of applying a neoliberal market philosophy to environmental and development problems. The tension between both the Coasean and sceptics’ perspectives may thus give the impression that debates on PES are mainly restricted to arguments in favor or against markets and commodification, with little room for synergies. Many sceptics tend to demonize the mainstream approach by depicting PES as a capitalist stooge in the hands of the neoliberal demon who uses the PES instrument as a Trojan horse to take capitalist ideas to new niches. This radical characterization is further nourished by the discursive claims of some PES advocates that unattractive regulated nature conservation should be converted into alluring business transactions (e.g. Wunder and Wertz-Kanounnikoff, 2009).

---

[5] Lohmann (2010) exemplifies this by referring to carbon off-set markets, which soon became ‘playgrounds for speculative investment’, mainly by disembedding climate change problems from their historically and political context, and ‘re-embedding’ them in neoclassical economics and property law (for a similar argument, see Robertson, 2006).



By using the neoliberal and market framing of PES as a paradigmatic reference, sceptics have put forward many crucial points that doubtlessly deserve further discussion, and have cautioned us against the potential detrimental societal and ecological outcomes of market-based conservation approaches. At the same time, however, the common essentialist (often implicit) abstraction of neoliberalism and hegemonic power (Benediktsson, 2014) within the capitalist system leaves little space to constructively and adequately engage with most of the everyday struggles around PES<sup>6</sup>. As we will argue below, this position paradoxically entails an (implicit) recurrence to ‘populist’ discourses (Adger et al., 2001), in which local farmer communities are often portrayed as either passive victims of or fierce insurgents against green neoliberal projects. Neither one of these portraits sufficiently deals with the complex and variegated ways in which these policy interventions are locally (re)shaped and take form in real world practical struggles (Castree, 2007; 2008; Higgins et al., 2008; 2012; Potter and Wolf, 2014). Indeed, various recent studies (e.g. Higgins et al., 2012; McElwee, 2012; McElwee et al., 2014; Muradian et al., 2010; Shapiro-Garza, 2013a) show how local actors ‘negotiate livelihoods and markets when adjusting to conservation pressures’ induced by PES projects (Roth and Dressler, 2012: 363; see also section 3). PES sceptics, arguing that ‘these instruments are the expression of “neoliberal” conservation’, may then be ‘shooting a straw man by missing the point that in fact most of them are very far from following market rationales, and have an hybrid nature that can hardly be labeled as “neoliberal”’ (Muradian and Gómez-Baggethun, 2013: 1119-20).

Moreover, one could even argue that in a certain way the rather ideologically-motivated critiques of PES as a neoliberal hegemonic sweep, downplay or at least over-generalize –quite paradoxically– the voice and ‘agency’ of the rural actors involved in these processes (McElwee, 2012; Van Hecken et al., 2015). Higgins et al. (2012) aptly capture this by stating that ‘attempts to neo-liberalise nature are contingent on the existing values and practices of those who are the ultimate targets of governing’ (ibid: 384), which implies that similar PES approaches will result in different degrees of ‘neoliberalization’ in distinctive contexts. A constructive debate on the potential and appropriateness of (certain elements of) PES is, therefore, only possible if one manages to steer clear of some of the caricatured representations of mainstream PES theory. This may not be easy, as the underlying conceptual underpinnings of PES are often framed in many different ways, depending on the context and the audience (e.g. Wunder and Vargas, 2005).

Although the underlying Coasean discourse may seem to suggest the opposite, in practice, most PES programmes are not confined to free markets where nature or ecosystem services are consecutively ‘commoditized’, priced and traded according to the rules of demand and supply (Pirard, 2012; Sandbrook et al., 2013; Vatn, 2010; 2014; Wunder, 2013). Wunder’s (2005) mainstream PES definition, for example, is clearly based on market principles, referring, as it does, to ‘suppliers’, ‘buyers’, ‘services’, ‘transactions’ and ‘conditionality’. Yet, in other publications the same Wunder asserts that ‘a frequent misunderstanding is that PES requires “markets” to function’, while in fact ‘markets and competition are neither necessary nor sufficient preconditions for PES’ (Wunder, 2008b: 3-4; see also Wunder, 2015). PES, therefore, do not necessarily depend on the creation of markets, yet it is often framed in market terms as it makes the concept more attractive to market enthusiasts and thus is ‘a fashionable term that helps “sell” programs’ (Engel et al., 2008: 664; see also Fletcher and Breitling, 2012). On other

---

[6] Wunder (2013) formulates his critique on this discursive framing of PES by sceptics as follows: “...once a convenient straw man of PES has been built, one can scorn it and shoot it down –in some cases, apparently again and again. But to the extent that the straw man consistently diverges from the original, the criticism risks looking like a rebellion without a cause” (ibid: 235).

occasions, when the market discourse is likely to invoke ideological resistance rather than support, PES might be made ‘politically palatable’ by using non-market semantics, such as ‘compensations’ or ‘rewards’ instead of ‘payments’ for ES (Swallow et al., 2009; Wunder and Vargas, 2005). In other words, the use of the PES terminology within or outside a market narrative is often a strategic or pragmatic choice and not necessarily rooted in a strong belief in free market environmentalism (see also Sandbrook et al., 2013 or Shapiro-Garza, 2013a). Yet, even though the dominant PES literature does not consider markets and private property rights as strictly necessary conditions (Wunder, 2005), it often depicts them -at least theoretically- as the ideal scenario in which PES would flourish (Gómez-Baggethun et al., 2010; Wunder et al., 2008), and it generally uses the market as the model legitimizing PES (Vatn, 2010)<sup>7</sup>.

The conceptual and practical confusion created by this ambiguous stance to PES has been increasingly criticized in the literature (Hiedanpää and Bromley, 2014; Pirard, 2012; Pirard and Lapeyre, 2014; Sandbrook et al., 2013; Vatn, 2014). A growing number of scholars acknowledge some of the potential strengths of (certain elements of) PES, but they simultaneously stress the need to address many points raised by PES sceptics (e.g. Farley and Costanza, 2010; Muradian et al., 2010; 2013; Tacconi, 2012; Vatn, 2010). Furthermore, they point out that the Coasean conceptualization largely falls short of explaining many dynamics and hybrid outcomes in the field. How can it, for example, explain the participation of ES suppliers, even though most payments in existing schemes do not cover land users’ opportunity cost and might thus be considered economically inefficient from an individual point of view (Kosoy et al., 2007; Kroeger, 2013)? Or why are PES mechanisms defined as voluntary transactions, while in fact many PES schemes clearly lack this condition (Milne and Adams, 2012; Sommerville et al., 2009)<sup>8</sup>? Or how can it explain the very different outcomes of PES implementation in the field, in which social concerns such as justice and equity, often dominate the designed efficiency objectives (Martin et al., 2014; McAfee and Shapiro, 2010; McElwee, 2012; McElwee et al., 2014; Shapiro-Garza, 2013a)? The integration of these and other critiques into PES research requires a broader framework than the currently narrow Coasean conceptualization (Muradian et al., 2010; Farley and Costanza, 2010; Tacconi, 2012). These concerns are partly dealt with in an alternative perspective to PES, which has been mainly inspired by insights from new institutional economics (NIE) and ecological economics (EE), as schematized in the middle column of Table 1, and to which we turn now.

### **2.2.3. Beyond efficiency: the ecological economics approach to PES**

Generally speaking, the ecological economics (EE) approach to PES aims to broaden the simplistic managerial and narrow economic framework used by Coasean PES scholars. It looks for common ground in the PES debate by recognizing that PES are not necessarily confined to the functioning of markets and the strict commodification of nature, but that in practice PES reflect socially-constructed situations in which governments as well as social organizations and institutions more generally play an intermediary role (Corbera et al., 2007b). This relates to more general critiques on environmental economists’ neglect of the socially constructed nature of the economy and more generally (economic) institutions as social constructs (Gendron, 2014).

[7] Yet, even if PES were an attempt to establish new markets, its implementation in practice results in an inevitable struggle over its concrete institutionalization and rationale, leading to the kind of power-laden hybridized forms that define all real world markets and exchange systems (see also Benediktsson, 2014).

[8] Typical examples include payments for watershed services in local communities, where water users are generally not even aware of the higher water fees for PES that they are charged by the intermediary water utility (Kosoy et al., 2007). Neither do service providers necessarily have the choice whether or not to provide the service, for example when threatened that their land will be incorporated into protected areas if they do not participate in a PES scheme (Kosoy et al., 2007; see also Milne and Adams, 2012; Rodriguez-de-Francisco et al., 2013; Sommerville et al., 2009).

As such, the EE perspective focuses more explicitly on the ways PES could play a complementary role in a broader policy mix or hybrid governance structure (Muradian and Gómez-Baggethun, 2013), and highlights that PES are not necessarily about shifting public policies to market allocations, but ‘more about a reconfiguration of state-market-community relationships’ (Vatn, 2010: 1251). Furthermore, it criticizes the environmental economics approach for being overly restrictive and alienated from social reality, for its normative prioritization of efficiency over equity considerations and its implicit adherence to weak instead of strong sustainability<sup>9</sup> (Farley and Costanza, 2010; Muradian et al., 2010; Pascual et al., 2010; 2014).

While the EE approach to PES encompasses a multitude of disciplines and perspectives<sup>10</sup>, many of its arguments and concepts can be traced back to (new and old) ‘institutional economics’ and ‘institutional ecological economics’ (IEE). The latter can be considered the synthesis between ecological and institutional economics (Paavola and Adger, 2005). The concept of ‘institutions’ should then be understood as the ‘rules of the game’ in a society, consisting of both the formal and informal human-devised constraints that govern individual behavior and structure social interactions (see e.g. North, 1990). Instead of taking institutions as an exogenous variable, ecological institutional economists explicitly acknowledge that institutions play a central role in articulating values and in forming preferences, and thus regulate the way in which humans interact with their environment (Dietz et al., 2003; Spash, 2011; Vatn, 2005a). As such, they focus on the role of institutions in explaining human behavior and collective action in the context of environmental governance (Paavola and Adger, 2005). They build on concepts such as value and motivational pluralism, which refer to the multiple and often incommensurable values that inform agents’ preferences in a choice situation (ibid). Considerations of pluralism and fairness also imply that more attention should be given to ‘participatory’ or ‘communicative’ processes and procedures in environmental decision making, instead of limiting policy analysis to individual cost-benefit analyses (Paavola, 2007, Paavola and Adger, 2005; Vatn, 2005a, 2009). Moreover, in acknowledging that economic transactions are social relations of a specific kind, the IEE approach highlights how trust, engagement, culture, beliefs and other forms of so-called collective ‘social capital’ influence the effectiveness of governance solutions (Paavola and Adger, 2005; Gendron, 2014). In sum, economic transactions are always ‘embedded in cultural and social contexts from which they derive their significance, as well as in the legal institutions which enable them’ (Gendron, 2014: 245).

Corbera and Brown (2008) and Corbera et al. (2009) –partly inspired by Young (2002a, 2002b)– explain how a more explicit institutional approach to PES can contribute to understand a broad range of important issues that the Coasean literature has largely overlooked or failed to explain. By referring to the analytical domains of institutional design, performance and interplay, and to the crosscutting dimensions of capacity and scale, they argue that an institutional approach can contribute ‘to reveal the tensions between PES design rules and resource managers’ practices, any likely controversies over who owns and should benefit from payments, and it can emphasize the way in which PES schemes attribute a value to ES and plan to monitor their outcomes’ (Corbera et al., 2009: 744). An institutional approach may also be able to shed more light on plural notions of justice and equity, an issue that has largely been neglected in the Coasean-inspired literature (see e.g. Corbera, 2015; Farrell, 2014; McDermott et al., 2013).

---

[9] Proponents of weak sustainability believe that human-made and natural capital are substitutable in the long term whilst followers of strong sustainability believe they are not (Neumayer, 2003).

[10] This is not only so for the EE approach to PES, but more generally for ‘ecological economics’ as an interdisciplinary approach (see for example Plumecocq, 2014). See, however, recent calls for a need for more clarity on the ontological and epistemological foundations of the ecological economics approach (E.g. Spash, 2012; Gendron, 2014).

The recognition that institutional settings of PES implementation in practice are characterized by high levels of uncertainty, imperfect and asymmetric information, and therefore high transaction costs (Muradian et al., 2010), inspired EE scholars to abandon Wunder's (2005) restrictive and normative definition, and to propose a new definition for PES, which adheres to the idea that PES can be applied in a wide variety of complex institutional contexts (Sommerville et al., 2009). Muradian et al. (2010) have proposed to more broadly define 'PES as a transfer of resources between social actors, which aims to create incentives to align individual and/or collective land use decisions with the social interest in the management of natural resources' (ibid: 1205). This more hybrid classification of PES recognizes the institutional complexity in which PES schemes operate, and the various degrees of ES commodification and reliance on markets. It opens a new research agenda which aims to more explicitly address and understand some of the key issues raised in the former sections.

It is important to note how this EE focus differs from the Coasean approach to PES. Coase's theory with its explicit focus on transaction costs, in fact, is often considered as one of the founding blocks of new institutional economics (North, 1990; Williamson, 1985) and much of the Coasean-inspired PES research has explicitly dedicated attention to the design of efficiency-enhancing institutional arrangements (e.g. Wunder et al., 2008). From this perspective, the limitations of most existing PES schemes are often explained by referring to 'institutional design failures' (e.g. lack of property rights, lack of adequate spatial target mechanisms, lack of efficient payments design). However, rather than trying to adapt the real world to a Coasean world of zero transaction costs and clearly-defined property rights, the EE approach explicitly recognizes how PES systems are not created in an institutional vacuum (Vatn, 2010) and how their outcomes are not predictable as they result 'from a combination of institutional factors, some of which are extrinsic to institutional design' (Corbera et al., 2009). Moreover, it advocates adapting institutions to the biophysical characteristics and the socio-environment it is dealing with, and not the other way around (Farley and Costanza, 2010; Vatn, 2009). Indeed, the services that PES are dealing with are often considered to be public goods, and this usually implies that their provision entails the solution to a problem of collective action (or social rationality), rather than to a dilemma of individual rational choice. It is, therefore, 'problematic to use methods based on individual rationality for decision concerning common goods' (Vatn, 2009: 2210). Since according to this view, the role of institutions is to signal which rationality is expected (ibid), it may thus 'make more sense for collective institutions to take the lead, supplemented by more market-based approaches where possible' (Farley and Costanza, 2010: 2065).

