The EU Floods Directive trickling down: tracing the ideas of integrated and participatory flood risk management in Sweden

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Abstract

This study examines how the EU Floods Directive – an extensive and innovative legislative instrument for integrated and participatory flood risk planning in all EU member states – influences local flood risk management in one member state, Sweden. The study identifies that: many municipalities have received new knowledge; cross-sectoral organisational structures for water and flood risk issues at the local level are being formed or strengthened; and the flood risk issue has been elevated up the political agenda. There are also however clear signs that a number of other fundamental issues are not being adequately addressed in the complex institutional setting that results from the directive’s implementation. These issues are undoubtedly obstructing the development of a more integrated and participatory flood risk management system. Of key importance here are questions relating to how roles and mandates are communicated and adopted, the lack of coordination between the Floods Directive and the Water Framework Directive, and the inadequate involvement of the municipal level and other stakeholders. Practical recommendations on how to redirect development towards more positive outcomes in these areas are thus formulated.

Keywords: Climate adaptation; Collaboration; EU Floods Directive; Flood risk management; Integrated planning; Municipality; Participation; River basin management; Sweden

Introduction

In December 2015 all EU member states published the first generation of flood risk management plans in accordance with the EU Floods Directive (FD) that came into force in 2007 (EU, 2007). The directive’s aim which is to reduce and manage the risks associated with floods on human health, the environment, cultural heritage and economic activity, can be seen as a response to a number of catastrophic events in central Europe around the turn of the century (e.g. Elbe, Danube, Oder and Vistula). Around this time Europe suffered over 200 major floods, causing more than one thousand deaths.
the displacement of half a million people and at least €52 billion (10^9) in insured economic losses (European Environment Agency (EEA), 2010).

These events, all of which involved rivers that traverse national borders, were reminders of the need to establish a more integrated management approach to flood risks, thus prompting action in the form of the FD. Many parts of the FD support an integrated management approach: the broadly formulated objective that involves consideration for human health, the environment, cultural heritage and economic activities, the requests to coordinate actions within river basins, and the request to coordinate flood risk and water environmental issues, specifically the FD and the EU Water Framework Directive (WFD)^1 (EU, 2000).

Another primary idea contained within the FD relates to the issue of participation – the active involvement of the actors concerned in flood risk management: ‘Member States shall encourage active involvement of interested parties …’ (Art. 10:2). One reason for this is the growing understanding of the importance of participation in flood risk management (Rouillard et al., 2014; Challies et al., 2016). Another refers to the institutional context, where the implementation of EU policy often makes use of more direct forms of citizen involvement for legitimisation than does national policy (Elander, 2002).

To operationalise these ideas, the FD formulates several tasks: (1) preliminary flood risk assessments in all water districts, (2a) flood hazard maps, (2b) flood risk maps for the areas identified, and (3) the establishment of flood risk management plans. These tasks are performed during 6-year cycles, the first ended in December 2015.

Many of the studies examining the implementation of the FD across Europe focus on the issues of integration and participation. Case studies from Ireland, Germany and Sweden show that integration with respect to legislation, policy fields and actors remains both vital and highly complex (Jupner & Muller, 2010; Earle et al., 2011; Thorsteinsson & Larsson, 2012; Hedelin, 2015; van Eerd et al., 2015). The common theme that emerges from these studies is that coordination and collaboration between concerned actors, pieces of legislation and policies is key to successful implementation. While flood risk management spans an array of policy fields and sectors, one issue pointed out specifically by many studies is the need to coordinate the FD and the WFD (Newig et al., 2014; Hedelin, 2015; Challies et al., 2016).

On the issue of participation, the increasing level of complexity in respect of the governance system for flood risk management is likely to have a negative effect on the establishment of effective procedures for participation because such procedures are dependent on, for example, clarity in roles and mandates. In addition to the difficulties that arise from increased complexity, studies from Germany, Austria and Great Britain actually have rather low ambitions in relation to the ‘active involvement’ requirement by the FD (Unnerstall, 2010; Newig et al., 2014; Hedelin, 2015). Together, the raised complexity and the low participatory ambitions establish a rather negative standpoint in relation to the fulfilment of the participatory intentions manifested in the FD.

In Sweden – the member state put under the microscope here – all that has been reported from elsewhere in the EU equally applies (Hedelin, 2015). The rising complexity of water governance, which began with the implementation of the WFD, has increased even more with the FD. Furthermore, issues of participation and democracy are not even on the new FD administration’s agenda (Hedelin,

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1 In short, the Water Framework Directive aims to protect European water resources, harmonising water planning activities among the member states. The WFD has brought about significant institutional changes to most member states’ water administration, mainly by introducing the river basin as the administrative basis of their work.
2015). Hedelin (2015) identified key issues for successful implementation of the FD in Sweden focusing on the ideas of integration and participation. These issues will work as an investigatory baseline for the current study. The Swedish context and the key issues identified are explained in the case-section below.

