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Coordination and Participation Boards under the European Water Framework Directive: Different Approaches Used in Some EU Countries

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Abstract: River basin planning under the European Water Framework Directive (2000/60/CE, WFD) poses two major challenges to EU countries: coordination among administrative units for large-scale river basin planning and the inclusion of interested parties in decision-making processes. To face both challenges, many Member States have established Coordination and Participation Boards at the River Basin District or river basin level. These boards can be defined as multi-agency and multi-actor groups that support the development of inclusive and coordinated river basin planning to comply with the WFD requirements. The aim of this paper is to understand the functioning and effectiveness of the coordination and participation boards in promoting participatory river basin planning in seven EU countries. We built a conceptual framework, based on spatial fit, coordination capacity and participatory governance theories, to assess the scale at which these boards are established as well as the type of coordination and participation they support. The results indicate the relevance of the sub-River Basin District level to promote participatory decision-making. However, a clear linkage between participatory processes conducted at the sub-district level and decision-making processes at River Basin District should be established. Only if this link is well established are the outcomes achieved through the coordination and participation boards included in river basin plans. Moreover, we identified a lack of knowledge on how planning and implementation activities carried out at sub-River Basin District are aggregated and coordinated for the entire District. Research could contribute to this issue, by focusing on coordination mechanisms and problems that occur at the River Basin District level.

Keywords: Water Framework Directive; policy implementation; integrated water resources management; river basin planning; public participation; water governance; scale; top-down and bottom-up

1. Introduction

European water resources are definitely under pressure: more than half of surface water bodies have a less than good ecological status, and approximately 25% of the groundwater is reported to have a poor chemical status [1]. Moreover, European waters are endangered by over-abstractions and increasing climate change effects, such as droughts and short periods of rainfall [2]. In 2000, the Water Framework Directive (2000/60/CE, WFD) established the European strategy to address these increasing concerns about water resources. The reference to the principles of Integrated Water Resources Management (IWRM) is evident for some aspects of the WFD, such as river basin management,

participatory approach and the acknowledgement of the economic value of water. However, the WFD reflects a narrower and more technical vision of IWRM with a primary focus on water sector [3] and its overall aim is to establish a framework for the protection of water resources that applies to all available water bodies in Europe. For this purpose, two targets were set in 2000: first, preventing further deterioration of water bodies, and second, improving their state with the aim of achieving ‘good water status’ by 2015 (Article 4, WFD). As a ‘framework’ directive, the WFD does not prescribe EU countries what to do to improve water quality and management but rather tell them how to do it [4–6]. In particular, the WFD establishes the river basin planning process as the ‘central tool’ to achieve water quality objectives [7]. Outputs of this process are the River Basin Management Plans (RBMPs) that are manifold documents that go from the evaluation of the state of water bodies within a specific hydrological scale, the River Basin District (RBD), to the identification of a set of measures to improve and restore qualitative and quantitative aspects of water resources [7]. The identification of RBD as the management unit of water bodies, and the development of RBMPs, can be observed as the institutionalization of the principle of spatial fit at the European level [8]. This large-scale configuration for river basin planning poses a great challenge to EU countries in terms of coordination among the government tiers at different geographical scales of the RBD. Moreover, the WFD mandates the involvement of civil society at each stage of the planning process [9]. Kaika [10] argues that the new decision-making procedures and institutions that the WFD implementation mandates can be seen as ‘a top-down effort to create social capital’ and that the interaction between this WFD-generated social capital and the pre-existing social capital determines the final implementation. Newig and Koontz [11] synthesized this new approach for policy implementation established at the EU level with the expression Mandated Participatory Planning (MPP). The latter tries to grasp the main aspects of this implementation style that are: the creation of new governance levels and the need to improve horizontal and vertical coordination for effective policy implementation, the participation of private actors in decision making, ‘the creation of plans that are in themselves political programmes’ [11]. After the first implementation cycle (2009–2015) it was evident that implementation of the WFD has been cumbersome for many Member States [12,13]. By studying the adaptation to the requirements of river basin management and participation in thirteen EU countries, Jager et al. [14] concluded that ‘established routines of environmental decision-making’ were kept in most of the countries. Nevertheless, the authors found that implementation of the WFD encouraged the creation of organized boards that bring together authorities and stakeholders for the development of RBMPs [14]. These boards promote coordination and participation for river basin planning and can be seen, we argue, as the new social capital generated by the WFD under Kaika’s definition [10].

Even though the WFD does not formally require the institution of these boards, in the guidance document on public participation the European Commission suggests the creation of steering and advisory boards as methods to promote coordination and participation in many steps of the planning process [9].

We believe that the governance changes that occurred in EU countries as a consequence of the WFD implementation deserve a specific attention from research. Consequently, the aim of this paper is to understand what type of coordination and participation these boards support for the development of RBMPs. To this end, we performed a qualitative meta-analysis of the implementation strategies in 7 EU countries, focusing on the role of coordination and participation boards in the development of RBMPs. In this paper we refer to Coordination and Participation Boards (CPBs) to identify multi-agency and multi-actor groups supporting the development of river basin planning.

In doing so, this paper aims to contribute to the growing branch of the literature that addresses the governance implications of the WFD [15] and to provide useful suggestions for the future implementation cycle.

The rest of the paper is organized as follows: the second section provides more information about the procedural obligations established by the Directive for the development of RBMPs and public participation; the third section provides the theoretical framework that guides our analysis. We referred to the theories of spatial fit, coordination in public management and participatory governance and we identified three research questions: (1) At what scale are CPBs established? (2) How is coordination among administrations within the same RBD achieved? (3) How are civil society's interests included in RBMPs? The fourth part describes the method adopted to select the EU countries for whom CPBs are analysed; in the Results section, we analysed the formal institutional changes occurred in selected EU countries to comply with the WFD's requirements; in the sixth section, we discuss the results in view of the conceptual framework, focusing on what implications institutional changes have in promoting effective coordination and participation strategies; finally the Conclusion outlines the main results of our analysis, limitations and future avenues of research.

2. River Basin Planning under the EU Water Framework Directive

To achieve both objectives of good water status and not deterioration, the WFD establishes two main procedural obligations that EU countries should undertake. The first requires Member States to base the planning and management of water bodies on hydrological boundaries rather than on administrative ones. This requires setting up a new unit for the management and protection of river basins, the RBD, which is 'the area of land and sea, made up of one or more neighbouring river basins together with their associated groundwaters and coastal waters' (Article 2, WFD). For each RBD, an RBMP must be developed (Article 13, WFD), which includes the analyses of the RBD characteristics and of the main physical and societal pressures on the water resources; the designation of specific objectives for each water body according to the pressure and the state identified; monitoring programmes to trace improvement in the state of the water resources; the economic analysis of water uses and services; and the Programme of Measures (PoMs). The latter is a key document of RBMPs as it establishes all the activities that have to be carried out on water bodies to achieve the good status objective.

