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Newig, Jens; Challies, Ed; Jager, Nicolas Wilhelm; Kochskämper, Elisa

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# What Role for Public Participation in Implementing the EU Floods Directive?

## A comparison with the Water Framework Directive, early evidence from Germany, and a research agenda

Jens Newig, Edward Challies, Nicolas Jager, Elisa Kochskämper

This is the accepted version of an article that will appear in *Environmental Policy and Governance*.

### Abstract

We examine the roles and functions of non-state actor participation in implementing the EU Floods Directive of 2007 (FD). We draw on experiences with participation under the Water Framework Directive (WFD), because of important links between the two directives. Comparing the legal basis and the different functions for participation, we observe the paradoxical situation that while the WFD has fervently advocated public participation, public interest has remained low, whereas the FD is less sanguine about participation, despite citizens being potentially more affected by flood management issues – particularly given the current trend towards a ‘risk management’ approach under the FD. Our examination of current FD implementation in Germany reveals a considerable variety of participation approaches, as well as a general trend to ‘less’ rather than ‘more’ participation as compared to the WFD. The paper closes by discussing implications for future flood management planning and avenues for comparative research.

**Key words:** Flood risk management, mandated participatory planning, nested policy cycle, risk approach, security approach, adaptive policy learning.

### 1 Introduction

The recurrence of flood disasters in central Europe over the past decade<sup>1</sup> has reinforced the discussion on the effectiveness of flood management. The EU Floods Directive (FD)<sup>2</sup>, in place since 2007, aims to reduce the adverse consequences for human health, the environment, cultural heritage and economic activity associated with floods. The directive requires that flood risk management plans (FRMPs) be drafted for flood risk areas across Europe by 2015. Following the general trend of current EU (environmental) policies, such planning has to be carried out by informing the public and actively involving

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<sup>1</sup> “Between 1998 and 2009, floods in Europe have caused some 1126 deaths, the displacement of about half a million people and at least €52 billion in insured economic losses” (European Environment Agency, cited in European Commission 2014, online).

<sup>2</sup> Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks, entered into force on 26 November 2007.

all interested parties: “This Directive reinforces the rights of the public to access this information and to have a say in the planning process” (European Commission 2014). The EU is following an instrumental rationale wherein participation is expected to lead to better informed, more widely accepted decisions and thus more effective policy delivery (Newig and Fritsch 2009b).

There is ongoing debate as to whether and under what concrete circumstances participatory planning efforts in general are actually conducive to effective environmental management (Layzer 2002, Newig and Fritsch 2009a, Young, *et al.* 2013). For two reasons, flood risk management according to the Floods Directive constitutes a particularly interesting case for studying the effectiveness of participatory environmental governance: *First*, flood risk management planning is a relatively recent policy field, in which the risk paradigm poses particular emphasis on the role of individuals. The importance of the latter can be demonstrated by recent experiences from German municipalities which have revealed that public involvement may severely delay effective flood protection measures, leading to increased damages (as in the case of the June 2013 flood in Germany – see Baldauf 2013<sup>3</sup>). *Second*, as the FD has to be implemented in all EU member states in parallel, and this lends itself to quasi-experimental approaches to studying more or less participatory planning on a given issue in a multitude of cases in parallel. It is thus timely to investigate the role of public and stakeholder participation in flood management planning.

Flood risk management planning under the FD is required to be closely aligned with river basin management planning under the Water Framework Directive (WFD)<sup>4</sup>, issued in 2000. The FD and related guidance documents repeatedly and systematically refer to the WFD as a role model in its requirements for public participation in river basin management planning. As the first major directive to introduce ‘mandated participatory planning’ instruments to implement policy (Newig and Koontz 2014), the WFD has attracted wide scholarly attention. A particular focus has been on the role of public participation in the Directive’s implementation (Blomqvist 2004, Newig, *et al.* 2005, De Stefano 2010, Wright and Fritsch 2011, Van der Heijden and Ten Heuvelhof 2012, Roggero 2013). Building on this ample experience, it will therefore be useful to establish parallels and to compare participatory governance in the two directives in order to elucidate what can be learned from WFD experiences, what is transferable to FD implementation – and what is not (see Evers and Nyberg 2013 for a critical discussion).

Against this backdrop, this paper aims to assess the role of public participation in implementing the FD. In particular, we ask what types of participation are likely to be useful for effective and sustainable flood risk management. The paper thus contributes to the growing body of literature that addresses the issue of ‘what works’ in participatory environmental governance (Bäckstrand 2006, Koontz and Thomas 2006, Newig and Fritsch 2009a, Høgl, *et al.* 2012).

We proceed as follows: In section 2, we draw on legal and policy documents to analyse the formal basis for participation under the FD in comparison to the WFD. In a short excursus (section 3), we summarise recent experiences with participatory management planning under the WFD. Subsequently, in section 4, we discuss different functions of participation as described in the academic literature, applying these again in comparative context to the FD and flood management more generally, and to water management under the WFD. We show how different policy issues in sustainable water management and flood management lead to different functions of participation. Notably, the stronger and

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<sup>3</sup> Technical protection measures planned in the aftermath of major floods in 2002 in the city of Grimma were delayed by citizen protest, with lengthy court proceedings until 2007.

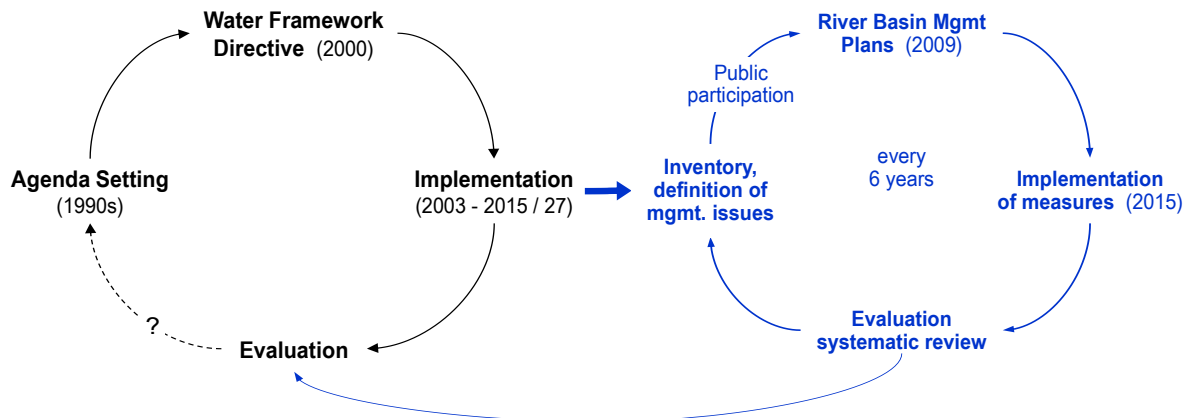
<sup>4</sup> Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy.

more direct affectedness of flood-prone communities, especially given the current trend towards a risk approach through the FD, implies a greater need for effective participation. In sections 5 and 6, we explore early experiences with FD-related participation. We do so by first reviewing the (scant) available academic literature. Second, we present early results of primary research of FD implementation in Germany, drawing on document analysis and interviews with public officials. The paper closes by summarising the early application of FD-related participation, highlighting differences to the more consolidated experiences with implementing the WFD, and outlining avenues for further research.

