



# The conception of public interest in Dutch flood risk management: Untouchable or transforming?



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## ARTICLE INFO

### Article history:

Received 17 May 2016

Received in revised form 8 March 2017

Accepted 8 March 2017

Available online 2 April 2017

### Keywords:

Water governance

Flood safety

Public interest

Climate adaptation

Flood risk management

## ABSTRACT

The governance of flood risks varies considerably in different parts of the world. Obviously this is due to the nature and characteristics of flood risks, but in part governance approaches vary because of political differences in the nature of governance itself. What is 'appropriate' in this respect depends partly on the prevailing conceptions of the public interest in a country. By applying Alexander's (2002) categorization of public interest to flood risk management practices in The Netherlands, we show that the strongly unitary conception of the public interest (a historic 'flood risk safety for all'), is intertwined with a state-based, sector-based, hydro-technical governance and expertise system. Although this conception is very strong it is no longer self-evident. Because of changing conceptions of governance in general and because of the felt necessity to adapt to climate change, Dutch flood risk management is gradually changing. Increasingly, the Dutch government has to deal with more dialogical and utilitarian approaches to public interest in the governance of flood risks. The Dutch approach is rooted in community-based interests in flood protection and was centralized and rationalized during the 19th and 20th century. The current flood risk standards are based upon a coarse utilitarian benefit-cost analysis, but evolved into mostly a unitary idea of national safety materialized in law by statutory flood risk standards. The findings show that this unitary concept and status of the public interest of flood risk safety has not diminished; it must, however, increasingly take into account the importance of both processes of decision making (dialogues, deliberations) and neighboring public interests. We conclude that the Dutch conception of the public interest on flood safety is still strong but nevertheless gradually changing, not the least because of a general availability of the information and technology to calculate and differentiate risks.

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## 1. Introduction

The Netherlands is one of the most vulnerable countries in Europe in view of possible impacts of climate change. It consists of a low lying and densely populated coastal delta where three major European rivers discharge into the North Sea (Van Heezik, 2007; Van de Ven, 2004). Although the Dutch are highly vulnerable in geophysical terms, from a governance perspective the Netherlands appears less susceptible, given its long and eventful history of dealing with and recovering from changing physical circumstances, especially regarding floods (Van de Ven, 1995; Tol and Langen, 2000; Van Steen and Pellenbarg, 2004; Wiering and Crabbé, 2006; Correljé and Broekhans, 2015). In adapting to new

climatic circumstances, new institutions are established, including the Delta program which prepares the Dutch for (mainly) water-related problems (Crabbé et al., 2015; Wiering et al., 2015; Boezeman, 2015; Delta Programma, 2011). In the light of updating flood risk management policy and regulations, new risk approaches are discussed and implemented. As such, climate change forced the Dutch government to rearticulate the important role of flood risk management and the status quo of its governance. In the Netherlands flood risk management is and remains predominantly a state responsibility. Government institutions, both on the national (*Rijkswaterstaat*) and regional level (regional water authorities or boards), are responsible for a collective system of the protection of citizens against flooding. Dutch flood risk management is a national priority and a core governmental task. In other words, protection against flood risks is considered an important overarching public interest.

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In contrast, in many states of the USA natural hazards, including flood risks, are seen as an individual and private concern, for which you either can seek insurance or community help (Kraft, 2015). Also in England, governmental responsibility for flood risk protection is not formalized on a legal basis (Wiering et al., 2015; Johnson and Priest, 2008). Very often flood risk management is a responsibility shared by state, (insurance) market and community and governance is indeed shifting towards a citizens' responsibility (Nye et al., 2011). Public response can then be limited to protecting the societal order. Thus, the answer to the question 'what to do in the public interest?' differs per country. These differences are actually rooted in political theory (for an elaboration, see Keessen et al., 2013). Flood risk governance is therefore in part dependent on the physical-geographical nature of the risks, and other country characteristics, and in part on how flood risks are conceptualized. Are risks seen as an individual (private), a community or a collective (national) concern? Who bears core responsibility for flood risk measures? The importance of the conception of what is considered in the public interest, and what the social and political foundations of this conception of the public interest are, is often underestimated in debates on environmental management in general, and flood risk management in particular. This conception of public interest deserves attention as it defines how (flood risk) interests are prioritized, positioned and negotiated, and therefore, what the room is for public participation and co-management and eventually how governance is organized.

In this paper, we focus on the conception of the public interest in the Netherlands and investigate whether there are possible shifts in this conception in Dutch flood risk governance. Our thesis is that recent discussions related to adaptation to climate change as well as the recently changing approaches to risks show that the concept of flood risk safety as a traditionally overarching and general collective interest is transforming rather than being untouchable. Therefore, the following research questions are central: To what extent are specific conceptions of the public interest reflected in Dutch flood risk management practices and are these conceptions changing? In answering these questions, we first introduce a typology of these conceptions by Alexander (2002), and explain our methodological approach. We then briefly describe the Dutch historical basis of flood risk policy. Thereafter, we analyze three empirical cases as illustrations of Dutch flood risk practices to show how the conception of the public interest in Dutch flood risk management relate to other collective (national) interests, e.g. spatial planning and environment. In the analytical

part we discuss possible shifts in conceptions of public interest and we end with our conclusions and reflections.