The second obligation asks Member States to engage in participatory processes by including all interested parties into the development of RBMPs. To operationalize this bottom-up approach, information supply, stakeholder consultation and the active engagement with civil society in the development of RBMPs are required by the WFD (Article 14). Both information supply and consultation are mandatory for WFD implementation but do imply a direct engagement of the public in the decision-making process, while active involvement is encouraged by the European Commission and implies collaboration among authorities and interested parties in the development and implementation of RBMPs and PoMs [9].

Due to the heterogeneity of water governance systems across EU countries, river basin planning and public participation can be achieved in many ways, and the Directive recognizes a high degree of flexibility in addressing both procedural obligations. For instance, the WFD does not require that specific competent authorities accountable for the WFD are created, nor does it state that one specific implementation approach (such as centralized, regional, or local) is superior to the others. In addition, the Directive recognizes that the planning process may occur at different geographical scales (i.e., sub-basin) or per water themes [7]. In the same vein, public participation may be carried out at the scale deemed most appropriate by countries as long as a clear reference to the RBD is made and information flows across the different scales are guaranteed [9].

Despite this flexibility, the WFD is unequivocal on the effects that both requirements should produce. For instance, Article 3 states that 'Member States shall ensure that [. . .] all programmes of measures are coordinated for the whole of the river basin district' (WFD). This requirement has implications both in terms of coordination across administrative levels at different geographical scales of the RBD and for cross-sectoral coordination among different water-use sectors that must align their interests and objectives to improve the state of the water bodies [3,16]. In the same vein, the WFD

links the achievement of effective policy implementation to public participation [4,17,18]. For instance, participatory planning is supposed to improve the quality of river basin planning, as expert-based and local knowledge are included in the decision-making processes, as well as to increase social acceptance towards decisions that should, in turn, facilitate implementation. Moreover, public participation should increase public awareness and the ownership of environmental problems [19] and facilitate a process of mutual understanding among parties as well as social learning [3,20,21].

In summary, the adoption of both procedural requirements by Member States is expected to produce results in terms of administrative and sectorial coordination, as well as of inclusive decision-making. Whether these outcomes are achieved depends on the actions and activities that the actors involved in water management and protection establish [22]. In this paper, we focus on a specific activity that Member States usually engage in to promote inclusive and coordinated river basin planning and management: the creation of CPBs. These boards, established at the RBD or sub-RBD scale, address the challenge of coordination through the creation of multi-agency and multi-actor groups that develop or support the development of RBMPs and PoMs.

3. Conceptual Framework to Analyse CPBs

Cross-administrative coordination and civil society engagement in decision-making procedures are surely issues widely discussed in public management literature.

New Public Management (NPM) reforms that occurred in many Western democracies during the 1980s and 1990s challenged the notion of the State as the only provider of public services [23]. Central government lost its capacity to give direction to society, while the space of decision-making became wider including decentralized state actors, societal actors and supra-national actors [24]. This modern setting is referred to with the overarching definition of governance. As Hufty observes, governance is a social fact that has to do with the way in which each society develops its own ways of making decisions and resolving conflicts [25]. This definition explains why this term is widely used in governance literature. Kjær [23] provides a basic definition of governance saying that it entails 'something broader than government, and it is about steering and rules of the game'. For our research's objectives, three specific aspects of this social phenomenon are relevant. The first relates to how multiple actors that are engaged in decision-making processes coordinate their activities to find solutions for collective problems (Coordination in public management and administration). The second addresses the issue of how decision-making processes include the interests of civil society in policy development (Participatory governance). The last one regards the capacity of social institutions to match themselves with the natural and social domains they influence (Spatial fit).

Coordination in public management and administration. Many governance studies agree that the dispersion of authority across jurisdictions and societal actors is normatively superior because it allows decisions to be taken closer to the places where problems arise [26] and it facilitates the achievement of benefits at multiple scales as well as experimentation and learning [27]. However, this broader space of decision-making, together with the hollowing-out of the State, makes coordination a huge challenge.

MLG research, for instance, raises 'the difficulty of having to coordinate governmental and non-governmental actors at different territorial levels in ways that do not conform with the hierarchical relations or the mechanisms of consultation currently in place in member states' (Piattoni, 2008 as cited by [28], p. 12). Rhodes stresses the meaning of governance as self-organizing networks that risk creating problems to governability when not properly managed by central government [29]. Dang et al. [30], indeed, define governance capacity as the 'actors' ability to cooperate to solve collective problems' while institutional capacity is intended as the institutional settings that allow actors' cooperation. Strategies to improve coordination often find a compromising solution between the increase of central control and the promotion of more collaborative types of decision-making [31]. Rhodes argues that for managing networks of interdependent actors that characterize any governance system, government should search for new tools different from traditional authoritative power, such as 'game-playing, joint action, mutual adjustment and networking' [29]. Elinor Ostrom stresses the need for institutions that

enable trust among participants engaged in a 'dilemma situation' of resources management to promote social cooperation [32].

The implementation of the WFD engages first and foremost public administrations concerned with water management and protection. For this reason, research addressing the issue of coordination in public administration is particularly relevant for our study. Wegrich and Štimac describe three main types of coordination that have been observed for public administration and executive government: hierarchical coordination, negative horizontal coordination and positive horizontal coordination [31]. In the first type of coordination, decisions are made at high levels (by executives, leaders, etc.) and affect lower levels regardless of the individual distribution of the costs and benefits [31]. In negative horizontal self-coordination, instead, the policy is developed by the group with the main responsibility for the issue and then is analysed by the other units involved in the decision-making to ensure that the draft does not violate or contradict other policy domains [31]. Finally, positive horizontal self-coordination occurs when proposals from different units are combined to elaborate a joint plan. This type usually involves the creation of task forces or specific working groups [31].

