



# The introduction of catchment-wide co-operations: Scalar reconstructions and transformation in Austria in flood risk management



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## ABSTRACT

The management of flood risk in Europe is changing. In several European Member States there are significant ongoing processes to shift certain flood risk management duties and responsibilities from the national to the local level. Previously, national authorities dominated the discourse about national flood risk management policy, but increasingly, local and private stakeholders have become responsible for flood risk management. This has greatly influenced the governance structure and arrangements for flood risk management policy. As a result, the co-operation among various stakeholders has become increasingly important. The consequences of this shift toward local stakeholders can be understood in the context of rescaling. This paper analyses the rescaling processes through catchment-wide management plans in the Austrian flood risk management system. Therefore, we selected three different Austrian study sites (Aist in Upper Austria, Triesting-Tal in Lower Austria and Ill-Walgau in Vorarlberg). New management ideas required new dynamics within the current scales and allowed changes in the interaction of local, regional, and national stakeholders in terms of negotiation, funding, and strategy development. The new policy direction demonstrates not only the importance of network connections between stakeholders at the same scale, but also networks between stakeholders at different scales, especially between local and national levels. However, engagement at the local level strongly depends on social capacities, such as knowledge, motivation/self-interest, networks at various levels, and procedural capacity. The theoretical framework of politics of scale helps in understanding and analysing the impact of the new decentralisation policy and practice.

## 1. Introduction

Flood risk management has changed over the past few decades, due to major flood events and subsequent policy changes (Klijn et al., 2008; Harries, 2012; Porter and Demeritt, 2012; Thaler, 2016). The most notable change is the EU Floods Directive, but there are also ongoing changes in national water legislation. As the EU Floods Directive mandates stronger stakeholder participation, governance matters are becoming key issues in flood policy. Well-rehearsed roles and responsibilities, which were traditionally dominated by state policy for flood protection, have been redirected (Hartmann and Driessen, 2017). This has influenced governance arrangements within flood risk management, as water authorities are becoming just one of many players, and other public and private stakeholders are increasingly involved (Thaler and Priest, 2014; Hartmann and Driessen, 2017), including individual households (Johnson and Priest, 2008) or sectoral planning authorities

(Holub et al., 2012; Adger et al., 2013; Thaler et al., 2016). These developments have encouraged the transformation of state roles by sharing responsibilities for risk management (Adger et al., 2013, 2016; Geaves and Penning-Rowsell, 2016; Thaler and Levin-Keitel, 2016). As a result, the new policy agenda leads to a reduction of control by national authorities towards the inclusion of private stakeholders in the decision-making process (Hartmann and Spit, 2016; Thaler and Hartmann, 2016). Politics of scale play a fundamental element in current flood risk management debates, particularly when related to responsibility for flood risk management and the current relationship between state stakeholders and non-state stakeholders (see for example Lebel, 2006; Norman and Bakker, 2009; Dore and Lebel, 2010; Cohen and Davidson, 2011; Norman, 2012; Norman et al., 2012; Huesker and Moss, 2015). But this is also an element when considering stakeholder participation in how decision-making processes are organized and conducted in a catchment-wide management process. Therefore,

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understanding and analysing scalar re-arrangements by exploring the consequences and impact on power relationships in the governance arrangement of flood risk management is important for future flood risk management.

Traditional flood risk management is organised within the boundaries of a local authority. However, catchment-wide management plans often include the implementation of flood storage areas<sup>1</sup> in the upper part of the catchment to reduce the negative consequences on communities in the lower part of the catchment (Thaler, 2014; Seher and Löschner, 2016). The change from local solutions towards catchment-wide management concepts encourage new governance structures and arrangements for ongoing flood risk management policy, where local authorities within a catchment co-operate in developing and providing flood risk management strategies for the whole catchment (Yazdi et al., 2013; Milman et al., 2017; Waylen et al., 2017). Usually the aim is to use flood retention areas in the upper part of the catchment to protect downstream communities (Fuchs, 2009; Normann and Bakker, 2009; Thaler, 2014; Rouillard et al., 2015; Short, 2015; Thaler et al., 2016). However, the main challenge is to get such options implemented on private land. Most measures need to be realized on land that is currently owned by farmers, citizens, or other private entities (Hartmann, 2011; Thaler, 2014). A limiting factor is finding land with sufficient enough storage to be useful (Hartmann, 2009; Thaler, 2014; Seher and Löschner, 2016). In these cases, interventions to reduce risk at any one point must take place upstream of that point so flood risk management increasingly becomes a catchment-scale problem and a land and water governance problem (Evans et al., 2002; Seher and Löschner, 2016; Hartmann and Driessen, 2017; Green, 2017). Those who bear the burden of flood storage or runoff reduction are not those who gain the benefits of a reduced risk of flooding. Additionally, work areas are often outside of the administrative area where flooding currently occurs. As such, the boundaries imposed by the behaviour of the catchment at a certain point are relocated upstream by human intervention (Thaler, 2014). These types of arrangements are encouraged by the EU Floods Directive (Hartmann and Juepner, 2014). However, with recent flood events, the guarantee of safety for residential and non-residential properties or new funding resources boosts the development of catchment-wide management plans (Thaler, 2014). However, these changes ultimately affect the power relationship between the different stakeholders in existing governance arrangements (Gualini, 2006; Thiel, 2009; Thiel and Egerton, 2011; Kythreotis and Jonas, 2012; Cohen and Bakker, 2014).