As such, the EE perspective argues that PES should be explicitly considered and crafted as part of an 'equity-conscious', integrated and multi-purpose rural governance strategy, which cannot simply be reduced to an 'isolated' efficiency problem (Muradian et al., 2010; Pascual et al., 2014). It is argued then, that the emphasis of PES should move from the 'internalization of externalities' to the design of 'incentives for collective action' (Muradian et al., 2010; Muradian, 2013; Muradian and Rival, 2012). Poverty and equity, apart from being an ethical concern in itself, are also increasingly recognized as playing an instrumental role in shaping environmental outcomes (Pascual et al., 2014). Indeed, as is evident in the literature on Social Ecological Systems (SES) (Berkes and Folke, 1998; Ostrom, 2010), this follows from the intrinsic connections between both ecological and social subsystems (Hirsch et al., 2010; Pascual et al., 2014). In other words, 'divorcing equity considerations from PES risks the oversimplification of conservation challenges' (Pascual et al., 2014: 1029).

This broader perspective on PES has already sparked new research initiatives that aim to clarify some of the identified analytical and empirical gaps. For example, various studies highlight the role of the socio-institutional context in determining the prevailing fairness and/or efficiency criteria in PES schemes, and call for further in-depth research on justice and power relationships between the different actors involved in PES schemes (Corbera et al. 2007a; Martin et al., 2014; McDermott et al., 2013; Pascual et al., 2010; 2014; Sommerville et al., 2010; Van Hecken et al., 2012). Other studies show how farmers' willingness to participate in payment schemes is not only dependent on economic incentives, but is highly influenced by different aspects of trust and 'social capital' (Blackman and Woodward, 2010; Bremer et al., 2014; Hendrickson and Corbera, 2015; Kosoy et al., 2007; 2008; Miranda et al., 2007; Zanella et al., 2014). The role of intermediary agents is thereby increasingly recognized (see also Bosselmann and Lund, 2013; Hayes et al., 2015; and Pham et al., 2010; Schomers et al., 2015). Some authors even caution that monetary compensations may 'crowd out' non-profit-based motivations for environmental governance (Bowles, 2008; Muradian et al., 2013; Rode et al., 2014; Van Hecken and Bastiaensen, 2010b; Vatn, 2010). This follows from the many contextual factors that influence the outcomes of PES schemes, including local notions of fairness and justice, and the psychological, cultural, and social embeddedness of the desired behavior (Muradian et al., 2013). In short, most of these studies call for further multidisciplinary research on the social embeddedness of PES and the socio-political and environmental transformations this instrument may trigger. Further research on PES should then help to formulate policy interventions and design hybrid institutional arrangements that lead to the strengthening of cooperative will and the inducement of a commitment to long-term conservation (see e.g. Kolinjivadi et al., 2014).

### 3- QUALIFYING COMMON ASSUMPTIONS UNDERLYING CURRENT PES APPROACHES

The former sections discussed the main perspectives in the current PES debate and highlighted how the EE approach advocates for integrating equity and sustainability, while avoiding overly essentialist analyses of ‘neoliberal natures’ (McElwee et al., 2014). The EE approach acknowledges that PES schemes interplay with everyday cultural, institutional, and political realities and that social-ecological outcomes are therefore shaped by place-specific ideas and social norms, and are deeply influenced by power relations (Muradian et al., 2013; Pascual et al., 2014). These considerations have encouraged some scholars to enrich institutional frameworks by integrating complementary conceptual tools, such as a capital asset framework (Hejnowicz et al., 2014), a capability approach (Kolinjivadi et al., 2014) or multidimensional equity considerations (McDermott et al., 2013) into new conceptual models for PES design and analysis. These are clear attempts to construct alternative ways to analyse and conceptualize PES in other ways than ‘neoliberal’ or not, ‘market-based’ or not, or ‘genuine’ or not (McElwee et al., 2014; Vatn, 2014).

But in spite of these efforts there seems to remain a certain frustration stemming from the unpredictable, messy and complex outcomes that PES projects generate in practice (Adhikari and Agrawal, 2013; Hendrickson and Corbera, 2015; Muradian and Gómez-Baggethun, 2013). The key challenge for ecological economists therefore appears to lie in finding the appropriate (hybrid, context-dependent and adaptive) institutional arrangements that can ensure -or incentivize- optimal resource use, beneficial collective action and hence more equitable and ecologically-sustainable governance (see e.g. Muradian et al., 2010; Muradian and Gómez-Baggethun, 2013; Kolinjivadi et al., 2014). In this sense, the EE approach ‘develops a normative analysis suggesting how these institutions should be rebuilt’ (Gendron, 2014: 244). Or in the words of Slaviková et al. (2010: 1368): ‘The change of institutions or the design of new institutions must be done after careful mapping of a particular situation (especially knowing the ecological, economic and social characteristics of the problem) and with the use of open social dialog (Vatn, 2005a; 2005b)’. This normative stance is largely in line with mainstream ‘collective action’ schools of thought (e.g. Ostrom, 1990; 1992), in which institutions are believed to be amenable to design, and can then be crafted or shaped in desirable directions (Hall et al., 2014: 72-73; Young, 2002a,b). As convincingly argued by Cleaver (2002) and other critical scholars, this normative posture is quite problematic, in that it is ‘based on concepts which are inadequately socially informed and which ill-reflect the complexity, diversity and *ad hoc* nature of institutional formation’ (ibid: 11).

As such, we believe the EE approach has definitely succeeded in advancing a highly-relevant and more constructive research agenda for guiding future PES research, but we argue that its ontological and epistemological assumptions, as well as several of its key concepts and its continuing belief in the necessity and possibility of institutional design require more careful scrutiny. If not, further frustration in academics’ and practitioners’ attempts to grasp and intervene in the complex social-ecological dynamics occurring in the field can be expected. In the face of these challenges, we argue that understanding PES practices and outcomes requires an acknowledgement of the fundamental limitations of any knowledge, science included. As social-ecological systems are complex and characterized by high levels of uncertainty and unpredictability this also implies the need for a more explicit and empirically-grounded focus on the role of power/politics in the context of environmental governance and related institutional changes (Blaikie, 1999; Cleaver, 2012; Leach et al., 2010). In the same vein as recent sociological

critiques on social-ecological systems (SES) scholarship, we think it is crucial for future PES research to critically and seriously engage with the insights from the social sciences about agency, power and knowledge (Cote and Nightingale, 2012; see also Fabinyi et al., 2014). Insights from other fields and disciplines –in particular critical institutionalism, social anthropology and political ecology-, can help us subject some of the common assumptions underlying mainstream and alternative conceptualizations of PES and identify the main issues that we believe deserve more attention in future research. More specifically, in the next subsections we build on critical sociological insights to discuss the tendencies:

1. to assume that institutions can be designed in order to make them ‘fit’ specific human-environment problems;
2. to oversimplify social and cultural diversity through the apolitical concept of ‘social capital’; and
3. to conceptualize human agency, collective action, and institutional change through either overly-rational/functional or overly-structuralist models.

We hope a critical discussion of these issues can help pave the way towards better socially-informed frameworks for analysing PES as part of broader social-ecological systems (SES), in which power and politics are treated as ‘(...) crucial drivers of social-ecological outcomes rather than ‘inconvenient’ politics that can be simply sorted out through institutional design’ (Cote and Nightingale, 2012: 484). The discussion also helps us understand why designed PES arrangements mostly turn out in unexpected ways.

### **3.1. Social-Ecological Systems and the illusive quest for institutional ‘fit’**

As discussed above, the EE perspective questions a blueprint approach to PES based upon a reductionist externality-market imperfection model, and convincingly argues for a broader socio-institutional approach that includes attention to social relations, values and perceptions in environmental governance. As indicated by Vatn and Vedeld (2012), this creates a need for ontological and epistemological clarification in order to create ‘firmer foundations of the interdependencies of institutions and human actions’ (ibid: 7) and their interaction with nature. These concerns relate to ongoing debates on ‘institutional fit’ as proposed by Young (2002a). At first sight and in line with the basic tenet of Young’s proposal, the challenge of environmental governance would seem to be relatively straightforward. It would consist of the need to design institutional arrangements (PES included, if deemed appropriate and as part of a broader institutional set-up) in view of the objective state of the ecological system in order to allow for sustainable flows of ES that will contribute to present and future human well-being. The ontological and epistemological foundations of this widely adopted view are, however, quite problematic and ultimately impossible to maintain. Ontologically it must assume that the ecological system, ‘nature *an sich*’ exists independently from our human perceptions and appropriations. Epistemologically it follows that we can obtain ‘objective knowledge’ of that natural reality, if not perfect, at least increasingly scientifically reliable. This growing knowledge then should allow us to inform how we need to design and adapt our human institutions in order to ensure resilience and ‘equilibrium’ of the natural systems (e.g. Ostrom and Cox, 2010).

At a very fundamental level, our evolving reality is however a co-evolutionary social-ecological system (SES) in which human and natural aspects are deeply intertwined and in continuous interaction (e.g. Berkes and Folke, 1998; Folke et al., 2005), and not a separated ecological system with a superimposed social system to be adapted to the former (Leach et al.,

1999). Evidently, and indeed to a problematic extent in this anthropocentric age, humans and human activities as shaped by their interrelated perceptions, motivations and social institutions are a crucial constituent part of ‘nature’, and not external to or dominant over it (Fabinyi et al., 2014). In other words, ontologically there is no ‘pure’, socio-politically and culturally uncontaminated ‘nature out there’ to which we could objectively adapt our institutional arrangements and human behaviour. Neither is it possible to obtain value-neutral scientific knowledge about this ‘human-nature reality’ (e.g. Litfin, 1994); it will inevitably be coloured by particular socio-political and cultural framings through which we try to understand and make sense of what we perceive as the ‘natural reality’ (see also Leach et al., 2010)<sup>11</sup>.

It follows from the above, that the classical argument for an institutional ‘fit’ approach becomes recursive and impracticable, since institutions, social structure and perceptions are not exogenous, but endogenous to the evolution of the social-ecological system. Indeed, Bromley (2012) aptly captures this socio-constructivist idea by stating that:

‘In terms of management and the idea of FIT, the implication here seems to be that what Young calls “nature” (the ecosystem) does not and cannot exist independently of us. We have created it both ontologically via our a priori colonization of it, and ideationally through our mental impositions upon it (see Norgaard, 1984).’ (ibid: 4).

The natural sciences can thus not be attributed with the role of the objective, apolitical supreme judge capable of identifying and dictating what must be done in order to ‘preserve’, ‘rationally exploit’ or ‘manage’ nature. Nor can we accept possible pretences in this direction. This view does not necessarily imply that there is no reality to ecological processes, or for that matter no role for scientific knowledge: the human mind can indeed construct many (and only) models of nature, and inspired by these act upon nature, but this does not preclude that ‘nature will talk back’ to our conceptions of it. Whenever confronted with the limitations of a specific model, human beings can ‘update their beliefs about nature’ (Bromley, 2012) and come up with a new adjusted model of ‘nature’ and ways to address the perceived human-nature interrelations. This new model, inevitably emerging out of the prevailing human-nature constellation, does not necessarily represent a truer story of natural reality however. As described by Katz (1998), new models can, for example, contribute to transform ‘nature’ from an infinite source into a limited, new and investable capital asset in consonance with dominant capitalist practices, ideas, structures and rules, even allowing for new avenues of accumulation by dispossession. Important, however, is that this continuing updating-adaptation process is never purely ‘scientific’, but always inevitably socio-cultural and political, involving multiple perceptions, values and interests (see also Robertson, 2006).

Following Hukkinen (2014: 101), it thus ‘appears advisable from both scientific and policy perspectives to contemplate more integrative theoretical frameworks with which to conceptualize SESs’. He therefore proposes to consider SES as autopoietic systems, i.e. a system which evolves, reproduces and regenerates itself solely and exclusively from within the dynamics of that system itself. In the language of complexity theory, one could say that the governance and the governance outcomes of any SES are an emergent result of the dynamic interactions between human (with cognitive, motivational, social and institutional dimensions) and natural (dependent upon ecosystem dynamics) processes. It is therefore:

---

[11] Or, in the words of Bromley (2012:2): ‘The mind is not a mirror of nature (Rorty, 1979). Rather, the mind creates its own “nature” in the light of current embeddedness in particular social and economic and cultural settings and circumstances’.



(...) not just the physical characteristics of an ecosystem that are determinative of the appropriate management arrangements that will be brought to bear on that system. Rather, it is the social construction of that ecosystem—its shared mental objectification—that will be decisive in terms of institutional arrangements for addressing issues of global governance' (Bromley, 2012: 6).

It follows that the identification and recognition of environmental problems (and newly perceived challenges of environmental governance) will inevitably be endogenous to the prevailing system and emerge out of the complex interactions of ideas, knowledges, motivations and interests reproduced and reworked by the agency of different groups enabled and constrained by the evolving institutional arrangements (social networks, and rules of the game) within the SES (Hukkinen, 2014; see also Blaikie, 1999). In other words, it is impertinent to take the natural processes for separate analysis in order to inform social processes, political decision-making or cultural perceptions; they are inevitably and intrinsically intertwined.

At the same time, it is not possible for any actor to understand and control the entire logic of the system as a whole. The changes the SES undergoes are the aggregate result of interrelated micro-dynamics that result in at least a partially spontaneous self-organizing process without a centralized direction. This renders the effects of any conscious planning or design effort unpredictable. However, this does not mean that the socio-ecological systems function without intentionality, conscious governance or influence of power. It rather means that no actor will at any point be able to control and guide the entire dynamic of the system as a whole (Bastiaensen et al., 2015a,b). Although we clearly acknowledge the inevitable and central role of power in the emerging processes (of dominant ideas and networks with made-to-order rules), we follow the argument of German sociologist Norbert Elias, analysed by Mowles et al. (2008: 812), who holds that 'most significant change is unplanned and unforeseen, and is the result of a web of interdependent actions informed by past actions'. Obviously the fact that no actor can control the entire process does not mean that the actors are playing on a level field. Nonetheless, the final result of the process will always be the consequence of the interaction among them, with the dominant ones trying to impose and maintain while those dominated try to resist and change (Scott, 1990).