Participatory governance. We borrow definitions from both collaborative governance and participatory governance theories. Collaborative governance is defined as 'A governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets' [33]. Participatory governance, instead, can be defined as 'the regular and guaranteed presence when making binding decisions of representatives of those collectivities that will be affected by the policy adopted' (Schmitter, 2002 as cited by [34], p. 595). Engagement of non-state actors is certainly the common trait of both definitions; however, collaborative governance implies a two-way communication and influence between public agency and stakeholders and its aim is a multilateral consensus-based deliberation [33]. Partnerships, collaborative management, interactive decision-making can provide examples of this bottom-up approach of decision-making [33,35]. Participatory governance, instead, implies decision-making processes initiated from the top and that include stakeholders before the policy is created [34]. Newig and Koontz [11] place WFD's requirement for public participation under the umbrella of participatory governance and underline that the rationale for having stakeholder involved in the development of RBMPs is to enhance the effectiveness of policy delivery. The guidance document of public participation, in fact, clarifies that 'Public participation is not an end in itself but a tool to achieve the environmental objectives of the Directive' [9]. Newig and Koontz [11] identify three dimensions of participatory governance: representation, information flow and influence. The first relates to the extent to which participatory processes reflect the variety of interests of society. The second, at least in the terms of the WFD, can range from information supply to the public (one directional flow), consultation of interested parties (bi-directional flow with advisory function), active engagement (bi-directional flow with deliberative function). Finally, influence is related to the capacity of participatory processes to actually determine decision-making [11]. This last dimension is particularly relevant for our study, because it provides information on whether, and under what conditions, the outcomes of participatory processes are included in RBMPs.

Spatial fit. Spatial fit, and its related problem of fit, refers to the attempt to improve the capacity of social institutions to match themselves with the natural and social domains they influence [8,36,37]. In terms of water resources management, the answer to the problem of fit has come from the river basin approach or watershed approach [38]. Although river basin management was a practice since ancient time, it is only in the last century that this approach was deemed at the base of sustainable water resources management [39]. Empirical research on the topic highlights the difficulties of matching institutional boundaries with natural ones [40] and stresses the need to take into account also other dimensions of fit, for instance, with political, socioeconomic and cultural features, to support sustainable water management [8,41–43]. CPBs established at the river basin level, can be regarded as an endeavour to make institutions more consistent with natural and societal processes.

The theoretical background described in this section allowed us to identify the three relevant factors that we analysed in the selected case studies: the scale, the type of coordination and the type of participation. For each factor, a specific research question has been identified and possible options outlined. Table 1 summarizes the theoretical background, the factors, the research questions and options that guided the analysis of CPBs in the selected EU countries.

Table 1. Conceptual framework used to analyse the CPBs.

Theoretical Background	Factors	Research Question	Options
Spatial fit	Scale	At what scale are CPBs established?	Administrative RBD Sub-RBD Hierarchical coordination
Coordination in public management and administration	Type of coordination	How is coordination among administrations within the same RBD achieved?	Negative horizontal self-coordination Positive horizontal self-coordination
Participatory governance	Type of participation	How are civil society's interests included in RBMPs?	Representation Information flow Influence on decision-making

Source: author's own elaboration.

4. Materials and Methods

This article analyses empirical studies, European Commission implementation reports and consultants' reports that address the topic of water governance adaptation to WFD requirements in EU countries. Using the Scopus and Web of Science databases, papers were first screened by title and abstract to exclude non-English written papers; papers on physical or natural science; mathematical, technology and software-based research; studies on the exportability of the WFD to non-EU countries and meta-analyses. This first screening led us to consider 70 studies. This analysis allowed us to understand the overall implementation pattern for the following countries (not for all EU states as none or very few studies were found for some countries): Denmark, Latvia, Lithuania, Poland, The United Kingdom, Greece, Finland, Germany, Italy, Spain, Portugal, France, Sweden, The Republic of Ireland and The Netherlands. These countries represent a good sample of different approaches used for WFD implementation: the centralized approach (Denmark, Latvia, Lithuania, Poland, The United Kingdom, and Greece), the federal/regional approach (Finland and Germany), the river basin approach (Italy, Portugal, France, Sweden, and Spain), the local approach, (The Republic of Ireland), and the multi-level approach (The Netherlands). However, as the aim of the study is to understand the structure and functioning of CPBs, we restricted our analysis to 64 studies referring only to those countries for which detailed information on the topic was available. Thus, the focus was placed on the following countries: Denmark, England and Wales, Germany, Italy, France, Spain and Sweden. This selection certainly constitutes a limitation to a more comprehensive analysis of coordination and participation across EU countries. Nevertheless, this study allows for an analysis of some of the different approaches used in Europe to comply with the WFD requirements.

5. Results

Implementation of the procedural obligations described in the Section 2 varied considerably across EU countries depending on the different domestic water policies already in place. In this section, we analyse formal implementation of both requirements of river basin planning and participatory decision-making in the seven selected countries with a focus on CPBs. In particular, we looked at how countries have adapted their water governance structures and what role, composition, functioning and resources 'availability CPBs had in the development of RBMPs. We overall identify two main

approaches for the implementation of the WFD: the centralized and the decentralized. Specifically, we identified the centralized approach in Denmark, England and Wales, and the decentralized in Germany, Italy, France, Spain and Sweden although these countries differ considerably within the group.

5.1. Centralized Approach for WFD Implementation

5.1.1. Denmark

The first phase of WFD implementation in Denmark was characterized by a rigid top-down approach. According to Liefferink et al. [44], the main reason for this centralized planning approach was related to the fear that a more participatory approach would have increased the costs of the decision-making process. The Nature Agency (NA) under the Ministry of Environment (MoE) and its seven local agencies were given the responsibility for the development of RBMPs for the four RBDs [45]. Additionally, PoMs were designed in a highly centralized process with a limited inclusion of municipalities despite their role of recipients and implementers of the measures [46]. In 2013, however, the Ministry of Environment reformed water governance for WFD implementation and established 23 new water councils (WCs) at the sub-RBD level composed of a maximum of 20 members each, representing a variety of stakeholders of water resources protection, use and management [47]. The new structure for the WFD implementation is organized as follows: the NA is still responsible for RBMP development, and it establishes a fixed regulatory framework within which WCs can work (e.g., the NA establishes the minimum environmental improvements that PoMs must make). Then, the municipalities organize and facilitate the WCs' work, which basically consists of providing advice to the municipalities for the drafting of PoMs. [47]. Concerning funding sources, for the implementation cycle 2015–2021, the Danish government allocated DKK 695,700,000 (€93 million) to the 23 water councils and municipalities, and the money was distributed across WCs according to the NA's criteria [47]. Hence, WCs have a twofold function as they allow for stakeholders' participation in the planning process, and they provide advice to local authorities even if they do not have veto power over municipalities' decisions.

