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The absence of institutional entrepreneurship in climate adaptation policy – in search of local adaptation strategies for Rotterdam's unembanked areas

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ABSTRACT

Innovative policy measures often imply institutional adjustments. Whether such adjustments are accomplished often depends upon the presence of institutional entrepreneurship: actors who take responsibility to initiate the necessary actions to redesign existing institutional practices. The question arises under which conditions can institutional entrepreneurship be developed? And, what might be the cause of lacking institutional entrepreneurship? In this article, the latter question is examined through in-depth collaborative research project for exploring alternative, adaptive flood risk strategies for flood proofing the unembanked area of the north-end of the city district Feijenoord in Rotterdam. Due to climate change, these areas are increasingly vulnerable to flooding. The traditional, institutionalized solution of raising the ground level before initiating new spatial developments does not suffice in the long term. Therefore, the city government explored alternative strategies for more adaptive ways of dealing with flood risks. Together with representatives of key stakeholders in the area, two key strategies for the unembanked areas were elaborated. These strategies have significant implications for the distribution of costs, risks and responsibilities and necessitate alternative governance architectures that exceed the current institutional structures. During the research project, it became clear that the developed alternative strategies fundamentally differed from the current institutional system. Thus, institutional redesign was necessary. This proved to be virtually impossible, especially because none of the involved actors was willing nor capable of undertaking entrepreneurial activities to start such redesign. This observation led us to further investigate into the causes and the consequences of the absent entrepreneurship.

KEYWORDS

Institutional redesign; entrepreneurial actions; flood risk management; adaptive strategies

1. Introduction

The policy field of climate adaptation is relatively new. Although in the 1970s some scholars (Bolin, 1970; Keeling et al., 1976) addressed the influence of greenhouse gas on the global climate, it took almost another decennium before the topic entered the policy

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agenda. Nowadays, actors at different levels of scale in various policy fields, among which urban planning, are processing the expected impacts in new policies, plans and measures. Especially in vulnerable and poorly protected urban zones, such as the unembanked areas in Dutch cities like Rotterdam and Dordrecht, the 'invention' of new policies for climate adaptive urban development is much needed. However, this proves to be rather difficult as the formal policy responsibility seems to be 'vacant' and institutional rules are lacking: in the Netherlands, no policy authority is formally responsible for safeguarding unembanked urban areas. This institutional 'void' calls for pro-active entrepreneurship of actors to 'invent' and implement suitable policies, planning strategies and effective measures to reduce the areas' vulnerability, which also implies institutional redesign.

We are especially interested in the difficulties to come to effective institutional entrepreneurship which is needed to overcome the often-called implementation gap in climate adaptation (Wejs, Harvold, Larsen, & Saglie, 2014). In our case – dealing with flood risks in the unembanked areas of the Dutch city of Rotterdam – innovative policy strategies were designed, but the step toward implementation was not taken. One of the reasons was the change resistance of the institutional context and the lack of effective institutional entrepreneurship. In this article, we answer the question why no effective institutional entrepreneurship was developed and which role the institutional context plays in obstructing the evolution of this entrepreneurship.

The case study used in this paper is a research project in which alternative flood risk management strategies were developed for the unembanked areas of the Dutch city of Rotterdam. These strategies were developed in a collaborative research project with stakeholders, officials and experts. As researchers we were involved in one of the latter phases of this project, to assess the institutional consequences of these strategies, and to explore possible governance arrangements for their implementation. The research project was executed in close collaboration with representatives of the main stakeholders in the area. During its course it became clear that the developed alternative strategies for flood risk management fundamentally differed from the current institutional system. Thus, institutional redesign was necessary. However, institutional entrepreneurship was not developed because no one of the involved actors seemed to be willing nor capable of undertaking entrepreneurial activities to start such redesign. Moreover, the institutional context proved to be very rigid. Then, the question can be posed how these two relate.

This article is based upon an in-depth collaborative research and builds on previous studies about the institutional context and potential technical and/or spatial measures for flood-proofing the area (Kokx & Spit, 2012; Van Buuren et al., 2014; Van Veelen, 2013). Both components constitute the institutional redesign challenge that was put before representatives of the main actors in the designated area.

2. Institutional entrepreneurship – theory and relevance

2.1. Institutions and institutional change

The perceived need for changing a policy status quo often originates from the observation that existing structures and routines cannot cope with new problems. Also, the need for developing new pathways stems from the desire to seize emerging possibilities. Existing structures and routines that set reality for actors, both organizations and individuals, thus

prescribing, guiding and rewarding or sanctioning their behavior are often referred to as institutions (Hoffman, 1999; Jepperson, 1991; Scott, 1995). Institutional conditions determine whether behavior in a particular institutional or policy field is appropriate or legitimate (Meyer & Rowan, 1977; Suchman, 1995).

There are many ways of analyzing institutions. In this article, we use the framework for institutional analysis as proposed by Williamson (1998) and adjusted by Koppenjan and Groenewegen (2005), distinguishing between four levels of institutions (see Table 1).

The capacity or agency to work toward new routines and developing alternative structures, resisting the powers of institutional path-dependency, calls for pro-active behavior, often framed as entrepreneurship. Change following from entrepreneurship indicates the deviation or crossing of some kind of (societal) norm (Garud & Karnøe, 2001). This deviation from what is 'normal' will become scrutinized. Deviating ideas or practices will have to gain wider legitimacy if they want to 'survive'. As such, legitimacy struggles will occur because what may appear to be new and valuable to one social group may seem threatening to another (Garud, Hardy, & Maguire, 2007).