## 2 Legal and policy analysis of the role of participation in FD and WFD implementation

Both the Floods Directive and the Water Framework Directive share a common, novel approach to EU (environmental) policy, namely the ‘mandated participatory planning’ (MPP) approach to policy implementation (Newig and Koontz 2014). This mode of EU policy explicitly mandates the formulation of particular plans or programmes on a national, subnational or even cross-national level. These plans serve as the central vehicles for policy implementation; at the same time, they are in themselves political programmes. A political decision-making process results, which we describe in terms of a secondary policy-cycle nested within a larger cycle of European public policy-making and implementation. Figures 1 and 2 depict these nested policy cycles for the WFD and the FD, respectively.

Importantly, non-state organised interests or the wider public must be involved in drafting the required plans. Mandated from ‘above’ rather than bottom-up, this institutionalisation of participation in policy implementation can be regarded as a particular form of participatory governance. We begin our analysis by considering the WFD as the earliest and arguably most prominent example of MPP before turning to the FD as its most recent instance, and considering connections between the two.



**Figure 1:** Nested policy cycle of the Water Framework Directive. Source: Newig and Koontz 2014.

The *Water Framework Directive* requires all EU member states to achieve “good status” of all inland ground and surface waters by 2015. As the central vehicle of implementation, member states must develop River Basin Management Plans (RBMPs) and Programmes of Measures (PoMs) that assess current water conditions and define actions to be taken to achieve the Directive’s targets. Public authorities are given substantial flexibility in operationalising the goal of ‘good water status’, defining the measures by which this is to be attained, and defining exemptions for certain water bodies. RBMPs and PoMs had to be submitted to the European Commission by the end of 2009. Subsequent six-year

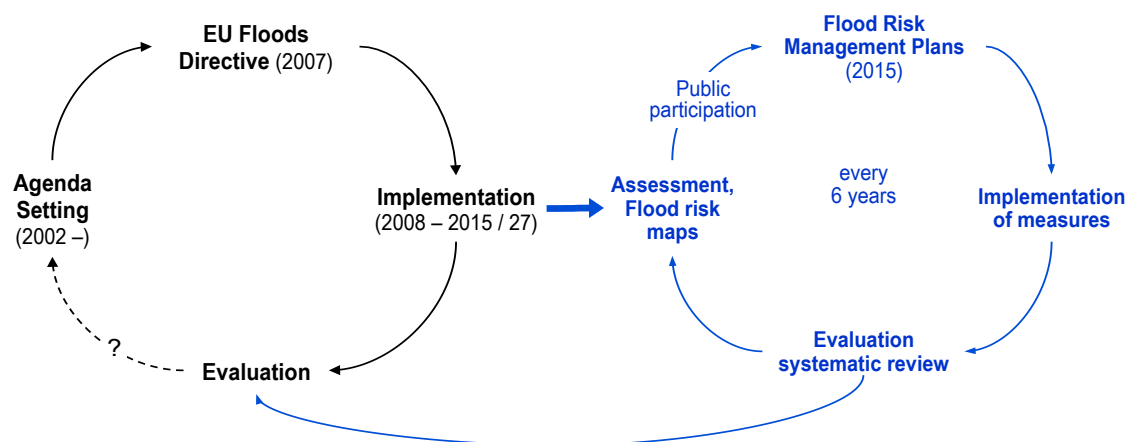
planning cycles require the submission of plans in 2015 and 2021 (see table 1 for an overview). Plans must be produced at the level of river basin districts, thereby covering hydrological spatial units rather than political-administrative jurisdictions, to overcome spatial ‘misfit’ and internalise negative externalities (spillovers) (Moss 2004).

Public participation is seen as *the* central element of the WFD planning process (European Commission 2003: 55) and a key success factor for the Directive’s implementation (Preamble 14 WFD). The official WFD internet portal<sup>5</sup> proclaims the need to ‘get Europe’s waters cleaner by getting citizens involved’:

The increasing demand by citizens and environmental organisations [...] is one of the main reasons why the Commission has made water protection one of the priorities of its work. [...] In achieving these objectives, the roles of citizens and citizens’ groups will be crucial. This is why a new European Water Policy has to get citizens more involved.

Against the backdrop of these more rhetorical statements, the WFD specifies public participation in its Article 14. It introduces three main forms, namely: information supply, consultation and active involvement. Whereas information supply and consultation must be “ensured” by member states, active involvement is only to be “encouraged”. Consultation is to be organised in a three-step procedure (see table 1). Draft RBMPs and associated planning documents have to be made available for public scrutiny and comment. Consultation and active involvement apply to the implementation of the whole directive, but to the production of RBMPs in particular. Annex VII WFD requires that RBMPs summarise the participatory measures taken, their results and their impact on the plan, as well as details on how background information can be obtained.

Unprecedented in European public policy, a ‘Common Implementation Strategy’ (CIS) was established via a joint process by European national water ministries with the aim of coordinating implementation of the WFD and providing guidance on specific aspects of the Directive. The CIS guidance document on public participation in the planning process is particularly enthusiastic about participation, maintaining that “Public participation covers a *wider* range of activities than prescribed by the Directive. The Directive requires active involvement, consultation and access to information. *More* may be useful to reach the objective of the Directive (preamble 14)” (EU 2002: 19, emphasis added).



**Figure 2:** Nested policy cycle of the Floods Directive.

<sup>5</sup> URL: [http://ec.europa.eu/environment/water/water-framework/info/intro\\_en.htm](http://ec.europa.eu/environment/water/water-framework/info/intro_en.htm) (last accessed 22 January 2014; unchanged since 2002). Ironically, this introduction to the Directive is available in English language only.

Aimed at the protection of human health, the environment, cultural heritage and economic development, the *Floods Directive* is the most recent and the first not predominantly ‘environmental’ directive to follow the MPP model. It requires member states to:

- carry out preliminary flood risk assessments by December 2011;
- identify areas with potentially significant flood risk;
- produce flood hazard maps and flood risk maps by December 2013;
- produce flood risk management plans by December 2015.

These planning steps have to be repeated every six years, reviewing and updating the respective planning documents. As Preamble 17 FD stresses, planning under both the WFD and the FD constitute elements of integrated river basin management, and ought to be coordinated (Albrecht and Wendler 2009).