## 2. Conceptions of the public interest

Military defense, nature conservation, saving banks from bankruptcy or protecting people from flood risks: at some point these issues need governmental action (in most countries) and any action has to be justified as being 'in the public interest' (Alexander, 2002; Bengs, 2005). However, *what* exactly is included as public interest and *how* it is weighted are fundamental political decisions and related demarcations vary strongly in different countries (Keessen et al., 2013). Alexander (2002, 228–234) distinguishes between four conceptions: the utilitarian, the unitarian, the deontic (rights-based) and the dialogical. These reflect a variety of political theories, e.g. libertarian, liberal, communitarian, social-democratic or socialist theory.

First, the utilitarian conception is a public interest that is a sum – or aggregation – of individual, private interests (based on hedonic values) in a certain field. These are aggregated, calculated and objectified to decide upon the public interest in a specific case. Very common applications are economic investment analysis methods, like cost-benefit analysis (Alexander, 2002, 230). Well-known classical scholars are Bentham and John Stuart Mill. Utilitarianism starts from the bottom, weights the interests on a certain aggregation level, to finally decide that total benefits outweigh total costs or the other way around. This is the way that flood risk management essentially is practiced in England (Alexander et al., 2016).

Second, the unitary concept of the public interest is based on "some collective moral imperative that transcends particular or private interests" (Alexander, 2002, 230), such as societal stability, public order or social justice, all secured by a sovereign core institution, mostly the state. The public interest, in a unitary concept, may refer to a common universal value, a common principle or a collective concern that can override private interests and individual or group values.

Third, the deontic view can be best explained by citing Alexander itself (2002, 232):

"Deontic means rule- or norm-based, i.e. judging actions by their ethical content – 'is this action right?' – rather than (as utilitarianism does) by their consequences: 'will it do good?.'

Alexander further refers to "individuals" as well as affected groups' rights, based on principles ranging from liberal democracy to ultra-liberal individualism and libertarianism. Consequently,

**Table 1**  
Four conceptions of Public Interest (PI) (elaborated upon the scheme of Alexander, 2002).

Conception of Public Interest	Process of defining PI	Substantial outcome PI
Unitary	The PI has evolved over longer time periods (in the case of flood safety, over many centuries) and is now <i>a priori</i> fixed in decision making processes through laws, standards, norms or legal principles.	Refers to a situation where there is a strong public moral imperative to (collectively) act and a broad political and societal discourse supporting the interest. This interest- discourse has been substantiated in core national laws or even constitutional law; it is supported by a set of organizations protecting and securing the interest/value.
Utilitarian	PI is based on an aggregation of bottom up interests that are calculated by benefit-costs analysis; this means the PI is defined <i>ex post facto</i> , in a recursive process of calculations of benefits and costs. Not fixed (risk) standards, but calculation procedures and conditions are key.	Refers to a situation where there is an conclusion on the highest utility/satisfaction by aggregation of individual values/preferences; which means that the outcome can differ in time and space (in different situations).
Deontic	Individual rights or group rights that are very often legally protected and therefore adjudication processes might follow. This is another form of <i>a priori</i> fixed interests in decision making.	Refers to claims stemming from individual substantial rights or group rights of participants that are considered in a specific situation
Dialogical	The (democratic) process of reaching <i>ex post facto</i> determined conclusions, in events of bargaining, conflict, dialogues and deliberations – time and time again – with contemporary stakeholders.	The PI is the conclusion of a pluralist negotiation, conflict situation or deliberation, leading ideally to the best inter-subjective temporary outcome with the stakeholders involved.

something is in the public interest because 'there is a right', mostly with groups of individuals proclaiming a right, e.g. to be protected against floods.

Fourth, and final, the dialogical perspective is referring to a process of bargaining or conflict (a 'Madisonian' concept wherein the public interest is the actual outcome of political struggles) or to a Habermasian process of communicative action (Habermas and McCarthy, 1985) and deliberative democracy (Hajer and Wagenaar, 2003). The public interest is here the outcome of preferably, open and power free communication and public debate.

In case of the unitary and deontic approaches to public interest, the value of the public interest is pre-given (*a priori*) and in fact already defined in earlier stages of institutional development of the specific domain. With the dialogical as well as the utilitarian conception, there is no *a priori* public interest, as the public interest is defined *ex post facto*: it has to be discussed and decided upon over and over again, through either communicative action or renewed cost benefit-calculations (see Table 1 for an overview).

