The Role of Local Stakeholder Participation in Flood Defence Decisions in the UK and Germany

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Abstract

An important aspect of integrated flood risk management around the world is accepted as being the involvement of a range of stakeholders in flood-related decision-making processes. Achieving local stakeholder participation in ways that lead to the expected benefits is burdened by challenges and difficulties. By drawing on examples of practices of local stakeholder participation in flood risk management in two European countries, the United Kingdom and Germany, this paper aims to understand the extent to which local stakeholders are able to influence flood risk management. Empirically, the paper focuses on flood defence planning and implementation-related decisions as they still remain the dominant approach of managing flood risks in those locations. The findings from the two case studies show that involvement of local stakeholders in decisions related to flood defence schemes is limited and likely to lead to conflict and frustration as well as, potentially, a strengthening of inequalities. These lessons have implications for the United Kingdom and Germany as well as for other locations around the world.

Key words: Flood defence, Participatory processes, Public engagement, Risk governance

Introduction

Historically, measures to reduce flood risk have been dominated by expert-led approaches to decision making (Johnson and Priest, 2008). The limitations of such approaches have been widely discussed (Fordham 1999; Samuels *et al.* 2006; Schanze 2006; Scott 2013; Adelekan 2015), further highlighted by the damage that floods continue to cause alongside continuing calls for more integrated approaches for dealing with flood risk, achieved by working across sectors as well as across sub-national and national boundaries (Kelman 2001; Wehn *et al*. 2015). As a result, a shift towards societal flood risk management (FRM) has taken place.

FRM has been broadly defined as a "holistic and continuous societal analysis, assessment and reduction of flood risk" (Schanze 2006). Others have described current FRM in more detail as a "strategic, integrated system of flood risk management that takes more account of the environmental and social impacts of flood hazard management" (Nye *et al*. 2011 p. 289) by promoting flood risk reduction through a combination of structural and non-structural measures (Nye *et al,* 2011; Challies *et al*. 2015). Structural measures include flood defences, flood water storage, drainage, and pumping, whilst non-structural measures include spatial planning, relocation, building codes, infrastructure design, forecasts, warnings, insurance, and communication (e.g. encouraging citizens to take measures to inform and prepare themselves) (DEFRA 2005; 2007/60/EC Article 7 §3; Kelman 2001; Schanze *et al*. 2008; Krieger 2013; Wehn *et al*. 2015).

As a result of these shifts, the involvement of a wide range of stakeholders in FRM is seen as necessary to effectively reduce flood-related damage (Johnson and Priest 2008; Nye *et al.* 2011). The involvement of local stakeholders is seen to be important to improve the quality of decisions and to encourage local stakeholders to take more responsibility for FRM (DEFRA 2011a; Wehn *et al*. 2015 and according to legal regulations such as SächsWG 2013). There is a particular emphasis on inclusive governance in which local stakeholders are encouraged to become involved in FRM-related decision-making processes, such as the planning and implementation of structural and non-structural measures (DEFRA 2011a; § 72 VwVfG). Much literature exists on the importance and benefits of involving local stakeholders in such decisions (Webler *et al.* 1995; Wisner 1995; Few *et al.* 2007; Renn 2008), but there is a lack of empirical studies which focus on the influence that such involvement can have on the final decision and the reduction of flood-related damage (Kuhlicke 2014; Begg *et al*. 2015; Otto *et al*. 2016).

In order to gain a better understanding of how local stakeholder participation can influence FRM, this paper provides an overview of the process of FRM-related participation for structural defences in two case studies. This is achieved by briefly outlining the benefits and limitations of local stakeholder participation as discussed in the scientific literature, before exploring the role of local stakeholder participation in current European FRM policy. To unravel further the practical context of participatory processes in FRM, this paper focuses on the experiences of two European Union Member States at the time of the research: the UK and Germany.

We focus specifically on England instead of the UK and Saxony instead of Germany due to the way in which participatory processes are set up in both countries. In the UK, significant differences in FRM exist for each constituent country (England, Northern Ireland, Scotland, and Wales). Similarly, in Germany, national agendas are set for FRM, but the responsibility for implementing these agendas is placed in the hands of the Länder (or states). We have chosen these two examples because they have both been influenced by policy changes supporting local stakeholder involvement at the European level (2007/60/EC), but they have different approaches to local stakeholder participation in practice.

