

Making space for institutional change?

A comparative case study on regime stability & change in river flood management in the Netherlands & England

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Although there are significant differences in state traditions in the field of river flood management, both in the Netherlands and England various projects have been implemented to make more “Space for the River” to reduce the risk of river flooding. Within the Netherlands a whole program (39 projects) was assigned to enlarge the discharge capacity of the Dutch main rivers considerably. In England a cross-sectoral, programme “Making Space for Water” set out the strategic direction of travel for a more holistic, sustainable approach to fluvial flood risk management. In this paper we compare both approaches to making more space for the river and the institutional contexts in which they are applied. Although the chosen approach to introduce new ideas in both countries is different, as is the specific rule constellation of the policy regime, both countries however show many characteristics of path-dependency and institutional inertia. Change within flood management regimes is seriously hampered due to characteristics of both the institutional regimes in which flood risk management is anchored. Core competences have become core “rigidities” in both the Netherlands and England, preventing flood risk management from being adaptive to innovative changes in flood risk management mind-set and agendas.

1. Introduction

In recent years, both in the Netherlands and in England various projects have been implemented to reduce river flood risks by enhancing river discharge capacity and “making more space for rivers”. In the Netherlands a programme labeled “Room for the River” started in 2001 consisting of 39 projects, of which 34 will eventually be implemented. This was designed to increase the discharge capacity of the main Dutch rivers considerably. The programme will be finalized in 2015, after which project implementation

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will start. The programme will probably be extended after 2015 in light of climate adaptation measures identified by the Dutch Delta State Advisory Commission of 2008.

In England, a cross-sectoral strategy, “Making Space for Water”, was launched by the Government in 2005, setting out a 20-year strategic direction of transition towards a more holistic, sustainable approach to flood risk management. Whilst recognising the need to focus investment on defences in areas at greatest risk of flooding, the English strategy was also expected to result in flood risk management solutions associated with natural processes. However, unlike the Netherlands programme outlined above, the English Making Space for Water strategy lacked specific targets as regards “making more space for rivers”. Instead the strategy aspired more generally to the appropriate use of realignment to widen river corridors and areas of multi-functional wetlands that would also provide for wildlife and recreational resources (Department for Environment, Food and Rural Affairs [Defra], 2005).

Although both approaches have been implemented in quite path-dependent and static policy domains, their impacts in terms of “regime dynamics” are different. A regime may be defined as the “implicit or explicit principles, norms, rules, and decision-making procedures around which actors’ expectations” (Krasner, 1983). As in other countries, the flood risk management regimes in England and the Netherlands are remarkably stable and even resistant to change (Harries & Penning-Rowsell, 2011; Meijerink, 2005; Scrase & Sheate, 2005; Wiering & Arts, 2006). However, after the perceived success of the Room for the River programme in the Netherlands, thinking about how to deal with changing climate conditions (higher river discharges and sea-level rise) is now approached with the principal aim to make space for rivers whenever possible and to build higher dikes whenever necessary. In England, few schemes for managed realignment and restoring of functional floodplains have been put into practice. The majority of restoration projects are limited to river restoration within river channels, whereby schemes to restore floodplains for flood risk management are often of a small scale and largely limited to demonstration sites. It has been suggested that the English practice of making more space for rivers is not keeping pace with the associated policy rhetoric (Adams, Perrow, & Carpenter, 2004; Ledoux, Cornell, O’Riordan, Harvey, & Banyard, 2005; Moss & Monstadt, 2008; Potter, 2013a; Werrity, 2006). The question arises of how to explain these differences in regime changes in the presence of the same overall aim, namely to make more space for rivers.

Various meso-level theories and approaches from the social and political sciences offer means of conceptualising policy regime change and stability, from policy arrangements (Arts & van Tatenhove, 2000) to transition landscapes or pathways (Geels & Schot, 2004), the advocacy coalition approach (Meijerink, 2005) and policy entrepreneurship (Huitema & Meijerink, 2010). A common element underlying these approaches is the idea that to change the hegemonic set-up, it takes a coherent agenda, alliance and strategy. Spaces (niches) need to be captured to show that these alternative approaches can work (for example, in the Netherlands the Meuse and in England the Lower Thames rivers). However, the above described theories and approaches are less helpful in explaining the coexistence of change and institutional inertia or reproduction. Wiering and Immink

(2006) have sought to explain the entrenchedness of the Dutch water policy context, while Van Hemert (1999) has claimed that creating space for rivers was just a different modality of the same technocratic controlling mindset. This suggests a path of gradual transformation rather than transition.

There are many studies departing from a more institutional perspective, that offer a framework to explain both stability and change by analyzing both mechanisms of path-dependency and institutional change (Duit, 2007; Peters, Pierre, & King, 2005; Thelen & Mahoney, 2009). In this article, we use the approach of modest or gradual institutional change as developed by Streeck and Thelen (2005) in which different forms, speeds and grades of change are distinguished, more gradual than the regime shifts that are to expected from a transition perspective. We deliberately chose to compare the Dutch and English contexts. Both are characterized by an influential and long-standing role for the government in water management and flood security. The flood risk management regimes in both countries show many characteristics of path-dependency and institutional inertia. However, the chosen approach to introduce new ideas is different, as is the specific rule constellation of the policy regime. In this paper we compare both approaches, the institutional contexts in which they are applied. We also focus on the institutional legacy of these contexts, and analyze why their outcomes differ with regards to institutional change and how we can explain these differences. By doing so we aim at adding a more subtle understanding of policy stability and change in contemporary flood risk management, which we think relevant to science on the one hand and to policy-makers and practitioners faced with the challenges of climate change on the other.

