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6 **Environmental governance – from public to private?**

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### Abstract

22 This paper analyzes the expanded role of private actors and markets in environmental governance.  
23 The public goods dimension of environmental services renders privatization and trading challeng-  
24 ing. To illustrate the key issues involved, a series of privatization efforts and market creations are  
25 reviewed. Despite the focus on privatization, the empirical material shows that the role of the state  
26 is still very pronounced. It defines the commodities and property rights, and plays a key role in  
27 setting up and regulating the markets. In the case of payments for ecosystem services, public  
28 authorities even appear as the dominant ‘trader’. Privatization and markets may reduce costs of  
29 delivering the service, while this is not universally true. Moreover, the service delivered often  
30 becomes a different one. Finally, high transaction costs may prohibit the creation of markets. The  
31 conflict between public goods delivery and private profit motive makes public control both  
32 important and difficult. Finally, several distributional issues following this neoliberal development  
33 are highlighted.

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37 Keywords: environmental governance; privatization; market creation; public goods; motivation;  
38 transaction costs

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## 48 **Environmental governance – from public to private?**

### 49 50 **1. Introduction**

51 Environmental governance is moving towards an expanded role for private actors and markets.  
52 This neo-liberal trend includes e.g., privatization of environmental resources, programs like pay-  
53 ments of ecosystem services as well as carbon markets. Moreover, private rule making have  
54 become increasingly important – e.g., certification.

55 This development represents a change in the institutional basis for the management of many  
56 environmental resources. Originally, environmental policy was dominated by public regulations  
57 based on legal and economic instruments. Over time, there seems to be a shift towards more  
58 ‘private regulation’. It is argued that this will enhance efficiency – e.g., Pagiola and Palatais (2007).  
59 The development is also thought to lessen the burden on public budgets. At the same time,  
60 privatization and markets face limitations in a sphere like the environment. The aim of this paper  
61 is to study the new trend to see what the institutional landscape looks like and to what extent  
62 expectations have been met.

63 The paper is divided in six parts. First, I give a brief overview of what characterizes environ-  
64 mental resources from a socio-political and natural science perspective. Second, I explain the con-  
65 ceptual framework used. Thereafter, I turn to three empirical parts where I look at a selected set of  
66 cases regarding a) changes in property rights towards increased private ownership of resources; b)  
67 the creation of markets in environmental services; and c) the development of self-regulation – i.e.,  
68 the move from state law to private rule making. Finally, I conclude by discussing and summarizing  
69 the findings and offering explanations for the patterns observed.

70

71

## 72 **2. Characterizing environmental resources**

73 Nature is of great economic, social and cultural importance. First, we all live off nature and how  
74 access to these resources is distributed is crucial. For the poor, it may even influence the capacity  
75 to survive. Defining e.g., property rights seems important also to avoid overexploitation.

76 We do, however, not only live off, but also in and with nature (O'Neill et al. 2008). The  
77 significance and meaning of nature is complex as well as culture specific. Environmental values  
78 may pertaining to certain places. Nature is moreover common in the sense that what one does to  
79 e.g., a forest has implications for others. It therefore becomes a tense political and social issue who  
80 should have the right to 'use' these resources, what should be for individual use and what should  
81 be under common decisions.

82 From a biophysical perspective, ecosystems are complex networks of processes including  
83 species transforming and transferring matter and energy. We talk of bio-geochemical cycles of  
84 different spatial and temporal scales. Variation in life forms – biodiversity – is crucial for the  
85 dynamics of ecosystems and their resilience (Odum and Barrett 2005).

86 The above observations have several implications for environmental governance. First, we  
87 have the issue of rights to resources and how shifts in such rights influence people's opportunities.  
88 Second, environmental values may both be quite idiosyncratic as well as highly interdependent.  
89 This creates limits to commodification, substitution and trade. Third, environmental problems are  
90 typically the sum of actions of many producers and consumers. They systemically affect third  
91 persons as in the case of pollution. Large numbers of people may be involved. Hence, the  
92 individual motivation for reducing problems is weak as gains of such actions are spread over many  
93 others – i.e., the so-called free-rider problem. In the realm of our physical environment,  
94 coordination of individual actions is therefore difficult both technically and motivationally.

### 95 **3. Governance structures – the conceptual basis for the analyses**

96 The move towards increased role of private actors and markets in environmental governance may  
97 be seen as a change in governance and governance structures. The concept of governance refers to  
98 the purposeful effort to steer or manage sectors of society in certain directions (Kooiman 1993).  
99 The concept of governance structures typically refers to the actors involved and the institutional  
100 structures defining these actors and facilitating their interactions\_(e.g., Vatn 2015a).

101       Regarding the actors, one may distinguish between economic, political and civil society  
102 actors. Economic actors hold rights to resources through property or use rights – as private, public  
103 or common property (Bromley 2006). Many resources are, however, under open access. That has  
104 typically been the case for environmental resources like water and air. While land may be parceled  
105 out, many processes or ‘services’ linked to it cannot be easily demarcated – e.g., biodiversity,  
106 movements of water and various gases.

107       Political actors, such as parliaments and traditional leaders, have the power to define who  
108 hold rights to various resources and how such rights can be transferred. We may talk of regulatory  
109 or customary law based on third party power. Civil society actors – such as political parties and  
110 NGOs – are important not least in bringing legitimacy to political processes, including establishing  
111 fora for interaction between decision-makers and the wider society.