5.1.2. England and Wales

WFD implementation in England and Wales shares many common features with the Danish experience. During the first planning cycle (2009–2015), in fact, water planning was centralized at the Environment Agency (EA), with poor consideration of local authorities and stakeholders' organizations, which were treated merely as 'co-delivers' of PoMs rather than 'co-deciders' [48]. To ensure a degree of coordination and stakeholder consultation, the EA established RBD Liaison Panels composed of representatives of key sectors of the district who were responsible for PoMs implementation [19]. However, these panels were mainly used by the EA to transmit information to other administrations and stakeholders, rather than being real participatory bodies [48,49]. Similar to Denmark, for the second cycle (2015–2021), the government launched the so-called 'Catchment-based approach' (CaBA), re-focusing the scale of water planning from 10 RBDs to 93 individual catchments [50]. At the catchment scale, the national government encouraged the creation of multi-actor groups, called 'Catchment Partnerships' (CPs). The structure, composition and organization of the CPs are not established by the national government, but these partnerships can organize their activities based on local needs. However, the aim of these collaborative groups is to facilitate collaborative works between local communities and the EA's planning process through the identification and implementation of measures. For its part, the EA encourages such initiatives by providing data, the framework of analysis and funding support. During the start-up of the process, the government allocated £1.6 M to be distributed across the CPs according to criteria delineated by the EA. After the initial funding cycle, the CPs are expected to establish their own funding sources to support their activities [51]. Moreover, in each CP, an EA Catchment coordinator is responsible for ensuring that there are information flows

and collaboration between the experts of the EA and the CPs [51]. Although the EA should show ‘due regard to the advice from those partnerships in relation to the priorities set out in the River Basin Management Plan’ [51], the leading role in the development of RBMPs and PoMs is kept in the hands of the Environment Agency.

5.2. (Decentralized) Federal Approach for WFD Implementation

Germany

Water management in Germany is traditionally organized around administrative-political boundaries rather than hydrological ones [41]. Following the WFD, 10 RBDs were identified, and the Länder Ministries for the Environment were appointed as competent authorities for WFD implementation for all water categories [52–54]. As many RBDs include more than one Federal State (Länder), they are required to coordinate their activities for RBMP development [52]. A joint working group of Federal States, called LAWA, insures cross-state cooperation, but the development of joint RBMPs among Länder belonging to the same RBD is not general practice [14]. The governance for WFD implementation varies depending on the Federal State but is generally organized as follows: at the Länder level, the federal ministry for the environment provides general instructions on the planning process and approves RBMPs. At this level, coordination boards are established, composed of groups of technical experts to support the implementation of the WFD. However, real stakeholder engagement and participation occur at the catchment level, where long-term participatory institutions, called working groups (WGs) or area cooperation (AC), were established [14,20,42,55,56]. These CPBs are established by the Länder Ministries for the Environment and are usually led in cooperation with the Federal State environmental agency, which sets the agenda for meetings and selects participants among existing networks of organizations [34]. These boards are composed of local authorities, water-user associations, and NGOs, and their task is to discuss and identify feasible and cost-effective measures [57]. The measures selected by the CPBs are then returned to the Länder Ministries for the Environment to elaborate the final versions of the RBMPs and PoMs. In terms of funding, we did not find information for the whole country, but both Newig et al. [42] and Koontz and Newig [34] report that the Lower Saxony Ministry for the Environment allocated €15,000 to each AC to support their work.

5.3. (Decentralized) Traditional River Basin Approach for WFD Implementation

5.3.1. Italy

In Italy, the institutionalization of river basin management occurred before WFD implementation. In 1989, Law 183/1989 was the first attempt to establish a systemic management of land and water resources based on river basin boundaries with specific river basin authorities. In addition, Law 36/1994 identified ‘optimal territorial units’, where intermunicipal agencies identified by regional administrations were in charge of managing all the water services, from water capture to sewerage and depuration systems, in an integrated way to overcome administrative fragmentation. However, both laws were implemented to a limited extent. The main governance innovations established by the laws—namely, the creation of functional jurisdictions for water management and protections—were basically overlooked [58]. In 2006, for WFD implementation, specific competent RBD authorities (RBDAs) were designed and appointed to develop RBMPs and PoMs and ensure public participation [52]. According to the law, these RBDAs should have replaced the pre-existing river basin authorities and become the coordinating and decision bodies for WFD implementation. However, this replacement occurred only in 2016, so that the first and second rounds of RBMPs were approved under the supervision of the weak pre-existing river basin authorities and large-scale river basin planning was very limited [58–61]. Moreover, in the first implementation cycle, no additional funding sources were allocated by the Ministry of the Environment to the RBDAs. Regardless, the governance for WFD

implementation is organized as follows: regional administrations (R in Figure 1) develop their own water protection plans, which are similar to RBMPs and contain PoMs. RBDAs should ensure that the regional plans are consistent with the objectives set at the RBD level. RBDAs are composed of two decisional bodies, namely, the institutional and the technical committees. The first is the deliberative body of the RBD authorities and is composed of the head of the RBD authority, all the regional administrations in the district, representatives from the main national ministries and representatives from the agricultural sector, which have only an advisory function. The second is a technical body that provides technical support for the development of RBMPs (Article 63 Legislative Decree 152/2006). However, in addition to these institutional bodies, coordination is mostly achieved through more informal meetings at the district or sub-district level. RBD authorities also organize road shows in different places and at different levels of the RBD to provide information on WFD implementation to citizens and stakeholders. In summary, although RBDAs are competent authorities for WFD, the main actors for river basin planning are still the regional administrations (see in Figure 1, where the transparent triangle of RBDA is compared to that of regional administrations).

5.3.2. France

In France, river basin management was established long before the WFD, in 1964, when Water Agencies (WAs) at the river basin level were created [62]. Moreover, in 1992, the French Water Development Master Plan established planning at the watershed level, and citizens were allowed to give input to these plans by means of Basin Committees and Local Water Commissions [63]. Following the WFD, the French water governance is organized around two main governance levels: the RBD where the WA, and in particular its legislative body called the Basin Committee (BC), adopt a river basin management plan (SDAGE) that is equivalent to the RBMP under the WFD [44]. In addition, there is the local level, where local authorities develop their own water management plans (SAGE) and implement measures [64]. At the RBD level, the BC is composed of elected representatives from ministries (20%), regional and local governments (40%), water users and associations (40%) (such as farmers, industries and NGOs). The river basin plans adopted by the BC are then approved by the *prefêt*, which is a national government representative designed as the official competent authority for the WFD in each RBD, so that central control over the plans is insured [44]. The WAs are also composed of executive bodies, called, again, water agencies, which are 'state-owned, financially autonomous bodies responsible for levying abstraction and pollution charges on water users' [64]. At the sub-basin and local levels, local authorities can elaborate the cross-municipality plans called SAGE. The latter is developed through a local water commission (CLE) composed of representatives of the state (25%), local authorities (50%) and users (25%) [65]. Upon WFD implementation, water governance in France has become increasingly less centralized [64]; however, at the RBD level, through the *prefêt*, and at the sub-RBD level, because of CLE composition, central control is ensured.