2. Flood risk regimes, institutional inertia and policy change

National flood risk management regimes show many characteristics of institutional inertia (Dicke & Meijerink, 2008; Garrelts & Lange, 2011; Harries & Penning-Rowsell, 2011). This suggests that reforming flood risk regimes is anything but easy due to the “sticky” institutional, policy and cultural legacies of these regimes.

National flood risk management policy contexts are characterised to a large extent by stable relationships. These are associated with the actors involved, accepted views of who the principal players amongst these are and the balance of power between them, as well as the boundaries with adjacent policy fields. Stable relationships can come with more or less fixed and stable patterns of behaviour, divisions of tasks and a stabilisation of the “rules of the game” (Arts & Leroy, 2006; Crabbé & Leroy, 2008). Some institutional patterns can “solidify” and thereby constrain political behaviour, creating mechanisms of path dependency that agencies cannot easily overcome (Arts & Goverde, 2006). Solidified policy domains can result in actors being badly prepared for engaging with new issues and problems that emerge (e.g. climate change) and responses to them (Crabbé & Leroy, 2008). Research undertaken on the institutional basis of flood risk management policy has uncovered policy fields and domains that over many years have established ways and styles of policy-making that may have become rigidly “institutionalised”. This

means that the way in which the specific policy processes unfold is more or less pre-structured (Wiering & Crabbé, 2006). In this context, some of the institutional patterns are continually being reproduced and consolidated, and are very resistant to change (Wiering & Crabbé, 2006).

Institutionalism theory focuses on the temporary character of stabilisation; structures are not fixed. Rather, they can be gradually changed considering the ongoing process of construction and reconstruction of the organisation and substance of a policy domain (Van der Zouwen, 2006). New ideas, actors, rules and resources can emerge in policy domains and it is possible that these can change existing ideas, result in new coalitions, affect existing rules and resources. In turn, sometimes such changes can become patterns themselves, whereby new problem definitions become stable and the new division of responsibilities and interactions between actors become routine (Van der Zouwen, 2006). Liefferink (2006, p. 47) described the structure of policy arrangements to be like language, in that “speakers of a given language may gradually adopt new grammatical or syntactical rules, or invent new expressions. They are not able, though, to change the entire language at once”.

Change in a path-dependent policy regime is difficult for more than one reason (Pierson, 2000). Based upon the seminal work of Arthur (1994), Pierson has presented the main reasons why path-dependency seems to be an important characteristic of public policies. He argues that four characteristics of politics make path-dependency particularly prevalent. First, politics has to do with the provision of collective goods. This is backed by authority which is expressed in the use of laws and obligations. Laws also have the character of public goods for those who benefit from them. It is difficult to change existing power constellations, given the interests they represent. Furthermore, they carry the bias of previous interactions, views and power relations (Gupta et al., 2010). Hence, all institutions embed a degree of robustness and resistance to change. Second, the high density of institutions is an important barrier for change. Policy regimes have a complex, compounded and highly interconnected institutional structure. Adjustments of this structure are thus highly difficult, due to the robustness of the system against change. At the same time, due to its complex character, one small disturbance can trigger a whole series or cascade of changes and therefore provoke dramatic regime shifts (Folke, Colding, & Berkes, 2003). Third, the possibility of using political power to enhance power asymmetries is important to note. Due to positive feedback patterns the power of one actor coalition can grow disproportionately, having a self-reinforcing effect. Power can be used to further enhance the power of the ruling coalition. Finally, due to the huge complexity of political environments it is highly difficult for learning processes to occur. Furthermore, three characteristics of politics make positive feedbacks particularly intense. These include the absence or weakness of efficiency-enhancing mechanisms of competition and learning; the shorter time horizons of political actors; and the strong status quo bias generally built into political institutions (Pierson, 2000).

Within a political realm there are only a few (if any) mechanisms for competition. Political environments are normally much more permissive than economic ones.

Furthermore, learning is difficult in complex environments, as “political reality is so complex and the tasks of evaluating public performance and determining which options would be superior are so formidable, such self-correction is often limited” (Pierson, 2000, p. 261). Due to the logic of electoral politics, politicians are rarely interested in the consequences of their actions beyond the short term, rendering it difficult to realize “credible commitments” (arrangements that facilitate cooperation by lengthening time horizons). The long-term thus is usually beyond the political horizon. Moreover, the strong status-quo bias is a strong barrier for change. Institutions are designed in a way that makes it difficult to overturn them and politicians usually seek to bind their successors and themselves by removing certain options “from their future menu” (Pierson, 2000, p. 262).

