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Article

Actors' Perceptions of Issues in the Implementation of the First Round of the Water Framework Directive: Examples from the Water Management and Forestry Sectors in Southern Sweden

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Abstract: The EU Water Framework Directive exerts a major impact on water management structure and aims, and water use activities in the member states. This paper reviews the perceptions of the early WFD implementation in a case study area in southern Sweden. The focus is on the perceptions of both water management and forestry actors, the latter as a potential diffuse source impact on water quality. This study highlights the considerable complexity of reorienting or rescaling governance given the complex existing systems particular to the area, the multi-interpretable early policies on implementation and the complexity of interpreting the regionally-focused WFD approach in the largely locally-focused Swedish system. While the first phase of implementation is now long past, conclusions on the complexity of reorienting systems remain relevant, particularly with regard to non-point sources.

Keywords: water framework directive; governance; Västerhavet; Sweden; forest

1. Introduction and Aim

The EU Water Framework Directive (WFD) is currently being implemented across the EU with the aim of bringing all water bodies up to “good ecological and chemical status” by 2015 with full enforcement of the directive by 2027 [1]. The supra-national delegation of authority on water issues introduced with the EU WFD has been seen as being a potentially radical policy innovation [2], but also includes a number of issues for its implementation. These include the designation of river basin districts as well as the appointment of a suitable authority to apply the rules of the Directive (Art. 3.1) with

significant local involvement [3]. All of these requirements are likely to play out differently in different national contexts due to varying prerequisites in terms of administrative structure, established interests and policy priorities. The WFD may contribute to a rescaling of governance, whereby very different impacts in terms of actors' losses or gains of influence may now result as compared with the previous structure in each country [4,5]. There are also indications that changes in actor roles will depend on how they are able to deal with the rescaling, *i.e.*, their ability to work across scales and with the participatory and integrative requirements of the WFD.

Sweden is an interesting example for WFD implementation given Sweden's major focus on municipal self-government and the historically strong importance of resource-based interests such as forestry, which has a diffuse source impact on water quality [6–8]. This paper studies the perceptions of the actors in the first round of the WFD directive implementation within the Swedish Västerhavet Water District. In particular the study asks how participants perceive the changing governance structure, including authority distribution, due to the WFD implementation. This study thereby adds a governance-oriented case study in southern Sweden to assessments of WFD implementation in other case study areas in Sweden (e.g., [6,7,9]). The following sections describe the study's background with regard to the case study in terms of changes caused by the WFD, based on a multi-level governance perspective. The paper then outlines the case study method and the results, particularly in relation to the impact at regional and local levels.

2. Background

Multi-level governance is regularly defined as the integration of decision-making in government on several levels and the integration of the supranational, in particular the EU-level as well as private parties and NGOs [10]. Multi-level governance is also regularly seen to include changes in the distribution of authority and the inclusion of potentially competing administrative requirements (*cf.* [3]). As a result, the implementation of new tools, such as the Water Framework Directive, could be expected to impact the distribution of authority. Given the framework design of the WFD, and the relatively large degree of freedom this allows the individual state concerning the implementation of the directive [5], the perceptions of challenges and requirements for reorientation of practices amongst those involved in the implementation are important to understand and include the impact on new governance structures. The WFD can be seen as a multi-level governance tool [4] that results in the rescaling of water governance: it changes the distribution of authority across levels and may result in some actors losing or gaining influence, although this also depends on their own capabilities to work across scales [4]. Such changes will impact the national level, which will also develop specific ways to implement the Directive that serve as guides at the regional and local level. Regional and local levels within a state will thus face considerable demands as concerns regarding the integration and implementation of new organisational tools that originate, and are driven by, logics external to the state organisation [3]. In addition, other land use or industrial sectors with a potential impact on water quality will need to comply with the WFD and its requirements in both a stakeholder role and as impacted by potential measures under the WFD.

The general requirements of the WFD include (Art. 13) that regional water authorities must be developed on a river basin scale, and each of these are required to develop a river basin Management Plan and Programmes of Measures, including environmental quality standards along with identification

of cost-effective measures to fulfil these. The Programmes should also describe which authorities are responsible for which measures, they should coordinate with different stakeholders when relevant, and define the timeframe for accomplishing these measures. Development is carried out on a cyclical basis, with the first cycle of implementation of the Water Framework Directive lasting until 2015, with upcoming cycles ending in 2021 and 2027, respectively [11].

