

# Complement or competition in water governance? Analysing two collaborative water management arrangements in one river basin

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## Abstract

This study aims at advancing collaborative governance theory by investigating the interaction between two different collaborative arrangements within the same forested area of high ecological and social value in the Vindel River basin. Semi-structured interviews, policy documents and observations of board meetings were analysed based on analytical typologies of collaborative arrangements to answer the following questions: which factors can explain why a new collaborative arrangement was established within an area where one already existed? In what way do the two arrangements compete with or complement each other? And, to what extent do they address the effects of forestry on water? The analysis shows that a new collaborative arrangement was formed because the existing arrangement did not materialise certain stakeholders' expectations. Moreover, the two collaborative arrangements do not compete but rather complement each other. The newly established organisational/action collaborative arrangement presented those stakeholders most interested in on-the-ground action with the appropriate venue while freeing them from the organisational/policy arrangement that did not match their aims. However, both arrangements experienced power imbalances as certain stakeholders were perceived as having more influence on their agenda. Collaboration at this local-regional level was found to focus on limited problems with concrete and feasible solutions, such as fish migration, rather than on the complex problems with solutions marked by ecological uncertainty and power asymmetries, e.g. diffuse pollution from forestry.

*Keywords:* Collaborative governance; EU Water Framework Directive; Forest water; Institutional interplay; North Sweden; Water governance

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## Introduction

Collaborative approaches have become widespread in water governance as a response to the global-wide deterioration of aquatic ecosystems caused by anthropogenic pressure (Brisbois & de Loe, 2016). Polycentric and collaborative governance scholarship has shown that such decentralised approaches have both advantages and limitations (Koontz, 2016; Morrison *et al.*, 2019). On the one hand, in polycentric governance several smaller 'nested' entities could form a successfully functioning system if there

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is ample communication and cooperation between them (Ostrom, 2010). Collaborative arrangements with different aims could operate more effectively by creating networks and delegating functions between each other (Margerum, 2011). On the other hand, collaborative decision-making is twice as costly as decision-making without public involvement and the results are often uncertain (Thomas, 2013). Furthermore, several collaborative arrangements within the same geographical area could place a heavy workload on certain stakeholders and potentially increase transaction costs (Lubell *et al.*, 2010; Eckerberg *et al.*, 2015), especially if they do not communicate and coordinate their aims and focus. This is particularly apparent in sparsely populated rural areas where few actors have to take upon themselves the role of representatives in several collaborative arrangements (Bjärstig & Sandström, 2017).

Water governance scholarship has focused mainly on aspects such as EU Water Framework Directive (WFD) implementation (Hovik & Hanssen, 2016; Xerri *et al.*, 2016; Voulvoulis *et al.*, 2017), participation (Carlander *et al.*, 2016; Graversgaard *et al.*, 2016; Matti *et al.*, 2017), top-down versus bottom-up processes in relation to output implementation (Koontz & Newig, 2014) and attainment of environmental outcomes (Biddle & Koontz, 2014). However, studying the interaction between collaborative arrangements that might exist within the same geographical area has been largely ignored, leaving questions about the effects of such interplay unanswered. This study aims at enhancing collaborative governance theory by investigating the interaction between two seemingly overlapping collaborative arrangements within the same river basin – that of the Vindel River in north Sweden. The area was chosen for its ecological, social and economic significance, which means that the problems its waters face cross-cut several sectors. The substantial territory covered by production forests makes diffuse pollution from forestry, including increased concentrations and loads of mercury to surface waters (Eklöf *et al.*, 2014), a central issue in the management of the region's water. Rising demands on forestry from different sectors (Söderberg & Eckerberg, 2013; Lidskog *et al.*, 2018) could further exacerbate the problem of forest water quality, indicating that there is an urgency to investigate how the issue is being addressed.

While water management is generally characterised by segmentation and sectorisation (Granit *et al.*, 2017), the EU WFD aims at achieving good ecological and chemical water quality of European waters through a holistic approach and broad stakeholder inclusion in the management of river basins (Kallis & Butler, 2001). Thus, a cross-sectoral collaborative approach between two or more sectors should be applied (Bryson *et al.*, 2006) if WFD aims are to be achieved in relation to forestry's effect on water quality. However, reaching WFD goals specifically in regards to diffuse pollution has proved difficult. Recent research from Sweden on forestry's effects on water ecosystems shows that its governability is constrained by a number of contextual political and economic factors, including a softly regulated forest sector (Lidskog *et al.*, 2018). Also, the effects of policy changes over time to address forest water protection in Sweden are still insufficient, pointing to a need to find new policy solutions (Hasselquist *et al.*, 2019). Similarly, in the Netherlands, despite already-existing institutions at the river basin scale that facilitate the implementation of the WFD, diffuse pollution from agriculture continues to be a pressing problem due to a mismatch between WFD and Dutch quality standards, together with a softly regulated agriculture sector (Squintani *et al.*, 2017). Moreover, previous research has shown that the prioritisation of water quality faces difficulties in regards to other policy sectors (Hovik & Hanssen, 2016) and that polycentric and collaborative governance approaches are susceptible to power asymmetries (Brisbois & de Loe, 2016; Morrison *et al.*, 2019), hinting at the many challenges that cross-sectoral management of the river basin faces. Exploring water management at the river basin scale, and especially the interplay

of two overlapping collaborative arrangements that are nested in the same governance context, could offer insight on how complex cross-sector issues are addressed at this institutional level. It could shed light on whether multiple collaborative arrangements in the same area compete for limited resources or complement each other in managing the area's water by addressing different issues and mobilising additional resources.