An important aspect of institutional revision depends on the actual room for adjustments, the ability and willingness to implement changes. When policies fundamentally differ from the current institutional system, resistance and institutional rigidity are likely to emerge (Gupta et al., 2010; Matthews, Lo, & Byrne, 2015). Although institutions are perceived to be highly change-resistant, they actually do change. Normally institutional change is approached from a rather evolutionary perspective in which change results from a misfit between new circumstances and old institutions (Oliver, 1992). Institutional change is also frequently approached from a more political stance: institutions are subject to conflict because of different interests. Relative power differences explain whether institutions resist or actually change (Håkansson & Johansson, 1993; Peters, Pierre, & King, 2005). Finally, institutional change can also be described from a transaction costs perspective. It results from more rational considerations: institutional rules are adjusted when this is necessary to reduce transaction costs (Williamson, 1998). In other words: 'If institutions fail to fulfill stability or bring about non-decision-making and mobilization of bias, there is ground for institutional (re)design' (Ghorbani, Ligtvoet, Nikolic, & Dijkema, 2010, p. 3).

The latter form of institutional change can be seen as a form of deliberate change, referring to the domain of *institutional design*. Institutional design can be defined as: 'the devising and realization of rules, procedures, and organizational structures that will enable and constrain behavior and action so as to accord with held values, achieve desired objectives, or execute given tasks' (Alexander, 2005). In the context of this paper, we would define institutional design as: the deliberate attempt to modify, add or remove institutional rules within a certain policy domain in order to enable the production of alternative policy objectives.

Table 1. A framework for institutional analysis based on Williamson (1998) and Koppenjan and Groenewegen (2005).

Meta-level: norms and principles	Norms, values, codes, orientation, culture, informal institutions
Macro-level: rules and laws	Formal rules, laws, regulations, constitutions and the process arrangements that constitute them
Meso-level: decision-making and collaboration	Covenants, contracts, agreements, plans and the processes that constitute them
Micro-level: interactions	Actors and interactions, aimed at creating or influencing services, provisions, planning, outcomes

There are also authors who approach both the concepts of institutions and policy change from a more nuanced position which leave room to study the possibilities to alter the rules of the game when new policy ideas mature (cf. Goodin, 1998; Weimer, 1995). They draw attention to the role of individuals in altering the institutional rules of the game, and have coined the concept of institutional entrepreneurship for this.

2.2. Institutional change and entrepreneurship: balancing between structure and agency?

Combining institutions and entrepreneurship was first proposed by DiMaggio (1988, 14): 'new institutions arise when organized actors with sufficient resources see in them an opportunity to realize interests that they value highly'. Pro-active actors, the institutional entrepreneurs, create new systems of meaning that connect the functioning of disparate sets of institutions together (Garud, Jain, & Kumaraswamy, 2002). Institutional entrepreneurship is aimed at doing something new, often in a new manner. These notions indicate the relevance of developing a theory to explain how institutions are created and become diffused and stabilized through behavior of actors (DiMaggio & Powell, 1991).

Institutional entrepreneurs can be perceived as actors who look and go beyond the rules of the game, past the boundaries of 'the system of meaning'. As such, they are capable of acting as change agents (Fliegel & Kivlin, 1966; Garud et al., 2007), breaching the existing state of affairs, causing new dynamics which might transform existing institutions and/or stimulate new ones. This indicates the importance of agency as driving force behind institutional change.

Agency is the capacity of an actor, whether an organization or an individual, to act in any given environment. Here, it refers to the capacity to act or perform with (some) freedom of choice, regardless of being immersed in an institutional context. Or as Scott (1995) poses it, the ability of actors to intentionally pursue interests and exert some influence of their environment. It is important to investigate into the characteristics of agency to prevent the all too simplistic idea that the capacity to act as a change agent is an externally given talent (Delmestri, 2006; Meyer, 2006). Therefore, Garud, Hardy, and Maguire (2007, p. 67) propose to examine the factors that 'enable the emergence of institutional entrepreneurship despite institutional pressures towards stasis'.

Wijen and Ansari advocate to direct more attention to endogenously driven institutional change 'where purposeful actors overcome the agency – structure paradox' (2006, p. 1081). They observe that collective interests do not always result in collective action. This is especially the case in situations of collective action dilemmas (Oliver, 1992). These situations are characterized by a so-called double paradox (Wijen & Ansari, 2006, p. 1080). First, actors have to bridge the gap between agency and structure by overcoming constraints to initiate change. Second, actors need to find ways of coping with the tension between the need for collective action and the individual interests that oppose change, or even stimulate collective inertia. The latter paradox is caused by the fear of free riding, actors waiting for each other to take initiative and the misconception by actors of their actual capacity to contribute to problem-solving.

The question is here how the endogenous factors that cause the collective action paradox might be overcome. For each endogenous factor, Wijen and Ansari have identified

strategies that can stimulate cooperation between 'numerous dispersed actors' (2007, p. 1084) (Table 2).