Aim and objective

The overall aim of this study is to contribute to integrative and participatory processes for flood risk management through raising our understanding around policy implementation in this field. The objective is to describe and explain how the EU FD – an extensive and innovative legislative instrument for integrated and participatory flood risk management adopted in all EU member states – influences local flood risk management in Sweden. Sweden provides an example of a highly complex and fragmented governance system for water and flood risk issues, something that can be considered a challenge in respect of both integration and participation. Alongside the scientific aim of knowledge production, the study also aims to deliver practical recommendations. Where the Swedish case reflects similar experiences to other EU member states, it can help to provide insights for those who are currently finding their way through the FD implementation maze.

The FD in Sweden

Floods occur on a regular basis in Sweden and are doing so with increased frequency (MSB (Swedish Civil Contingencies Agency), 2012). Climate change will bring a temperature rise above the global average and long-term and heavy rainfall is predicted to increase in some areas. This, together with the projected sea level rise, brings additional flood risks in low-lying and coastal areas in Sweden. The sum of costs from increased damage from floods, landslides and erosion due to climate change has been estimated at 11–26 billion (109) Euro or 12–29 billion (109) USD (SOU 2007:60) between 2010 and 2100.

As in all EU member states, the FD was parachuted into an already existing national institutional system for the handling of risks. The main actors in that system in Sweden are the municipalities, around 300 in number. The municipalities are responsible for preventive planning in terms of land-use planning and building permits, climate adaptation, water and sewage issues, infrastructure planning and risk management, which all concern flood risk in different ways. They are also the key responsible actor for crisis management. The FD, however, has been written into Swedish legislation by means of an ordinance (SFS 2009:956) which does not place any new formal obligations on the municipalities (see Figure 1).

At the regional level, the county administrative boards (CABs) (21 in number) have, primarily, a supporting and supervisory role before the implementation of the FD. Most importantly, they have the authority to obstruct municipal land-use plans that are deemed not to handle risk issues sufficiently.

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2 Integration here focuses on the organisation of flood risk management, such as integration across sectors, actors, legislations, administrative borders and geographical scales.

3 Participation is here broadly defined as various degrees and forms for direct or indirect part taking in planning and decision-making by the actors directly or indirectly concerned by the flood risks at hand.

4 The main acts regulating the work related to municipal handling of flood risks are the Planning and Building Act (SFS 2010:900), the Civil Protection Act (SFS 2003:778) and the Act on municipal and county council measures prior to and during extraordinary events in peacetime and during periods of heightened alert (SFS 2006:544).
Also, in crisis situations spanning municipal borders, they can assume the lead coordinating role. In addition to this, the FD adds an important mandate to the formal role of the CABs (hereafter referred to as the CABs). These additional responsibilities are associated with how the work of the WFD has been organised in Sweden. The WFD led to the division of Sweden into five super-regional water districts. In each district, one of the CABs is commissioned as the Water District Authority and charged with leading the WFD work. Each district is divided into regional river basins, where each CAB carries out most of the practical tasks prescribed. The implementation of the FD has added two important tasks to the CABs’ work – the development of flood risk maps (2b) and the establishment of flood risk management plans (3). The five CABs commissioned as the Water District Authorities are responsible for the flood risk maps in their water districts (2b), and each CAB with a flood risk area within its territory is responsible for developing the plans (3).

At the national level, the key actor is the Swedish Civil Contingencies Agency (MSB), which was commissioned by the government to be the competent authority for the FD. The MSB represents Sweden at the European level (e.g., the common implementation strategy), leading the national work in this area and carrying out important tasks in relation to the practical work – the preliminary flood risk assessments (1) and the development of flood hazard maps (2a). It also has the authority to establish legal instructions for the work carried out by the CABs. Outside the scope of the FD, the MSB is the main national authority in relation to risk and crises. At the central governmental level the Ministry of Justice is responsible for FD-related issues.

Key issues for successful implementation of the FD

A recent study of the implementation of the FD in Sweden will be used as an important baseline of investigation (Hedelin, 2015). That study also used integration and participation as its conceptual point
of departure and it has prepared the ground for this study by identifying key issues in terms of integrated and participatory flood risk management. The key issues are explained in this section.