With regard to implementation in the Swedish system, the greatest changes resulting from the WFD are that water issues are treated by the river basin rather than by the county or municipality [12]. A specific process has also been introduced which concerns decision-making on the (binding or non-binding) nature of environmental quality standards or norms for water in Swedish legislation at large. This process is not dealt with here, but see for instance [3]. Sweden has thus been divided into five river basin districts, each of which consist of river basin areas composed of several county administrative boards, *i.e.*, including several regional denominations as these are divided in the general Swedish system of delineation of authority. Each river basin district is administered by a Water Authority, which, in the Swedish system, is identified as one of the county administrative board in the area. Each Water Authority is responsible for developing water management plans and related programmes of measures for its river basin area, including the requisite cooperation with other county administrative boards, municipalities and others in local bodies [13]. Due to the requirement for consultation, the water authorities in two of the districts included in this study (Västerhavet) have suggested that the local water councils should be developed to include local stakeholders impacted by water management. Such water councils are based on local water organisations (water management councils) that have been in place, particularly in southern Sweden, since the 1950s but have now been developed into a format which is compliant under the WFD in order to monitor water management plans and potential measures [12]. While it has been emphasised in some literature that water councils do not hold decision-making authority (e.g., [12]), the structure for management under the WFD at the local and regional levels was initially somewhat inconsistent, for example discussing the role of proposals for potential measures from such bodies [13] which potentially led to confusion amongst stakeholders.

Changes to the existing governance system, particularly in southern Sweden and Västerhavet, in response to WFD implementation in Sweden were thus relatively elaborate, and include:

- Regional delineation of water, based on river basins, which have been established in Sweden by including several existing regional delineations (counties) together that make-up the water district.
- Designation of a water authority to develop water management plans and programmes of measures, which in Sweden consist of one selected county administrative board from the counties that make up the water district.
- In southern Sweden, development of local water councils to serve as collaboration bodies for the regional water authority, rather than in their previous format of collaboration bodies for the municipality.

The above changes to the Swedish system of water governance therefore mean that the regional level, which is generally de-emphasised in the Swedish system as a non-elected, mainly implementing, arm of the state, is instead emphasised, although now with new regional delineations. The changes in water council areas also result in local collaboration bodies (apart from the municipality itself) becoming more

emphasised than previously. This is a shift from the pre-existing local coordination bodies, which were largely working in relation to the municipality and have not been judged to have exerted a major impact on measures taken. Rather the municipality is the emphasised sub-national decision-making unit in the Swedish system, *cf.* e.g., [7]. Both of these changes may, to some extent, impact what is often called the *planning monopoly* of the Swedish municipality, where the municipality is responsible for land use and planning decisions at the local level [14]. Jurisdictional mismatch may arise, particularly between previous systems of management and those newly introduced, posing significant implementation difficulties on both regional and local levels as well as in relation to land use. One example is the local level of the municipality which was formally responsible for the long-term protection of the water supply [13].

Authority distribution, or more broadly the governance of water, could thus be expected to result in both discussions on specific decision-making rights as well as discussions on coordination, in particular for the first implementation round of this system. Impacts affect not only in water management but also amongst stakeholders who may be impacted by the implementation of the WFD. In Sweden, forestry is a large-scale land use and thereby a potential diffuse source of impact on water quality (e.g., through fertilization of forest plantations where runoff may impact water systems). Forestry is, however, also particular in that, historically, forestry planning as a highly important industry traditionally functions separate from land use planning, whereas aspects of the WFD now require some integration [15]. As a result, concerns in the forestry sector over implications of the WFD were, from the outset, relatively extensive and as a result were dealt with in this study.

3. Case Study and Methodology

The case study targets the Västerhavet Water District, located in an area where water management issues have traditionally been pronounced. The area includes Sweden's second largest city, Gothenburg, and is the site of part of the County Administrative Board of Västra Götaland, which is the water authority for the Västerhavet Water District (See Figure 1).

