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The design of public participation: who participates, when and how? Insights in climate adaptation planning from the Netherlands

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The planning and implementation of climate adaptation measures requires the participation of citizens. The design of public participation is often determined by local government. Yet, it remains largely unclear to what extent there is deliberate design of participation efforts and which objectives are served with the designs put into practice. This article reviews three cases of adaptation planning in the Netherlands, using a theory-derived framework that links the design of public participation with nine different objectives that participation could have. These case studies illustrate that participants did not depart from an explicitly formulated and agreed-upon objective, leading to a design of the participatory process that was highly contingent. The findings suggest that a more systematic and deliberate approach, in which both the objectives and the design of public participation are communicated explicitly, and are discussed by participants, increases the chance that the objectives are met.

Keywords: public participation; responsibilities; local government; societal actors; legitimacy

1. Introduction

In cities worldwide, local governments must consider ways to adapt public and private space to reduce the impact of expected climate change events (Bulkeley and Castán Broto 2013). For example, cloudbursts can lead to urban flooding. The effects of urban flooding can be reduced by enlarging the water storage and infiltration capacity of a neighborhood. The planning and implementation of such adaptation measures requires the participation of citizens (Hegger *et al*. 2017). A substantive reason for this is that measures taken solely by local governments in public space might not be sufficient for the expected climatic changes and related impacts. Citizens, therefore, need to take responsibility by adapting to climate change, whether this is by adapting their own properties (private space) or making sure that they do not contribute to maladaptation in public space (Mees, Driessen, and Runhaar 2012; Tompkins and Eakin 2012). In addition, adaptation measures taken in public space can be radical in design or require

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assistance for maintenance. Input from citizens might be insightful for both the design and maintenance aspects, as they might have local expertize on the impacts as well as the use of the public space. Besides these substantive reasons, including the citizens' voice also legitimizes the selected measure (Runhaar 2009; Petts 2003). Therefore, climate change adaptation would benefit from public participation by citizens in the different stages of the adaptation planning process, from policy making to implementation and maintenance (Mees, Driessen, and Runhaar 2012).

In various European cities, local governments are experimenting with public participation in climate adaptation (Mees and Driessen 2018; Mees 2017; van Herk *et al*. 2011). Although these experiences have been documented to some extent, we lack systematic empirical assessments that show to what extent there is a deliberate design underlying public participation efforts; what designs are applied in practice and with what intended outcome. This hampers the possibilities for coming up with evidence-based recommendations for the design of public participation efforts.

To address this knowledge gap, the current article aims to contribute to the debate on public participation by exploring how local governments are designing public participation and with what objective(s) in mind. The focus of our evaluation is on comparing the outcomes achieved in practice with those suggested in scholarly literature. Hence, the article does not focus on an evaluation of the extent to which the policy goals set by governmental actors have been met.

Climate change adaptation has been chosen as the empirical scope of analysis, not only for the substantive reasons mentioned in the previous paragraph, but also because it is a relatively new and emerging policy field (Massey and Huitema 2013). Therefore, we assume that policy makers will make more deliberate choices and will be more willing to experiment with new participatory designs in climate adaptation, since they are less bound by existing routines and ways of working (e.g. Howlett 2009). Moreover, according to some scholars, successful climate adaptation especially calls for collaborative and deliberative governance arrangements, paying attention to stakeholder participation and partnerships among multiple actors and across several policy levels. These arrangements are regarded as being able to deal with the complex, multi-scale, cross-sectoral and long-term aspects of climate change and climate adaptation in a more adequate manner than more hierarchical arrangements (e.g. Mees 2017; Tennekes *et al*. 2014; Mees *et al*. 2013; Termeer *et al*. 2017; Few, Brown, and Tompkins 2007).

To achieve the research goal, the following steps have been taken. Section 2 discusses prominent scholarly contributions to literature on public participation to provide an overview of existing insights on the link between the design of public participation and the objectives this should serve. Section 3 explains our methodology and introduces the case studies. Section 4 takes a closer look at the participatory design and objectives of three Dutch local adaptation planning processes in which citizens participated. These processes focused on the planning, implementation and maintenance of climate adaptation measures in public space. Public participation was coordinated by local governments. The concluding section discusses the variety in the design of public participation by local governments in practice and reflects on the objectives achieved.

2. Theory

2.1. Why public participation?

Public participation has been widely discussed in academic literature on environmental planning (Newig *et al*. 2018; Glucker *et al*. 2013; O'Faircheallaigh 2010; Few, Brown,

and Tompkins 2007). There is general agreement that public participation, certainly in environmental decision making, is beneficial (Stewart and Sinclair 2007). Public participation could benefit the decision-making process in various ways, e.g. in establishing acceptance of and/or support for the decision (e.g. Runhaar 2009; Petts 2003), collecting local knowledge and expertize (e.g. Stewart and Sinclair 2007), or inducing social learning (e.g. André *et al.* 2006; Chávez and Bernal 2008). This notwithstanding, there are differences in how researchers conceptualize the term 'participation', ranging from the empowerment of participants in decision making, to other (less influential) forms of consultation and information provision (see for example the ladder of participation by Arnstein 1969). This has led to conceptual confusion in the debate on the objectives, i.e. intended benefits, of public participation.

Glucker *et al*. (2013) added to conceptual clarity by structuring the debate on the objectives of public participation. They identified nine objectives, which they categorized according to three rationales: a normative, a substantive and an instrumental one (Table 1). To our knowledge, this is the best available overview to date and therefore we have adopted Glucker *et al.* (2013)'s categorization. While all nine objectives can be intended benefits of a public participation process, they are not necessarily achieved all at once. One objective might require a differently designed participatory process than the other—e.g. as pointed out by Glucker *et al*. (2013, 109) "harvesting local knowledge" would suffice with the consult of a few participants, while enhancing democratic capacity would imply the involvement of the general public. This illustrates that, although the causal mechanisms need to be further clarified, there is a relationship between the objective and the design of public participation. Those organizing participatory processes determine what objectives are important and design their process accordingly. It is an open question, though, whether and to what extent the design of public participation is done deliberately and to what extent it should be seen as a messy, contingent and iterative process. One could logically argue that the extent of experience with designing a participatory process might affect the extent to which those organizing participatory processes deliberately design such processes. Hence, our starting assumption is that 'design' can mean different things in different municipalities, so we use the term 'design' as a sensitizing concept, not suggesting that design is always deliberate (or not). With this article, we want to understand the possible relationship between design and objectives, which can assist in the question about how to deliberately design a participatory process. To be able to address this design process empirically, the next sub-section conceptually unpacks the notion of 'design of public participation' by discussing relevant elements that feature prominently in the literature.