### 3. Methods

The data collection stems from two research projects on the governance of flood risks, one being a European wide research project STAR-FLOOD ([www.star-flood.eu](http://www.star-flood.eu)) and the other a dissertation project on public involvement and participation in Dutch flood risk management. The cases reflect the main policy programs in Dutch flood risk management in recent years, the Room for the River program (2000–2015) and the water related climate adaptation Delta program (as from 2008). The Room for the River program is illustrated by two cases, the dike relocation in Lent and the 'terps plan' in the Overdiep polder. The Delta program is illustrated by the Island of Dordrecht, which is an example of the relatively new multilayered safety policy (see Section 4).

The case studies are examples of regular practices of flood risk management but where the *modus operandi* is somehow put to the test. For more in-depth investigation three cases were selected as a variation of case studies contributes to generalizability. The Lent case study is a government project (top-down plan) studied during the designation phase from 2000 to 2006. The period from 2000 to 2003 was covered by documents and reports. In the period from 2004 to 2006 60 interviews were held with members of the project organization, government executives, officials, societal organizations and inhabitants, including so-called 'street interviews' with inhabitants who were chosen at random by walking through the village. The Overdiep polder case study is a citizens' initiative (bottom up plan). It was a longitudinal study from 2000 to 2015, including the designation and implementation phase. The period from 2000 to 2005 has been analyzed through documents and reports. Between 2005 and 2014 42 interviews were held, of which 21 interviews were held with (a representative of) the inhabitants, 19 interviews were held with various government executives, officials, and experts. The Island of Dordrecht case study is a government project which was studied from 2013 to 2016 focusing on the approach in flood risk governance and the discussion on the innovation in flood risk strategies. Our analysis is a secondary analysis of the empirical data that were collected via document analysis, literature study and reports of two workshops. Furthermore, 12 interviews were held with government executives, officials and a research consultant.

The operationalization of the four conceptions of public interest (see Table 1) was used as analytical framework for the data analysis: how is the public interest of flood risk safety considered and referred to in the three cases; how is it weighted against other interests, both individual and collective. Is there an appeal to some sort of 'super'-claim (a claim above all other claims) or is it a (more utilitarian) balancing out of competing interests? How are

entitlements of group or individual rights and private interests taken into account? Finally, is there a *shift* in conception of the public interest in the particular case?

### 4. A brief historical perspective on the Dutch approach

The many dikes, embankments, canals and ditches show that the Netherlands is a man-made environment (Van de Ven, 2004; Saeijs, 2008), particularly since water management became a state affair in 1795 (Disco, 2002, 2009). Water management in the Netherlands has a long history of collective action (Vink et al., 2013) stemming from the establishment of the water boards which functioned as a platform for stakeholders (farmers, landlords and government officials) to negotiate flood risk measures (Winnubst, 2011). To fully understand flood risk safety as a public interest we must go back to the French rule in the 'Republic of the Seven Provinces' between 1795 and 1813. In this period the unified nation-state was established. Before that, water management and flood defense was of a regional or local concern (Disco, 2009). In 1795, in the same year the Batavian Republic was established (based on the Unitarist Constitution), the national water agency *Rijkswaterstaat* was founded. It became responsible for the building of national infrastructural water works, while the maintenance remained mainly a regional and local affair. As a consequence, negotiation between national and lower-level governments was essential based on regional and local interests.

*Rijkswaterstaat* revealed to be a crucial agent capable of pursuing water policies in the nation's interest (Disco, 2009). It focused on a complete normalization of the major river network and river beds (Disco, 2002; Van der Vleuten and Disco, 2004; Van der Woud, 2007), and a fresh water distribution network. Throughout centuries one of *Rijkswaterstaat's* main concerns remained flood defense. After the 1953 flood in the Southwestern part of the Netherlands, which caused 1836 victims, a (first) national Delta-Committee and Program for flood protection was set up. Hence, *Rijkswaterstaat* worked on the damming of the vulnerable coastal estuaries in the Province of Zeeland, and finally, the building of a storm surge barrier in the Eastern Scheldt in the '80s (Van de Ven, 2004; Disco, 2002). By 1960, statutory flood risk standards were agreed upon, that are still important in contemporary times.

From the viewpoint of public interest it is relevant to zoom in on the conception of these general safety standards: they were based upon a coarse benefit-cost analysis per Dutch region, weighing the costs of flood defense infrastructure (dikes and dams) and the resulting prevented damage in that region. Interestingly, in a later evaluation of flood risk policies (Ten Brinke and Bannink, 2004, p. 112) was acknowledged that there was no solid and systematic benefit-cost analysis supporting the decisions on standards. Obviously, there were costs and there were benefits, and the west was considered economically more important than the east, far north or south of the country, but the risks were not calculated in much detail, were not complete, and the overall rationale was, in fact, not always systematic and clear (Ten Brinke and Bannink, 2004, pp. 31–35 and 110–112). Another element of the discussion was the idea of risk management: probabilities × consequences; severe consequences (in the west) should be balanced out by low probabilities and less severe consequences (e.g. in the major river areas in the mid and east) could be balanced out by higher probabilities of overflowing of the dike, especially as the water and flood characteristics were different: river floods in the east could be predicted a few days ahead and people could be evacuated. These important general flood risk standards, as consolidations of the public interest in law, were roughly rooted in utilitarian thinking, but already in 1960 have a unitary character: they reveal a message of flood protection as a general concern for all Dutch,

despite the regional differences in safety that are based on both an rough economic and a risk -rationale.