### **3.2. Knowledge, framing and power: discursive battles at the human-environment nexus**

The previous reflections also lead us to acknowledge that 'truths' about the environment are inevitably 'shaped by the relationship between the subject and object of research, such that different actors, such as scientists, or others, may construct the same environment in very different ways' (Blaikie, 1999: 134). The managerial and apolitical focus on institutional 'fit', then, in essence disguises how social-ecological systems are in fact open to multiple –and often contested– framings<sup>12</sup>, i.e. different ways of understanding or representing specific problems and corresponding sets of solutions (Leach et al., 2010; see also Mitchell, 2002). Social-ecological systems, thus, are 'not in themselves ontological entities but rather are particular framings of reality that include some things and leave others out' (West et al., 2014: 5, referring to Leach et al., 2010). Indeed, as argued by Jasanoff:

---

[12] Leach et al. (2010: 4) explain 'framing' as the 'particular contextual assumptions, methods, forms of interpretation and values that different groups might bring to a problem, shaping how it is bounded and understood' (ibid: 4).

‘Scientific knowledge, in particular, is not a transcendent mirror of reality. It both embeds and is embedded in social practices, identities, norms, conventions, discourses, instruments, and institutions – in short, in all the building blocks of what we term the social.’ (2004: 3, emphasis in the original).

In other words, epistemologies deeply influence governance processes<sup>13</sup> (Leach et al., 2010; Flyvbjerg, 2001; Cleaver, 2012; Mosse, 1997). In the face of the ‘unknowability’ of the SES, the widely divergent interests of different stakeholders as well as the huge practical challenges to cooperate and coordinate actions, there is strong fragmentation as well as discursive and practical struggles over knowledge and action<sup>14</sup>. Environmental governance is then essentially ‘a value-laden exercise that is contested by groups with differential power, who employ a range of strategies that include debating and negotiating the very ways in which environmental issues are commonly understood and represented’ (Fabinyi et al., 2014: 6). The plurality of perceptions on the environment, the ways in which certain discourses come to dominate world-views and eventually translate into material processes, are then crucial points of analysis in social-ecological change. Or in the words of Cote and Nightingale (2012: 475): ‘the role of knowledge at the intersections between social and environmental dynamics helps (...) to capture how power and competing value systems are not external to, but rather integral to the development and function of SES’.

The focus on power relations at the human-environment nexus is one of the key subjects of the broad and interdisciplinary field of political ecology. Political ecologists provide useful frameworks to critically analyse how environmental knowledge is produced, represented and contested (Adger et al., 2001; Blaikie, 1999; Bryant, 1998; Peet and Watts, 1996). Especially the work that has been influenced by Foucault’s (1972; 1980) conceptualizations of power, knowledge and discourse (e.g. Blaikie, 1999; Escobar, 1996), provides crucial insights into the ways in which knowledge and power interrelate and mediate political-ecological outcomes (Bryant, 1998: 82). This work demonstrates that social-ecological conflicts are both struggles over meaning and battles over material practices (ibid). In other words:

‘Practical struggles are always simultaneously struggles for “truth” and meaning –struggles that happen in imagination and representation at the same time as they are conducted in the material world (Peet and Watts 2002: 37)’ (Fabinyi et al., 2014: 6).

The focus on power, knowledge and struggles for meaning have spurred political ecologists to turn to discourse (e.g. Hajer, 1995; Peet and Watts, 1996), or the analysis of particular narratives that are promoted by, and become interlocked with, governance processes (Leach et al., 2010: 76; Adger et al., 2001). This emphasis on (multiple and often opposing) narratives as particular ways of framing problems and solutions, is held to promote a shift from simple descriptive to more critical and reflexive modes of explanation and ‘help illuminate how knowledge claims derived from particular instances and sites are spread and consolidated by enrolling other actors and institutions into knowledge/power networks’ (Leach et al., 2010: 74).

---

[13] Or in the words of Cleaver (2012: 155): ‘Policy (...) is not just rationally crafted, guided by evidence, but also is shaped by underlying worldviews which often reflect structural allocations of power and resources in society’.

[14] As argued before, current environmental problems are truly ‘wicked problems’, characterized by large degrees of interrelated uncertainty, knowledge gaps and divergent stakeholder interests (Leach et al., 2010). Effective action then requires the combination of ‘puzzling’ (i.e. jointly making sense and agreeing [sufficiently] about goals, underlying causal processes and adequate actions and institutional frameworks) and subsequent ‘organizing’ (i.e. creating legitimate and sufficiently powerful institutional arrangements [social structures and rules of the game] (Vink et al., 2013), capable to generate new evolutionary pathways of the autopoietic SES.

The debate about PES testifies precisely to this required focus on the politics of knowledge and the need to scrutinize supposedly ‘value-neutral’ narratives. As explained in section 2, PES narratives as advocated by environmental economists, are often constructed and framed from within managerial positivist-oriented epistemologies, which reduce the analysis of inherent complex social-environmental problems to simple techno-economic and mostly apolitical diagnoses. Complex problems are straight-jacketed into ‘externalities’, ‘ecosystem services’, and ‘ES buyers’, ‘users’, ‘sellers’ or ‘providers’, and the need to economically value certain ES in order to make social transactions possible (Van Hecken et al., 2015). Or in the words of Lele (2013):

‘(...) in practice, the entire focus of the ecosystem services literature has been on identifying, quantifying and representing in economic terms the links between ecosystems and human well-being. The question “why ecosystems degrade” is rarely asked and answered explicitly. Implicitly, the answer is a simple techno-economic one: that ecosystems degrade because society (primarily policy-makers) knows neither the “true extent” of these benefits (because some of them are indirect and thus ignored) nor their “true value” (because some of them are not priced correctly). The way to incorporate these values is to carry out an extended cost-benefit analysis, which will lead to more rational decisions’ (ibid: 125).

In this way, narratives often boil down to what Ioris (2014: 6) has called the ‘imposition of a hegemonic rationality of economic growth and private accumulation over both society and the rest of nature’, in which the challenge is reduced to creating the appropriate institutional setting and finding the ‘right’ exchange prices for a PES mechanism to work (see also Matulis, 2014 and McAfee and Shapiro, 2010)<sup>15</sup>. As discussed elsewhere (e.g. Büscher, 2014; Ervine, 2010), this specific framing of the problem in terms of ecosystem services guides interventions towards particular blueprint solutions, with a practical application that is blind to the social-ecological context, ensuing from and simultaneously leading to PES fetishism. As such, this particular framing ‘de-historicizes’ and ‘de-ecologizes’ debates on complex human-environment relationships (Ernstson and Sörlin, 2013), and neglects that ‘ecosystem services’ are inherently normative and discursive constructs or imaginaries (West et al., 2014; Lele, 2013; McCarthy and Prudham, 2004). In the same vein, McAfee and Shapiro (2010) conclude that a ‘neoliberal’ PES narrative

‘(...) privileges an abstract version of conservation, in which nature is measured by desocialized science and given value through the logic of supply and demand. It then seeks policies that will maximize environmental-market efficiency and thus yield the greatest conservation gain at the least cost for abstract “society.” Actual society, with its place-specific complexities and unruly actors, is set aside.’ (ibid: 17).

It is then crucial to consider the global context in which PES narratives have been developing, and link this to the ways in which human-ecological interactions and social-economic relations are being restructured and in whose interest (Fairhead et al., 2012: 242). Various studies have already indicated how discourses and corresponding policies promoted by particu-

[15] In an attempt to redefine an ‘ideal PES type’, Wunder (2015) advocates that ‘PES definitions should focus on describing a functional tool, rather than normatively integrating desirable PES outcomes’ (ibid: 234). He therefore proposes to focus on non-normative features, and he re-defines PES as ‘voluntary transactions between service users and service providers that are conditional on agreed rules of natural resource management for generating offsite services’ (ibid: 241). However, and despite Wunder’s claims, this definition (and in fact the whole idea of PES) is obviously far from being non-normative. Its explicit reference to ‘service users’ and ‘providers’, for example, is inevitably –and as argued in this section– not ‘value-neutral’ and a value-laden narrative (one among many other possible) in itself; it imposes a specific (economics-inspired) worldview rooted in a modernist and Western epistemological framework, which is not necessarily compatible with alternative worldviews.

lar global governance institutions are increasingly inspired by neoliberal ideas in which conservation efforts are governed by market principles (e.g. Blaikie, 2006; Brockington and Duffy, 2010; Büscher et al., 2012; Fairhead et al., 2012; McAfee, 1999). The discursive power concentrated around these institutions enables PES to be promoted as a promising conservation and development tool (McAfee, 2012). In this process the proliferation of PES heavily depends on the active construction of PES ‘success stories’ by like-minded experts belonging to specific ‘epistemic communities’. Büscher (2012, 2014) and Ervine (2010), for example, show how these experts (consisting of consultants, government officials, NGOs, etc.) work hard to assure that their proposed projects are sufficiently in line with those preferred by global funding institutions. It becomes a self-congratulating circle of knowledge and experience generation. Uncritical support becomes institutionalized within the workings and logic of funding and the ‘*bon ton*’ of the large conventions and international organizations regarding sustainable development (Büscher et al., 2012; Van Hecken et al., 2015).

These reflections underline the crucial importance of scrutinizing global neoliberal or market-based discourses as purported by PES advocates and their epistemic communities. But a crucial question remains: how do these global discourses and ideologies translate into local practices? Do they really result in sweeping neoliberalization processes, benefitting powerful economic actors to the detriment of the poor? If so, in which ways? We believe an analysis of these important questions first requires an acknowledgement that policies are always negotiated and co-produced through complex interactions between global actors, national governments and a multitude of other actors at different scales (Blaikie and Muldavin, 2014). This obviously means that ‘the shape of policies on the ground can differ significantly from the shape they should take based on theoretical considerations’ (Muradian and Gómez-Baggethun, 2013: 1117), and that mechanisms of neoliberal rule do not necessarily produce uniformly neoliberal effects (Higgins et al., 2008: 1783). The increasing interest in PES policies around the world could then be more than a matter of ‘hegemonic imposition’ of a neoliberal project by some powerful capitalist actors.

Indeed, PES schemes can in some cases also create new opportunities for negotiating existing practices ensuing from specific power relations (e.g. Higgins et al., 2012; McElwee et al., 2014; McAfee and Shapiro, 2010; Shapiro-Garza, 2013a). In some contexts they have been recognized as means to realize social justice, or even as ways to *challenge* neoliberal conservation policies (Corbera, 2015; McElwee et al., 2014; McAfee and Shapiro, 2010; see also Robertson, 2007 and Mansfield, 2007). Various studies report how farmer movements in Mexico and Central America, for example, perceive PES schemes as an opportunity to revalue the marginalized countryside (McAfee and Shapiro, 2010; Shapiro-Garza, 2013a), and thus as a useful ‘surface of engagement’ (Shapiro-Garza, 2013b). Projects based on an underlying PES logic could, as such, induce changes in local perceptions, values and norms concerning ‘accepted’ and ‘desirable’ agricultural practices, and break away from strict conservationist approaches, which are mostly insensitive to the societal dependence of rural farmers on resource-extractive activities (Wells and Brandon, 1992). The local adoption of PES discourses could then even be framed within a process of new strategies of peasant resistance to (neo)colonial legacies of resource alienation in the name of the environment, in which peasants are often discursively constructed as environmental destroyers (e.g. Adger et al., 2001; Fairhead et al., 2012; McElwee et al., 2014). In sum, it is thus crucial to avoid grand generalizations about PES (Corbera, 2015), and to deepen our understanding of the variegated ways in which PES can simultaneously evoke ‘resistance’ and ‘support’ at different scales, and the (micro)political and socio-cultural dynamics that mediate these processes.

### 3-3. **Romanticizing resistance: agency and the social embeddedness of ‘neoliberalism’**

PES sceptics have convincingly warned us for the potential perverse social-ecological detrimental effects of socially-agnostic interventions that take for granted the ‘historically contingent, unequal distribution of economic power and property rights in the market world’ (McAfee and Shapiro, 2010: 17). As alternative framings of human-nature problems are not necessarily ‘truer’ than dominant representations, it follows we should, however, be sufficiently reflexive and critical about the emergence/creation of particular counter-narratives. As we have argued in section 2.2.2, in the academic PES debate the ‘radical’ counter-narrative as purported by many PES sceptics, arguably fits the description of what Adger et al. (2001) earlier have called ‘populist’ discourses, in which local actors are portrayed as victims of external interventions (see also Castree, 2007). Indeed, presenting PES as a dichotomous contradiction between a dominant ‘capitalist’ or ‘neoliberal’ system and dominated and suppressed ‘non-capitalist’ (peasant, worker or indigenous) alternative societies, is in itself a particular framing, subject to contestation. Indeed, ontologically, we need to acknowledge that almost all societies have been incorporated to a certain degree into the global economy. Yet, globalization processes are then often misunderstood as the result of a mere penetration of the global capitalist system into passive pre-modern societies. Alternative conceptualizations acknowledge that these processes should rather be understood as multiple (often violent) global-to-local-to-global encounters that transform both the local and the global (in the sense that the globalized local becomes a constituent part of the global economy and society) (Hart, 2006).

This approach is in line with Polanyi’s ideas that any economic system is always inevitably socially embedded into a broader society (Dale, 2010: 199), which will thus tend to exert pressure and resistance in cases where its constituting principles (ideas, values, interests, organizational networks, rules, etc.) are violated by the functioning of the economy. However, it is important not to consider the capitalist market economy and its current ‘neoliberal forms’ as a disembedded system, but rather as the outcome of –obviously very unequal– encounters of the dominant economy with evolving societies. As De Angelis (2007) has argued, one could actually characterize current ‘roll-out neoliberalism’ as an attempt to apply a kind of ‘inverted Polanyi’ principle, i.e. an attempt to adjust broader society to the strategic project of neoliberalism (ibid: 98). Struggles are therefore largely over the way in which this is precisely and concretely achieved, according to whose ideas, values and interests (Dale, 2010: 200-2; see also Brenner and Theodore, 2002), and not about a massive dichotomous resistance of ‘society’ (of non-capitalist societies) against the ‘market’ (of the capitalist neoliberal economy).

It is crucial therefore to turn our attention to what actually occurs in the relevant encounters on the ground. For this reason, Gillian Hart argues for the need to elaborate detailed accounts of the situated ‘glocalization’ processes through ‘critical ethnographies’:

‘Such ethnographies are not accounts of “local” variations or instances of a “global” process. Nor are they case studies of the impact of globalization, imperialism, or any other set of inexorable, pre-given forces. Nor do they simply represent methods for the detailed production of area knowledge. Instead, critical ethnographies offer vantage points for generating new understandings by illuminating power-laden processes of constitution, connection, and disconnection, along with slippages, openings, and contradictions, and possibilities for alliance within and across different spatial scales’ (Hart, 2006: 981-982).