5.3.3. Spain

River basin management in Spain was established in 1926 when the '*Confederaciones Sindicales Hidrológicas*' were created. Moreover, in 1985 river basin plans became compulsory and approved as Royal Decrees by the government [66]. Upon the WFD implementation, the country has been split in 25 RBDs, of which 9 are inter-regional RBDs made up of several *Comunidades Autonomas* (regions hereafter), while 16 are intra-regional RBDs. Competent authorities for inter-regional RBDs are the *Confederaciones Hidrográficas* (CHs) that are river basin authorities belonging to the Ministry of the Environment and Rural and Maritime Affairs (MMARM). CHs have a high degree of financial autonomy because they receive fees from users; however, the MMARM also contributes to their functioning by providing them with financial resources and appointing their presidents and water management boards [67]. In the intra-regional RBDs, instead, regional hydraulic administrations are the main competent authorities for the WFD implementation [52]. In this organization, CPBs are established both at national and RBD levels. At the national level, the National Water Council

(NWC) is composed of the national government, regional and local administrations, CHs and regional hydraulic administrations that together are called *Organismos de Cuenca*. NWC provides information and coordination for the development of RBMPs and for the drafting of National Water Plan. At RBD, the CHs are composed by four different bodies: the executive body, the management board, the Water Council and the Committee of Competent Authorities. These bodies have a similar composition, including representatives from state, regional and local administrations belonging to the same RBD and the main water users. Although with different functions for water planning and management, all these bodies support coordination and participation for the planning process. In particular, the Water Council is the organism in charge of planning process and participation, while the Committee of Competent Authorities ensures administrative cooperation for the execution of water protection standards [52]. Concerning public participation, very inclusive forms of participation have been established following the WFD implementation. However, participatory processes are usually organized at regional level where specific sub-groups of public and private stakeholders are established; moreover, specific offices have been created within regional administrations to foster participation [18,20].

5.4. (Decentralized) Adaptive River Basin Approach for WFD Implementation

Sweden

Sweden has undergone formal institutional changes to comply with the river basin management requirement established by the WFD [14]. Before the WFD, competences for water protection and management were shared between two actors: the central state was responsible for water regulation, and the municipalities were responsible for water and land-use planning [14,68,69]. For the WFD, 5 RBDs and new regional water authorities (RBDAs) were created [70]. These new authorities are responsible for coordinating water management among the regional county administrations of the RBD, while in each RBD, formal decision-making is carried out by a Water Board (WB), which is made up of government-appointed experts [14]. Coordination among the RBDAs is also foreseen; for instance, the measures listed in the PoMs are the same for all RBDs [70]. While the RBDAs are responsible for formal decision-making for WFD implementation, participatory processes are mainly conducted at the sub-RBD level through Water Councils (WCs), which are composed of regional and local authorities, companies and interest groups [70]. At the local level, stakeholder engagement was already in practice, and WCs inherited this tradition. The function of the WCs is twofold: they have an advisory role and should be consulted by RBDAs before making decisions, even those regarding technical issues (e.g., the classification of water bodies or EQS). They should also serve as arenas for knowledge sharing, the identification of water problems and the development of solutions [70,71]. WCs receive economic support from water authorities depending on some requirements, such as the broad representation of stakeholders, the size of the catchment, and the number of municipalities and inhabitants [71]. However, the advice and comments provided by WCs on the RBMPs and PoMs are not binding for the RBDAs [71].

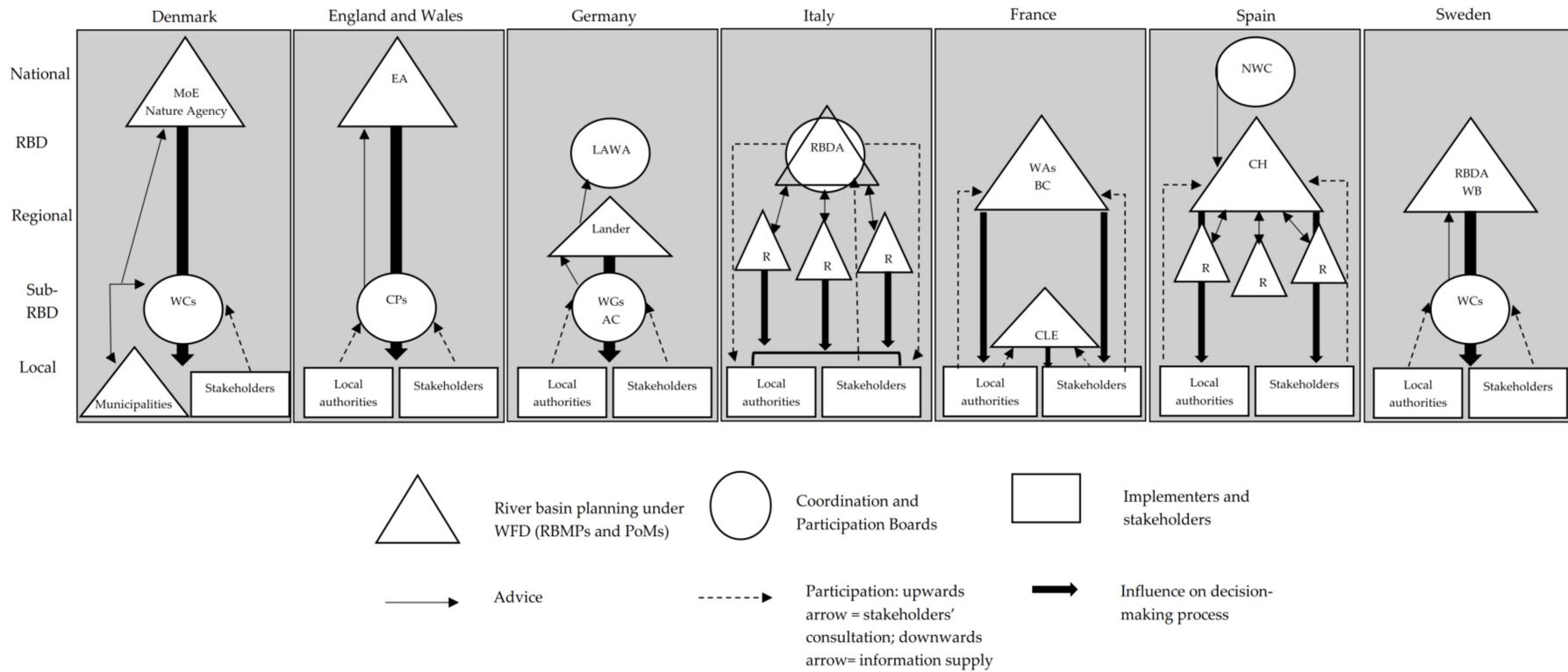


Figure 1. Governance structure for WFD implementation in the selected countries. Source: author's own elaboration.

