



How different institutional arrangements promote integrated river basin management. Evidence from the Baltic Sea Region[☆]

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ABSTRACT

The EU Water Framework Directive introduces the principle of integrated river basin management, incorporating both the idea of spatial fit between ecosystems and social systems *and* a requirement to integrate water management across scales and sectors. In designing their implementation setups, member states must therefore address both the roles of different institutional actors and the interplay among institutions. In this paper, we will explore strengths and weaknesses of different institutional arrangements for integrated water management through a comparative analysis of river basin management planning processes in six countries around the Baltic Sea. We use theories on multi-level governance, regime interplay and institutional effectiveness. We find that, in most cases, central governments have played a dominant role in the formulation of river basin management plans, while local influence has been somewhat limited. The tight procedural deadlines of the directive appear to have pushed for more centralisation than originally intended by the countries. But the analysis also shows that interplay mechanisms such as norms, ideas and incentives do promote effective institutional interplay and may serve to overcome coordination problems of implementation structures. Moreover, it is expected that institutional interplay will improve over time resulting in more integrated management.

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Introduction

By designating river basins as the defining entity of water management, the Water Framework Directive (WFD) (60/2000/EC) provides a seemingly logical answer to longstanding externality and coordination problems in water management: alignment of the boundaries of social systems and ecosystems. As few member states applied this principle of spatial fit prior to adoption of the WFD, the literature on implementation of EU policy would predict poor implementation of the directive due to a misfit with existing institutional arrangements (Knill and Lenschow, 2000). Empirical studies do not, however, unequivocally support the misfit thesis. In a study of Germany, Moss (2004) found that implementation

proceeded without hitches even though the ecosystem approach of the WFD clashed with the hierarchical tradition of the German governing institutions. Liefferink et al. (2011) in their comparative study of France, Denmark and the Netherlands also find little support for the fit/misfit thesis. Instead, these studies suggest that the ecosystem-based approach to water management may simply create new boundary problems, i.e. different misfits where jurisdictions and interests of organised actors overlap and create conflicts.

The question of boundary problems becomes all the more pertinent because the WFD not only promotes spatial fit of administrative structures, but also introduces a new governance framework revolving around the principle of integrated water management (Paavola et al., 2009). This implies that water planning should be integrated *across all water uses* as well as *integrated with other related policy sectors*, particularly land use planning and agriculture, which have a major impact on the state of water bodies. Moreover, water management cuts across *multiple scales* of decision making (Frederiksen et al., 2008: 103; Moss and Newig, 2010). The principle of spatial fit refers to the efforts to find optimal units of governance for various policy issues, under the assumption that compatibility between institutional and administrative frameworks and the

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biophysical properties of the resource can be found (Moss, 2004; Frederiksen et al., 2008). When resource management is linked across scales, as is the case with water management, it raises the question of “how local resource management can be coupled to larger scale institutions without losing its local fit to the resource base” (Folke et al., 1998: 16). Governance scholars argue that in such complex settings implementation performance depends as much or more on institutional interplay as on institutional fit (Young et al. 2008; Moss, 2004; Gehring and Oberthür, 2008). Thus, the assumption of “optimal scales” is questioned, and it is pointed out that re-scaling of governance levels involves costly institutional adaptations (Moss and Newig, 2010). We suggest that the relevant question common to the two approaches is how well different institutional arrangements perform with respect to achieving integrated water management.

While the literature on institutional interplay is rich in taxonomies (Stokke, 2001: 4), it is rather stingy on causal theories regarding the effectiveness of institutions. Stokke (2001) therefore adapted a framework from theory on the effectiveness of international regimes, which we use to analyse the institutional arrangements for implementation of the WFD. While the framework has been applied primarily to studies of horizontal interplay, we attempt to apply it to vertical interplay, as suggested by Gehring and Oberthür (2008: 223). However, international regimes have no common authority, while in the case of the WFD institutional interplay is embedded in national and EU hierarchies. We find it necessary, therefore, also to incorporate a structural dimension into our analytical framework, analysing decision making structures for implementation of the WFD. This allows us to examine how the ecosystem-based management principle inherent in the WFD is implemented in national water management institutional frameworks, and how different governance structures perform with respect to integrated water management. Moreover, we can study interactions between the structural setups and the interplay mechanisms.

This paper therefore examines how the institutional arrangements for implementation of the WFD affect integrated water management. Specifically, we ask

1. What implementation structures are most effective at promoting integrated water management?
2. How do interplay mechanisms such as norms, ideas and incentives influence the effectiveness of implementation structures with respect to the achievement of integrated water management?

To answer these questions, the paper compares the institutional arrangements for implementation of the WFD in six countries around the Baltic. We draw on theory of regime interplay and institutional effectiveness as well as theory on multi-level governance and coordination. As implementation of the WFD involves many stages, some not yet undertaken, the analysis is confined to the development of river basin management plans (RBMP) and programmes of measures (PoM). The PoM (Art. 11 of the WFD) lists the measures to be implemented in order to achieve the environmental objectives set out in the RBMP.

The next section outlines the theoretical framework used in the analysis, and the “Methodology and data” section describes the research design and data. The analysis is presented in the following two sections, one focusing on structural arrangements and one on interplay mechanisms. The conclusion summarises our findings and discusses their policy implications.

