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Towards a Conceptual Framework for The Study of Shifts in Modes of Environmental Governance – Experiences From The Netherlands

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ABSTRACT

In the last decade, many authors have observed shifts from government to governance in the environmental policy domain. However, a clear conceptual framework to differentiate between modes of environmental governance is lacking and our understanding of when, how and why environmental governance changes from one mode to another is limited. In this paper we propose such a framework and we illustrate its usefulness by applying it to two environmental policy sectors in the Netherlands: urban environmental policy and policy regarding sustainable production and consumption. We show how the application of our framework leads to detailed, replicable and comparable claims about character and intensity of shifts in environmental governance. From this analysis, we conclude that character and intensity of shifts in environmental governance vary significantly. Furthermore, we show that modes of governance build on rather than completely replace one another. Finally, we point to a number of possible explanations for shifts in environmental governance, recognized in literature and in practice. We conclude with some suggestions for further research. Copyright © 2012 John Wiley & Sons, Ltd and ERP Environment.

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Introduction

ACCORDING TO SCHARPF, '(I)T IS UNLIKELY [...] THAT PUBLIC POLICY OF ANY SIGNIFICANCE COULD RESULT FROM THE choice process of any single unified actor' (1978, p. 347). Policy is formulated and implemented in dynamic contexts where multiple actors interact at multiple levels. At any given time, we can observe certain *actor configurations* in which issues are framed according to certain principles, following certain routines (see, e.g., O'Toole and Montjoy, 1984; Kickert *et al.*, 1997). Interactions between the actors respond to particular *institutional features* (see, e.g., North, 1990; Ostrom, 2005). In general, the arrangement is recognizable in terms

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of *content* – i.e. it has distinct goals and a set of preferred policy instruments (see, e.g., Richards, 2000; Glasbergen, 1992). This ensemble of actors, institutions and content is generally referred to as *governance*.

In this paper we particularly focus on *environmental governance*, i.e. all kinds of measure deliberately taken to prevent, reduce and/or mitigate harmful effects on the environment. Several scholars point to the existence of different modes of environmental governance, such as hierarchical governance, interactive governance or self-governance. Although much has been said about the conceptual and empirical appraisal of separate modes of governance (see, e.g., Bartley *et al.*, 2008; Lowndes and Skelcher, 1998), our understanding of when, how and why environmental governance changes from one mode to another is significantly more limited. Although there is some literature on the characteristics of (new) modes of (environmental) governance (e.g. Bäckstrand *et al.*, 2010; Van Zeijl-Rozema *et al.*, 2008), a clear conceptual framework to differentiate between modes of governance is lacking. Hysing's framework (2009) – based on the distinction between instruments, relations and levels on the one hand, and a spectrum ranging from government control to societal autonomy, on the other – is relevant, but not sufficiently specific for our purpose. The modes of governance he distinguishes are a simplification and do not allow for an analysis of hybrid forms of governance. In addition, it leaves out interesting aspects such as the power base of relevant actors and the role of knowledge development and knowledge exchange. The aim of this paper is to provide a clear and more specific conceptualization of modes of environmental governance that can be used as a framework of analysis for shifts in environmental governance.

First, we shall start with a short overview of the debate on shifts in (environmental) governance. We then propose a framework for the measurement of variation in modes of governance. The potential use of this framework is illustrated by applying it to two policy sectors in the Netherlands – a country that began taking on environmental challenges in an innovative and interactive way long before the term 'governance' was coined in the academic literature (Keijzers, 2000). We look at urban environmental policy and policy regarding sustainable production and consumption. The analysis of both policy sectors is based on existing literature and previously published research results. We will then briefly discuss possible drivers of and barriers to shifts in modes of governance in our cases – a discussion that we shall embed in the existing literature on policy change. In the final section we present suggestions for further research.

The Debate on Shifts in (Environmental) Governance

Environmental governance seems to be the answer to the growing concern about degrading environmental quality, depletion of resources, biodiversity loss and climate change. According to Lemos and Agrawal (2006), environmental governance 'is synonymous with interventions aiming at changes in environment-related incentives, knowledge, institutions, decision making, and behaviors' (p. 298). The concept refers to the means by which society determines and acts on goals related to the management of the environment. It includes instruments, rules and processes that lead to decisions and implementation. For many, the increasingly collaborative nature of policy formulation and implementation denotes a defining character of the concept (e.g. Durant *et al.*, 2004).

The debate on shifts in environmental governance is part of a broader debate that started in the late 1970s (see, for instance, Hanf and Scharpf, 1978; Ostrom, 1990; Marin and Mayntz, 1991; Rhodes, 1997; Stoker, 1998; Pierre, 2000; Driessen and Glasbergen, 2002; Kooiman, 2003; Kjaer, 2004; Van Kersbergen and Van Waarden, 2004). From this debate, governance emerges as a concept that acknowledges that the public sector is not the only controlling actor when it comes to the solution of societal problems. Instead, more attention is given to interaction between actors pertaining to the state, the market and civil society. Stakeholder involvement is one of the main characteristics of this shift. For example, we find government authorities at different levels cooperating with private parties – both from civil society and from the market – with direct interests in the issues at stake (Glasbergen, 1998). We also observe environmental issues being tackled through the self-regulating capacity of private parties (Glasbergen and Groenenberg, 2001; Vermeulen *et al.*, 2010). Non-government parties are assigned or claim a more prominent or even protagonist role in the policy arena.