Related to the idea of integration, it was observed that the FD has in fact been implemented in the Swedish institutional system in a way that has the potential to make use of existing organisations and legislations in a coherent way. During the investigation overseeing the implementation of the FD in Sweden, a telling observation was made that sufficient legislative cover for the handling of flood risks was already in place. Accordingly, the implementation of the FD has resulted in an ordinance that does not put any additional obligations on the key actors for flood risk management – the municipalities. Instead it is the actors that have supporting and coordinating roles in the national system that are responsible for the tasks prescribed – namely the MSB and the CABs. From this arrangement it follows that CABs that have flood risk areas have the formal authority to decide on flood risk management plans, while lacking the formal power to implement them, something which is still held by the municipalities. This is coherent with the Swedish model of strong local power – often referred to as the ‘local planning monopoly’ (e.g. Storbjörk & Hjerpe, 2014). The MSB’s approach to this matter is to look at the FD as an additional way of supporting the municipalities, primarily through the provision of tools to enhance more informed local decisions (hazard and risk maps). Accordingly, MSB sees the flood risk management plans as a compilation of municipally planned measures, arranged into plans by the concerned CABs. This way of implementing the FD in Sweden makes the national system for flood risk management and the EU system (the FD) coherent in terms of the integration of the EU policy into the Swedish national legislative and organisational system.

It was also observed by the previous study that the understanding of that approach, such as its corresponding roles and mandates, was not shared by the different authorities involved. When asked to choose between a municipally based approach (municipally planned measures in flood risk management plans) and an expert-based approach (CAB-planned measures in flood risk management plans) the CABs suggest that the plans will probably be drawn up by the concerned CABs and then discussed with the municipalities. Most of the CAB respondents claimed that they had not yet had time to reflect on the role and formal status of the plans. The first key issue to follow up here is therefore how this understanding has evolved, and especially, how it has been transferred to the key flood risk management actors in Sweden – the municipalities.

The second key issue to investigate is whether there are any clear signs of integration in terms of the FD and the WFD. If the FD and WFD administrations are to succeed in integrating the two directives, targeting the municipal level should be a key part of their strategy. One reason for this is the strong municipal mandate relating to physical planning and management, another is the municipalities’ multi-sectoral character.

Furthermore – and directly related to the FD’s idea of participation – because the main mandate of flood risk management is held at the local (municipal) level in Sweden, and because that level is not formally engaged in the Swedish FD administration, the municipalities are here regarded as the main stakeholders participating in the FD processes. The third key issue is therefore how the municipalities have been involved in the FD work.

In addition, other stakeholders are concerned by flood risks at the local level, e.g. real estate owners, river regulators and fishing organisations. Involving these in the local (municipal) processes that concern flood risks was identified by the previous study as a complementary key strategy in the development of an effective participatory flood risk management approach. The fourth key issue is therefore for the FD administration to enthuse and support the municipalities in developing their local flood risk management
processes further in relation to participation. This will then indirectly feed into the various FD processes through direct municipal involvement in these processes. This strategy is in line with the idea of the need for coherent roles and mandates in the whole flood risk management system just described.

Method

In order to understand how the FD influences local flood risk management in Sweden, key persons at the 18 municipalities mainly concerned with the FD were interviewed. These are the municipalities that correspond to the 18 flood risk areas identified during the preliminary flood risk assessments, step 1 of the FD process. Respondents were selected by enquiring at the CABs responsible for establishing the flood risk management plans about their contacts at the concerned municipalities within their territory. Altogether, 17 out of the 18 municipalities were interviewed during the autumn of 2015 (one municipality had no contact due to personnel turnover). The semi-structured interviews lasted about one hour each and were structured against the two themes of integration and participation. In order to take advantage of earlier research, specifically the recent study of the implementation of the FD in Sweden (Hedelin, 2015), the questions were formulated based on the result of that study (which centred on the same two themes, see the section on key issues above). See Table 1.

The interviews were transcribed and analysed in line with the directed content analysis approach (Hsieh & Shannon, 2005) using the main interview questions as the basis for categorisation. Both direct and latent content were targeted in order to allow for a deeper understanding of the FD’s local influence.

Result

Organisational integration – communication of roles and mandates (key issue 1)

The first key issue concerns the need to clarify the roles and mandates of all the key parties concerned with the FD work. Such understanding is fundamental to achieving integration in a complex multi-level organisational system for flood risk management, as in Sweden.

The interviews reveal that only one of the municipalities had discussed the issue of roles and mandates explicitly during their involvement in the FD work. That municipality explained that the issue has been discussed very much with the CAB, on the municipality’s initiative, and that there was now a shared view of the respective roles. In two municipalities the issue had been touched upon indirectly – in one by means of a section that describes the roles in a CAB report and in the other by means of discussions about the content (types of measures) to include in the flood risk management plan. Presumably, as a result of the lack of communication around the issue, the understanding of the involved roles and mandates varies heavily among the respondents, and on the whole, it is unclear.