Based on analytical typologies of collaborative arrangements, three research questions are posed: (1) *which factors can explain why a new collaborative arrangement was established within an area where one already existed*; (2) *in what ways do the two arrangements compete with or complement each other*; and (3) *to what extent, and if so how, do they address the effects of forestry on water ecosystems*?

## Theoretical framework

Collaboration in policymaking has become a staple choice within a variety of countries and policy sectors (Emerson & Nabatchi, 2015). Collaborative arrangements aim at identifying common problems, sharing information, and building consensus on outputs in the form of policies, management plans, and on-ground action (Margerum, 2008; Koontz & Newig, 2014) that are expected to resolve problems and lead to desired outcomes (Sabatier *et al.*, 2005). Outcomes of collaboration can consist of environmental (e.g. water quality improvement) or social changes (e.g. increase in social capital in the form of new networks) (Sabatier *et al.*, 2005). Previous research has associated collaborative arrangements with both the improvement of environmental conditions (Biddle & Koontz, 2014; Scott, 2015; Biddle, 2017) and with socioeconomic benefits, among which institutional learning, reduction of conflicts over time, grant leveraging, and the creation of human and social capital (Bingham, 1986; Sabatier *et al.*, 2005; Koontz, 2016). Collaborative arrangements could fail to achieve specific aims, such as positive environmental outcomes, but still lead to positive social outcomes through spurring the creation of new networks and enhancing trust and social capital among stakeholders (Sabatier *et al.*, 2005).

Some aspects of the collaborative arrangements are common, such as the importance of fostering two-way communication between public and private stakeholders (Özerol & Newig, 2008; Margerum, 2011). Others are specific, depending on the type of collaborative arrangement. Through a comparative study of 36 collaborative arrangements, Margerum (2008) distinguishes between three archetypes within a spectrum: action, organisational and policy collaborative arrangements, according to their aims. While action collaborative arrangements focus on concrete measures such as restoration of disturbed natural environments often at the local level, the aim of organisational arrangements that function usually at the regional level is to agree on management plans and guidelines, and possibly secure financing for their execution. The third type – policy collaborative arrangements – aim at influencing government policy and legislation through deliberation at the highest institutional levels.

One aspect that affects the design of a collaborative arrangement is whether it is top-down or bottom-up initiated and financed. In their study of a large number of collaborative arrangements over natural resources management, Eckerberg *et al.* (2015) found that while policy and organisational collaboration can be initiated both from the top-down and the bottom-up, action collaboration that is mostly initiated from below relies heavily on top-down (state) financing that often comes with specific requirements e.g. for partnership or collaboration. There is general agreement in research that financing is crucial, both for the initiation of collaboration (Emerson & Nabatchi, 2015), its well-functioning (Özerol & Newig,

2008) as well as for the implementation of its aims (Koontz & Newig, 2014; Cruz *et al.*, 2017), including WFD aims (Xerri *et al.*, 2016).

Stakeholders in bottom-up initiated collaborative arrangements generally influence the agenda and procedures to a much higher extent than in top-down initiated arrangements (Koontz & Newig, 2014). This is important in relation to the implementation of decisions, since the roles that stakeholders are assigned within the collaborative arrangement and their acceptance thereof could affect the achievement of watershed improvement goals (Biddle, 2017). The formulation of clear and obtainable objectives, or aims, is also of central importance for the implementation of policy (Sabatier & Mazmanian, 1980) and for sustained commitment among stakeholders in collaboration (Margerum, 2008). Since certain stakeholders could be inclined to value specific outputs and outcomes more than others, they might prefer to engage in certain types of collaborative arrangements over others. More importantly, well-formulated aims are easier to follow up and how stakeholders interpret them could predetermine their perception of whether the collaboration was successful. For example, local stakeholders with a prime interest in environmental outcomes, would be more likely to engage in an arrangement to implement concrete measures, such as restoring ecological values of a stream, than in one geared to reach consensus between conflicting parts, for example on a management plan. Despite leading to positive social outcomes, the latter results could be dismissed by action-oriented stakeholders as they are less tangible (Sabatier *et al.*, 2005; Koontz & Newig, 2014).

However, bottom-up arrangements also tend to address small-scale problems that fulfil local stakeholders' own interests, since private actors are not equally bound as authorities by procedures, rules, and requirements to strive for outcomes that are useful for the broader society (Aukes, 2017). In contrast, top-down initiated collaboration often comes with certain requirements, including which interests should be represented in the arrangement (Koontz & Newig, 2014). This is important, because limited engagement of stakeholders in collaborative water management arrangements could reduce their external legitimacy (Matti *et al.*, 2017). Since participants in the collaborative water governance processes, such as government, private, non-state and community actors, are rarely equal (Brisbois & de Loe, 2016), narrow representation and low external legitimacy could deepen existing power asymmetries within the arrangements. For example, representatives from industries that play an important economic role in the area, could influence both the design and the focus of collaborative arrangements aimed at water management and lower the ambition levels in addressing pollution (Galaz, 2006). Stakeholder influence on decisions also depends on knowledge about the problem at hand. Information and knowledge provide a basis of discursive power and can be used for strategic purposes (Brisbois & de Loe, 2016); knowledge dissemination affects the attainment of WFD objectives (Xerri *et al.*, 2016).

