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Tackling climate change risks. Stakeholder participation in flood risk management

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Abstract
Climate change is one of the risks the contemporary society is confronted with. The paper focuses in particular on flood risks. Along other drivers, climate change is expected to increase flood risks. Therefore, policymakers are urged to take measures to anticipate to these risks. However, implementation of flood mitigation measures is often confronted with social protests. Local people contest measures proposed by policymakers and consider the prevailing policymaking as illegitimate. This paper is based on the assumption that stakeholder participation in policymaking might increase social and political support to flood measures and solve the impediments currently experienced in implementation. In the first paragraphs, the flood policy problem is explored as well as the paradigm shift towards more participation in flood policy. Then, the implementation problem is explained based on two theoretical views: modernity theory and governance theory. Modernity theory argues that the causes are inherent to increasing risks and uncertainties and the demonopolization of science, while governance theory considers the increasing complexity of interactions as the main cause. The fourth paragraph explores how stakeholder participation can be organized. And the last part considers the analytical framework of the PhD.-research that aims to analyze how stakeholder participation in flood risk management should be organised to achieve social and political support towards flood measures and which process and context variables are important. The research will be carried out during 2008-2010 and therefore, concluding results are not yet available.

Introduction

Contemporary society is confronted with many risks, climate change being one of them. Climate change is expected to increase temperature and precipitation patterns, resulting in warmer climate, heat waves, drought, but also floods, storms and sea level rise.[1] These weather events may cause enormous costs to society. Therefore, policymakers increasingly become aware that measures should be taken to anticipate these risks. The paper focuses on one particular type of climate change risks: flooding.

[1] IPCC 2001; De Groof et al. 2006.

Despite the urgent need to take measures, implementation of flood measures is regularly confronted with social protest and citizen's inconvenience. It seems that traditional models of policymaking, which are characterized by top-down decisions made by policymakers who have gained legitimated power from the public, are not suitable to the complex and uncertain situations of contemporary society. In what way society has been changed, since representative democracy has reached its limits? Modernity theory and governance theory try to provide an answer on this question.

However, a way out from this lacuna in situations characterized by high stakes and conflicting values, could be the inclusion of all stakeholders in policymaking, thus stakeholder participation. Stakeholder participation can be organized in various ways: different degrees of involvement in policymaking and different methods and tools. But many policymakers doubt about who should be involved in participation and how the process should be organized to achieve social and political support. Furthermore, it is expected that context as well may influence the acceptation of flood measures. The PhD. research aims to analyse the conditions of stakeholder participation required to attain successfully the purpose of social and political support by exploring which process and context variables may affect acceptability of flood measures.

The first paragraph of this paper describes the climate change problem and in particular the effect of flood risks. Next, a glance is taken at flood policy and the currently trend towards more participation of stakeholders in flood policy decisions. In other words, flood policy is experiencing a paradigm shift. The third paragraph explains the causes and needs of the paradigm shift based on two theoretical perspectives: (1) modernity theory and in particular risk society theory and (2) governance theory. In the subsequent paragraph, the concepts and mechanisms of stakeholder participation are explored in a more detailed way. And finally, the research question and the analytical model of the PhD. project are elucidated.

How flood risks became a policy problem?

The paper focuses on flood risks as being one of the impacts of climate change. Flood risk in this paper, is defined as 'the product of the probability of flooding and the consequences of the flooding to aspects that are valued by people'.[2] More concrete, fluvial flooding is considered in this paper, which is described according to the definition of Douben and Ratnayake (2005) as 'overflowing or failing of the normal confines of a river or accumulation of water as a result of heavy precipitation through lack or exceeding of the discharge capacity of drains, both affecting areas which are submerged in normal conditions'.