These factors can be influenced by pro-active, entrepreneurial actors in search for institutional change. As such, institutional entrepreneurs must have access to social and political capacities to stimulate other actors by creating shared meaning and identities and gradually altering the actual state-of-affairs by taking other important interest bases into account. Such a process is often referred to as 'leveraging' (Dorado, 2005). In order to legitimize the allies to pursue the desired change, institutional entrepreneurs must provide them with an attractive and convincing story that enables them to mobilize their constituencies (see also Battilana, Leca, & Boxenbaum, 2009). This change-oriented discourse balances familiarity and recognition with innovation and uncertainty. Allies and their constituencies must be able to recognize the story, as well as be inspired to accept and follow it toward a new situation.

2.3. Institutional entrepreneurship as process of alliancing

Earlier, we indicated that agency is the capacity to act in a certain institutional environment (cf. Scott, 1995). To be capable of acting, an agent must be competent to articulate the need for moving from the current state of affairs toward a more desirable situation. In addition, the agent must be capable of acquiring resources, support and legitimacy to redesign the institutional conditions. As Wijen and Ansari rightfully observe, many complex, multi-sector policy domains cannot be changed by key actors singlehandedly. They need to organize a broader array of actors to collaboratively assume responsibility and take action to initiate change. Institutional entrepreneurs must be well aware of the fact significant change cannot be reached without support from other actors. As such, they must be capable of identifying potential supporters, opponents and other actors that might be in the position to either stimulate or block the desired change. Mobilizing allies also refers to the ability to attract and align the change supporting actors in productive alliances.

Table 2. Endogenous factors for institutional change (Wijen & Ansari, 2006).

Endogenous factors	Strategies
Manipulating the power configuration	Achieving power concentration to reduce opinion diversity
	Controlling resources to stimulate collaboration
	Inducing cooperation by (relatively) powerful actors
Creating common ground	Framing to induce cooperation by appealing to mutual identity and interests
	Setting an agenda that others believe to be in their own interests
	Expressing tangible and task-oriented goals
	Spreading public knowledge to make an issue more familiar and amenable to acceptance
Mobilizing bandwagons	Enrolling large numbers of other participants through the process of alliance building
Devising appropriate incentive structures	Encouraging cooperation by reducing transaction costs
	Creating appropriate incentive structures
	Raising awareness of non-compliance costs
	Issue linkage to widen to scope for mutually beneficial exchanges
Applying ethical guidelines	Invoking ethical factors for cooperation, such as fairness, equity and altruism
	Creating compliance through shared aversion for negative outcomes
Using implementation mechanisms	Building implementation capacity through information transfer, research grants, technical assistance training and management expertise

For making significant institutional change possible, the entrepreneur will have to acquire the necessary resources. Often, these resources exceed the entrepreneur's own assets, making the capacity of mobilizing allies ever more important. Financial resources are indispensable to overcome the initiation costs for bringing allies together and pay for withstanding eventual obstructive actions of opponents. Next to financial means, acquiring formal authority and 'attracting' social capital are equally valuable for institutional change (Battilana et al., 2009). Formal authority – an actor's legitimized right to make decisions (Phillips, Lawrence, & Hardy, 2000, p. 33) – enables institutional entrepreneurs to make novel ideas and their supporting stories, more legitimate, acceptable and admissible for both allies and their constituencies. Social capital as a resource connects to the entrepreneurs' efforts to mobilize allies. It refers to the position entrepreneurs need to have in the actor network, to be capable of influencing other actors that are needed for the desired change. Social capital also indicates the entrepreneurs' capacity of 'orchestrating collective action among diverse stakeholders' (Maguire, Hardy, & Lawrence, 2004; Maguire, 2007). This facilitates the conception of a collaborative story about the desired direction for change.

It is important to acknowledge that institutional entrepreneurship is a form of *embedded* agency. It takes place within a pre-structured and predetermined context which allows for change efforts to a certain extent. Subsequently, the context also influences the possibilities to create the conditions for successful entrepreneurship and thus its emergence. The question how the current institutional regime influences the emergence of entrepreneurship and to what extent the necessary conditions for successful entrepreneurship, given the current institutional conditions can be pursued, is important to assess the actors' ability to tamper with the endogenous factors. The remainder of this article is devoted to answer this question.

3. Research design: collaborative case study research and data collection

The study underlying this paper was part of the national Knowledge for Climate Research Program that ran from 2007 to 2014 and co-financed by the Dutch ministry of Infrastructure and the Environment. It builds further on a number of preceding studies that were also partially conducted within this national research program. These studies examined the institutional landscape of policy-making for unembanked urban areas in the Netherlands and Rotterdam in specific (Batterbee et al., 2010; Van der Lee, 2013) and potential technical and spatial flood proofing measures that are deemed feasible in the designated case study area (Nabielek-Kronberger, Doepel, & Stone, 2012; Van Vliet, 2012; Van Vliet & Aerts, 2014; Veerbeek et al., 2010).

Between October 2012 and July 2013, representatives of the most important stakeholders assessed and selected feasible and viable technical and/or spatial measures in order to flood proof the area. The collaborative research project was inspired by the ideas on participatory policy analysis (Dunn, 1994; Durning, 1993). Through collaborative selection of individual measures, practical strategies would be formed that could be implemented by one or a coalition of represented stakeholders. Based on the selections of measures, two main strategies were developed. The potential strategies represent trade-offs between costs (investments, nuisance) and benefits (increased safety and protection). These two strategies were assessed regarding their institutional implications for the stakeholders involved. As such, the representatives were asked to explore potential government arrangements for the implementation of the strategies. Last, experts of the national Delta Program were asked

to discuss the possibilities to support the developed strategies, e.g. by adopting it into this national policy program aimed at flood proofing the Dutch territory.