112       Institutions/rules for interaction and appropriate behavior are also important in environ-  
113 mental governance. Key formats here include trade, command and cooperation. There may also  
114 be areas of a society where no interaction rules are defined. Again, that is typical for many  
115 environmental issues – e.g., rules for various types of pollution may not exist.

116       Institutions are crucial to (environmental) governance. As already emphasized, they define  
117 rights and responsibilities. They also influence the level of transaction (or interaction) costs

118 (Williamson 1985). Finally, different actors and institutional contexts are characterized by specific  
119 types of motivations (Hodgson 2007; Vatn 2009, 2015a). Motives may be based on what is best  
120 for the individual actor – like profits or individual utility. They may, however, also be based on  
121 what is best for the group or even for ‘the other’ – what is seen as appropriate behavior (March  
122 and Olsen 1995). The type of motivation involved is moreover expected to influence how easy it  
123 is to facilitate coordination among actors. Taken together, these observations imply that choice of  
124 governance structures for handling environmental issues – like establishing markets – may exer-  
125 cise considerable influence on outcomes.

126       The above concepts and perspectives are used to organize the study. I will look at implied  
127 changes in rights, transaction costs and motivational structures and ask to what extent the changes  
128 imply increased efficiency. In doing so, I will also look at how complexity and the related  
129 challenges regarding commodification have been handled. I will finally look at what the develop-  
130 ment has implied for the role of the state. I have chosen to study a set of example areas, capturing  
131 key dynamics as well as variations across the field. In each case, I will emphasize the most  
132 important dimensions and issues. Hence, there will be some variation in focus across sub-sections.

133

#### 134 **4. Privatization**

135 Privatization is typically understood as shifting property/use rights from state/public or communi-  
136 ties to private entities. Privatization is observed in a large number of sectors. To illustrate key  
137 dynamics, I have chosen to emphasize two – land and water services.

138

#### 139 **4.1 Land**

140 Land is an example of an environmental resource that is among the easier to privatize. Bromley  
141 (1991) emphasizes, however, that in some cases land is not productive enough to carry the extra

142 costs of privatization. Moreover, attaching property rights to land is often mainly nominal w.r.t.  
143 demarcating all the processes involved linking land, water and air.

144 Privatization of land is certainly not a new process. Nevertheless more than 80 % of forests  
145 are publicly owned (Agrawal (2007) and large tracts of pasturelands are under common property  
146 arrangements. Here I will focus at a rather recent development of great significance recognized as  
147 ‘large land deals’ or ‘land grabbing’ implying acquisition in the form of purchase or long term  
148 lease of large areas of land in low income countries – typically by foreign investors (Cotula 2012;  
149 White et al. 2012). This development seems to have peaked after the steep increase in food prices  
150 in 2007-08. According to Anseeuw et al. (2012), about 200 million hectares were traded between  
151 2001 and 2010. This is over eight times the size of UK. About 2/3 of the deals were in Africa,  
152 while there are agreements of this kind made on all continents except North America and Western  
153 Europe. Agribusiness and financial investors as well as foreign states are key actors. Hence, many  
154 of the deals are not examples of privatization, rather trade between states. Some buyers are coming  
155 from the North, but actors from countries like China, India, Saudi Arabia and Qatar are important  
156 (Deininger and Byerlee 2011; Anseeuw et al. 2012; Cotula 2012). Opportunity for profit making  
157 and international food security issues explain the trend. Some investments are purely ‘speculative’,  
158 expecting future gains from increased land prices linked to prospects regarding biofuel, carbon  
159 projects and the like.

160 Deininger and Byerlee (2011) emphasize that this form of land deals has the capacity to  
161 reduce poverty by increasing rural activities. While having some merit, this argument is questioned  
162 by several authors, emphasizing not least the dispossession of local communities and the low  
163 compensations they receive, if any, when land is transferred (e.g., Li 2011; De Schutter 2012;  
164 Fairhead et al. 2012). The land deals are often made in cases where there are competing rights’

165 claims. States formally own the land in the sense of being a ‘custodian of the people’, while com-  
166 munities have ‘use rights’, typically held in common and based on traditional authority. So, the  
167 shift in property rights – including leasing – may as well be one from common property to private  
168 or in some cases even (foreign) state property. Li (2011) emphasizes that states often underbid to  
169 attract foreign capital. Conditions regarding local compensation are often not met (ibid. Anseeuw  
170 et al. 2012). While income from exports increases due to the transfer of rights – which may be  
171 important for the state – authors like De Schutter (2011), Li (2011) and White et al. (2012) argue  
172 that if the aim is reduced poverty and increase food safety, strengthening the rights of the local  
173 poor – individually or collectively – would be better.

174 As already indicated, ‘privatization’ turns out to not be a simple and homogeneous trend.  
175 Another example of land transfers – albeit much smaller in scope – illustrates the complexities  
176 further. It regards the expansion of land trusts. It is included here to illustrate that privatization of  
177 land may involve quite different motivations from those dominating ‘large land deals’. Land trusts  
178 are non-profit private organizations working for conservation of land and depending on donations  
179 and grants. As conservation agents, they have a history back to the late 19<sup>th</sup> century, while we  
180 observe a substantial increase in activities since the 1990s. Land trusts are typically a Northern  
181 phenomenon – found especially in the UK, US and Canada.