2.2. The design of public participation: who, when and how

The design of public participation relates to the organization of a participatory process in terms of who participates, when and how. The 'who', 'when' and 'how' refer to the scope of interest representation, the opportunities for participation and the degree of influence respectively. These three design elements will be discussed subsequently. The aim here is not to be normative, but to illustrate the range of possible options in the design of public participation, so these can inform our conceptual framework. Furthermore, we will also hypothesize about the relationship between the design elements and the participation objectives introduced in the previous section.

Table 1. The objectives of public participation (based on Glucker *et al.* 2013).

Objectives of public participation	
Normative rationale	
1. Influencing decisions	Public participation will enable those who are affected by a decision to influence that decision.
2. Enhancing democratic capacity	Public participation will enable participants to develop their citizenship skills (such as interest articulation, communication and cooperation) and, at the same time, provide participants with an opportunity to actively exercise citizenship.
3. Social learning	Public participation will enable deliberation among participants and thus lead to social learning.
4. Empowering and emancipating marginalized individuals and groups	Public participation will alter the distribution of power within society, thus empowering formerly marginalized individuals and groups.
Substantive rationale	
5. Harnessing local information and knowledge	Public participation will enhance the quality of the decision output by providing decision-makers with environmentally and/or socially relevant information and knowledge.
6. Incorporating experimental and value-based knowledge	Public participation will increase the quality of the decision output by providing decision-makers with relevant experimental and value-based knowledge.
7. Testing the robustness of information from other sources	Public participation will increase the quality of the decision output by testing the robustness of information from other sources.
Instrumental rationale	
8. Generating legitimacy	Public participation will legitimize the decision-making process, thus providing legitimacy to the authority and facilitating project implementation.
9. Resolving conflict	Public participation will contribute to the identification and resolution of conflict before final decisions are made and thus facilitate project implementation.

2.2.1. Who: interest representation

Who participates in public participation is widely discussed. Views of researchers differ in two crucial respects. First, researchers have different views as to whether public participation implies the participation of everybody or only 'stakeholders' who are believed to represent 'the public', hence implying a sharp distinction between the two categories (Dietz and Stern 2008; Glucker *et al.* 2013). While involving the general public in public participation could enhance democratic capacity (objective 2) and generate a wider legitimacy (objective 8), it is most likely costly and time consuming to record and categorize all voices of the general public (Dietz and Stern 2008). Therefore, other scholars argue that the focus should be on complete *representation* of interests, as opposed to full inclusion (Driessen and Vermeulen 1995; Innes and Booher 1999; Mees, Driessen, and Runhaar 2014). According to Scharpf (1978), the

success of participation depends on an accurate assessment of the indispensable actors and their interests, which corresponds to the interdependencies in a policy network and the estimate of the resources that are required to achieve the policy objectives. Yet, the question remains of who decides if one has a valid interest or is 'indispensable'. A local government, as an organizer of public participation, might think that one has an interest, and thus expect participation, while a citizen might not recognize this interest and be unwilling to participate. Also, the opposite is possible: a citizen considers himself to have an interest, but the local government does not acknowledge this. This could lead to a feeling of exclusion and unrest amongst citizens.

Second, participation literature points at the need to address the equal representation of interests. For instance, Mees, Driessen, and Runhaar (2014) point out that representation could reflect existing power relationships, which implies that participants can obtain a dominant voice because of their existing financial resources or knowledge in the participatory process (objective 1). Such a skewed interest representation leads to procedural and distributive inequities (Lemos and Agrawal 2006; Mees, Driessen, and Runhaar 2014). Yet, if skewed interests are addressed, equal interest representation could lead to empowerment and emancipation of marginalized individuals or groups (objective 4).

2.2.2. *When: opportunities for participation*

The element of *when* to participate relates to the number of opportunities offered to influence the decision-making process (Mees, Driessen, and Runhaar 2014). Following the phases of a planning process, participants can participate in the policy-making, policy implementation, policy evaluation and/or maintenance phase. Consequently, the nature of participants' contribution may vary as they can take up roles such as providing ideas about a proposed climate adaptation measure and its design, implementing the measure and contributing to its management or maintenance. Many scholars argue that participants should be included from the beginning of the planning process to have meaningful participation (Newig *et al*. 2018). By including participants early on in the planning process, it is possible for them to influence decisions (objective 1), and for governments to harvest local knowledge and expertize (objective 5), include experimental and value-based knowledge (objective 6) and stimulate social learning (objective 3). Organizing participatory processes later in the planning process might still be useful to test the robustness of information from other sources (objective 7), but can also be a case of window dressing by public decision-makers who hope to legitimize predetermined outcomes (objective 8) (Few, Brown, and Tompkins 2007; Mees, Driessen, and Runhaar 2014). Several researchers argue that the later participants are included in the planning process, the less influence they likely have because crucial decisions have been taken and laid down in governmental procedures (Howlett 2009; Boonstra and Boelens 2011). Participation later in the planning process will consequently be condensed to information provision and consultation. Yet, during the implementation phase participants still have possibilities for organizing opposition to proposed measures and can even block them, which could be seen as an argument for intensive participation in the implementation phase.

2.2.3. *How: degree of influence*

The element of *how* to participate affiliates with the degree of influence (through deliberation or otherwise)—i.e. the degree that participants can critically engage in the

discussion about the issue at hand (Mees, Driessen, and Runhaar 2014). There is a variety of participation practices that aim to inform (e.g. public hearings, information booth, project office, online fora), to extract knowledge (e.g. public survey, focus groups) and/or to gain feedback (e.g. workshops, sounding board group). The selection of participation practices determines the degree of deliberation. Evans-Cowley and Hollander (2010) take a normative stance and argue that citizens should not solely be informed and educated to accept decisions that have already been made. This would then just be a form of tokenism (cf. Arnstein 1969). As Renn (2006, 41) puts it, participation practices should instigate "a dialogue in which participants can share arguments, increase their knowledge base, reflect and look beyond their personal preferences". In this way, participatory processes can, for example, stimulate social learning (objective 3), harness local information and knowledge (objective 5), and give insight into and possibly resolve conflicts (objective 9).