One-third of the municipalities (including the three above) hold the view that the MSB and the CAB have no mandate to decide on locally binding flood risk measures. Associated with this is the view that the FD administration essentially has a supporting and encouraging role; supporting the municipalities in their ongoing work with risk management, climate adaptation and land-use planning. These municipalities comprehend that their view on roles is shared with the FD administration. One expresses it such
that there has not been a need to talk about roles and mandates due to the high level of awareness from earlier collaboration in the county (with the CAB):

‘there hasn’t been a need I think […] I believe it’s rather obvious […] the CAB has the role of gathering together all this knowledge and these suggestions for measures […]’

About half of the municipalities, however, expressed that, although it has not been stated explicitly, it is obligatory for them to contribute to the FD work and to carry out the measures planned by the FD
administration. There are three main reasons provided: that there will be some sort of sanction if the flood risk objectives are not reached, that the FD work has given them new knowledge that makes it impossible to ignore the flood risks, and that one has the experience that when ‘things like this’ are introduced by the CAB they will eventually become mandatory. The following quotes exemplify this:

‘[…] it has just been established by the CAB, that this lies on you [the municipality].’

‘[…] we haven’t gone very deeply into it, but I believe there will be some form of sanction [if the planned measures are not carried out] […] to be honest, I don’t know how…’

The rest of the respondents have no clear picture of the involved roles and of the formal meaning of the flood risk management plan. They are not sure whose responsibility it is to implement the plan. For example:

‘The plan includes mistakes and things that are unclear. For example, they have written that the wastewater plant will not be affected because it is not flooded, but the pipe system is, so it would be affected heavily. And another objective concerns safe roads. Roads that we are responsible for. But we are not pointed out as responsible for reaching that objective. Many of the objectives are difficult to know what they will mean for us, in concrete terms.’

A number of respondents are clearly critical of the FD work and of the fact that the CABs are making plans. A range of critical arguments are delivered. One concerns the CABs’ intrusion into the municipalities’ planning mandate and into local risk management. The top-down character of the work creates inconsistencies with respect to the traditional roles in the Swedish system for the handling of flood risks and makes it blurry. The following quotes help to illustrate this critique:

‘It is very strange, these risk management plans where the CABs are pointing at the municipalities to do this and that while there aren’t any sanctions […] and no money to support these measures really.’

‘[…] a concoction that the authorities have hatched […] but then it lands at the feet of the municipalities to handle.’

Another critique concerns the absence of a cost-benefit and a political perspective which include the handling of value trade-offs:

‘[…] when you look at these kinds of measures you need to follow the law of course but it’s also about having a cost-benefit perspective […] and I think that approach is totally lacking […]’

‘They have written in their plan that […] the municipality is responsible for some measures. And, essentially, one can buy that, of course we are, but you know as well as I do that it depends on what year the technical department gets the money in their budget to operationalise this.’

These critical voices call for less interference from the national and regional levels. But some respondents also point to the need for an expanded regional mandate in order to coordinate measures
around lakes and river systems, for example Lake Vänern and Lake Mälaren. In this respect, one respondent argues, the currently strong local authority model is a problem for the integrated handling of flood risks. While a fundamental idea of the FD is to manage flood risks according to river basins, these respondents also say, however, that the FD administration has not yet taken on such a coordinating role.

‘[…] one could build dams so that the water can be stopped and spread out on the fields upstream so we don’t […] all water in the city […]. […] then a farmer will of course lose his harvest, […] but it might be worth paying for his losses if we avoid a lot of damage to buildings and infrastructure […]’

With regard to roles and mandates, the respondents were also questioned about the type of content contained in the flood risk management plans. Most say that it includes measures that the municipality has already planned for and which the CAB has collected from them. But the plans generally also include additional types of measures – both physical measures that the CABS advise the municipalities to carry out, and measures of an inquiry-based character for which either the CAB or the municipality is made responsible. Some municipalities are however concerned that they simply do not have the capacity to carry out these inquiries.

In some cases the respondents explain that it was considered important that the plans do not include measures that are unrealistic from a municipal perspective. These plans have been drawn up in a collaborative process between the municipality and the CAB. In other cases the plan is more of an expert product produced by the CAB which has been remitted to the municipality. See key issue 3 for more results concerning how the plans were produced.

Furthermore, some municipalities clearly do not regard the plan as important for them. For example:

‘Oh, it was a while since I looked at it, so I can’t really answer that […] [Answering whether the plan includes additional measures to those already planned by the municipalities.]’

Coordination of the Floods Directive and the Water Framework Directive (key issue 2)

The second key issue concerns the need to coordinate the FD with the WFD, a formal demand of the FD and a prerequisite for integrated river basin management. The answers reveal little evidence of active coordination between the directives directed to the municipalities. Four of the respondents claim that they do not know about the WFD, or, that they have not heard about it in their contacts with the FD administration. One-third of the respondents said that they know about the WFD from work in other contexts, but that they cannot point out any activities undertaken by the FD administration to coordinate the FD and the WFD. Two respondents, however, mentioned that they have seen references being made to the WFD in the flood risk management plan. For example:

‘[…] the WFD was mentioned in the [risk management] plan so we had to ask, well what does this mean then? […] and we started to ask questions and then it became kind of vague, […] I mean it is not very clear, but it has something to do with drinking water and stuff. […] I think we clarified it […] and it was likewise important for the CAB to understand what was written […]’
In addition, one said that a CAB employee working with the WFD was attending their FD meetings with the CAB, indicating that coordination activities from the CAB level were occurring.