3.1. Data collection

Through triangulation in the data collection methods – document analysis, in-depth, semi-structured interviews and group sessions – the ambitions and values of these stakeholders were identified. The inclusion of these stakeholders in the three data collection methods is listed in Table 3.

The document analysis revealed the objectives of the stakeholders involved about flood risks and its potential consequences as well as management strategies for flood protection and mitigating eventual impacts. After the document analysis, interviews were conducted with representatives of the stakeholders involved to elaborate their ambitions and values as well as their willingness and ability to contribute to the conception and implementation of alternative strategies. Based on the results of document analysis and interviews, four group sessions were organized to explore alternative strategies for future flood risk management in the area. The components for these strategies were derived from the ambitions and values of the stakeholders in the city district. As such, these ambitions and values revealed the desired situation in the area, envisaged by the stakeholders involved in the research project (Table 4).

Based on the data collection, a description of the case study is presented as well as:

(1) the institutional design of the *current situation* following Williamson's four levels of institutional analysis;
(2) the stakeholders' specifications of the *desired situation*, and the subsequent design space (in terms of conditions and objectives) that follows from them;

Table 3. Inclusion of stakeholders in the data collection.

	Document analysis	In-depth interviews	Group sessions
City government	Y	Y	Y
City district Feijenoord	Y	Y	Y
Housing association	Y	Y	Y
Real estate owners	Y	Y, partially	Y
Citizens	N	Y	N
Businesses	Y, partially	N	Y, partially
Regional water board	Y	Y	N
Asset managers of civic infrastructures	N	Y	N
Provincial authority	Y	Y	N
National authority	Y	Y	Y

Table 4. Participants and outcome of the four group sessions.

Group session	Participants	Outcome
1	Public authorities at the local level	Ambitions and values of the local public authorities about future flood risk management
2	Public authorities and private stakeholders at the local level	Ambitions and values of local private stakeholders about future flood risk management
	Between group sessions 2 and 3, researchers identified the components for two alternative strategies	
3	Public authorities and private stakeholders at the local level	Verification and assessment of two alternative strategies
4	Public authorities at the national level	Reflection and prioritization of the two alternative strategies

(3) the stakeholders' account of strategies with which the *institutional gap* between current and desired situation might be solved.

4. Case study description: the unembanked areas in Rotterdam

Due to climate change, the unembanked areas of Rotterdam's city district Feijenoord are increasingly vulnerable for flooding. The local public authority is responsible for the facilitation of spatial development in this vulnerable unembanked area. The prevailing local flood risk policy is based upon a formal regulation to raise the ground level of new building lots to the 1/10.000 storm surge flood level. The current storm surge flood level height is set to a level that fluctuates between 3.90 and 4.10 m above sea level, depending on the specific local conditions, such as expected wind direction and wave upset. This policy implies that new buildings and assets have to be raised to approx. 1 m above average street level. For existing urban areas, there is no additional regulation in effect to minimize the effects of a potential flood. Homeowners are responsible for possible damages caused by a flood and to take precautionary measures. At this moment, they are poorly informed about local flood risks. Community disaster management is currently limited to closing-off quay sections and other public areas.

The current policy results in urban areas with a patchwork of ground levels of different heights, creating a disorderly and unsecure urban landscape. In addition, the policy is perceived to be not feasible anymore because of its inflexibility and high costs for both municipality and private investors. It simply hampers new investments in unembanked urban areas, especially when the return on investments is relatively low when building new houses for the lower incomes.

Because of the shared perception that the current policy has too many negative side effects, the city government of Rotterdam explores alternative strategies, aiming for a more adaptive way of dealing with flood risk. This fits into the more general picture of Rotterdam (and other large cities) which proactively tries to deal with the consequences of climate change (Bulkeley & Betsill, 2013; Ward et al., 2013).

The national government has allocated responsibility for flood risk of the unembanked area to local governments. Local public authorities are responsible for deciding whether and under what conditions spatial development in flood plain zones is allowed. Integrating flood risk management in spatial planning, however, has proved to be problematic. In the Dutch prevention-based flood risk management system, there is little or no experience with the accommodation of flooding, causing lack of knowledge on flood-proofing measures and methods (De Moel, van Vliet, & Aerts, 2013; Van Vliet & Aerts, 2014). Currently, flood risk management is not included in zoning plans, and only on voluntary basis risks are mentioned in zoning documents to inform stakeholders. Flood-proof building regulations are neither included in the National Building Act nor in local building codes. In addition, flood zoning as an instrument in existing areas does not suffice as land use zoning plans are no appropriate legal instruments to change current functions. Only recently the provincial government is thinking about assisting local governments in weighing flood risks in spatial planning of unembanked areas (Van der Lee, 2013). In addition, flood risks are not included in home insurance.

4.1. Analysis of the current institutional regime

To explore the institutional design challenge for local urban climate adaptation, an analysis of the present and desired situation is necessary. This means an inquiry into the current institutional conditions of climate adaptation policy and its consequences for urban development in unembanked areas. As said, we use Williamson's (1998) framework to conduct the analysis of the current institutional regime around flood risk management of the unembanked areas in Rotterdam (Table 5).