**Table 1:** Participation requirements in WFD and FD implementation.

	<b>Water Framework Directive</b>	<b>Floods Directive</b>
<b>Name of plans</b>	River Basin Management Plans (RBMPs), Programmes of Measures (PoMs)	Flood Risk Management Plans (FRMPs), and accompanying flood risk maps and flood hazard maps
<b>Geographical focus</b>	River basin districts and sub-units	Flood risk areas within river basin districts and sub-units
<b>Cyclical planning</b>	Six-year cycles (2009, 2015 ...)	Six-year cycles; for FRMPs aligned with those of the WFD (2015 ...); for flood maps, three years ahead (2012, 2018, ...)
<b>Material goals of the directive</b>	Good water status for all ground and surface waters by 2015	Abstract goal only, no concrete objectives
<b>Subject of participation</b>	Implementation of the whole directive, and RBMPs in particular (PoMs are subject to consultation under a Strategic Environmental Assessment )	Formally, FRMPs only (also subject to public consultation under a Strategic Environmental Assessment )
<b>Public information</b>	Work programme for RBMPs, overview of significant water management issues and draft RBMPs (Art. 14 para. 1). On request, access to background documents (Art. 14 para. 1)	Preliminary flood risk assessment, flood hazard maps, flood risk maps, FRMPs (Art. 10 para. 1)
<b>Public consultation</b>	Three-stage consultation of the general public (Art 14 para. 2)	Not mentioned, but FRMPs are subject to public consultation as part of a Strategic Environmental Assessment
<b>Active involvement</b>	Active involvement of all interested parties in implementation of the directive shall be encouraged (Art. 14 para. 1)	Active involvement of all interested parties in production of FRMPs shall be encouraged (Art. 10 para. 2)

Unlike the WFD, the FD remains purely procedural, leaving definition of goals for flood protection and the reduction of flood risk to the member states (or sub-/cross-national administrations). Beyond assessment of the status quo of flood risk and the considerable requirements of drafting flood risk maps and designating flood risk areas, plans only have to define measures for flood risk *management*, but need not address how flood *protection* will be achieved. MPP here becomes almost purely an exercise in reflexive governance. By obliging public administrations to intensively engage with flood risk at the local level, it is hoped that flood protection will also be enhanced.

Compared to the high expectations for public participation in the WFD, the FD appears less sanguine. On the FD online portal<sup>6</sup>, public participation is briefly addressed, but not given nearly the same weight as in relation to the WFD. There is also no guidance document on participation specifically drafted for the FD. However, the whole process of the Common Implementation Strategy for WFD implementation has recently been extended to the FD in the form of a ‘Working Group F on Floods’. Both FD-related scholarly literature and policy documents refer to the guidance document’s definitions of ‘active involvement’ and ‘interested parties’, while at the same time acknowledging differences regarding participation in both directives (Gierk and Stratenwerth 2010, Heintz and Pohl 2011). In summary, the FD could arguably be regarded as an addendum to the WFD, albeit with a different substantive focus, and in some cases distinct competent authorities.

The legal provisions of the FD are also somewhat less ample on participation, compared to the WFD. According to Art. 10 para. 1 FD, the public must be granted access to preliminary flood risk assessments, flood hazard maps and flood risk maps, implying ‘ex post’ access and mandating no public involvement in the drafting of these documents (Heintz and Pohl 2011). As with the WFD, ‘active involvement’ of ‘interested parties’ must be ‘encouraged’ in the production (as well as the review and updating) of FRMPs. Moreover, according to Art. 9 FD, “the active involvement of all interested parties [...] shall be coordinated, as appropriate, with the active involvement of interested parties under Article 14 of Directive 2000/60/EC”.

In both the WFD and the FD, the term ‘encourage active involvement’ leaves substantial leeway for member states to implement a wide variety of forms of public involvement, including non-participatory forms of drafting plans where this is deemed appropriate. In addition to the specific participation-related requirements, draft Flood Risk Management Plans (FD) and Programmes of Measures (WFD) are subject to a formal consultation as part of a Strategic Environmental Assessment according to the SEA Directive<sup>7</sup> (Carter and Howe 2006, Unnerstall 2010).

### **3 Excursus: Experiences to date with public participation in implementing the WFD**

In contrast to the Floods Directive, the implementation of the Water Framework Directive has already passed through its first planning cycle. It is therefore useful to consider these experiences with participatory planning in order to inform FD-related participation. Undoubtedly, the WFD has had a huge impact on water-related public administration Europe-wide. The scope and depth of WFD-mandated participatory planning has been unprecedented in water governance in the great majority of member states (see De Stefano 2010).

Due to the considerable leeway with how to implement Article 14 WFD, member states and even jurisdictions within member states have adopted quite different approaches to participation, leading to an enormous variety of process types (Rault and Jeffrey 2008). Although this makes general statements about participatory planning in WFD implementation difficult, a number of insights common to most member states do emerge. Participation of the general (lay) public (‘users’ in WFD terminology) is essentially absent. In most EU member states – with the notable exception of France – hardly any

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<sup>6</sup> URL: [http://ec.europa.eu/environment/water/flood\\_risk/index.htm](http://ec.europa.eu/environment/water/flood_risk/index.htm) (last accessed 22 January 2014).

<sup>7</sup> Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment, entered into force on 21 July 2001.

comments on RBMPs have been submitted by non-specialists<sup>8</sup>. In hindsight, this is not overly surprising: Despite different water governance challenges across the EU (e.g. in southern member states water scarcity and quality issues are often more acute, and citizen participation has been slightly higher), most citizens remain affected only to a very limited degree by often rather technical WFD issues. The two earlier consultation steps (in 2007 and 2008) elicited virtually no comments at all, not even by professional stakeholders, arguably because these steps were not perceived as relevant, despite being mandated by the WFD. In contrast to this sobering experience with the formal consultation procedure, quite a rich variety of ‘active involvement’ activities has emerged, which typically include organisational representatives such as municipalities, agriculture, industry and environmental NGOs (see, e.g. Demetropoulou, *et al.* 2010, Van der Heijden and Ten Heuvelhof 2012).

Notwithstanding the range of processes involving non-state actors in WFD implementation, evidence is emerging to suggest that participant input may have very little impact in actually shaping RBMPs and PoMs (Koontz and Newig 2014). While such evidence suggests that participation so far has failed to effectively address pressing water-related problems, such as agricultural nitrate pollution (EEB 2010), participation does seem to have fostered trust and networks among participants, which may have positive long-term effects. These are, in any case, early conclusions, and a comprehensive assessment of WFD-induced participation and its impact on achieving the material goals of the Directive is lacking to date (but see European Commission 2012).

Below we investigate which of these recent experiences with participatory WFD implementation may usefully be drawn on in FD implementation – and where the two regulatory fields differ to the extent that a transfer of WFD experiences may make little sense.

#### **4 Functions of participation in flood risk management**

Over recent decades new forms of governance, increasingly drawing on the participation of non-state actors, have emerged in response to the failure of traditional state and market mechanisms to address democratically and effectively many pressing problems in the realm of the environment and beyond (Schmitter 2002). The current (European) policy discourse and much of scholarly research is concerned with the instrumental value of stakeholder and citizen participation. Through the inclusion of lay knowledge, social learning, and improved acceptance and compliance, participatory processes are expected to arrive at improved environmental standards, better implementation and positive environmental impacts, compared to more traditional top-down modes of decision-making (Reed 2008, Newig and Fritsch 2009b). However, evidence on the effects of public participation remains scattered, and debate is on-going. While advocates assert the aforementioned advantages of collaborative governance, critics highlight the potentially adverse effects of participatory group processes (Cooke 2001) as well as the superiority of scientific expertise over lay contextual knowledge (Rydin 2007).