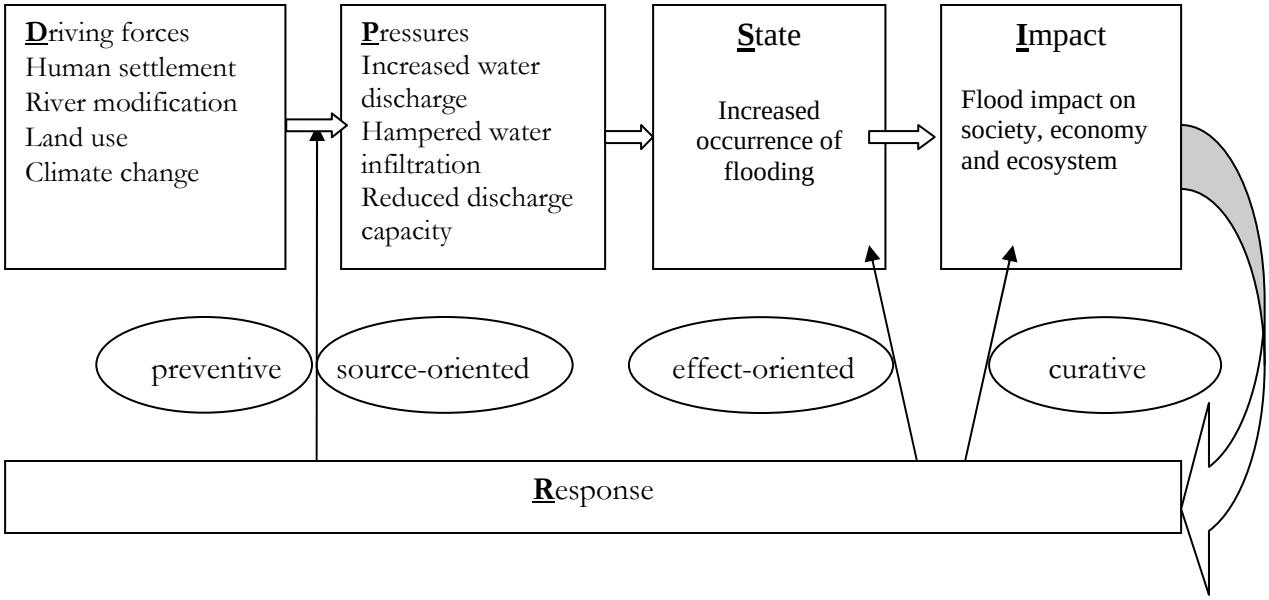
Longitudinal research on flooding patterns demonstrates a worldwide increasing occurrence of flood events. Meanwhile, flood damage increases as well.[3] The damage can be multiple, mainly being material damage to houses, properties and public infrastructure. But also social impacts, as there are stress, health effects, poverty and loss of community cohesion and environmental effects, like habitat loss or environmental degradation can be enormous.

Climate change is very likely expected to increase heavy precipitation events. Although the precise consequences of heavy precipitation in terms of flood risks are still uncertain,

[2] Based on Renn, 1998.
[3] Douben, 2006.

several studies forecast a higher frequency of flooding events.[4] Beside climate change, three other drivers of flood risks can be distinguished. Firstly, flood events can be caused by human settlements and human activities, like urbanization of riverbanks or deforestation. Secondly, changes to the river system can increase the occurrence of flooding, like canalilzation or weirs and dams. And lastly, land use changes in the river basin can also add up to increasing flood risks. Although the other three drivers are more or less within human grip, climate change is not. Climate change enforces the aspects of complexity and uncertainty within flood policy. As illustrated in the DPSI-R-chain (figure 1), the four drivers generated pressures on the system due to larger water discharges, hampered water infiltration or reduced discharge capacity.

Figure 1 Flood risks in the DPSI-R chain



Source: Adapt project (2008) final report, p. 82-83.

Multiple responses can be taken to reduce economic, social and environmental flood impacts. Flood impact reduction measures can be either directed to the probability component of the flood risk definition or to the consequence component. Measures pointed to reducing the probability of floods are preventive or source-oriented measures. Measures pointed to the consequence component are effect-oriented measures. Curative measures also aim to reduce the consequences of flooding but are taken after the flood event. Besides, the chosen measures can be technical or non-technical.

[4] IPCC 2007 p.11; Samuels 1999, 14; Marbaix en van Ypersele 2004; Booij 2003; Wit et al. 2001 ; Gellens en Roulin 1998.

Table 1 Examples of flood measures

	Technical measures	**Non-technical measures**
Preventive and source-oriented measures (reduce *probability* of occurrence)	Renaturalisation of waterbodies via the reconnection of wetlands	Enhancing retention capacity of soil by agriculture stimulating a year-round vegetation cover
Effect oriented measures (reduce *consequences* of flooding)	Water proof building Pumping	Awareness raising Communication and knowledge dissemination
Curative measures (reduce *consequence* of flooding	Reinforcement of buildings	Emergency response plan

Source: Adapt project (2008) final report, p. 129.