As a result of dangerous peak discharges in the main rivers in the mid-'90s of the last century the Room for the River program was launched in 1996. Instead of continuous dike heightening, space for the river was promoted by realizing 34 river projects, varying from lowering groynes to dike relocation. The Room for the River program aimed at flood risk safety as well as spatial quality. While the first objective had priority for *Rijkswaterstaat*, the second objective was meant to include the ministry in charge of spatial planning and regional and local governments, responsible for land use behind the dikes. *Rijkswaterstaat* was leading in the program, but the implementation of most of the river projects were delegated to a lower-level government (Van den Brink, 2009). The partnership between the state and lower-level governments was based on a strict management when it concerned the flood risk safety objective. The regional and local governments had some room for negotiation to embed the river measure in the landscape (Van Twist et al., 2011) addressing the second objective 'spatial quality'.

Climate change stirred the government to establish a second Delta Committee in 2007 (Veerman, 2008) whose main task was to give advice on how to deal with future challenges of water management. Based on the Committee's advice the Delta Program was established aiming at (1) a basic safety standard for everyone (chance of casualties: 1 in 100.000 years); (2) preventing disruption of society and (3) preventing failure of vital infrastructure, e.g. hospitals and public utilities (Vink et al., 2013; Kaufmann et al., 2016). The aim is that by 2050 the Netherlands will be 'as climate-proof as possible' (deltacommissaris.nl). The region was asked to develop 'promising strategies' which would result in 'preferential strategies', i.e. flood risk measures for the coming 50 years. Future flood risk measures may be (a combination of) dike heightening (1st layer), spatial measures (2nd layer), and evacuation and crisis communication (3rd layer). Although governance is key in the policy approach, in essence the national government has a dominant position in the Delta Program (by its mandate from both the cabinet and parliament) headed by a Delta Commissioner (Vink et al., 2013). His main task is to connect various stakeholders, however, and in this light the balance between the national and the regional is again delicate (Water Governance Centre, 2014).

In short, Dutch flood risk management historically evolved into a nation-wide public interest. In Alexander's terms this can be viewed as a unitary public interest, exemplified by *a priori* national policy, with statutory nation-wide flood risk standards, and a series of measures and projects to ensure a flood safe country. In addition, we see that other public interests come alongside (spatial quality, ecology of water systems) and other, utilitarian and

dialogical conceptions of the public interest are introduced, which brings in negotiations and public debates. In the following we show how the predominance of the unitary character of flood risk management has continued but also has been tested over the last decades.

## 5. Cases

### 5.1. The dike relocation in Lent

In 2000 the inhabitants of Lent, a village along the river Waal (a major branch of the river Rhine) were suddenly confronted with a government plan for a dike relocation. While presenting the White Paper (*Beleidslijn*) Room for the River, the state secretary of water management showed the dike relocation plan as an example of the new policy varying from heightening dikes towards taking spatial measures. Situated between Lent and the city of Nijmegen the river was considered a bottle neck which lead to possible dangerous discharge levels. The dike relocation plan aimed at relocating the dike 350 m land inwards to create more space in the river Waal (see Fig. 1). The measure would withstand floods to a design discharge of 16,000 m<sup>3</sup>/s (objective of 1990s Room for the River policy) and ultimately a design discharge of 18,000 m<sup>3</sup>/s in the river Waal (objective of the later Delta program).

The alderman of the city of Nijmegen to which the village Lent belongs, was not amused with the plan to relocate the dike in the same area where a new housing development *Waalprong* had just been planned. At the insistence of the city of Nijmegen, the state secretary commissioned a Quick Scan study of two by-pass alternatives (with routes through the northern and middle parts of Lent) and the proposed dike relocation. The results of the Quick Scan demonstrated that the dike relocation proved the best option, particularly when it came to safety and costs and it would have less impact on the planned housing development. The alderman used these outcomes in his negotiation with the Ministry of Water Management to ask for compensation (for houses that now could not be built) by way of a contribution to a desired second bridge over de river Waal, which was provided later. In an information meeting for the inhabitants of Lent the alderman's message 'the *Waalprong* will go ahead' stirred the inhabitants into action. They organized themselves in three resident groups and questioned the assumptions of the new policy. Their argumentation was built on historical and geographical facts. During the last flood of 1926 the discharge capacity of the river Waal was 12,600 m<sup>3</sup>/s, not anyway near 16,000 m<sup>3</sup>/s, let alone 18,000 m<sup>3</sup>/s and even if this would happen, the border was nearby and Germany would be flooded first. A retired professor in water management helped the inhabitants to develop an alternative plan *Lentse Warande* based

