



From information to participation and self-organization: Visions for European river basin management



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HIGHLIGHTS

- Participation can help with social as well as ecological sustainability.
- The degree of participation depends on decision-making power.
- Commoning is a new floor at the end of the ladder of participation.
- Important: inclusivity, representativeness, self-organization, decision-making power
- Due to complexity: Spatial fit and temporal continuity matter

GRAPHICAL ABSTRACT

	Inclusivity	Representativeness	Self-organization	Decision-making power for citizens in RBM	Spatial fit	Temporal continuity
Emscher	High	Low	Low	Low	High	High
Thames	Medium	Low	High	Low	Medium	High
Huerta	Medium	Medium	High	High	Medium	High

Table 1: Summary of the three cases: Emscher, Thames and the Valencian huertas

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ABSTRACT

The European Union Water Framework Directive (EU WFD, 2000) calls for active inclusion of the public in the governance of waterbodies to enhance the effectiveness and legitimacy of water management schemes across the EU. As complex socio-ecological systems, river basins in western Europe could benefit from further support for inclusive management schemes. This paper makes use of case studies from Germany, England and Spain to explore the potential opportunities and challenges of different participatory management approaches. Grounded in theoretical considerations around participation within ecological management schemes, including Arnstein's Ladder of Participation and commons theories, this work provides an evaluation of each case study based on key indicators, such as inclusivity, representativeness, self-organization, decision-making power, spatial fit and temporal continuity. As investors and the public develop a heightened awareness for long-term sustainability of industrial projects, this analysis supports the suggestion that increased participatory river basin management is both desirable and economically feasible, and should thus be considered a viable option for future projects aiming to move beyond current requirements of the European Union Water Framework Directive.

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1. Introduction

Rivers provide humans with vital ecosystem services (MEA, 2005). In Western Europe, most river basins are densely populated and have

been heavily modified, including to facilitate transportation routes, create reservoirs, and to improve drainage systems (Blackbourn, 2008). Yet, river basins remain part of broader, complex networks of interdependent ecological, economic and social systems, and maintaining their fragile balance is important for the health and well-being of local communities (Rault and Jeffrey, 2008). Today, continued environmental and social change puts additional pressure on the river systems of Western Europe. To that end, a broad range of stakeholders may be affected

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by a single river basin, yet management strategies aimed at improving the state of rivers suffer from a lack of public involvement (de Stefano, 2010). This phenomenon is often attributed to a lack of interest on the part of the general public (Frör et al., 2016; van der Heijden and ten Heuvelhof, 2012) but it also stems from a paucity of existing avenues for meaningful participation (Kochskämper et al., 2016).

In this context, participatory river basin management could be considered a potential answer to both the lack of attention paid to matters relating to riverine health and to the lack of involvement of stakeholders within decision-making mechanisms (Kochskämper et al., 2016; Newig et al., 2016). Nevertheless, participatory approaches remain challenging, for example, because defined management units are lacking, meaning that strategies often fail to match existing institutional structures, such as taking into account electoral districts. These challenges are particularly prevalent within larger river basins, characterized by high levels of complexity (Borowski et al., 2008).

Further, participatory processes may also be hampered by existing norms, rules, and regulations, as well as environmental conditions across European river basins (van der Brugge et al., 2005). These processes are strongly linked to the availability of relevant expertise as well as political will, two facets that are often unstable and unpredictable (Eichenseer and Hitschfeld, 2015: 137f.; Huitema et al., 2009; Renn, 2013). Proponents argue that increasingly participatory ecological management leads to a democratization of processes and therefore a higher quality of decision-making which goes beyond participation and promotes novel self-organization strategies. Some of those strategies, known as 'commons' or 'commoning', refer to age-old ways of managing land or irrigation systems as a community (cf. Ostrom, 1990). Similar principles have recently been applied in a variety of cases including virtual phenomena, such as the online encyclopedia Wikipedia (Euler, 2018).

The commons perspective can serve as a conceptual anchor point and the theoretical limit of maximal public participation, yet it does not imply that participatory management is always the preferred option. The aim of this work is to further explore the potential of participatory strategies for improving the management of European river basins, including to better understand the limitations of such approaches. This analysis will firstly highlight the most important elements common to all participatory river basin management strategies. The broad range of available management approaches will subsequently be illustrated across three case studies from Germany, England, and Spain. Taken together, these examples provide a descriptive account of communication and information patterns within ecological management programs, driven by varying degrees of bottom-up participation and levels of self-organization.