How flood policy is changing towards more stakeholder participation?

Flood policy is the process wherein policymakers aim to yake decisions on appropriate flood measures. Currently, flood policy is subjected to a paradigm shift. Up till recently, the main objective of flood policy was to control flooding, hereby seeking to protect human settlements in the river basin permanently. In this policy process, policymakers and experts collaborated to identify solutions to the flooding problem. Mainly hydrologists provide knowledge on the causes and solutions regarding the flood problem to policymakers. Most of the measures were taken in response to heavy flooding. As a consequence, the policy process was characterized by a reactive and top-down approach. However, many measures are confronted with protests of local people and implementation is hampered. This was for instance the case in the development of a controlled flood area in the Ooypolder in the Netherlands, where local citizens are united in a Hoogwaterplatform, which has brought charges against these plans into parliament.[5] Another example of protest is the dissatisfaction of the farmers in the Willem Leopoldpolder (B) against the measures to 'depolder'[6] agricultural area for the benefit of reduced silting in nearby nature reserve after flooding.[7] And lastly, the illegitimate perception of this type of policymaking is clearly put into word by a citizen of Kampen (NL), who fiercely protested the plan to build a levee near residential area by arguing that the Dutch 'government is not my government'.[8]

There are mainly two arguments that support the shift to another flood policy philosophy. Firstly, achieving permanent flood protection is an utopia. Flooding has been experienced in several European countries, despite extensive flood control measures. In Belgium, for instance, heavy river flooding was experienced in 1993, 1995, 1998, 2000, 2002-2003.[9] It is acknowledged that floods are a natural and unavoidable reality. Therefore, the flood policy focus is now more on reducing the risk to and effects of flooding, instead of preventing the floods at all costs. In other words, flood control has been evolved towards flood risk management. Secondly, river catchments contain various users. Measures taken on one location can trigger effects on other locations. Therefore, a more integrated approach is preferred in river catchments. The term integrated refers both to including the whole natural river catchments and to involving all users of the river system.

[5] http://www.hoogwaterplatform.nl
[6] lowering the dikes so the area can be used as floodplain.
[7] De Standaard, Boeren voeren actie tegen ontpoldering, 18.04.2008.
[8] Cuppen, 2007.
[9] http://www.kmi.be

Flood policy is shifting from flood control towards integrated flood risk management. Integrated flood risk management is characterized by[10]:

1. basin approach to cope with the problem
2. a multidisciplinary approach, hereby including all relevant sectors as there are economy, technique, society, environment and water.
3. reduction of vulnerability and risks, preferable before flooding has been taken place
4. involving all stakeholders
5. preserving ecosystems

The integrated flood risk management differs fundamentally from the flood control philosophy since solutions are developed in a bottom-up approach in collaboration with stakeholders. Stakeholder participation in flood risk management decisions is advantageous because people's demands and needs will be clarified during the process and measures can be developed in line with their requests.[11] Consequently, acceptance of proposed plans increases significantly and implementation is facilitated.

Table 2 Comparison of the two flood policy systems: a paradigm shift

	Flood control	**Integrated flood risk management**
Basic philosophy	Fighting against the water	Living with the river – making space for water
World view	Technocratic worldview	Sustainable worldview
Governance setting	Policymakers and experts	Policymakers, experts and all stakeholders
Process design	Top-down	Bottom-up
Type of measures	Technical measures	Technical and non-technical measures
Solutions	- Area specific	- Oriented to integration of the whole basin and all relevant sectors
	- Focus on safety	- Focus on economic, social and environmental objectives
	- Reactive approach	- Proactive approach
Decisions	Based on scientific findings: objective approach	Based on science and on prevailing perceptions of causes and solutions: subjective approach

Source: based on Pahl-Wostl C. 2007; Pahl-Wostl C. 2006; Werrity A. 2006.

The paradigm shift towards integrated flood risk management can already be observed in the Netherlands[12], United Kingdom[13], Germany[14] and Flanders[15] just to name a few countries.