Moreover, for participants to accept the outcome, they need to understand the complexity of the problem and the decision-making process. In traditional participation practices, such as public meetings and workshops, there is often limited time for participants to understand such complexities (Evans-Cowley and Hollander 2010). Even when multiple meetings or workshops are organized, it is difficult to arrange timeslots in which everybody is (physically) available. Internet-based tools such as Facebook allow for a network which participants can join to be informed, give voice/feedback and be organized (objective 2); with the additional advantage that this practice fits the timeframe of the participant as the Internet is accessible 24/7 (Evans-Cowley and Hollander 2010; Ertiö and Bhagwatwar 2017). Using Internet-based tools builds on the idea that every participant has access to the Internet and knows how to use it. This might not necessarily be the case. If lack of access to the Internet is not taken into account, some individuals or groups in society are missing the opportunity to be empowered (objective 4). In any case, combining multiple media, practices and activities seems to be necessary to provide sufficient access to have a voice in the participatory process and influence the decision-making.

2.3. Conceptual framework

Figure 1 provides the conceptual framework for this article. It shows how the public participation objectives discussed in Section 2.1. are linked to the three design elements discussed in Section 2.2. This conceptual framework will be used in the forthcoming sections (1) to systematically explore who participates, when and how in the case studies; and (2) to assess which objectives are supposedly met and (3) to reflect on the influence of the former on the latter.

3. Method

The conceptual framework developed in Section 2 was applied to three spatial planning processes with a focus on climate adaptation in the Netherlands. The Netherlands is an interesting case to study public participation for multiple reasons. First, public participation has been institutionalized in spatial planning processes. A plan cannot be implemented before it has been made public and a six-week period for response and objections has occurred. After this period, the local governments can adjust the plan based on the gathered input and then continue with implementation. Hence, some level

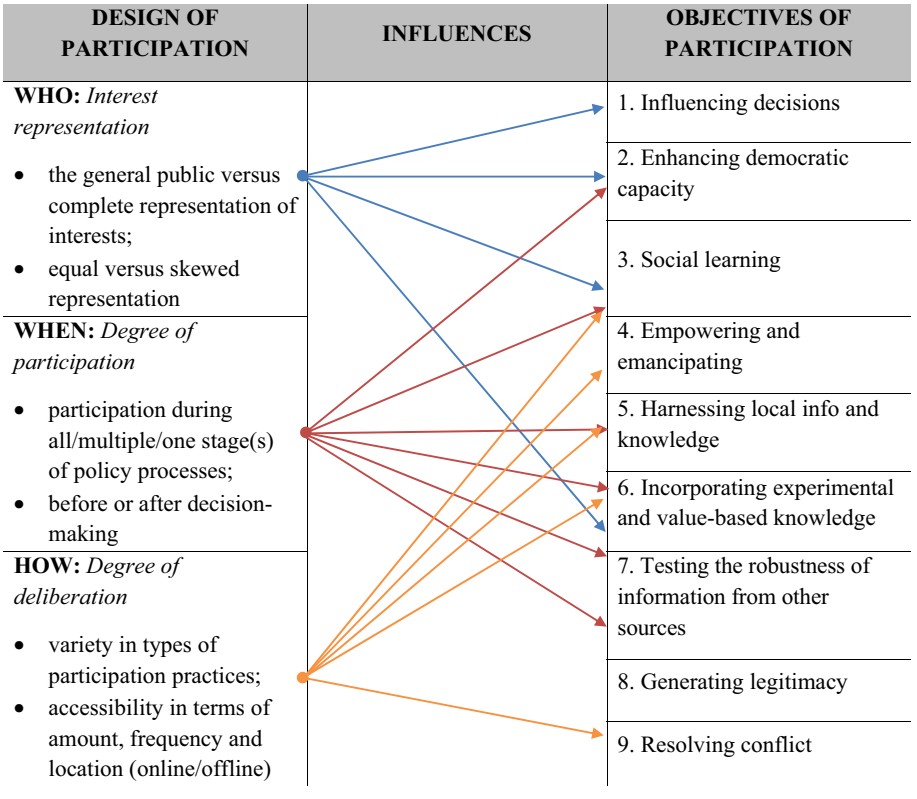

Figure 1. Conceptual framework.

of participation, in terms of information provision, is mandatory during the policy-making phase; however, more engaging forms of participation or facilitating participation in the consecutive phases of the planning process is not. This gives local governments much freedom in the design of public participation, a freedom which they deal with in different ways depending on their objectives for participation. The Netherlands can therefore illustrate possible variation in the design of public participation by local governments. Second, there is a societal and political trend in Dutch society towards an 'Energetic Society' ('*participatiesamenleving*' in Dutch), in which citizens are expected to take part in public issues such as climate adaptation and to increasingly bear responsibilities for addressing these (Hajer 2011). Finally, the Netherlands has traditionally been exposed to a high level of flood risk, both fluvial and pluvial, in terms of probabilities. This is further increased by climate change. Solutions to deal with these flood risks need to be found in both public and private space and therefore need action by governments and citizens. That is why the three cases in the article are all cases of pluvial or fluvial flooding.

Three Dutch cases of local planning processes with a focus on climate adaptation have been selected: two cases that aimed to address pluvial flooding, Water Square Tiel and Kockengen Water Proof; and one case of fluvial flooding, Rotterdam Rooftop Park. This selection is primarily based on the criterion that the cases claim to have organized a more extensive than the standard participatory process with considerable involvement of citizens. Table 1 provides a brief overview of the characteristics of the three case studies.

Table 2. Overview of the three case studies.