Although local stakeholder participation occurs for various aspects of FRM, including risk assessment (see DEFRA 2009) and flood risk mapping (Meyer *et al*. 2012), this paper is particularly interested in the way in which this responsibility is delegated and the participation formats that exist in order to improve flood defence schemes. Despite criticisms of flood defence approaches (Tobin 1995; Etkin 1999; Fordham 1999), it remains favoured as a means of ensuring public safety and it is the area of FRM where most funding is spent (Otto *et al.* 2016). Many decision-making processes assume that structural defences decrease flood risk and assume that populations want them. In fact, unlike alternative, non-structural measures, there is a long history of flood defence as a government-

led measure for managing flood-related risk under such assumptions (Fordham 1999; Johnson and Priest 2008; Tobin 1995). Moreover, it is an area which has established forums for participation, providing comparable examples across Europe. In order to understand the influence that current participation processes can have on flood defence-related decisions, this paper addresses three overarching research questions: To what extent do stakeholder participation processes 1) encourage deliberative processes, 2) provide input into decisions related to planning and implementation for flood defence and 3) lead to reductions in flood-related damage?

The empirical findings of this paper reveal that despite an emphasis on local stakeholder participation, the actual possibility for stakeholders to participate and to influence decisions is limited in practice which could lead to frustration and conflict as well as increased inequality. Thus, this paper also discusses some of the reasons for the limited space provided for local stakeholder participation in decision-making processes related to flood defence and concludes by outlining some assumptions and challenges regarding local stakeholder participation in such decisions.

Participation in theory and EU policy

Based on Freeman (1984), we understand local stakeholders to represent organised groups or individuals who are potentially affected by or who have an interest in FRM in their area of residence, work, or professional representation (e.g., NGOs and elected officials). Actively involving local stakeholders in decisions affecting them provides numerous benefits. The following subsections present some of the theoretical discussions related to the role of participation in environmental decision-making processes, especially regarding the role of participation in European Union FRM. These discussions provide the basis for the three aforementioned research questions which will be used to evaluate the two empirical examples of local stakeholder participation in flood defence related decisions.

Participation in theory

Active involvement of local stakeholders in environment- and development-related decisions through participatory activities is seen to lead to better accepted decisions thereby improving legitimacy and encouraging active citizenship and democracy (Webler *et al*. 1995; Chambers 2002; Paton 2007; Walker *et al*. 2010; Featherstone *et al*. 2012). Moreover, as Few *et al*. (2007) point out in regards to climate change adaptation, "[p]articipation has been promoted both instrumentally, as a 'means' of ensuring that decisions are better geared toward their objectives, and as an empowering 'end' in itself, ceding communities greater control over the decisions that affect their lives" (p. 48).

However, inequalities could arise and/or may be strengthened when communities are given control over decisions but little support to deliver FRM-related outcomes (Begg *et al*. 2015). Therefore, if a participatory process is used as an 'end', rather than forcing local stakeholders to take full responsibility for FRM, participation should be deliberative and encourage co-decision-making between local stakeholders and the authorities by involving local stakeholders in decisions about what that responsibility should entail and providing support to be able to take such responsibility (Begg *et al*. 2015). Additionally, participation as a 'means' or an 'end' should go beyond informing about, educating on, and consulting regarding predetermined decisions, because this approach would be likely to lead to conflict, frustration, and disempowerment (Few *et al*. 2007; Otto *et al.* 2016). For example, Arnstein (1969) argued that "participation without redistribution of power is an empty and frustrating process for the powerless" (p. 216), a statement continually corroborated by more recent works on participatory processes (Cooke and Kothari 2001; Hickey and Mohan 2004) including with respect to floods (Wisner 1995). Moreover, participation without power means that, although local stakeholders can be involved in decision-making processes, they do not have the power to affect their situation. As a result, their input leads to little change regarding the predefined status quo (Allmendinger and Haughton 2010; Featherstone *et al.* 2012). In sum, if local stakeholder participation is to influence the final decision and improve the acceptance and quality of the outcome, it should encourage deliberation and ensure the stakeholders can contribute significant inputs.

Participation in European flood risk management policy

Local stakeholder input in environment and development-related decisions that affect them, including for FRM, has been supported at the international and European levels. At the international level, Agenda 21 of the 1992 Rio Conference on Environment and Development underlines the relevance of participation by stating that "[e]nvironmental issues are best handled with participation of all concerned citizens, at the relevant level (UNDP 1992 Principle 10). At the European level, various policy documents exist that highlight the relevance of participation, with Begg *et al*. (2011) providing an overview. Regarding FRM, the European Directive on the assessment and management of flood risk (Floods Directive 2007/60/EC), which aims to improve efficiency in reducing the flood risk, includes local stakeholder input as an important aspect. Local stakeholder participation is particularly encouraged for developing FRM plans (FRMPs) (2007/60/EC Article 10).