6. Discussion

After the analysis of the implementation structures, in this section we discuss the implications that institutional changes undertaken in the 7 EU countries have in promoting effective coordination and participation strategies. Table 2 summarizes the main results of our analysis based on the conceptual framework provided in Table 1. In doing so, we are left with four questions that summarize what emerges from the countries' analysis and may suggest future research needs.

Table 2. Summary of the main results based on the conceptual framework provided in Table 1.

Country	CPB	Scale	Type of Coordination	Type of Participation
Denmark	Water Council	Sub-RBD	Hierarchical + positive horizontal coordination	Representation: Medium Information flow: Stakeholders consultation Influence: High
England and Wales	Catchment Partnership	Sub-RBD	Hierarchical coordination	Representation: Low Information flow: Stakeholders consultation and active engagement Influence: Low
Germany	Area Cooperation Working Group	Sub-RBD	Information not available for the RBD, While positive horizontal coordination within AC	Representation: Medium Information flow: Stakeholders consultation Influence: Low
Italy	RBD Authority	RBD	Negative horizontal coordination	Representation: Low Information flow: Stakeholders consultation (mostly regional and state representatives) Influence: Low
France	Basin Committee Water authority	RBD and Sub-RBD	Positive horizontal coordination	Representation: Medium Information flow: Stakeholders consultation Influence: High
Spain	National Water Council <i>Confederaciones Hidrográficas</i>	National and RBD	n.a. (not available)	Representation: High Information flow: Stakeholders consultation and active engagement Influence: mixed results
Sweden	RBD Authority Water Council	RBD and Sub-RBD	Positive horizontal coordination at municipal and RBD level. No clear coordination between the two levels	Representation: Medium Information flow: Stakeholders consultation Influence: Low

Source: author's own elaboration.

6.1. Denmark and England: Softening the Top-down Approach (Apparently?)

- **Scale.** Denmark and England have both reformed their water governance structures moving from the first to the second implementation cycle. Interestingly, both countries opted for the sub-RBD scale as the optimal level for enhancing coordination and participation rather than the RBD scale. In England, the appropriateness of the sub-basin scale was endorsed both by the government and the involved organizations [50]. In Denmark, the large-scale river basin approach is perceived as

a limiting factor since the size of the RBD is considered to be too broad to facilitate access to local knowledge [47].

- Type of coordination. As Figure 1 shows, in either case, the structure for WFD implementation is top-down, with the NA and EA leading the planning process. The presence of WCs and CPs certainly softens the hierarchical approach to coordination; in Denmark, as it will be discussed in the next point, collaborative planning has occurred in some cases. In alignment with Wegrich and Stimac [31], we could argue that in Denmark, a mix of hierarchical coordination and of positive horizontal coordination achieved through CPBs, is in place. In England, the hierarchical approach seems to still dominate in the implementation process as it is discussed in the next point.
- Type of participation. The three dimensions of participation identified by Newig and Koontz, display quite differently in the two countries. Concerning representation and information flow, in Denmark, decisions on who can have access to the process are defined within the fixed regulatory framework given by the NA. Participation was limited to stakeholder organizations, with an uneven representation of interest groups, generally in favor of agricultural water users [72]. The strict framework provided by the NA, defining timing, funding allocations, competences and influence of WCs on PoMs elaboration, allowed WCs and municipalities to work effectively [47] but limits these participatory processes to ‘expanded stakeholder consultation’ and does not provide any possibilities for active public involvement [72]. Concerning the influence, in Denmark the measures concerning stream management proposed through the collaboration of the municipalities and WCs were adopted by the NA for the development of RBMPs [47]. In this case, CPBs were given a deliberative power to identify the most cost-effective measures and the clear regulatory framework provided by the NA, together with funding allocation, allowed an effective co-production of PoMs [47]. However, a second factor explains this successful collaborative planning and relates to the role of municipalities in the planning process. Municipalities, in fact, by acting as facilitators and intermediaries between the central level and lower level of decision-making, established a link between the *loci* of knowledge production and those of policy formulation. Scholars highlight the need for institutions that act as ‘interface’ to ensure that the results of collaborative planning are integrated into the decision-making processes [73] and for the active participation of decision-makers in continuous learning processes [74]. In the Danish case, municipalities fulfill both needs and this may explain the elaboration of collaborative planning.

In England concerning representation and information flow, the EA gives considerable leeway on CPs organization and activities. Euler and Heldt [17], for instance, describe the CPs in the Thames catchment that are coordinated by the non-profit charity Thames21 ‘which works with the community to improve rivers and canals for people and wildlife’. The authors highlight that despite the non-profit organization is able to promote a very participative form of information sharing and consultation, representativeness in participatory processes is not guaranteed because all the activities are volunteer-based [17]. Similarly, Rollason et al. [75] found that CPs are embedded into local social structures and are found to be effective in improving the horizontal integration of management practices among the members of the partnerships. However, the same authors highlight that traditional top-down approaches still dominate planning and management activities and that ‘participation is limited in either power transfer and/or representation’ [75].

6.2. Germany: To Change or Not to Change?

- Scale. In Germany, long-term participatory institutions have been established at the sub-RBD scale to comply with WFD requirements. These CPBs, together with the Lander, determine how the policies are shaped and implemented in practice, despite the WFD requirement of large-scale river basin management [57].