The concept of environmental governance has been refined to reflect the increasing complexity of social structures in which it is embedded (Bressers and Rosenbaum, 2003). The term 'multi-level governance' refers to the mutual dependency between the various tiers of government. It also alludes to the need for coordination and to

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the various levels of aggregation at which non-governmental bodies involved in governance operate. Another modifier of 'governance' is 'multi-actor'. Different public and private actors may have a stake in an issue – i.e. they are affected by the allocation of costs and benefits associated with either the problem or its solutions. The success of resolving that issue may depend on their cooperation. The extent of multi-actor, multi-level governance determines variation in the perception of problems and solutions.

Weber *et al.* (2011) observed that shifts in governance are often presented as unilinear changes in a policy domain, although some authors point to 'hybrid' approaches (Héritier, 2002) or 'coexisting policy arrangements' (Van Tatenhove *et al.*, 2000; Hajer *et al.*, 2004; Arts *et al.*, 2006). Hysing (2009) and Jordan (2008) conclude that the policy discourse of 'shifts from government to governance' is to be interpreted as a storyline on shifts between two poles on a continuum. These authors agree that there is a shift towards the pole of governance; however, they also observe that government and the state often still play a significant role. This shift is thus to be regarded as a change in the role and power of the state and other actors. Moreover, the plurality and co-existence of modes of governance in the environmental policy domain is mainly the result of variety in actor constellations, the instruments and policy discourses (Van Tatenhove and Leroy, 2003).

A large number of conceptual labels have emerged to indicate and characterize new (environmental) governance arrangements, such as public–private partnerships (Glasbergen, 1998), participatory environmental management (Kapoor, 2001), interactive policy making (Driessen *et al.*, 2001), adaptive management (Folke *et al.*, 2005), transition management (Kemp *et al.*, 2007), self-regulation (Gunningham and Grabosky, 1998), reflexive governance (Voss *et al.*, 2006), earth system governance (Biermann, 2007) and environmental policy arrangements (Van Tatenhove *et al.*, 2000). These labels indicate that far more discretionary power can be allocated to the non-state actors. They also illustrate that governance should by no means be perceived as a static equilibrium. The growing number of actors involved in or affected by efforts to solve environmental issues are all to varying extents potential sources of shifts in modes of governance.

What still seems to be lacking is a framework that helps to meaningfully differentiate between various governance arrangements. In this respect the labels discussed above have contributed to confusion, rather than to order and clarity. A conceptual framework distinguishing modes of governance is essential for the measurement of variation over time – i.e. shifts in modes of environmental governance. Such a framework also facilitates attempts to study the conditions under which a shift from one mode to another is likely to take place – something that has not yet been explored in great detail.

Differentiating Between Modes of (Environmental) Governance: Towards a Conceptual Framework

Modes of Governance

Governance in essence is about solving collective action dilemmas (see Olson, 1965). It is recognized in the literature that this, in broad strokes, can be done through government regulation, privatization or self-governance arrangements (Van Laerhoven and Berge, 2011; Berge and Van Laerhoven, 2011). Therefore, we primarily design our framework according to the roles of and relations between the *state*, the *market* and *civil society*. We recognize three general spheres in the literature that could help us start building a typology of modes of environmental governance (see, e.g., Gunningham and Grabosky, 1998; Driessen and Glasbergen, 2002; Lafferty, 2004; Lemos and Agrawal, 2006; Hysing, 2009) (see Table 1 below). First, we discern governance arrangements where actors pertaining to the public domain are the main or sole protagonists. Here, we make a distinction between *centralized* and *decentralized* modes of governance. In both cases either central or regional/local governments take the lead and the market and civil society are the recipients of the government's incentives.

Second, governance arrangements can be characterized by the joint efforts of partners belonging to the public and the private domain. We label this mode of governance as *public–private governance* when cooperation is mainly between government and market actors, or *interactive governance* when the actor base is broader and governments, market actors and civil society are collaborating on equal terms. Within these modes actors from the market and civil society are granted some autonomy within predetermined boundaries, which are still set by the (central)

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		Centralized governance	Decentralized governance	Public–private governance	Interactive governance	Self-governance
Actor features	**Initiating actors**	Central gov't agencies (or supranational bodies)	Gov't at its various levels of aggregation (subsidiarity)	Central gov't agencies; private sector is granted a preconditioned role also	Multiple actors: gov't, private sector and civil society	Private sector and/or civil society
	Stakeholder position	Stakeholder autonomy determined by principal agency	High likelihood of stakeholder involvement	Autonomy of market stakeholders within predetermined boundaries	Equal roles for all network partners	Self governing entities determine the involvement of other stakeholders
	Policy level	(Supra)national state	Lower levels of gov't	Local to international level	Multiple levels	Local to international level
	Power base	Coercion; authority; legitimacy (democratic representation at the national level)	Coercion; authority; legitimacy (democratic representation at lower levels)	Competitiveness (prices); contracts and legal recourse; legitimacy (agreement on relations and procedures)	Legitimacy (agreement on roles, positions, procedures and process); trust; knowledge	Autonomy; leadership; group size; social capital; legitimacy (agreement on relations and procedures)
Institutional features	**Model of representation**	Pluralist (popular (supra)national election and lobbying)	Pluralist (popular local election and lobbying)	Corporatist (formalized public–private governing arrangements)	Partnership (participatory public–private governing arrangements	Partnership (participatory private–private governing arrangements)
	Rules of interaction	Formal rules (rule of law; fixed and clear procedures)	Formal rules (rule of law; fixed and clear procedures)	Formal and informal exchange rules	Institutions in its broadest form (formal and informal rules)	Informal rules (norms; culture); self-crafted (non-imposed) formal rules
	Mechanisms of social interaction	Top down; command and control	Sub-national governments decide autonomously about	Private actors decide autonomously about collaborations	Interactive: social learning, deliberations and negotiations	Bottom up: social learning, deliberations and negotiations