In relation to developing FRMPs, including structural measures, both the Strategic Environmental Assessment (SEA) (UN 2003) and the Environmental Impact Assessment (EIA) (2003/35/EC) are relevant policy documents. The Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Trans-boundary Context (the SEA Protocol) (UN 2003), supports local stakeholder participation by stating that "each Party shall ensure early, timely and effective opportunities for public participation, when all options are open, in the strategic environmental assessment of plans and programmes" (UN 2003 Article 8(1) p. 5; also see the SEA Directive 2001/42/EC). Additionally, the Directive 2003/35/EC as an amendment to the Environmental Impact Assessment Directive 85/337/EEC of 1985 and the SEA Directive (2001/42/EC) supports public participation for drawing up certain environment-related plans and programmes; however, how local stakeholder participation is implemented in practice is left to the discretion of individual Member States (also see further amendments to Directive 85/33/EEC, 2009/31/EC; 2014/52/EU).

Therefore, policy, like theory, assumes that local stakeholder participation can improve the decision-making process as well as the decision outcome. It has been argued that this turn towards participation suggests a trend towards greater openness and inclusion of stakeholders and their views and expertise (Saurugger, 2010; Chilvers and Kearnes 2016). Although there have been many studies conducted on the benefits of participation and some more recent publications engage with implementation mechanisms of how participatory processes are set up in different European Union Member States in the context of the Floods Directive (e.g. Heintz *et al*. 2012; Thaler and Priest 2014; Otto *et al*. 2016), a more detailed empirical account of the extent to which participation in FRM-related decision-making processes in Europe can influence final decisions is lacking. This paper contributes to filling in this gap for flood defence related decisions in two locations.

Methods

Over the last few decades, both England and Germany have experienced major floods (e.g., England in 1998, 2000, 2007, 2013/2014, and 2015/2016 and Germany in 1993, 1995, 1997, 2002, 2006, 2010, 2012, and 2013). In both countries, as a result of a range of social and political pressures, including implementing the European Floods Directive in national legislation in both in England and Germany, the involvement of local stakeholders in FRM, although in differing forms, has gained emphasis in both policy and practice. Consequently, these case studies provide a comparison of how European FRM policy has been interpreted and implemented in practice.

These empirical examples combine findings from two separate European FP7 projects[1]. The data used is based on a literature review and stakeholder interviews in flood-affected areas. Ten interviews were conducted across England in 2012 with local decision makers, including regional and local government decision makers, community organisations, an urban planner, and academics. Twelve interviews were conducted in Saxony in 2014 with regional and local government decision makers, representatives of responsible administrative bodies, community

[1] Social Capacity Building for Natural Hazards: Toward More Resilient Societies (CapHaz-Net, Grant number: 227073; see Begg *et al*. 2015) for England and Building Resilience Amongst Communities in Europe (emBRACE, Grant number: 283201; see Callsen 2014) for Saxony.

organisations, and non-governmental organisations. The interviews in England were conducted in English by a native speaker, while the interviews in Germany were conducted in German by a native speaker.

The implementation of local stakeholder participation is slightly different in each case study, so to reflect this difference, the interview questions also had slight differences. One key divergence is that the English case study's questions focused on identifying the stakeholders involved in FRM, the impact of recent political changes, and whether or not responsible stakeholders have the capacity to fulfil their responsibilities. Meanwhile, the Saxon case study's questions also identified the stakeholders involved in FRM, but focused on the perceived impact that participation can have on decision-making processes, and sought suggestions for alternative ways for local stakeholder participation. Both studies share a focus on the role of local stakeholders in flood defence-related decisions. Both studies fully transcribed each of the interviews using the f4 program. The English interviews were coded manually and the Saxon interviews were coded using the support of the maxQDR program. The present study compares the findings of both studies. For a detailed discussion of the specific methods used for each case study see Callsen (2014) and Begg *et al.* (2015).

Participation in flood defence in practice

The following sub-sections describe the role of local stakeholder participation in the planning and implementation of flood defence measures in England and Saxony.