In this way, Hart locates local resistance to dominant capitalist interests squarely within the struggle for the constitution and redirection of the globalization process from within that process itself, not as something that comes from the outside or aims to reject the ‘evil of the system’. In the same vein, Sparke (2008) draws our attention to the danger of romanticizing resistance, since according to him the rhetoric of resistance often becomes a hindrance to a thorough empirical understanding of the nature and reach of the agency of resistance.

‘While the basic idea of resistance rests on notions of people “pushing back”, the allure of the r-word itself can (...) ironically become a regulative “pull” that disciplines critics: a pull, in other words, away from examining the messy middle grounds where control and opposition, structure and agency, hegemony and counter-hegemonic action, are all variously mediated. This problem of pull can be usefully ascribed to the *romance* of resistance. It is a romance that is initiated by assumptions about autonomous action and animated by diverse forms of idealism; a romance that ultimately imagines agency in the existential and ageographical terms of some seminal and heroically universalized human spirit, and thus a romance that also tends to pre-empt empirical research with metaphorical moves that make prescriptions of socio-economic forces, racial and sexual subjectification, or even just everyday life seem somehow beside the point (...)’ (Sparke, 2008: 423, emphasis in the original).

From this perspective, power analysis –and thus also the analysis of ‘resistance’- should then more explicitly focus on the ways in which differentially positioned groups contest, rework, adapt, co-opt ideas, values and associated institutional arrangements imposed through dominant structures and discourses. Indeed, as noted by Higgins et al. (2012: 384), ‘attempts to neoliberalise nature are contingent on the existing values and practices of those who are the ultimate targets of governing’. Yet, how environmental policy instruments that utilise neoliberal techniques are taken up –or not- by local actors in practice is mostly overlooked in current research (ibid: 377). This requires a profound empirical analysis of how local actors attempt to rework, to adjust in order to increase their resilience and/or to confront and challenge the imposed ideas and arrangements (Katz, 2005; see also Benediktsson, 2014 and Robertson, 2007). Understanding such processes of reworking, resilience and resistance is equivalent to understanding the emergence of institutional evolution as the outcome of power-laden territorial collective action by interacting groups of actors in multiple organizations and social networks. Here precisely, also lies the way forward to understanding the ‘negotiated’ emergence of pathways of change with the potential of adjusting environmental governance through mutual reworking-adjustment-resistance (see section 4.2. for examples and further reflection on this).

#### **4- ENGAGING WITH SOCIAL DIVERSITY AND LOCALIZED ENCOUNTERS: TOWARDS A SOCIALLY-INFORMED AND POWER-SENSITIVE ANALYSIS OF PES**

The former sections already underlined the importance of understanding the politics of knowledge in assessing social-ecological changes and the unfolding of PES schemes in particular. They also emphasized that an abstract, structuralist interpretation of power tends to downplay the scope of agency of ordinary people on which PES is 'imposed' from the outside. These discussions clearly relate to broader structure/agency debates (e.g. Giddens, 1984; Long, 1992), and are in line with evolutions in the field of political ecology. Indeed, the latter generally has evolved from a Neo-Marxist inspired structural analysis explaining environmental conflicts mainly in terms of class relations and global capitalist systems, towards studies 'which sought to demonstrate a more complex understanding of how power relations mediate human-environmental interaction (...)' (Bryant, 1998: 81-82; see also Blaikie and Brookfield, 1987). This analytical shift, however, does not mean that interactions at the local level can only be explained through the analyses of local-level phenomena. It is important to acknowledge that all local interactions are co-produced within the context of wider social and political dynamics (Agrawal and Gibson, 1999), a thought which is also captured through the term of 'progressive contextualization' (Vayda, 1983). Moving beyond dualist understandings of agency and structure, we believe insights from 'critical institutionalist' scholarship on natural resource management (e.g. Cleaver, 2012; Hall et al., 2014) can partly recast and further advance the PES research agenda. They can help us recognize and conceptualize the (albeit possibly limited) agency or 'margin of manoeuvre' of local actors in the context of PES programmes, and thus the multiple ways in which interventions are locally adapted, re-crafted, and embedded in everyday practices. But before we turn to these useful insights, it is worth to briefly discuss the way in which the bulk of current PES literature engages with the 'social', and the 'local' in the context of these encounters.

##### **4.1. Capturing power and institutional change through 'social capital'?**

As mentioned earlier, the focus on local encounters and the recognition of social and institutional factors in the shaping and analysis of PES has been a key concern for ecological economists. This is also reflected in recent PES literature, which dedicates increasing attention to the critical role of 'social capital' and the 'empowerment of local institutions' for the successful implementation and outcomes of PES interventions (e.g. Adhikari and Agrawal, 2013; Clements et al., 2010). Indeed, the recognition that economic incentives are not the only motivational factors steering 'pro-environmental behaviour' (e.g. Muradian et al., 2010; Van Hecken and Bastiaensen, 2010b), and that levels of trust and community organization influence participation in and outcomes of PES, has led to an increasing interest in 'social capital' as a key variable in PES studies (e.g. Bosselmann and Lund, 2013; Bremer et al., 2014; Gong et al., 2010; Pham et al., 2010; Schomers et al., 2015; Zanella et al., 2014).

However, in most of these studies social capital is only vaguely defined; usually in terms of the strength or density of 'social networks' and 'community organizations', and the role of 'trust' and 'institutionalized access to information' for improving participation and equal access to PES schemes (e.g. Bremer et al., 2014). Largely in line with the concepts used by new institutional economics, and the ensuing collective action school (e.g. Ostrom, 1990), social relationships are then conceptualized as assets in which individuals rationally invest in anticipating reciprocity and economic benefits (Cleaver, 2002; 2005; 2012); social capital is perceived as something that can be 'built' or 'substituted' for other missing assets in local communities.

Cleaver (2002) summarizes this view as follows:

‘Weak institutions can be transformed into strong ones by resource users and policy-makers through an active process of institutional design and crafting (Ostrom, 1990: 60). Ostrom sees crafting as a continuous evolutionary process of developing the optimal institution for the job in hand. Culture and social structure then becomes another raw material, part of the institutional resource bank from which arrangements (especially distributional norms and relations of trust) can be drawn which reduce the “social overhead costs” of co-operation. Increasingly such resources are referred to as “social capital” but as Ostrom herself admits there is generally a lack of understanding about how to “create, maintain and use social capital” (Ostrom, 1992: 23). (Cleaver, 2002: 14).

The notion of social capital is closely related to other common-made assumptions about the ‘local’ in environmental governance literature. The concept of ‘community’ and ‘community-based governance’ conveyed by much of the work on PES (and human-nature studies more broadly) builds on a legacy that portrays local populations as relatively homogeneous, static, and holistic entities with shared norms<sup>16</sup> (Agrawal and Gibson, 1999; Brosius et al., 2005; Leach et al., 1999; Milne and Adams, 2012; Mosse, 1997; Mosse, 2006). It follows that environmental governance then seems to be mainly a matter of local investments in social capital through ‘participation’ and ‘empowerment’ (Mosse, 2006; Cleaver, 2002) enabling the alignment of ‘incentives for collective action’ at the community level (Muradian, 2013).

While we applaud economists’ attempts to ‘unshackle the economy to some extent’ (Olivier de Sardan, 2013), and ‘making leaps towards a more sociological understanding of institutions’ (Hall et al., 2014: 80), we concur with many anthropologists that the concept of social capital and the (implicit) assumptions related to the ‘myth of community’ (Brockington, 2004) and the ‘empowerment of local institutions’ leads to a black-boxing of social and cultural factors, precluding a deeper understanding of the multiplicity, the mobility, and the ambiguity of cultural and social dynamics (Hibou and Banégas, 2000: 40). In fact, these conceptualizations to a large extent mask the political relations or internal differences and processes ensuing from the multiple interests and actors within communities (Agrawal and Gibson, 1999: 630; see also Cleaver, 2002; 2005; Milne and Adams, 2012; Mosse, 1997), and neglect ‘the very different meanings that different institutions may carry for different actors’ (Leach et al., 1999: 238). It is important to acknowledge that most communities are indeed heterogeneous groups made up of ‘complex mosaics of cultural groups and social classes’ with various and sometimes opposed interests and strategies regarding resources (Hall et al., 2014; Leach et al., 1999; Li, 1996: 508). Social capital is thus:

‘(...) not automatically created from association, trust does not magically emerge from repeated interaction, and representation of the poorest is difficult to secure even through decentralized institutional structures.’ (Cleaver, 2005: 904, emphasis in the original)

Indeed, as has been emphasised increasingly by political and social anthropologists:

‘The actual mechanisms for coordinating actions to deliver collective or public goods are, in reality, very different from the very general and relatively simplistic models proposed by new-institutional

---

[16] As noted by Leach et al. (1999: 228): ‘Sometimes social difference within communities is acknowledged, and explicit efforts are made, using participatory rural appraisal methods, for example, to specify the implications for project interventions. But all too often it is implied that the public airing of conflict is sufficient, and that social consensus and solidarity will necessarily result.’



economists. Empirical and contextualised analysis of delivery arrangements and coordination mechanisms should precede abstract theorizing rather than the other way round. Little progress, however, has been made in this direction by economists'. (Olivier de Sardan, 2013: 288).

In order to capture the social diversity within communities, and account for the complexities of how actual communities work, we rather need to ground institutional analysis in a theory of power and explore institutional change in a political and historical perspective (Blaikie, 2006; Cleaver, 2002; Cleaver, 2012; Hall et al., 2014; Leach et al., 1999; Mosse, 1997; Olivier de Sardan, 2013).

#### **4.2. Understanding PES through an 'institutional bricolage' lens**

As argued before, an inquiry into the different ways that PES arrangements are shaped in practice and the multiple social-environmental outcomes they generate, requires an approach that is sufficiently sensitive to local particularities and the social interactions among individuals (Cleaver, 2012; Horowitz, 2008). Instead of conceptualising social relations as context or instrumental assets, we should therefore acknowledge the dynamic interplay between agency and structure, in which 'emergent political processes reflect both the agency of current actors and the influence of historically embedded structures, practices and legacies' (Leach et al., 2010: 73). This requires a critical reflection on the central role and functioning of institutions, which can be conceptualized as the 'arrangements between people which are reproduced and regularized across time and space and which are subject to constant processes of evolution and change' (Cleaver, 2012: 8). In this regard, we think insights from 'critical institutionalism' in human-environment scholarship are particularly useful.

Critical institutionalism –while not wholly antagonistic to mainstream thinking on institutionalism– questions some of the key assumptions underlying mainstream 'common property' or 'collective action' institutional scholarship (e.g. Ostrom, 1990). The latter mainly focuses on the generation of a predictive theory of collective action for sustainable governance of SES, is largely rooted in (bounded) rational choice assumptions about human behaviour, and assumes that institutions are functional constructs in that they can be purposefully crafted in order to achieve sustainable resource management (Hall et al., 2014). Critical institutionalists instead acknowledge the 'messiness' and dynamic characteristics in the shaping of institutions (Cleaver, 2012; Leach et al., 1999) and emphasise how processes of institutional evolution '(...) are more ad hoc, approximate and shaped by social life and culture than is implied by concepts of design and crafting' (Cleaver, 2002: 15). Striking a balance between agency and structural constraint (e.g. Long, 2001; Giddens, 1984), they reconceptualise individuals as 'conscious and unconscious social agents, deeply embedded in their cultural milieu but nonetheless capable of analysing and acting upon the circumstances that confront them' (Cleaver, 2002: 16). This also implies the adoption of a 'thicker' or more 'contextualized' model of agency and motivations, in which

'(...) strategic livelihood choices (about the use of resources) are critically influenced by social concerns (such as the need to live in peace with neighbours), by psychological preferences (for example for cooperation over confrontation) and by culturally and historically shaped ideas about the "right way of doing things"' (Cleaver, 2012: 15).

From this perspective, institutional emergence and evolution is thus not so much 'the process of conscious selection of mechanisms fit for the collective action task (...) but rather a messier process of piecing together shaped by individuals acting within the bounds of circum-

stantial constraint' (Cleaver, 2002: 17). This idea is aptly captured by Cleaver's concept of 'institutional bricolage', which she understands as:

'(...) a process in which people consciously and non-consciously draw on existing formulae (styles of thinking, models of cause and effect, social norms and sanctioned social roles and relationships) to patch or piece together institutions in response to changing situations. These institutions are neither completely new nor completely traditional but rather a dynamic hybrid combining elements of "modern", "traditional" and the "formal" and "informal". The institutions produced through bricolage are inevitably uneven in functioning and impact, and are often fuzzy assemblages of meaningful practices, which overlap and serve multiple purposes.' (Cleaver, 2012: 45).

This also explains ecological anthropologists' findings that institutions responsible for managing human-environment relations have historically not necessarily evolved in functional or purposeful ways<sup>17</sup> (Leach et al. 1999, Cleaver 2002, Fabinyi et al. 2014). Nor will institutional arrangements intended for environmental management only serve these purposes –even if they were consciously and purposefully crafted to these ends (e.g. Vedeld 2000, Cleaver 2002, Neves-Graça 2004); they also have other functions and capacities within their social context (Hall et al., 2014:81, Cleaver 2000, 2002), while other generic or purposeful institutions will also affect environmental governance issues without explicitly having this mandate. As institutions are not 'things' but the results of what people do -they are animated and (re)shaped through the practices, norms and relationships of everyday life- (Cleaver 2012), it follows that 'the directions in which institutional outcomes in local spaces will unfold cannot be plotted precisely, they can only be roughly assessed' (Agrawal and Gibson 1999:640). Institutions, therefore, are not amenable to design, and their outcomes are highly unpredictable. As such, the 'bricolage' lens can help us explain how PES interventions that have been designed to enhance efficient environmental resource management, can turn out very differently on the ground, and are –in fact- in the continuous process of 'becoming'; the arrangements underlying the intervention are (consciously and non-consciously) deconstructed and patched back together in ways that make them cognitively and politically 'fit' with people's worldviews and diverse objectives (Hart 2006, Cleaver 2012).