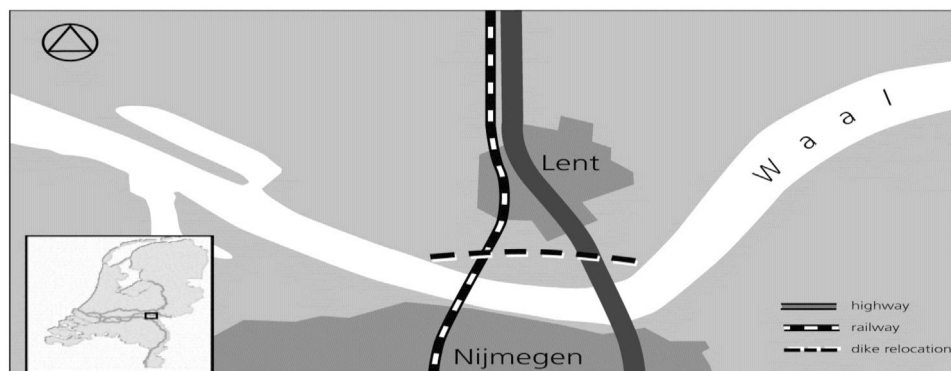


Fig. 1. The dike relocation Lent-Nijmegen.



on the legal design discharge of 16,000 m<sup>3</sup>/s. This plan provided for excavating the flood plain, including a green side channel separated from the main channel by a longitudinal dam, and a land reservation for a dike relocation in future.

In autumn of 2000 the state secretary decided to install an advisory commission to develop the government plan. Based on the outcomes of the Quick Scan and the commission's advice she negotiated with the alderman of the city of Nijmegen about damage compensation, including the construction of a second bridge over the river Waal. The alderman successfully negotiated that the government plan and the residents' alternative *Lentse Warande* would be studied in the environment impact assessment (EIA), an obligatory step in the planning application procedure. The national water agency, *Rijkswaterstaat* was in charge to lead the EIA process. While the inhabitants argued that their plan would match best with the legal design discharge of 16,000 m<sup>3</sup>/s, the government officials pointed out that the government plan was the best option as it meets best the future forecast of 18,000 m<sup>3</sup>/s. Finally, the state secretary decided and chose for the government plan as the most robust plan which was approved by the Parliament (Winnubst, 2011).

From the Lent case we learn that the interests of the inhabitants of Lent finally were acknowledged. After strong citizen protest a serious investigation of alternatives to the initial Room for the River project of dike relocation was conducted. In a later stage, budget became available to elaborate the inhabitants' alternative *Lentse Warande* which shows that the water authorities were substantiating a dialogue to discuss community and national interests. This can be conceived as a dialogical conception of the public interest to get spotted the various interests (process). The municipality negotiated with the national government compensation of the government plan which may be conceived as a utilitarian conception of public interest (process). However, as far as the dialogical and utilitarian conception of public interest are concerned, flood safety as such, was seen as a unitary conception of public interest. The way flood risk was conceived of by government officials, embedded in the Room for the River discourse and institutionalized in law and regulations showed that it was not negotiable (outcome). The final decision showed that (future) flood risk safety had priority over other considerations.

## 5.2. The terps plan in Overdiep polder

In 2000 the national government designated the Overdiep polder as a 'search area' to give more space to the river Meuse. Up until the 1970s the small polder (550 ha and a flood plain of 180 ha) already was a retention area during peak flood in the river Meuse. In 2003 the polder hosted 94 inhabitants of which 17 farmer families and one family who owned the marina. In the the polder was also a military training center with army barracks. Most farms were dairy farms of 25–40 ha (partly owned in leasehold), each between 80 and 100 cows (Habiforum, 2003). The former retention function and the small number of inhabitants made the polder suitable for river widening projects (see Fig. 2).

Knowing that their polder was a 'search area' for making Room for the River, some farmers decided to take the initiative themselves to redesign their polder as a retention area. Their farms would be built on terps to continue farming during a period of peak discharge in the river Meuse. The initiators got support from other farmers who told that 'they were more afraid of the government than the water' (Habiforum, 2003; Winnubst, 2011, 258). Based on their experiences they did not like the idea to be involved in a government-steered planning process for several years. The terps plan fitted well with the national policy to reduce flood risk as it would lower the water level about 28 cm. The farmers' self-interest in redesigning their polder was to secure a viable economic future perspective for their farms. As a consequence, the polder could harbor only 8–10 farmers and 7–9 farmers would have to leave the polder.