Collaborative arrangements are established in existing institutional contexts (Lubell *et al.*, 2010) as nested entities within a polycentric system. Collaboration could build networks between different sectors and significantly lower transaction costs of cross-sectoral policymaking (Feiock, 2013). Collaborative arrangements with different aims within the same area could delegate functions to each other, depending on their expertise and capacities, and spur the creation of networks (Margerum, 2011), potentially leading to more effective resource management. Highly polycentric governance systems in general lead to environmental outputs of higher quality (Newig & Fritsch, 2009), and to institutional adaptation, but only given that there is ample communication between the multitude of agencies that are involved (Ostrom, 2010; Koontz *et al.*, 2015) even if that coordination is imposed by top-down regulation (McCord *et al.*, 2017). Even if collaborative approaches are often applied to establish that needed communication and coordination, in practice they could have the opposite effect. When limited resources are channelled into costly collaborative approaches, which seldom have an all-encompassing focus,

collaboration between traditional institutions is lowered and leads to an actual decrease across sectors (Lubell *et al.*, 2010). In sparsely populated rural areas this could result in strong state influence on decision-making, due to weak private actor representation and pro forma participatory decision-making approaches (Björstig & Sandström, 2017). State agencies and financing could play a crucial role in that regard through enabling broader stakeholder participation and representation (Eckerberg *et al.*, 2015; Björstig & Sandström, 2017). Communication should also cross institutional levels, as governance networks have proven to be more successful in influencing government decisions regarding water management if they are politically anchored at the local and regional level (Hovik & Hanssen, 2016).

To answer the research questions there is a need to investigate the aims of the two arrangements and how they emerged; the extent to which they communicate and coordinate their aims between each other; which stakeholders participate in each of them; their connection to forestry and its effects on water; the relevant stakeholders' perceptions of those aims and how they evaluate the arrangement. The answer to whether the two arrangements compete with each other over resources (human and financial) and whether they overlap will follow from such an analysis.

## Research design and methods

Case studies offer a particular opportunity to study processes that develop over time in specific social contexts (Yin, 2014). Here, the case of collaborative water management in the Vindel River basin, Sweden was chosen as the empirical basis for analysis. Focusing on the same social-ecological system or 'context', means that the background factors are constant. This allows theoretical advancements (Ragin & Amoroso, 2011) regarding the nature and impact of interplay between the two arrangements through an analysis of process factors, interactions and stakeholders' perceptions of results.

### *Choice of case study*

The socio-ecological system of the Vindel River basin in Västerbotten, northern Sweden, was chosen because it is valued both for its unique ecosystem and the economic worth of its vast forests. It is one of only three Swedish rivers longer than 150 km that has remained unregulated (Dams, 2000), as a consequence of an intense environmental campaign in the early 1960s – one of the first environmental protest movements in Sweden (Vedung, 1978). The Vindel River is a tributary to the Ume River and therefore managed by the Ume and Vindel River Water Council. The Ume River for its part is regulated and its largest hydroelectric dam affects the upstream migration of different fish species including salmon to the Vindel River (Västerbotten, 2018). The river basin area is dominated by vast forests, the majority of which are not protected and thus subject to regular exploitation. The commonly applied management practices have been shown to have negative effects on water quality, such as leakage of pollutants and nutrients into water sources (Eklöf *et al.*, 2014). Applying a holistic approach to the management of the river basin, according to WFD requirements would therefore require cross-sectoral collaboration between myriad stakeholders.

### *Research methods*

Existing collaborative arrangements were mapped at the regional (river basin) level, and six different organisations that address various water-related issues were identified. Out of those, only two met the



predefined methodological criteria, namely that at the time of investigation: (1) they had functioned for at least a year with documented statutes, meeting agendas and decisions; (2) they involved both public and private stakeholders; and (3) they had regular meetings to discuss and agree upon outputs.

I relied on three qualitative methods of data collection to achieve a triangulation of the results (Yin, 2014): semi-structured interviews, document analysis and meeting observations. Thirteen interviews ranging between 15 to over 60 minutes were conducted with eleven participants from the two arrangements and two representatives of the indigenous community in the region who do not participate in either. Interviewees were chosen according to their position in the respective arrangement, starting with the heads of both arrangements and through the so-called ‘snowballing sampling technique’ (Ritchie *et al.*, 2014). The aim was to reflect different interests and positions. A questionnaire was constructed (see Appendix I) inspired by Bjärstig’s (2017) study of collaboration and the research questions were broken down into variables. Interviewees were offered the opportunity to edit the used quotations.

I observed one board meeting per collaborative arrangement to acquire a deeper understanding of the meeting procedures and how the different stakeholders interact (Ritchie *et al.*, 2014). Policy documents and meeting protocols were analysed by searching for information on any of the studied factors: aim and focus of arrangements, rules for participation and inclusion, expected outcomes. All meeting protocols of the Ume and Vindel River Water Council (hereafter Water Council) were received as electronic files from the Council’s chairperson. The statutes for the formation and aim of the Water Council as well as those of the Vindel River Fishing Area (hereafter Fishing Association) are available online.