From this perspective, we can (re)interpret recent studies that report how PES interventions have been strategically adapted -through encounters with grounded social realities at different scales and involving various actors- as to achieve multiple social goals. Vatn (2010), for example, highlights how 'people holding land in common have involved themselves in PES projects as a way also to strengthen their rights to the land' (ibid: 1247; see also Bremer et al., 2014 and Lawlor et al., 2013). Similarly, Osborne (2011) explains how participation of small farmers in carbon PES projects in Mexico has been mainly driven by farmers' need to secure land tenure 'in the wake of neoliberal agrarian policies that threaten to displace them' (ibid: 860). Shapiro-Garza (2013a) and McAfee and Shapiro (2010) demonstrate how the original conceptualization of 'market-efficient environmental policy' in the Mexican national PES program has been contested and reworked at different scales (from federal politics to the everyday grounded practices of rural participants) as 'to more closely fit national interests, rural realities and alternative conceptions of the "value" of socionature' (Shapiro-Garza, 2013a: 6). They explain how the PES programme as conceived by its promulgators 'has been hybridized through multiple sites of articulation and contestation to become a federal subsidy for rural poverty alleviation'

[17] This critique is also captured through the term 'ecological reductionism' (Sahlins, 1978), which implies the assumption that the social organization and culture of 'communities' are mainly determined by the environment (Fabinyi et al., 2014: 4).

(ibid: 5). The project's framing of nature's services as commodities has been hardly adopted by local actors; people's 'epistemological placement of "nature" and its value has been little altered' through the PES program' (ibid: 11). In the same vein, McElwee (2012) and McElwee et al. (2014) show how PES policies in Vietnam have been reshaped by rural actors to make them better reflect local notions of equity and justice, which are the product of deep-rooted place-specific social and cultural norms (see also He and Sikor, 2015; Martin et al., 2014; McDermott et al., 2013). Local norms underlining 'equal benefit sharing' or 'effort-based compensations' then often may challenge and ultimately replace commonly-used output-based PES rules (McElwee, 2012). In short, these examples clearly show how PES institutions are adapted and used for multiple purposes, how people give alternative meanings to them, and they highlight the influence of local actors in these transformations.

At the same time, however, we should beware of over-romanticizing the potential beneficial outcomes of these local negotiation and adaptation processes, as they do not miraculously lead to decreased inequality and inclusion of more vulnerable actors at the local or community level (Cleaver, 2005; Milne and Adams, 2012). Indeed, many institutions emerge or change in ways that maintain particular power balances rather than to manage or conserve resources (Fabinyi et al., 2014: 2; Leach et al., 1999; Cleaver, 2012). Institutions as embodiments of 'the "right ways" of socializing, associating, and participating in public are generally those that confirm dominant world views, which reinforce existing relations of authority and which channel routinized and habitual everyday actions to reproduce such social structures' (Cleaver, 2005: 895). Rodríguez-de-Francisco et al. (2013), Boelens et al. (2014) and Rodríguez-de-Francisco and Budds (2015), for example, show how community-based PES schemes in Ecuador and Colombia have reinforced existing social differences among actors *within* the community, stemming from pre-existing unequal distribution of land and power between farmer community members (see also Hendrickson and Corbera, 2015 and Milne and Adams, 2012). In this way, 'PES have the potential to produce a particular set of social relations that enable the continuity of accumulation processes in the era of conservation, leading to contradictory and unequal outcomes' (Rodríguez-de-Francisco and Budds, 2015: 301). Alternatively, PES may just be 'a new name for an approach that is not substantially different from past ones' (McElwee, 2012: 419). As any institutional arrangement will inevitably be part of broader historical space-time dynamics, examination of PES as politicized phenomena should then move beyond a focus on the discursive struggles between global 'governors' and local 'targets of governing' (Higgins et al., 2012: 379), to including the political ways these schemes are constructed and negotiated 'from within the communities themselves' (Rodríguez-de-Francisco et al., 2013: 1230; see also Milne and Adams, 2012). It is also clear that different stakeholders might fully or partially adopt elements of the PES proposals induced from the outside, and introduce them with various degrees of success to local institutional arenas so that some of these elements become part and parcel of a hybrid 'glocalized' institutional evolution. Processes of bricolage may thus also imply that new ways of doing things introduced through a PES project become institutionalised, even when disguised in or blended with the language/appearance of tradition or accepted arrangements<sup>18</sup>.

Understanding the evolution of institutions and their outcomes then requires an in-depth focus on how people attach meaning and purpose to everyday practices and social relationships and a deeper understanding of the ways in which these processes are mediated through both public authoritative and everyday 'invisible' dynamics of power (Cleaver, 2002; 2012; Hall et al., 2014; Ribot, 2001; Ribot et al., 2008). This means we also need to engage with

---

[18] We are grateful to one of the anonymous reviewers for this remark.

intra-community dynamics from an actor-oriented (Long, 2001) and ‘micro-political ecology’ perspective (Horowitz, 2008) allowing us ‘to hone in on local particularities and the importance of interactions among individuals in influencing environmental [and social] outcomes’ (ibid: 260; see also Leach et al., 1999). Deeper knowledge on the way in which PES are framed and aligned with specific interests, beliefs and objectives by particular social groups, requires a focus on how divergent interests and constructed narratives around conservation and development create ‘hybrid regimes of truth’ (Higgins et al., 2012: 379), which in turn shape the design, implementation and outcomes of such projects (Rodriguez-de-Francisco et al., 2013). Therefore, critical research on the discursive struggles around the attached meanings and distinct conceptualizations attributed to these particular institutional arrangements, and the ways in which these divergent frameworks collide and materialize through everyday practices of local actors- merit more support and attention.

## 5. CONCLUSIONS: RECASTING THE PES RESEARCH AGENDA

As we have argued throughout this paper, understanding the ways in which PES is locally shaped, resisted, reworked or adjusted essentially boils down to analysing issues of who is able to frame the problems and set the rules, how they do so and to what end, and why it is possible for them to do so (Adger et al., 2001; Blaikie, 1999; Hall et al., 2014; Rodriguez-de-Francisco et al., 2013). Any (purposefully-crafted) intervention is then to be recognized as a politicized phenomenon that is intrinsically interwoven with local and supra-local relations of power and related discourses (Blaikie, 1999; Fairhead et al., 2012; Nygren and Rikoon, 2008). Rather than focusing on whether or not PES arrangements work for environmental governance, we should then shift our focus to political and ethical questions of ‘how, and to what ends, alternative natures might be produced’ (Smith, 1996: 50, as cited by Büscher et al., 2012). We therefore agree with McElwee (2012) who concludes that ‘while both proponents and detractors present PES as a novel approach that either encompasses the best or worst of neoliberalism (...), both camps fail to recognize that in many ways PES may simply replicate already existing patterns of institutionalized management of land and commodities’ (ibid: 413). Indeed, ‘the significance of the PES policy model lies in the political and social effects of its design and implementation, not in its functioning as a market per se’ (Milne and Adams, 2012: 136). An approach which is blind to the existing historical contexts, social relations, forms of organization and multiple cultural values, is unlikely to challenge the root causes of inequalities in land tenure and resource allocation (McAfee and Shapiro, 2010; Rodriguez-de-Francisco et al., 2013). This means that

‘(...) a challenge ahead for scholarship of market-based conservation is developing solid arguments which, grounded on robust data, provide insights on whether the ecological and social pitfalls of markets for ecosystem services are distinctively different than those of other apparently similar but well-intentional and non-speculative conservation instruments. Such arguments are required to be able to inform both public debates and policy-making about the ethical implications of valuing, paying for and exchanging ecosystem services at different scales. (Corbera, 2015: 156)

Confronted with these challenges, we believe future research on PES (and any other environmental governance instrument) could benefit from (i) conceptualising any institutional arrangement as a *local political arena*, i.e. a network of actors interacting around (partially) common or divergent stakes; (ii) enlightening how social relations link to the functioning of institutions; and (iii) focussing on how these interventions are shaped by and produce social and cultural norms which result in institutional exclusion and inclusion (Bastiaensen et al., 2005; Cleaver, 2005; Olivier de Sardan, 2013). This also means considering PES interventions as intercultural confrontations where multiple and contrasting systems of norms and values, and cultural and social logics interact at different levels (Li, 2007; Olivier de Sardan, 2001). We are convinced that a more explicit focus on these issues can help us generate new insights in the power geographies underlying certain institutional logics and organisational forms in the human territory concerned, which define the different ways in which PES is designed, analysed and practiced/experienced in the field.

A framework based on a ‘thick model’ of agency, which ‘(...) leaves scope for the agency of actors, their manoeuvring room and their strategies, whether they are calculating and opportunistic or not’ (Olivier de Sardan, 2013: 291), can help us better acknowledge and understand the influence of local actors, who often have been successful in re-crafting ‘imposed’ PES projects to better reflect equity, justice and fairness values, and thus in creating spaces for contestation of ‘neoliberal processes’ (Higgins et al., 2012; McElwee et al., 2014; Shapiro-Garza,

2013a). In this sense, we believe the ‘institutional bricolage’ lens can serve as a valuable conceptual guiding principle to future PES scholarship; it helps us redirecting our attention to the ways in which PES interventions are locally adapted through the exercise of both visible and invisible power, and to how this shaping is always socially located and ‘shaped in the interplay between deliberate design, everyday practices and relationships and societal processes’ (Clever, 2012: 171).

From a methodological perspective, these challenges imply a need for multi-dimensional long-term empirical studies into the complex and place-based workings of power (related to meaning and representation), and into the ways in which ideologies, beliefs and norms shape decision-making (Osei-Kufuor, 2010, as cited by Cleaver, 2012: 22). As argued throughout this paper, these key issues can only be meaningfully addressed if we manage to more actively engage critical social scientists in socio-environmental research, and manage to integrate ‘anthropological-style local research with political-economic structural analysis’ (Bryant, 1998: 81; see also Horowitz, 2008; Leach et al., 1999; Li, 1996). This means we should seriously challenge the adoption of overly economics inspired ‘ecosystem system’ frameworks that ‘involve major simplifications and omissions that then make them highly inadequate representations of the environment-society relationship for analytical purposes’ (Lele, 2013: 134). We should rather focus on how PES interventions are locally framed and interpreted, and work towards interventions that are ‘(...) based on an understanding of the content, the underlying principles and social effects of institutions, not merely on their visible form’ (Clever, 2012: 106). Indeed, as Olivier de Sardan has recently argued,

‘(...) if one wishes to step off the well-trodden path of economics, it is better to arm oneself with other tools besides the theoretical and methodological tools of economists, other concepts, other modes of intelligibility, and abandon, at least for a while, the language of formal variables, abstract models, deductive typologies, one-size-fits-all interpretive frameworks’ (Olivier de Sardan, 2013: 289).

We therefore fully endorse recent calls for more systematic interdisciplinary dialogue with anthropologists, political ecologists, and other critical social and political scientists in addressing these issues (see e.g. Barnes et al., 2013; Castree et al., 2014; Fabinyi et al., 2014; Lele, 2013; Olivier de Sardan, 2013). This also means embracing ethnographic and other qualitative empirical approaches that combine in-depth studies on the cultural values and political relations at the local level (leading to a better understanding of *how* institutions are shaped through grounded practices), with the politics of decision-making at the global level (allowing better insights into the way epistemic communities frame understandings, circulate knowledge, and legitimize particular policy interventions through global governance institutions) (Barnes et al., 2013; Brosius and Campbell, 2010; Higgins et al., 2012; Leach et al., 2010). We believe these insights can provoke further critical reflection on how PES interventions are intrinsically shaped by political relations, power dynamics, social status and cultural values (Barnes et al., 2013: 542). The contribution of PES scholars, practitioners or other experts in environment-development interventions should then shift from an (illusory) focus on providing total predictability on the basis of pre-defined framings of issues and solutions, to supporting a joint learning, ‘sense-making’ and negotiation process among different actors and in feeding this process with relevant information (e.g. Vink et al., 2013).

## REFERENCES

- Adger, W.N., Benjaminsen, T.A., Brown, K. and Svarstad, H. (2001) Advancing a Political Ecology of Global Environmental Discourses, *Development and Change* 32: 681-715.
- Adhikari, B. and Agrawal, A. (2013) Understanding the social and ecological outcomes of PES projects: a review and an analysis, *Conservation and Society* 11: 359-374.
- Agrawal, A. and Gibson, C.C. (1999) Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation, *World Development* 27(4), 629-649.
- Ajayi, O.C., Jack, B.K. and Leimona, B. (2012) Auction Design for the Private Provision of Public Goods in Developing Countries: Lessons from Payments for Environmental Services in Malawi and Indonesia, *World Development* 40(6): 1213-1223.
- Alix-Garcia, J., De Janvry, A. and Sadoulet, E. (2008) The role of deforestation risk and calibrated compensation in designing payments for environmental services, *Environment and Development Economics* 13: 375-394.
- Antle, J.M. and Stoorvogel, J.J. (2008) Agricultural Carbon Sequestration, Poverty and Sustainability, *Environment and Development Economics* 13: 327-352.
- Bakker, K. (2005) Neoliberalizing nature? Market environmentalism in water supply in England and Wales, *Annals of the Association of American Geographers* 95(3): 542-565.
- Bakker, K. (2010) The limits of 'neoliberal natures': Debating green neoliberalism, *Progress in Human Geography* 34(6): 715-735.
- Barnes, J., Dove, M., Lahsen, M., Mathews, A., McElwee, P., McIntosh, R., Moore, F., O'Reilly, J., Orlove, B., Puri, R., Weiss, H. and Yager, K. (2013) Contribution of anthropology to the study of climate change. *Nature Climate Change* 3: 541-544.
- Bastiaensen, J., De Herdt, T. and D'Exelle, B. (2005) Poverty Reduction as a Local Institutional Process, *World Development* 33(6): 979-993.
- Bastiaensen, J., Merlet, P., Craps, M., De Herdt, T., Flores, S., Huybrechts, F., Mendoza, R., Steel, G. and Van Hecken, G. (2015a) Agencia en territorios humanos rurales: una perspectiva socio-constructivista, in: Bastiaensen, J., P. Merlet, and S. Flores (eds.) *Rutas de desarrollo en territorios humanos: Las dinámicas de la Vía Láctea en Nicaragua*, UCA Publicaciones, Managua, pp. 21-64.
- Bastiaensen, J., Merlet, P., Craps, M., De Herdt, T., Flores, S., Huybrechts, F., Mendoza, R., Steel, G. and Van Hecken, G. (2015b) Making sense of territorial pathways to rural development: a proposal for a normative and analytical framework. Discussion Paper 2015:04. Institute of Development Policy and Management (IOB), University of Antwerp, Antwerp.
- Benediktsson, K. (2014) Nature in the 'neoliberal laboratory', *Dialogues in Human Geography* 4(2): 141-146.
- Berkes, F. and Folke, C. (1998) *Linking social and ecological systems: management practices and social mechanisms for building resilience*, Cambridge University Press, Cambridge, UK.
- Blackman, A. and Woodward, R.T. (2010) User financing in a national payments for environmental services program: Costa Rican hydropower, *Ecological Economics* 69: 1626-1638.
- Blaikie, P. (1999) A Review of Political Ecology. Issues, Epistemology and Analytical Narratives, *Zeitschrift für Wirtschaftsgeographie* 43(3-4): 131-147.
- Blaikie, P. (2006) Is Small Really Beautiful? Community-based Natural Resource Management in Malawi and Botswana, *World Development* 34(11): 1942-1957.
- Blaikie, P. and Brookfield, H. (1987) *Land Degradation and Society*, Methuen, London, UK.
- Blaikie, P. and Muldavin, J. (2014)