Firstly this study draws upon a literature review on the Västerhavet water management system (for example water authority reports, water management plan and programmes of measures). Secondly, the study conducted a total of seven semi-structured interviews undertaken in 2010 during the first round of the implementation of the WFD. Interviews targeted the main administrative actors, as defined in the above background section, who were identified based on a strategic selection. These interviewees represented the Regional Water Authority and County Administrative Board (the water authority located at the Västra Götaland County Administrative Board and its Secretariat); the Göta River Water Council as the water council for the largest tributary in the area; the Göta River Water Management Council as a pre-existing stakeholder body of this water council, and Gothenburg City as the largest municipality in the area. In order to discuss opportunities for water management which would take into account industry in other sectors (potentially impacting water quality), actors in forestry have also been interviewed. Forestry was selected because it is a major industry which constitutes a potential diffuse source, as contamination from e.g., fertilizers used in forestry are dispersed across large areas and with considerable impact, particularly to small streams crossing the forested areas. Interviews with actors in forestry targeted a selection of state and small-scale forestry interests: the Swedish Forest Agency, the

state forest company Sveaskog, and the association for small-scale forest owners in the area (Södra skogsägarna). Interview questions in all cases targeted their experience of the implementation of the WFD, including the development of river basin management plans, consultation and participation. The interviews further targeted interviewees' perception of changes in the distribution of authority resulting from the WFD and its impact on existing administrative systems. All interviews were undertaken in person, recorded and transcribed in full. Interviews typically lasted about an hour.

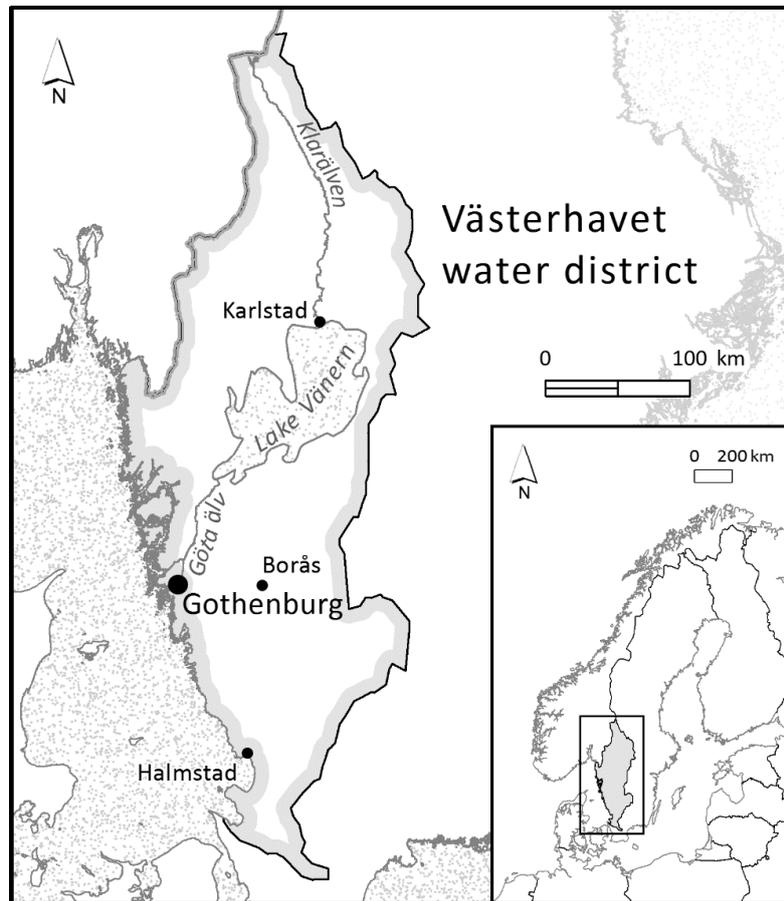


Figure 1. The Västerhavet Water District (revised from Västerhavet Water Authority 2011, GIS graphics courtesy of Magnus Strömgren).

Thirdly, the study draws upon a review of the Minutes and consultation statements. With regard to the Minutes, the study selected Minutes of the Göta River Water Council (Göta Älvs vattenråd) meetings ranging from its establishment in 2006 to 2009, which include some discussion of the stakeholders' perceptions of the process and implementation of the Directive (public material available on the council website). The study further draws on statements from the consultation received by Västerhavet Water Authority on the Management Plan and Programmes of Measures. Comments—Often in document format with lengths varying from a page to a couple of pages or longer—Were submitted during the March–September 2009 period of referral for these documents. The review of statements has targeted: (a) statements submitted by the main actors in administration as defined in interviewee selection above (Gothenburg Municipality and Göta River Water Council, as well as the summary of statements by the Västra Götaland County Administrative Board); and (b) statements submitted by stakeholders in forestry (a broader selection including all state forest organisations, forest owner or management bodies

submitting statements during the consultation: the Swedish Forest Agency, general statements by the Federation of Swedish Farmers LRF which is also the national private forest owners' association, the forest industry association Skogsindustrierna, private forest owner organizations Skogsägarna Mellanskog and Södra Skogsägarna, forestry management industry Bergvik Skog and state forest company Sveaskog). This selection does not include the forest products industry.