The Water Council was used as an entry point for comparison as it was the first arrangement to be established and (at least in theory) could have covered the functions of the new Fishing Association. The establishment of the Fishing Association was explored by asking interviewees directly and through investigating an overlap of the two arrangements’ aims, stakeholder perceptions of their aims and the success of the two arrangements in reaching positive outcomes.

## Results

### *The two arrangements*

*Water council.* The first collaborative arrangement in this study – the top-down instigated Water Council – was established at river basin level in 2008, four years after the transposition of the WFD into Swedish law. Water Councils are expected to come up with ideas and recommendations (i.e. not legally binding) for the management of the river basin. Those are subsequently considered and decided on by the decision-making organ in each of the five Water Districts – the Water Delegation (Vattenmyndigheterna, 2018a). Water Councils, albeit top-down initiated in this particular case, are expected to represent a bottom-up perspective through providing local-regional stakeholders an opportunity to influence the management of the respective river basin (Eckerberg *et al.*, 2012). Their aim is broad – the achievement of improved water quality through focusing on both physicochemical (pollution) and hydromorphological anthropogenic alterations (such as watercourse restoration after timber floating), which affect among other fish migration and breeding (Lindegarh *et al.*, 2016).

The Ume and Vindel River Water Council has an annual budget of 50,000 SEK (5,000 EUR) provided by the County Administration. Half is designated as compensation to the chairperson of the

Council. The Water Council has two to four board meetings per year, one being an annual meeting. The river basin is an area of active forestry, hydro energy production, tourism, reindeer husbandry, mining, angling and like all Water Councils it is expected to strive towards an all-encompassing river basin approach and thus bring together that wide array of river basin stakeholders. Its board includes representatives of public authorities (the County Administration, the Swedish Forest Agency), private commercial stakeholders (the regional Forest Owners' Association, the Association of Hydropower Producers), state commercial stakeholders (the state power company), and non-governmental organisation (NGO) representatives (the Ume and Vindel River Fishing Council; the Swedish Society for Nature Conservation; and Collaboration Ume River – a local collaborative project focusing on the ecological effects of water regulation). In addition, some of the municipalities in the river basin are represented by both public officers and by three so-called 'water politicians', but keeping politicians engaged in the Council's work has proved challenging (Interview 2). Of those board members, the forest sector and municipalities were initially active but with time stopped coming to meetings (Interview 3), although they formally are still board members. The network of the Water Council consists of everyone who has signed up on the Council's mailing list and includes 75 people (as of March 2018).

*Fishing Association.* The Fishing Association, was established in the same river basin in 2015 from the bottom-up by angling enthusiasts who initially participated in Water Council meetings. They mobilised top-down financing and a budget of 14 million EUR for the period 2016–2023 from the LEADER<sup>1</sup> programme. With those resources, the Fishing Association entirely or partially funds local projects according to four priorities: developing management plans; strengthening regional collaboration for improved environment or fish status; sustaining fish stocks; and improving accessibility to fishing areas and marketing fish products (Vindelälven, 2015). Like the Water Council, the Fishing Association applies an all-encompassing river basin approach ('from mountain to sea'). The association's statutes underscore that it should strive to be beneficial to the general public and the local community (Vindelälven, 2015).

The board members of the Fishing Association include representatives of public authorities (County Administration, some of the municipalities in the river basin area), state commercial interests (state power company), private stakeholders (a tourist company and sea fishermen), NGO stakeholders (Ume and Vindel River Fishing Council), and a representative of the Vindelälven-Juhtatdahka Biosphere Candidature. Since its focus is more narrow so is the representation of interests and in contrast to the Water Council, environmental NGOs are not represented.

### *Aims of the two collaborative arrangements – is there an overlap?*

In documents from its initiation, the motives of the Water Council were described as follows:

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<sup>1</sup> LEADER is a programme for local-led development financed by four EU funds: EU Rural Development Fund; European Maritime and Fisheries Fund; EU Social Fund; and the EU Regional Development Fund. It is co-financed by the Swedish Board of Agriculture, as well as from Västerbotten County Administrative Board and six municipalities in the region. LEADER stipulates that private, non-profit and public sectors work together to contribute to local development (<https://nya.jordbruksverket.se/4.3be9f42016bd87d7cece0f7f.html>, last accessed 11 November 2019).

*‘Advantages of Water Councils: [they present] a holistic perspective on water resources; give local participants the opportunity to influence decisions at an early stage and include the local perspective in them; improve the conditions for carrying out concrete measures; stakeholders and authorities can learn from each other; simplify the consultation procedure; a knowledgeable Water Council weighs heavily in the decision-making procedure.’ (Vattenrådet, 2009)*

Those statements are quite vague and are visions rather than aims. The same document also mentions mapping and analysis of water status; improving environmental monitoring programmes; acting as a communication link between the local level and county authorities; and informing society about activities that affect the water. It is noteworthy that under the subtitle ‘Measures Programme’, the Water Council is stated to provide;

*‘[...] realistic proposals for measures, cost-effective solutions’, further specified in that ‘[...] the Water Council can participate in the execution [of the Measures Programme.]’ (Vattenrådet, 2009)*

With these initial stipulations, the Water Council could have taken form as any of the three types of collaborative arrangements: policy, organisational and action since its general aims were defined quite broadly. Indeed, there are examples of other Water Councils in Sweden – such as the Emå River Association – that function as organisational/action collaborative arrangements, mobilising project financing and implementing measures (Emåförbundet, 2018).