It is interesting to note that there is much ambiguity about the responsibilities and liabilities for flood risk management in unembanked areas. Although the formal policy states that inhabitants are responsible for their own safety, the local government does have a responsibility for communication and (risk-sensitive) spatial planning. In addition, there are strong drivers to downplay the issue of flood risk safety because of the costs for project developers to meet local norms and because of falling house prices when flood risks are communicated forthright (Kokx, 2012). Finally, actors mainly try to shift away their responsibility to other actors. Property owners are looking at the local government and vice versa. The national and provincial governments refuse to assume formal responsibility, leaving the issue entirely to the local government. In turn, the local government asks for national attention and resources for climate proofing their unembanked areas.

The current regime is represented by the values of the local private stakeholders in the area, more specifically the main real estate owners/investors, the housing association, two large companies (of which only one actively cooperated in the research) and the asset manager of civic infrastructures which appeared to be more or less coherent with those of the local government. Besides lowering the possibility of casualties, most stakeholder values refer to preventing liability for flooding and responsibility for assuming additional costs for the own organization. Also, they acknowledge the necessity to prevent house prices for private homeowners from collapsing and safeguarding private real estate properties from

Table 5. Institutional analysis of the current regime for unembanked areas.

	Analysis of the current institutional regime
1	*Norms, values, codes, orientation, culture, informal institutions*
	Almost 50% of the population in the Rotterdam area does not think about the risks of living in an unembanked area. One of the important reasons for this is that Dutch inhabitants expect the government to be responsible *and* pay for damages if flooding takes place (RLI, 2011)
2	*Formal rules, laws, regulations, constitutions*
	There are no legal norms for flood risk safety in unembanked areas. Residents are responsible themselves for measures to reduce damages to their properties due to flooding. The assessment of the actual safety level and communication about this matter are the responsibility of local and regional institutions. There is ambiguity with regard to liability for damage: inhabitants are responsible, but local authorities have to inform them properly and are responsible to take wise planning decisions
3	*Covenants, contracts, agreements, plans*
	Local authorities test planning applications and give permits for building activities
	The Public Safety Region is responsible for the accessibility of unembanked areas for emergency services. This authority provides advice to local government about public safety risks in general but not at the level of concrete spatial plans. There is a regional risk and disaster management plan but not specifically focused on unembanked areas
4	*Actors and interactions, aimed at creating or influencing services, provisions, planning, outcomes*
	Regarding spatial developments, the local government sets specific standards to the project developer with regard to elevating the surface before building. In planning processes, public and private stakeholders try to find creative solutions to realize these standards at minimal costs. Regular maintenance operations in the public space (streets, sidewalks, squares) are used to adjust the street level to the new height

flood damage. This is in sharp contrast with the local residents, as interviews indicate that they do not perceive any problem yet.

The local private stakeholders emphasize the continuous uncertainty about the feasibility and the costs of the current policy which decreases their willingness to invest. The long-term accuracy and viability of considerable investments in area development and real estate are very important to them. In addition, the housing corporation stressed their responsibility for providing houses for lower incomes, which complicates investing in this area because of the higher costs due to the responsibility of raising ground levels to achieve the required water safety standards.

The involved stakeholders agree that an alternative policy is more preferable compared to the current strategy of land elevation based upon local, public norm-setting. Although using different argumentations, all actors are convinced that a more flexible, tailor-made strategy is necessary to be able to deal with the consequences of climate change in the long term (Kokx & Spit, 2012). At the same time, such an integrated approach requires new roles from the stakeholders as well as new governance arrangements to enable implementation of this strategy (Van Veelen, 2013). The local public authorities acknowledge that the current policy is an obstacle for spatial investments because of the high costs associated with land elevation. However, they are hesitant to change this policy and to become solely responsible for realizing and (co-)financing alternative strategies. The same holds true for the private stakeholders: they are willing to think about alternative strategies but are not willing to accept the consequences in terms of more (financial) responsibilities.

4.2. Specifications of the desired situation and the subsequent design space

Next, the specifications of the desired policy regime can be explored. This new policy regime can be achieved by an alternative strategy for flood risk management that combines a substantive solution with an institutional arrangement between stakeholders involved. However, our analysis shows the ambiguity in their positions toward the issue. They all underline the shortcomings of the current strategy. But they all try to defend their own position within the current institutional regime, both in terms of responsibilities and obligations. In other words, they are mainly concerned with safeguarding their own position and 'wait and see' whether other actors make a first move.

This brief institutional analysis specifies the design space – that is the gap between 'is' and 'ought' – that must be bridged in order to reach a more desired situation:

- Shared responsibility between public authorities at different levels of scale, and with private stakeholders because none of the actors can individually take responsibility for an alternative strategy;
- Increased awareness at the local residents and private stakeholders with regard to the potential flood risks and the formal division of responsibilities for flood risk management, including their own responsibility for taking appropriate measures;
- More flexible, co-creative and inclusive approaches to urban development and spatial planning in these types of areas. E.g. by coupling area-oriented investments with flood risk management;
- Formulating an equalizing mechanism for sharing costs among initiators and new entrants.

In summary, the design challenge for institutional entrepreneurs to escape from the deadlocked situation in the area is coined in Table 6.

Stakeholders indicate the following conditions for a new institutional arrangement that should support an alternative flood risk management strategy. First, future private real estate property owners in the area (new entrants) must be denied the opportunity of free riding. If they want to develop real estate after collective flood risk measures are taken, they must be willing to compensate for the investments done earlier. Second, ways for fair distribution of costs between all involved actors must be explored. Third, actors aim for maximizing the efficiency by coupling adaptation measures and other spatial investment projects into integrated investments. And fourth, efforts must be undertaken to prevent current residents, both private homeowners and tenants, and private real estate property owners from becoming anxious about the potential risk of flooding. This must guarantee the area's livability and attractiveness.