England

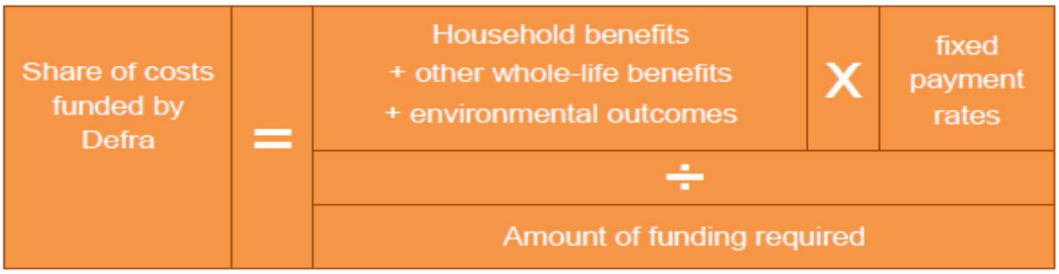
In England at the time of the research, participation had become a prominent topic in various policy contexts. The "Big Society" agenda (Cameron 2010) emphasised the importance of local stakeholder involvement in solving local problems. This political rhetoric was transferred into regulation through the Localism Bill (2010) and later the Localism Act (2011), which promotes localism on the premise that local stakeholders are "those best placed to find the best solutions to local needs" (Localism Bill 2010 p. 2). The ethos of the Localism Act and its focus on decentralisation can be seen in the way in which floods are managed in England (Thaler and Priest 2014). Even before the introduction of the Flood Risk Regulations (2009) and the subsequent Flood and Water Management Act (2010), which translates the European Floods Directive into national law, there has been an increasing emphasis on the government placing boundaries around the state's ability to protect its citizens 100% from flood damage. Instead, the need for local stakeholders to play a larger role in managing floods is articulated (EA 2009).

Local stakeholder involvement is seen to be necessary in order to ensure the effective delivery of flood defence schemes (DEFRA 2011a). Wehn *et al.* (2015) argue that local stakeholder participation has shifted to the start rather than the end of the planning process. In other words, local stakeholder participation in flood defence planning in England has evolved from a 'design-defend-implement' to a 'discuss-design-implement' process in which citizens are expected to take active responsibility at the beginning of the process rather than passively receive a service (Wehn *et al.* 2015). In regards to planning, a statutory requirement 'duty to cooperate in relation to planning for sustainable development' requires local authorities, lead local flood authorities (county councils and unitary authorities), and public bodies (i.e. the EA) to work together to ensure that flood risk is included in Local Plans (DCLG 2009). Local stakeholders can become involved in the development of Neighbourhood Plans, which have to be taken into consideration in the Local Plans but it has been argued that scope for changing the status quo through Neighbourhood Plans is limited (Begg *et al.* 2015) and whether or not the projects are implemented depends on whether funding can be obtained.

The focus on local stakeholder involvement in funding flood defence schemes has emerged as a result of two influential reports: the *Pitt Review* (Pitt 2008) and *Investing for the Future* (EA 2009). These reports stressed the need for additional sources of funding to deal with flood-related risk at a time of government cuts to flood defence funding. The localism agenda has further helped to promote the importance of local stakeholder participation in the planning and implementation of flood defence schemes. The introduction of the Flood and Coastal Resilience Partnership Funding has encouraged communities to come together in order to fund flood defence schemes

through applying for Flood Defence Grant-in-Aid (FDGiA) (DEFRA 2011a). As a result, the Department for Environment, Food and Rural Affairs (covering England and Wales) no longer fully funds flood defence schemes as it has previously. Instead, funding must now partly come from other sources such as local councils, businesses, and residents (DEFRA 2012). The amount of funding received from the national government for a flood defence scheme depends on the level of benefits the scheme provides for householders, the economy, and the environment, calculated (Figure 1) by multiplying each of these aspects using "a set of payment rates, which are fixed amounts of national funding per unit of outcome or benefit achieved" (DEFRA 2011b p. 1). Deprived areas will attract higher payment rates, so they are prioritised for funding using the Department of Communities and Local Government's Index of Local Deprivation (DCLG 2010).

Figure 1: Calculation of share of project cost by Defra



(DEFRA 2011b)

Funding is allocated in consultation with the Regional Flood and Coastal Committees (RFCCs) (Benson *et al*. 2016). The RFCCs have an independent chair and comprise a combination of local stakeholders including representatives from the EA, local authority workers, and local experts, such as from conservation, farming, and landowning interests (Benson *et al*. 2016). Final decisions remain the responsibility of the EA (DEFRA 2011b).

In order to qualify for full funding, proposals need to achieve a score of 100%. Projects that score below 100% are required to find ways to save costs and/or find other sources of funding (DEFRA 2011b). DEFRA argues that these changes mean that more funding will be opened up for flood defence (DEFRA 2011a), because rather than relying on one pot of money provided by DEFRA, communities are able to work together to pool resources in order to contribute to the funding. In other words, although previously not every community could receive funding based on DEFRA's finite funds, the revised approach makes it possible for any community to receive flood defence funding from DEFRA as long as councils, businesses, and residents have access to and are willing to contribute funds towards the scheme. This means that local stakeholders play an active role in whether or not a scheme is funded and therefore whether it will reach the implementation phase.

