

Towards explanations of stability and dynamics in modes of environmental governance: a framework and examples from water governance in The Netherlands

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ABSTRACT

Various authors observe shifts in modes of environmental governance or propagate new modes of environmental governance. However, it often remains implicit what exactly constitutes such shifts and what causes them. Many explanatory studies found in literature contain weaknesses both in terms of conceptualising the explanandum and considering a correct and complete overview of potential explanatory factors. To address this gap, this paper presents a meta-framework for explaining stability and dynamics in modes of environmental governance, based on a review of recent literature from the fields of policy sciences and environmental governance. The framework provides guidance on how 'stability' and 'dynamics' in modes of environmental governance may be conceptualised and subsequently introduces five types of explanatory factors and their possible interrelationships: physical circumstances, infrastructures, structural factors, characteristics of agency and shock events. The paper uses empirical examples from Dutch water governance showing that each explanatory factor may contribute to dynamics *and* stability in modes of environmental governance. This finding reconfirms and further specifies our observed need for comparative and explanatory empirical studies. The paper concludes with a research agenda, specifying the next steps to be taken in this respect.

1 Introduction

There is growing scientific and societal debate about shifts in modes of environmental governance (Driessen et al., 2012; Lange et al., 2013). Several authors analyse or observe such shifts (Driessen et al., 2012; Greenhalgh and Zaapagic, 2009) or proclaim them out of the wish to achieve sustainable transformations in society (Rockström et al., 2009; Van Zeijl-Rozema et al., 2008). The dominant thrust of the debate in environmental governance literature seems to be that societal actors should look for the small margins for change that might help to modulate on-going societal developments in perceived beneficial directions (Van Zeijl-Rozema et al., 2008; Zahariadis, 2007). Literature also emphasises the importance of public-private cooperation (Lemos and Agrawal, 2006; Mees et al., 2012), interactive forms of governance (Driessen et al., 2001) and stakeholder participation (Lamers et al., 2010).

To be able to derive recommendations for policy design, there is both a need to analyse variations in modes of environmental governance over time (preferably sector-specific) and to *explain* these variations and (the absence of) shifts therein (Driessen et al., 2012). Regarding the former, important steps have been made recently (Arnouts et al., 2012, Driessen et al., 2012, Hysing, 2009, Lange et al., 2013). The cited studies present theoretical (meta)-frameworks providing a profound theoretical basis for comparative empirical assessments of stability and dynamics in modes of governance. When it comes to *explanations*, however, there is still some important work to be done.

It is no exaggeration to say that many explanatory studies contain weaknesses both in terms of conceptualising the explanandum and considering a correct and complete overview of potential explanatory factors. For one, empirical studies that actually *use* the analytical frameworks referred to

above are still rare. More in general, studies tend to be prone to what scholars in the policy sciences have termed the ‘dependent variable problem’ (Capano and Howlett, 2009; Howlett and Cashore, 2009; Dupuis and Biesbroek, 2013). It often remains very implicit how “stability” is distinguished from “dynamics”, and examples have been documented of studies claiming to compare similar issues (e.g. climate adaptation policy) whereas, on closer inspection, the dependent variable turned out to be different across studies (Dupuis and Biesbroek, 2013). Second, there is much diversity in the types of explanatory factors that are considered in analyses and in the underlying theoretical frameworks (Capano and Howlett, 2009). This constitutes richness in the analyses but may on the other hand lead to fragmentation and incomparability of studies (Pahl-Wostl et al., 2013:42).