However, the Ume and Vindel River Water Council functions mainly as an information platform in practice. Its chairperson who is also involved in the implementation of concrete measures (and took three months leave of absence to participate in the restoration of another river), underlined its role as an important link between local knowledge and interests and decisions made at the regional level regarding the management of the river basin.

*‘I see the Water Council’s biggest advantage in ordinary people meeting representatives from the County Administration in an enabling setting. Not as lecturers and addressees but rather [people] sitting at the same table. [...] The best thing about it is probably what cannot be seen in the fisheries environment: [...] that people who never would have met otherwise can sit and talk to each other. And we have owners and small energy producers who are somewhat in conflict with the County Administrative Board who sit together with a representative from the county at the same coffee table out in the forest. It’s hard to set a value on that but it’s probably worth a lot! For both sides!’ (Interview 2)*

The Water Council’s function as an information platform was confirmed during the observed annual meeting. There, both the chairperson and the County Administration representative gave presentations on government plans for the region. Both sought continuous two-way communication by encouraging participants to come up with questions and proposals for what should be prioritised in the river basin. This suggests that it functions as an organisational collaborative arrangement (Margerum, 2008), with an ambition to influence policy. However, the chairperson sees its potential to inform policy as limited:

*‘If everyone must agree, we won’t have a sensible response. It will be so meaningless that no one will want to sign under it. [...] [The Council] is not supposed to be a referral body. [...]’ (Interview 2)*



Likewise, none of the interviewees knew whether the Water Council gives any recommendations that are subsequently considered and decided upon by the Water Delegation. At the annual meeting the observed participants posed solely questions of informative character. The Water Council was not used by the Water Authorities in a consultation process in 2018, where in a three-month period the public could comment on the Water Authority's environmental quality standards for heavily modified by hydro energy production water bodies and propose changes to those plans (Vattenmyndigheterna, 2018b). Instead, stakeholders were expected to contact the Water Authorities directly.

The Fishing Association achieves its stipulated aims through redistributing the granted funds to projects. Its board decides which projects to finance and the association currently owns two of the seven funded projects (as of September 2018). These two include the full-time employment of the Fishing Association's head administrator, and increasing physical and digital accessibility to the river. The externally managed projects include promoting coordination between those local and regional organisations that implement the Fishing Association's strategy; enable sea trout migration upstream; improve accessibility to the river basin; support the establishment of a small production facility for packaging locally caught fish; and enhance participation of youth and women in the management of the river basin. Since the main task of the Fishing Association is the redistribution of funds, it fulfils the criteria of an organisational collaborative (Margerum, 2008) but is near the action type because of its strong focus on the redistribution of resources for concrete measures.

The Fishing Association makes decisions through deliberation and seeks consensus within the board (Vindelälven, 2015). The attended Fishing Association board meeting was more structured and formal than the Water Council meeting, with a detailed agenda that the secretary made sure was kept to. This follows by consequence of the Fishing Association's clearly focused aims, detailed statutes and process rules. Two-way communication was not sought. Participants were encouraged to pose questions of informative character after points in the agenda were presented and before voting, rather than to come up with new ideas or suggest changes.

#### *Stakeholders' perceptions of the arrangements' aims*

All interviewed board members of the Fishing Association had a shared understanding of the association's aims. In contrast, interviewees neither shared a common perception of what the Water Council's aims are or should be, nor how they could be achieved. Several of the Water Council board members pointed out that especially in the initiation phase there was lack of clarity about what the Water Council plans should do. These claims were confirmed by the Fishing Association interviewees who had been involved in the Water Council's work in the first years after its establishment but eventually dropped out as it did not meet their expectations. Most had expected a hands-on approach and to implement concrete measures. One interviewee said:

*'Nothing happens [in Water Councils] in my opinion, when actual action is concerned – getting something physically done. [...] The Water Councils are an instrument which is too blunt, in my opinion.'* (Interview 7)

Despite the possibility to influence government river basin management plans, one interviewed board member did not perceive the Water Council as a *two-way* collaborative forum, but rather as a forum for

*one-way* dissemination of information from the governmental agencies to local stakeholders. This opinion was confirmed by Fishing Association representatives and questions the collaborative nature of the arrangement per se (Margerum, 2011). However, alike the chairperson, other interviewees underlined the Water Council's importance as a discussion forum facilitating two-way information exchange with the Water Authorities (Interviews 3, 4, 5).