The results of the interviews here (see Begg *et al*. 2015) revealed that although some communities are likely to benefit from the funding arrangements set out by Partnership Funding, some communities, particularly those unable to contribute funding to the scheme, are likely to be left out. As explained by one planning consultant: "There are opportunities for people who have the resources to exploit them". Although deprivation levels are taken into account within the funding methodology, it has been argued that the funding scheme is likely to result in fewer choices, and therefore inequality, for areas that cannot raise funding such as small rural areas:

> "… rural areas are going to be the ones that suffer again because there isn't the partners around … in a small community. And the community themselves, being small, are not going to be able to raise the vast thousands upon millions of pounds that are needed towards any flood scheme" (interview with a community engagement officer).

The potential increase or creation of inequality was also emphasised by another interviewee:

> "well you have got … that difficulty with the small rural communities … they have created a mechanism to try and catch areas of deprivation so that they get a higher score but if it is not scoring high enough they have got very little chance of drawing in the funding … its puts a lot of schemes, you know, out of reach forever" (interview with a flood management officer from a county council).

In other words, local stakeholder participation in selecting flood defence options requires local stakeholders to work within predefined decision-making structures and is limited to whether or not those local stakeholders have access to the financial resources required to fund flood defence schemes in their local area. Therefore, although the current structures surrounding local stakeholder participation in implementing flood defence options could benefit some communities, without further support, communities and local stakeholders unable to obtain flood defence funding may experience a strengthening of existing inequalities and/or a shift towards non-structural FRM approaches. These findings are similar to those of Thaler and Priest (2014) who argue that, whilst Partnership Funding encourages the involvement of a wide range of stakeholders, it does little to fairly distribute risk. Moreover, once funded the Environment Agency (the EA), local authorities and internal drainage boards, local stakeholders are responsible for managing 'flood assets' (NAO 2014) but the interviews did not indicate that once flood defences are given permission and funding, that their design, construction, and maintenance are delivered through participatory processes.

Saxony

Since the 2002 flood and the introduction of the European Floods Directive, flood management in Saxony has changed (Grünewald 2005; Müller 2010; Otto *et al.* 2016). Although flood defence related decisions have traditionally been based on providing all citizens with protection against damage from a 1-in-100-year flood in Saxony (Krieger 2013), the increased pressure to secure citizen safety and to fairly distribute finite funds has meant that a focus on the number of citizens ostensibly protected from flood damage and cost-benefit analyses have started to play an increasingly important role in flood defence related prioritisation (Müller 2010; Otto *et al.* 2016). As a result of the 2002 floods, the authorities decided to develop a rationale for prioritising single schemes according to four categories: expected damage, cost-benefit ratio of a scheme, effects on water management, and vulnerability (Socher *et al*. 2006). A scheme's rating defines not only the types of flood damage protection measures communities will receive, but also the degree of flood damage protection the scheme will provide (Müller 2010). Interviews with local decision makers (Callsen 2014) revealed that, initially, the prioritisation referred primarily to the timing of the implementation of measures (e.g. very urgent, urgent, etc.) because it was assumed that all measures would eventually be implemented. This has changed gradually over time, so that due to limited funds, lower priority schemes are now not likely be funded at all. As one state representative explained, "the magic word is economic efficiency. In all cases where we have a cost-benefit ratio lower than one, nothing will happen".