To address this knowledge gap, this paper presents a meta-framework for explaining stability and dynamics in modes of environmental governance, based on a review of recent literature from the fields of policy sciences and environmental governance. This literature is very diverse and includes theories that differ from one another in terms of the, often implicit, explanandum as well as the dominant focus in their explanatory factors (Capano, 2009). Obviously, if possible at all, integration of all these theoretical strands would fall beyond the scope of this paper. The route we have chosen is, instead, to develop a meta-framework in which we denominate some common issues of which we argue that they are of potential relevance across empirical domains. Section 2 addresses the ‘dependent variable problem’. How can the explanandum be determined and what would distinguish “stability” from “dynamics”? Section 3, first, introduces five influential bodies of literature for explaining policy change: the Multiple Streams Framework (Kingdon, 1984; Zahariadis, 2007), Punctuated Equilibrium Theory (True et al. 2007), the Advocacy Coalitions Framework (Sabatier and Jenkins-Smith, 1993; Sabatier and Weible, 2007), the Institutional Analysis and Development Framework (Ostrom, 2007) and change agency literature (Caldwell, 2003; Huitema et al., 2011). The subsequent sections derive five types of explanatory factors from this literature: physical circumstances (section 4), infrastructure (section 5), structural factors (section 6), characteristics of agency (section 7) and shock events (section 8). Each factor is illustrated with reference to empirical examples, from the domain of water management in The Netherlands. This focus has been chosen to illustrate how different factors may point at different types of explanations for stability and dynamics. Besides that, the domain has been well-documented and there are actual dynamics present that one can attempt to analyse and explain. For each explanatory factor, an example is given where this factor contributes to stability and one in which it contributes to dynamics in modes of environmental governance. Section 9 provides our conclusions and sketches a research agenda for comparative empirical studies explaining (the absence of) dynamics in modes of environmental governance.

2 What to explain: the explanandum

As stated in the introduction, many explanatory studies inside and outside the environmental governance field suffer from the dependent variable problem (Capano, 2009; Howlett and Cashore, 2009; Dupuis and Biesbroek, 2013). Dupuis and Biesbroek (2013) have nicely illustrated the existence of the problem by comparing four prominent studies on national climate adaptation policies (Gagnon-Lebrun and Agrawala, 2006; Massey and Bergsma, 2008; Swart et al., 2009; Keskitalo, 2010). The outcome of the comparison was that “except for agreeing that the UK has made most progress on adaptation policy, correlational testing reveals hardly any agreement on the assessment of other countries” (Dupuis and Biesbroek, 2013:1478). According to Dupuis and Biesbroek, reasons for this have been conceptual indistinctness regarding the explanandum, the use of inadequate research designs and un-clarity of the used indicators.

This finding concurs with that of Howlett and Cashore (2009). They state that what they call the “new orthodoxy in the policy sciences literature”, being that policy change is solely or predominantly

attributable to “perturbations occurring outside of an institutionalised policy subsystem” (p. 33) can be questioned. According to Howlett and Cashore, the reason for this finding of outside perturbations being crucial often recurring is a poor conceptualisation of the explanandum. As a way forward, these authors propose a taxonomy of components of policymaking, including goals, objectives, settings, instrument logic, mechanisms and calibrations. These components differ from one another in the extent to which they focus on different levels of abstraction (high, programme level, on the ground measures) as well as a dominant focus on goals or means.

Concurring with the general direction of these proposed solutions, we argue that the following two issues should be taken as requirements for formulating the dependent variable in the field of environmental governance more generally:

First, it is necessary to be explicit and precise on what constitutes the dependent variable, in our case stability/dynamics in modes of environmental governance. To this end, authors should disentangle the dependent variable into sub-aspects, for instance actors; resources; rules; discourses (Arts et al., 2006; Wiering and Arts, 2006); actor features; institutional features; features concerning policy content (Driessen et al. 2012:148). Also, criteria need to be given for calling certain changes a shift in modes of environmental governance. For instance, is something called ‘a shift’ if only one sub-aspect has changed (e.g. dominant policy discourses) or should various sub-aspects change simultaneously? Authors can make different choices in this respect, as long as these choices are made explicit.

There exist some examples of such nuanced analyses of the degree of stability/dynamics in modes of environmental governance. Wiering and Arts (2006) analysed the extent to which discursive changes in Dutch river management from “a battle against the water” to “living with water” should be seen as “deep institutional change” or on the other hand, as the paying of lip service by water managers in order to maintain their vested interests. It was found that ongoing institutional changes went beyond mere “policy talk” particularly in terms of new legislation and procedures, but that it was too early to speak of “deep institutional change”. Driessen et al. (2012) analysed the domains of urban environmental governance and sustainable production and consumption. They derived detailed, replicable and comparable claims regarding the character and intensity of shifts in modes of environmental governance. These have been shown to vary significantly across the domains. Furthermore, it was found that modes of environmental governance do not completely replace one another but, on the contrary, build upon one another.