The studied Water Council has a very limited budget and different stakeholders have different perceptions whether this is a problem or not. While the chairperson, the County Administration representative and an NGO representative all expressed the opinion that the current financing is more than sufficient given the role that the Water Council has been delegated, other stakeholders, such as the representative from the Swedish Forest Agency see the Council as severely underfunded to be able to be effective in the management of the river basin. S/he explicitly pointed out underfinancing and inability to support specific measures and actions as one of the main reasons as to why many stakeholders, such as private forestry companies lost interest and dropped out of the Water Council:

*'The idea to work from a river basin perspective is very, very good! And so much more could be done if resources actually existed up here, resources which the Water Council could use! It feels like a lot of the resources go out for the administration of water management. [...] Many of the stakeholders within the Water Council would like to work with more concrete measures, such as maybe spreading of information to businesses, companies and all the others who operate here, close to the water.'* (Interview 3)

When discussing the Fishing Association, on the other hand, all the interviewees claimed that the available resources are sufficient given its aims.

Neither the mining industry nor the indigenous community have representatives on the boards of any of the two arrangements, leaving those interests unrepresented in the management of the river basin. Participants from both arrangements pointed out that particularly the absence of representatives of the indigenous community in their organisation is a shortfall, as their interests are important in relation to the management of the river basin (Interviews 1, 4, 6, 7 and 11). The interviewed representative of the National Association of Swedish Sami (SSR) was not familiar with the two arrangements' work and voiced surprise and dissatisfaction with not being included or at least being enquired about the Sami position on water management in the river basin (Interview 12). In contrast, the interviewed chairperson of one of the two reindeer husbandry unions whose territory is within the river basin did not see the lack of Sami representation as a problem. S/he expressed satisfaction with how the water is managed in the river basin and did not deem it necessary to take part in either of them (Interview 13).

As far as power relations are concerned, interviewees from both arrangements perceived angling stakeholders to have greater influence on what issues are tackled and what solutions are chosen. This was mainly attributed to their deeper knowledge on the issues that both arrangements address, especially concerning fish migration and breeding. In the Water Council, they were perceived as steering the Council's focus mainly towards problems connected to fish migration and fish stocks, pushing to the background other problems the river basin faces (Interview 3). In the Fishing Association, one interviewee perceived inland projects of importance for angling as being prioritised over projects that would benefit sea fishermen (Interview 8).

### Stakeholders' perception of results

Respondents had noted that even if it took some time for the Water Council to settle into its role, it now functions as an organisational collaborative arrangement.

*'The guidance has become better, in my view. In the beginning it felt as if we were tramping on the same ground. The meetings were only about information and the overall perception was that we weren't getting anywhere with this. There were no specific decisions made and no specific measures. This was an initiation phase that was pointlessly long until [...] things started to happen. It was a pity because I believe that we lost a little... It took time to build up the trust again and start working.'* (Interview 3)

Interviewees have opposing opinions on whether the Water Council has led to positive social outcomes within the river basin. While those from the Fishing Association deemed it as ineffective (Interviews 1, 7, 10), most respondents from the Water Council consider the arrangement as having increased social capital in the river basin (Interviews 2, 3, 5). Both the County Administration representative and the Water Council's chairperson claim that its work has led to the creation of new collaboration initiatives (spinoffs), as well as to improved dialogue between stakeholders who did not communicate before that. This claim is confirmed by the fact that several respondents from the Fishing Association had attended meetings of the Water Council before initiating their own arrangement. Another example is the consolidation of the NGO Collaboration Ume River as an official association. Although its chairperson, who is also on the board of the Water Council, does not agree and conversely sees it as a parallel organisation that was initiated independently from the Water Council (Interview 9), the Water Council's meeting was organised directly after the annual meeting of the NGO as '... it included more or less the same stakeholders.' (Interview 2). Together with the chairperson's constant referral to work carried out by the NGO during the Water Council's meeting, this suggests quite close linkage between the two arrangements.

Although the Fishing Association was established more recently, all interviewed representatives were unanimous about its success in building bridges between stakeholders who previously were in conflict and/or never had communicated their viewpoints. The Fishing Association's role in mobilising funds, which requires significant expertise and dedication, and the consequent redistribution of those funds to 'good projects', was positively evaluated by its board members. Interestingly, the Fishing Association was also positively evaluated by interviewees from the Water Council. They underscored its positive role in channelling resources towards concrete measures, while materialising an aim of central importance to local stakeholders that had not previously been addressed.

No respondent connected specific positive environmental outcomes to the Water Council's work. Moreover, respondents were split in their position on whether positive environmental outcomes were part of its aim. Rather, most saw it solely as a forum meant to lead to positive social outcomes. This is important given the role that Water Councils are expected to play in establishing management plans aimed at improving water quality and attaining 'good status' according to the WFD (Vattenmyndigheten, 2018a). The Fishing Association, on the other hand, was perceived by some respondents as an arrangement that could potentially aid the achievement of positive environmental outcomes by materialising local development projects (Interviews 2, 10, 11).

## Discussion and conclusion

*Which factors can explain why a new collaborative arrangement was established within an area where one already existed?*

Analysing the two collaborative arrangements reveals both similarities and differences (see [Table 1](#) for comparison). The top-down initiated Water Council has broad aims with the ambition to address all issues affecting the basin's water, including diffuse pollution, while the bottom-up established Fishing Association has a narrower focus. The severity and scope of the problem at hand predetermines the magnitude, nature and scope of the measures needed to address complex problems (i.e. water quality) generally lead only to partial improvement ([Sabatier et al., 2005](#); [Margerum, 2008](#)). The interviewees'

Table 1. Summary of results.