At the same time, even seemingly inert policy regimes do actually change. Ideas underlying a dominant policy paradigm can change due to both, endogenous and exogenous developments (Ingram & Fraser, 2006; Sabatier, 1998). Wiering and Crabbé (2006) describe exogenous forces for change as a form of “shock waves” in society, such as a sudden disruption of the physical environment (e.g. flood event), a political event (e.g. political modernisation) and adjacent policy arrangements (e.g. spatial planning). These forces can either trigger new or stimulate existing institutional changes, or cause further congestion in the development of a policy domain. “Policy entrepreneurs” are a force of change endogenous to the arrangement and generally hold the perception that there is a need to change the governance capacity of arrangements (see also Warner, 2013b). We summarize the factors explaining gradual institutional change as presented by Sabatier (1988) and Ingram and Fraser (2006) in Table 1.

In order to analyze the degree of institutional change resulting from the dynamics within a specific policy domain, we use the frequently used typology of Streeck and Thelen (2005) which makes a distinction between the process of change and the result of institutional change. Figure 1 presents this typology.

It is interesting to see whether we can find a relation between the impact of change and the drivers for change. In the comparative case study we both reconstruct the drivers for change in river flood risk management and the resulting degree of change.

Table 1
Gradual institutional change - towards a typology of explaining factors

External system events		Changes in socio-economic conditions
		Changes in public opinion
		Changes in systemic governing coalition
		Changes in other subsystems
Internal subsystem dynamics	Direct	New insights from science
		Existing strategies fail
	Indirect	New actors
		New venues

		Result of change	
		Continuity	Discontinuity
Process of change	Incremental	Reproduction by adaptation	Gradual transformation
	Abrupt	Survival and return	Breakdown and replacement

Figure 1. Process and result of institutional change (Streeck & Thelen, 2005)

3. Methodological approach

A comparative case study of the river flood management approaches of Netherlands and England is provided. For England, research conclusions are drawn from an archive review and a critical discourse analysis of policy documents, the relevant professional literature and newspaper articles. Other aspects include participant observations, focus groups and semi structured interviews with key stakeholders from 2006 to 2013. For the Netherlands a secondary analysis of existing studies and evaluations on the Room for the River program (Berenschot, 2007; Roovers, 2012; Rijke, 2014) of the existing regime and the way in which the paradigm of making space for rivers was institutionalized is provided by means of documentary study and secondary analyses. This analysis is complemented by insights from several case studies that were carried out earlier (Warner, Van Buuren, & Edelenbos, 2013). To establish the institutional change that resulted from the Room for the River program an extensive document analysis was conducted in which the various relevant policy statements and formal regulations were analyzed.

4. River flood management in England

4.1. Institutional context

For centuries, landowning interests, the pursuit of growth and the accumulation of capital, have dominated floodplains and water management in England. Initial small scale and uncoordinated efforts to drain land and control polluted, troublesome rivers saw a rapid expansion following World War I, when England's reliance on foreign agricultural imports led to a pivotal point in new institutional arrangements – the Land Drainage Act 1930 (Scrase & Sheate, 2005).

The Land Drainage Act gave 46 catchment boards and local authorities the permissive powers and financial resources to carry out flood defence engineering works to eliminate “vast unhealthy washes” and “swamps”. Large rivers, otherwise termed “arterial drains”, were “improved” through widening, deepening and straightening. The central questions were of a technical nature and involved how to solve drainage problems so that food production could be modernised and expanded (Penning-Rowsell & Handmer,

1988; Scrase, 2006). Although historically development had taken place above the level of normal, seasonal floods, coupled with population and economic demands, the newly drained land in urban areas became highly valuable and the wise avoidance of floodplains for development broke down in the 1940s, yielding to pressures for housing and industry (Werritty, 2006).

The “shock” flood events of 1947 on the Fens, 1952 in Lynmouth and the dramatic storm of 1953 that “invaded” the east coast of England (shared across the channel by the Netherlands and Belgium) and claiming over 300 lives were considered an act of war by nature and the UK Government followed the US and Dutch lead by introducing a major strategy favouring structural flood defence solutions; dikes, dams, flood control reservoirs, diversions and floodways (Adams et al., 2004). Building on floodplains continued to progress at a rapid pace in flood-prone areas up until the turn of the 21st century, despite the obvious risks. In order to minimise the ensuing flood risks, streams and rivers were straightened, diked, and lined in order to increase their velocity and capacity to carry more flow away from the vulnerable floodplains (Novotny, Ahearn, & Brown, 2010).

By the 1990s and turn of the century England again experienced a number of catastrophic flood or “shock events”. A discourse of environmentalism and “sustainability” (cf. Brundtland, 1987) had developed in response to a strongly pro-development agenda. The language of sustainability provided the frame for contesting voices to express the benefits of making space for rivers. Whether or not an event becomes a “discursive event” and influences the flood policy discourse usually occurs only if an event appears on the discourse planes of politics and the media, extensively and for a prolonged period of time (Jager & Meier, 2009). If a statement occurs very frequently, it has sustained effects and solidifies a particular knowledge. Subsequently, it can become a stimulus for change (Jager & Meier, 2009). Whereas the 1990s saw the media supporting the flood defence discourse, utilising pathos and “war” discourse to control rivers, from the late 90s onwards the folly of building on floodplains and the use of structural defences in exacerbating flood risk gained a dominant position in the discursive space of the media. The perception of a poor functioning of the policy domain has proved the dominant endogenous force of change. Flood defences were pronounced to be inefficient and too expensive, losing political legitimacy. They were also seen to be impacting on the hydrological and ecological integrity of entire watersheds. At the same time as the environmental impacts on riparian and aquatic ecosystems, wildlife and the landscape began to be recognised, shifting institutional arrangements saw the reduced influence of farming interests in England and the associated demise of the Ministry of Agriculture, Fisheries and Food (Penning-Rowsell & Handmer, 1988) subsumed by the newly created Defra in 2002.