				collaborations within top-down determined boundaries	determined boundaries		
Features	**concerning**	**Goals and targets**	Uniform goals and targets	Uniform and level specific goals and targets	Uniform goals; targets actor specific	Tailor-made and integrated goals xand targets	Tailor-made goals and targets
content		**Instruments**	Legislation, permits, norms and standards	Public covenants and performance contracts	Incentive based instruments such as taxes and grants; performance contracts	Negotiated agreements; trading mechanisms; covenants; entitlements	Voluntary instruments; private contracts; entitlements; labelling and reporting
		Policy integration	Sectorial (policy sectors and levels separated)	Sectorial (policy sectors separated)	Sectorial (branches and industries separated)	Integrated (policy sectors and policy levels integrated)	Sectorial to integrated (depends on problem framing by communities of interest)
		Policy–science interface	Primacy of generic, expert knowledge	Primacy of generic expert knowledge; room for issue and time-and-place specific knowledge	Dominance of issue and time-and-place specific knowledge; expert and lay (producers and consumers)	Transdisciplinarity: expert and lay knowledge in networks; emphasis on integrated and time-and-place specific knowledge	Dominance of issue and time-and-place specific knowledge: expert and lay (citizens)

Table 1. Modes of (environmental) governance and key features
→ dominant role; ←→ equivalent role; - - - background role;
S, central state; s, decentralized state; M, market; CS, civil society.

government. Third, we observe governance arrangements in which primarily actors pertaining to the private domain participate. This mode of governance aims to achieve environmental goals through private efforts and investments. Within this mode, actors from the market and civil society enjoy far-reaching autonomy and are able to initiate new approaches themselves. Some regulation by the central government however will always be of relevance.

The five modes of governance that we present in our model must of course be seen as archetypical descriptions for the purpose of analysis. These archetypes – which may not actually exist in their purest form – are simplified representations of complex social arrangements.

Key Features

We propose to add sufficient detail to the archetypical modes of governance that we recognize in order to create a detailed measuring tool that can be used to meaningfully appraise and compare shifts. Therefore, we refine our framework by differentiating the five modes of governance according to variation on several key features. Hysing (2009, p. 649) proposes to distinguish between modes of governance according to differences on three dimensions: (a) governing styles and instruments; (b) relationships between public and private actors; (c) relations between policy levels. We take his laudable effort one step further, because we observe that in literature on (environmental) governance more dimensions and features are mentioned that can be used to characterize modes of governance. Based on an extensive literature review we have derived 11 unique features that we shall cluster into the following three dimensions: (a) actors; (b) institutions; (c) content. The selected references merely point to the relevance of a certain feature. For practical reasons not all the relevant literature could be mentioned.

I – Actor features

1. *Key public actors* that initiate action and specify the environmental interest in policy ambitions (see, e.g., O'Toole and Montjoy, 1984; Kickert *et al.*, 1997).
2. Position of other *stakeholders* (see, e.g., Driessen *et al.*, 2001; Kapoor, 2001).
3. Predominant *policy level* at which key actors operate (see, e.g., Hooghe and Marks, 2001; Newig and Fritsch, 2009).
4. Formal and/or informal *basis of power* of the key actors (see, e.g., Avelino and Rotmans, 2011).

II – Institutional features

5. *Model of representation* (see, e.g., Glasbergen and Groenenberg, 2001).
6. Formal and/or informal *rules of exchange and interaction* (see, e.g., Ostrom, 1990; Van Tatenhove *et al.*, 2000).
7. *Mechanisms of social interaction* (see, e.g., Hanf and Scharpf, 1978).

III. Features concerning policy content

8. Types of *goals* that are pursued (see, e.g., Driessen *et al.*, 2001; Vermeulen, 2002).
9. *Policy instruments* that are predominantly used for policy implementation (see, e.g., Glasbergen, 1992; Richards, 2000).
10. *Type of knowledge* that is used for policy preparation, decision-making, implementation and evaluation (see, e.g., Huberman, 1994; Bäckstrand, 2004).
11. The extent to which policies are *integrated* or not (see, e.g., Lafferty and Hovden, 2003; Jordan and Lenschow, 2010).

In Table 1 we present an indication of the variation in these features based on the five aforementioned modes of governance. By analyzing and comparing these key features over time, one can arrive at an objective – and thus replicable and comparable – characterization of shifts in environmental governance. One can determine direction and intensity of shifts by zooming in on the significance of changes on one or more of the features. Changes can be labelled as 'paradigm shifts' when nearly all the features have transformed. Other shifts may be more gradual with only some slight and occasional transformations.

Next, we shall illustrate the application of this framework using two case studies, namely shifts in urban environmental governance and shifts in the governance of sustainable production and consumption. The analysis is at a

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meta-level, employing a 20-year time horizon. Based on Sabatier and Jenkins-Smith (1993), we assume that a time perspective of 20 years would be long enough to analyse and understand changes in modes of governance.

Shifts in Urban Environmental Governance

Urban environmental governance in the Netherlands encompasses a wide variety of environmental themes, such as noise, air and soil pollution, water quality, flood risk management, energy efficiency of (new) dwellings, municipal waste collection and management. In this section we characterize urban environmental governance, as well as the shifts in modes of governance. First, we characterize urban environmental governance around the 1990s. We subsequently discuss the major policy changes that have taken place in the 1990s and the first decade of the 21st century. We then characterize urban environmental governance as it is today. We have chosen to characterize urban environmental governance at these two points in time only, because between 1990 and 2010 shifts in governance were modest and gradual and did not result in a substitution of existing ways of governing or in the addition of radical new governance modes.