Both the WFD and the FD subscribe to the positive potential of public participation. In the Common Implementation Strategy’s Guidance Document on participation under the WFD, the expected outcomes of participation are described as awareness raising, knowledge elicitation and social learning, and enhanced transparency and acceptance (EU 2002). Also subscribing to the CIS process, the Floods Directive apparently follows in this line of political reasoning. However, as the two directives address

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<sup>8</sup> In Germany, for instance, only around 7 percent of all comments were made by (lay) citizens, and in England and Wales 11 percent (document analysis by Anna Ernst, 2010). However, these figures may even be too high, since apparently some professionals (e.g. NGOs) submitted their comments as private citizens.



different (though overlapping) policy fields, participation may serve different functions under both directives. Due to its wider interest in the quality of European surface, ground and coastal waters, stake under the WFD is mainly determined by actors' position and role in the hydrologic cycle; under the FD, affectedness is mainly a function either of exposure to flood risks or of contributing to flood risk management measures, largely leaving other issues of water management aside. This leads to different stakes among societal actors and publics under the two policy regimes. As table 2 indicates, WFD river basin management planning has largely been a public managerial effort in which almost exclusively organised interests (e.g. agriculture, industry, environmental groups) took part, as water users or concerned parties. The FD, however, as not exclusively, and not even primarily, an *environmental* directive, considers a larger range of 'goods' to be protected: environment, human health, cultural heritage, and economy. In this way, the FD generates a variety of affected stakeholders, ranging from a large number of lay citizens or abutting landowners from industry and agriculture exposed to an immediate flood risk, to various actors without direct exposure to flood hazards, but with capacities to engage or foster mitigating measures.

**Table 2:** Stakeholders in WFD and FD implementation in comparison.

	<b>Water management under the WFD</b>	<b>Floods management under the FD</b>
<b>Local government</b>	<i>Rather important</i> Local water authority Sponsor of measures	<i>Very important</i> Urban and land use planning in flood risk areas
<b>Industry</b>	<i>Less important</i> Local polluters	<i>Important</i> Abutting landowners Potential source of hazardous substances during floods
<b>Agriculture</b>	<i>Very important</i> Users of (ground)water for irrigation Source of diffuse pollution – nitrate, pesticides etc.	<i>Rather important</i> Retention areas on intensively used agricultural land
<b>Forestry</b>	<i>Less important</i>	<i>Rather important</i> Reforestation as 'ecological' measure in flood prevention
<b>Environmental NGOs</b>	<i>Important</i> Promote sustainable and ecological water management Integrate nature protection	<i>Important</i> Promote sustainable natural flood protection Integrate nature protection
<b>Citizens</b>	<i>Less important</i> Hardly directly affected Local knowledge	<i>Very important</i> Responsibility for property and well-being Local knowledge

Participation under the FD is further substantially determined by the special communication and information requirements imposed by flood risks. The Directive seeks to achieve a Europe-wide harmonisation of the flood management regime under a flood risk management paradigm, reflecting a shift away from the security paradigm hitherto prevalent in several member states. Under the security paradigm, floods are mainly seen as natural phenomena to be fought by predominantly structural protective measures, typically through centralised decision-making. Governance structures are usually characterised by strongly hierarchical, expert-driven planning systems aimed at the creation of 'safe areas'

(Penning-Rowsell, *et al.* 2006, Heintz, *et al.* 2012). In contrast, the risk-based approach sees floods as related to human behavior and, as such, to be addressed in a broad debate in regional and local contexts (Butler and Pidgeon 2011, Heintz, *et al.* 2012). Uncertainties and risks are accommodated within decision-making processes, which incorporate a variety of societal values beyond security, such as ecological and environmental values (Penning-Rowsell, *et al.* 2006, Lange and Garrelts 2007, Heintz, *et al.* 2012). As such, flood risk management processes include in addition to central government also civic and private actors, and local-level public officials. Mitigation measures associated with risk-based approaches are oriented towards place-specific combinations of non-structural and people-centred measures over traditional structural approaches, embracing both causes and consequences of expected floods (Penning-Rowsell, *et al.* 2006).

The societal accommodation of risk is a core issue of FD governance, and, as such, shapes the involvement of stakeholders and the public. Independent of the particular source of risk, management procedures rest on two requirements: the accessibility of sufficient knowledge and information about the risk source and the likely consequences of different management options; and the availability of criteria to judge alternatives based on their consequences for affected parties and the wider public (Renn 2004 cf. McDaniels 1998). In this respect, stakeholders and the public perform important functions. Although scientific and expert knowledge is essential in risk management processes, anecdotal knowledge on the sources and consequences of certain risks and the impacts of given policy alternatives, held by stakeholders, has frequently proven to be able to add value to the systematic analyses of experts (for a discussion of this issue see Pellizzoni 2003, Renn 2004). The weighting of certain risks and of their tolerability can be seen as a societal exercise (Schanze 2002), in which participation plays a pivotal role: “Public input is an essential contribution for determining the objectives of risk policies and for weighing the various criteria that ought to be applied when evaluating different options” (Renn 2004: 290 cf. McDaniels 1998). Measures of awareness raising and information about flood risk exposure are here again of particular significance as prerequisites for the meaningful inclusion of participants’ values into the political process through dialogue and collaboration (Merz, *et al.* 2011, Bradford, *et al.* 2012).

## **5 Review of early experiences with FD-related participation across Europe**

Experience thus far with participation in Floods Directive implementation is limited, given that flood risk and flood hazard maps were only due by December 2013, and flood risk management plans (FRMPs) are not due until December 2015. Furthermore, as discussed in section 2, the requirements on member states to involve stakeholders and the public differ for the various stages of the planning cycle, and authorities are much less obliged to encourage participation and involvement in preliminary flood risk assessments and flood risk and hazard mapping. A review of the emerging literature on FD implementation reveals that scholarly attention to date has focused on (1) transposition of the FD into national legislation and integration with existing policy, and (2) calculation and mapping of flood risks and flood hazards. Only very few papers discuss early experiences with the development of regional implementation strategies, pilot planning processes, and the preparation of draft FRMPs.

Much of the literature engaging with the development and adoption of the FD is framed in the broader discussion of the shift from a flood protection paradigm towards a flood risk management paradigm in Europe. This shift, it is observed, has taken place unevenly, and a variety of flood risk management practices have evolved across the member states due to different historical, socio-economic, cultural and policy contexts (Klijn, *et al.* 2008, Krieger 2013). The Floods Directive both responds to this

broad paradigm shift, and aims for convergence and harmonisation in European flood risk management (FRM) policy.

### ***Flood Risk and Hazard Mapping***

While the process of flood risk and hazard mapping under the FD is quite advanced in most member states (de Moel, *et al.* 2009), public participation appears to have been rather limited. Comparing the legal framework for participation in flood risk mapping across Germany, Austria, England and Wales, for example, Unnerstall (2010) found that the countries examined had not developed participatory approaches. In Flanders (Belgium), which has integrated FD and WFD implementation from 2009 onwards, Kellens *et al.* (2013) report that participation in flood risk mapping extended only to professionals and experts. Indeed, European flood risk mapping in general seems to have been carried out in a rather expert-led, technical fashion (Dráb and Říha 2010, Pleschko and Kaufmann 2012).

The publication of flood maps, as required by the FD, is recognised as important for awareness-raising, education and capacity-building (Buchecker, *et al.* 2013). However, simply making maps available is usually insufficient to meet these ends, and several authors report on research and pilot projects for the creation and improvement of flood risk and hazard maps via stakeholder and public participation (e.g. Meyer, *et al.* 2012, Kjellgren 2013). Common to most of this research is the general finding that participation in practice remains limited. In particular, evidence from Germany suggests that given the weak requirements of the Directive, flood managers tend not to mobilise the resources necessary for active public and stakeholder involvement (Kjellgren 2013).