Aided and abetted by the storm clouds that gathered over Boscastle in the devastating floods of 2005, with associated media coverage, the “contesting voices” of ecologists, geomorphologists and geographers found their window to influence the radical change in policy, from flood defence to flood risk management in Defra’s “Making Space for Water” strategy (2004, 2005).

4.2. *Space for the river: content and approach*

The new strategy, “Making Space for Water” (2005), set out the government’s 20-year plan for a holistic approach to fluvial flood and coastal erosion risk management, to embrace the new flood doctrine and seek a different model of flood risk management than the one preceding it (Johnson, Penning-Rowsell, & Parker, 2007). It was recognised that a more holistic approach to the management of rivers and floodplains was required, moving away from managing risks on a project-by-project basis towards a catchment approach achieving multi-functional benefits where possible.

Currently, Defra is responsible for national flood management strategic policy in England with various other public bodies implementing policy at a local level. Defra provides funding through grants to the executive public body, the Environment Agency (EA), and also to local authorities. The EA also administers grants for capital projects to local authorities and Internal Drainage Boards. “Making Space for Water” was a strategic document, setting the direction of travel but lacking specific targets or a programme of specific measures or schemes. The Environment Agency had been tasked with the integration of Catchment Flood Management Plans (CFMPs) for catchments of high flood risk across England, under the umbrella of River Basin Management Plans (RBMPs), the latter a requirement of the EU Water Framework Directive. CFMPs establish local management policies to alleviate flood risk, and help maximise the combined benefits of flood management and other water policies (Wharton & Gilvear, 2007). Defra had anticipated that the WFD would require some rivers to be returned to a more natural state, including improving the river channel profile and river margins through setting back defences (Wharton & Gilvear, 2007). Areas of agricultural land currently behind potentially non-viable flood defences were referred to as the possible candidate areas for restoration and realignment, through the use of agri-environment schemes (Wharton & Gilvear, 2007). It was also seen as “critical” that the flood pulse was recognised as a vital part of most river ecosystems, the ecological disturbance producing a burst of biological productivity, maintenance of biodiversity and fertility of floodplain soils (Wharton & Gilvear, 2007).

As previous policy arrangements had favoured the use of river floodplains for intensive agriculture and capital development, coupled with engineered flood defences to protect investment, the successful implementation of the innovative strategic approach would also involve complex institutional reforms in neighbouring policy sectors and societal domains (Moss, 2008). Defra’s “Making Space for Water” (2005) document emphasised the importance of a coordinated approach to land use, planning policy and urban design. Planning policy guidance was reformed in Planning Policy Statement 25 (PPS25) in 2006 to outline the roles and responsibilities for developers, regional and local planning bodies and authorities, in a more strategic, rigorous and systematic approach to the development decision-making process regarding flood risk (Goodson, 2011; Johnson et al., 2007). The new planning guidance placed an emphasis upon “reducing”, in addition to “avoiding” flood risk. Under the ethos of working in constructive partnership all stakeholders were to identify “opportunities for development of infrastructure that offer[ed]

wider sustainability benefits”. This included the dual use of flood storage and recreation to realize “cost-effective” solutions for the reduction and management of flood risk. Opportunities offered by new development were to be taken, making the most of the benefits of green infrastructure for flood storage, conveyance and sustainable urban drainage systems.

4.3. Results in terms of regime change

With momentum growing for institutional change, the findings of the IPCC 2007 on climate change were again closely ensued by the shock flood events across England, leading to further strong recommendations for change in the Pitt Review on the causes and consequences of the summer floods 2007 (Pitt, 2008). Respondents to the Pitt Review (2008) had expressed concerns that progress on the delivery of more working with natural processes was too slow despite Government flood risk management policy supporting this approach in its “Making Space for Water” strategy.

The Pitt Review led to fundamental legislative change in the Flood and Water Management Act 2010, which has identified new responsibilities and a duty of cooperation between all relevant authorities. Defra remains the lead government department and develops flood risk management policy. The EA has been given the strategic overview for flood risk management, and is also responsible for flood risk management activities on main rivers. The Act provided for the “replacement” of existing Regional Flood Defence Committees with the “Regional Flood and Coastal Committees” (RFCCs), who “have a key role in the co-ordination of FCERM (UK Flood and Coastal Erosion Risk Management, JW) by advising on and approving the implementation of programmes of work for their areas, and supporting the development of funding for local priority projects and works. They will also have a wider role in assisting the scrutiny of local authority risk assessments, maps, and plans required by the EU Floods Directive. “Lead local flood authorities” (LLFAs), working closely with RFCCs, are to prepare and maintain a strategy for local flood risk management and how it will be managed in “partnership” in their areas, which includes the establishment of a “SuDS [sustainable drainage] approval body”. District councils and internal drainage boards (IDBs) supervise land drainage, and flood defence works on ordinary watercourses or other sources of flooding. Thus a new “actor” has joined the scene of flood risk management, in the form of “Lead local flood authorities”, yet the new authority will be working closely with the “new” Regional Flood and Coastal Committee (i.e. the Flood Defence Committee), within the remaining institutional structure that has now remained largely intact for over eight decades in England.