Urban Environmental Governance Around 1990

Around the year 1990, governance of the urban environment can be labelled as 'centralized' (see Table 1). *Key public actors* then were the state government (and increasingly the European Union), largely responsible for formulating policy objectives and legislation. Municipalities were mainly in charge of policy implementation and responsible for meeting predefined objectives. Hence, the *predominant policy level* at which key actors operated was the state level (Runhaar *et al.*, 2010). The *position of other stakeholders* was determined by the central government, although industry and other stakeholders were actively lobbying. The *formal basis of power of the key actors* was authority embedded in legislation. Strict and detailed regulations determined by state actors typically limited policy autonomy for municipalities in implementation. For instance, in noise policy, very detailed standards were developed regarding sources and maximum exposure levels (Glasbergen, 2005).

Regarding institutional features, the *model of representation* was pluralist; stakeholders and the public were only indirectly involved in decision-making (e.g. through lobbying). Roles of the key actors involved in implementation were prescribed in legislation, determining the *rules of exchange and interaction between actors* and hence resulting in hierarchic *mechanisms of social interaction* (De Roo and Visser, 2004).

Concerning policy content, the *goals pursued* were driven by environmental and health protection. In addition, norm setting was driven by an equal protection for all rationales, implying uniform goals (Runhaar *et al.*, 2010). The predominant *policy instruments* used for implementation are typical of centralized governance, namely environmental impact assessments, permits, zoning and physical measures, complemented with state subsidies for cleaning up polluted soil and for insulating houses. Norm-setting for the urban environment took place in a fairly non-integrated way, meaning that separate norms, objectives and policies exist for noise nuisance, air pollution, soil quality etc. The sectoral approach is also reflected in the organization of municipalities, usually characterized by specialized environmental departments. Finally, regarding *science–policy interfaces*, norms and objectives central to urban environmental governance were traditionally heavily reliant on natural science insights regarding the health and ecological impacts of pollution and exposure to toxic substances (put forward in expert panels set up by the European Commission).

Policy Changes Between 1990 and 2010

In practice, it was difficult for municipalities to meet all norms and objectives regarding the urban environment. Regarding soil pollution and noise nuisance, budgets were a constraining factor. Also, conflicts between spatial and environmental planning added to this problem. Often, urban planners felt that strict norms for urban environmental quality impeded new spatial developments. However, not meeting the environmental objectives for noise and soil pollution was mainly a problem for the state; when municipalities had to choose between spatial developments and environmental quality, the former was given priority (Glasbergen, 2005). Regarding air pollution,

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however, failing to meet legal norms became a problem for municipalities also, as not abiding by European regulations may have direct consequences for EU funded (re)construction plans.

The above situation urged for a better integration of spatial and environmental planning in urban areas, not only to allow for urban development but also to enhance the performance of environmental planning. It was felt that, in spatial planning, opportunities were missed to improve environmental quality, for example, because the incorporation of environmental aspects often only occurred in a later stage of the planning process (Runhaar *et al.*, 2009).

Between 1990 and 2010 various measures were implemented by the central government to bridge the gap between urban and environmental planning (Glasbergen, 2005; De Roo and Visser, 2004; Runhaar *et al.*, 2009). Municipalities were stimulated to overcome stagnation in environmental governance by promoting interactive and area-specific environmental planning. Cooperation between governments, societal organizations (NGOs, market parties) and, occasionally, citizens was expected to result in a joint course of action, enhanced trust in and legitimacy of the government and the development of creative solutions (Van de Klundert and Eberg, 1996). In addition, since 1999 experiments were initiated that granted municipal planners more freedom in the formulation of area-specific and differentiated ambitions for reducing noise pollution and improving soil quality based on the existing functions and characteristics of urban areas (Glasbergen, 2005; Runhaar *et al.*, 2009). Even some form of compensation between sectoral environmental norms was envisaged – for example, allowing higher noise levels if that would be compensated by more green spaces. Yet, due to new EU legislation, this appeared impossible. As of 2006, deviating from legal norms concerning noise levels has been allowed. Partly through the above mentioned experiments, the central government has stimulated municipalities to think in terms of 'liveability' and 'urban environmental quality' rather than in terms of meeting norms in order to bridge environmental and spatial planning (De Roo and Visser, 2004).

A second new policy initiative in this era concerned the introduction of covenants (Keijzers, 2000). These covenants (e.g. on energy efficiency and waste volumes) led to more room for negotiation among stakeholders about norms and objectives. However, they were mainly an addition to, rather than a substitution of, existing policies. At the same time as covenants came into vogue, EU legislation was issued that posed strict and non-negotiable norms for air quality. Additionally, interactions between municipalities and citizens centred round sustainability issues took place, in the light of the Local Agenda 21 initiative following the 1992 Earth Summit (Lafferty and Eckerberg, 1998).

Minor Shifts Towards Decentralized and Interactive Governance Around 2010

The above changes did not mean a fundamental shift in urban environmental governance, but rather the addition of alternative ways of governing the urban environment.

- *Actor features*. Policy freedom at the local level increased (to a limited extent) and interactions between municipalities, companies and citizens were intensified. As a consequence, urban environmental governance now has some characteristics of *decentralized governance* and *interactive governance*, although it should be noted that these changes supplement rather than replace existing governance modes. The prevalent mode still is *centralized governance*.
- *Institutional features*. The observed changes in institutional features are tied to the changes in actor base. Although pluralist representation and formal decision-making rules still prevail, we observe additional mechanisms of social interaction that are less formal and more interactive.
- *Policy content*. Regarding the *content* of urban environmental governance, the main change is a gradual shift towards the promotion of a further integration of spatial and environmental policy (Runhaar *et al.*, 2009). However, integration in practice is felt to be constrained by the limited room for deviating from sectoral environmental norms. Overall, we observe few significant changes. Some attempts were made to reframe urban environmental planning according to 'liveability' and 'sustainability', but formal policy objectives are still specified in sectoral environmental laws. Over the last two decades the emphasis on environmental problems has changed, among other things due to a more important role of European environmental legislation. Air quality (mainly particular matter concentrations) for instance has become a main theme in urban environmental governance due to stricter European norms (and difficulties in the Netherlands to comply with these). Covenants have entered the policy scene but have complemented rather than replaced the more traditional policy instruments.