4.3. Tackling the design challenge: two alternative strategies

After an intensive process of exploring the physical conditions of the area and through selection of potential technical-spatial measures for flood risk management, the stakeholders formulated two alternative flood risk strategies: the individual-adaptive strategy and the collective-preventive strategy. The first strategy is object-oriented, the second strategy is an area-oriented approach. The first strategy relies on the responsibility of private real estate investors and private homeowners to take (their own) necessary measures for flood protecting their property. This strategy departs from the idea that it is better to adapt to the risk of flooding, by taking individual measures in buildings. The second strategy is based upon flood prevention and is aimed at taking precautionary measures for safeguarding the entire unembanked area of Feijenoord's north-end, by collective infrastructural measures.

Both pathways are deemed feasible. At the same time, both strategies do not fit within the current institutional regime. The first strategy would rely on individual private homeowners, private real estate owners and investors and owners of civic infrastructure to take their own measures to protect their own object or property, whether it be a single home or an entire high-rise building with rental apartments. This approach goes beyond the current practice of relying on public authorities to take action. Each of these actors would have to take responsibility to conceive and implement appropriate measures to flood proof their private property. The degree of adaptiveness of the private property in the area will thus depend on the individual wet proof or dry proof measures property owners are willing and able to take.

The individual-adaptive strategy presupposes the local government to allow for more degrees of freedom for less equality between residents with regard to water safety. As such,

Table 6. The design challenge for institutional entrepreneurship.

	Current regime (Is)	Desired regime (Ought)
Substantive component (What)	Standard ground-level elevation to approx. 4 m above sea level; inflexible and not cost effective	Flexible and cost-effective adjustment to actual flood risks
Procedural component (How)	Formal responsibility at local authority, without material resources to act upon this	Flood protection as a collaborative responsibility and joint initiative to arrange it

the local government should refrain from its responsibility for guaranteeing certain standards for water safety. This strategy allows for more freedom for real estate investors and private homeowners to take appropriate flood risk measures as they see fit with regard to the desired spatial development of the area. It also gives them more responsibility to take care of their own properties.

The second strategy requires the local public authority to come up with a solution that protects the entire area against flooding. This approach is based on the premise that local authorities are willing and able to assume responsibility for safeguarding an urban area that is prone to flooding. This exceeds the local authority's current resources, such as expertise and financial and organizational capacities. To make this strategy feasible, public and private objectives and resources must be acquired, combined and assembled. The degree of protection in the area will largely depend on the local authority's agency to acquire these resources as each level of protection has its price in terms of required knowledge and financial means.

The collective-preventive strategy requires an entrepreneurial role of the local government to take collective flood risk measures, protecting the entire city district in one go. As such, the local government guarantees the same level of water safety as in embanked areas. In turn, real estate investors and private homeowners are obliged to follow and financially contribute to these measures. However, there is no legal instrument to make these actors financially contribute for the value increase that results from the increased protection level.

5. The institutional gap and the entrepreneurial deadlock

The feasibility of both strategies was assessed in the fourth and final group session in which representatives of the national government participated. These policy experts on water safety and flood risk management indicated that the collective-preventive strategy would be most feasible. Their expert judgment was largely inspired by the local circumstances at that time. Based on the given (physical) circumstances characterized by the short term need for reconstruction of deteriorated water fronts and reshaping a public park near the river Maas, the local government should be in the position to combine them with the construction of collective flood prevention measures to protect the entire area. This decreases the uncertainty for private stakeholders about the future flood risks in the area and therefore stimulates them to start investing again in real estate.

Given the actual, local circumstances, the choice for the collective-preventive strategy seems rather obvious. However, the institutional implications are rather considerable because this strategy would result in the factual embankment of the city district. This changes its spatial characteristics as well as its institutional embedding because it will bring another government agency – the regional water board – to the stage as principle public agency for water safety infrastructures (dikes and levees) in embanked areas. As indicated earlier, in the Netherlands, local governments are formally responsible for this without disposing of the required knowledge and financial and organizational resources. In contrast, the regional water boards do have these resources but do not bear the formal responsibility to protect this specific type of areas. National government denies responsibility for this type of areas by excluding them thus far from the scope of the national Delta Program, aimed at re-setting the national flood protection levels. As a consequence, the flood proof spatial development of the urban unembanked area in the north-end of Feijenoord is not actively pursued. This institutional gap might be overcome by undertaking entrepreneurial activities

within the current regime. Although most actors acknowledge the need for a new policy for flood proofing the area, no one of them is stepping up to take on the required entrepreneurship. Actors seem to be neither capable nor willing to do so. Both public and private actors claim to lack the financial and organizational capacities, and the required expert knowledge. In addition, local public authority is hesitant to create some kind of precedence for other unembanked areas in Rotterdam, whereas the private actors lack the willingness and competencies to take on public tasks such as flood risk management. But perhaps the most important reason for the entrepreneurial deadlock is the fact that it is simply too far off from their usual core business, tasks and experiences. Actors seem to be hesitant to engage in an uncertain and complex situation, precisely what genuine entrepreneurs normally thrive in, and stick to the current rules of the game. This leads to the situation that for the preferred strategy, the appropriate – who is willing and capable – institutional entrepreneur remains lacking.