Characteristics	Rotterdam	Tiel	Kockengen
General			
Population size	623,652	41,590	3,330
Adaptation issue	Fluvial flooding from the Meuse	Pluvial flooding	Pluvial flooding
Adaptation measure	Multi-functional dike with rooftop park	Water square	Elevation of the ground level of the public space
Spatial scale	Neighbourhood	Neighbourhood	Entire village
Time scale	2000–2014	2007–2016	2012-ongoing
Data collection			
Interviews	$n = 10$	$n = 7$	$n = 10$
Content analysis	Various policy documents and media/Internet coverage; scientific papers	Various policy documents and media/Internet coverage, attendance of public ceremonies (e.g. start construction)	Various policy documents and media/ Internet coverage

Source: Mees *et al.* (2016).

For the empirical illustration of the cases, both primary and secondary data were gathered and analysed. Primary data were collected through semi-structured interviews with several key stakeholders. This list of stakeholders includes governmental actors, such as representatives of the municipalities and the regional water authorities; and private stakeholders, such as representatives of citizens' groups, social housing associations and project developers. In total, 27 interviews were held with 30 representatives. Secondary data were collected through a content analysis of relevant policy documents, media clippings, scientific papers and Internet websites (Table 2).

4. Results

In the following paragraphs, the three cases will be presented and analysed in an identical format. First, each case is introduced in terms of the selected climate adaptation measure, the involved actors and duration. Accordingly, we provide a summary of the participation process using the who, when and how dimensions of the design. Each case study concludes with an analysis of which objectives have been served based on the applied design. Reflections on the link between design and outcomes are provided in Section 5.

4.1. Rooftop Park Rotterdam

4.1.1. Introduction to the case

Rooftop Park Rotterdam is a multifunctional dike. The primary function is flood defense along the river Meuse, but a retail center and parking are integrated in the dike and on top of the dike a park is situated for the residents of the neighborhood. The park is 1,200 m long, and 90 m wide, and consists of 8 hectares. The project was initiated by urban planners from the Development Department of the Municipality of Rotterdam. Yet, the dike is governed by the Regional Water Authority. Plan

development started in 2000, and the park was officially opened in December 2013. It has been a highly complex project with various professional public stakeholders, including the municipality and regional water authority, and private actors, amongst which were the project developer and residents. The focus will be on the interaction between the municipality and the residents.

4.1.2. A summary of the participation process

The residents from the surrounding neighborhoods have been actively and intensively involved in various phases of the planning process. For most, the residents have inspired the idea of a park on the dike and retail functions. An interest group of around 40 residents pressured politicians to get more green space in their neighborhood as this would improve the deteriorated neighborhood. This group was not fully representative of all residents' groups, as it was dominated by the original people of the neighborhood, and its members were relatively from older age groups. To gather more opinions and address more interests, effort was put into visiting different residents' groups in the neighborhood—e.g. by visiting the local mosque (relates to *who*).

Overall, the municipality invested much time and resources in the participation process, partially because they would obtain a national subsidy if they invested in public participation. Hence, residents could participate through all kinds of practices, such as formal participation of a few core residents in the project team, consultation evenings in the community center, workshops, information booth where residents could go to see a model of the park and ask questions, parties, playful activities, sessions with school children and with the local mosque, and excursions to parks. This illustrates that the municipality created accessibility in terms of frequency but also in amount and variety of participation practices (relates to *how*).

To illustrate the participation practices: residents were given a strong position in the planning process as a core group of 4–6 residents took part in the project management meetings. These representatives were supposed to represent the interests of all residents, but this proved to be a difficult job for them to do as they were put on the spot during public hearings by other residents, who felt that their interests were not represented well enough. This led to the instalment of another participation practice, namely the appointment of a professional facilitator. The municipality hired this facilitator to represent the residents during the planning and implementation of the project. He took part in project team meetings and facilitated the interaction between the municipality and the residents. The professional facilitator was significant in channeling the interests of the residents in an 'eight commandments' document about the design of the park. Through this, the residents were given a voice and being heard as this document was also acknowledged by the municipality and project developer.

After completion of the park, residents united themselves in a foundation ('Stichting Vrienden Dakpark'–Foundation Friends of Rooftop Park) to organize their participation in the maintenance and oversight of the park. Currently, there is still regular interaction between the residents' foundation, the gardening company and the city management department of the municipality to discuss which tasks the residents take on themselves in the maintenance of the park. However, it should be pointed out that the residents united in the foundation are somewhat frustrated with the division of responsibilities in the maintenance phase. They demand greater responsibility for the maintenance of the park, but the municipality is anxious to hand over this responsibility to the residents because of possible issues with the continuity and the quality of the

maintenance. To summarize, the residents had many opportunities throughout the process (in the planning, implementation and maintenance phases) to influence the decision making (relates to *when*).

4.1.3. Analysis of the participation objectives

The participation process of the municipality aimed at several objectives, amongst which was empowerment of marginalized individuals and groups (objective 4), as was illustrated through their activities to reach out to other resident groups; influencing decisions (objective 1) and harnessing local info and knowledge (objective 5) by allowing a core group of residents in the project management meetings; enhancing democratic capacity (objective 2) by giving residents some (although minor) responsibilities in the maintenance of the park, and; generating legitimacy (objective 8) as the interests of residents were channeled in the eight commandment document.

4.2. Water Square Tiel

4.2.1. Introduction

Water Square Tiel is a public square that also functions as a water storage facility in times of heavy rainfall. Rain that falls on roofs and streets is redirected to the square, which will store it until the sewage system is able to carry it off (Schaatsbergen 2015). The square includes four water basins: one big basin that also functions as sport court and three smaller basins that are used for transportation, additional storage and infiltration of water. The water square was part of a larger urban renewal project. Public participation with residents was therefore not only focused on the water square, but also on topics such as housing, parking and green space. The implementation of the water square is closely linked to the urban renewal project as without this project there would not be a water square. Between 2007 and 2015, the municipality invested time and money to improve the neighborhood. The municipality worked together with the local community—residents and primary school—housing corporations, regional water authority and urban designers.

4.2.2. A summary of the participation process

Residents were mostly involved during the policy-making phase of the process. The municipality performed several (personal) conversations with residents to learn what problems existed in the neighborhood in order to inspire the urban renewal program. This was followed up by a plenary public meeting in which the main problems were once more discussed in a workshop setting. This resulted in four main problems: a deterred housing stock, lack of parking space, lack of green and water issues. Accordingly, the municipality offered several solutions for each problem. These were presented during a public meeting. But the attendees did not represent the entire neighborhood. Therefore, the municipality decided to knock on all the doors in the neighborhood and undertake a survey (relates to *how*).