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Concluding, urban environmental governance in the Netherlands had and mainly still has features associated with *centralized governance*, although the policy changes discussed above imply a shift towards more *decentralized* and *interactive governance* since the 1990s. These represent however relatively small-scale changes that supplement rather than substitute the dominant mode in which the urban environment is governed.

Possible Drivers of Change

The main drivers of the changes outlined above seemed to have been the lack of synergy and even conflict between environmental and spatial planning at the local level and, second, the macro trends towards more decentralization and interaction. Moreover, there were powerful forces that enhanced the prevalence of centralized governance modes, namely an increasing influence of EU legislation on urban environmental governance (which typically takes the form of decentralized governance) and the political and societal responses to 'external safety' disasters which resulted in stricter regulations and enforcement.

Shifts in the Governance of Sustainable Production and Consumption

The production of goods and services has always been one of the core foci of environmental policies, due to its resource use, its resulting pollution and the growing volume of consumption. Since the late 1980s the Dutch government has changed its role in promoting sustainable production and consumption considerably. In this policy field we see fundamental changes in two stages: (a) the period 1990–2000 and (b) the period 2000–2010.

The Governance for Sustainable Production and Consumption Around 1990

Keijzers (2000, p. 180) describes the period before these changes as characterized by a legislating national government, implementing top-down environmental regulation for all individual businesses without stakeholder involvement. The central government was the initiating actor. Parliamentary decision making based on democratic representation was the basis, with decision making on the European level gaining strength. Business sector stakeholders were lobbying for more market-based policies, while environmental stakeholders were separately lobbying in the political arena to address environmental problems more stringently. In these early years, environmental policy had to gain its place in the overall government policy. This resulted in a step-by-step approach in developing legislation, creating separate policy plans and legislation for various issues (water, waste, chemical waste, air, noise etc.).

This initial strategy of *centralized governance*, working with command and control, succeeded in reducing the most obvious large source pollution, such as water pollution with organic substances, heavy metals and SO_2, while more complex issues (such as mobile sources, pesticides, nitrification and waste prevention) remained unresolved (Keijzers, 2000, p. 181). Several implementation problems were identified in the mid-1980s, such as a lack of procedural coherence and a lack of shared responsibility (Winsemius, 1986; De Koning 1994). Efforts for creating a better 'integrated environmental policy' started in the mid-1980s (Ministerie van VROM, 1983). In the same period, many firms did not act according to permit requirements, often with municipalities also not effecting enforcement (EWM, 1996; Keijzers, 2000, p. 182).

Policy Changes Between 1990 and 2010

In response to this, a strategy aiming at creating stronger business commitment to environmental challenges was implemented. This included three parallel elements:

- first, improving the performance of the regulatory approach and its enforcement;
- second, extending the application of economic incentives such as eco-taxes, and
- third, stimulating business sectors to take responsibility, relying on voluntary agreements combined with financial support promoting innovation and diffusion (see Keijzers, 2000; Vermeulen, 2002).

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The first element implies an improvement of *centralized governance*, while the second and third complementary elements are forms of *public–private governance*. These three elements were seen as complementary and explicitly linked to each other. For example, procedures were developed for connecting the environmental business plans written by firms (laid down as an obligation in *voluntary* sector agreements) to regulatory procedures for the *mandatory* process of environmental permitting.

This change in policy strategies around the year of 1989 demarcates efforts to work with a fully integrated long-term policy vision. Starting from this period, the Dutch environmental policy has set clear long term goals for most environmental issues and translated these into required transitions in the societal system (Ministerie van VROM, 2001).

For our analysis of the resulting shifts in modes of governance we need to focus on the two approaches, which were intended to complement the initial strategy of *centralized governance*; namely *public–private governance*, which emerged in the early 1990s, and *self-governance*, which gained prominence after 2000.

Public–Private Governance in the 1990s

With the shift towards *public–private governance*, actors connected to several industry sectors were granted a stronger role in determining the modes of implementation, while the Dutch government continued to set the fixed long-term targets in their National Environmental Policy Plans. These targets formed the boundaries within which industry could determine their own implementation strategies. Producers were addressed as groups: 'target groups' (either industry sectors or product chain related networks) and their branch organizations became crucial actors in the policy process. Working this way, new 'hybrid' actors also emerged: forms of independent mixed state–market partnerships, enabling the implementation and monitoring of voluntary agreements. An example is the 'Facilitatory Organisation Industry' (FO Industry), established as an independent support office in 1993 enabling the implementation of voluntary agreements. Companies were expected to submit their environmental plans to FO Industry and they aggregated the results to ensure that the sum of the performance improvements would be sufficient to meet the sectoral targets.

In most cases of the target group policy implementation, industry and government actors were at the negotiating table, but in the area of waste prevention and recycling environmental NGOs were also participating (Glasbergen *et al.*, 1997; Vermeulen and Weterings, 1997; Chappin *et al.*, 2008). *Public–private governance* also implies that the tasks of implementation, monitoring and enforcement have become shared responsibilities instead of solely public tasks. This is the case with certification of environmental management systems, which is organized as a 'private' activity, provided by commercial auditing firms.