	Water Council	Fishing Association
<i>Type of collaborative arrangement</i>	Organisational/Policy	Organisational/Action
<i>Bottom-up/top-down characteristics</i>	Top-down initiated through the implementation of the WFD. Top-down financed by state authorities.	Bottom-up initiated but top-down financed through EU, state, regional and municipal funding.
<i>Funding</i>	Very limited funding. Most stakeholders see it as sufficient given the Council's current aims and functions. Interviewees interested in carrying out concrete measures see the funding as inadequate.	According to interviewees, the Fishing Association has ample funding given the association's objectives.
<i>Aims</i>	Serves mainly as a forum for exchange of information between local stakeholders and governmental authorities. Provides local stakeholders the possibility to influence the management plans and prioritisations of authorities.	Redistribution of funding to projects which aim at developing the region through addressing issues concerning fish stocks and fish products.
<i>Stakeholders' representation and influence</i>	Broad representation of public and private interests. The indigenous community is not represented. The sport fishing stakeholders are perceived as having more influence than other stakeholders on the issues discussed.	A narrower representation of public and private interests. The indigenous community is not represented. Projects of interest to sport fishing are perceived as being prioritised.
<i>Stakeholders' perceptions of aims</i>	Most interviewees claimed that the aims of the Water Council initially were unclear which led to disappointment among participants. At present most agree that it serves as a forum for two-way information exchange between authorities and local and regional stakeholders.	The Fishing Association representatives had the same perceptions about what the association's aims are.
<i>Stakeholders' perceptions of results</i>	Considered by most Water Council representatives as successful as information exchange forum and in network creation. This view is not shared by Fishing Association representatives.	The Fishing Association is considered as successful in supporting hands-on action in the river basin by both its interviewed representatives as well as representatives of the Water Council.

criticism of the Water Council is therefore not surprising given that the overall aim – improved water quality – remains unachieved. In contrast, respondents were much more positive in their perceptions of the functioning of the Fishing Association, which focuses on more limited issues such as fish migration that can be noticeably improved by concrete actions.

The disillusionment in the Water Council was further fuelled by its unclear and vague aims. Since different stakeholders are interested in achieving different aims, it is important when collaborating to develop clear common objectives or a ‘collective purpose’ (Margerum, 2008). The stakeholders with an affinity towards action collaboration were attracted initially to the Water Council because they believed it was the right forum for implementing concrete measures. Since it functions as an organisational/policy arrangement with perceived limited influence, it did not fulfil their expectations. Stakeholders interested in concrete measures (including the Water Council chairperson) eventually created other platforms for materialising those interests, such as the Fishing Association. With its clearly formulated and narrower aims, the Fishing Association targets the ‘right’ stakeholders, and avoids a discrepancy between aims and expectations. Additionally, clearly stated aims facilitate the implementation of outputs (Sabatier & Mazmanian, 1980) and the evaluation of whether or not they are attained (Sabatier *et al.*, 2005). On the one hand, the complex problem-focus of the Water Council led to an inability to achieve environmental outcomes. On the other, the breadth and unclarity of the aims led to disappointment in its inability to achieve expected outcomes and a negative perception of its work among some stakeholders, despite progress in achieving social outcomes such as new networks.

The expectations stakeholders had about the arrangements’ aims proved important in relation to financing. Both arrangements are state financed, albeit with a quite different budget size at their disposal (see Table 1). From their inception, Water Councils in north Sweden have had inadequate financing to meet all of their stated aims (Eckerberg *et al.*, 2012), making it difficult to maintain collaboration and implement tangible outputs (Koontz & Newig, 2014; Emerson & Nabatchi, 2015). Research on the WFD’s implementation in the Azores also stresses underfinancing as one of the main constraints (Cruz *et al.*, 2017). Nevertheless, the Water Council is seen as underfinanced only by those stakeholders who initially saw it as a potential action arrangement and perceive its inability to finance concrete measures as a shortfall. Since the Water Council was initiated by the Water Authority which also decides on its annual budget, it was probably never intended to be action-oriented. Instead, resources to carry out concrete measures must be applied for separately with the Fishing Association as a successful example. Hence, in conclusion the two arrangements, albeit both organisational, addressed different issues, met different expectations among the stakeholders, and applied different methods in achieving their aims.

*In what ways do the two arrangements compete with or complement each other?*

Answering why a new collaborative arrangement was established in the same river basin helps to answer this question. Although the action-orientated Fishing Association was evaluated positively by all, some interviewees also saw the Water Council as resulting in positive outcomes (Table 1). The results show that two parallel organisational collaborative arrangements can play an important role in the management of the water within the same river basin. With its different focus and particular aims, the second arrangement neither competed for the same stakeholders, nor for the same resources. The Water Council could have taken up any of the three forms according to the official documents at the time of its initiation: action, organisational and policy, as evidenced by other Water Councils, and thus



could well have addressed those aims that the Fishing Association later took up. Instead, this Water Council took up the role of facilitator for information exchange between government authorities and local-regional stakeholders and consequently lost those participants who expected it to be more action-oriented. The shift and interchange of stakeholders between the two arrangements should not necessarily be viewed as a negative development. Local stakeholders who are interested in implementing concrete measures are more commonly engaged in local action collaborative arrangements than in regional organisational/policy collaborative arrangements (Margerum, 2008). By retaining the most relevant stakeholders, the more policy-oriented Water Council focus its meetings on more general issues. The void it left was swiftly filled by a bottom-up initiated organisational/action collaborative arrangement that took advantage of available state financing. Since some of the initiators met through the Water Council, it clearly played an important role in network creation. This reshuffle enabled those stakeholders interested in on-ground action to initiate action within the Fishing Association.