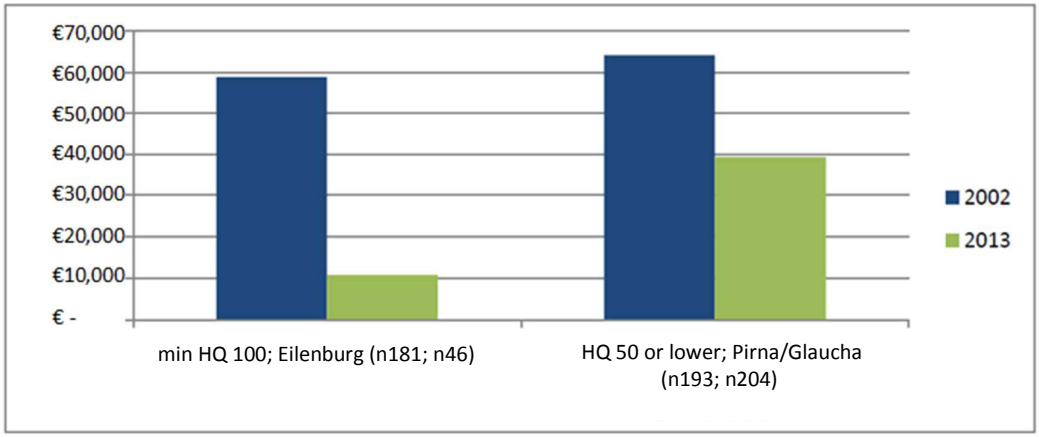
With regard to local stakeholder involvement, a representative of the state government explained that the prioritisation scheme was subject to the legally required participation process which includes consulting those possibly affected by the planned schemes as well as other administrative bodies representing public concerns (the so called "*Träger öffentlicher Belange*", TÖB). In addition, local stakeholders are provided with the opportunity to become involved in implementing the prioritised measures through the planning process. Although participation is required during the development of the prioritisation scheme, empirical examples of this involvement are lacking, apart from flood defence measures planned for major rivers. Then, a so-called "Planfeststellungsverfahren" (PFV; official approval of a plan) is organised (§ 72 VwVfG), which is, above all, an administrative process that regulates how public administrations interact with the public. The aim of the PFV is to develop a legally binding plan ("rechtsicher"). Within this formalised process, development plans have to be made publicly accessible to affected municipalities, exposed citizens, environmental associations, and other stakeholder groups. This process provides local stakeholders with the opportunity to communicate their interests and concerns in writing. These submissions must be considered and evaluated by the authorities (Kuhlicke *et al.* 2016).

During the 2013 flood, there was a controversial public and media-driven debate about the role that participation should play in decision-making processes (Callsen 2014; Kuhlicke *et al.* 2016). Local stakeholder input into the planning process was accused of favouring individual voices over the greater good which delayed the planning process and, therefore, led to the high damage experienced by some communities as a result of the floods (LVZ online 13.06.2013; Sächsische Zeitung 15./16.06.2013 p. 3). Yet in some cases, authorities are allowed to replace the PFV with a Plangenehmigungsverfahren (PGV), which aims at accelerating the approval process by excluding participation from the planning process altogether (Kuhlicke *et al*. 2016). This suggests that local stakeholder participation is acceptable as a way to legitimise decisions ex post, whereas allowing local stakeholders to influence the decision-making ex ante is seen as problematic, if not something to be avoided (Wiechmann and Terfrüchte 2013).

The perceived lack of input and impact that local stakeholders can have on flood defence-related decisions has led to protests from community groups who are frustrated about the way in which floods are currently managed (e.g. Chemnitzer Morgenpost 17.03.2012, p. 4; Ökolöwe 18.10.2013). As one member of a nature conservation organisation commented, "when they have already done everything and all is nice and finished; the potatoes are cooked, then they call us to the table and everything is supposed to be wonderful".

This situation poses the question of whether current participation in decisions related to flood defence suffices. Such a question is particularly relevant when considering financial damage experienced as a result of past floods. Damage from the 2013 flood estimated at €1.9 billion was much lower than damage in 2002 estimated at €8.7 billion (DKKV 2015). It has been argued that the main reasons for this reduction in damage are due to the "improved inclusion of flood hazards in spatial planning and urban development, an increasing uptake of property-level mitigation, more effective flood warnings and improved coordination of disaster response as well as a more targeted maintenance and construction of flood defense systems" (Thieken *et al.* 2016 p. 1). Yet, a closer look reveals that a difference emerged in the financial damage experienced in cities with high priority in the prioritisation scheme and a higher structural protection level compared to low-priority cities with less, or even completely lacking, structural flood protection. Figure 2 compares Eilenburg, Pirna, and Glaucha. All cities experienced financial damage in 2002. As a result of the prioritisation scheme, Eilenburg received a score which meant that the city was given high priority and received state-provided flood defence measures in 2012. Although Pirna and Glaucha also received a high score, they remained without flood defence measures during the 2013 flood, as the planning and construction process did not proceed as quickly as in Eilenburg.

Figure 2: Average damage per household experienced in 2002 and 2013 in cities in Saxony with and without structural flood defence schemes – HQ 50 and HQ 100 refer to the 1% and 2% annual probability of flooding respectively



(Kuhlicke 2014, p. 23)

This suggests that although the overall damage caused by flooding has been reduced as a result of measures taken between 2002 and 2013 (keeping in mind that there might be other influences on vulnerability as well), small rural

communities that are unable to receive effective flood protection measures are probably forced to bear the brunt of the future damage. Therefore, like England, communities and local stakeholders unable to obtain flood defence schemes may experience a strengthening of existing inequalities and/or a shift towards non-structural FRM approaches. Furthermore, it was found that local stakeholders who are interested in being involved in decisions related to flood defence are largely people who have experienced flood-related damage in the past (Kuhlicke 2014; Begg et al. 2016).