In these 'environmental target group policies', the mechanism of social interaction and decision-making more or less follows the 'rules of the negotiation table', with the essential stakeholders at the table working towards consensus on how to implement policies. In this governance mode there is still some form of democratic control in place, with ministers at least bringing the voluntary agreements made with the industrial sectors to the parliament for approval.

With the shift towards *public–private governance* the *content* of environmental policy did not change; the same long-term targets were imperative. Collaboration with industry sectors enabled the national government to apply an integrative approach in increasing the effectiveness of policy instruments. However, along with this, the financial implications of improving production and products have largely been allocated to the market, following the polluter pays principle. Indeed it was also argued that improving environmental performance is in fact profitable (pollution prevention pays) and can give front-runners a competitive advantage. Simultaneously, new environmental policy instruments have been introduced addressing externalities: introducing environmental taxes on resource use (groundwater) and land filling and allocating recycling costs to producers (extended producer responsibility). These taxes were not very high, but have been instrumental in reducing land filling and encouraging extended producer responsibility and waste recycling (Vermeulen and Weterings, 1997). The introduction of emission trading systems (greenhouse gases and nitrogen) later (after 2000) also fits into this strategy.

The major role for public finance is in promoting innovation and market introduction of sustainable technologies, and in supporting the technology transition policies. Government funds are mostly being spent on subsidies for transition projects.

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In these shifts, the eminent role of science and technology has also changed. The scientific community continues to play a strong role in advising governments and industries on technological solutions and policy impacts, but technological expertise and market assessments provided by businesses and their organizations have become equally important.

Self-Governance After 2000

The development towards *self-governance* is a rather gradual one and a process in complement to the continued application of centralized governance and public–private governance. Old mechanisms persist, but on top of this front-runners in business and civil society have been creating new practices. In line with industry sectors being challenged to take more responsibility, a process of self-organization started. First, in the 1990s in the state–market collaboration in the field of waste prevention and recycling, this was labelled as 'extended producer responsibility', with businesses developing new recycling organizations. With respect to the firm's management style, the *voluntary* certification of environmental management systems paved the way for further forms of *self-regulation*: in some cases solely with market actors, in other cases in partnership with civil society NGOs. Since 2000 the concept of *corporate social responsibility* has been embraced both by governments and by key actors in the business world. Its shared interpretation is one of businesses taking greater responsibility in environmental governance, going beyond merely complying with regulation (under *centralized governance*) towards governments taking a step back and merely facilitating this development (European Multi Stakeholder Forum, 2004).

Since 2000, in more recent cases of *self-governance*, the front-running market actors are the initiators. They have developed new proactive strategies such as a growing number of supply chain certification systems wherein businesses regulate the sustainability performance of their (often developing country based) suppliers, by using their market power in selecting appropriate suppliers. These certification systems are often developed in partnerships with environmental, consumer and/or development NGOs. These NGOs have also taken new roles, moving from lobby and action groups towards cooperative partners for proactive firms (Vermeulen *et al.*, 2010). This also resulted in a growing new sector of auditing firms for monitoring compliance. Other examples of 'hybrid' actors are the International Organisation for Standardisation (ISO), Global Reporting Initiative (GRI) and International Social and Environmental Accreditation Labelling Alliance (ISEAL).

Knowledge transfer, awareness raising, network creation and joint learning have also been organized by 'new hybrid actors'. In many cases these are state sponsored, such as the 'CSR Netherlands' organization and more recently, in the area of supply chains, the Sustainable Trade Initiative (IDH) and various 'Roundtables'.

This changing composition of the actor base has also led to a redistribution of powers and new interdependencies between actors in the three domains of state, market and civil society. The initiation of these new *private* instruments and the decision making about content (standards levels, modes of control) is in the hands of new forms of tripartite or market–civil society cooperation.

With the shift towards *self-governance*, the mechanism of social interaction and decision-making rather follows the *rules of the open market*: front-running firms and NGOs join forces and often create *coalitions of the willing*. In doing this they allow for consultation and entrance of 'the willing', but decision-making procedures are self-designed and in the hands of the early initiators, and result in self-crafted (and self-imposed) rules. These new 'centres of decision making' are diffuse and lack democratic control, but allow for fast procedures in efficient lean organizations. However, they do not work in a vacuum: their self-crafted rules are mostly taken from (international) agreements and regulations in the public domain. We also observe a stronger role for the public debate: the discourses on supplying sustainable products take place to a large extent via the public media: in television shows, newspapers and the new ICT media. This public discourse affects the rationalities applied in two ways. First, having 'corporate social responsibility' and 'sustainable products' as key elements in branding activities, firm strategies follow the rationale of preventing reputation damage. Second, NGOs cleverly use the media, bringing in the rationality of media: presenting simple and single issues, presenting black and white stories (Muller *et al.*, 2009). As a result, businesses are far more vulnerable to the views of the public, and strategic choices do not necessarily solely reflect a scientific rationality.

Looking at the type of goal set, the level of comprehensiveness and integration and the applied instruments, we need to stress that both shifts discussed in this section reflect an accumulation of governance modes rather than one

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mode replacing another. Long-term goals set in the public domain again also dominate the activities conducted in the market and civil society. CSR instruments and certification systems successfully integrate the wide spectrum of issues connected to sustainability into instruments applicable for firms (see Vermeulen *et al.*, 2010, pp. 68, 153).

With *self-governance* a remarkable change of cost allocation has occurred: the costs of certification of management systems or of products are covered by actors in the private domain.