In the survey, the solutions for the local square always involved a water square in combination with another function (parking, green, encounter or play). It was already decided by the municipality (inspired by the water board) that the square would be a water square. The residents could only provide input on the alternative function and

the design of the square. According to the then program manager, the residents did not consider this a problem as they understood that this would solve the water issues in the neighborhood. The outcome showed that the residents preferred the focus to be on play on the square.

During the implementation or maintenance phase of the planning process, less focus was on involving the residents (relates to *when*). The municipality chose to approve small requests by the residents in order to speed up the planning process (e.g. not planting fruit trees as these could attract wasps), but decided to not invest in more participation practices. The urban designers, however, did want input for the design of the water square. At first, the municipality was reluctant to organize other participation practices, but agreed to a participation practice with the schoolchildren from the school next to the water square. The participation with the schoolchildren included a class in which they were first educated about climate change, the related risks and local solutions, and accordingly, asked about what kinds of play activities and color schemes they preferred for the water square. Based on this input, the designers created the design of the water square. For the large basin, they designed three color schemes. These were presented to the children once more. They could vote which color scheme should be used. Based on the vote, the designers finalized the design (also relates to *how*).

A model of the water square was put on display at the primary school. Residents had the opportunity to comment on this final model during two public sessions. At the first meeting, more civil servants were present than residents—probably because there was a game of world cup soccer on television. In the second meeting, more residents showed up, but it was not necessarily representative of the neighborhood (relates to *who*). This illustrates that the municipality provided several opportunities for public participation, but that residents were not necessarily interested in participating.

4.2.3. Analysis of the participation objectives

The participation process for the water square seems to have aimed at objectives such as social learning (objective 3) by including schoolchildren in the design of the water square and teaching them about climate change; testing the robustness of the information from other sources (objective 7) as the final design of the water square made by the urban designers was put on display and two public sessions were organized to collect feedback on this design; and, influencing decisions (objective 1) by organizing a survey to collect the wishes for the function of the square.

4.3. Kockengen waterproof

4.3.1. Introduction

Kockengen waterproof is a program, consisting of three projects to make the village of Kockengen more resilient to flooding in 50 years' time. The village of Kockengen has a history of surface water flooding from land subsidence and heavy rainfall. Together with the regional water authority and the province, the municipality developed the entire program. Each of them ran and financed a project. The focus of this case study is on one of these projects: the 'village project' as opposed to the other project, being the 'water project' and 'polder project'. This is because the village project has the most direct links with the community of Kockengen which makes it relevant for this

research. This part of the project aims to elevate the ground level of public space, streets and green space, and several smaller additional measures. The project is carried out in 10 stages between 2014 and 2024. The project has its origin in 2012, when the municipality decided that a more profound solution was needed, instead of the incidental elevation of several roads in the village, which was the practice until then.

4.3.2. A summary of the participation process

In 2012, the municipality had instigated a sounding board group, consisting of several representatives of the private interests in Kockengen. This group consisted of approximately 20 members of the community of Kockengen, with representation from business, farmers, residents and a nature conservation group (relates to *who*). The members did not have similar interests, for example several members needed high water levels (to preserve the wooden foundations of their houses), while other members wanted lower levels to avoid street flooding. The composition of this group has been determined to a large extent by the municipality, who has initiated this group. The sounding board group is based on the idea of giving a voice by installing a residents' network. The group can give solicited and unsolicited advice, yet the ultimate decisions are made by the local authorities. The group does not have any legal or financial power. Based on the interviews, not much evidence has been provided that the input of the sounding board group or of the residents has actually influenced the key decisions of the municipality or the water board. For example, the municipality decided to partly replace green lawns with more natural vegetation, while the majority of residents preferred the existing form of green space. For their voice to get heard, the residents used the media to demonstrate power.

Several different participation practices have been used, depending on the nature of the occasion (the following relates to *when* and *how*). In the planning phase of the program, three Climate workshops were organized, in which residents participated alongside experts to brainstorm about potential solutions to the recurring surface water flooding issue. In the implementation phase, the municipality issued several newsletters to keep the residents informed. They also created a project office, open to the public one day per week, where residents could go to ask questions or obtain information. The municipality also organized several traditional information sharing events for the residents whose neighborhood is being elevated. These evenings were primarily one-directional in the sense that the municipality provided the necessary information about what was going to happen, when, why and how. The residents were asked their views on the redevelopment of the public space in their neighborhood, and those views have had some, albeit moderate, influence on the decisions regarding the public space.

In September 2014, the municipality and the regional water authority organized a big information meeting after a serious rain event had caused damage in July 2014, to deal with the public unrest among the residents of Kockengen. It turned out to be an event in which the residents let off steam, because they felt neglected by the public authorities as the governors of the municipality and the water authority were not visible directly after the event and one governor of the water authority made controversial statements in the press. Both the municipality and the water authority put considerable effort into communication and information sharing with the residents, particularly after the July 2014 shock event. Nevertheless, at least in the eyes of some respondents, the voices of the residents were not sufficiently heard when it comes to influencing key decisions in the program.

Table 3. Summary of the participation processes.

Cases	Who	When	How	Objectives
Rotterdam	Forty residents formed a group, self-organized, not so diverse, facilitated by a professional	Planning and implementation phase, and maintenance phase	• Reps in project team • Professional facilitator • Workshops • Public meetings • Newsletters • Visits to schools/mosques • Project office with regular opening hours • Information booth with model	1, 2, 4, 5, 8
Tiel	Few residents were involved in the water square design, this group was not representative of the neighborhood, school kids assisted in designing the square	Planning phase	• Public survey • Access to project manager at municipality • Public meetings • Workshops with school children • Newsletters	1, 3, 7
Kockengen	A sounding group of 20 stakeholders including residents, farmers and local organizations, established by the municipality	Planning and implementation phase	• Sounding board group • Climate workshops • Public meetings • Newsletters • Project office with regular opening hours	2, 3, 5, 9

4.3.3. Analysis of the participation objectives

The participation process in the Kockengen case aimed at least at the following objectives: to enhance democratic capacity and social learning (objective 2 and objective 3) by installing a sounding board group in which residents and other stakeholders were put together to voice their interests and also learn about each other's interests, to resolve conflict (objective 9) as the different members of the sounding group had different interests and also an information meeting was used by residents to show their dismay towards the public authorities (albeit conflict was not necessarily resolved, just made visible), and to harness local knowledge (objective 5) by organizing climate workshops in which experts and residents worked together to think of potential solutions for the flooding issues.