Furthermore, four respondents noted that they have registered that flood risks and water environmental issues are handled in a more integrated manner within their municipality by cross-sectoral water groups compared to some years ago, probably as an indirect consequence of the WFD and the FD. The water groups are described as groups of persons from different parts of the municipal organisation, such as the planning and building office, the environmental office and the technical office, formed on the municipality’s own initiative. For example:

‘[…] there is another understanding now that we need to meet [across sectors] and talk about all this.’

In addition, many respondents refer to a municipal colleague as ‘the water coordinator’ or ‘the water strategist’. Such cross-sectoral roles are – like the above mentioned water groups – a relatively new phenomenon in Sweden, and although the respondents themselves did not point to that as a sign of the integration of the directives, such roles will support the integration of water issues at the local level (and coordination of the FD and the WFD).

**Municipalities’ involvement in the planning process (key issue 3)**

The third key issue concerns the need to effectively involve the municipalities – the key stakeholders for flood risk management – in the FD work.

According to the interviews, the MSB, who is the main responsible authority for the FD work, has arranged information meetings twice yearly in different parts of the country. The concerned municipalities have been informed about the FD work, about how the FD administration is working with the tasks that are underway and what support is needed from the municipalities. There has also been the opportunity to pose questions. The municipal attendance has varied much, but the majority of the municipalities have attended most meetings. Some say that it was too far to travel while others suggest that it is very good that the meetings have been held in different parts of the country to make it easier to attend.

Except for these meetings of an informational character, the respondents have mainly had contact with the CABs who are responsible for the flood risk management plan (see Figure 1). While many parts of the work are coordinated by means of national instructions (such as simulated flood levels, mapped categories, formats of maps, categories of objectives and measures) it is clear that there is no common national or regional strategy for how, in process terms, to engage the municipalities. In two municipalities the CAB has taken an active process-leading role, for example by arranging meetings with different departments of the municipality and by presenting the risk management plan for the municipal board. In the other cases the municipal contact person (the respondent) has been the link between the CAB and the municipality. In a few municipalities new or existing cross-sectoral groups have been used to reply to FD requests such as providing local data and answering to remittances. In others, the contact person him-/herself or together with a colleague from another office has been in contact with the FD administration. There have also been a few attempts to integrate the FD planning process with on-going municipal processes such as the mandatory risk and vulnerability assessment and the development of local planning guidelines. But coordination has often been difficult to achieve.
here due to different time tables and reporting requests. In fact, in most of these cases the respondents reported that the FD work has intruded into the municipal flood risk management processes rather than supported these. For example:

‘[… we have been working so hard to implement our municipal climate adaptation guidelines […] a basis for new buildings and land-use planning. And to introduce an additional study at that time […] on top of this work that has already been done, that’s not completely optimal in the municipal reality.’

About one-third of the interviewees have, on the whole, a very positive attitude to the FD work and claim that they have had a close, continuous and worthwhile collaboration with the FD administration. These municipalities have been involved from the early stages of the work, often in relation to both the maps and the risk management plan. A few municipalities have participated in a broad process including several municipal departments and politicians. One typical example is:

‘The CAB has been perceptive to the viewpoints and local conditions of the municipality […] not least when it comes to the management plan where it has been very important to not include more than we can actually accomplish.’

All respondents except for one have contributed to the maps with their knowledge and data. Most respondents have also fed in their already planned municipal measures to the risk management plans. However, about one half of the municipalities argue that besides the national information meetings, the exchange with the FD administration has mainly been in the form of remittances; to react to completed drafts rather than being more actively involved, and from an earlier stage.

About half of the respondents report that the hazard and the risk maps include knowledge that one did not previously have, such as additional flood level simulations and the mapping of new types of values at risk from floods. The broad span of values at risk is pointed out by several respondents as valuable for attaining a more complete picture of the risk situation.

More than half of the respondents, however, say that the MSB and or the CAB have not paid enough attention to their knowledge and requests for local adaptation:

‘[…] they haven’t been very interested in listening.’