[10] Grabs et al., 2006.
[11] Penning-Rowsell et al. 2005.
[12] The Netherlands: since 1997 by the initiating of the political initiative 'Ruimte voor de Rivier'.
[13] United Kingdom: since 2004 by initiating of the 'Making space for water' program.
[14] Germany: flood policy is organized by the Länder, change is remarkable during '90s.
[15] Flanders: acknowledgement of the need to manage risks instead of fighting against flooding in the beginning of this century. In Strubbe et al. 2006

All European countries are encouraged to proceed this transition by the European Water Framework Directive and the European Flood Directive.[16]

Why stakeholder participation is needed: two theoretical perspectives?

Why flood policy is 'suddenly' confronted with social protests and hampered implementation? Why is traditional policymaking not longer appropriate to implement flood measures? Why does the public not support proposed flood measures and why would stakeholder participation being able to solve the legitimacy crisis? The answers on these questions are analyzed in the following paragraph based on two theoretical perspectives: modernity theory and the governance theory. Both theories claim complexity of contemporary society to be the main cause of the lacuna in policymaking. However, modernity theory mainly focuses on the increasing complexity in the content of policy issues and the declining role of science. Governance theories emphasize the complexity of the policymaking process due to increasing interactions between social agents. Both perspectives are briefly set forth in the following sections.

Perspective of modernity theory

This section mainly focuses on risk society as one of the aspects explored by modernity theory. Key sociologists who have been written on the theme of risk society are U. Beck and A. Giddens. The starting point in modernity theory is the change of society from industrial society to contemporary modernity. Key elements in industrial society, being science and technological development are considered to be the drivers of societal change into a 'laboratory where no one controls the conditions and the results of the ongoing experiment'.[17] Modernity theorists argue that society has changed into a society that is permeated by 'new' risks which have emerged from human processes odd for modernity itself, like industrialization, technological development and globalization. Although these processes have generated many positive effects in terms of welfare, they are accompanied by negative consequences being techno-scientifically produced risks. Consequently, a new era has commenced: the era of reflexive modernity. This era is characterized by awareness of people about the consequences of technological processes they have introduced and induced themselves and the reflection on these consequences.[18]

Beck has argued that 'in risk society, the unknown and unintended consequences come to be a dominant force in history and society'.[19] The risks that are produced by human activities are different from other risks since[20]:

- the risks are complex and unstructured
- the risks can have consequences to a large group of people, which are subjected to the risks involuntarily
- the risks are difficult to trace in time nor space

[16] European Water Framework Directive - Directive 2000/60/EC and European Flood Directive - Directive 2007/60/EC.
[17] Beck, 1997.
[18] Alario and Freudenberg, 2003, 196.
[19] Beck 1992.
[20] Giddens 1990; Whiteside 2006 p. 31-35; Rotmans 1998; Goorden et al. 2001; Van Asselt 2000; Van Asselt 2000 p.157

- the risks cannot be experienced by direct observation
- the potential damage of the risks is large but hard to predict
- due to tracing difficulties, political inertia is a danger

Besides increasing risks, people are now less tolerant towards existing risks, because of the increasing welfare.

The changing nature of risk results in the break-down of the monopoly of science. This is mainly due to three aspects related to risk society. Firstly, in risk society, many aspects of the new risks are uncertain, in other words unknown. This uncertainty can be related to the lack of knowledge, for instance due to the impossibility to measure the effects, or can be related to the variability of systems or actors. Secondly, the risks are permeated by complexity. Therefore, it is difficult to understand and to quantify the causal relations between human activities in the past or in other parts of the world and consequences experienced elsewhere. And thirdly, complexity and uncertainty results in ambiguity since differing and even conflicting perspectives emerge on the causes and consequences of the problems, as well as on appropriate measures to cope with the risks. Scientists themselves come up with conflicting findings. But also other social actors are involved in risk definition, resulting in a 'conflicting pluralization and multiplicity of risk definitions.[21] As a consequence, science is losing its role as the provider of objective rationality. In traditional policymaking processes, scientists pretend to provide objective scientific findings and political agencies only carry out what scientific experts recommends.[22] that are an objective basis to take decisions. This type of policymaking is called 'science-speaking-truth-to-power'. However, these prevailing models are no longer appropriate for policymaking in the risk society since the monopoly of science on objective rationality is broken as mentioned above.[23]