- Type of coordination. Cross-administrative coordination in Germany occur at supra-federal state level, within the LAWA, and at sub-basin level, though AC and WGs. However, since the development of joint RBMPs among Lander belonging to the same RBD is not general practice, we consider only coordination carried out at sub-basin scale. The authors found that the AC supported the ‘mutual understanding of the views and positions of stakeholders and even help to develop a shared perception of problems’ [76]. This may suggest the achievement of positive horizontal self-coordination within the AC.
- Type of participation. CPBs in Germany usually include several interest groups from both public and private domains. Municipalities, local water authorities, farmers and fishery associations, environmental NGOs, water boards and state representatives usually participate in AC or WGs [20]. However, many authors highlight the uneven representation of environmental concerns compared to agricultural interests and highlight the risk for ‘co-optation’ of environmental actors from stronger interest groups [42]. Participation through AC has similar characteristics with the WCs in Denmark in terms of expanded stakeholder consultations and is found to be effective in promoting social outcomes such as networking, satisfaction of participants, mutual understanding and shared perceptions of environmental problems [20,76]. Concerning influence, the extent to which the decisions made by the CPBs are actually considered by the federal ministries of environment for the development of RBMPs and PoMs is questionable. Scholars found a limited impact of the measures identified by the WGs or AC on the final draft elaborated by the federal ministry for the environment [20,34,42,57]. There may be strategic reasons behind the decision of using measures identified by the CPBs only as a general reference [34]; in addition, water planning in larger and aggregated management units cannot be, by nature, as specific as local water planning [42]. However, authors identify other reasons that may explain the low capacity of the CPBs to influence decision-making. The first relates to the unclear framework provided by the federal state environmental agency to define CPBs’ functioning. Koontz and Newig [34] indicated that the guidelines given by the federal state environmental agency to AC in Lower Saxony were vague and unclear about how the CPBs could structure their work. This caused performance to vary across working groups of AC even for substantial aspects, such as how to propose measures and how to decide which ones to include in the final draft [34]. The second aspect is intrinsic of the complex shift from administrative-based to hydrological-based water planning. Germany, like almost all EU countries, should consider who decides ‘in this complex balance between local basin bodies and federal national administrations’ [3]; otherwise, it runs the risk of creating two disconnected governance levels, which will end up in confusion, conflicts and overlaps [73].

6.3. Italy, France and Spain: Keeping the Status Quo?

- Scale. Italy, France and Spain established planning and the management of water bodies along hydrological boundaries before the WFD. Moreover, all these countries set up competent authorities and CPBs at the RBD scale to comply with the Directive’s requirements.
- Type of coordination. Despite these commonalities, the results in terms of coordination for river basin planning are rather different. After the first implementation cycle in Italy, RBMPs were a simple collection of regional water protection plans without clear coordination mechanisms at RBD in place [13]. Regional administrations in Italy have had competences in water protection and management since the 1970s; consequently, it would be illogical, even risky, to completely change the water governance structure. However, as Rainaldi [60] explains, problems emerge because a number of planning tools, such as the river basin plans established by Law 183/1989 and regional water protection plans established with the Legislative Decree 152/1999, coexist and overlap with RBMPs without the law clearly defining the roles and hierarchies of these different planning instruments. These overlaps, together with the great delay in providing RBDAs with their full functions, significantly affected the capacity of coordination for RBMPs development. Using Wegrich and Stimac definitions [31], Italy shows the features of negative

horizontal coordination although improvements from the first to the second cycle are evident at least for some RBDs (see for example the second implementation cycle in Alpi Orientali RBD at <http://www.alpiorientali.it/>).

Compared to Italy, in France since 1964, water governance has increasingly been characterized by hydrological-based water planning and management. As Aubin et al. highlight [65], the polycentric water governance system observed in France, where functional water agencies are present at both the RBD level (WA) and at the sub-RBD level (CLE), is anchored in a long history and the influence of the WFD on that is limited. However, some authors highlight that coordination between planning at RBD and planning (SDAGE) at the municipal level (SAGE) may be an issue in terms of implementation of measures. For instance, Christophe and Tina [77] highlighted that the municipalities may be more interested in re-election than in water protection, and this may be an obstacle for the implementation of some types of measures.

In Spain, while many studies have focused on how coordination and participation are achieved at regional level, the capacity of CH to coordinate the planning at RBD level is not evident from the analysed literature.

- Type of participation. In contrast to the other countries analysed, in Italy, the implementation of the WFD has not prompted the creation of CPBs at the sub-RBD level, where participation would deliver more effective results. Certainly, a number of participatory initiatives do exist within regional administrations, but it is not evident how these are related to the development of RBMPs and PoMs. Official planning for the WFD remains structured with top-down and technocratic approaches, as proven by the inclusion of few stakeholders in the decisional bodies of RBDAs. In France, both the BC and CLE provide robust platforms for stakeholders' consultation. Although citizens are not directly engaged in the decision-making processes, both the BC and CLE are composed of elected representatives, giving an indirect voice to citizens.

Spain has been a pioneer country in promoting participatory processes for water resources management. Civil society actively engaged with participatory processes, with peaks of 644 participants in Cantabria [20] and over 1600 people in Catalonia [18]. This outstanding participation, however, is only partially the result of the WFD requirement of public participation but mostly relates to a large movement called the 'new water culture' (*nueva cultura del agua*) [78]. This movement, in opposition with the previous policy paradigm—largely based on large infrastructure building and supply management—considers water as finite resource which requires an integrated and holistic management. The influence of these large participatory processes on the development of RBMPs varies depending on the case. Kochskämper et al. [20] found that the result of participatory processes was mainly a list of generic measures and no explanation was provided in the final RBMPs on whether and how these proposals have been used. On the contrary, Parés et al. [18] found that the deliberative process conducted in Catalonia had a 'significant impact on the river basin management policy' and the innovative measures were actually included in the RBMP. Despite these remarkable results, it is interesting to note that many authors question the fact that Spanish water governance can be considered an example of democratic governance. Following Parés [78], 'Even though a deliberative mechanism could be carried out in really democratic conditions [. . .], if this deliberation does not have a real impact on politics and society and, above all, if the resources between participants are unequal, then we cannot qualify this form of steering as a form of democratic participation' and he concludes 'Formal participatory mechanisms, therefore, become just one more space of influence in a complex and net-worked governance system'. In the same vein, Cabello et al. [79] found that mainstream narratives, reflecting traditional coalitions around large infrastructure investments, dominate the process at the expense of local and rural interests. Cultural factors, such as uncertainty avoidance by the government [79,80], power distance [80] and lack of a deliberative culture [18] are discussed as possible reasons that hinder the shift to more democratic processes.