### ***Flood Risk Management Planning***

As the production of FRMPs is yet to begin in most member states, we find little literature reporting on participation in flood risk management planning under the FD. Only a few papers report on pilot flood risk management planning projects. These tend also to focus on the legal and technical aspects of FD implementation, and while public participation is not described in great detail, several authors recognise scope and challenges for achieving active involvement of interested parties.

Cooper *et al.* (2013) discuss the FRM planning processes underway in the Catchment Flood Risk Assessment and Management programme in Ireland. In a deliberate move away from top-down consultation, the programme aims for close engagement between communities and local authorities, for the production of locally specific flood hazard and risk information. The authors observe progress in raising awareness of flood risk, generating community acceptance of FRM measures, and building trust among authorities, stakeholders and communities. Verta and Triipponen (2011) describe the production of a national pilot FRMP for the Kokemäenjoki River Basin in Finland. The authors report that the process involved extensive collaboration among agencies, municipalities and stakeholders, with the aim of “creating an open and participatory planning process, in which the opinions and views of various stakeholder groups are taken into account to produce a commonly accepted FRMP” (Verta and Triipponen 2011: 86). No detail is provided on the participatory process, however, and the authors note that ongoing collaboration remains the most significant challenge, given the divergent interests of stakeholders in the river basin.

Despite the current lack of literature, however, quite a number of pilot FRM planning processes are underway or recently completed in EU member states, and a number of draft and pilot FRMPs exist. These have the potential to yield important early insights and are worthy of investigation.

## 6 The ‘Case’ of Germany: A Multi-level Analysis

To begin to get an understanding of how FD implementation is playing out in the German case, and the extent to which it incorporates participatory planning and encourages the involvement of interested parties, we have turned to a variety of primary sources and ‘grey literature’. This includes planning documents, agency and consultants’ reports and official project websites. Particularly valuable have been the strategies and concept documents for active involvement in FD implementation produced by the responsible ministries and agencies of the federal states and early documentation of participatory processes in the practitioner literature and conference presentations. Our preliminary analysis reveals diverse participatory forms and structures materialising at different levels. In Germany, the 16 federal states (*Länder*) have the (sole) capacity to determine the type and degree of participation in FD implementation. Germany therefore can be seen as a ‘laboratory’ in which very different forms of participation in FRM planning may be observed under very similar overall contextual conditions, thus potentially leading to valid insights on the link between participation and planning outcomes.

### *Participation in International River Basins*

Germany has joint responsibility for FRM planning in six international river basins. Each is managed under an international convention and a commission comprising competent authorities from the national or federal states party to the convention. Notable examples include the Convention on the International Commission for the Protection of the Elbe, the Danube River Protection Convention and the Convention on the Protection of the Rhine.

With the advent of the FD, stakeholder engagement in FRM planning was already occurring at the international river basin level, with varying degrees of stakeholder participation. For example, the Danube Action Programme on flood protection, finalised in 2004, deems participation “a cornerstone of successful implementation [...], both to improve the quality and the implementation of the decisions, and to give the public the opportunity to express its concerns” (ICPDR 2004: 16). The extent to which such principles are operationalised basin-wide, however, remains unclear. As German federal state agencies reserve flood risk management planning authority at the sub-basin level, type and degree of stakeholder engagement in different sub-basins and federal states is varied.

### *Participation Strategy at the National Level*

The FD was transposed into German law through a 2010 amendment to the Federal Water Act, which is an almost exact transposition of FD requirements. Leaving aside the intricacies of the German constitutional system, which determines the sharing of power between the federal and the state (*Länder*) level, the *Länder* in practice serve as the competent authorities for FD implementation.

Generally, the *Länder* had not been enthusiastic about the FD. Via the Federal Council (*Bundesrat*), they had sought to prevent stringent regulation (Bundesrat 2006), questioning the necessity of an EU directive on flood risk management given the already existing legal framework in Germany. Moreover, they expressed disapproval at close alignment of WFD and FD processes because of the different objectives, actors involved, and interests in the two policy fields (Bundesrat 2006).

To guide FD implementation in the German *Länder*, the Federal-state-workgroup on water (LAWA) developed guidance documents, including recommendations for the establishment of FRMPs (LAWA 2010) and for participation in FD implementation (LAWA 2012). Already for WFD implementation,

the LAWA had played an important role by developing guidelines, in accordance with the European Common Implementation Strategy papers, for the German context (LAWA 2003).

The LAWA guidelines for both directives differ substantially on the notion of participation. Whereas the WFD guidelines adopt quite a broad notion of the public to be addressed in participatory processes, the recommendations for FRMPs interpret the term ‘interested parties’, given in Article 10 (2) of the FD, rather narrowly as “the relevant authorities involved in the drawing up and implementation of the FRMPs, municipalities, recognised associations [... and] other interest groups determined on a case-by-case basis” (LAWA 2010: 18). The wider public is just to be informed on flood risk and flood hazard maps and FRMPs. While the WFD guidelines stress early involvement of the public, both FD guidance documents mention active involvement merely as a ‘possibility’, recommending consultation as an equally valid approach. Furthermore, it is recommended that experiences with participation in WFD implementation are drawn upon in FD implementation, for instance in employing regional workshops at the river basin level (LAWA 2012). These, it is suggested, might take the form of flood risk partnerships (described further below). In essence, both FD documents leave much room for interpretation, and *Länder* may potentially select from a whole spectrum of participatory processes.

### ***Participatory Strategies at the Länder Level***

Empirically we observe three general types of (participatory) FRM planning unfolding in Germany, which can be described as: (1) the adoption of established WFD structures and procedures for FD implementation; (2) rather restricted consultation, and; (3) rather intensive stakeholder involvement. Out of the sixteen<sup>9</sup> *Länder*, six are planning to use structures and procedures already established under the WFD to facilitate involvement in FRM planning<sup>10</sup>. Generally, they follow a two-tier structure with an Advisory Board at the state level, and participatory forums at the sub-basin level (Buschhüter 2013, LUGV 2012, Leeb 2013, MLULR 2011, MLUSA 2010, TMLFUN 2011). The concrete implementation measures within this two level structure vary. Bavaria, for instance, pursues the participatory development of FRMPs mainly at the regional level: The core planning function is passed to the eight governing districts, (*Regierungsbezirke*), which organise Regional Water Forums – an important participatory mechanism in WFD implementation. In adapting WFD institutions to FRM planning, the Regional Water Forums incorporate additional actors representing civil protection, cultural heritage, and the insurance sector. None of the states makes provision for inclusion of the general public, and Bavaria even deems the participation of individuals inappropriate for strategic FRM planning (Heintz, *et al.* 2012).

The second strategy for facilitating active involvement involves meeting the bare minimum requirements through information and consultation measures. Five *Länder*<sup>11</sup> endorse a concept of public involvement that emphasises the provision of information and use of the Strategic Environmental Assessment (see section 2) as the main instrument for active involvement (Gerber 2011, Marbuger 2012, MLUV 2011, NLWKN 2012). As there are no established mechanisms, stakeholder participation occurs on an ad-hoc basis, implying a decrease in the ‘level’ of participation as compared to WFD implementation in some states. Saxony, for instance, which drew on rather inclusive WFD structures (Unnerstall 2010) opted for information events and consultation for harmonising existing flood protection concepts and FRMP requirements.