A second requirement for determining the explanandum is that stability and dynamics in modes of environmental governance should be measured longitudinally (Sabatier and Jenkins-Smith, 1993; True et al., 2007). It is also important to precisely denominate the baseline situation: “change compared to what” (Rayner 2009).

3 Five existing explanatory frameworks: an introduction

Several frameworks may inspire explanations of stability and dynamics in modes of environmental governance. The discussion in this paper is grounded in five existing frameworks that contain (elements of) explanations: the Multiple Streams Framework (MSF) (Kingdon, 1984; Zahariadis, 2007), Punctuated Equilibrium Theory (PET) (True et al. 2007), the Advocacy Coalitions Framework (ACF) (Sabatier and Jenkins-Smith, 1993; Sabatier and Weible, 2007), the Institutional Analysis and Development Framework (IAD) (Ostrom, 2007) and change agency literature (Caldwell, 2003; Huitema et al., 2011). There are various other frameworks, but the paper’s scope does neither allow nor require discussing them all in detail. An introduction of these five prominent explanatory frameworks will suffice to show in later

sections that different frameworks are to some extent similar, but in other respects complementary in terms of the types of explanatory factors that are emphasised most.

3.1 Multiple Streams Framework (MSF)

The MSF was originally developed by John Kingdon (1984). The framework conceptualizes policy making processes as three relatively independent “streams”, those of problems, policies and politics (Zahariadis 2007). According to the MSF, often these streams are not connected. Policies are made in policy subsystems. The main role in connecting problems, policies and politics is reserved for policy entrepreneurs who make use of policy windows that exist from time to time. A basic assumption behind the model is that individuals involved in policymaking are boundedly rational. They can devote their attention only to a limited number of issues at a time. Therefore, the context in which they operate significantly influences what captures their attention. Key concepts of the MSF are (Zahariadis 2007: 71): the problem stream, the politics stream, the policy stream, policy windows and policy entrepreneurs. These five factors together are expected to determine policy output.

3.2 Punctuated Equilibrium Theory (PET)

PET (True et al. 2007) conceptualizes policy processes as alternations of long periods of relative stability punctuated with short periods of major change. Similar to MSF, PET assumes that individuals are boundedly rational and have to operate in the context of existing institutions. According to PET, most policy issues rarely dominate the political agenda, but at some points in time (True et al. 2007: 158) “some issues catch fire, dominate the agenda, and result in changes in one or more subsystems. The explanation for the same political institutions producing both stasis and punctuations can be found in the processes of agenda setting – especially the dynamics produced by bounded rationality and serial information processing”. Another notion to be derived from PET is that “like earthquakes or landslides, policy punctuations can be precipitated by a mighty blow, an event that simply cannot be ignored, or by relatively minor events that add up over longer periods of time” (p. 160). It is probably good to assume that change is always underway. Each event at every point in time could be a contributor to change or stability. What happens in periods of relative stability is probably “to identify a range of strategic possibilities for action. The existence of these strategic possibilities and the use that is made of them by historical agents explains both the durability of the “period” and its ultimate collapse and transition into a new one” (Rayner, 2009:87). It is an important question to what extent change derives from exogenous shocks or from internal contradictions. As Rayner (2009: 91) makes us aware, sometimes [shock events] “tend to close policy windows and inhibit change rather than the reverse”. Other important notions within the PET framework are those of policy images and policy venues.

3.3 Advocacy Coalitions Framework (ACF)

ACF as originally proposed by Sabatier and Jenkins-Smith (1988) and further developed later (e.g. Sabatier and Weible, 2007). ACF focuses on the analysis of policy sub-systems in which multiple competing advocacy coalitions, coalitions of actors that converge in their ideas, can be found. Actors within these coalitions have certain policy beliefs as well as a certain amount and type of resources, including formal legal authority; public opinion; information; mobilizable troops; financial resources; and skilful leadership) (Sabatier and Weible, 2007: 203). The framework does not presuppose the existence of different coalitions, but states that their existence and modus operandi should be empirically assessed.