As such, they suggest that the FD work is not useful. The municipalities wanted to use data formats and reference systems that matched their existing data, and for the simulation of specific levels of flows which are most relevant. Several respondents were of the opinion that the analyses left the most important flood risks outside of the scope of the exercise. For example, one municipality wanted to expand the geographical area to include the affected infrastructure and another wanted to include interacting factors such as flash floods and wind into the analysis. Another municipality argued that their most severe risks are those outside the urban area, which is not included in the maps. Others pointed to the need to include their neighbouring municipalities in the study, in order to be better able to coordinate risk management in the river basin. But this has not been possible. The explanation given is that the work needs to be coordinated across the whole country or water district (flood levels simulated, data formats etc.).
Many of the municipalities are either resigned to this or continue to express a level of frustration, meaning that they are expected to contribute to the work while not getting much in return.

Half of the municipalities also say that the knowledge basis provided by the FD work (risk and hazard maps), or better knowledge, was already available to them before the FD, and that it delivers no additional knowledge in terms of furthering their local flood risk work. When comparing the provided material to their own or to FD simulations made in the same river, but on the other side of the member state border, five municipalities have also discovered, or suspect, that there are errors in the new material. Together with the perceived top-down character of the work this has impacted negatively on the municipalities’ attitude to the FD work, illustrated by the following quote:

‘[…] I don’t know if it’s the algorithm with which the flows are calculated […] somehow it differs, what’s come out. Now they have agreed to choose a value but during one period they argued about where the error was and whose fault it was. […] A lot of work has been going on above our heads […] and then a report comes out about it […] we feel that all this comes to us with the measures and consequences of the decisions but we should get resources and participate […] the municipalities have been on the periphery in this.’

One-third of the municipalities have a clearly negative attitude to the whole FD work and administration. The earlier presented top-down character of the work, the lack of local adaptation, the identified errors, and the perceived lack of new material for the municipalities are all reasons for this attitude. In addition, a lack of understanding of the involved roles and mandates and of the complex municipal political reality is highlighted by several respondents:

‘[…] it doesn’t work like the CAB can make a plan and then send it to the municipalities and then the municipality will decide on that plan […]. It’s much more complicated.’

Another reason mentioned by several respondents is that previous negative experiences in dealings with the CAB or the MSB have a significant impact on future interactions. For example, when errors in the first generation of flood hazard maps, from the 1990s, saw local politicians lose confidence in the local civil servants’ flood risk work, or when the ‘water people’ posed unrealistic demands on the localisation of a new pre-school far from the city centre to avoid a 10,000 year flood event. Three respondents are disappointed because they had expected the FD work to support the coordination of flood risk management among the municipalities around a lake or a river system. Finally, the lack of resources (time) to participate is highlighted by several respondents as problematic, considering the lack of valuable support in return.

It is clear that the time required to feed in local knowledge to the work has been considerable. One third of the municipalities report that they have found it difficult to participate in the FD work because of the lack of time resources. In many cases the responsible person at the CAB has had little knowledge and previous experience of flood risk work which has made it more time consuming for the municipalities to participate effectively:

‘[…] you need to go into a really detailed level if you are going to understand this, and it’s only one person [the respondent] who works with this in our municipality so there is no room for me to sit
down and make a risk management plan together with the CAB because I need to urge on this project [an extensive flood preventive measure], [...]’

Involvement of stakeholders in the local flood risk processes (key issue 4)

The fourth key issue concerns the involvement of other local stakeholders affected by flood risk management. The main question is whether the FD administration has adopted a strategy to support or engage the municipalities to increase stakeholder involvement in their local processes that concern flood risk issues, such as land-use planning and risk and vulnerability assessment. Such a strategy would be coherent with the municipalities as the main planning and operational actor for the handling of flood risks and the FD administration as the supporting and reporting actor (which would correspond to the current national system and with how the FD is implemented in the Swedish formal institutional system). From the interviews it is clear, however, that the FD administration has not undertaken substantial work in this respect. Typically, the answer is:

‘No. No, I don’t recognise that [being encouraged or supported by the CAB to involve local stakeholders in municipal flood risk processes].’

A handful of the respondents said that they have been encouraged by the CAB to inform stakeholders such as the concerned public, real estate owners and dam owners about flood risks and about their responsibility to take preventive measures and to act during a flooding event. There are also measures in the flood risk management plan that relate to the need to inform these groups. In addition, three respondents said that the flood risk management plan has been published on the municipal homepage to support communication of the plan to local stakeholders during the formal consultation process.

While these are positive signs in relation to the involvement of local stakeholders, other respondents note that the FD work has posed problems in terms of local communication of flood risk issues, both within their own organisation (mainly the local politicians) and with the concerned parts of the public. In one case the FD administration published the flood risk maps which were used in the local press so that the readers were given a skewed or partial understanding of the flood risk problem. Moreover, as the municipality had not itself yet received the maps it could not answer all of the questions from the general public that the material gave rise to. The fact that some municipalities’ own flood risk maps and the new maps produced by the FD administration often seem to differ was highlighted as a major problem in terms of communicating flood risk issues locally. This creates confusion and mistrust around the local flood risk work among the media, insurance companies, politicians and other local stakeholders.