4.4. Comparative analysis of the participation practices

In all cases, the municipalities applied a combination of participation practices to inform and deliberate with residents. Additionally, the municipalities applied multiple practices over a course of time, which increased accessibility in terms of multiple

opportunities for residents to participate. In terms of objectives, all cases have targeted, to some extent, normative and substantive rationales. The Rotterdam and Kockengen cases also illustrate objectives related to the instrumental rationale. It is interesting to observe that in the Tiel case the focus was not on these types of objectives. Table 3 provides a summary of the participation processes in the three cases.

5. Discussion

Despite appeals in the literature and practice for more public participation, there is still conceptual and empirical confusion about what public participation entails and what objectives it should serve. Consequently, the question arises about the deliberate design underlying public participation efforts. This is also the aim of this article: to understand and systematically analyze how public participation processes in the Netherlands have been designed. Consequently, we have reasoned what objectives have been met with the applied design. Admittedly, this is still descriptive. Yet, it does illustrate some interesting observations on which factors affect the design of public participation.

The cases illustrate that municipalities and citizens are dependent on each other for participation. Both actors need to be willing to participate. Accordingly, the degree to which they are willing to participate also influences the design and, successively, the participation objectives that can be reached. The Tiel case shows that when citizens are overall unwilling (or not interested) to participate, the municipality can install various participation practices, but they will not be used by citizens. It should be noted that unwilling citizens might require different participation practices as the reason for their unwillingness might come from unawareness that the problem at hand is also their problem. On the other hand, citizens who are willing to participate can pressure the municipality to invest in more participation practices, as can be seen in the Rotterdam and Kockengen cases. In case citizens are willing, they can ask for more public participation practices in which they can steer towards objectives that relate to the normative rationale, such as influencing decisions, enhancing democratic capacity, social learning and empowering marginalized groups (objectives 1–4).

Municipalities also need to be willing to participate in terms of their inclination to listen to and acknowledge citizens' input. This can facilitate achieving objectives that relate to the substantive (objectives 5, 6 and 7 on harnessing knowledge and verifying information) and instrumental rationales (objectives 8 and 9 on gaining legitimacy and resolving conflict). The municipality can install various participation practices to make sure that citizens' input is collected and in this way, supposedly achieve objectives related to the substantive rationale. But it depends on the acknowledgment of the input in order to reach objectives related to the instrumental rationale. Based on our findings, acknowledgement of citizens' input is even more important than the amount or type of participation practices the municipality installs. This becomes clear from the Kockengen case in which the municipality installed a sounding board group which was allowed to give solicited and unsolicited advice. This assisted in harnessing local knowledge and information (objective 5). But subsequently, the municipality only partially listened to the advice given by the group, which angered some citizens, thereby fueling conflict rather than gaining legitimacy. On the other hand, the Tiel case showed that by not investing in additional participation practices, but simply by being accessible for citizens and by giving into simple requests (tokens) by residents, they

did gain legitimacy. In addition, municipalities need to be aware of possible policy feedback (Pierson, 1993). Earlier policy or participation practices have effects on upcoming participation practices and fuel virtuous cycles of trust or vicious cycles of distrust (Sztompka, 1999). This might explain the low participation concerning the water square in Tiel, as residents had already participated in practices addressing other issues in the same neighborhood, e.g. concerning parking and green projects. It might also explain the negative attitude of some residents of Kockengen during the participation processes that succeeded the 'failed' September 2014 information meeting.

An important difference between the Rotterdam case on the one hand and the Tiel and Kockengen cases on the other hand is the size of the municipalities, Rotterdam being much bigger than the other two. One might argue that this could be an important factor that affects the resources available to that municipality and hence larger municipalities might have more possibilities to organize successful participatory processes. Although this seems to be a plausible thought on a general note, we hold that this factor does not explain differences found between the three particular cases in our article. Also, in the Tiel and Kockengen cases, the municipalities invested in additional participatory practices and had professional staff to arrange the participatory processes. Rotterdam acquired additional resources from the national government due to the complexity of the project and aimed for greater visibility of the project.

Both, municipality and citizens, can influence the design of public participation. As the organizers of participation, municipalities can decide who participates, when and how. As the participants, citizens can pressure for more, less or other participation practices. This gives both actors power in the design of public participation as well as the power to steer towards certain participation objectives. This leads to the question of to what extent municipalities and citizens are deliberately shaping the design of public participation and/or aiming to gain certain participation objectives. From the citizens' perspective, it might be clear that their objective is to get a voice and to be heard. But in the case of municipalities, this is not always evident. Ideally, municipalities would first consider which participation objectives need to be achieved, before they determined the design of the participation process. In our findings, it remained largely unclear whether the municipalities in the cases designed a participation process with a clear objective in mind, or whether the design of public participation was more iterative and emerging. We assume the latter. From the three cases, Rotterdam seems to be most deliberate in their design, but this is at least partly due to the fact that public participation was a precondition for acquiring a national subsidy. Due to this multiple participation, objectives were met. However, it is questionable whether this is the ideal driver for stimulating public participation. In our opinion, public participation should not be designed to achieve as many participation objectives as possible, but to solve the problems at hand. We acknowledge that a participation process evolves, which can influence the objectives in the sense that they change or alter in number. But the aim of a participatory process must not be to tend for all nine participation objectives listed in our framework. The value of our framework is that it can help policy makers to identify possible participation objectives and assist in developing a deliberate design for public participation. For scientists, the framework can serve as a heuristic framework to systematically analyze processes of public participation.