In the studied case, the existence of two water management arrangements within the same river basin has not entailed an extra load on the same stakeholders in the area and increased transaction costs as Eckerberg *et al.* (2015) and Lubell *et al.* (2010) suggest could happen. Rather, the different collaborative arrangements attract different stakeholders and fulfil different aims, while together allowing for more comprehensive water management in the region. Having two organisational collaborative arrangements with different specific foci in the same river basin provides varying collaborative fora for stakeholders with different interests to engage in ways that correspond to their respective interests. This higher acceptance of delegated roles by participants in the collaborative arrangement could lead to the attainment of river basin improvement goals (Biddle, 2017). The collaborative arrangement that did not mobilise new financial resources paved the way for another arrangement to do so. Therefore, there was no competition for resources between the two. Since both arrangements are state supported and fulfil different functions in the management of the river basin, it could be concluded that the authorities have found a way of establishing collaborative approaches in the management of the area's water as required by the WFD through both action, organisational and policy collaboration at a regional level. Still, it is important to note that there is little to no communication nor coordination between the two arrangements, regarding, for example, which issues they address, which is a serious shortfall in polycentric governance that could hinder institutional adaptation (Koontz *et al.*, 2015). One way to resolve this problem as suggested by previous research is through state regulated coordination (McCord *et al.*, 2017).

*To what extent, and if so how, do the two arrangements address the effects of forestry on water ecosystems?*

Even if the two collaborative arrangements complement each other, neither was found to address forestry impacts on water. This is surprising given that the Vindel River basin is located within a heavily forested area with commercial logging. Very few representatives from the forestry sector participate actively in the Water Council and none in the Fishing Association. Around 50% of Swedish forests are owned by individual private forest owners and previous research has shown that these forest owners are generally not interested in collaborating over improved forest water quality as they do not perceive it to be a problem (Mancheva, 2018). Within the scope of existing soft regulation as decided upon at the national level, decision-making regarding forestry largely lies with forest owners at the local level. The regional level is thus shown to be the inappropriate institutional level for focusing on water quality issues connected to forestry practices.

The regional level however was shown to be the most appropriate realm for the anglers' interests, who managed to influence the agenda of both collaborative arrangements thanks to their knowledge on aquatic environments. Other local stakeholders were perceived as having much less influence leading to power asymmetries in both arrangements and confirming previous findings on collaborative approaches' susceptibility to power imbalances (Brisbois & de Loe, 2016). Not having built the required capacity among participating stakeholders to enhance participation on more equal grounds (Özerol & Newig, 2008) is an obvious deficiency of both arrangements. Together with the lack of communication between the two arrangements, this indicates that the river basin is managed through a decentralised polycentric approach that is inappropriate for addressing complex environmental issues with highly asymmetric power distribution among stakeholders (Morrison *et al.*, 2019). It also indicates that the river basin level, just like the local, is probably not the correct institutional level to address the complex problem of diffuse pollution from forestry and land use, which requires cross-sectoral interplay. Further research should investigate whether a more centralised polycentric governance approach could be applied at Margerum's (2008) policy/national level and if it is better matched for a collaborative cross-sectoral approach to minimising the effects forestry has on water quality.

## Supplementary material

The Supplementary Material for this paper is available online at <https://dx.doi.org/10.2166/wp.2020.202>.

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## Interviews

- Interview 1 (2017). Vindel River Fishing Association project leader, 25 April
- Interview 2 (2017). Ume and Vindel River Water Council chairperson of, 25 April
- Interview 3 (2017). Public sector (Swedish Forest Agency) representative in the Ume and Vindel River Water Council, 26 April
- Interview 4 (2017). NGO (Ume and Vindel River Fishing Council) representative in the Ume and Vindel River Water Council, 28 April
- Interview 5 (2017). Public sector (County Administrative Board) representative in the Ume and Vindel River Water Council, 28 April
- Interview 6 (2017) NGO (Vindelälven-Juhtatdahka Biosphere Candidature) representative in the Vindel River Fishing Association, 2 May
- Interview 7 Public sector (municipal) representative (substitute) in the Vindel River Fishing Association, 5 May
- Interview 8 (2017). Private sector (sea fishermen) representative in the Vindel River Fishing Association, 5 May

Interview 9 (2017). NGO (Collaboration Ume River chairperson) representative in the Ume and Vindel River Water Council, 11 May

Interview 10 (2017). NGO (Ume and Vindel River Fishing Council) representative in the Vindel River Fishing Association, 12 May

Interview 11 (2017) Public sector (County Administrative Board) representative in the Vindel River Fishing Association, 15 May

Interview 12 (2017). National Association of Swedish Sami (SSR) operative head and legal representative, 16 October

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