According to Beck, social protests against policy decisions are a result of the acceptability of the failure of scientific rationality since it is science and technology themselves which are the root causes of contemporary risks. Giddens speaks in terms of distrusting science. As a consequence, science is losing its legitimatizing power and therefore, it causes science to lose the role of arbiter in policymaking and policymakers to lose the objective basis to found decisions on and the public to distrust science and policymaking. Therefore, policymaking is threatened to head straight towards a fundamental legitimacy crisis.[24] Meanwhile, one experiences a tendency of individualization and an increasing awareness and willingness to appeal on the individual rights. In an ever-widening cognitive risk society, individuals are claiming a place in risk defining and risk policy. In these circumstances, politics should be an inherently discursive process with the participation of relevant social agents. Beck calls this a discourse society or sub-politics, which refers to the shaping of society from below.[25]

Perspective of governance theory

To start the analysis from the perspective of governance theory, it is necessary to define the meaning of governance, since multiple definitions are used in the literature. In this context, governance is understood as 'the structure and practice of decision-making in society'.[26]

[21] Beck 1992, p.29-31; Renn 2006
[22] Beck 1992, 188.
[23] Beck 1992.
[24] Beck 1992, p. 58-59; van Asselt, 2000.
[25] Delanty 1999,154-158; Beck 1994.
[26] Quentin Grafton et al. 2001, 119.

The governance literature acknowledges the shift from traditional policymaking towards an other way of policymaking where society is more involved. More concrete, they make a distinction between 'old' governance and 'new' governance. 'Old' governance[27] refers to 'the formal institutions of the state and their monopoly of legitimate coercive government'.[28] In other words, it refers to the traditional models of rule-making and can be defined as 'the capacity of government to make and to implement policy on society'.[29] Key elements are the capacity of government to steer society and the state-actors who play a central role in decision-making. However, it is argued that governance is making a shift towards 'new' governance'. 'New' governance differs from 'old' governance in terms of the process of decision-making, since society is involved. In 'new' governance, boundaries between public and private sectors are blurred and decision-making is 'the result of the interaction of a multiplicity of governing and each other influencing actors'.[30] Stoker has described ('new') governance based on five key elements:

1. governance refers to a set of institutions and actors that are drawn from but also beyond government
2. governance identifies the blurring of boundaries and responsibilities for tackling social and economic issues
3. governance identifies the power dependence involved in the relationships between intuitions involved in collective action
4. governance is about autonomous self-governing networks of actors
5. governance recognizes the capacity to get things done which does not rest on the power of government to command or use its authority. It sees government as able to use new tools and techniques to steer and guide.

Relying on these five elements of governance, I argue in accordance with Pierre et al. (2000) and Kooiman (2003) that government is not losing power, but merely that government's role is transforming from a role based on constitutional powers towards a role based on coordination and fusion of public and private resources[31] As mentioned in the previous paragraph, in flood policy as well, a comparable trend of increasing involvement of non-state actors in a more horizontal way of decision-making can be observed.

According to governance theory, the emerging complexity of contemporary society is the explaining factor in the shift towards 'new' governance. It is mainly due to globalization that interdependency is growing between economies, states, societies and people.[32] As a consequence, socio-political context is confronted with increasing complexity because of a myriad of interactions between a plurality of public and private agents.[33] In such a complex world, traditional ('old') governance models seem no longer appropriate. This can be explained by two arguments. First argument is the inability of these models to hold someone accountable. In traditional models, accountability was direct and continuous. But in a complex world, accountability chains are longer and more complicated. Accountability disappears in a web of institutions, and it is not longer possible to discern who did what. Consequently, government loses control and power and governmental crisis may arise. Second argument is that in a representative democracy, government is supposed to act in the

[27] Old governance is in Anglo-American political theory named 'government'.
[28] Stoker 1998, 17.
[29] Pierre and Peters, 2001, 1.
[30] Kooiman and Van Vliet 1993, p. 64 in Stoker 1998.
[31] Evans 1997, Payne 2000 in Pierre and Peters 2000.
[32] Rosenau 2000.
[33] Kooiman 2003.

interest of the population. But since interests are multiple and vary and may even conflict between people nowadays, government fails in representing public interests. Participation of societal agents is opted to solve legitimacy crisis by reintroducing direct accountability and by providing the possibility to the social agents to represent their interests themselves. Therefore, participation of societal agents is the key element in 'new' governance that aims to 'manage the rules of the game in order to enhance the legitimacy of the public realm'.[34]

How stakeholder participation *can* be organized?