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<sup>9</sup> No reliable information on participatory instruments in FD planning was found for Berlin or Hamburg.

<sup>10</sup> Bavaria, Brandenburg, North Rhine Westphalia, Thuringia, Schleswig-Holstein and Saxony-Anhalt.

<sup>11</sup> Hesse, Mecklenburg-Western Pomerania, Saxony, Lower Saxony and Bremen.

The third strategy<sup>12</sup> entails participatory processes that contrast significantly – in the degree and scope of participation – with the first two strategies discussed above, as processes are designed as inclusive, bottom-up, and facilitative of active involvement. Baden Württemberg adopted a new flood defence strategy in 2003, which included the establishment of specific multi-stakeholder forums for flood risk management, so-called flood partnerships. This flood partnership model was in turn adopted by the adjacent *Länder* Rhineland-Palatinate (SGD Süd 2012) and Saarland (Jüpner 2010). Flood partnerships are supposed to foster cooperation among municipalities within sub-basins (WBWFG 2012), and function as round tables for an array of actors, including municipal representatives, local water and civil protection authorities, cultural heritage groups, industry and environmental groups. They are initiated by voluntary agreement among cities, municipalities, public officials and associations, so that the exact structure and organisation varies. Organised at the sub-basin level, flood partnerships are assigned as the main units advising in the preparation of FRMPs. Their wide-reaching mandate may even extend to elements of implementation. An advisory board exists at the federal state level, comprising state and non-state actors, to coordinate these efforts.

Notwithstanding their early opposition of the FD, some *Länder* have since engaged in comprehensive participatory processes. The different strategies discussed here, however, seem to have emerged largely due to already established flood protection structures, rather than because of the requirements of the FD.

## 7 Conclusions for participatory FD implementation and outlook for further research

The EU Floods Directive explicitly mandates the involvement of the public and organised stakeholders in its implementation, notably in the drafting of Flood Risk Management Plans. This paper has sought to shed light on the concrete roles and functions of participation in implementing the FD. It did so by comparing participation under the FD to participation under the Water Framework Directive. For two reasons, the WFD is taken as an important point of reference: First, the FD and the WFD share many similarities. Both address water management in river basins, and both follow the same recently established pattern of mandated participatory planning in European (environmental) governance. This requires local public administration to draft management plans in six-year cycles in order to operationalise the goals of the directives. Second, the FD makes explicit reference to the WFD, calling for the alignment of flood management with water management under the WFD, including in the realm of public participation.

In comparing participation under the FD and the WFD, our analysis suggests a paradoxical situation: The WFD and accompanying policy documents have fervently advocated participation, notably of the broad public. Empirical evidence shows, however, that participation under the WFD has mainly incorporated organised interests, giving less opportunity for involvement of the wider public. The low levels of interest observed among the latter are indeed not surprising given the limited degree to which citizens are directly affected. The FD, on the other hand, is much less sanguine about participation, mandating even less involvement of the general public. However, citizens as residents and property owners are potentially far more significantly and directly affected by flood management issues as compared to water management under the WFD – even more so as the FD embodies a shift from an administration-led ‘security approach’ to a ‘risk approach’ that puts more responsibility on individuals. This suggests, therefore, that contrary to the legal requirements, the public ought to be more inten-

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<sup>12</sup> This is taken up by just three *Länder*: Baden-Württemberg, Rhineland-Palatinate and Saarland.

sively involved in flood risk management planning than in river basin management planning. Such involvement would range from awareness-raising and education to opportunities to shape plans and identify measures.

Across Europe, there is currently only very little experience with FD-related participatory planning, since risk management plans are not due until 2015. Experience with participation in flood risk and hazard mapping, to be completed in late 2013, has also so far been limited, as mapping has been largely non-participatory. Some experience with pilot flood risk management plans exists, but there is little literature available detailing the participatory planning process. As an initial step, we have conducted a preliminary analysis of current *strategies* for involving the public in FRM planning in the 16 German *Länder*. Due to the distribution of competencies in the German federal system, each *Land* has developed its own approach to implementing the FD. We find, first, that although the FD suggests close alignment of management planning with the WFD, this appears to be seldom the case in practice. Some *Länder*, such as Lower Saxony, explicitly denounce both the WFD approach to participation as well as any close alignment in implementing the two directives. Second, we find that there is a wide variety of different approaches to participation, ranging from basic consultation in some *Länder* to flood partnerships, involving a lot of non-state actors in others. Third, we find that the ‘baseline’ level of non-state actor participation is lower in FD implementation as compared with WFD planning. Only three out of sixteen *Länder* have implemented a flood partnership model.

In order to promote informed decision-making by both flood managers and affected non-state actors (e.g. landowners), a more inclusive approach than what is currently practiced would be advisable. Allowing for structured participation in the drafting of FRMPs within pre-given deadlines could also help avoid the delay of flood protection measures as a result of local citizen intervention, as witnessed in some German communities severely affected by the June 2013 floods.

Institutionalised participation in flood risk management planning as mandated by the FD clearly is a novelty, and there will be much to learn throughout the upcoming planning cycles. Despite considerable experience with prior and ongoing participation in river basin management under the WFD, some important differences between the two policy areas prohibit a direct transposition of WFD experiences to FD implementation, as outlined above. From a governance research perspective, FD implementation provides an excellent quasi-experimental setting for studying the effects of mandated participatory planning occurring in parallel in 28 member states. It will be crucial to closely examine the extent to which (adaptive) policy learning takes place both across policy fields (by incorporating experiences with WFD implementation) and temporally (through learning from one planning cycle to the next). This will contribute significantly to an improved, evidence-based understanding of ‘what works’ in public environmental governance.