6. Explaining the consequences for institutional entrepreneurship

The question here is whether the endogenous factors (Wijen & Ansari, 2006) through which institutional regimes can be changed can be used to explain the lack of institutional entrepreneurship in this specific case study area. Should we suspect that these endogenous factors are absent or too rigid? Or that actors are not powerful enough to change them? Or perhaps that they do not recognize them as factors that can be influenced?

In Table 7 below, an assessment of these factors and the accompanying strategies is presented, offering an explanation for the absence of (collective) institutional entrepreneurship with regard to the two developed strategies for flood-proofing the area.

Based on Wijen and Ansari's account of the endogenous factors that can be influenced to stimulate collective institutional entrepreneurship, it can be observed that strategies to creating common ground, mobilizing bandwagons and/or applying ethical guidelines are not actively deployed by either of the stakeholders. This is also the case for the factor devising appropriate incentive structures which seems to be absent or overlooked. The manipulation of the power configuration could be pursued, although none of the actors involved seems to be eager to 'perform power play', motivating (or urging) the others to follow in an alternative direction. And although there seem to be collective interests, the problem of collective action remains (Wijen & Ansari, 2006). It is difficult to convince private actors to bear the costs of solutions and assume responsibility when there is also (still) the possibility that other actors, like the city government, will take on the entire investment and acknowledge its formal role. It is thus attractive to 'wait and see'.

Moreover, the characteristics of the current institutional regime seem to be more suitable to explain why it is difficult to develop some kind of institutional entrepreneurship. First of all, the implicit norm for citizens and private actors is that the government is responsible for flood safety. That makes it difficult to call upon the own responsibility of private actors and citizens when it comes to both strategies. There is no sound story in place to convince actors that they have a responsibility as well. Second, it is difficult for the water board, the city government or the housing cooperation to invest in a collective solution because this will result into a precedent with unknown consequences, when other areas also have to be protected. The national and provincial governments are not willing to consider taking additional responsibilities for this issue, basically because of the same reason.

Table 7. Activities of institutional entrepreneurship.

Endogenous factors `and enabling strategies	Strategies for flood proofing Feijenoord's unembanked areas	
	Individual-adaptive strategy	Collective-preventive strategy
Manipulating the power configuration: Achieving power concentration to reduce opinion diversity Controlling resources to stimulate collaboration Inducing cooperation by (relatively) powerful actors	Formal power to make taking climate proofing measures mandatory for individual stakeholders in the area is absent. Local authorities cannot issue directives and policy measures on the housing cooperation to flood proof their real estate	Formal power is concentrated at the local authorities but they lack financial resources and specialized expertise. The national government could step up by means of the National Delta Program but decided at the start of this program to exclude unembanked urban areas from their responsibility The regional water board, in possession of financial means and expertise for flood control management, also discarded unembanked areas from their formal work field. As such, residents in these areas do not have to pay taxes for flood control measures to the water board. Including these areas in their work field would require extensive redesign of formal responsibilities, tasks and taxation, involving their executive and general boards, and probably also the national government as guardian of the taxation configuration between the separate layers of Dutch public administration
Creating common ground: Framing to induce cooperation by appealing to mutual identity and interests Setting an agenda that others believe to be in their own interests Expressing tangible and task-oriented goals Spreading public knowledge to make an issue more familiar and amenable to acceptance	No convincing discourse was developed about why individuals should take responsibility for their own properties. In their opinion, the current problem was not perceived as urgent. In addition, they are unaware of the fact that they bear the responsibility and not the municipality nor the water board (as assumed by them)	No convincing discourse about the necessity to collectively climate proof the area is developed. Actors are hesitant to develop, adopt and propagate such discourse because of their reluctance to bear the costs, take formal responsibility and communicate about the potential risks and/or casualties
Mobilizing bandwagons: Enrolling large numbers of other participants through the process of alliance building	Difficult because many different actors that have to be stimulated/convinced to take action in line with objectives of climate proofing the area. The city district of Feijenoord is among the poorer areas in Rotterdam, largely inhabited by elderly and non-Western immigrants. Many residents do not own their home, as only smaller parts of the district are inhabited by private homeowners. Many of them are deemed not able to invest individually in measures to flood or dry proof the houses. The tenants will have to rely of the housing cooperation to take these measures	Pursuing this strategy requires from different actors to take responsibility for construction, maintenance and exploitation of collective measures. Most of the potential allies are not willing nor capable of doing so because it overreaches their own capacity Relatively difficult because of the risk of 'free riders'. Public resources could well contribute to an increase of private property value which is not compensated by private contributions to the flood measures. This gives private actors a reason 'to wait and see' if local authorities (or other public actors) would step up and 'solve the problem' This strategy brings another public agency to the forefront, the regional water board. This complicates the process of alliancing and the accompanying institutional arrangement to accommodate their specific interests