2. Participatory river basin management

2.1. On river basin management

Human settlements historically benefited from access to freshwater. Waterways have historically provided human settlements with access to fish and transportation routes. At the same time, flooding has often been a risk for riverine communities, even during the early 20th century, which was characterized by increasing industrialization and the growing sentiment that humans should actively control their environment. In the 1960s, as the environmental movement emerged, the notion that human activity is a greater threat to water bodies than vice versa gained acceptance across central Europe, leading to the development of a new paradigm of 'sustainability' in river basin management and, on a broader level, the erosion of the conventionally adversarial relationship between humans and nature (Buijs, 2009; Verbrugge et al., 2016).

In recent years, those ideas have reached the top levels of inter- and supranational governance. In 2000, the European Union passed the EU Water Framework Directive (WFD), which unified Member States'

highly-fragmented water legislation and aimed to reach and maintain 'good' ecological status for all water bodies across the EU (2000/60/EG, WFD; de Stefano, 2010; Jager et al., 2016). The WFD was developed to restore the health of the EU's riparian environments, in part by promoting the sustainable use of the ecosystem services provided by waterways (Antunes et al., 2009; Collins et al., 2007; Gouldson et al., 2008).

European rivers are vital to industrial, agricultural and domestic processes. Ensuring that these services are maintained whilst at the same time preserving the ecological health of rivers is one of the key and most complex challenges of sustainability initiatives (Buijs, 2009). The potential for conflict is high, not least because of the increasing pressure on the land around rivers, valued for both industrial and ecological uses (Antunes et al., 2009; Collins et al., 2007). At the same time, rivers in Western Europe are an important facet of the area's cultural environment and the social identity of residents, in part because of the industrial structures built around them, which are now considered part of the landscape itself (Buijs, 2009; Freiburger, 2005). It is in the context of these deeply engrained and sometimes contradictory interests that public participation has never been more vital, including within the development and compliance process for the WFD, where stakeholder engagement is a key method of understanding the patchwork of interests inherent in river basin management.

2.2. On public participation

Although river basin management strategies affect the entire catchment area, they are often overlooked in the public discourse, with the exception of larger, highly publicized restoration projects. When such projects do enter the public domain, the focus tends to be on the management of the river basin itself rather than the involvement, or the resistance, of local communities (Buijs, 2009; Freiburger, 2005). To mitigate against this discord, river basin management should incorporate a project's ecological and economic aspects alongside the sociocultural elements, using strategies that encourage civic engagement by local stakeholders throughout the decision-making process. The aim of such an integrative approach is to develop management strategies that are both ecologically and socially sustainable.

The public is increasingly keen to participate in decision-making processes (Bentele et al., 2015: 8f; Eichenseer and Hitschfeld, 2015: 137f; Krebber, 2016: 38–39). In this context, according to van der Arend and Behagel (2011), this bottom-up civic engagement has specific and unique dynamics, often informal and spontaneous compared with conventional, top-down processes. Given this growing interest by the general public, excluding members of local communities from the decision-making processes is not an appropriate solution. Further, if affected parties do not feel that their interests are represented by local authorities, they may try to find other ways to articulate their aims, values, and needs, including by organizing their own social networks (van der Arend and Behagel, 2011) or taking legal action (Huitema et al., 2009). In the past decades, citizen groups have had a better chance of gaining recognition and being invited to participate in decision-making only after demonstrating their ability to act as powerful interest groups, putting significant pressure on project managers and authorities (Krebber, 2016: 43–46).¹

In this context, top-down approaches, which are only implemented to fulfill legal regulations (van der Heijden and ten Heuvelhof, 2012) and to legitimize decisions that have already been made, cannot be considered truly participatory. However, these approaches may also be useful, as they can lead to a fostering of mutual understanding and even enhance the working atmosphere to improve productivity and

¹ Protest could thus be regarded as a self-organized form of participation and as an indicator of representation deficiencies within the decision-making process.

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