ACF assumes that policy subsystems are nested within a broader physical and societal context which is relatively stable and contributes to policy stability. It was originally assumed that major policy

change can come from external shocks and policy oriented learning. In recent revisions of the framework, the change patterns of internal shocks and negotiated agreements have been added. The relative stability of policies in the short term was a reason for Sabatier and others to plead for diachronic analyses in which policy developments of at least a decade are taken into account. ACF gives an important role to the so-called deep core beliefs and policy core beliefs of actors. Changes therein are seen as an important explanatory factor for policy change. ACF scholars furthermore attach an important role to technical information and argue that researchers, (university scientists, policy analysts, consultants etc.) are among the central players in a policy process.

3.4 Institutional Analysis and Development Framework (IAD)

The IAD framework focuses on how individuals behave in collective action settings and the institutional foundations that inform such arrangements (Ostrom 2007). The core focus of the framework is on action arenas formed by action situations and actors. These are influenced by three characteristics of institutions: physical/material conditions, attributes of the community and rules in use. The following features of action situations and actors can be identified: the participants in the situation, their positions, the outcomes of participants' decisions, the payoffs or costs and benefits associated with outcomes, the linkages between actions and outcomes, the participants' control in the situation and information. The analysis can be performed at several levels: the operational level, the collective choice level and the constitutional level. The IAD has influenced many researchers, especially those studying common pool resources and diverse property regimes (Ostrom, 2007; Araral, 2014). Ostrom – rightly – claims that the framework has contributed to the production of common meta-theoretical language for analysing and testing hypotheses about behaviour in diverse situations at multiple levels of analysis. (2007:51).

3.5 Change agency literature

Whereas the previous subsections discussed circumscribed and coherent theoretical frameworks, the change agency literature is more diverse. Nevertheless, much change agency literature converges in its focus on the role of individuals and groups in stability and dynamics of policies. Caldwell (2003) proposes a classification according to four types of change agents: leadership, management, consultancy and team models. Each category includes various theoretical streams which we will not discuss in detail here. Change agents are likely to be found at different places and in different roles. They can be leaders or senior executives, middle level managers, external or internal consultants and they can work at a strategic or at an operational level. Change agents can also be teams. Huitema et al. (2011) have analysed strategies of policy entrepreneurs in water transitions and found that these individuals can employ various types of strategies to reach their goals. These include the development of ideas, the building of coalitions, the selling of ideas, recognizing and exploiting windows of opportunity, orchestrating and managing networks and recognizing, exploiting, creating and/or manipulating multiple venues. In a similar vein, Brouwer and Biermann (2011) have identified (1) attention and support-seeking strategies; (2) linking strategies; (3) relational management strategies; and finally, (4) arena strategies. Contrary to what is claimed in the frameworks introduced in 3.1-3.2, Brouwer and Biermann claim that the margins for establishing policy change are not small. Instead, much agency is attributed to policy entrepreneurs.

3.6 From five frameworks to explanatory factors

Each body of literature introduced in the previous sub-sections has its strengths, especially in cases in which the frameworks are tailored to specific empirical subjects and zoom in on specific aspects. However, they also each have their blank spots. This is not problematic per se, but it carries the risk of limited comparability of studies using different frameworks. To address this risk, the subsequent sections propose a fivefold classification of explanatory factors: physical circumstances, infrastructures, structural factors, characteristics of agency and shock events. As we will show below, these five factors include all types of mechanisms influencing stability and change, amongst which i) factors internal or external to the policy arrangement/policy subsystem (Capano and Howlett 2009), ii) factors that are more physical or more human/social in nature and iii) factors that provide more or less possibilities for changing them at will (Giddens 1984). For each factor, we will denominate to what extent the bodies of literature introduced in this section address them. The factors are of course interrelated and, in most cases, they will produce explanations in interaction with one another. The reason for analytically distinguishing them is that this will enable researchers, first, to determine if any blank spots are present in their frameworks and, second, to advance interaction with other theories and even other disciplines, enabling a broader debate about research results and hence creating the potential of producing richer explanations.