182 Land trusts focus at conservation and ensuring land for public access. Hodge and Adams  
183 (2012) discuss the situation in the UK with reference to the debate on neo-liberalization and  
184 privatization. Land for land trusts is mainly acquired from other private owners. Hence, to the  
185 extent one can talk of privatization, it regards the conservation responsibilities. The public may  
186 still be involved through partnerships. The state may moreover help land trusts by e.g., giving  
187 priority to collective buying of land as recently included in the Scottish Land Reform Act. Hodge



188 and Adams note that “The policy represents a direct state intervention to push back the operation  
189 of the private land market and override the interests of individual owners in order to promote  
190 collective action in support of public policy objectives” (ibid.:476). Hence, “Neo-liberalization is  
191 too broad a category to offer an adequate basis for the analysis of rural land conservation policies”  
192 (p.480).

193 Logan and Werkerle (2008) observe a similar trend in Canada, but see it much more as neo-  
194 liberalism in action where the state facilitates creating expansion opportunities for private profit  
195 making. It is true that the development follows a strong reduction in expenditures on conservation  
196 by relevant ministries. This seems to be an effect of neo-liberal ideology. Land trusts ‘fill (some  
197 of) the gap’ left – while they still receive public funding, and landowners that make contracts with  
198 land trusts for conservation are supported by tax incentives. While a ‘pull-back’ of the state, this  
199 actor plays at the same time a key role in facilitating the operation of land trusts. Most notably, it  
200 is hard to see this kind of ‘privatization’ as pushing the frontiers for profit making.

201

## 202 **4.2 Water services**

203 Water services include domestic water delivery, wastewater treatment, irrigation, as well as  
204 ‘services’ for ecosystems. I will here focus on the former. Privatization of domestic water services  
205 comes in different forms. There are systems where infrastructure and management responsibilities  
206 are transferred from a public body to a private company, and there are systems where infrastructure  
207 is still publicly owned while a private company is responsible for (some of) the operative parts.  
208 So, what is owned and what is under operation contracts varies.

209 The system with private ownership to water infrastructure is called the UK system and refers  
210 to the way public water agencies for England and Wales were transferred to private companies by

211 the Thatcher government. The system with operation contracts dominates, however, globally and  
212 includes various forms of public-private partnerships – see Bakker (2010), Jacobs and Howe  
213 (2005), McDonalds and Ruiters (2005), de Gouvello and Scott (2012). Shift in ownership of water  
214 itself is usually not part of the privatization of domestic water services.<sup>1</sup> This illustrates some of  
215 the challenges involved when privatizing water services. Water covers a basic need for humans as  
216 well as other species. Hence, there is the argument that access should be ensured for all, and if  
217 taken seriously, it reduces opportunities for trade (Bakker 2007).

218 Privatization of domestic water services is not new. Morgan (2005) shows, as an example,  
219 how the US and UK involved the private sector extensively in the 19<sup>th</sup> century, while turning to  
220 public solutions for most of the 20<sup>th</sup>. What is special about the recent privatization is the role of  
221 transnational firms. The sector is quite monopolized with RWE-Thames, Suez and Vivendi as  
222 dominant actors (Jacobs and Howe 2005, Morgan 2005). According to Morgan (2005), these firms  
223 were responsible for about 15 % of the world’s water supply at the time.

224 Water privatization is justified by expected increased efficiency and by fiscal arguments –  
225 see e.g., Dore et al. (2004), Araral (2009). Have these ‘promises’ been fulfilled? The literature  
226 shows that performance is very context-dependent. The overall picture is, however, that cost of  
227 delivery does not differ systematically between private and public domestic water services. This  
228 is the conclusion of four meta-studies analyzing the effect of water privatization – Dore et al.  
229 (2004), Bel and Warner (2008), Araral (2009), de Gouvello and Scott (2012) – and according to  
230 Araral (2009) this is the consensus view. I note that the costs of public regulation are not included  
231 in these assessments. While public water bodies also need to be controlled, this cost is expected to

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<sup>1</sup> The conflict in Cochabamba over payments for collecting rainwater is a much commented case to the contrary. International Waters were contracted for water delivery and claimed the right to rainwater by including it into their paid permit system. Regarding the UK system, I note that water companies need a license from the Environment Agency to access water sources and have to pay for the water (see Environment Agency n.y.).

232 be higher under the privatization regime as they have to organize bidding and undertake contract-  
233 ing, price controls, and ensure that ‘non-economic’ uses are taken care of – including water to  
234 ecosystems (Swyngedouw 2005).

235 Generally, it is only the bidding that is competitive – and less so due to monopolization in  
236 the sector. Delivery is a natural monopoly and the potential positive effect of competition is  
237 weakened. In the end, it is still the public that is responsible for delivery and acceptable prices –  
238 e.g., the UK price regulation from 1999 (Dore et al. 2004). Bel and Warner (2008) emphasizes that  
239 due to asset specificity – for example, the quality of infrastructures – there is also substantial  
240 information asymmetry that results in high rates of renegotiation of contracts.