All statements, protocols and interviews were coded according to categories of perceptions on the development of the programmes of measures, participation and impacts on authority of different actors within the Swedish structure. All Swedish to English translations in the results section from interviews and other types of documents were done by the author.

4. Results

4.1. Perceptions of the Development of Programmes of Measures: The Role of the National and Regional Level

In general, interviewees noted that there were complications with the participation and involvement in the WFD in the first phase of implementation. This was due to very extensive and generally-oriented material and to the relatively short period for referrals onto the programmes as well as the water council structure for participation. However, most actors who were interviewed also noted that the WFD has had a greater impact in terms of focusing attention on water issues. A typical comment in interviews was that “We have more focus on water issues than we did before”. Also interviewees within the forestry sector typically noted that the water directive has brought “Water issues [in forestry] ... more significantly into focus”.

Organisation on national level in order to support the process, on regional (water authority vs. broader county administrative board structure) and on local (water council vs. municipality) level was impacted by the WFD process. On each of these levels, the role of the political control of the process was discussed and, to some extent, used as an explanation for some of the implementation problems so far. The national level was particularly criticised for its limitation in developing the guidance on implementation in a timely manner. In the interview the Swedish Forest Agency noted that its work on the Water Framework Directive was delayed by the time that was spent establishing the water authorities, as well as by the delay in guidance from the Swedish EPA on the process of work in the water authorities: guidance to what was, at the time, regarded as a potentially large impacting factor in terms of diffuse sources of pollution was thereby perceived as limited. Actors generally noted that political control either at national or lower levels—e.g., in providing advice on how to balance conflicting interests—had been limited and that most of the work with developing the implementation process for the WFD had fallen to civil servants. For example as an interviewee noted: “Political control ... has been very weak ... the Ministry of the Environment, overarching water management but also the ... now... Ministry for Rural Affairs ... have maintained a very low profile”.

This was seen to result in problems with regard to the role of the regional level. For example, interviewees noted that: “Water authorities themselves have had to do a lot of work in the development (of water management in relation to the Water Framework Directive) ... as guidance for their organisation was lacking from the start”. Statements from the consultation on water management plans

also note that the Water Authorities are expert administrative organisations (staffed by civil servants) and thus unable to make the political decisions required by weighing environmental and other societal goals, which results in limited means for decision-making. As a result, authorities may have had to move towards more general and assessment-based measures.

On the basis of work on environmental quality assessment, suggestions for programmes of measures and management plans were finalised for the first cycle of WFD implementation in December 2008, and, according to the schedule of implementation, were required to come into force in December 2009. The management plan summarised the work so far with regard to the areas of mapping of water bodies, development of environmental quality norms and programmes of measures, and participation in water management assessment. The water authority concluded that it had “[e]stablished that extensive and broad measures are required to reach the environmental quality norms” ([13] author’s translation). Rather than suggesting detailed measures, the authority identified 38 measures that constitute the basis for physical and other direct measures, which were given its mandate to direct measures to authorities and municipalities. One example is No. 21 on forestry that: “The Swedish Forest Agency should, in cooperation with the Swedish EPA and the Swedish Board of Fisheries, determine ordinance that imposes requirements for ... protection zones and other measures close to water so that good chemical status and good or high level ecological status is maintained or achieved” (Measure No. 21 of the Management Plan [13] (p. 132) and the Programme of Measures [16] (p. 11), author’s translation). The Management Plan notes state that given the complex nature of environmental quality norms, authorities and municipalities will, in many cases, need to undertake supplementary studies to clarify the measures necessary to achieve these ([13] author’s translation).

The Management Plan thereby concluded that setting environmental quality norms require not only technical but also administrative, legal and practical coordination. Thus, it advocated stepwise implementation which includes knowledge building and the development of supporting administrative measures [13]. Both the role of formal administrative actors and the water councils are highlighted, as well as funding issues: “Our goal is to have the water councils as a central part of the development of the Programme of Measures, where the water councils themselves develop suggestions for measures that lead to improved water quality. This local knowledge and local acceptance of processes is important in order to implement the right measures at the right place at the right cost. Formally there is no hindrance to active water councils pursuing their own management work” ([13], author’s translation). Statements on water councils as potentially undertaking management—And thereby potentially conflicting with municipal steering—Were not clear on the roles of different actors. Similarly, it was noted that “[T]he municipalities and county administrative boards will have a central role in the realisation of the programmes of measures. It is important that the experience with supervision and testing, among other matters, is utilised in order to continuously improve work” ([13] (p. 174); *cf.* [16]). On the other hand, “[F]or measures that lack a clear responsible operational actor to be undertaken in practice, a financial support system to finance or encourage actors to implement cost-effective measures is needed. In order to finance this support system and develop measures in different areas, financial instruments may be necessary” (*ibid.*). Clarification of the roles and funding has thus remained unsolved at this early stage of implementation.