However, the current financial crisis has perhaps exacted the strongest change on “making space for water” through the adjacent policy arrangement of planning. From the Planning and Compulsory Purchase Act of 2004 to 2012, the structure of English planning witnessed a “breathtaking pace of change” (Cowell & Owens, 2010, p. 954). The final years of New Labour saw further steps to concentrate the institutions of regional planning on economic development goals. As the financial crisis deepened, the Conservative/Liberal Democrat coalition government elected in May 2010, backed by the political lobbying

of house builders and developers, announced planning reform as key to England's economic recovery and planning a tool for economic growth. In successive measures to "roll back red tape" and get "planners off our back" the coalition government announced the delivery of 75,000 new homes "in an attempt to reverse the chronic shortage of housing and boost the flagging economy" (*The Times*, 2012). Pro-development changes in the planning arrangement backed by the Treasury are evident in the radical restructuring of planning policy; the "streamlined" National Planning Policy Framework (2012). Economic discourses were neatly aligned with an emphasis on "technological innovation" (Davoudi, 2012). Key elements of the former PPS25 are retained in an accompanying new NPPF Technical Guidance, albeit there is a shift in emphasis within the flood risk management policy arrangement to "resilience" aligned with neo-liberalism ideology; "the object to be governed has to some extent shifted from actual flood waters, to those citizens at risk of flooding and the agencies or organisations with designated responsibilities", that is local councils and the EA (Butler & Pidgeon, 2011). Originating from Labour and now driven by "localism", the Government is trying to encourage local responsibility, for local communities to understand flood risk management and to "learn to live with it" (Butler & Pidgeon, 2011).

Although viewed positively by ecologists and conservationists, the long-term impacts of the embryonic flood alleviation technique of making space for rivers was viewed with scepticism by those engineers who favour the traditional flood defence discourse. They saw restoring floodplains as "weakening" flood control, particularly given the limited experience of large scale schemes (Moss, 2007). Making room for rivers is considered a complex natural process in which the science underpinning the measures is incomplete, the misunderstanding of what can and cannot be done thus hinders a holistic approach (Moss, 2007). This is the case despite the growing scientific knowledge on the functioning of floodplains, ecosystems and the regulation of rivers, since the mid 1980s generated by international scientific communities of ecologists, biologists, hydrologists and geomorphologists in England as well as internationally.

5. River flood management in the Netherlands

5.1. Institutional context

The Dutch are proud of their strongly institutionalized flood risk management regime. The regional water boards and the National Department on Public Works (Rijkswaterstaat) are the cornerstones of this regime. These have extensive powers to keep the whole system of dikes, sluices, dams and other associated infrastructure in a good condition. This system was significantly enforced after the dramatic 1953 storm flood which claimed over 1700 lives in the Netherlands.

Norms for flood risk safety are laid down in the Water Law, approved by Parliament. These norms are related to the strength of the dikes and are upheld by the water boards. When dikes are insufficient, improvements are programmed by the national government

and executed by the water boards. The necessary financial means for this whole system are split. 50% is financed by national government and 50% by the water boards that have their own water system tax base. This system is based upon the principles of solidarity. This means that whatever your personal flood risk is, you pay as much as every other inhabitant of your water board district for flood risk management.

The Dutch flood management system is internationally renowned for its technological innovativeness. At the same time its strong focus on prevention has also been the reason for a strong technological and cultural lock-in. This means that flood risk management is dominated by the idea that water has to be retained at any cost. There is a strong epistemic community of public and private professionals, dominated by a civil engineering background and with a bias towards engineering solutions for flood risk safety.

As noted in the former section, since the 1950s, the Public Works Department had developed into a powerful centralised organisation, which critics called a “state within a state” (Lintsen, 2002). It had ruled between the dikes on the main rivers, and would find it hard to share power. The world-famous technical prowess in the construction of dams and sluices for the Delta Project had legitimized the civil engineers from the Public Works Department as heroes saving the country from the evil waters. This narrative was so dominant it took twenty years before any dissent over the consequences of this safety infrastructure reached the political arena. Discomfort took the shape of a mirrored discourse in which civil engineers were seen as the bad guys, the wicked wolves or dragons threatening the beautiful princess, i.e. the pristine landscape, natural, and cultural values, with their evil plans (van Eeten, 1997). Green thinking got the upper hand in policy circles, with “nature development” as its central value, a form of river restoration that pragmatically harks back to an idealized past of natural rivers, but also pragmatically eyes economic profitability. Landscape development can generate the funds to cover the cost of “new nature”. Whilst the Delft civil engineers have lost their status as magicians, several have quickly adapted by going “green” now that nature conservationists and worried citizen have increasingly have started to repeatedly win the day. An influential group however, has insisted every last penny should be invested in raising and strengthening dikes (Vrijling, 2013).