241 Regarding the issue of fiscal balance, Hall and Lobina (2006) show that privatization has not  
242 relieved the public of the burden of investments where the problem is largest – in developing  
243 countries. Water companies have concentrated their efforts more in medium to high-income  
244 countries where the possibilities for earning money is greatest. The problem of generating  
245 resources for investments in domestic water services the South therefore largely prevails. While  
246 there has been substantial levels of protest against privatization due to price increases and people  
247 being cut off if unable to pay – e.g., McDonalds and Ruiters (2005), Bakker (2007, 2010) –  
248 dysfunctionalities of the public system typically continues. This is so not least because of lack of  
249 finances. Sometimes payments for water services are even used to support other sectors of an  
250 underfinanced state – see e.g., Hellum et al. (2015).

251

## 252 **5. Creating markets in environmental governance**

253 While there has been reference to trade above, the issue of establishing markets in environmental  
254 governance warrants more in-depth treatment. According to Coase (1960), if transaction costs are

255 zero/low and rights clearly defined, it would be better to rely on markets than state regulation.  
256 While many saw Coase's paper as a theoretical exercise, it has become part of neo-liberal practice.  
257 To illustrate key variations across the field, I will briefly cover four areas – the creation of markets  
258 for individual fishing quotas, the establishment of payments for ecosystem services, carbon  
259 markets and finally biodiversity offsets.

260

### 261 **5.1 Tradable fish quotas**

262 Establishing markets for an environmental resource, demands also establishment of rights to the  
263 resource. This is well illustrated by the topic of tradable fish quotas. The first step is to define total  
264 allowable catches (TACs) – an important strategy in regulating harvests in fisheries. States create  
265 property rights in these catches by splitting up TACs into individual quotas (IQs). Some countries  
266 have next made these tradable (ITQs). Fish may travel large distances and transgress national  
267 borders. International agreements have therefore been key in the development of TAC/I(T)Q  
268 systems (e.g., Stokke 2012). According to Arnason (2012), harvests under ITQs cover up to 25  
269 percent of global marine harvests.

270 Economists largely support ITQs on the grounds that it reduces per unit costs of catches  
271 (e.g., Grafton 1996; Hannesson 2004; Arnason 2012) compared to non-tradable IQs – a claim that  
272 is empirically supported. Including transaction costs into the equation seems not to change that  
273 conclusion. In 2008, eighteen countries use ITQs “to manage several hundred stocks of at least  
274 249 species” (Chu 2009:217). According to Diekert et al. (2010), only two of these stocks are in  
275 South America and Africa. Hence, ITQs may fit best for the simpler ecosystems of the North  
276 (Degnbol et al 2006; Ban et al. 2009). Chu (2009) has studied 20 marine fisheries with ITQs.  
277 Biomass has on average increased. She notes that the decline in six stocks may follow from too

278 high TACs, low harvest compliance, and natural causes. She notes that ITQ programs may have  
279 little effect in the case of highly migratory species. The political games around the setting of TACs  
280 are also important to notice, while these are not an effect of the trading.

281 IQs are typically grandfathered. Hence, the resource rent goes to those individuals/firms  
282 getting the right to fish. It has been argued that the rent of a ‘common resource’ should go to  
283 communities or the state and not individuals (Weitzman 2002; Bromley 2009). Auctioning quotas  
284 is one way of ensuring this. Offering quotas to fishing communities is another.

285 There is also debate about the reasonableness of trading. ITQs have become concentrated on  
286 rather few hands including absentee owners and fishing communities lose out (Pálsson and  
287 Helgason 1997; Stewart and Callagher 2011). Offering quotas to these communities would guard  
288 against this, but imply limitations on trading, illustrating the conflict between emphasizing reduced  
289 per unit costs (of catching fish) and protecting resource dependent communities.

290 In the 1980s and 90s, ITQs had a kind of panacea status especially among many economists  
291 (Davis 1996). Over time, there is increased notice that a single instrument may not work. While  
292 there are still disagreements – e.g., Pinkerton and Edwards (2009), Turrís (2010) – few argue that  
293 one solution fits all anymore. There is also the issue of ocean ecosystem preservation. The political  
294 battle regarding what role ITQs should play in this wider context is not settled.

295

## 296 **5.2 Payments for ecosystem services (PES)**

297 PES is seen as the archetype of a market in environmental governance – e.g., Wunder (2005). In  
298 this case ownership to the ecosystem services is, without exceptions, assumed to be with the owner  
299 of the resource producing the service. It is ‘provider gets’ based. This is the case whether the  
300 service comes in the form of additions to a naturally ‘produced’ good – e.g., cultural landscapes –

301 or as a reproduction of a service whose quality has been diminished by the resource owner in the  
302 first place – e.g., land use changes resulting in loss of ecosystem services. While the latter seems  
303 against the ‘polluter pays principle’, it may seem a necessary rights structure simply because the  
304 idea of PES is a voluntary payment and not a liability or tax-based system. Payments are typically  
305 not for a concrete service, but for some kind of a ‘proxy’ like certain land management practices.  
306 These are simpler to measure than the service itself.

307 PES in the form of direct trades between buyers and sellers seem rare. A well-known case  
308 concerns Vittel, which has made contracts with farmers to reduce nitrate inflow to water bodies it  
309 exploits (Perrot-Maître 2006). Most PES projects involve intermediaries. These may be firms/trade-  
310 ders, NGOs, but also public bodies at various levels as well as intergovernmental organizations.  
311 Finally, some intermediaries are public-private partnerships like conservation trust funds (Spergel  
312 and Wells 2009).