Many bodies commented on the preliminary character of the Management Plan and Programmes of Measures, as well as noting problems in the documentation and consultation for these plans. Amongst

other issues, actors discussed the limitations to the consultation process in that the documents were too large and complex to properly involve the citizenry. Additionally suggestions for measures were developed under a severe time limit. An interviewee in administration also noted that the implementation in a state such as Sweden would have to take longer: “Many parts have been based on expert judgement ... progress isn’t quick when you have all these watercourses, which is not a situation for the rest of Europe”.

Therefore the WFD resulted in having relatively large-scale discussions on how to implement the system, largely at regional level and below with perceived limited state guidance. In addition, discussions on what extent different sectors should integrate considerations and what potential considerations were needed in the process were undertaken. As a result of these concerns, some actors provided statements to the consultation that this first water management cycle should, given the limited time and material, be regarded as a trial period to provide the basis for follow-up and assessment of proposed measures. However, while management programmes were criticised for not being detailed enough, it was noted that having too detailed and developed programmes would have limited local influence, knowledge and application by water councils and other actors in the future [17]. An interview with the Water Authority noted: “Detailed programmes of measures ... I do not think it matters how many people we have had, they could not have been made in any case, because they need to be developed through cooperation ... and cooperation takes time”.

4.2. Perceptions at Local Level

At the local level, the water councils were a new format for stakeholder participation. The Göta Älv Water Council was funded by the water authority administered by Göteborgsregionen (GR), which also administered the preceding format of local water cooperation stakeholder body since the 1980s. For example, from the basis of the established participatory structure, the Water Council also contacted other potentially interested bodies and allowed e.g., Kungälv Municipality to join the Council. Locally, WFD requirements were thus interpreted and implemented within the particular context of the area, and added to by consultations with additional bodies that were not part of the previous stakeholder body. A view that typified the understanding of interviewees in administration was: “When it starts to concern ... concrete measures we should have more people in... from the planning side, from the technical side”.

While the Management Plan noted that the water council, county administrative boards and the municipalities would play central roles in developing measures [13], interviewees noted difficulties with the somewhat unclear definition of roles and authority. Concerns particularly targeted the role of the Water Councils. For example, an interviewee at the local level noted that: “Proposing measures is a rather far-reaching step. Who do you represent when you suggest measures in a water council? ... There [should be] democratically elected bodies that should determine these kinds of things”. Water councils, another interviewee judged, “are also a somewhat odd constellation ... different water councils differ as to who joins and [who] is judged to be important. If representatives from fishing, fisheries councils and so on take part and play a dominant role in the water councils their issues are given a large scope”.

On the forestry side, concerns were also related to the local character of participation envisioned within the Water Framework Directive. Interviewees noted that while the forest owners’ organisation Södra has taken the stand that it should be represented in all water councils, the Swedish Forest Agency

and Sveaskog, for example, noted that they have had no such opportunities. The interviewee at Sveaskog said: “A forest owners’ association ... [has the] opportunity to let its members represent it in the water councils, but for us who have a total of perhaps 600–700 employees, if we join every water council then that will be a very heavy burden”.

As a result of these concerns, forest sector participation was also developed through setting up an informal forestry water council group, based on an initiative by the Federation of Swedish Farmers to join with participants from the forest industry sector (forest owners and forest owners’ associations) to discuss the implications of the Water Framework Directive. This group, amongst other matters, discussed the potential impact of the WFD on forestry and potential ways of responding to any such requirements. For instance, the interviewee at Sveaskog noted that Sveaskog had been involved in the dialogue with water authorities, which differed depending on water authority, with the industry being a primary party: “My experience is that this dialogue is the result of a forest sector initiative, it was not ... the communication path intended from the start, rather as the issue was raised the forest sector has taken this initiative”. Therefore, to some extent the higher-level organisation of forestry was developed as a result of what was seen as a local focus in the WFD and which was perceived as not sufficiently including more large-scale actors from forestry, especially as the sector may become impacted in relation to management of non-point or diffuse sources such as forest fertilization, which is a potential issue along large areas close to water.