From the very beginning the Overdiep polder was a special project. Apart from the bottom up initiative of the farmers, the Overdiep polder was the first project the national government delegated to a lower-level government, in this case the province of Noord-Brabant. Whereas the province had the lead during the designation phase, the implementation phase would be in the hands of both the province and the regional water authority (water board). During the planning process the national government was internally divided about the terps plan. The minister and the state secretary were proponent while the government officials of the *Rijkswaterstaat* were not convinced of the advantages of the terps plan. A particular obstacle for the government officials was the role of the inhabitants. They demanded a central role in the planning process. They participated in the official supervisory group that tended to be the preserve of government officials. It took time before the government officials understood that the project's success would reflect positively on their organization. Towards

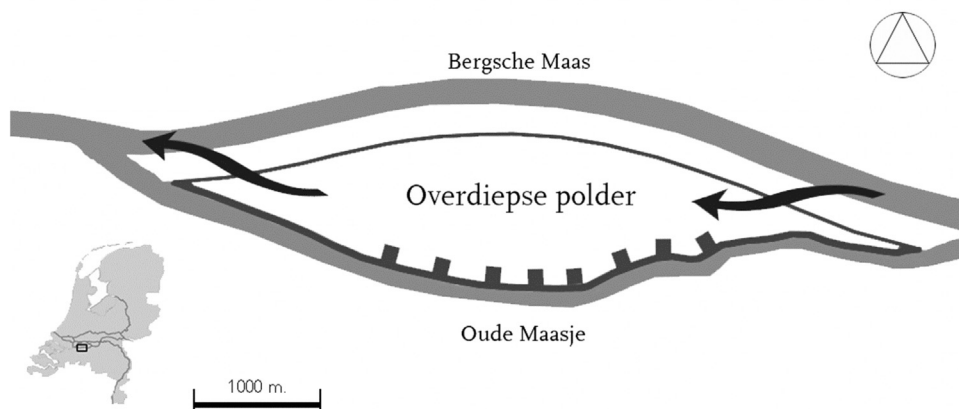


Fig. 2. The Overdiep Polder.

mid-2006 when the Parliament approved the terps plan it was also accepted by the government officials.

Until then many conflicts between the national government and the province had to be solved. The province and the farmers turned out to be allies in disputes with the national and regional water managers, e.g. regarding the financial design, the dike building, the design of the terps to meet the second objective of the Room for the River policy program, i.e. spatial quality, the compensation in case of flooding and the exit-procedures for farmers who wanted to leave the polder. These disputes continued throughout the design and implementation stage. Although the allies, during the actual planning process remained, the relationship between the province and the farmers was put under pressure. Some farmers turned out to be very tough negotiators and those who had to leave the area, felt undervalued as their interests were not addressed by the local citizen group. This caused a shift in the farmer community and hampered the planning process (Roth and Winnubst, 2015). The completion of the terps plan in 2015 however was on track.

The Overdiep polder case study showed that national and regional water agencies had to get used to a very different approach to infrastructural works. The farmers' plan to redesign their polder was finally approved and implemented based on standard flood safety regulations which can be conceived as a unitarian conception of public interest (outcome). Various interests including personal and farmers' entrepreneurial interests on the one hand, and the collective interest of flood risk safety and spatial quality on the other hand, had to be negotiated. The negotiation of personal, business and collective interests may be conceived as a dialogical conception of public interest (process). But the unitary conception of public interest of flood risk safety had priority in decision making (process).

### 5.3. Flood adaptation measures in Dordrecht

In the year 1421 the St. Elizabeth flood in the southwestern delta of Holland had devastating consequences. A tidal surge from the North Sea that surged up the rivers deep in-land destroyed a

complete land area, called the *Grote Hollandse Waard*. It affected the old city of Dordrecht that saw its environment change tremendously. Nowadays, Dordrecht is still vulnerable for floods. The city lies on an island that is enclosed by different river branches (see Fig. 3). Swift evacuation of inhabitants would in any case be difficult because of the dependence on many bridges connecting the island, and part of the old inner-city is located outside the dikes. The so-called *Voorstraat* is the longest shopping street of The Netherlands, which is built on an embankment that does not meet the actual safety standards.

The municipality of Dordrecht decided to take action in order to develop a new approach in climate adaptation. Therefore, Dordrecht participated in the regional Delta Program with other authorities. By creating a compartment through a delta dike (a huge dike) which is surrounded by a regional flood defense, inhabitants would be safe. The involved governments approved this 'promising strategy' changing its status in a 'preference strategy'. However, due to reasons of both cultural heritage and calculating cost-benefits, this strategy was not realistic and feasible. Despite meeting the safety standards and the current policy aims, the investment would exceed the budget of the regional and local governments. Local flood risk measures would in this case not be borne by the Delta fund as this is primarily preserved for 'primary' flood defenses, i.e. measures of national priority. And Dordrecht has always been in part an outside dike area.