313 Surprisingly, while presented as markets, PES are typically not based on trade. According to  
314 Milder et al. (2010), PES projects amounted to about 23.5 billion USD in 2009. The money went  
315 largely to protection of water services, biodiversity and landscape beauty/recreation purposes.  
316 Calculations made on the basis of their data show that about 90 percent of the money for PES was  
317 created through taxes and fees – by command not trade. Removing payments for private goods –  
318 e.g., fishing and hunting rights – this figure is 99 percent (Vatn 2015b). This implies moreover that  
319 voluntariness cannot generally explain why PES is based on ‘provider gets’.

320 While the resources are mainly public, the state may next trade with the providers or ‘sellers’.  
321 There are some examples of such trades like The US Conservation Reserve Program and the  
322 Australian BushTender system use auctioning/competitive bidding. Systems of this kind seem not  
323 to be much observed outside some OECD countries. Porras et al. (2008) note that auctions are not

324 used in any of the PES projects they have studied – all in developing countries. Agri-environmental  
325 schemes – e.g., those of the EU – include some contract-based systems that could be categorized  
326 as trade. Rousseau and Moons (2008) nevertheless term most as rather broad based subsidies –  
327 illustrating the challenges faced with defining the specificities of transacted services.

328       Why is PES not much based on trade? We have already emphasized that ecosystem services  
329 are difficult to demarcate. Implicit in that is a free-rider problem, with motivations obstructing  
330 private payments. Some firms pay PES projects as part of their CSR programs. Some individuals  
331 support NGOs active in the field for philanthropic or moral reasons. Nevertheless, sums are  
332 marginal. Moreover, we also have the issue of transaction costs. Defining what to trade is very  
333 demanding and there are typically a high number of beneficiaries. Public bodies as ‘intermediaries’  
334 have the power to both avoid the free-rider problem and reduce transaction costs by using the force  
335 of command. In case of water projects, public water agencies typically make an addition to the  
336 standard water bill to raise the necessary revenues for protection activities. This way transaction  
337 costs may be reduced substantially compared to setting up and managing markets.

338

### 339 **5.3 Carbon markets**

340 Moving to carbon markets, we note again that the establishment of a publicly defined right to trade  
341 – now in carbon emissions – forms the basis. A cap on emissions was established in 1997 through  
342 the Kyoto protocol defining emission reduction liabilities for developed countries and countries in  
343 transition (Annex-1 countries) that could be traded between these countries or alternatively with  
344 non-Annex I countries through the clean development mechanism (CDM).

345       The choice of cap-and-trade as opposed to taxes on fossil fuels may (partly) be explained by  
346 the opportunity to grandfather quotas, implying that costs are reduced for industry. This way the

347 industry got a right to emit for free up to the defined limit. An important element in this is the  
348 concern for competitiveness as not all countries got reduction responsibilities according to the  
349 Kyoto protocol – e.g., the US did not ratify it and countries like China had no commitments.

350 There are actually several carbon markets, of which the EU emission-trading scheme is the  
351 largest. According to the World Bank (2012), the total value of carbon markets in 2011 was  
352 176,020 million USD. Of this, the EU scheme accounted for almost 85 percent – 147,848 million  
353 USD. The next largest volume was the CDM market – 25,323 million USD. It should be mentioned  
354 that the total value also includes 569 million USD from what is termed the voluntary market – i.e.,  
355 a fraction that, while small, is outside the cap-and-trade system.

356 Like in the TAC system in fishing, it is the size of the cap that defines the protection level  
357 of the environmental resource. Moreover, the regulation in this case is to large an extent linked to  
358 an already existing commodity – fossil fuels – which makes market operations much simpler than  
359 in a case such as PES. Nevertheless, intermediaries play a significant role, reducing as well as  
360 living off transaction costs. There are several technical issues involved to render trade possible,  
361 which shows up in challenges appearing when trying to link markets (e.g., Perdan and Azapagic  
362 2011). Regarding CDM, the challenges are greater as payments typically relate to land use changes  
363 and renewable energy with demanding measurement and control problems.

364 While the cap defines the protection of the environment, trading helps reduce costs of  
365 abiding by the cap. Such cost reductions have been empirically verified. However, issues like thin  
366 markets and over-allocation of emission allowances have created some notable efficiency  
367 problems (Montagnoli and de Vries 2010). Costs may, however, also be reduced by failing to  
368 deliver what is assumed to be traded. Both in case of the EU emission trading scheme and the  
369 CDM, several instances of fraud have been reported – see for example Schneider (2007), Sovacool



370 and Brown (2009); World Bank (2010). There is a motivational reason for this. Cap-based markets  
371 differ from traditional commodity markets. Those being parties to the trade have no direct interest  
372 in the quality of what is traded or whether the amounts traded are in accordance with the contract.  
373 That interest is with the regulator – the state – as representing its citizens. While involving more  
374 countries, the climate agreement made in Paris late 2015 is built on so-called intended nationally  
375 determined contributions. Moving from a liability to a voluntary system, the future form and role  
376 of cap-and-trade systems is somewhat unclear (e.g., Hawkins 2016).