- Environmental justice? The story of two projects, *Geoforum* 54: 226-229.
- Boelens, R., Hoogesteger, J. and Rodríguez de Francisco, J.C. (2014) Commoditizing water territories: the clash between Andean water rights cultures and payment for environmental services policies, *Capitalism Nature Socialism* 25(3): 84-102.
- Bolton, P. and Dewatripont, M. (2005) *Contract Theory*, Cambridge, Massachusetts: MIT Press.
- Bosselmann, A.S. and Lund, J.F. (2013) Do intermediary institutions promote inclusiveness in PES programs? The case of Costa Rica, *Geoforum* 49: 50-60.
- Bowles, S. (2008) Policies designed for self-interested citizens may undermine 'the moral sentiments': evidence from economic experiments, *Science* 320: 1605-1609.
- Bremer, L.L., Farley, K.A. and López-Carr, D. (2014) What factors influence participation in payment for ecosystem services programs? An evaluation of Ecuador's SocioParamo program, *Land Use Policy* 36: 122-133.
- Brenner, N. and Theodore, N. (2002) Cities and the geographies of 'actually existing neoliberalism', *Antipode* 34(3): 349-379.
- Brockington, D. (2004) Community conservation, inequality and justice: Myths of power in protected area management, *Conservation and Society* 2(2): 411.
- Brockington, D. and Duffy, R. (2010) Capitalism and conservation. The production and reproduction of biodiversity conservation, *Antipode* 42(3): 469-484.
- Brockington, D., Duffy, D. and Igoe, J. (2008) *Nature Unbound. Conservation, Capitalism and the Future of Protected Areas*, Earthscan, London, UK.
- Bromley, D.W. (2012) Environmental Governance as Stochastic Belief Updating: Crafting Rules to Live by, *Ecology and Society* 17(3): 14.
- Brosius, J.P. and Campbell, L.M. (2010) Collaborative Event Ethnography: Conservation and development trade-offs at the fourth world conservation congress, *Conservation and Society* 8(4): 245-255.
- Brosius, J.P., Tsing, A. and Zerner, C. (2005) *Communities and conservation: Histories and politics of community-based natural resource management*, Altamira Press, Walnut Creek, CA.
- Bryant, R.L. (1998) Power, knowledge and political ecology in the third world: a review, *Progress in Physical Geography* 22(1): 79-94.
- Bulte, E.H., Lipper, L., Stringer, R. and Zilberman, D. (2008) Payments for ecosystem services and poverty reduction: concepts, issues and empirical perspectives, *Environment and Development Economics* 13: 245-254.
- Büscher, B. (2008) Conservation, Neoliberalism, and Social Science: a Critical Reflection on the SCB 2007 Annual Meeting in South Africa, *Conservation Biology* 22(2): 229-231.
- Büscher, B. (2010) Derivative Nature: interrogating the value of conservation in 'Boundless Southern Africa', *Third World Quarterly* 31(2): 259-276.
- Büscher, B. (2012) Payments for ecosystem services as neoliberal conservation: (Re)interpreting evidence from the Maloti-Drakensberg, South Africa, *Conservation and Society* 10(1): 29-41.
- Büscher, B. (2014) Selling Success: Constructing Value in Conservation and Development, *World Development* 57: 79-90.
- Büscher, B., Sullivan, S., Neves, K., Igoe, J. and Brockington, D. (2012) Towards a synthesized critique of neoliberal biodiversity conservation, *Capitalism Nature Socialism* 23(2): 4-30.
- Caparrós, A., Cerdá, E., Ovando, P. and Campos, P. (2010) Carbon Sequestration with Reforestations and Biodiversity-scenic Values, *Environmental and Resource Economics* 45: 49-72.



- Castree, N. (2003) Commodifying what nature?, *Progress in Human Geography* 27(3): 273–297.
- Castree, N. (2006) From neoliberalism to neoliberalization: Consolations, confusions, and necessary illusions, *Environment and Planning A* 38(1): 1–6.
- Castree, N. (2007) Neoliberal Environments: A Framework for Analysis. Manchester Papers in Political Economy, *Centre for the Study of Political Economy Working Paper No. 04/07*, University of Manchester, UK.
- Castree, N. (2008) Neoliberalising nature: the logics of deregulation and reregulation, *Environment and Planning A* 40: 141–152.
- Castree, N. Adams, W.M., Barry, J., Brockington, D., Büscher, B., Corbera, E., Demeritt, D., Duffy, R., Felt, U., Neves, K., Newell, P., Pellizzoni, L., Rigby, K., Robbins, P., Robin, L., Rose, D.B., Ross, A., Schlosberg, D., Sörlin, S., West, P., Whitehead, M. and Wynne, B. (2014) Challenging the intellectual climate, *Nature Climate Change* 4(9):763–768.
- Chisholm, R.A. (2010) Trade-offs between ecosystem services: Water and carbon in a biodiversity hotspot, *Ecological Economics* 69: 1973–1987.
- Cleaver, F. (2002) Reinventing Institutions and the Social Embeddedness of Natural Resource Management, *European Journal of Development Research* 14(2): 11–30.
- Cleaver, F. (2005) The Inequality of Social Capital and the Reproduction of Chronic Poverty. *World Development* 33(6): 893–906.
- Cleaver, F. (2012) *Development through bricolage: rethinking institutions for natural resource management*, Routledge, Abingdon, Oxon.
- Clements, T. (2010) Reduced Expectations: the political and institutional challenges of REDD+, *Oryx* 44(3): 309–310.
- Clements, T., John, A., Nielsen, K., Dara, A., Setha, T. and Milner-Gulland, E.J. (2010) Payments for biodiversity conservation in the context of weak institutions: Comparison of three programs from Cambodia, *Ecological Economics* 69(6): 1283–1291.
- Coase, R.H. (1960) The problem of social cost, *Journal of Law and Economics* 3: 1–44.
- Corbera, E. (2012) Problematizing REDD+ as an experiment in payments for ecosystem services, *Current Opinion in Environmental Sustainability* 4: 1877–3435.
- Corbera, E. (2015) Valuing nature, paying for ecosystem services and realizing social justice: A response to Matulis (2014), *Ecological Economics* 110: 154–157.
- Corbera, E. and Brown, K. (2008) Building Institutions to Trade Ecosystem Services: Marketing Forest Carbon in Mexico, *World Development* 36(10): 1956–1979.
- Corbera, E., Brown, K. and Adger, W.N. (2007a) The equity and legitimacy of markets for ecosystem services, *Development and Change* 38(4): 587–613.
- Corbera, E., Kosoy, N. and Martínez Tuna, M. (2007b) Equity implications of marketing ecosystem services in protected areas and rural communities: Case studies from Meso-America, *Global Environmental Change* 17(3–4): 365–380.
- Corbera, E., González Soberanis, C. and Brown, K. (2009) Institutional dimensions of payments for ecosystem services. An analysis of Mexico’s carbon forestry programme, *Ecological Economics* 68: 743–761.
- Costanza, R. and Daly, H.E. (1992) Natural Capital and Sustainable Development, *Conservation Biology* 6: 37–46.
- Cote, M. and Nightingale, A.J. (2012) Resilience thinking meets social theory: situating social change in socio-ecological systems (SES) research, *Progress in Human Geography* 36(4): 475–489.
- Cranford, M. and Mourato, S. (2014) Credit-Based Payments for Ecosystem Services: Evidence from a Choice Experiment in Ecuador, *World Development* 64: 503–520.

- Daily, G.C. (1997) *Nature's Services: Societal Dependence on Natural Ecosystems*, Island Press, Washington, D.C.
- Daily, G.C., Polasky, S., Goldstein, J., Kareiva, P.M., Mooney, H.A., Pejchar, L., Ricketts, T.H., Salzman, J. and Shallenberger, R. (2009) Ecosystem services in decision making: time to deliver, *Frontiers in Ecology and the Environment* 7(1): 21-28.
- Dale, G. (2010) *Karl Polanyi: The Limits of the Market*, Polity Press, Cambridge.
- De Angelis, M. (2007) *The Beginning of History. Value Struggles and Global Capital*, Pluto Press, London, Ann Arbor, MI.
- Dietz, T., Ostrom, E. and Stern, P.C. (2003) The Struggle to Govern the Commons, *Science* 302, 1907-1912.
- Engel, S. and Palmer, C. (2008) Payments for environmental services as an alternative to logging under weak property rights: the case of Indonesia, *Ecological Economics* 65: 799-809.
- Engel, S., Pagiola, S. and Wunder, S. (2008) Designing payments for environmental services in theory and practice: an overview of the issues, *Ecological Economics* 65: 663-675.
- Ernstson, H. and Sörlin, S. (2013) Ecosystem services as technology of globalization: On articulating values in urban nature, *Ecological Economics* 86: 274-284.
- Ervine, K. (2010) Participation denied: the Global Environment Facility, its universal blueprint, and the Mexico-Mesoamerican biological corridor in Chiapas, *Third World Quarterly* 31(5): 773-790.
- Escobar, A. (1996) Constructing nature: elements for a poststructural political ecology, in: Peet, R. and M. Watts (eds) *Liberation Ecologies: Environment, Development, Social Movements*, Routledge, London, pp. 46-68.
- Fabinyi, M., Evans, L. and Foale, S.J. (2014) Social-ecological systems, social diversity, and power: insights from anthropology and political ecology, *Ecology and Society* 19(4): 28.
- Fairhead, J., Leach, M. and Scoones, I. (2012) Green Grabbing: a new appropriation of nature? *The Journal of Peasant Studies* 39(2): 237-261.
- Farley, J. and Costanza, R. (2010) Payments for ecosystem services: from local to global. *Ecological Economics* 69: 2060-2068.
- Farrell, K. (2014) Intellectual mercantilism and franchise equity: A critical study of the ecological political economy of international payments for ecosystem services, *Ecological Economics* 102: 137-146.
- Ferraro, P.J. (2001) Global Habitat Protection: Limitations of Development Interventions and a Role for Conservation Performance Payments, *Conservation Biology* 15(4): 1-12.
- Ferraro, P.J. (2008) Asymmetric information and contract design for payments for environmental services, *Ecological Economics* 65(4): 810-821.
- Ferraro, P.J. and Kiss, A. (2002) Direct payments for biodiversity conservation, *Science* 298: 1718-1719.
- Ferraro, P.J. and Simpson, R.D. (2002) The cost-effectiveness of conservation payments, *Land Economics* 78(3): 339-353.
- Fisher, J.A. and Brown, K. (2014) Ecosystem services concepts and approaches in conservation: Just a rhetorical tool? *Ecological Economics* 108: 257-265.
- Fletcher, R. and Breitling, J. (2012) Market mechanism or subsidy in disguise? Governing payment for environmental services in Costa Rica, *Geoforum* 43(3): 402-411.
- Flyvbjerg, B. (2001) *Making social science matter: why social inquiry fails and how it can succeed again*, Cambridge University Press, Cambridge, UK.
- Folke, C., Hahn, T., Olsson, P. and Norberg, J. (2005) Adaptive governance of social-ecological systems, *Annual Review of Environment and Resources* 3: 441-473.
- Foucault, M. (1972) *Archaeology of knowledge*, Tavistock, London, UK.

- Foucault, M. (1980) *Power/knowledge: selected interviews and other writings 1972–1977*, Vintage, London, UK.
- Gendron, C. (2014) Beyond environmental and ecological economics: Proposal for an economic sociology of the environment, *Ecological Economics* 105: 240–253.
- German, L., Villamor, G., Twine, E., Velarde, S.J. and Kidane, B. (2009) Environmental Services and the Precautionary Principle: Using Scenarios to Reconcile Conservation and Livelihood Objectives in Upper Catchments, *Journal of Sustainable Forestry* 28: 368–394.
- Giddens, A. (1984) *The Constitution of Society: Outline of the Theory of Structuration*, Polity Press, Cambridge.
- Gómez-Baggethun, E., de Groot, R., Lomas, P.L. and 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.
- Gong, Y., Bull, G. and Baylis, K. (2010) Participation in the world's first clean development mechanism forest project: the role of property rights, social capital and contractual rules. *Ecological Economics* 69: 1292–1302.
- Hajer, M. A. (1995) *The Politics of Environmental Discourse. Ecological Modernization and the Policy Process*, Clarendon Press, Oxford.
- Hall, R. and Lovera, S. (2009) *REDD Realities: How strategies to reduce emissions from deforestation and forest degradation could impact on biodiversity and Indigenous Peoples in developing countries*, Global Forest Coalition, Asunción, Paraguay.
- Hall, K., Cleaver, F., Franks, T. and Maganga, F. (2014) Capturing Critical Institutionalism: A Synthesis of Key Themes and Debates, *European Journal of Development Research* 26(1): 71–86.
- Hart, G. (2006) Denaturalizing dispossession: critical ethnography in the age of resurgent imperialism, *Antipode* 38: 975–1001.
- Hayes, T., Murtinho, F., Cárdenas Camacho, L.M., Crespo, P., McHugh, S. and Salmerón, D. (2015) Can Conservation Contracts Co-exist with Change? Payment for Ecosystem Services in the Context of Adaptive Decision-Making and Sustainability, *Environmental Management* 55(1): 69–85.
- He, J. and Sikor, T. (2015) Notions of justice in payments for ecosystem services: Insights from China's Sloping Land Conversion Program in Yunnan Province, *Land Use Policy* 43: 207–216.
- Hejnowicz, A.P., Raffaelli, D.G., Rudd, M.A. and White, P.C.L. (2014) Evaluating the outcomes of payments for ecosystem services programmes using a capital asset framework, *Ecosystem Services* 9: 83–97.
- Hendrickson, C. Y. and Corbera, E. (2015) Participation dynamics and institutional change in the Scolel Té carbon forestry project, Chiapas, Mexico, *Geoforum* 59: 63–72.
- Heyman, J. and Ariely, D. (2004) Effort for payment: a tale of two markets, *Psychological Science* 15(11): 787–793.
- Hibou B. and Banegas, R. (2000) Civil society and the public space in Africa, *Codesria Bulletin* 1: 39–45.
- Hiedanpää, J. and Bromley, D.W. (2014) Payments for ecosystem services: durable habits, dubious nudges, and doubtful efficacy, *Journal of Institutional Economics* 10(2): 175 – 195.
- Higgins, V., Dibden, J. and Cocklin, C. (2008) Neoliberalism and natural resource management: agri-environmental standards and the governing of farming practices, *Geoforum* 39: 1776–1785.
- Higgins, V., Dibden, J. and Cocklin, C. (2012) Market instruments and the neoliberalization of land management in rural Australia, *Geoforum* 43: 377–386.
- Hirsch, P.D., Adams, W.M., Brosius, J.P., Zia, A., Bariola, N. and Dammert, J.L. (2010)