4. First factor: physical circumstances

4.1 Introduction

Physical circumstances include issues like the seasonality of rainfall patterns, climate change trends, altitude and gradient of physical terrains, the degree of complexity of river systems, heat patterns, and availability of resources like water, timber, oil and natural gas. In general, the physical point of departure of a country or region (e.g. downstream/upstream, relative richness/scarcity of resources) is to be seen as an important part of the context in which environmental governance takes place. The precise relevance of certain factors depends on the specifics of a certain policy domain.

The MSF and PET frameworks do not conceptualise physical circumstances as such (Zahariadis 2007, True et al. 2007). Also in the ACF, they are not explicitly addressed, but they will logically fit under the category of “relatively stable parameters” that constitute the context in which a policy subsystem has to operate (Sabatier, and Weible 2007). The IAD attaches a relatively large role to physical circumstances, since “physical/material conditions” are seen as one of the three main institutional features that influence action situations in action arenas. Change agency literature logically puts the actions of change agents centre stage and therefore puts less emphasis on these physical circumstances.

4.2 How physical circumstances may lead to stability

The Netherlands are situated in a densely populated low lying delta area. In general, this makes it rather difficult to prevent flood risks by ‘keeping people away from water’ through pro-active spatial planning. In many cases there is simply not enough space for pursuing this strategy. This may at least partly explain the dominance of the strategy of flood defence, via dikes, dams and embankments. Whereas pro-active spatial planning would imply the involvement of project developers, municipalities and provinces, in the case of flood defence the ‘traditional’ water management actors (department of public works, regional water authorities) are in charge. In terms of modes of governance, flood risk prevention can therefore be characterized as public private governance, whereas flood defence, due to the need for a strong state, can be characterized as combined centralized/decentralized governance. In The Dutch context, a huge shift in the dominant mode of governance for FRM is to be considered unlikely, although

in specific regions (e.g. Dordrecht) there is some evidence of what Driessen et al. (2012) would term an 'accumulation of modes of governance' (Anonymous, submitted).

4.3 How physical circumstances may lead to dynamics

In the last couple of years, the UK has been flooded several times. It is increasingly claimed that rainfall events like the ones in 2014, will be less exceptional in the future¹. The range of flood events that has occurred since 2007 has fuelled debates about the consequences of climate change and, related to that, government's responsibility for flood risk management. Whereas the UK government used to emphasise citizens' own responsibility and a lack of resources on the part of the government, it is now increasingly argued that government should take a larger and more pro-active role in FRM². This example shows that gradual changes in physical circumstances can be an explanatory factor for dynamics in modes of governance.

5. Physical and social infrastructure

5.1 Introduction

Infrastructures include dams, dikes, sewer systems, railways, ships, houses, energy installations, energy- and transport networks and knowledge infrastructures, but also educational systems, including handbooks and training facilities. They are the result of past investments that have materialised in physical artefacts. These past investments are to be seen as sunk costs that give these infrastructures some degree of *momentum* (Hughes 1987), powerfully reinforcing path-dependency and lock-in. These typical features of infrastructures suggest that they will generally – but not always as we will see – contribute more to stability than to dynamics in modes of environmental governance. Similar to what was discussed under "physical circumstances", it can be said that the frameworks introduced in section 3 do not explicitly address physical and social infrastructures, and if they do they will generally treat them as relatively stable background parameters.

5.2 How infrastructure may lead to stability

In The Netherlands, the strengthening of existing dikes is the default option for FRM and for climate change adaptation more generally (Tennekes et al., 2013). Because of national and regional governments' good reputation regarding flood protection, financing (the maintenance) of flood defences is relatively uncontroversial. The regional water authorities have their own powers regarding regulation, taxation, management and enforcement. Regulations regarding flood defences prescribe, amongst other things, that the zones near dikes are to be kept free of spatial planning so that they can be inspected, maintained and strengthened. Water authorities are also liable in case of dike failure (ibid). Hence, the strong emphasis on flood defence has materialised both in terms of the presence of its 'hardware' (the flood defences themselves) and in terms of the associated 'software' (actors, rules and regulations), reducing the possibilities for changes in modes of governance related to flood defence.