Overall influence of the FD

More than half of the respondents noted that the FD has had no effect on their municipal work with flood risks. The main reason for this is that these municipalities are already working with the issue, and the directive has provided no new knowledge or other support that the municipalities would need to move forward with their work locally. Five municipalities report that they already have, or plan to, carry out measures that they had not planned before the FD. The rest, moreover, cannot point to any tangible effects in terms of the FD. Many respondents mean, however, that the directive and the new
knowledge that it has brought, have led to a larger focus on the flood risk issue within the municipality, and in the long term some explain, this may affect local flood risk management through, for example, land-use planning and risk and safety assessment and planning.

Most respondents understand that the flood risk issue has a larger overall focus. Many assess that as a positive development because it provides support for elevating the priority level of the flood risk issue within the municipality, and in the neighbouring municipalities sharing a lake or a river system or nationally. Many express a desire that the issue is given greater priority as they generally see it as being under-prioritised. Currently, the lack of resources for personnel and physical measures presents a key barrier, and the available national funding that the municipalities can apply for is perceived as far from covering what is required.

Some municipalities are, however, worried that the possible rise in the priority of the flood risk issue will affect the management of other risk issues or other issues negatively. At the municipal level, resources given to one area are always withdrawn from another and resources are generally scarce, especially in the smaller municipalities. The following quote – answering whether the FD has put the flood risk issue higher up the municipal agenda – illustrates this concern well:

‘Yes, I guess you can say that, but it’s both good and bad because we have other risks we want to work with. [...] so the bad thing is that you have stolen some attention from other risks that are more difficult to communicate [referring later to problems of youth criminality].’

Discussion

The coordination of legislation, authorities and other actors in the complex institutional system that arises from the implementation of the FD and its sister directive (the WFD) is clearly both vital yet challenging in terms of the need to establish a well-functioning system for flood risk management. This is also reported from other studies and member states (Jupner & Muller, 2010; Earle et al., 2011; Thorsteinsson & Larsson, 2012; Hedelin, 2015; van Eerd et al., 2015). While the FD implementation in Sweden is coherent with existing national formal roles and mandates, a basic understanding of these formal roles and mandates was not shared within the new multi-level administrative arrangement, specifically at the CAB level (Hedelin, 2015). Therefore, the results here are discouraging, because they indicate a considerable opaqueness in terms of these roles and mandates and of the importance of working in compliance with them. It is not, for instance, within the formal mandate of the CABs to plan and decide on municipal flood risk measures, and the fact that the CABs are now doing that obviously requires explicit communication around, and clarification of, the involved roles and mandates. No municipality, however, reported that the issue had even been brought up for discussion by the FD administration. Many – mainly the smaller municipalities – also believe that they will be sanctioned if they do not support the implementation of the plan and carry out the planned measures. Furthermore, the result shows that it is these municipalities that assess that the FD will affect them the most, and that they will carry out flood risk measures that were not already planned.

From the perspective of prioritising flood risk measures it is positive that more local resources will be directed into flood risk measures. But from the perspective of integrated (flood risk) management, where flood risk measures need to be designed and balanced cooperatively between sometimes competing values and measures, more flood risk measures are not necessarily a good thing. This is rightly pointed
out by several of the respondents, referring to the lack of a cost-effective or a broader political perspective. The municipal level includes an established model for making democratic decisions over such trade-offs (locally elected politicians as decision-makers), and there are well-established political processes where flood risk is handled in a context of competing issues. Important examples here include the process of risk and vulnerability assessments and the processes for land-use planning. The intention of the FD – to establish a long-term administrative system for integrated, river basin based flood risk management – is clearly hampered by the basic level of opaqueness surrounding the issue of roles and mandates. This creates mistrust and a critical attitude amongst the municipalities (who are the key actors in implementation terms) towards the FD administration. So, what could be considered as progress in terms of increased resources into flood risk measures obviously puts the longer term objective of integrated flood risk management at risk.

The discussion around roles and mandates is also closely related to participation, and how the municipalities have been involved in the FD processes. A clear-sighted approach here (in line with the formal system) would be for the FD administration to take on a fully supporting and encouraging role, and feed the local political processes with knowledge and other resources – the municipalities as the planners, decision-makers and implementing actors, and the FD administration as supporters and those that do the reporting to the EU. The results show that in practice these coherent roles have still not been embraced across the board. Currently, instead of being adequately involved and supported, the municipalities are informed about the FD work, requested to support it with local data, and to answer to remittances of relatively complete drafts. Moreover, the supposed supporters – the FD administration – have clearly not been paying enough attention to local needs for knowledge and to the coordination of the municipalities around a lake or river system. As such, the need for river basin coordination on flood risk planning remains despite the putting in place of the FD system.