5.2. *Space for the River: content and approach*

Initially, “Space for the River” meant a ban on any new development in the floodplain. This was more or less accepted in the immediate aftermath of the near-floods of 1993 and 1995, but soon, local authorities started to look for ways out. In 2005, this ban was lifted, provided adequate compensation and additional safety measures were provided. The new arrangement enabled provincial and municipal authorities to pursue “regional development” as a comprehensive goal, incorporating river projects, housing development, and congestion relief. As a result “Space for the River” came to strike a balance between flood safety and climate adaptation, environmental values and urban/regional development. This “double ambition” was formally assigned by the national government. This program can

also be seen as the result of the strong societal resistance against the Deltaplan Main Rivers, which was a large-scale dike enforcement program, vigorously implemented after the near-floods of 1993 and 1995.

Rather than a rapid planning process or Rijkspactenprocedure, which would have fast-tracked decision-making in a single sector to cope with a crisis, the program was given the form of a “PKB”, a decidedly non-crisis “Spatial Planning Key Decision” procedure. This gave much more scope for multi-stakeholder bargaining and environmental and social impact assessment. As a result, vertical negotiations between central and local authorities, horizontal bargaining between local authorities amongst themselves and “diagonal” talks between authorities and private and NGO actors constitute highly complex governance processes that in a couple of cases resulted in highly attractive multifunctional solutions (cf. Van Buuren, Edelenbos, & Warner, 2012). However, in some projects it also resulted in stalemate negotiations between local inhabitants and regional authorities. The fact that this approach led to concrete projects has impressed observers.

This governance approach increased the support base among local authorities, private actors, and environmental NGOs. It also contributed to local opposition on the part of those who believed the interventions were not safe enough or who have to leave their ground in case of dike set-backs. Within the Room for the River Program, 34 projects have been selected in which eight types of measures for giving the river more room are realized. Following the program website, these types are:

- Removing obstacles from the riverbed;
- Lowering the floodplain;
- Lowering moles;
- Depoldering;
- High-water channels;
- Lowering summer bed of rivers;
- Water storage;
- Dike relocation.

The prime stakeholders to be enrolled in the program are the lower-level authorities, charged with concretising and implementing the policy. The success of this enrolment is not a given. At the local level, as predicted by Mosse (2004), the development thinking embedded in Room for the River resulted in a mix of compliance and resistance. In the 1990s a “liberal wave” led to the decentralisation and outsourcing of many “basic services” in the Netherlands. This eroded the power of the Public Works Department. Forced to downscale, it left the initiative to implement and tailor Space for the River to local wishes. These local authorities were happy to adopt this decision-making space and integrate Space for the River project in integrated regional development visions.

In spite of the official announcement of a new water management paradigm, actual practice presents a more varied picture (Wolsink, 2006). Local authorities go with what appears to be the flow – river widening – but negotiate conditions that suit them best. That means that the various river projects have to take existing interests (like agriculture) into

account in the final spatial design of the project, or that they have to include new ambitions (with regard to recreation, nature development, infrastructure et cetera). The involvement of local authorities gave inhabitants a stronger say in the way in which the river projects were designed (Edelenbos et al., 2013). In new flood protection programs the Space for the River program is frequently cited as a best practice when it comes to synchronizing agendas of spatial development and flood management, collaboration on multiple governance levels and stakeholder involvement.

Overall, though the Room for the River programme was successfully implemented. 27 of the 34 projects will be realized in time. For the river IJssel, a few projects are currently delayed due to societal controversy, political hesitation and difficulties with nature legislation (Andersson Elffers Felix, 2013). The program is also implemented within the preset budgetary frame.

5.3. *Results in terms of regime change*

Although the Room for the River program was only program when it originally started, there are some concrete indications that the river widening philosophy is now more broadly embraced.

River widening is now considered a standard alternative in the Flood Risk Defense Program (HWBP). This program is the basis for the organization of the improvement of disapproved levees. In the exploration phase for dike enforcement, both improvement measures for the levees as well as the river widening have to be investigated (<https://zoek.officielebekendmakingen.nl/kst-27625-191.html>). At the same time, the main emphasis in this program is still on traditional dike enforcement. In those cases where (partial) dike sections are disapproved dike enforcement is frequently considered the most cost-efficient alternative. This is strongly enforced by the dominant (and official) adagio for flood risk protection to keep it as cheap and simple as possible.

The Policy Guideline on the Main Rivers in 2008 replaced the Room for the Rivers programme. This guideline is much more receptive to developmental activities in the riverbed compared to its predecessor. It contains various criteria to be used to assess whether new functions in the riverbed are allowed. At the same time new reservation areas for future river widening are defined in national decisions and as such formalized in local area plans. That means that spatial developments on these spots are not allowed for. The legal reservation option is used to make the realization of future widening projects much easier.