Discussion and conclusion

The current situation in England and Saxony, presented in this paper, shows the constraints of local stakeholder participation in regards to planning and implementing flood defence schemes. The findings from the two case studies depict that limited involvement of local stakeholders in decisions related to flood defence schemes is likely to lead to conflict and frustration as well as, potentially, a strengthening of inequalities, albeit different forms of inequalities in each case study. These findings contrast with the emerging discourse that suggests a trend towards greater openness and inclusion of stakeholders (Saurugger 2010; Chilvers and Kearnes 2016).

This section discusses the influence that local stakeholder participation can have on decisions related to flood defence-related decisions by answering the three research questions: To what extent do stakeholder participation processes 1) encourage deliberative processes, 2) provide input into decisions related to planning and implementation for flood defence and 3) lead to reductions in flood-related damage?

In response to question 1, the role of participation in decision-making processes related to planning and implementation of measures presented here is shaped by expert-led and economically rationalised decision-making processes. However, in England deliberation, in the sense of active involvement, is encouraged through Neighbourhood Planning and the prioritisation of funding of flood defence schemes. In contrast, in Saxony, local stakeholder involvement is restricted from the prioritisation of flood defence measures and, rather than deliberation, opportunities for consultation in the planning process are provided to local stakeholders.

As a result, and to answer question 2, stakeholder involvement has been moved from the end to the start of the planning process in England. Although deliberation is encouraged in decision-making processes, the ability of local stakeholders to influence decisions is limited. Moreover, whether planned defences are funded and, in turn, whether defence schemes are implemented, depends on whether local stakeholders are able to contribute funds to ensure the scheme is realised. Conversely in Saxony, institutions employ prioritisation methods that are decided at the state level leaving little space for local stakeholders to challenge such decisions. While PFVs at the local level provide space for local stakeholder involvement in planning, such involvement is controversial and can be restricted altogether through the use of a PGV.

This leads to question 3. Although it is not possible, based on the results presented here, to draw conclusions regarding whether or not participation has directly led to a reduction in financial damage, the case studies show that employing participatory processes without providing opportunities for local stakeholders to influence either their role (in England), the outcome (in Saxony), or the decision-making starting point and criteria (both locations) may lead to further issues rather than improving the quality and acceptance of final decisions. We argue that the investigated participation processes related to flood defence planning and implementation may lead to increased and/or new inequalities.

Current involvement of local stakeholders in Partnership Funding in England encourages local stakeholders to deliver a service previously delivered by the state without being able to deliberatively shape the decision. This means that issues of power are not addressed through such participation. This has implications for the distribution of risk as communities able to contribute funds are more likely to receive defence schemes. Therefore, improvements to the delivery of flood defences in some communities may occur, but other communities might find they have fewer FRM options due to lack of resources and, therefore, inequalities may increase or be strengthened (Begg *et al*. 2015) because the most vulnerable still end up with the fewest options.

In Saxony, participatory processes do not prioritise measures. While informative and consultative processes are included in the PFV process, there is no possibility to challenge power relations. As our example shows, this can lead to conflict and frustration (see also Kuhlicke *et al.* 2016; Otto *et al.* 2016). While the theoretical aim may be the goal of seeking equal flood risk for everyone, inequalities arise when communities without access to flood defence experience higher financial damage than those that do have defence schemes (Kuhlicke 2014), although the defence schemes themselves might have changed perceptions, behaviour, and the flood hazard experienced downstream of the measures (Tobin 1995; Etkin 1999; Fordham 1999; Kelman 2001). Interestingly, whether local stakeholder participation takes place at the start or the end of the planning process, problems arise when issues of power and inequality are not dealt with, as is demanded by the literature on participatory processes, including for FRM (Allmendinger and Haughton 2010; Thaler and Priest 2014; Begg *et al.* 2015).

Despite extensive literature and European policy which support the use of local stakeholder participation in order to improve decisions, the two case study examples highlight the limitations of implementing participatory processes within pre-existing decision-making structures. The interplay of economic efficiency defined narrowly as an important criterion for flood defence related decisions and deliberative participation processes seem, to some extent, to be contradictory. When decisions are based on economic rationalism, opportunities for participation are automatically restricted. This situation becomes particularly problematic when conflict and inequalities arise.