Possible Drivers of Change

To conclude, the field of production and consumption shows clear shifts in environmental governance. The main drivers of these shifts seemed to have been implementation problems and conflicts. Many production and consumption related controversies have created pressure on industry and government to deliver results. However, 'policy entrepreneurs' (especially in the market domain) have also been innovative in creating effective new instruments of *self-regulation*. Businesses convinced of the need for corporate social responsibility have developed their own routes, often closely collaborating with NGOs. What we might tentatively state here is that moving away from working solely with *centralized governance* has enabled a strong internal dynamic in this field between the many stakeholders (including market, NGOs, media and the new 'hybrid' actors). These interactions have enabled front-running actors to step forward, create new coalitions and reframe issues. Creative learning in new approaches for sustainable production and consumption has also taken place. However, we also need to acknowledge that we do not have pendulums being swung here, but rather a group of cooks each adding their own ingredient to the menu.

Comparing Shifts in Governance Modes

The two cases discussed in this paper illustrate the five archetypical modes of governance we distinguished in Table 1. The transition in time in subareas of environmental policy is different. We have summarized these transitions in Table 2. The area of urban environmental policy has shown a gradual evolution, while in the area of production and consumption a wider spectrum of governance modes has emerged.

In the area of urban environmental policy, governance was and still is predominantly in line with what we called 'centralized governance'. As the case showed, the main drivers are a stronger role of the European Union in setting environmental norms and, to a lesser extent, incidents that resulted in pleas for stricter enforcement. The stability in urban environmental governance, for example when compared with the field of sustainable production and consumption, is surprising, as problems in urban environmental governance that were identified in the 1990s are still not solved. For instance, spatial and environmental planning are still not considered to be attuned, plus particular environmental problems such as noise pollution are not yet solved (Weber *et al.*, 2011).

In the area of production and consumption, we have identified three consecutive and complementary approaches. The evolution from an initial regulation based 'integrated environmental policy' to a target group consultation based approach was a logical development after the identification of the weaknesses of the centralized governance mode: low commitment of industry sectors and poor implementation of regulation. Closer collaboration of governments with market actors has occurred, by means of applying voluntary approaches and creating spaces for industry sectors to define their sector specific long term visions and appropriate technical and managerial means to achieve their targets. Increasingly, businesses have started to pose demands on environmental performance in their business-to-business cooperation. These successful developments (Ministerie van VROM en VNO-NCW, 1998) in their turn have opened the floor for the third governance mode: self-regulation by front-running firms.

Both cases illustrate that shifts in governance are not so much replacements of modes, but rather accumulations of modes. Isolating each mode of governance may to some extent be a simplification of the complex reality, but on the other hand it serves well the debate on suitable strategies for achieving a sustainable society.

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		Urban environmental governance		Production and consumption		
		1990	1990–2010	1990	1990–2000	2000–2010
Actor features	**Initiating actors**	Central gov't agencies (or supranational bodies)	Government at central (or supranational) and decentral levels; some involvement of other actors	Central gov't agencies	Central gov't agencies and private sector	Private sector and civil society initiate; central gov't agencies support
	Stakeholder position	Stakeholder autonomy determined by principal agency	Stakeholder autonomy mainly determined by principal agency; some stakeholder involvement; occasionally, equal roles for all network partners	Stakeholder autonomy determined by principal agency; stakeholders lobby	State determines long term goals; negotiations between state and market stakeholders within predetermined boundaries	Stakeholders from market and civil society initiate and create instruments and determine the involvement of other stakeholders
	Policy level	(Supra)national state	(Supra)national state and lower levels of gov't	National state	National state	International level
	Power base	Coercion; authority; legitimacy through national democratic representation	Coercion; authority; legitimacy (democratic representation at the national level and below); occasionally, legitimacy (agreement on roles, positions, procedures and process); trust; knowledge	Coercion; authority; legitimacy through national democratic representation	Contracts and legal recourse; legitimacy through parliamentary approval ex post	Autonomy and leadership (actors from market and civil society); group size via coalitions of by front runners; social capital
Institutional features	**Model of representation**	Pluralist (popular (supra)national and local election and lobbying)	Pluralist (popular (supra) national and local election and lobbying) combined with direct democracy and partnerships	Pluralist (via popular national election and via lobbying)	Corporatist (formalized public–private governing arrangements)	Partnership (participatory private–private governing arrangements)
	Rules of interaction	Formal rules (rule of law; fixed and clear procedures)	Formal rules (rule of law; fixed and clear procedures) and informal rules (participatory policy-making	Formal rules (rule of law; fixed and clear procedures)	Formal and informal exchange rules in voluntary agreements	Self-crafted formal rules in certification systems, private enforcement

(Continues)

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Table 2 (Continued)

		Urban environmental governance		Production and consumption		
		1990	1990–2010	1990	1990–2000	2000–2010
	Mechanisms of social interaction	Top down; command and control	Top down; command and control; some autonomy for sub-national governments; some interactions with stakeholders	Top down; command and control	Industry sectors decide autonomously about collaborations within top-down determined boundaries; firms voluntarily participate	Bottom up: discourse on targets and instruments with open market and civil society networks; social learning via self-created platforms
Features concerning content	**Goals and targets**	Uniform goals and targets	Uniform goals and targets; some experiments with tailor-made and integrated goals and targets	Uniform goals and targets	Sector specific integrated goals and targets	Self defined goals and targets, based on participants consensus and applying supranational policy agreements
	Instruments	Legislation, permits, norms and standards	Legislation, permits, norms and standards, supplemented with negotiated agreements; covenants	Legislation, permits, norms and standards	Negotiated agreements; covenants; supportive sectorial financial instruments	Voluntary instruments; private contracts; entitlements; labelling and reporting
	Policy integration	Sectorial (policy sectors and levels separated)	Sectorial (policy sectors and levels separated) but some attempts to promote integration	Sector specific policy integration programs	Integrated policy programs per sector	Sectorial to integrated (depends on problem framing by communities of interest)
	Policy–science interface	Primacy of generic, expert knowledge	Primacy of generic, expert knowledge	Primacy of generic, expert knowledge	Expert and market based knowledge in networks; emphasis on sector specific knowledge	Dominance of issue and time-and-place specific knowledge: market expert and NGO experts, science in supportive role
Dominant mode of environmental governance		**Centralized governance**	**Centralized governance, with additional elements of decentralized and interactive governance**	**Centralized governance**	**Centralized governance and public–private governance**	**Centralized governance, public–private governance and self-governance**