In response to a report by the State Advisory Commission, in 2009 the Dutch Government decided to start a new Delta Programme, replacing the national coastal and river defense programme which was set up following the 1953 storm surge. This new programme represents a fundamental rethink of the robustness of the Dutch water management system. It has to result in a couple of major so-called Delta Decisions about new flood risk standards and the future provision of fresh water by the end of 2014. The Delta Program is organized through nine regionally or thematically focused sub programs. The idea of river widening is a corner stone of the Main Rivers sub-program. Official statements of this

sub-program state that “river widening should be undertaken when possible, dike enforcement when necessary”. For the long term, river widening is seen as the most favourable adaptation strategy (Delta Commissioner, 2014). At the same time many involved actors question whether the standard operating procedures of the Flood Risk Defense Program suffice to enable this strategy. They perceive a risk that traditional dike enforcement will return as the dominant strategy for river flood risk management.

6. Comparative analysis: drivers for and impact of regime change

Table 2 contrasts the external and internal drivers for change in England and the Netherlands, focusing on changes in socio-economic conditions, public opinion, systemic government coalitions, and other subsystems. Furthermore, new insights from science, the failure of existing strategies, new actors and venues are considered.

Table 2
External and internal drivers for change.

	England	The Netherlands
<i>Changes in socio-economic conditions</i>	Global financial crisis, pursuit of “growth” and economic objectives	Global financial crisis, pursuit of “growth” and economic objectives
<i>Changes in public opinion</i>	Shock flood events lead to questioning of development on floodplains	Resistance against dike enforcement Increasing support for green values
<i>Changes in systemic governing coalitions</i>	Flood Defence institutional structure remains intact, from the land drainage act of 1930 to present day.	Program structure of Room for the River established new balance of power: RWS as executive agency; local and regional authorities as co-deciders about selection of measures
<i>Changes in other subsystems</i>	Fundamental change in the planning system, rolling back of regulation to facilitate development agenda	No meaningful changes observable
<i>New insights from science</i>	Flood “defence” seen as damaging to ecological and hydrological integrity of water courses from turn of century. Post financial crisis, move to “resilience” and localism.	Increasing insights in value of effectiveness of spatial solutions (lowering water levels)
<i>Failure of existing strategies</i>	Flood defence strategy questioned in turn of the century shock flood events	Dike enforcement led to increasing resistance. New failure mechanisms (piping) emphasized the vulnerability of engineering solutions.
<i>New actors</i>	Geomorphologists, ecologists, landscape architects etc. entrants to the ecologically inspired policy domain.	Entrance of new actors in the river flood risk domain (local stakeholders, municipalities, landscape architects)
<i>New venues</i>	Making Space for Water, initially provided a venue for a more holistic, sustainable response. (Recently achieved - see section 11.)	The program Room for the River contained a couple of new venues for actors to discuss flood risk safety.

a. Indicators of inertia

In the Netherlands, a successful “green/blue” engineering coalition, uniting civil engineers in government and green NGOs has failed to capture the public imagination. In the 2000s, liberal governments renounced spatial planning and green measures, partly in response to a strong populist siding against environmental and climate concern, seen as “*élitist*” and left-wing. Furthermore, good intentions on behalf of local authorities to involve stakeholder interests in the Space for the River programme did not always translate into good practice, reinforcing public scepticism.

In the English context, the government has not taken an active role in flood management as in the Netherlands, as it is seen as a matter of insurers and communities (Huber, 2004). The Environment Agency has a relatively weak policy base, mandate and budget. Potter (2013b) identified entrenched power relations as a key factor impeding a “transition.” Defra enforced rigid cost-benefit standards and community contributions for funding any new works, meaning projects in poorer areas were not easy to fund. Richer areas such as the Thames, qualified as a testing ground for green engineering projects such as the Jubilee Channel, but even there, Warner (2013a) noted a lack of cohesion in the alliance promoting non-structural space-making alternatives. Flood “defence” thus remains fundamental to the approach, skill and techniques within the relevant organisations and in the ideologies of river managers (Adams et al., 2004; Fox, 2006; Novotny et al., 2010). These can rely upon many well-institutionalised practices. Whereas Wiering and Crabbé (2006) saw the effect of developments in adjacent policy arrangements as a “force for change” on the arrangement under consideration (i.e. Room for the River and Making Space for Water), it is observed that adjacent policy arrangements bring their own set of “forces for change”. In the English case, the financial crisis served as a shock event on the planning regime; the pro-development consequences being a far more potent force for change than the shock flood events.

b. Impact of change

In England, a succession of relatively small (on a global scale) but destructive floods from 1998 until today has strengthened calls for river interventions, and the role of the Environment Agency and public involvement. Although multi-actor policy-making now characterises English water management, pre-existing coalitions have been challenged, but not displaced. “Policy entrepreneurs” generally hold the perception that there is a need to change the governance capacity of arrangements. In these policy arrangements, the entrepreneurs have been observed to fall within disciplinary boundaries and inherent ideologies, including primarily natural scientists, such as geographers, biologists, ecologists and geomorphologists. As Penning-Rowsell explained as early as 1996, non-structural strategies almost invariably depend for their implementation on more than one institution, so “that the context of one institution’s decisions, policies, and actions includes its partners’ institutions and their characteristics, plus “motivations that lead to reticence or resistance by just one partner within this type of fragile multiagency consortium, for whatever reason, can obstruct all progress” (1996, p. 87). The new discourse of floodplain restoration

Table 3
Differences of type of regime change

	England	Netherlands
Type of change	Reproduction by adaptation	Gradual transformation or survival and return

competes with the traditional, hegemonic discourse of flood defence, but to date there has not been a true redistribution of power at the local level and these more ecologically inspired actors do not have access to sufficient resources to implement their ideas.