377

#### 378 **5.4 Biodiversity offsets**

379 Biodiversity offsets are investments in compensation measures for loss of biodiversity due to  
380 ‘development’ of land. Some systems are clearly non-market, like the German compensation  
381 pools, which are integrated into municipal planning of land use and rely on command. The  
382 compensation scheme linked to the EU Natura 2000 is similarly a purely regulative measure  
383 (Conway et al. 2013). Concerning systems where trade is involved, there are examples of voluntary  
384 deals in the meaning that firms or individuals are willing to pay independent of a cap or regulation  
385 (UNEP 2012). Nevertheless, as with carbon trades, liability based systems dominate. A defined  
386 conservation objective forms the basis and the right to develop is offered only if the end delivery  
387 of e.g., biodiversity or landscape amenities is fulfilling that objective.

388       Offsetting is a way to ensure this. It is part of a hierarchy where avoidance, prevention and  
389 mitigation on-site are defined as first steps. Losses that cannot be avoided on-site can be offset by  
390 off-site protection (BBOP 2009). US and Australia have been pioneers of biodiversity offsets –  
391 e.g., the Compensatory Mitigation in the US and BioBanking in New South Wales, Australia

392 (Madsen et al. 2010). We find such programs also in Canada, in Brazil and in Europe (EFTEC et  
393 al. 2010; Santos et al. 2015). There are finally a few examples in developing countries.

394 According to Madsen et al. (2010), about 85 percent of the traded volumes are found in  
395 North America. Trade based biodiversity offsets dominantly take the form of markets with private  
396 companies as intermediaries. It is argued that biodiversity offsets may make higher levels of  
397 biodiversity protection possible as the costs for protection are reduced. At the same time, it may  
398 legitimize a lowered ‘fence’ against ‘land development’.

399 Again, public bodies play a core role as regulators. As noted above, these tasks are much  
400 more demanding here than in the case of carbon markets linked to fossil fuels. This may partly  
401 explain the rather limited, while increasing, use of biodiversity offsets. I especially note that  
402 defining baselines and specifying ‘like-for-like’ is demanding – in a strict sense impossible. The  
403 solution to this challenge is a form of standardization using a criteria-based scoring system. The  
404 regulator moreover needs to follow developments over time both on- and off-site. The costs of  
405 controlling might be high. Lack of capacity of public authorities to facilitate and control may  
406 explain why we see rather few biodiversity offset programs in developing countries.

407 Offsets have become highly controversial – see, for example, Spash (2011) and Sullivan  
408 (2013). One issue relates to ecological substitutability, another to locality and ‘sense of place’ –  
409 i.e., the aspects of living ‘in’ and ‘with’ nature – which may render substitution impossible.  
410 Moreover, not all offset programs follow the BBOP (2009) standards. Again, we encounter  
411 problems following from the incentive structures. The interest of the trading parties is in the  
412 credits. The services are important for the public who are not a party. Hence, the literature docu-  
413 ments that a rather low fraction of projects has fulfilled the criteria set – see e.g., Gibbons and  
414 Lindenmayer (2007), Benayas et al. (2009), Briggs et al. (2009), Suding (2011). A specific

415 problem relates to the observation that fewer measures are taken on-site than expected. Offsetting  
416 is cheaper, and we observe an ‘erosion’ of the mitigation hierarchy.

417

## 418 **6. Private rule making**

419 In the above cases of markets in environmental governance, we have observed that the state plays  
420 a dominant role either as ‘buyer’ of ecosystem services or as creating tradable rights and control-  
421 ling the trades. What about the opportunity for the business sector to control itself – to develop  
422 private rules to ensure more environmentally friendly production processes? In pursuing that  
423 question, I will look at two initiatives – that of certification and corporate social responsibility.

424

### 425 **6.1 Certification**

426 Certification is a way for private businesses to signal to consumers that their products and/or the  
427 production processes used hold certain standards regarding environmental, health or social aspects.  
428 It does not imply any changes in property rights, while the idea is that the right to use a label that  
429 signals e.g., ‘eco-friendliness’ is only offered if defined standards are met. Certification may be  
430 understood as a response to globalization and the following weakened power of states regarding  
431 control of economic activity. Problems regarding the establishment and strengthening of interna-  
432 tional environmental treaties also play a role. While we observe that businesses develop certifica-  
433 tion systems themselves, the key actors are environmental NGOs. They have pressurized firms as  
434 well as established certification systems themselves to enhance more sustainable production. Such  
435 schemes exist for a variety of products not least within the food, forests and fisheries sectors (see  
436 Bernstein and Cashore 2004; Bernstein and Cashore 2007; Forest Trends and Ecosystem Market-  
437 place 2008; Marine Stewardship Council 2013).

438           These developments started in the early 1990s, and I will use the forestry sector to illustrate  
439 key issues involved regarding the characteristics of private rule making in the environmental area.  
440 The oldest forest certification system is that of the Forestry Stewardship Council (FSC) –  
441 established in 1993. The World Wide Fund for Nature (WWF) was the main initiator, while other  
442 NGOs like Greenpeace and Friends of the Earth were engaged together with trade unions, retailers  
443 and representatives of indigenous groups (Pattberg 2005). According to Bernstein and Cashore  
444 (2004), the immediate background for the FSC scheme was the failure of the Rio Summit of 1992  
445 to develop a treaty regarding forests. FSC tried to ‘fill the gap’ through a voluntary measure.