5.3 How infrastructure may lead to dynamics

¹ <http://www.livescience.com/43307-uk-floods-climate-change.html>

² <http://www.theguardian.com/environment/2014/feb/12/david-cameron-environment-agency-job-losses-ea>

The notion of 'Delta Dikes' is currently being discussed in The Netherlands (Tennekes et al., 2013). These dikes can be distinguished from 'conventional' dikes not only by their very broad proportions, but also by the fact that it is possible to add other uses to it than water defence alone (e.g. parks, parking space, shopping malls), which is considered an advantage in densely populated places with a lack of space (ibid). Combining flood defence with these other functions will inevitably pose institutional challenges. Rijkswaterstaat and the regional water authorities would no longer be able to decide on their own when and how the dikes would be built, as they would need to interact with municipalities and private parties (e.g. project developers) responsible for some of the other functions in/on the dike. Also in the maintenance phase cooperation between the water management authorities and other actors would be necessary, e.g. to enable regular inspections of the dikes, but also to provide private parties with some degree of certainty that they can continue their business for a specified period of time (ibid). This example shows that it is in principle possible to have developments that draw on the accumulated knowledge, expertise and institutional frameworks related to existing infrastructures, but with new outcomes in terms of modes of governance (public-private governance instead of centralised/decentralised governance).

6. Structural factors

6.1 Introduction

Structures can be defined as "rules and resources, recursively implicated in the reproduction of social systems. Structure exists only as memory traces, the organic basis of human knowledge ability and as instantiated in action" (Giddens, 1984:377). They are to be understood as recurrent patterned arrangements which limit the choices and opportunities available, as opposed to agency, that is the capacity of individuals to act independently and to make their own free choices. There is an abundance of examples of relevant structural factors in various domains of environmental governance, including legislation, policy and legal principles, degree of integration of rules, constitutional procedural and substantive norms (Anonymous, submitted) as well as the venues in which policies are made (True et al., 2007).

The more those behaviours are institutionalised (the larger the degree of structuration), the more structural factors will contribute to stability of governance arrangements. But although structural factors guide behaviours, they do not determine it. For instance, in several cases (e.g. in countries with a decentralised legal system) formal rules could relatively easily be changed or they leave room for flexibility. Other norms or rules are more resistant to change, especially if they relate to the way in which competences are distributed and which actors are expected to initiate change. Often, informal 'normal' behaviours of actors may be very hard to change because of their high degree of institutionalisation.

All frameworks introduced in section 3 presuppose that the relationship between structure and agency is a mutual one (what Giddens (1984) refers to as a duality of structure). However, the relative emphasis that is put on 'structure' vis-à-vis 'agency' differs, with probably the IAD on one extreme (structure) and change agency literature on the other.

6.2 How structural factors lead to stability

Laws are good examples of structural factors reinforcing stability in governance arrangements. For example, the Dutch water law denominates very precisely the roles and responsibilities of Rijkswaterstaat and the regional water authorities in The Netherlands (Van Rijswijk and Havekes, 2012).

This law, which came into force on 22 December 2009, draws on various pieces of existing legislation that have existed for a long time. Legal obligations promote a predominant focus on flood defence to such an extent that this focus is even visible in debates about a diversification of FRM strategies. When discussing these strategies, it is still emphasised that flood defence is and should remain the cornerstone of Dutch water safety policy (Delta Programme, 2013).

6.3 How structural factors lead to dynamics

Whereas the division of roles and responsibilities for flood protection in areas protected by dikes is well-established, this is less so for unembanked areas (Van Rijswijk and Havekes, 2012). In principle, citizens living in unembanked areas are themselves responsible for water safety, although in many cases municipalities have chosen to help them, for instance by providing information on how they can take care of themselves (Anonymous, submitted). The relative absence of formal rules and regulations provides scope for new initiatives that would be less likely to be realised in embanked areas. In The Netherlands, some examples of this can be witnessed, including farms on tarps, floating buildings and the realisation of flood-proof buildings (ibid).