The research question this paper addresses is how changes in scales influence the interaction and performance of governance arrangements. This question is operationalized with a focus on power relationships in the political processes. First, how does the involvement of different public and private stakeholders in the policy decision-making process create and change scales? Second, how does rescaling create new spaces of interaction among different groups in the rescaled policy debate (e.g. the method of debating, bargaining, and negotiation between different stakeholders with the same or different scale backgrounds)?

The remainder of this paper is organised as follows. Section 2

<sup>1</sup> Flood retention is the temporary storage of water in the water cycle (Morris et al., 2004). It requires interventions in the landscape and land use planning which considers the catchment scale (Thaler, 2014; Thaler et al., 2016). Techniques range from upland forestry to river restoration, including interventions in the floodplains with wetland or wetland restoration, storage reservoir implementation and changes in agricultural practices. Flood storages provide certain advantages compared to the other natural flood management techniques. They aim to safeguard natural storage capacities by restoring or enhancing natural features and characteristics of wetlands, rivers and floodplains, and by increasing soil and landscape water retention and groundwater recharge (Mazzorana et al., 2009; Thaler, 2014). Therefore, storing water makes it possible to change the shape of the catchment hydrograph (reduce flood peak and increase flood duration) during out-of-bank events (JBA Consulting, 2005). Different options have different characteristics and effects on the flood risk. The technical and hydrological conditions are relatively well known (Patt and Jüpner, 2013).

includes a literature review of the political geography debate on scale to environmental governance. Section 3 provides an overview of the method used. Section 4 presents the empirical results for the case of Austrian flood risk management and outlines the interaction and performance of new scale arrangements. Section 5 draws conclusions on new flood risk management strategies and highlights lessons learned for use in other flood-prone countries.

## 2. The politics of scale in flood risk management

Politics of scale (or scalar politics) include different forms of scales and their impact and consequences on governance arrangements (Swyngedouw, 2000; Görg 2007; Guerrin et al., 2014; Cohen and McCarthy, 2015). Wissen (2009) argues that politics of scale is an important framework to understand governance arrangements as ‘the social production of the scale concept tends to sidestep the structuring effects of scalar configurations as well as the social struggles through which these effects may be challenged’ (ibid:886). One of the consequences is that the role of public administration merely changes its purposes and objectives. A central tenet is the introduction of socio-spatial relationships into analytical research for a more holistic understanding of scale concepts and linkages to policy discussions and their outcomes (Wallerstein, 1974; Taylor, 1982; Smith, 1992; Brenner, 2001; Peck, 2002; Clarno, 2013). Today, based on the work of Brenner (2004), Swyngedouw (1997) and others, scholars such as Gualini (2006), Jessop et al. (2008) or Fisher (2015) include a broader view of the scale concept. These authors describe politics of scale as a spatio-temporal interaction of human, environmental, and political discussions or dimensions. To this extent, scholars define the rescaling as ‘the spatial, temporal, quantitative, or analytical dimensions used to measure, or rank, and study any phenomenon and levels as the units of analysis that are located at different positions on a scale’ (Dore and Lebel, 2010:62). Thus, the concept of scale is based on social construction and evolution as well as on the interactions of territory and structure, which organise and rule social relationships (Howitt, 1993; Swyngedouw, 1997; Cox, 1998; Brenner, 2001; 2004; Gualini, 2006). The outcome is a change in the actual power relationship between national and local stakeholders (Paasi, 2004). Nevertheless, a key objective is to understand the mobilisation of the local stakeholders and their influence on changing social structures, especially the shift in power structure (Smith, 1990; Cox, 1998; Molle, 2007). This also demands that the space broaden to include socio-spatial relationships (Jessop et al., 2008; Jessop, 2016). Central aspects in scale discussions are the hierarchical nesting of responsibility and the organisation and sharing of power between different scales (Brenner, 2004). In line with Howitt (1993), the hierarchical concept (national-regional-local relationship) is a key attribute of the concept of scales, whereas the concept of scale ‘should not be seen as a simple hierarchical concept’ (ibid: 36). However, scalar arrangements are currently under review (fluid), as scalar re-arrangements are socially constructed and influenced by the social interaction at geographical spheres (Brenner, 2004; Brown and Purcell, 2005). Nevertheless, this also includes fixed arrangements of pre-defined social structures and power, especially the hegemonic position of elite groups in policy-decision-making practices (Brown and Purcell, 2005), which pre-define political, economic and cultural activities (Hoogester and Verzijl, 2015). Thus, scales include a dialectical interplay between fixed and fluid scalar structures, where power and hegemony is a central point in the ongoing policy decision practice (Allen, 2009). Jones (1998) observed the scale arrangements and production based on geographical and cultural variables. These also include ‘a contingent outcome of structural forces and practices of human agents’ (Cox, 2009:885). Scalar re-arrangements also led to new policy frames, relationships, and networks presenting new possibilities for policy interventions, such as new definition of responsibility and power among the different stakeholders. The new arrangements cause changes in formal and informal codes and norms as well as in

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