446           Following FSC, several industry dominated certification systems for forest production  
447 appeared – e.g., the Sustainable Forest Initiative (FSI) and the Pan-European Forest Certification  
448 (PEFC) in the US and Europe respectively. These were less strict in environmental terms than FSC  
449 (Gulbrandsen 2004). Bernstein and Cashore (2004) offer data from 2003 showing that FSC  
450 certified forests amounted at the time to about 25 % of certified forests. FSI and PEFC covered  
451 together over 50 %. As Gulbrandsen (ibid.:94-95) explains, “The lack of ownership felt by many  
452 forest owners to the FSC and the cost of complying with its stringent standards go a long way to  
453 explain the on-going proliferation of industry-dominated programs”. He notes that most ‘environ-  
454 mentally concerned’ professional purchasers “only require certified suppliers, not a particular  
455 label” (p. 93). He moreover emphasizes that in case of forest products, consumers’ willingness to  
456 pay a premium is fairly small. Certification is rather a “response to the activism and pressures  
457 exerted by environmental organizations, and may be seen as a precautionary strategy to avoid  
458 conflicts with NGOs, bad publicity and consumer boycotts” (ibid.).

459           There seems to be greater consumer engagement in the food sector, while here also the issue  
460 of food quality and individual health is important. Actually, the amount of certified food and forest

461 products sold is rather low. Forest Trends and Ecosystem Marketplace (2008) estimate the market  
462 for certified agricultural products to represent about 2.5 % of the global food market. While this  
463 figure is steadily growing, it also includes ‘fair trade’ products. Hence, we cannot from their  
464 estimate specify the amount of payments for ‘eco-friendliness’. Certification is relatively more  
465 important in the forest sector. While in the case of food products, certification is important also in  
466 the South, North dominates heavily regarding forests (Nathaniel and Jenkins 2012). Certification  
467 is relevant only for traded products, which simplifies somewhat the regulation process compared  
468 to e.g., that of biodiversity offsets. Control is still demanding. There are substantial discussions  
469 about the quality of various labels and whether they are abided by.

470

## 471 **6.2 Corporate social responsibility**

472 Corporate social responsibility (CSR) is also based on private rule making, hence, it is voluntary.  
473 In this case, the concept emanated within industry itself. It has a history going back to the 1930s  
474 following the reduced legitimacy of business due to the economic crisis. What is new from the  
475 1980s is the inclusion of environmental responsibility – typically illustrated by the focus on the  
476 triple bottom line.

477 Research shows that acting more sustainably may not jeopardise profits. Hence, there is  
478 room for progress among profit-oriented business – as emphasized by Orlitzky et al. (2003).  
479 Corporations need to think about the wider set of stakeholders than owners do (Porter and Kramer  
480 2006). However, a rather voluminous literature emphasizing serious limitations of CSR has  
481 appeared – see for example, Utting (2008), Jørgensen and Pedersen (2011), Lyon and Maxwell  
482 (2011), Sjøfjell (2011) and Sneirson (2011). Shareholder interests dominate corporate governance,

483 and CSR is more often found to be strategically motivated. A report by McKinsey (2009) docu-  
484 ments that key corporate representatives agree that maintaining good corporate reputation and  
485 strong brands are the most important aspects of CSR.

486 While a business initiative, some NGOs engage in CSR by collaborating with corporations.  
487 WWF is a key example (Lyon 2010). Poret (2014) discusses various implications of this strategy.  
488 It may have positive effects especially in the sense of bridging various information asymmetries  
489 in CSR. The NGO can help consumers become better informed about what a company does. It  
490 may also expand firms' understanding of what is happening among customers. By better  
491 information flows as well as the potential for exposing firms, NGOs may influence corporate  
492 action directly. This is an important motivation for them. However, they also gain financially from  
493 collaborating. While they 'sell legitimacy' to corporations, they therefore run the risk of co-  
494 optation. Poret (ibid.) emphasizes that the increased number of NGOs, with the following  
495 amplified competition for funding, has made partnerships with business increasingly interesting  
496 for them.

497

## 498 **7. Discussion and conclusion**

499 The aim of this paper has been to analyze the expanded role of privatization and markets in  
500 environmental governance. Privatization, as a trend, covers a wide range of areas. Here we have  
501 focused of resources like land, domestic water services and fish. Markets play an increased role in  
502 fields like domestic water supply, fishing and carbon emissions, as well as biodiversity offsets.  
503 Private rule making is observed in the form of certification and CSR

504 Beyond looking at changes in rights structures, I have emphasized implications for actors'  
505 motivations and transaction costs as well as implications for efficiency. In doing so, I have

506 emphasized challenges that complex natural resource systems create for commodification of the  
507 involved values and implications for the role of the state.

508         The paper reveals quite a compounded picture, with no simple trend from ‘state to private’.  
509 Certainly, privatization is important in fields like large land deals and domestic water services –  
510 driven by search for expanded profit opportunities among private/corporate interests. Neverthe-  
511 less, this is only part of the picture. In case of large land deals, issues regarding food security have  
512 also been important, implying that rights are in some cases acquired by foreign states. The  
513 expansion of land trusts illustrates that changes in ownership may be from one private owner to  
514 another, shifting the motivation from profit making to private engagement in environmental  
515 protection. Regarding domestic water services, it is typically only (parts of) the delivery that is  
516 privatized, e.g., not the resource itself.