7. Characteristics of agency

7.1 Introduction

Knowledgeable and capable agents (Giddens 1984) may contribute both to stability and dynamics in modes of governance as they may use their agency both to achieve and to resist change. The dominant message to be derived from all five frameworks introduced in section three is that the margins for change agency are small, although some recent studies point to the opposite (Brouwer and Biermann, 2011). The MSF provides space for agency as this framework postulates that the coming together of policy, problem and political streams is primarily attributable to chance and to the actions of policy entrepreneurs. ACF addresses agency in that it attaches much importance to the beliefs of actors (as opposed to their interests) in determining which actor groups form advocacy coalitions (Sabatier and Weible 2007: 203). IAD addresses the roles of actors in action situations, whereby these actors are conceptualised as rational agents moving within the boundaries of existing institutions. PET does not address agency specifically. Change agency literature, of course, has agency as its prime focus. This latter body of literature implicitly seems to attach a positive connotation to change agency. Our stance, on the other hand, is more neutral. We argue that the question of whether efforts to achieve or resist change are 'good' or 'bad' is a normative question that should be addressed through evaluative empirical research. Hence, change agency is not 'inherently good'.

7.2 How change agency leads to stability and dynamics

In The Netherlands, in 2008, the report of the Second Delta Committee, also known as the Veerman Committee, was released. This report dealt with the question how The Netherlands, in the long term, would be able to deal with the consequences of climate change. Based on the advice laid down in this report, a Delta Fund was established and a Delta Commissioner appointed (Delta Committee, 2008). This Delta Commissioner is to be labelled as a strong leader and a change agent, both because of his formal position and because of the personality of the person put in this position: Wim Kuijken (Van Buuren et al., 2014). The Delta Commissioner is responsible for the annual release of a report on the progress of the Delta Programme, a policy programme that will lead, by the end of 2014, to so-called Delta decisions (Delta Programme 2013). These policy decisions are expected to provide the general framework

conditions for future policies related to water safety and fresh water supply. In a sense, the Delta Commissioner can be seen as a change agent who carries out network and knowledge management. Within the Delta Programme, the actors that have been involved hitherto have a relatively firm position: regional water authorities, the department of public works (Rijkswaterstaat) as well as knowledge institutes traditionally involved in water safety are all involved (ibid). One can logically assume that the establishment of a special governmental commissioner who guards their core business will strengthen their position, also financially, which is important for them in times of declining governmental spending.

At the same time, the Delta Commissioner does have an important role in stimulating changes in policy discourses. He has contributed to putting the issues of water safety and fresh water supply on policy and political agendas (ibid). Also with regard to policy content, various changes can be noticed, such as the rise of debates on “multi-layered safety” as well as the use concepts like “tipping points” and “adaptive delta management” (ibid). At the local level, for instance in local pilot projects, also discussions are held about the necessary changes in rules in order to effectuate the new approaches (Anonymous, submitted). This example is illustrative of a case in which a change agent, the Delta Commissioner, has the potential to strengthen an existing governance arrangement but can at the same time contribute to its gradual transformation.

8 Shock events

8.1 Introduction

We conceptualise a shock event as an unexpected, sometimes unpredictable event. Shocks may come from inside and from outside a policy subsystem (Sabatier and Weible 2007, True et al. 2007). An example of the former would be expansion of conflicts between actors in a policy subsystem (Real-Dato 2009). Examples of external shocks include focusing events (e.g. floods), but also other changes in context such as economic crises, public opinion etcetera. But such events are only shock events to the extent that they are seen as such by actors involved. Shock events may be a main cause for dynamics in modes of governance, but it may also be the case that they only triggered immanent changes (True et al., 2007) or even “close policy windows and inhibit change rather than the reverse” (Rayner, 2009:91).

MSF addresses shock events. The framework distinguishes a problem stream, next to a policy and politics stream, in which focusing events are explicitly denominated (Zahariadis 2007). PET conceptualises shock events, by arguing that, although large punctuations can be preceded by shock events, it is still an open question whether it concerned the only or most important reason for the occurrence of large changes (True et al., 2007). ACF does not denominate shock events as such, but these would logically fit in the category of external (system) events which co-constitute the context in which policy subsystems have to operate (Sabatier and Weible 2007). This category would, however, only grasp external shocks while shock events can also occur within a policy subsystem (Real-Dato 2009). IAD and change agency literature do not explicitly discuss shock events.