6.4. Sweden: Is full Compliance Enough?

- Scale. Sweden has established functional water jurisdictions, the RBDAs, and participatory bodies, the WCs, at hydrological scales to comply with the WFD. At least in terms of formal adaptation to EU requirements, Sweden can be considered the 'the leap-frog' [14], questioning traditional implementation theories, such as the goodness-to-fit approach, which hypothesizes that when domestic policy arrangements diverge from European requirements, implementation effectiveness is likely to be low [81].
- Type of coordination. However, in this new governance setting, the municipal level is still relevant in terms of water and land-use planning. The addition of the new governance layer for water planning, the RBD, is causing problems of coordination because competences that were exclusively under the jurisdiction of municipalities are now shared with the RBDAs [69]. Despite the WFD implementation enhanced coordination within and between municipalities, as well as positive coordination between concerned parties at different administrative levels, there is a risk of a 'disintegrative process' between water planning and land-use planning [69].
- Type of participation. Participatory process in Sweden reflects the technical/scientific approach for WFD implementation that the country has undertaken (for instance, the environmental quality standards are legally binding in the country). For this reason, public participation in Sweden is more conceived as stakeholder consultation rather than active involvement of civil society, despite that large representation of interest groups is provided by WCs [71]. WCs are based on pre-existing water associations and their effectiveness in engaging local stakeholders and undertaking measures seems to be related to the legacy of cooperation capacity that was in place under pre-existing organizations [71]. A recent study highlighted the need to refine the role of WCs as municipalities do not consult WCs to ask advice on implementation [70]. According to Dawson et al. [16], the WCs provide a good basis for improving the integration of multiple kinds of knowledge into decisions, but this collective knowledge production is still separated from decision-making procedures. Combining scientific and local knowledge to develop RBMPs and PoMs is not an easy task, as evidenced by Hammer et al. [82]. Some authors argue that the technocratic structure for the implementation of WFD, which is focused on water quality goals and data-oriented, somehow conflicts with learning and knowledge integration that WCs should enhance [16].

7. Conclusions

This paper seeks to contribute to research regarding the functioning and effectiveness of new institutions, actions and activities that have come into being as a result of WFD implementation [14]. In particular, we focused our study on the multi-agency and multi-actor groups, we called CPBs, that many EU countries have established to comply with the WFD requirements of coordination and participation for river basin planning.

Three research questions, and related theoretical arguments, guided our analysis of CPBs. The first was an exploratory question aimed to understand the scale deemed more appropriate by EU countries to establish process of coordination and participation for river basin planning. We found that in most of the countries analysed, CPBs are set up at sub-RBD level. Some scholars identify the success of integrated water resources management in a combination of top-down and bottom-up policies and approaches [65]. The requirement of the WFD to adopt RBMPs at RBD scale responds to top-down approaches of decision-making, the District being too large for meaningful stakeholder participation. In addition, some characteristics of the WFD itself, such as the focus on water quality goals, its data-oriented approach, and the strict deadlines for water quality improvements, are prone to top-down decision-making and somehow conflict with participatory processes that require time and willingness to engage with complexity. Given that, the creation of CPBs at the sub-RBD scale

can be seen as a positive signal of Member States' attempts to find a sound balance between the two decision-making approaches.

The second research question aimed to identify how coordination among administrations within the same RBD is achieved. Overall, we found that the implementation of WFD promoted different forms of horizontal and vertical coordination but, hardly, this concerns the RBD. It is fair to say that most of the studies analysed focus on a narrower scale, such as a river basin, river or regional level, while the RBD usually lies in the background of their investigations. Consequently, it was not possible to draw general conclusions on how coordination is achieved at the RBD level for the seven countries we analysed. It is logical to think that most of the studies have been carried out at the scale where most of the activities related to the implementation are conducted, that is at the regional, municipal or river basin level.

The third research question concerned how the outputs of participatory processes are included in RBMPs and, in other words, whether CPBs are able to influence decision-making procedures. We generally found that establishing linkages between spaces for knowledge production and those for policy formulation is a hard task for most of the analysed EU countries. When the linkage proved effective, some factors may provide good explanations for that: the longevity, legitimacy and robustness of river basin institutions (e.g., in France), the clear framework provided to the CPBs to work, the clear allocation of roles and responsibilities among the actors engaged in RBMPs and PoMs, the active participation of decision-makers in learning processes and the presence of an 'interface' between the *loci* of knowledge production and those of policy formulation (e.g., in Denmark).

Finally, our analysis provides some general conclusions and instrumental recommendations for a more effective implementation of the WFD:

- in water governance, there are no 'one-size-fits-all' solutions, and the analysis of the countries confirmed that CPBs have to fit existing governance structures;
- if coordinated and participatory planning is needed to safeguard and improve the quality of water bodies, then the sub-RBD level should be given a primary role by the European Commission. The rule established by Article 13 that '...decisions should be taken as close as possible to the locations where water is affected or used' (WFD) can be effectively achieved only at a level lower than the RBD;
- to avoid losing the knowledge acquired through the CPBs, a clearer linkage between the top-down and bottom-up dimensions of WFD implementation is fundamental regardless of the institutional legacy of the country. The EC should encourage, and Member States should establish, a connection between the arenas engaged in learning, networking and knowledge exchange and those where decisions are made;
- there is a lack of knowledge on how planning and implementation activities carried out at sub-RBD are aggregated and coordinated for the entire District. In our opinion, the requirement of the WFD that all PoMs are 'coordinated for the whole of the river basin district' (Article 3, WFD) cannot be achieved only by a formal aggregation of measures established at different levels of the RBD but requires a greater effort of coordination among public administrations concerned with the implementation. Research could further contribute to this issue, by focusing on coordination mechanisms and problems that occur at the RBD level.
- the conceptual framework we adopted in in this paper could provide guidance for empirical research on the topic. Quantitative methods, such as the Social Network Analysis, could support the analysis of what type of coordination strategies exist among the set of actors engaged with decision-making. Moreover, specific indicators on the type of coordination and participation among public and private stakeholders could be applied: e.g., for coordination, the number and frequency of interactions among public authorities as well as the scope and the frequency of joint activities, while, for participation the degree of stakeholders' satisfaction for participatory processes [83].

Even if the focus of the paper is limited to the EU context, these conclusions might be extended to other non-EU countries that aim to implement integrated river basin management policies, by considering, however, that implementing frameworks have to be tailored on the specific local contexts. The exportability of the WFD requirements to non-EU countries was out of the scope of the paper; however, other studies address this issue especially with regard to EU-candidate countries [84,85].

Finally, we must acknowledge some limitations of this study. The first refers to the limited number of countries analysed that cannot provide a complete overview of implementation patterns in Europe. Second, this study was based only on secondary data derived from the literature. Testing our conceptual framework on other case studies would allow us to grasp less-structured aspects of coordination and participation that, in most cases, are crucial for determining policy implementation outcomes.

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