517         Regarding markets for environmental services, we observed a rather clear picture. Markets  
518 between private actors are largely based on state defined liabilities. This is the case in fisheries  
519 (TACs and IQs), in carbon markets, as well as in market based biodiversity offsets. In a case like  
520 payments for ecosystem services – i.e., where market trading is voluntary – the amount of private  
521 deals is very low. Rather, most PES systems are based on state/public taxes and fees. What has  
522 been portrayed as the archetype of markets in the realm of the environment, is actually based on  
523 state power to tax and pay subsidies. Moreover, where there are markets for ecosystem services,  
524 public authorities dominate as buyers through e.g., auctions.

525         A key reason for this is the complexity of environmental resources and their services. They  
526 are demanding to demarcate/commodify and changes in their status have implications for many  
527 actors. State command – e.g., using taxes or subsidies – reduces transaction costs substantially  
528 compared to trading. It is also notable that in cases where privatization has been undertaken and

529 markets between private actors have been functioning – like in cases of domestic water services,  
530 carbon markets and biodiversity offsets – the state has a key role, not only in defining liabilities,  
531 but also in setting up the markets, organize bidding where relevant and controlling the systems.

532         There are also motivational issues involved – playing out as a conflict between the common  
533 and the private (as profit) interest. This seems to be an important element in the explanation for  
534 why voluntary PES systems, but also certification and CSR, are rather marginal phenomena.  
535 Regarding PES, the free-riding problem is pervasive. In case of certification, its effectiveness  
536 seems to demand strong pressure from NGOs and CSR seems to attract business interest mainly  
537 as a way to build income opportunities through reputation. Finally, in systems like carbon markets  
538 and biodiversity offsets – where those trading have no direct interest in the service traded – we see  
539 that the profit interest may result in ‘erosion’ of liabilities and even fraud. Certainly, public  
540 authorities also face challenges regarding control of its activities. Nevertheless, its basic logic is  
541 different from e.g., that of firms.

542         What are implications of privatization and market governance for efficiency? Efficiency  
543 refers to a goal. Hence, the conclusion depends on the set of aspects emphasized. In case of large  
544 land deals, privatization has increased production especially for export. The profitability of this  
545 activity is, however, partly explained by the fact that land has been traded at very low prices.  
546 Somewhat surprisingly, we have observed that in case of domestic water services, costs seem not  
547 to have been reduced as an effect of privatization. Instead, including transaction costs, the  
548 conclusion may be opposite. In case of tradable fish quotas and carbon markets costs seem lower  
549 compared to systems where quotas are non-tradable, even when including transaction costs.

550         The above reasoning offers a rather limited account of efficiency, though. In most cases  
551 reviewed in this paper, there are broader issues involved than the costs of producing and trading a



552 defined commodity. Important conflicts are revealed regarding community vs. private interests.  
553 This was a key issue in the case of ITQs as well as for large land deals and domestic water services.  
554 Privatization influences which interests get priority – e.g., that of affluent or poor people, that of  
555 individuals/firms or that of communities. In the case of biodiversity offsets, there has been an issue  
556 in how to define ‘like-for-like’, again with implications for what values get protection. In economic  
557 analyses one tries to draw a line between ‘efficiency’ and ‘distribution’. Here we observe that this  
558 distinction vanishes when realizing that the definition of the good or service itself depends  
559 (implicitly) on the distribution of rights and what aspects then get to be considered.

560         Through the analyses, a clear distinction between the global South and North appeared. The  
561 global South is the weaker party and faces the kind of privatizations and marketizations that thrive  
562 on weak institutions, lack of capital and the fact that people are poor. The large land deals observed  
563 have come about mainly where local rights to land are weakly defined and prices are low. The  
564 attempt to expand privatized water in these regions has often failed due weak ability to pay. ITQs  
565 and biodiversity offsets are institutionally demanding and less observed in the South.

566         Privatization and market governances have a neo-liberal underpinning, and in some cases,  
567 the trend can best be seen as a way to create new frontiers for capital accumulation. The data  
568 shows, however, that this perspective captures only a part of what is happening. The state continues  
569 to play a key, albeit somewhat different role where markets are expanding. Beyond establishing  
570 and guaranteeing rights, the state has become heavily engaged in controlling private deals in the  
571 fields studied here. Moreover, parallel to the expansion of markets, the state continues to  
572 use/expand its regulatory force in areas like pesticide use and water quality. Furthermore, the paper  
573 illustrates that making money out of a degrading environment is not easy. Hence, collective  
574 decision-making and responsibility is still necessary to make progress. Certainly, the observed

575 trends imply important shifts in perspective. Market trade has become increasingly prominent as  
576 ‘the ideal’ governance structure. The state has become more and more engaged in creating the  
577 basis for this ideal to materialize. At the same time, states more and more end up as controlling  
578 agencies, having to also pick up issues that are too ‘wicked’ for markets and private actors to  
579 handle. While collective agents like the state are crucial for ensuring sustainability, we risk this  
580 way that its long-term legitimacy and therefore political capacity is weakened.

581

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