Many terms are used to refer to the inclusion of non-political actors in policy-making, as there is public involvement, citizen engagement or stakeholder participation. In this paper, there is opted to use the concept stakeholder participation because of two reasons. Firstly, the concept 'stakeholder' is preferred over public or citizen because it is defined as 'anyone who has an interest in an issue, because they will be affected or may have an influence themselves on policy, no matter whether this is a financial, moral, legal, personal, communal or direct or indirect interest'.[35] The concept of public implies the connotation of social agents to be a homogenous group, which they are not. In flood policy, many stakeholders with differing interests urge to participate besides residents, like farmers, fishermen, conservationists, tourists,…Furthermore, the concept of citizen is less suitable since the right to participate is not linked to civil rights but to having a stake in the policy.

Secondly, stakeholders should be included in policymaking in an interactive and two-way dialogue rather than in one-way process of informing or consulting. The term participation, to a larger extent than involvement and engagement, contains this component of interactivity.

Stakeholder participation is defined according to the definition of Bruyninckx (1997) who argues that 'participation is the process wherein social actors, who have a particular interest, consciously contribute or take part by way of their social acting in a process of social change towards a more sustainable society'.

The participation of stakeholders in policymaking would result in improvement of policy decisions. There are three arguments for this improvement. Firstly, the substantive argument that argues that because of participation, stakeholders are aware and informed of certain problems as well as politicians are informed on prevailing social values which were previously not taken into account. Secondly, the normative argument that states that participation increases the democratic strength of policymaking and legitimacy of the decisions. And lastly, the instrumental argument according which the inclusion of stakeholders in policymaking would result in better decisions.[36]

More concrete, stakeholder participation can be set-up for various reasons. In literature, a distinction is made between product-oriented aims and process-oriented purposes.[37] Product oriented purposes are for instance

- developing and implementing measures
- securing social and political acceptance of a proposed plan
- ensuring various interests and values to be represented in the decision
- improving the quality of decisions

[34] Kjaer 2004, 14-15.
[35] based on Aslin and Brown 2002 and Cuff 2001
[36] Fiorino 1990.
[37] based on Moore 1996; Beierle 1999; Wondolleck and Yaffee 1994.

Process-oriented purposes are for instance:

- enhancing relations of trust between community groups and between community groups and governmental agencies
- establishing responsibility
- resolving conflict among competing interests
- learning by educating and informing the public
- more democratic decision-making
- increasing transparency of decision-making
- empowerment of citizens

Stakeholder participation is organized to reach one or more the purposes mentioned above and purposes may vary with the policymaking context. In flood risk management, stakeholder participation is mainly encouraged 1) to build consensus and support towards flood measures and 2) to provide and obtain information on flood risks, prevailing values and interests and potential solutions.[38] One considers stakeholder participation to be successful when the preconceived purposes of the process are achieved.

Participation process can be organized according different levels of involvement of non-political actors in policymaking. Well-known is the ladder of Arnstein (1971), which distinguishes 8 types of participation processes according to the degree of power of the stakeholders in the end-product. These 8 types convene with the typology of Row and Fewer (2005). They discern three levels of participation according to the information flow. Firstly, public communication that includes a one-way dialogue, since information is conveyed from the organizers of the process to the public. This corresponds with the types of education and information in Arnstein's ladder. The power of the public is somewhat larger when they are asked to participate by way of consultation. In this case one-way information is conveyed from the public to the organizers of the process. Lastly, participation types like involvement, partnership and delegated power contains two-way information flow both from the public towards the organizers of the process and vice versa. Dialogue takes place. According to the definition of Rowe and Fewer, manipulation can be considered as non-participation, since not information, but coercion emanates from the organizers. In the same way, information flow does not exist in citizen control, since the citizen possess full decision power.