6. Conclusion

Public participation is, and has been, a much depicted topic in planning literature, inside and outside the environmental domain. Several researchers have produced normative statements on public participation (e.g. Arnstein 1969; Stewart and Sinclair 2007), while a few others are somewhat critical of the yields of public participation (van der Heijden and ten Heuvelhof 2012; Newig *et al*. 2018). There is a lack of systematic empirical studies on how public participation is actually practiced, how participation processes are designed and with what objectives in mind. Not having such empirical studies hampers the ability to generate evidence-based recommendations. In this article, we have partially addressed this knowledge gap by presenting three case studies of participation processes in the Netherlands.

These three case studies have provided interesting insights. Even though public participation is, in general, perceived as desirable—whether related to adaptation planning or not—we conclude that public participation is often limited in scope and that both local governments and citizens seem to struggle with the design and the objectives of participation processes. Mutual expectations regarding participation varied throughout the cases. In the Rotterdam and Kockengen cases, citizens wanted more participation, while in the Tiel case participation had reached a point of saturation. The findings suggest that public participation in adaptation planning is a contingent process that is not very systematically reflected upon in practice. Based on the findings, two essential observations are that (1) both local governments and citizens need to be willing to participate in public participation, and (2) both can affect the design and the objectives of public participation. Although this seems obvious, we question whether either actor is aware of this. By making a purposeful ex-ante decision of what participation objectives should be met, local governments can make a better informed decision for a particular design. The same accounts for citizens as they can ask for certain design changes when they know what participation objectives they are aiming for. In that sense, the framework developed in the current article has practical value as it could serve as a dialog facilitator for discussions between local governments and citizens. We do, however, also acknowledge that much of the design and with that the objectives is influenced throughout the participation process by external factors and the resources available to both local government and citizens.

Overall, more research is needed that compares public participation processes in practice based on the presented framework. This can give more insights regarding the relationship between design and objectives. In this article, we have distilled the objectives based on the design presented in the case studies, but it would be interesting to learn to what extent local governments and residents are actually deliberately steering towards certain participation objectives. Subsequently, it is possible to verify if, and to what extent, the selected design has contributed to achieving these objectives. Based on the findings of the current article, we hypothesize that the chance of achieving objectives of public participation in adaptation planning is increased in cases in which (i) goals have been explicitly formulated at the start; (ii) goals are discussed by participants, including local governments and citizens; (iii) based on these objectives, a conscious decision for a particular design of public participation is made. It is plausible that the relationships between the design of public participation and the goals to which it contributes, as stipulated in Figure 1, represent empirical reality, but this is something that should still be researched to a larger extent in order to verify this.

Action research could be an appropriate format for follow-up research. Through action research, public participation processes as interventions can be proposed as soon as the consequences of the selected design become visible. In the course of the participation process, it is possible to steer the design towards the desired objectives, which can assist in providing hands-on recommendations on how to design public participation for a certain objective.

Finally, with regard to adaptation planning, citizens need to become aware that some public issues are often too complex for the local government to solve alone. Adapting to climate change is such a public issue that requires municipalities and citizens to recognize each other's potential in addressing the issue. Thinking beforehand about the design and objectives of public participation can assist in not only recognizing, but also using it to each other's potential, while dealing with climate adaptation.

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References

André, P., B. Enserink, D. Connor, and P. Croal. 2006. *Public Participation International Best Practice Principles*." Special Publication Series 4. Fargo, USA: International Association for Impact Assessment.

Arnstein, S. R. 1969. "A Ladder of Citizen Participation." *Journal of the American Institute of Planners* 35 (4): 216–224. doi:10.1080/01944366908977225.

Boonstra, B., and L. Boelens. 2011. "Self-Organization in Urban Development: Towards a New Perspective on Spatial Planning." *Urban Research & Practice* 4 (2): 99–122. doi:10.1080/17535069.2011.579767.

Bulkeley, H., and V. Castán Broto. 2013. "Government by Experiment? Global Cities and the Governing of Climate Change." *Transactions of the Institute of British Geographers* 38 (3): 361–375. doi:10.1111/j.1475-5661.2012.00535.x.

Chávez, B. V., and A. S. Bernal. 2008. "Planning Hydroelectric Power Plants with the Public: A Case of Organizational and Social Learning in Mexico." *Impact Assessment and Project Appraisal* 26 (3): 163–176. doi:10.3152/146155108X363052.

Dietz, S., and N. Stern. 2008. "Why Economic Analysis Supports Strong Action on Climate Change: A Response to the Stern Review's Critics." *Review of Environmental Economics and Policy* 2 (1): 94–113. doi:10.1093/reep/ren001.

Driessen, P., and W. Vermeulen. 1995. "Network Management in Perspective: Concluding Remarks on Network Management as an Innovative Form of Environmental Management." In *Managing Environmental Disputes: Network Management as an Alternative*, edited by P. Glasbergen, 155–178. Dordrecht: Kluwer Academic Publishers.

Evans-Cowley, J., and J. Hollander. 2010. "The New Generation of Public Participation: Internet-based Participation Tools." *Planning Practice & Research* 25 (3): 397–408.

Ertiö, T. P., and A. Bhagwatwar. 2017. "Citizens as Planners: Harnessing Information and Values from the Bottom-Up." *International Journal of Information Management* 37 (3): 111–113. doi:10.1016/j.ijinfomgt.2017.01.001.

Few, R., K. Brown, and E. L. Tompkins. 2007. "Public Participation and Climate Change Adaptation: Avoiding the Illusion of Inclusion." *Climate Policy* 7 (1): 46–59. doi:10.1080/14693062.2007.9685637.

Glucker, A. N., P. P. Driessen, A. Kolhoff, and H. A. Runhaar. 2013. "Public Participation in Environmental Impact Assessment: Why, Who and How?" *Environmental Impact Assessment Review* 43: 104–111. doi:10.1016/j.eiar.2013.06.003.

Hajer, M. 2011. *The Energetic Society: In Search of a Governance Philosophy for a Clean Economy*. The Hague: PBL Netherlands Environmental Assessment Agency.

Hegger, D. L., H. L. Mees, P. P. Driessen, and H. A. Runhaar. 2017. "The Roles of Residents in Climate Adaptation: A Systematic Review in the Case of the Netherlands." *Environmental Policy and Governance* 27 (4): 336–350. doi:10.1002/eet.1766.