Table 2. Shifts in modes of governance in the two Dutch environmental policy fields

Discussion

Our intention in this paper has been primarily to conceptualize 'environmental governance' by means of a detailed typology. Such a typology is needed as a benchmark against which transitions can be carefully measured. Once transitions over time are mapped, one can start speculating about what may have caused the observed shifts. In the previous sections we have presented some indications for drivers of change. In future research, however, this has to be done in a more systematic manner and one can lean on the rich literature on *policy change* in order to support this. A first distinction emerging from this literature is based on whether one views change as a smooth and continuous process (see, e.g., Lindblom, 1959) or as a progression characterized by gradualism punctuated by sharp and rapid change (see, e.g., Baumgartner and Jones, 1993). Our typology would ultimately be helpful in providing insights regarding this descriptive aspect of shifts, with specific regard to governance. A second distinction regards the locus of control in pushes for change. At one end of the spectrum authors attribute decisive discretion to agents, such as policy entrepreneurs (e.g. Kingdon, 1995). At the other end, analysts assume that, for example due to the networked nature of governance (Kooiman and Van Vliet, 1993), to path dependency (e.g. Pierson, 2000) or to the 'stickiness' of institutions (see, e.g., Downs, 1972; Peters and Hogwood, 1985), the role of agency in shifts from one mode of governance to the next is limited to negligible.

At the 'agency' side of the story, *conflict*, *power*, *policy learning* and *adaptive capacity* play an important role in attempts to explain change. For example, Schattschneider (1960) poses the idea of *conflict* expansion whereby the ability to change the scope of a conflict alters the conflict itself. If agents exercise this ability skilfully, they can use conflicts to alter (governance) processes. The kind and amount of *power* that agents possess has been assigned an important role in bringing about transitions (see, e.g., Avelino and Rotmans, 2011); so has policy actors' capacity to *learn* from failures and successes (see, e.g., Huntjens *et al.*, 2011) and to *adapt* to change based on lessons learned (see, e.g., Folke *et al.*, 2005). At the other end of the spectrum, the role of (external) *shocks* and *macro-level change* has been highlighted. For example, according to the *advocacy coalition framework* (Sabatier and Jenkins-Smith, 1993), stable normative beliefs will only be questioned when external shocks lead to serious and undeniable anomalies. Kjaer (2004) holds that shifts in environmental governance are related to more *general shifts in governance*.

The main purpose of our case studies has been to show through our typology how shifts in governance can be carefully described and meaningfully compared across sectors. We have not yet attempted to methodically *explain* the intensity and direction of the shifts we observe. Yet, it appears that internal and external dynamics have played a role in both cases as well as conflict, gradual changes over time, policy entrepreneurs and changing venues for decision-making. More systematic empirical research is needed to ultimately answer explanatory questions regarding shifts in governance.

Conclusions

In the previous sections, we have illustrated the added value of the framework we propose for measuring variation over time (or the absence thereof) in modes of environmental governance. A first conclusion is that the character and intensity of shifts varies significantly. From the case analysis, it appears that certain authorities were shifted from national states to the supranational European level. Apart from vertical shifts upwards, downwards shifts occur as well when authority is transferred from national to lower levels of decision-making. Shifts from indirect to more direct forms of democracy can also be observed, for example when interactive policy making procedures with a higher stakeholder involvement are introduced in public affairs. These horizontal and vertical shifts in modes of governance have clearly affected important parts of the field of environmental policy during the last two decades.

Second, despite these shifts, traditional hierarchical modes of governance do not seem to have completely disappeared. On the contrary, in the abovementioned cases, governance still draws upon hierarchical structures with central representation based decision-making next to new modes of governance. In practice, modes of governance tend to build on rather than completely replace one another. At the beginning of the 21st century the environmental governance landscape might best be classified as multi-facetted, with simultaneously co-existing forms of governance.

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Finally, what is not always clear is the extent to which the respective shifts can be expected to represent an improvement in terms of performance. Some scholars make the implicit assumption that new forms of environmental governance are also better forms of environmental governance. It is obvious that this will not always be the case (see for instance Bäckstrand *et al.*, 2010).

In this paper we have argued that we need a detailed analytical framework to identify and measure shifts in modes of environmental governance. It seems to be necessary to focus not only on different modes of governance, but on specific features as well. However, from our analysis it becomes clear that – in order to test the framework – this field of research is in need of more systematic empirical research. The challenging question for further research is to what extent and under which conditions different and often co-existing modes of environmental governance enable successful societal change. In other words, we need more empirical studies that focus on

(a) the analysis of variations in modes of environmental governance over time (preferably sector specific)
(b) the analysis of drivers of and barriers to shifts in environmental governance
(c) the analysis of the causal relations between modes of environmental governance and (un)successful societal change towards sustainable outcomes
(d) the analysis of interrelations between the accumulated modes: can and do they reinforce each other or are they discordant?

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