Table 3 Typology of participation

Arnstein	**Rowe and Fewer**
Manipulation	Non-participation
Education	Public communication
Information	
Consultation	Public consultation
Involvement	Public participation
Partnership	
Delegated power	
Citizen control	Full citizen decision power

Source: based on Arnstein 1971 and Rowe and Frewer 2005.

[38] APFM 2006, 31.

Besides, stakeholder participation can be organized by various types of instruments, like focus groups, citizen's jury, brainstorming, scenario building, dynamic mind mapping, electronic consultation, deliberative opinion poll, review sessions, role playing, problem/cause analysis, interviews, group model building etc... These instruments are merely some of the possible instruments. Each instrument has strengths and weaknesses and they can be deployed for different purposes and towards different target groups and for different levels of participation.[39]

In this myriad of methods and tools, organizers of participation processes have to choose in order to reach their goal. The question raises how to develop a successful participation process in order to achieve social and political support towards flood measures in a context of uncertainty and conflicting values?

How stakeholder participation *should* be organized to achieve social support?

In integrated flood risk management, the main purposes of stakeholder participation are[40]:

- to build consensus and support towards flood measures
- to provide and obtain information on flood risks, prevailing values, interests and potential solutions.

The participation process is considered to be successful when the purposes are attained. The PhD. research focuses on the completion of the first objective. The central research question is:

- How should stakeholder participation be organized in flood risk management in order to achieve social and political support?

The sub-questions are:

- Which process variables in stakeholder participation affect the social and political support to flood measures?
- Which context variables in stakeholder participation affect the social and political support to flood measures?

It is argued that rules and regulation are not perceived as legitimate when social acceptance and active compliance are not present.[41] Thus, social protests will be reduced when social support and consensus exist regarding flood measures. Social acceptance, social support, consensus and legitimacy are closely related concepts. Social support is defined according to Ruelle en Bartels (1998): an evaluation of the political situation by the target groups of the policy based on their interests, to whom the target group decide to grant active or passive support or active or passive opposition'.[42] According to de Graaf (2007) social support can be distinguished in an attitude component and a behavior component.

[39] Loyens and Van de Walle 2006; Ridder et al. 2005.
[40] APFM 2006, 31.
[41] Falkenmark et al. 2004.
[42] In de Graaf 2007, 40.

Table 4 Components of social support

Support	Negative	Positive
Attitude	Dissatisfied	**Satisfied**
Behavior	Opposition	**Support**

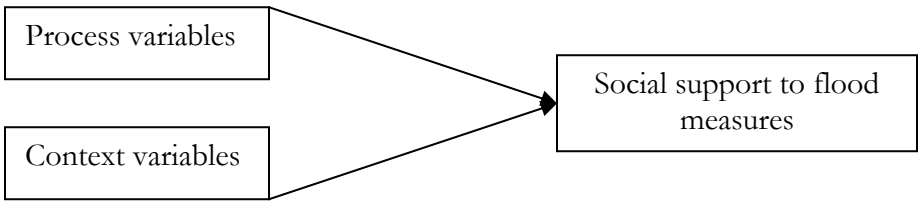
Source: de Graaf (2007) Gedragen beleid.

The objective of the study is to analyze which aspects of the participation process and which context aspects will affect the way people support (attitude + behavior) the flood measures. Several researchers already have discerned criteria determining the success of participation processes. Some have relied on theories[43]; others have derived the criteria from empirical research by directly interviewing the opinion of stakeholders in the process[44]. These criteria identify how the process should be organized to be successful. Several criteria of success often mentioned in the research results are.[45]

- Representativeness and inclusivity
- Fair deliberation
- Access to resources
- Transparency and accountability
- Learning
- Independence
- Efficiency (be cost-effective and timely)

Beside these process variables, de Graaf (2007) already has identified some context variables that might be relevant to the level of social support, like people and reputation, political and social events, macro-economic factors, decisions of other agencies. Both enumerations are preliminary and request further development.

Figure 2 Analytical framework



The main aim is to test the model of success criteria on empirical cases. More concrete, the research questions will be answered based on a comparative analysis of four empirical case studies. As a consequence, I will try to meet the research need in evaluation of stakeholder participation to more evaluation and comparison of existing processes.[46] The four cases have in common:

- Experience flood risks
- Participation process to develop flood measures is going on or is finished
- Beside experts and policymakers, other stakeholders participate as well

[43] Fiorino 1990, Renn et al. 1995; Webler 1995.
[44] Webler et al. 2001; Rowe et al. 2005; Susskind and Ozawa 1983; Wondolleck and Yaffee 1994; McCool and Guthrie 2001.
[45] Chilvers 2008, 425.
[46] Chase et al. 2004; Fiorino 1990; Rowe and Frewer, 2000.