In order to avoid conflict, frustration and increased inequality, it is important that the objectives and boundaries of participation are clear from the outset. Moreover, participation could be employed to deal with issues of power, risk distribution and inequality by creating opportunities to discuss issues of risk, responsibility and alternatives to flood defence such as private flood mitigation measures (Bubeck *et al.* 2012). This way, decision making processes could be understood and accepted by all parties and the limitations of and alternatives to flood defence could also be identified and discussed. More research is required to assess the influence of local stakeholder participation in the planning and implementation of non-structural FRM (e.g. spatial planning, emergency management, and individual household mitigation measures) (see Heintz *et al.* 2012; Kreibich *et al.* 2015; Mees *et al.* 2016; Otto *et al.* 2016). In addition, local stakeholder participation should also provide input in broader strategic decisions as it is encouraged in the EU Floods Directive.

As both case studies reveal interesting similarities but also differences which help identify the potential for and boundaries of local stakeholder participation, more research is needed to further understand and specify the actual driving forces of participation as well as the possible effects of participation and how these factors differ between various socio-political, cultural and institutional contexts in Europe and beyond in order to add to the lessons learnt here (see Wehn *et al.* 2015; Mees *et al*. 2016). The results from this work and their connection to previous literature demonstrate that much more could be done to give opportunities for local stakeholder participation.

Acknowledgement: This research was conducted within the framework of the European FP7 projects CapHaz-Net (Grant Agreement No. 227073) and emBRACE (Grant Agreement No. 283201). The authors would like to thank Rebecca Whittle and Gordon Walker for their comments on earlier drafts. The authors would also like to thank the anonymous referees for their reviews which greatly helped to improve this manuscript.

Word count: 5,736

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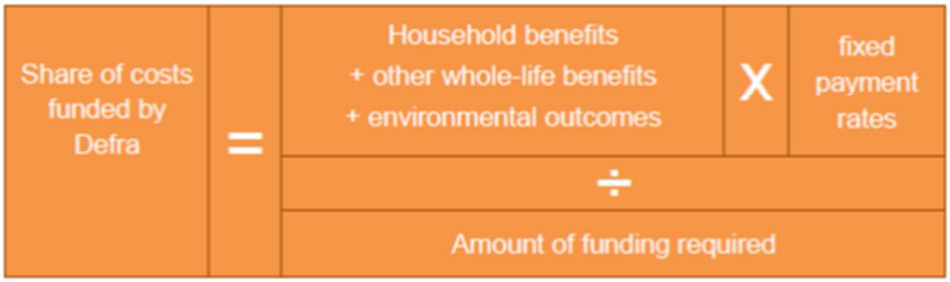

Figure 1: Calculation of share of project cost by Defra

156x42mm (100 x 116 DPI)

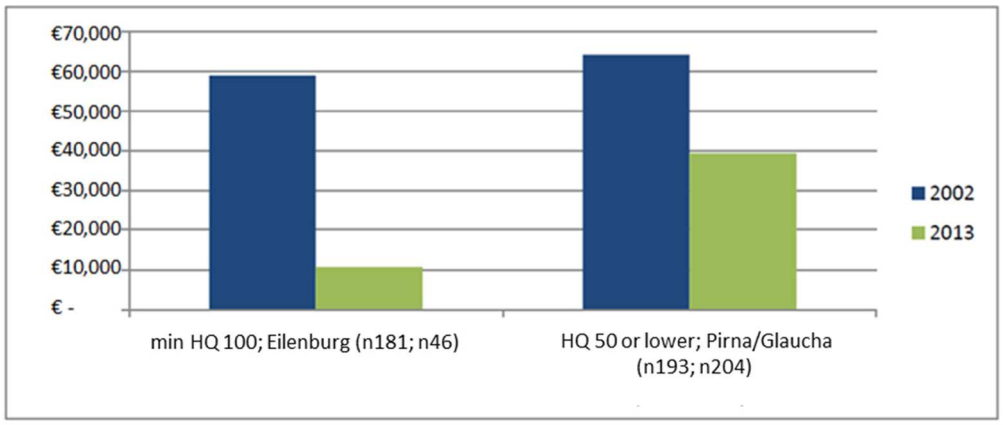

Figure 2: Average damage per household experienced in 2002 and 2013 in cities in Saxony with and without structural flood defence schemes – HQ 50 and HQ 100 refer to the 1% and 2% annual probability of flooding respectively

145x61mm (150 x 150 DPI)