	Both at the level of the policy network and in the area's community, there seems to be not enough social capital, mutual trust and sense of reciprocity to agree on this strategy. The process of alliancing will be very difficult because many individuals will have to be convinced and aligned to make this strategy productive	See individual-adaptive strategy
Devising appropriate incentive structures: Encouraging cooperation by reducing transaction costs	Difficult to develop and apply incentive structures that are capable of addressing many individual residents whether private homeowners or tenants, young professionals or non-Western immigrants	Difficult as the incentives for collective investments in flood-proofing the area were deemed lower than that of 'waiting and seeing', and seize the opportunity of free-riding
Creating appropriate incentive structures Raising awareness of non-compliance costs Issue linkage to widen to scope for mutually beneficial exchanges	The opportunity to link flood-proofing the area to solving social problems and/or spatial redevelopment was emerging at both the local authority and the housing cooperation but were at the time not (yet) substantiated	Relatively easy because this strategy was deliberatively linked to the spatial redevelopment of the deteriorated quays and the refurbishment of the district's public park, adjacent to the waterfront
Applying ethical guidelines: Invoking ethical factors for cooperation, such as fairness, equity and altruism Creating compliance through shared aversion for negative outcomes	Difficult because each of the individual actors has to be able to find the necessary resources and be willing to allocate them for climate proofing their property, thus resulting in inequality with other urban areas	Relatively easy because this strategy is fair to many different stakeholders in the area, whether it be individual tenants, or professional real estate owners. Also the public authorities will benefit from this strategy because spatial and socioeconomic development in this somewhat deprived urban area will become (more) viable
Using implementation mechanisms: Building implementation capacity through information transfer, research grants, technical assistance training and management expertise	Difficult as many different individual stakeholders had to be reached on a personal level to inform them about the consequences of this strategy, regardless of the question whether they could comprehend this	There was no structural evidence of combining implementation capacities, the area between the key actors: the local authorities, the regional water board and the largest real estate owner, i.e. the housing cooperation. Only the observation that the local authorities were planning the redevelopment of both waterfronts/quays and public park was promoted as leverage to implement this strategy

Attempts to come to collective action are thus seriously hampered by the existing fragmentation in roles and responsibilities. The more innovative activities are hampered by the fact that common values and (informal) norms regarding flood protection are deeply entrenched and difficult to change. These field characteristics thus made it rather difficult to perform the necessary activities for effective entrepreneurship (Battilana et al., 2009). The case study seems to indicate that the limited agency to initiate (collective) institutional entrepreneurship is not capable of overriding the rigid structure of water safety institutions.

The institutional implications of (one of) the alternative strategies are blocking the invention of new governance arrangements with which they can be implemented. Actors are caught in the present institutional regime and have good reasons to resist policy change and subsequent institutional adjustments, although they are convinced that the current strategy has had its day. Neither endogenous factors nor a genuine window of opportunity (cf. Kingdon, 1984) is powerful enough to push forward one of the two strategies.

7. Conclusions

From our analysis, we can conclude that the room for institutional entrepreneurship strongly depends upon the characteristics of the targeted institutional regime. When such a regime is characterized by much fragmentation and a long-lasting legacy of deeply entrenched values, it is very difficult to undertake the initial activities toward entrepreneurship. Related to this, we can conclude that a call for institutional entrepreneurship is important, but is far from a panacea for the problems of institutional change or redesign (Lowndes & Roberts, 2013). Entrepreneurship is important to put pressure upon such a process, but within a highly diversified and path-dependent regime with large interests at stake, it is questionable whether focusing on endogenous factors, advocated by Wijen and Ansari (2006), is powerful enough to bring about regime change in a non-incremental way.

Our analysis underscores that successful entrepreneurship in the case of climate adaptation is also highly dependent upon the presence of a window of opportunity. Without such a window (like an opportunity to connect interests or an external shock like a flood), it is very difficult to create enough sense of urgency to implement innovative adaptation strategies (Bakir, 2009). Finally, from our case we can conclude that successful entrepreneurship is difficult to realize for an individual with a specific role or responsibility. Effective entrepreneurship is much more a collaborative effort because changing an institutional regime means changing the institutional rules of the game of many different actors with their own ambitions and conditions (Wijen & Ansari, 2006).

With regard to suggestions for further investigations on the value of institutional entrepreneurship for renewal of existing policy regimes, we propose three topics: (1) the specific institutional and societal contexts in which entrepreneurship emerges, (2) the intricacies of innovation in public policy regimes and (3) the specific leadership competencies required to forge productive coalitions in an institutional void.

First, the added value of institutional entrepreneurship for establishing complex collective goods and services, such as flood risk safety, urban living conditions and protection of publicly funded and owned civic infrastructure, seems to be limited. Especially in the institutional context and administrative culture of Dutch water management policy, residents and private investors are used to the fact that 'the government' takes good care of national water safety. As a consequence, no one even thinks of taking the initiative for renewing the

existing flood risk management policy. This illustrates the importance for further examination of the relation between the specific institutional context, the extent of embedded agency and strategies of entrepreneurship that can succeed in such contexts.

Second, the intricacies of innovation in the public–private domain are perhaps best captured by the observation that 'everyone is waiting for everybody else, a situation of catch 22' (WRR, 2008). This is partly the 'normal' problem in organizing collective action, but it also has to do with ambiguity about responsibilities that give actors the possibility to do nothing and to look at each other. The question here is whether this type of behavior is omnipresent in situations when it is necessary to engage in new and uncertain pathways.

Third, the case study shows that forging a coalition for an issue that is complex stretches across policy domains and is not really perceived as urgent, (yet) requiring specific coalescing competencies. It could be worthwhile to explore what type of leadership qualities are necessary to combine working with diverging values, ambitions and formal responsibilities, with keeping a keen eye on emerging opportunities.

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