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## References

- Albrecht J, Wendler W. 2009. Koordinierte Anwendung von Wasserrahmenrichtlinie und Hochwasser-risikomanagementrichtlinie im Kontext des Planungsprozesses. *Natur und Recht* **31**: 608-618.
- Bäckstrand K. 2006. Multi-Stakeholder Partnership for Sustainable Development: Rethinking Legitimacy, Accountability and Effectiveness. *European Environment* **16**: 290-306.
- Baldauf H. 2013. Versäumter Hochwasserschutz. "Die Flut kommt vier Jahre zu früh". *Spiegel Online*, 04.06.2013 <http://www.spiegel.de/panorama/hochwasser-in-grimma-wieso-die-schutzmauer-nicht-fertig-wurde-a-903738.html> (last accessed 22.01.2014).
- Blomqvist A. 2004. How can stakeholder participation improve European watershed management: the Water Framework Directive, watercourse groups and Swedish contributions to Baltic Sea eutrophication. *Water Policy* **6**: 39-52.
- Bradford RA, O'Sullivan JJ, van der Craats IM, Krywkow J, Rotko P, Aaltonen J, Bonaiuto M, De Dominicis S, Waylen K, Schelfaut K. 2012. Risk perception : Issues for flood management in Europe. *Natural Hazards and Earth System Sciences* **12**: 2299-2309.
- Buchecker M, Menzel S, Home R. 2013. How much does participatory flood management contribute to stakeholders' social capacity building? Empirical findings based on a triangulation of three evaluation approaches. *Natural Hazards and Earth System Sciences* **13**: 1427-1444.
- Bundesrat. 2006. Beschluss des Bundesrats. Vorschlag für eine Richtlinie des Europäischen Parlaments und des Rates über die Bewertung und Bekämpfung von Hochwasser KOM(2006) 15 endg.; Ratsdok. 5540/06.
- Buschhüter E. 2013. Umsetzung der HWRM-Richtlinie in NRW. Zwischen EU-Verpflichtung und voraus-schauender Vorsorge vor Ort. Symposium: 'Hochwasserrisiken gemeinsam meistern'. Mülheim an der Ruhr.
- Butler C, Pidgeon N. 2011. From 'flood defence' to 'flood risk management': Exploring governance, responsibil-ity, and blame. *Environment and Planning C: Government and Policy* **29**: 533-547.
- Carter J, Howe J. 2006. The Water Framework Directive and the Strategic Environmental Assessment Directive: Exploring the linkages. *Environmental Impact Assessment Review* **26**: 287-300.
- Cooke B. 2001. The Social Psychological Limits of Participation? In *Participation: the new tyranny?*, Cooke B, Kothari U (eds). Zed Books: London, pp102-121.
- Cooper J, Adamson M, Russell E. 2013. Flood risk management: Challenges to the effective implementation of a paradigm shift. *Planning Theory and Practice* **14**: 135-140.
- de Moel H, van Alphen J, Aerts JCJH. 2009. Flood maps in Europe: Methods, availability and use. *Natural Hazards and Earth System Sciences* **9**: 289-301.
- De Stefano L. 2010. Facing the water framework directive challenges: A baseline of stakeholder participation in the European Union. *Journal of Environmental Management* **91**: 1332-1340.
- Demetropoulou L, Nikolaidis N, Papadoulakis V, Tsakiris K, Koussouris T, Kalogerakis N, Koukaras K, Chatzinikolaou A, Theodoropoulos K. 2010. Water Framework Directive implementation in Greece: introducing participation in water governance – the case of the Evrotas River Basin management plan. *Environmental Policy and Governance* **20**: 336-349.
- Dráb A, Říha J. 2010. An approach to the implementation of European Directive 2007/60/EC on flood risk management in the Czech Republic. *Natural Hazards and Earth System Sciences* **10**: 1977-1987.
- EEB. 2010. 10 years of the Water Framework Directive: A toothless tiger? A snapshot assessment of EU environmental ambitions. Brussels: European Environmental Bureau (EEB).
- EU. 2002. *Common Implementation Strategy for the Water Framework Directive (2000/60/EC). Guidance Document No. 8 on Public Participation in Relation to the Water Framework Directive*: Luxemburg.
- European Commission. 2003. Planning Processes. Common implementation strategy for the water framework directive (2000/60/EC). Water Framework Directive Working Group 2.9. Brussels: European Commission.
- European Commission. 2012. Report from the Commission to the European Parliament and the Council on the Implementation of the Water Framework Directive (2000/60/EC): River Basin Management Plans. Brussels: European Commission.
- European Commission. 2014. A new EU Floods Directive. Brussels: European Commission, DG Environment (online): [http://ec.europa.eu/environment/water/flood\\_risk/](http://ec.europa.eu/environment/water/flood_risk/) (last accessed 22.01.2014).
- Evers M, Nyberg L. 2013. Coherence and inconsistency of European instruments for integrated river basin management. *International Journal of River Basin Management* **11**: 139-152.
- Gerber S. 2011. Öffentlichkeitsbeteiligung bei den sächsischen Hochwasserschutzkonzepten. *Wasserwirtschaft* **11**: 45-48.



- Gierk M, Stratenwerth T. 2010. EG-Hochwasserrisikomanagementrichtlinie: Stand der Umsetzung auf Nationaler Ebene. *Wasserwirtschaft* **11**: 12-15.
- Heintz MD, Hagemeyer-Klose M, Klaus W. 2012. Towards a Risk Governance Culture in Flood Policy: Findings from the Implementation of the 'Floods Directive' in Germany. *Water* **4**: 135-156.
- Heintz MD, Pohl J. 2011. Akzeptanz und Umsetzung der EG Hochwasserrisikomanagement-Richtlinie in der Wasserwirtschaftsverwaltung. *Wasserwirtschaft* **3**: 10-13.
- Hogl K, Kvarda E, Nordbeck R, Pregernig M. 2012. *Environmental Governance. The Challenge of Legitimacy and Effectiveness*. Edward Elgar: Cheltenham.
- ICPDR. 2004. Flood Action Programme. Action Programme for Sustainable Flood Protection in the Danube River Basin. Vienna: International Commission for the Protection of the Danube River (ICPDR).
- Jüpner R. 2010. Hochwasserpartnerschaften zur Koordinierung grenzüberschreitender Hochwasservorsorge. Paper presented at the BWK-Bundeskongress 2010, Duisburg, 22 - 25 September.
- Kellens W, Vanneville W, Verfaillie E, Meire E, Deckers P, De Maeyer P. 2013. Flood Risk Management in Flanders: Past developments and future challenges. *Water Resources Management* **27**: 3585-3606.
- Kjellgren S. 2013. Exploring local risk managers' use of flood hazard maps for risk communication purposes in Baden-Württemberg. *Natural Hazards and Earth System Sciences* **13**: 1857-1872.
- Klijn F, Samuels P, Van Os A. 2008. Towards flood risk management in the EU: State of affairs with examples from various European countries. *International Journal of River Basin Management* **6**: 307-321.
- Koontz TM, Newig J. 2014. Cross-level Information and Influence in Mandated Participatory Planning: Alternative Pathways to Policy Delivery in Germany's Implementation of the EU Water Framework Directive. *Land Use Policy* **38**: 594-604.
- Koontz TM, Thomas CW. 2006. What Do We Know and Need to Know about the Environmental Outcomes of Collaborative Management? *Public Administration Review* **66**: 111-121.
- Krieger K. 2013. The limits and variety of risk-based governance: The case of flood management in Germany and England. *Regulation & Governance* **7**: 236-257.
- Lange H, Garrelts H. 2007. Risk Management at the Science-Policy Interface: Two Contrasting Cases in the Field of Flood Protection in Germany. *Journal of Environmental Policy & Planning* **9**: 263-279.
- LAWA. 2003. German Guidance Document for the implementation of the EC Water Framework Directive. Updated Version: 30.04.2003. Länderarbeitsgemeinschaft Wasser (LAWA).
- . 2012. Grundsatzpapier zur Öffentlichkeitsbeteiligung im Zuge der Umsetzung der HWRM-RL. Länderarbeitsgemeinschaft Wasser (LAWA), Ständigen Ausschusses Hochwasserschutz und Hydrologie.
- . 2010. Recommendations for the Establishment of Flood Risk Management Plans. Dresden: Länderarbeitsgemeinschaft Wasser (LAWA), Permanent Committee on Flood Protection and Hydrology.
- Layzer JA. 2002. Citizen Participation and Government Choice in Local Environmental Controversies. *Policy Studies Journal* **30**: 193-207.
- Leeb C. 2013. Hochwasserrisikomanagement-Planung in Bayern. Augsburg: Wasserforum Bayern.
- LUGV. 2012. Hochwasser- Risikomanagementplan (HWRMP) „Elbe bei Mühlberg“. Brandenburg: Landesamt für Umwelt, Gesundheit und Verbraucherschutz (LUGV).
- Marbuger M. 2012. Erfahrungen aus Öffentlichkeitsbeteiligung und strategischer Umweltprüfung. Wasserforum Hessen 2012 'Hochwasserschutz in Hessen'.
- McDaniels TL. 1998. Ten propositions for untangling descriptive and prescriptive lessons in risk perception findings. *Reliability Engineering & System Safety* **59**: 129-134.
- Merz B, Bittner R, Grünwald U, Piroth K. 2011. *Management von Hochwasserrisiken*. Schweizerbart Science: Stuttgart.
- Meyer V, Kuhlicke C, Luther J, Fuchs S, Priest S, Dorner W, Serrhini K, Pardoe J, McCarthy S, Seidel J, Palka G, Unnerstall H, Viavattene C, Scheuer S. 2012. Recommendations for the user-specific enhancement of flood maps. *Natural Hazards and Earth System Sciences* **12**: 1701-1716.
- MLULR. 2011. Konzept zur Information, Beteiligung und Anhörung der Öffentlichkeit zur EU-Hochwasserrisikomanagement-Richtlinie in Mecklenburg-Vorpommern. Schwerin: Ministerium für Landwirtschaft, Umwelt und Verbraucherschutz des Landes Mecklenburg-Vorpommern (MLULR).
- MLUSA. 2010. Hochwasserschutzkonzeption des Landes Sachsen-Anhalt bis 2020. Magdeburg: Ministerium für Landwirtschaft und Umwelt Sachsen-Anhalt (MLUSA).
- MLUV. 2011. Konzept zur Information, Beteiligung und Anhörung der Öffentlichkeit zur EU-Hochwasserrisikomanagement-Richtlinie in Mecklenburg-Vorpommern (MLUV).