Many issues thus remained to be developed, largely with regard to decision-making and, crucially, financing and potential reimbursement to actors who might be impacted by these measures. One interviewee in administration noted, in a rather typical comment, that “[t]he crunch issue is how to finance measures”. As most monitoring is carried out by public bodies, one issue was whether municipalities should fund further demands imposed by the Water Directive, or whether funding from the state level should be provided (e.g., [18]). The Water Authority noted that while funding had so far been supplied to water authorities supporting their work with the systematisation of knowledge, and to water councils for administration: “One concern is that the lack of financial resources will limit the opportunities to undertake concrete measures within water management activities. It is feared that the lack of means could also impact on the possibilities for everyone to participate, or participate on equal terms, in the coordination work” ([13], author’s translation). For example, Gothenburg Municipality, in their comments in the consultation, stated that the municipalities will play an important role in implementing the Directive and that the financing of the programmes of measures in this respect has to be made clear, as at the time it was difficult to assess which costs different actors needed to bear from the general Programme of Measures and its general suggestions on costs for different measures. Coordination between different actors would be needed for further development in the current and future implementation cycles.

5. Discussion and Conclusions

The implementation of the WFD during its first phase has shown the large-scale challenge of setting up new regional and local structures for decision-making on water quality. While the early stages resulted in a greater awareness of the importance of water management among participants, a number of issues were noted. Concerns regarding relationships between elected and participatory bodies in

clarifying requirements and developing and determining measures were noted, as a clear structure for making political decisions on priorities did not exist on the water authority level at the time (*cf.* [14]). These results concur with studies in other water districts in Sweden. In the case of a more northern Swedish water district, Hammer *et al.*, observed that challenges included coordinating monitoring within the district, that all stakeholders in the WFD were able to understand the technical information, and to manage diffuse sources of pollution [6]. Similar to this study's results, Andersson *et al.*, observed that: "Necessary municipal involvement in WFD-related measures for improving water quality will be difficult to achieve without associated guidance and financial support from the higher levels" [9] (p. 81). Both studies also noted that local actors at municipal level and in water councils listed unclear roles and responsibilities and funding issues as impediments to their participation. In addition, a number of potential measures also subject to the potential willingness of landowners (such as agricultural or forest land) to undertake them (*cf.* [9,19]). Considerations found in this study are not dissimilar to studies on WFD implementation in other areas, which have also noted that it may not be clear to all local actors to what extent certain issues are technical or may determine further decision-making ([4]; *cf.* [2,20]). It has also been noted that there are problems in decision-making when dealing with the complexity involved in WFD implementation (*cf.* [21]) and in "learning to work with new directives" [22] (p. 65). In the case of non-point sources such as forestry, and other large-scale land uses, such consideration may also relate to the scale at which implementation takes place; for instance, in this case, with regards to how to participate in a discussion of measures at a local level.

The WFD was built on a governance logic that is not particular to the specific state systems and cannot necessarily take issues into account such as the potential diverging role of different source emissions or varying structures which are of nationally important sectors in different countries. This may thereby be regarded as an illustrative case of the difficulty of integrating new governance principles and systems, such as those which are EU-based (*cf.* [10]). As highlighted in the Västerhavet Case, this process is affected by existing organisations on a sectoral as well as regional and national scale. As a result, "Whereas much multi-level governance research has focused on the relationships of EU central institutions to member states, it is the regional factors that seem to be of equal impact ... a core challenge of EU policy will be to recognize these different scales" ([23] (p. 244); *cf.* [24–27]). This type of novel multi-level considerations posed by implementation that takes place in context of different institutional settings—Where there exists an "institutional ambiguity" with relation to what rules and norms to apply and how—Has been highlighted by Hajer [28] and van Leeuwen *et al.* [29]. Van Leeuwen *et al.*, showed that the implementation of the EU Marine Strategy Framework Directive was considerably unclear as a result of interplay between national, regional and EU levels ([29]; *cf.* [27]).

While many of these problems in the Swedish process were compounded by the short period for participation, and to some extent with having to keep up with the EU schedule for implementation given a late start, they do highlight structural aspects of some of the implementation problems observed. While the formalisation of policy advice and a process for dealing with the challenges for implementation in these cases may require adjusting EU structures to the established national system [10], the case illustrates the extensive complexity in reorienting or rescaling governance based on a regional approach for the largely locally-focused Swedish system, and given its local government planning monopoly as well as the roles of established sectoral practices.

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Conflicts of Interest

The author declares no conflict of interest.

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