This leads to the key issue of the coordination of the FD with that of the WFD. The respondents could not point to any evidence of such a process of coordination currently taking place. However, the answers strongly indicate that both directives have started the development at the municipal level of cross-sectoral structures, e.g. water strategists at an overarching organisational level and water groups including the technical, environmental, planning and crisis services departments. This development is indeed positive in view of coordination. It is hoped, however, that this development will become part of a common and openly communicated strategy concerning all involved key actors rather than merely individual localised reactions to impulses, such as answering to remittances from the regional level. More research is clearly required here to understand the mechanisms around this interesting development, and how the actors at regional and national levels are working in this respect. Furthermore, studies in other member states would be needed to inquire whether similar developments are taking place across Europe.

Finally, and in relation to the participation of local actors other than the municipalities, it is clear that the FD administration has not broadly adopted the proposed strategy to support or encourage the municipalities to raise the involvement of local actors in their local processes for flood risk. Such a strategy would be coherent with the municipalities as the main planning and operational actors and the FD administration as the supporting actor. A handful of respondents noted that they had been encouraged to inform concerned actors about the flood risks and of their responsibility to take preventive measures, and there are measures in the flood risk management plan concerning information to these groups. Recognising the importance of this issue and the general lack of active involvement of these actors in local processes (Wahl, 2013), there is a clear need, however, to emphasise and support the municipalities in this respect to a much greater extent. This, together with the participatory approach utilised for
involving the municipalities in the FD processes, indicates that the participatory intention of the FD is currently not being operationalised. Together with findings from Germany, Austria and Great Britain (Unnerstall, 2010; Newig et al., 2014), the Swedish case also indicates that much more emphasis needs to be put on participation if the FD intention is going to become more than just an intention in European flood risk administration. Studies that compare the implementation of the WFD and the FD might provide important understanding on how to operationalise participation.

Conclusions and recommendations

The study has not identified many traces of the FD’s fundamental ideas – integrated and participatory flood risk management – at the local level in Sweden resulting from the directive’s implementation. The transformation of water planning systems is however a slow process (Jager et al., 2016), and on a positive note, the previous study on FD implementation at national and regional levels in Sweden did reveal a strong potential for more integrated planning (Hedelin, 2015). Furthermore, many municipalities facing considerable flood risks have received new knowledge that may affect decision-making. In addition, the flood risk issue has clearly been elevated up the political agenda and new measures are now being planned for, while cross-sectoral organisational structures for water and flood risk issues at the local level are being formed or strengthened.

But while Sweden may have much to gain from investing in flood risk measures, such investments are characterised by high costs, long-term economic returns and large uncertainties. And because of the institutional complexity, it is often not clear who has to take on the costs of flood damage. The division of indirect costs is even more complex, and the incentives for individual actors to internalise large preventive costs are generally absent. Under these circumstances, the fundamental intentions of the FD – establishment of procedures for integrated and participatory flood risk management based on river basins – are vital. Based on the results the author has formulated five connected pieces of advice:

1. **Explicit communication around and clarification of the involved roles and mandates** among the key concerned actors is a fundamental step towards making the complex multi-level system work. In the Swedish legal system the FD has been implemented such that the municipalities are the planners, decision-makers and implementing actors, while the FD administration plays a supporting role and is responsible for reporting to the EU.

2. **The FD administration needs to adopt a truly supporting role**, where a listening attitude and adjustment to local needs are key components. This will, on the one hand, require additional resources but on the other it ensures that resources are not spent on developing support that is not used.

3. **Development of structures and procedures on how to coordinate water environmental and flood risk issues** at the local level and in the river basins. This has to be done both within and between the involved organisations. The CABs should take a leading role in river basin coordination.

4. **Involvement of concerned local actors needs to be pursued at the local level** by the municipalities. The FD administration can support this in different ways, for example by collecting and sharing good examples from their respective municipalities. The focus here should be placed on making the already regulated municipal processes for land-use planning and for risk and vulnerability assessment more participatory as this would probably be the most effective way to bring this about.
5. A national strategy for raising and prioritising the necessary resources for flood risk measures. There is currently a mismatch between municipal decision-making and the need to allocate resources to river basin-scale flood risk measures, which hinders cost-efficient decision-making. The FD administration could play an important role here in establishing this strategy.

For countries that share important characteristics with the Swedish case, these pieces of advice can provide grounds for development of more integrated and participatory flood risk management. Especially, point 1 (characteristic: complex institutional system), point 3 (characteristic: organisational division of flood risk and water environmental issues) and point 5 (characteristic: mismatch between decision-making scale and resource allocation scale) can include transferable components. More comparative studies are needed, however, to understand the differences and similarities between countries, and how these affect the possibilities of establishing integrated and participatory flood risk management systems.

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