In the meantime, the municipality of Dordrecht developed a very different flood risk strategy, called 'resilient island' based on the multilayer safety policy (Kaufmann et al., 2016; see also Section 4). This strategy was particularly directed at the third layer of the flood risk policy which comprises evacuation. In order to address the safety standards in areas outside the dikes, the municipality of Dordrecht proposed the idea to accept a lower safety norm which saves money. This money can be invested in other flood risk measures, both spatial measures and evacuation plans for vertical evacuation as horizontal evacuation is not feasible. This new approach in flood risk policy means that in case of flooding people will be advised to go outside the flooded area, if

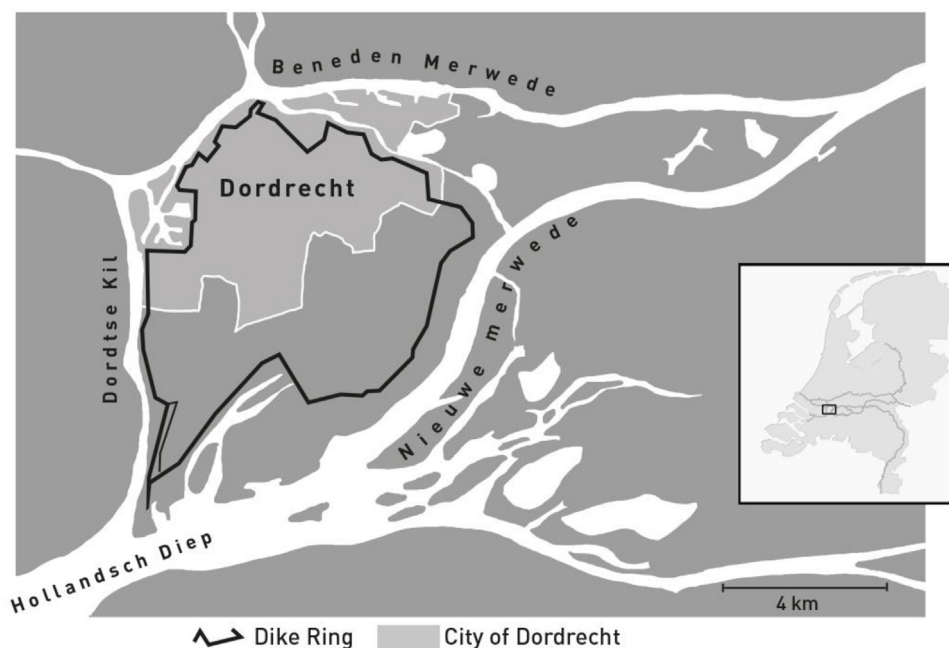


Fig. 3. Dordrecht and its surroundings.

still possible. Obviously, this new approach needs to be discussed with inhabitants. The municipality's strategy of regional flood defenses was considered a 'promising' strategy. In fact, it is a revolutionary approach in light of the classic idea of flood protection (building primary flood infrastructure with specialized water agencies) many obstacles still have to be overcome and implementation has high coordination costs. A recent impact study emphasized the necessity of vertical evacuation in the Island of Dordrecht. During a dike breach inhabitants have to stay in their house for a long period. As a consequence, inhabitants need to be informed how to survive without internet, gas and energy. Drinking water supply is possible, but only in case pumping water goes without using energy (Waterforum Online 7 February 2017).

The Island of Dordrecht demonstrates that the system of infrastructure and standards build around the unitary interest of flood safety is actually not stretching out to all situations of flood safety. It is limited to the core system of dike rings, relating to primary flood defenses; (old) outside dike areas are still very vulnerable. As Dordrecht is in part such an outside dike area, and as the municipality takes the vulnerability of the city island very seriously, the flood safety strategy is in part based on the 3rd layer of disaster management. In this case dialogues and deliberations were very important to create support and understanding for this new approach.

## 6. Analysis

Since the 18th century Dutch flood risk management has increasingly become a state affair. Flood risk protection has long been part of the Dutch societal narrative and its national identity, and it clearly is a moral imperative 'that transcends particular or private interests' (Alexander, 2002, p. 230). In general, the case studies show that flood risk safety is key in policy, discourse, and legislation which is exemplary for the unitary conception of public interest. The three case studies also demonstrate how the status of flood risk protection as public interest largely remained intact, although new developments have a significant impact on how flood risk safety has to be achieved.