8.2 How shock events may lead to stability

In The Netherlands, in the 1980s and 1990s, many plans for dike reinforcement had been made. In 1995, an emergency situation arose because of the threat of dikes being breached due to extremely high water levels in some major rivers. As Driessen and De Gier have shown (1999), this shock event helped the implementation of flood defence measures and the necessary changes in legislation, which had been hoped for by many water sector professionals for some time. In this specific example, however, the main thrust of the change was acceleration along existing paths and trajectories (flood defence), although also new types of measures (flood mitigation measures, Room for the River Measures) entered

policy agendas (Driessen and De Gier, 1999). So in a sense, this particular shock event contributed both to stability and dynamics in (modes of) flood risk governance.

8.3 How shock events may lead to dynamics

In August 2003, near the Dutch village of Wilnis, an unexpected dike breach took place. The dike failure was due to the fact the dike was composed of peat (as is the case for 3,500 km of dikes in The Netherlands) that had probably dried out due to the hot summer weather³. This pointed Dutch water managers to a dike failure mechanism that had not been accounted for until then and, counter intuitively, to the possibility that dikes can break in times of *dry* weather and *low* river discharges. Water boards that have management responsibility for peat dikes are now developing all kinds of flood management measures to avoid these dikes to dry out in times of dry weather.

9. Conclusion and research agenda

This paper has developed a meta-framework for explaining changes in modes of environmental governance. It was argued, first, that studies in environmental governance more generally would benefit from a more explicit denomination and operationalisation of the explanandum. Second, we proposed five types of explanatory factors: physical circumstances, infrastructure, structural factors, agency and shock events and illustrated them with examples of how they can contribute to stability and to dynamics in modes of environmental governance. The factors are being addressed in several dominant strands of the policy science literature, including PET, MSF, ACF, IAD and change agency literature, but in different degrees. Especially physical circumstances and infrastructures are less prominently present in the discussed frameworks. To avoid fragmentation in empirical analyses, we suggest not trying to integrate these and other bodies of literature, but instead to stimulate exchange and discussion between them. Our meta-framework should be seen as a proposal for how to go about this. We expect that disciplines other than the more sociologically or public administration oriented ones (e.g. economists or legal scholars) will recognise the explanatory factors introduced in this paper and hence will be able to collaborate in comparative analyses, providing challenging competing explanations. The framework laid down in this paper may serve as a dialogue facilitator for this purpose.

A dominant message to be derived from this paper is that precision is important, both in specifying what changes and what remains stable (the explanandum) and in analysing the relative influence of certain explanatory factors. Scholars may be encouraged to include in their studies a reflection on which of the factors they do (not) address. To move forward in the development of explanations for stability and dynamics in modes of environmental governance, we foresee the following next steps in particular.

First, the step preceding the development of explanations for stability and dynamics, that of the analysis of stability and dynamics, is still in need of a stronger and more refined empirical basis, although important steps towards the development of (comparative) analyses of stability and dynamics in modes of governance in various empirical domains have been made recently (e.g. Anonymous, submitted; Weber et al. 2013).

Second, comparative explanatory empirical studies need to be carried out. Methodologically, these should seek multiple lines of converging evidence for certain explanations through triangulation of various sources of data. Empirically, these studies need to assess the relative importance of the

³ http://www.rijkswaterstaat.nl/actueel/droogte_in_Nederland/veendijken/

explanatory factors, preferably specified per empirical domain. Furthermore, interactions between the explanatory factors need to be assessed. Logical types of interactions to focus on are those of interaction between action and structure (duality of structure); and the interplay between more 'material' factors (physical circumstances, infrastructure) vs. more 'social' factors (structural factors and characteristics of agency). Besides that, social processes can be interpreted along the lines of learning versus negotiation (Driessen et al., 2001; Vink et al., 2013). Both strands of literature are relatively separate, but for scholars in environmental governance it will be important that studies focusing on policy learning (Sabatier and Jenkins-Smith, 1993) are combined with ones that focus on conflict resolution (Susskind et al., 1999).

We hope that this paper has provided a next step towards the development of more profound and more comparable empirical basis for explaining (the absence of) dynamics in modes of environmental governance. Such empirical basis will constitute a vital building block towards the development of design principles for governance for sustainable development. We invite other scholars to join us in the next steps of this endeavour.

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