- Acknowledging conservation trade-offs and embracing complexity, *Conservation Biology* 25: 259–264.
- Horan, R.D., Shogren, J.F. and Gramig, B.M. (2008) Wildlife conservation payments to address habitat fragmentation and disease risks, *Environment and Development Economics* 13: 415–439.
- Horowitz, L. S. (2008) “It’s up to the clan to protect”: Cultural heritage and the micropolitical ecology of conservation in New Caledonia, *The Social Science Journal* 45: 258–278.
- Hukkinen, J. I. (2014) Model of the social-ecological system depends on model of the mind: Contrasting information-processing and embodied views of cognition, *Ecological Economics* 99: 100–109.
- Ioris, A. A. R. (2014) The paradox of poverty in rich ecosystems: impoverishment and development in the Amazon of Brazil and Bolivia, *The Geographical Journal*, doi: 10.1111/geoj.12124.
- Jasanoff, S. (ed.) (2004) *States of Knowledge: The Co-production of Science and the Social Order*, Routledge, New York.
- Kareiva, P., Watts, S., McDonald, R. and Boucher, T. (2007) Domesticated Nature: Shaping Landscapes and Ecosystems for Human Welfare, *Science* 316: 1866–1869.
- Karsenty, A. (2007) Questioning rent for development swaps: new market-based instruments for biodiversity acquisition and the land-use issue in tropical countries. *International Forestry Review* 9(1): 503–513.
- Katz, C. (1998) Whose nature, whose culture?, in: Braun, B. and Castree, N. (eds.) *Remaking reality*, Routledge, London, pp. 46–63.
- Katz, C. (2005) Partners in crime? Neoliberalism and the production of new political subjectivities, *Antipode* 37: 623–31.
- Kolinjivadi, V., Adamowski, J. and Kosoy, N. (2014) Recasting payments for ecosystem services (PES) in water resource management: A novel institutional approach, *Ecosystem Services* 10: 144–154.
- Kosoy, N. and Corbera, E. (2010) Payments for ecosystem services as commodity fetishism, *Ecological Economics* 69(6): 1228–1236.
- Kosoy, N., Martinez-Tuna, M., Muradian, R. and Martinez-Alier, J. (2007) Payments for environmental services in watersheds: Insights from a comparative study of three cases in Central America, *Ecological Economics* 61: 446–455.
- Kosoy, N., Corbera, E. and Brown, K. (2008) Participation in payments for ecosystem services: Case studies from the Lacandón rainforest, Mexico, *Geoforum* 39: 2073–2083.
- Kroeger, T. (2013) The quest for the “optimal” payment for environmental services program: ambition meets reality, with useful lessons, *Forest Policy and Economics* 37: 65–74.
- Landell-Mills, N. (2002) Developing markets for forest environmental services: an opportunity for promoting equity while securing efficiency?, *Philosophical transactions – Royal Society London A* 360: 1817–1825.
- Lawlor, K., Madeira, E., Blockhus, J. and Ganz, D. (2013) Community participation and benefits in REDD+: a review of initial outcomes and lessons, *Forests* 4: 296–318.
- Leach, M., Mearns, R. and Scoones, I. (1999) Environmental entitlements: Dynamics and institutions in community-based natural resource management, *World Development* 27(2): 225–247.
- Leach, M., Scoones, I. and Stirling, A. (2010) *Dynamic Sustainabilities. Technology, Environment, Social Justice*, Earthscan, London and Washington D.C.
- Lele, S. (2013) Environmentalisms, justices and the limits of Ecosystem Services, in: Sikor, T. (ed.) *The Justices and Injustices of Ecosystems Services*, Earthscan/Routledge, Abingdon, pp. 119–139.
- Li, T. M. (1996) *Images of Community: Discourse and Strategy in Property Relations*.

- Development and Change* 27(3): 501-527.
- Li, T. M. (2007) *The Will to Improve. Governmentality, Development, and the Practice of Politics*, Duke University Press, London.
- Litfin, K.T. (1994) *Ozone discourses: Science and politics in global environmental change*, Columbia University Press, New York.
- Lohman, L. (Ed.) (2006) *Carbon Trading: A Critical Conversation on Climate Change, Privatisation and Power*. Dag Hammarskjöld Foundation - Durban Group for Climate Justice and the Corner House, Uppsala, Sweden.
- Lohmann, L. (2009) Climate as investment, *Development and Change* 40(6): 1063-1083.
- Lohmann, L. (2010) Uncertainty markets and carbon markets: variations on polanyian themes, *New Political Economy* 15(2): 225-254.
- Long, A. (1992) From Paradigm Lost to Paradigm Regained? The Case for an Actor Oriented Sociology of Development, in: Long N. and Long, A. (eds.) *Battlefields of knowledge: the interlocking of theory and practice in social research and development*. Routledge, London, pp. 16-43.
- Long, N. (2001) *Development Sociology: actor perspectives*, Routledge, London.
- Mansfield, B. (2007) Property, markets, and dispossession: the Western Alaska community development quota as neoliberalism, social justice, both, and neither, *Antipode* 39 (3): 480-499.
- Martin, A., Blowers, A. and Boersema, J. (2008) Paying for environmental services: can we afford to lose a cultural basis for conservation?, *Environmental Sciences* 5(1): 1-5.
- Martin, A., Gross-Camp, N., Kebede, B., McGuire, S. and Munyarukaza, J. (2014) Whose environmental justice? Exploring local and global perspectives in a payments for ecosystem services scheme in Rwanda, *Geoforum* 54: 167-177.
- Martínez-Alier, J. (2004) *The Environmentalism of the Poor: A Study of Ecological Conflicts and Valuation*, Oxford University Press, New Delhi.
- 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.
- Mauerhofer, V., Hubacek, K. and Coleby, A. (2013) From polluter pays to provider gets: distribution of rights and costs under payments for ecosystem services, *Ecology and Society* 18(4): 41.
- McAfee, K. (1999) Selling nature to save it? Biodiversity and green developmentalism, *Environment and Planning D: Society and Space* 17(2): 133-154.
- McAfee, K. (2012) The Contradictory Logic of Global Ecosystem Services Markets, *Development and Change* 43: 105-131.
- McAfee, K. and Shapiro, E.N. (2010) Payment for Environmental Services in Mexico: Neoliberalism, Social Movements, and the State, *Annals of the Association of American Geographers* 100(3): 579-599.
- McCarthy, J. (2005) Devolution in the woods: Community forestry as hybrid neoliberalism, *Environment and Planning A* 37(6): 995-1014.
- McCarthy, J. and Prudham, S. (2004) Neoliberal nature and the nature of neoliberalism, *Geoforum* 35(3): 275-283.
- McCauley, D.J. (2006) Selling out on nature, *Nature* 443: 27-28.
- McDermott, M.H., Mahanty, S. and Schreckenber, K. (2013) Examining equity: a multidimensional framework for assessing equity in payments for ecosystem services, *Environmental Science and Policy* 33: 416-427.
- McElwee, P.D. (2012) Payments for environmental services as neoliberal market-based forest conservation in Vietnam: panacea or problem? *Geoforum* 43: 412-426.
- McElwee, P., Nghiem, T., Le, H., Vu, H. and Tran, N. (2014) Payments for environmental

- services and contested neoliberalisation in developing countries: A case study from Vietnam, *Journal of Rural Studies* 36: 423-440.
- Millennium Ecosystem Assessment (MEA) (2005) *Millennium Ecosystem Assessment. Ecosystems and Human Well-being*, Island Press, Washington, D.C.
- Milder, J., Scherr, S.J. and Bracer, C. (2010) Trends and future potential of payment for ecosystem services to alleviate rural poverty in developing countries, *Ecology & Society* 15.
- Milne, S. and Adams, W.M. (2012) Market masquerades: uncovering the politics of community-level payments for environmental services in Cambodia, *Development and Change* 43: 133-158.
- Miranda, M., Dieperink, C. and Glasbergen, P. (2007) Voluntary agreements in watershed protection in Costa Rica, *Environment, Development and Sustainability* 9: 1-19.
- Mitchell, R.B. (2002) International environment, in: Risse, T., Simmons, B. and Carlsnaes W. (eds.) *Handbook of International Relations*, Sage Publications, London, pp. 500-516.
- Miteva, D.A., Pattanayak, S.K. and Ferraro, P.J. (2012) Evaluation of biodiversity policy instruments: what works and what doesn't? *Oxford Review of Economic Policy* 28(1): 69-92.
- Mosse, D. (1997) The Symbolic Making of a Common Property Resource: History, Ecology and Locality in a Tank-irrigated Landscape in South India, *Development and Change* 28: 467-504.
- Mosse, D. (2006) Collective Action, Common Property, and Social Capital in South India: An Anthropological Commentary. *Economic Development and Cultural Change* 54(3): 695-724.
- Mowles, C., Stacey, R. and Griffin, D. (2008). What Contribution can Insights from the Complexity Sciences make to the Theory and Practice of Development Management? *Journal of International Development* 20: 804-820.
- Muradian, R. (2013) Payments for Ecosystem Services as Incentives for Collective Action. *Society & Natural Resources* 26(10): 1155-1169.
- Muradian, R. and Gómez-Baggethun, E. (2013) The Institutional Dimension of "Market-Based Instruments" for Governing Ecosystem Services: Introduction to the Special Issue, *Society & Natural Resources* 26(10): 1113-1121.
- Muradian, R. and Rival, L. (2012) Between markets and hierarchies: The challenge of governing ecosystem services, *Ecosystem Services* 1: 93-100.
- Muradian, R., Corbera, E., Pascual, U., Kosoy, N. and May, P. (2010) Reconciling theory and practice: An alternative conceptual framework for understanding payments for environmental services, *Ecological Economics* 69(6): 1202-1208.
- Muradian, R., Arsel, M., Pellegrini, L., Adaman, F., Aguilar, B., Agarwal, B., Corbera, E., de Blas, D.E., Farley, J., Froger, G., Garcia-Frapolli, E., Gómez-Baggethun, E., Gowdy, J., Kosoy, N., Le Coq, J. f., Leroy, P., May, P., Méral, P., Mibielli, P., Norgaard, R., Ozkaynak, B., Pascual, U., Pengue, W., Perez, M., Pesche, D., Pirard, R., Ramos-Martin, J., Rival, L., Saenz, F., Van Hecken, G., Vatn, A., Vira, B. and Urama, K. (2013), Payments for Ecosystem Services and the fatal attraction of win-win solutions, *Conservation Letters* 6(4): 274-279.
- Neumayer, E. (2003) *Weak versus strong sustainability: Exploring the limits of two opposing paradigms*, Edward Elgar Publishing, Cheltenham.
- Neves-Graça, K. (2004) Revisiting the Tragedy of the Commons: Ecological Dilemmas of Whale Watching in the Azores, *Human Organization* 63(3): 289-300.
- Norgaard, R. B. (1984) Coevolutionary development potential, *Land Economics* 60(2): 160-173.
- Norgaard, R. (2010) Ecosystem services: From eye-opening metaphor to complexity blinder, *Ecological Economics* 69(6): 1219-1227.

- North, D.C. (1990) *Institutions, Institutional Change and Economic Performance*, Cambridge University Press, New York.
- Nygren, A. and Rikoon, S. (2008) Political ecology revisited: integration of politics and ecology does matter, *Society and Natural Resources* 21: 767–782.
- O’Neill, J. (2001) Property, care, and environment, *Environment and Planning C: Government and Policy* 19: 695–711.
- Olivier de Sardan, J.-P. (2001) Les trois approches en anthropologie du développement, *Tiers-Monde*: 729-754.
- Olivier de Sardan, J.P. (2013) Embeddedness and informal norms: Institutionalisms and anthropology, *Critique of Anthropology* 33(3): 280-299.
- Osborne, T. (2011) Carbon Forestry and Agrarian Change: Access and Land Control in a Mexican Rainforest, *Journal of Peasant Studies* 38(4): 859–883.
- Osei-Kufuor, P. (2010) *Does Institutionalising Decentralisation Work? Rethinking Agency, Institutions and Authority in Local Governance: A Case Study Ntonaboma in Kwahu-North District, Ghana*, Unpublished PhD Thesis, University of Bradford.
- Ostrom, E. (1990) *Governing the Commons: The Evolution of Institutions for Collective Action*, Cambridge University Press, New York.
- Ostrom, E. (1992) *Crafting Institutions for Self-Governing Irrigation Systems*, ICS Press, San Francisco.
- Ostrom, E. (2010), A long polycentric journey, *Annual Review of Political Science* 13: 1–23.
- Ostrom, E. and Cox, M. (2010) Moving beyond panaceas: a multi-tiered diagnostic approach for social-ecological analysis, *Environmental Conservation* 37(4): 151-163.
- Paavola, J. (2007) Institutions and environmental governance: a reconceptualization, *Ecological Economics* 63: 93-103.
- Paavola, J. and Adger, N.W. (2005) Institutional ecological economics, *Ecological Economics* 53: 353-368.
- Pagiola, S. and Platais, G. (2007) *Payments for Environmental Services: From Theory to Practice*, World Bank, Washington D.C.
- Pagiola, S., Bishop, J. and Landell-Mills, N. (2002) *Selling Forest Environmental Services. Market-based Mechanisms for Conservation and Development*, Earthscan, London.
- Pagiola, S., Arcenas, A. and Platais, G. (2005) Can payments for environmental services help reduce poverty? An exploration of the issues and the evidence to date, *World Development* 33(2): 237-253.
- Parkhurst, G.M. and Shogren, J.F. (2007) Spatial incentives to coordinate contiguous habitat, *Ecological Economics* 64: 344-355.
- Pascual, U., Muradian, R., Rodríguez, L.C. and Duraiappah, A. (2010) Exploring the links between equity and efficiency in payments for environmental services: a conceptual approach. *Ecological Economics* 69: 1237-1244.
- Pascual, U., Phelps, J., Garmendia, E., Brown, K., Corbera, E. Martin, A., Gómez-Baggethun, E. and Muradian, R. (2014) Social Equity Matters in Payments for Ecosystem Services, *BioScience* 64(11): 1027-1036.
- Pattanayak, S.K., Wunder, S. and Ferraro, P.J. (2010) Show me the money: do payments supply environmental services in developing countries? *Review of Environmental Economics and Policy* 4(2): 254-274.
- Peet, R. and Watts, M. (1996) *Liberation ecologies: environment, development, social movements*, Routledge, London.
- Peet, R., and Watts, M. (eds) (2002) *Liberation ecologies: environment, development, social movements*, Routledge, London, UK.
- Persson, U.M., and Alpízar, F. (2013) Conditional Cash Transfers and Payments for Environmental Services—A Conceptual Framework for Explaining and Judging Differences in Outcomes, *World Development* 43: 124-137.