- Moss T. 2004. The governance of land use in river basins: Prospects for overcoming problems of institutional interplay with the EU Water Framework Directive. *Land Use Policy* **21**: 85-94.
- Newig J, Fritsch O. 2009a. Environmental Governance: Participatory, Multi-Level – And Effective? *Environmental Policy and Governance* **19**: 197-214.
- Newig J, Fritsch O. 2009b. More Input – Better Output: Does citizen involvement improve environmental governance? In *In Search of Legitimacy. Policy Making in Europe and the Challenge of Complexity*, Blühdorn I (ed). Barbara Budrich: Opladen, pp205-224.
- Newig J, Koontz TM. 2014. Multi-level Governance, Policy Implementation and Participation: The EU's Mandated Participatory Planning Approach to Implementing Environmental Policy. *Journal of European Public Policy* **21**: 248-267.
- Newig J, Pahl-Wostl C, Sigel K. 2005. The Role of Public Participation in Managing Uncertainty in the Implementation of the Water Framework Directive. *European Environment* **15**: 333-343.
- NLWKN. 2012. Konzept für die Information, Beteiligung und Anhörung der Öffentlichkeit bei der Umsetzung der EG-HWRM-RL in Niedersachsen. Hannover: Niedersächsischer Landesbetrieb für Wasserwirtschaft, Küsten und Naturschutz (NLWKN).
- Pellizzoni L. 2003. Knowledge, Uncertainty and the Transformation of the Public Sphere. *European Journal of Social Theory* **6**: 327–355.
- Penning-Rowsell E, Johnson C, Tunstall S. 2006. 'Signals' from pre-crisis discourse: Lessons from UK flooding for global environmental policy change? *Global Environmental Change* **16**: 323-339.
- Pleschko D, Kaufmann A. 2012. Implementing the EU Floods Directive in Austria - Umsetzung der Hochwasserrichtlinie in Österreich. *Österreichische Wasser- und Abfallwirtschaft* **64**: 329-335.
- Rault PAK, Jeffrey PJ. 2008. Deconstructing Public Participation in the Water Framework Directive: Implementation and Compliance with the Letter or with the Spirit of the Law? *Water and Environment Journal* **22**: 241-249.
- Reed MS. 2008. Stakeholder participation for environmental management: a literature review. *Biological Conservation* **114**: 2417-2431.
- Renn O. 2004. The Challenge of Integrating Deliberation and Expertise: Participation and Discourse in Risk Management. In *Risk Analysis and Society: An interdisciplinary characterization of the field*, McDaniels T L, Small M J (eds). Cambridge University Press: Cambridge, pp289-366.
- Roggero M. 2013. Shifting Troubles: Decision-Making versus Implementation in Participatory Watershed Governance. *Environmental Policy and Governance* **23**: 63-74.
- Rydin Y. 2007. Re-examining the role of knowledge within planning theory. *Planning Theory* **6**: 52-68.
- Schanze J. 2002. Flood Risk Management: A Basic Framework. In *Flood Risk Management: Hazards, Vulnerability and Mitigation Measures*, Schanze J, Zeman E, Marsalek J (eds). Springer: Dordrecht, pp1-20.
- Schmitter PC. 2002. Participation in Governance Arrangements: Is there any reason to expect it will achieve 'Sustainable and Innovative Policies in a Multi-Level Context'? In *Participatory Governance. Political and Societal Implications*, Grote J R, Gbikpi B (eds). Leske & Budrich: Opladen, pp51-69.
- SGD Süd. 2012. Jahresbericht 2012. Neustadt: Rheinland Pfalz Struktur- und Genehmigungsdirektion Süd (SGD Süd).
- TMLFUN. 2011. Thüringer Gewässer gemeinsam entwickeln. Erfurt: Thüringer Ministerium für Landwirtschaft, Forsten, Umwelt und Naturschutz (TMLFUN).
- Unnerstall H. 2010. Legal Framework for Public Participation in Flood Risk Mapping: A comparative study of the responses of different European member states to some requirements of the Floods Directive. Leipzig: Helmholtz Zentrum für Umweltforschung.
- Van der Heijden J, Ten Heuvelhof E. 2012. The Mechanics of Virtue: Lessons on Public Participation from Implementing the Water Framework Directive in the Netherlands. *Environmental Policy and Governance* **22**: 177-188.
- Verta O-M, Triipponen J-P. 2011. The Kokemäenjoki River Basin Flood Risk Management Plan: A national pilot from Finland in accordance with the EU Floods Directive. *Irrigation and Drainage* **60**: 84-90.
- WBWFG. 2012. Hochwasserpartnerschaften in Baden-Württemberg. Karlsruhe: WBW Fortbildungsgesellschaft für Gewässerentwicklung (WBWFG).
- Wright SAL, Fritsch O. 2011. Operationalising active involvement in the EU Water Framework Directive: Why, when and how? *Ecological Economics* **70**: 2268-2274.
- Young JC, Jordan A, Searle KR, Butler A, Chapman DS, Simmons P, Watt AD. 2013. Does stakeholder involvement really benefit biodiversity conservation? *Biological Conservation* **185**: 359-370.