In the Netherlands, although the Room for the River program can be seen as having been highly successful in developing and implementing a new paradigm in Dutch river flood management, there are serious barriers for mainstreaming the new paradigm into the standard operating procedures of the competent water authorities. It is difficult to predict whether, and following (in terms of Streeck & Thelen, 2005) we can expect a gradual transformation of the river flood management regime over the coming years or whether the previous regime will survive and return. However, the current focus on dike enforcement – which is strongly anchored in existing rules and regulations – still forms a major obstacle for mainstreaming the Space for the River paradigm in day-to-day implementation programs.

7. Conclusions: explaining the extent of regime change

Section 5 has described how the English novel discourse of making space for the river was anchored in Defra's "Making Space for Water" (2005) strategy. However, this is merely a strategic document, with no formal measures, programmes of work or targets. In general, environmental policy in England is characterised by a legal system with a strong emphasis on procedural regulation, and with a strong tradition of informal regulation through consensus and not coercion (Moss & Monstadt, 2008). Although the various actors in the policy arrangements, across the disciplines, hold varying perceptions of what the flood risk "problem" and solution is, those with power in the two arrangements impose their interpretation onto the rest of the actors, and are clearly able to "designate what is considered a legitimate political argument in the political discourse and ultimately, what kind of society we envision ourselves living in" (Hajer & Wagenaar, 2003, p. 13). Following Fischer (2003), it can be said the normative presuppositions of those in power in England operate "below the surface" of water management and planning.

The current coalition government in England has more recently "archived" the 20-year strategic document "Making Space for Water". The Pitt Review (2008), following shock flood events, had brought about fundamental regime changes, with the Flood and Water Management Act (2010). It is debatable whether the addition of new rules has altered the existing traditional power balance to a greater extent. Engineer dominated "Flood Defence Committees" have retained executive powers within the Environment Agency to the present day. EU Directive policy, in the guise of the Habitats Directive and the Water Framework Directive, provides levers for the ecologically inspired to implement a "working with nature"

ideology. However, the potent force for a more innovative, holistic approach to flood risk management, namely natural scientists, desire the flood defence budget to meet their ecological objectives, yet are locked in the search for more evidence that restoring floodplains for flood risk management “works”, constrained by technocratic engineering ideologies at the local level. Furthermore, a more recent financial discursive event has “hijacked” the wider English discourse on sustainability. The hegemonic economic discourse is proving a strong counteracting force for change, against making room for rivers, exerted through the adjacent policy arrangement of the planning system. In the Netherlands the programmatic approach was highly successful as a means to facilitate nearly 40 different measures that together resulted in a targeted water discharge capacity. The programmatic approach – somewhat outside the traditional institutional structures – made space for participation of other actors and for the introduction of new ideas. Therefore, it resulted in quite innovative projects for river widening, bypasses and secondary channels with multifunctional applications.

There are some indications that institutional adjustments are in favor of making space for rivers. At the same time, there are signals that actual practices of river flood management are still dominated by a strong focus on dike enforcement. New insights in structural risks like “piping” actually reinforce instead of weaken this focus in the Netherlands. Associated uncertainties turn out to be much larger than anticipated after the “old” Delta Plan, necessitating remedial or anticipatory investment in dike maintenance. This makes it cost-effective to combine maintenance with enforcement. Regional water authorities are strongly in favour of river widening. Actors involved also express their fear that the current focus on reinforcing small dike segments (“weak spots”) constitutes a significant barrier for considering river widening.

The question is whether this approach will also lead to consolidation. Although it is difficult to predict, it can be expected that institutional change will only be minimal and that the traditional system may survive. The Dutch programmatic approach can be seen as a quite effective way to insert new practices, but when river flood management returns to “going concern” it is highly difficult to maintain this success. It is difficult to predict whether a programmatic approach – which can be implemented in niche-like settings, additional to the dominant institutional regime focused upon dike enforcement – is powerful enough to gradually replace or transform that regime. At the same time, the regional resistance against traditional forms of dike enforcement grows steadily, which is thus a serious threat to its legitimacy. An incremental process of institutional change is more likely than a punctuated regime shift.

The most important conclusion from this comparative analysis thus is that change within flood management regimes is far from easy and is seriously hampered due to characteristics of the institutional regime in which flood risk management is anchored. Its change-resistance and risk aversion is an important quality of policy regimes as they have to provide stability and predictability. Especially in the context of a very important public value like flood risk management, it is important for an existing policy regime to be very critical to new, innovative concepts which possibly complicate daily practices of implementation and maintenance. At the same time, such a “core competence” can become a “core rigidity” that prevents a system to be adaptive to external changes in mind-set and agenda, and thus running the risk of losing its legitimacy (Leonard-Barton, 1992).

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