- Peterson, M.J., Hall, D.M., Feldpausch-Parker, A.M. and Peterson, T.R. (2010) Obscuring Ecosystem Function with Application of the Ecosystem Services Concept, *Conservation Biology* 24(1): 113-119.
- Pham, T.T., Campbell, B.M., Garnett, S., Aslin, H. and Hoang, M.H. (2010) Importance and impacts of intermediary boundary organizations in facilitating payment for environmental services in Vietnam, *Environmental Conservation* 37: 64-72.
- Pirard, R. (2012) Market-based instruments for biodiversity and ecosystem services: A lexicon, *Environmental science & policy* 19-20: 59-68.
- Pirard, R. and Lapeyre, R. (2014) Classifying market-based instruments for ecosystem services: A guide to the literature jungle, *Ecosystem Services* 9: 106-114.
- Plumecocq, G. (2014) The second generation of ecological economics: How far has the apple fallen from the tree? *Ecological Economics* 107: 457-468.
- Potter, C.A. and Wolf, S.A. (2014) Payments for ecosystem services in relation to US and UK agri-environmental policy: disruptive neoliberal innovation or hybrid policy adaptation?, *Agriculture and Human Values* 31: 397-408.
- Raymond, C.M., Singh, G.G., Benessaiah, K., Bernhardt, J.R., Levine, J., Nelson, H., Turner, N.J., Norton, B., Tam, J. and Chan, K.M.A. (2013) Ecosystem Services and Beyond: Using Multiple Metaphors to Understand Human-Environment Relationships, *BioScience* 63(7): 536-546.
- Redford, K.H. and Adams, W.M. (2009) Payments for Ecosystem services and the Challenge of Saving Nature, *Conservation Biology* 23: 785-787.
- Ribot, J. (2001) Integral local development: 'Accommodating multiple interests' through entrustment and accountable representation. *International Journal of Agricultural Resources, Governance and Ecology* 1(3): 1-21.
- Ribot, J., Chhatre, A. and Lankina, T. (2008) Introduction: Institutional choice and recognition in the formation and consolidation of local democracy, *Conservation and Society* 6(1): 1-11.
- Robertson, M.M. (2004) The neoliberalization of ecosystem services: wetland mitigation banking and problems in environmental governance, *Geoforum* 35: 371-373.
- Robertson, M. M. (2006) The nature that capital can see: science, state, and market in the commodification of ecosystem services, *Environment and Planning D: Society and Space* 24: 367-387.
- Robertson, M. (2007) Discovering price in all the wrong places: the work of commodity definition and price under neoliberal environmental policy, *Antipode* 39(3): 500-526.
- Rode, J., Gómez-Baggethun, E. and Krause, T. (2014) Motivation crowding by economic incentives in conservation policy: A review of the empirical evidence, *Ecological Economics* 109: 80-92.
- Rodríguez-de-Francisco, J. C. and Budds, J. (2015) Payments for environmental services and control over conservation of natural resources: The role of public and private sectors in the conservation of the Nima watershed, Colombia, *Ecological Economics* 117: 295-302.
- Rodríguez-de-Francisco, J. C., Budds, J. and Boelens, R. (2013) Payments for environmental services and unequal resource control in Pimampiro, Ecuador, *Society & Natural Resources* 26(10), 1217-1233.
- Rorty, R. (1979) *Philosophy and the mirror of nature*, Princeton University Press, Princeton, New Jersey, USA.
- Roth, R.J. and Dressler, W. (2012) Market-oriented conservation governance: The particularities of place, *Geoforum* 43: 363-366.
- Sahlins, M. (1978) Culture as protein and profit, *New York Review of Books* 25(18): 45-53.



- Sandbrook, C., Fisher, J. and Vira, B. (2013) What do conservationists think about markets? *Geoforum* 50: 232-240.
- Schomers, S. and Matzdorf, B. (2013) Payments for ecosystem services: a review and comparison of developing and industrialised countries, *Ecosystem Services* 6: 16-30.
- Schomers, S., Sattles, C. and Matzdorf, B. (2015) An analytical framework for assessing the potential of intermediaries to improve the performance of payments for ecosystem services, *Land Use Policy* 4: 58-70.
- Scott, J. (1990) *Domination and the Arts of Resistance: Hidden Transcripts*, Yale University Press.
- Shapiro-Garza, E. (2013a) Contesting the market-based nature of Mexico's national payments for ecosystem services programs: four sites of articulation and hybridization, *Geoforum* 46: 5-15.
- Shapiro-Garza, E. (2013b) Contesting market-based conservation: payments for ecosystem services as a surface of engagement for rural social movements in Mexico, *Human Geography* 6: 134-150.
- Sikor, T. and Newell, P. (2014) Globalizing Environmental Justice? *Geoforum* 54: 151-157.
- Slavíková, L., Kluvánková-Oravská, T. and Jílková, J. (2010) Bridging theories on environmental governance: Insights from free-market approaches and institutional ecological economics perspectives, *Ecological Economics* 69: 1368-1372.
- Smith, N. (1996) The production of nature, in: Robertson, G. M. Mash, L. Tickner, J. Bird, B. Curtis, and T. Putnam (eds.) *Future Natural: Nature, science, culture*. Routledge, London, pp. 35-54.
- Sommerville, M., Jones, J.P.G. and Milner-Gulland, E.J. (2009) A Revised Conceptual Framework for Payments for Environmental Services, *Ecology and Society* 14(2): 34.
- Sommerville, M., Jones, J.P.G., Rahajaharison, M. and Milner-Gulland, E.J. (2010) The role of fairness and benefit distribution in community-based Payment for Environmental Services interventions: A case study from Menabe, Madagascar, *Ecological Economics* 69(6): 1262-1271.
- Sparke, M. (2008) Political geography – political geographies of globalization III: resistance, *Progress in Human Geography* 32(3): 423-440.
- Spash, C.L. (2011) Social Ecological Economics: Understanding the past to see the future, *American Journal of Economics and Sociology* 70(2): 340-375.
- Spash, C. L. (2012) New foundations for ecological economics, *Ecological Economics* 77: 36-47.
- Swallow, B.M., Kallesoe, M.F., Iftikhar, U.A., van Noordwijk, M., Bracer, K., Scherr, S.J., Raju, K.V., Poats, S.V., Duraiappah, A.K., Ochieng, B.O., Mallee, H. and Rumley, R. (2009) Compensation and Rewards for Environmental Services in the Developing World: Framing Pan-Tropical Analysis and Comparison, *Ecology and Society* 14(2): 26.
- Swart, J.A.A. (2003) Will direct payments help biodiversity?, *Science* 299: 1981.
- Tacconi, L. (2012) Redefining payments for environmental services, *Ecological Economics* 73: 29-36.
- Tickell, A. and Peck, J. (2003) Making global rules: globalization or neoliberalization?, in: Peck, J. and Yeung, H. (eds.), *Remaking the Global Economy: Economic-Geographical Perspectives*, Sage, London, pp. 163-181.
- Uphoff, N. (1993) Grassroots Organizations and NGOs in Rural Development: Opportunities with Diminishing States and Expanding Markets, *World Development* 21 (4): 607-622.
- Van Hecken, G. and Bastiaensen, J. (2010a) Payments for ecosystem services in Nicaragua: do market-based approaches work?, *Development and Change* 41: 421-444.

- Van Hecken, G. and Bastiaensen, J. (2010b) Payments for ecosystem services: justified or not? A political view, *Environmental Science & Policy* 13(8): 785-792.
- Van Hecken, G., Bastiaensen, J. and Vásquez, W.F. (2012) The Viability of Local Payments for Watershed Services: Empirical Evidence from Matiguás, Nicaragua, *Ecological Economics* 74: 169-176.
- Van Hecken, G., Bastiaensen, J. and Huybrechts, F. (2015) What's in a name? Epistemic perspectives and Payments for Ecosystem Services policies in Nicaragua, *Geoforum* 63: 55-66.
- Vatn, A. (2005a) Rationality, institutions and environmental policy, *Ecological Economics* 55: 203-217.
- Vatn, A. (2005b) *Institutions and the Environment*, Edward Elgar: Cheltenham.
- Vatn, A. (2009) An institutional analysis of methods for environmental appraisal, *Ecological Economics* 68: 2207-2215.
- Vatn, A. (2010) An institutional analysis of payments for environmental services, *Ecological Economics* 69(6): 1245-1252.
- Vatn, A. (2014) Markets in environmental governance – From theory to practice, *Ecological Economics* 105: 97-105.
- Vatn, A. and Bromley, D.W. (1997) Externalities - A market model failure, *Environmental and Resource Economics* 9: 135-151.
- Vatn, A. and Vedeld, P. (2012) Fit, Interplay, and Scale: A Diagnosis, *Ecology and Society* 17(4), 12.
- Vayda, A.P. (1983) Progressive contextualization: methods for research in human ecology, *Human Ecology* 11: 265-281.
- Vedeld, T. (2000) Village politics: heterogeneity, leadership and collective action, *Journal of Development Studies* 36(5): 105-134.
- Vink, M.J., Boezeman, D., Dewulf, A. and Termeer, C. (2013) Changing climate, changing frames: Dutch water policy frame developments in the context of a rise and fall of attention to climate change, *Environmental Science & Policy* 30: 90-101.
- Wells, M. and Brandon, K. (1992) *People and Parks: Linking Protected Area Management with Local Communities*, The International Bank for Reconstruction and Development/The World Bank, Washington, D.C.
- West, S., Haider, J., Sinare, H. and Karpouzoglou, T. (2014) Beyond Divides: Prospects for synergy between resilience and pathways approaches to sustainability, *STEPS Working Paper 65*, STEPS Centre, Brighton, UK.
- Williamson, O.E. (1985) *The Economic Institutions of Capitalism*, Free Press, New York.
- Winthrop, R.H. (2014) The strange case of cultural services: Limits of the ecosystem services paradigm, *Ecological Economics* 108: 208-214.
- Wunder, S. (2005) Payments for environmental services: some nuts and bolts, *CIFOR Occasional Paper 42*, CIFOR, Jakarta, Indonesia.
- Wunder, S. (2007) The efficiency of Payments for Environmental Services in Tropical conservation, *Conservation Biology* 21 (1): 48-58.
- Wunder, S. (2008a) Payments for environmental services and the poor: concepts and preliminary evidence, *Environment and Development Economics* 13: 279-297.
- Wunder, S. (2008b) *Necessary Conditions for Ecosystem Service Payments*, Paper presented at the Workshop on Economics and Conservation in the Tropics: a Strategy Dialogue, San Francisco, USA, 31 January-1 February, 2008.
- Wunder, S. (2013) When payments for environmental services will work for conservation, *Conservation Letters* 6: 230-237.
- Wunder, S. (2015) Revisiting the concept of payments for environmental services, *Ecological Economics* 117: 234-243.

- Wunder, S. and Vargas, M.T. (2005) Beyond “markets”: why terminology matters, in: Bayon, R., Nathaniel, C. and Hawn, A. (eds.), *The tale of two continents – Ecosystem services in Latin America and East and Southern Africa*, Ecosystem Marketplace. 255-278.
- Wunder, S. and Wertz-Kanounnikoff, S. (2009) Payments for ecosystem services: a new way of conserving biodiversity in forests, *Journal of Sustainable Forestry* 28: 576-596.
- Wunder, S., Engel, S. and Pagiola, S. (2008) Taking stock: A comparative analysis of payments for environmental services programs in developed and developing countries, *Ecological Economics* 65: 834-852.
- Wünscher, T., Engel, S. and Wunder, S. (2008) Spatial targeting of payments for environmental services: a tool for boosting conservation benefits, *Ecological Economics* 65: 822-833.
- Young, O.R. (2002a) *The Institutional Dimensions of Environmental Change: Fit, Interplay and Scale*, MIT Press, London.
- Young, O.R. (2002b) Institutional Interplay: The Environmental Consequences of Cross-scale Interactions, in: Ostrom, E., Dietz, T., Dolsak, N., Stern, P.C., Stonich, S. and Weber, E.U. (Eds.) *The Drama of the Commons*, National Academy Press, Washington D.C.
- Zanella, M.A., Schleyer, C. and Speelman, S. (2014) Why do farmers join Payments for Ecosystem Services (PES) schemes? An Assessment of PES water scheme participation in Brazil, *Ecological Economics* 105: 166-176.
- Zhang, W., Pagiola, S. (2011) Assessing the potential for synergies in the implementation of payments for environmental services programmes: an empirical analysis of Costa Rica, *Environmental Conservation* 38(4): 406-416.
- Zilberman, D., Lipper, L. and McCarthy, N. (2008) When could payments for environmental services benefit the poor?, *Environment and Development Economics* 13(3):





**IOB**

Institute of Development Policy and Management  
University of Antwerp