- The participation process is characterized by two-way dialogue
- Philosophy in flood policy is comparable in four cases, as well as the socio-economic situation.

The cases are subdivided according two process variables: moment of involvement and degree of openness.

Table 5 Case study comparison

	open participation	Closed participation
Early involvement	Shaldon (UK)	Deventer – De Worp (NL)
Later involvement	Noorwaard (NL)	Scheldt estuary (B)

In the first phase, level of support will be measured for each of the cases. Then, the participation process will be explored based on the process and context variables. In the third phase, the theoretical model of success criteria will be tested by analyzing the causal relation between process and context variables on the one hand and the level of support on the other hand. And in the last phase of the research, the results will be verified. The data will be collected based on a triangulation of information sources (participants of the process, documents and media) and by different research methods (survey, semi-structured interviews and document analysis). Further elaboration of the analytical framework will be carried out in the next months. Preliminary remarks are welcome.

Acknowledging the many guidelines and evaluations of participatory instruments, they rarely analyze which conditions are absolutely necessary in order to obtain a certain goal. Most of the times, evaluation is limited to the analysis whether the goal is reached. In other cases the processes are checked according to normative criteria, but it is seldom explored whether the criteria are sufficient to obtain the goal. Furthermore, the impact of the process on social support varies according to the context. And lastly, not all processes are able to meet all criteria and therefore, it is necessary to identify the criteria that are crucial to obtain the goal.[47] This study will try to meet this research gap by focusing on participation in one particular context: flood policy context.

Conclusion

The paper explores the importance of stakeholder participation in flood risk management. Firstly, the paper describes the flood risk problem which is expected to increase by climate change among other drivers. As a consequence, the aspects of risk, complexity and uncertainty are now key elements in flood policy. Furthermore, multiple responses are possible to reduce flood risks, each of them creating benefits and losses for different stakeholders. As a consequence, it is observed that many implementations of flood measures are hampered by social protests, what is mainly due to the inappropriateness of the traditional policy-making model. The second paragraph sets forth the way flood policy is currently transforming from flood control towards integrated flood risk management, wherein social actors play a larger role in policymaking. In the third paragraph, the changes that are experienced in society are explained based on two theories: the modernity theory and the governance theory. Both theories argue that complexity of contemporary society is the main cause of the inability of traditional policymaking and that the participation of social

[47] Fiorino 1990.

actors would reduce the lacuna in policymaking. Next, the paper has examined the concept of stakeholder participation and the way this could be organized. And lastly, the analytical framework of the PhD. research is elucidated which aims to study how stakeholder participation should be organized in flood risk management in order to achieve social support towards flood measures and consequently, reducing social opposition. By means of comparison of four empirical case studies, the model of success criteria will be tested and the correlation between success criteria and social support will be analyzed in order to answer the research questions. The research will be carried out from 2008-2010.

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Annexes

Case studies

1. Shaldon Pilot Project (UK)

Shaldon is located at the estuary of the Teign. In this place, the British Environment Agency has set-up a pilot project to involve the community in local flood policy. Innovative element is the involvement of the community in the definition of the problem, as well as in the solution finding phase. This participation process is considered to be open, since the whole community is invited to participate by means of interactive expositions, public meetings, a website and a liaison group. (early involvement + open process)

2. Deventer-De Worp (NL)

Project De Worp concerns the construction of channel along the river. A selected team of stakeholders was invited to participate in two waterworkshops in order to explore the possibilities of the channel. (early involvement + closed participation)

3. Project Noordwaard (NL)

The Dutch government is planned to depolder the area Noordwaard. The opinion of citizen and other stakeholders is requested on these plans. Several activities for dialogue were organized. (late involvement + open participation)

4. Development plan Scheldt estuary

Dutch and Flemish government participate to develop a plan for the Scheldt Estuary. Societal organizations from both countries are invited to be part of an advisory committee. (late involvement + closed participation)

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