There are two essential elements in the categories of Alexander, the status of an interest (*a priori*, not-negotiable, an 'untouchable' claim or *ex post facto* – differing in time and space) and the processes of defining and dealing with (collective) interests. Has protection against flood risks ceased to be a '*a priori*' overarching collective interest in the Netherlands? Stated this way, the answer is certainly no. Flood risk safety is not negotiable and as result of climate change and the awareness of risks in general, its status has increased in the last decades. However, the conception of the public interest has been affected. When flood risk management was predominantly a state affair (with the long-standing regional water authorities as the implementing agencies of national policies), the interest of flood risk protection had priority. Nowadays, it has to be related to other collective interests. While the status of the public interest of flood risk safety has not diminished, it must increasingly take into account the importance of both processes of decision making (dialogues, deliberations) and neighboring public interests. This is accelerated by processes of decentralization and integrated decision making (e.g. inclusion of spatial quality, environment, nature conservation). In both the cases of dike relocation in Lent and the redesign of Overdiep polder, it is clear that initially unwilling water agencies gradually got used to both more dialogical and utilitarian approaches to interests. National government had to negotiate about the designation of the flood defenses with lower-level authorities and citizens. But these cases also show that the unitarian approach is still prominent. The assumptions of target flood risk discharge levels (18,000 m<sup>3</sup>/s) were never fundamentally discussed as this is a political issue to be

dealt with at national level. The national claim is that climate change makes it necessary to deal with future flood risks resulting in very high flood risk standards.

The Dordrecht case shows how the adaptation to flood risk is dealt with in outside dike areas. These areas fall outside the collective protection of primary dike rings anyway. Although situated in the economic valuable center of the Netherlands, Dutch flood risks that are outside this collective system are not considered a state affair. As a consequence, it is beyond the 'normal' conception of public interest, and becomes a private matter for people living outside the system of dike protection for which the local government should take care. The Dordrecht case shows us that the unitary concept of flood safety, leading to a technical infrastructure and risk standards, has also a down side: it is formally bound to the core dike ring -system of primary dikes and excludes deviations from this system. When flood risks have to be newly incorporated in the collective system of dike rings, the public interest suddenly becomes a matter of utilitarian considerations, calculating costs and benefits, similar to the English approach to flood risk (see Section 1). Creative flood risk measures are now considered too costly because the local government has no budget for flood risk safety and cannot make a claim on the national budget for flood safety. In these boundary cases, elements of the dialogical and utilitarian approach are recognizable.

## 7. Conclusions and discussion

This article focuses on the extent to which the conception of the public interest of Dutch flood risk safety is possibly changing. Based on three case studies, we conclude that the Dutch (still) have predominantly a unitary approach to flood risk safety. Depending on the case study there is more or less room for weighing cost and benefits, deliberation or negotiation during *implementation processes*, which in Alexander's terms could indicate more dialogical or utilitarian conceptions of the public interest. However, the value of protection against flood risks *in itself* cannot be compromised or negotiated. As a result, in decision making flood risk safety has priority over other interests, either personal or other collective interests. The value of flood risk safety as such, has hardly been debated publicly. This raises the political question why the government does not discuss the established unitary approach of flood risk protection. Even more importantly, the role of stakeholder participation or co-management in the core of Dutch flood risk management is by consequence actually quite limited. In the heart of the matter, flood protection as a public value is non-negotiable and in fact 'untouchable'. On the other hand, changes in governance more generally, the rise of values of environment and nature protection, and the expected effects of climate change, all lead to bringing the 'untouchable' public interest of flood protection increasingly in contact with other, competing public interests (spatial quality, ecology, economy). As a result, more dialogical approaches to public interests are becoming mainstream. This increases the tension between '*a priori*' values and other more negotiable and partly *ex post facto* -defined public interests (e.g. spatial quality, nature conservation or regional development). In public decision making more generally, there is not much attention paid to the *nature* (of conceptions) of interests, while, actually, there often is an 'invisible hierarchy' in public interests. Thus, there is not always a level playing field of interests (Carpentier, 2016).

As a general reflection, we expected to find evidence of an overall tendency towards more utilitarian approaches to flood risks. We now have to paint a more nuanced picture. There are different forces at work: The new approach in Dutch flood risk management is showing two main directions: First, the policy starts from a basic safety standard for all people (based upon the

probability of causalities – 1 in 100.000 year). One may conclude that the unitary nature of flood risk safety actually has been reinforced and now covers all people instead of only those inhabitants that are luckily living within dike rings. However, we also find evidence of increasing utilitarianism: the availability of technology and information to calculate risks enhances the possibility of feasible differentiation of risk approaches and therefore more calculative approaches. This is strengthened by a general economic rationale to risks in decision making whether flood risk measures will be taken, and if so, which are most feasible.

It will be interesting to see how long the Dutch collective approach with a high priority of ‘flood protection for all’ within the bounds of a collective system (and not outside of it) stands tall in a differentiated world.

## Acknowledgements

This research project was supported by the Dutch program Knowledge for Climate Change, as part of a work package on normative principles in governance of adaptation. It also profited from the EU Seventh Framework Program– project of STAR-FLOOD ([www.star-flood.eu](http://www.star-flood.eu); Contract 308364) which underlined the cases.

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