Howlett, M. 2009. "Governance Modes, Policy Regimes and Operational Plans: A Multi-level Nested Model of Policy Instrument Choice and Policy Design." *Policy Sciences* 42 (1): 73–89. doi:10.1007/s11077-009-9079-1.

Innes, J. E., and D. E. Booher. 1999. "Consensus Building and Complex Adaptive Systems: A Framework for Evaluating Collaborative Planning." *Planning. Journal of the American Planning Association* 65 (4): 412–423. doi:10.1080/01944369908976071.

Lemos, M. C., and A. Agrawal. 2006. "Environmental Governance." *Annual Review of Environment and Resources* 31 (1): 297–325. doi:10.1146/annurev.energy.31.042605.135621.

Massey, E., and D. Huitema. 2013. "The Emergence of Climate Change Adaptation as a Policy Field: The Case of England." *Regional Environmental Change* 13 (2): 341–352. doi:10.1007/s10113-012-0341-2.

Mees, H. 2017. "Local Governments in the Driving Seat? A Comparative Analysis of Public and Private Responsibilities for Adaptation to Climate Change in European and North-American Cities." *Journal of Environmental Policy & Planning* 19 (4): 374–390. doi:10.1080/1523908X.2016.1223540

Mees, H., and P. Driessen. 2018. "A Framework for Assessing the Accountability of Local Governance Arrangements for Adaptation to Climate Change." *Journal of Environmental Planning and Management*. 1–21. doi:10.1080/09640568.2018.1428184.

Mees, H. L., P. P. Driessen, and H. A. Runhaar. 2012. "Exploring the Scope of Public and Private Responsibilities for Climate Adaptation." *Journal of Environmental Policy & Planning* 14 (3): 305–330. doi:10.1080/1523908X.2012.707407.

Mees, H. L., P. P. Driessen, and H. A. Runhaar. 2014. "Legitimate Adaptive Flood Risk Governance beyond the Dikes: The Cases of Hamburg, Helsinki and Rotterdam." *Regional Environmental Change* 14 (2): 671–682. doi:10.1007/s10113-013-0527-2.

Mees, H. L., P. P. Driessen, H. A. Runhaar, and J. Stamatelos. 2013. "Who Governs Climate Adaptation? Getting Green Roofs for Stormwater Retention off the Ground." *Journal of Environmental Planning and Management* 56 (6): 802–825. doi:10.1080/09640568.2012.706600

Mees, H. L. P., C. Uittenbroek, D. L. T. Hegger, and P. P. P. Driessen. 2016. *Work Package 2: The Netherlands Country Report*. Utrecht: Utrecht University.

Newig, J., E. Challies, N. W. Jager, E. Kochskaemper, and A. Adzersen. 2018. "The Environmental Performance of Participatory and Collaborative Governance: A Framework of Causal Mechanisms." *Policy Studies Journal* 46 (2): 269–297. doi:10.1111/psj.12209.

O'Faircheallaigh, C. 2010. "Public Participation and Environmental Impact Assessment: Purposes, Implications, and Lessons for Public Policy Making." *Environmental Impact Assessment Review* 30 (1): 19–27. doi:10.1016/j.eiar.2009.05.001.

Petts, J. 2003. "Barriers to Deliberative Participation in EIA: Learning from Waste Policies, Plans and Projects." *Journal of Environmental Assessment Policy and Management* 5 (3): 269–293. doi:10.1142/S1464333203001358.

Pierson, P. 1993. "When Effect Becomes Cause: Policy Feedback and Political Change." *World Politics* 45(4): 595–628. doi:10.2307/2950710.

Renn, O. 2006. "Participatory Processes for Designing Environmental Policies." *Land Use Policy* 23 (1): 34–43. doi:10.1016/j.landusepol.2004.08.005.

Runhaar, H. 2009. "Putting SEA in Context: A Discourse Perspective on How SEA Contributes to Decision-Making." *Environmental Impact Assessment Review* 29 (3): 200–209. doi: 10.1016/j.eiar.2008.09.003.

Schaatsbergen, R. 2015. "Waterplein Tiel alles in één. Waterberging als speelaanleiding in openbare ruimte." Straatbeeld, September 2015.

Scharpf, F. W. 1978. "Interorganizational Policy Studies: Issues, Concepts and Perspectives," In *Interorganizational Policy Making: Limits to Coordination and Central Control*, edited by K. Hanf and F.W. Scharpf, 345–370. London: SAGE Publications.

Stewart, J. M., and A. J. Sinclair. 2007. "Meaningful Public Participation in Environmental Assessment: Perspectives from Canadian Participants, Proponents, and Government." *Journal of Environmental Assessment Policy and Management* 9 (2): 161–183. doi:10.1142/S1464333207002743.

Sztompka, P. 1999. *Trust, A Sociological Theory*. Cambridge: Cambridge University Press.

Tennekes, J., P. P. Driessen, H. F. Van Rijswick, and L. Van Bree. 2014. "Out of the Comfort Zone: Institutional Context and the Scope for Legitimate Climate Adaptation Policy." *Journal of Environmental Policy & Planning* 16 (2): 241–259. doi:10.1080/1523908X.2013.836961.

Termeer, C. J. A. M., A. Buuren, A. Dewulf, D. Huitema, H. Mees, S. V. Meijerink, and M. V. Rijswick. 2017. "Governance Arrangements for the Adaptation to Climate Change." In *Oxford Research Encyclopedia of Climate Science*, edited by H. von Storch. New York: Oxford University Press.

Tompkins, E. L., and H. Eakin. 2012. "Managing Private and Public Adaptation to Climate Change." *Global Environmental Change* 22 (1): 3–11. doi:10.1016/j.gloenvcha.2011.09.010.

van der Heijden, J., and E. ten Heuvelhof. 2012. "The Mechanics of Virtue: Lessons on Public Participation from Implementing the Water Framework Directive in The Netherlands." *Environmental Policy and Governance* 22 (3): 177–188. doi:10.1002/eet.1583.

van Herk, S., C. Zevenbergen, R. Ashley, and J. Rijke. 2011. "Learning and Action Alliances for the Integration of Flood Risk Management into Urban Planning: A New Framework from Empirical Evidence from the Netherlands." *Environmental Science & Policy* 14 (5): 543–554. doi:10.1016/j.envsci.2011.04.006.