Theoretical framework: interplay mechanisms and structure

Institutional interplay

Institutional interplay refers to the interdependence among different institutional arrangements, implying that the effectiveness of specific institutions is affected by other potentially intersecting institutional arrangements (Young et al., 2008: xvi; Gehring and Oberthür, 2008: 187; Moss, 2004). Interplay may occur through functional linkage, e.g. when policy requirements of one institution interact with the policy requirements of another institution, or through political linkage, i.e. linkage deliberately established by policy makers in order to regulate interaction across functionally linked systems (Gehring and Oberthür, 2008; Stokke, 2001). Importantly, such linkage may lead to conflicts as well as to synergies between the institutional frameworks. Integrated water management requires interactions that involve synergies among institutions regulating water and related policy fields, particularly land use. What we are looking for, then, is how different institutional setups promote or hinder such synergies.

Stokke (2001) suggests that the study of institutional interplay and effectiveness may be advanced by linking to existing theoretical work on institutions and their effects on behaviour (2001: 8). Stokke identifies three general sets of institutional mechanisms. In theory of economic institutionalism *incentives and costs* determine implementation behaviour. Applied to interplay, this means that the institutions of one regime may affect the benefits or costs of behaviours under a different regime; this is characterised as utilitarian interplay. *Norms* constitute the second type of mechanism, derived from theory of international legitimacy; a regime may affect the normative compellence of regulation, and normative interplay occurs when norms spill over from one regime to another. Finally, policy ideas affect attention to certain objectives or policy instruments (Stokke, 2001: 9). Thus, ideational interplay may affect implementation when problem identification, ideas and solutions are transferred from one regime to another. While the typology is well-known and also commonly used in the policy instrument literature (see, for instance, Vedung, 1998), it offers a new and promising take on the study of interplay among functionally linked systems.

Implementation structures

For the analysis of the structural dimension of institutional arrangements, we draw on general political theories on decision making processes and implementation. These theories also aim to uncover conditions for effective policy implementation, particularly with regards to coordination within and across organisations. As for coordination across vertical levels of organisation, original implementation theory held that the fewer links in the decision chain the better, as each point constitutes a potential veto point that may derail implementation (Pressman and Wildavsky, 1973).

But Scharpf (1994), writing within the welfare economic tradition, shows that the efficiency of centralised coordination is severely limited by a double information problem: information impoverishment when central decision makers do not have adequate information about local circumstances (1994: 33) and information overload when central decision makers cannot effectively use all available information (1994: 34). Thus governance theorists argue that multi-level governance enables better decisions because it can make use of the knowledge available at all levels of the implementation chain and because it offers greater flexibility in accommodating different scale efficiencies across policy areas (Hooghe and Marks, 2003; Newig and Fritsch, 2009).

Thus, complex settings of interaction pose a dilemma between high coordination costs of multilevel governance and poorly informed decisions of centralised coordination. The solution, Scharpf argues, may be negotiated coordination in the shadow of a hierarchy (or network structure), meaning negotiated coordination among agencies at lower levels, but embedded in a hierarchy that may intervene to ensure coordinated action (1994: 36–37). At best, such coordination may achieve policy solutions that maximize overall utility across different sectoral or spatial interests; this is termed positive coordination, which for the purpose of this paper equals integrated water management.

This general theoretical discussion about identifying the optimal scalar level of implementation is reflected in the recent literature on scale and water management (Moss and Newig, 2010); here, efficiency concerns specifically whether “administrative-scale levels can be constructed in a way that can best internalize spatial externalities of environmental issues and minimize costs”, referred to as scalar fit (Moss and Newig, 2010: 3). However, Moss and Newig question the assumption of optimal scales. They point out that any re-scaling of governance levels requires institutional adaptation that carries with it increased transaction costs (Moss and Newig, 2010; Roggero and Fritsch, 2010). Citing the transaction cost literature, they suggest that it may be more fruitful to look for ways to improve cooperative arrangements (Moss and Newig, 2010: 3). Thus, both the general governance literature and the literature on scale in environmental governance tend to offer multi-level governance as the most efficient governance approach, weighing in trade-offs, but they also suggest that this enhances the need for analysis of patterns of cooperation and negotiation.

Young’s (2006) identification of distinct patterns of vertical interplay may offer an approach to such analysis. Vertical interplay occurs among “scale-dependent environmental resource regimes”, i.e. management regimes that operate on different levels, such as national and local authorities involved in the management of the same resource. Where management of the resource intersects with other sectoral regimes, such as water and land use management, the analysis of vertical interplay may be extended to patterns of interaction across levels in horizontally linked institutional regimes.

Young distinguishes among five patterns of vertical interplay, the most important ones in this context being dominance and negotiated coordination. Dominance implies that “an environmental or resource regime operating at one level dominates one or more regimes operating at other levels” (2006: 5). The pattern of negotiated agreement instead implies that no regime takes priority and that actors must agree on rules and procedures (2006: 6). Analysing the consequences of each pattern, Young shows that neither dominance nor negotiated agreement ensures sustainable, i.e. environmentally effective, or efficient solutions. Thus, while the dominance pattern may potentially lead to sustainable solutions and may reduce transaction cost, typically it will lead to solutions favoured by the dominant actor, which may or may not be sustainable and which may also not be welfare efficient (Young, 2006: 11). In patterns of negotiated agreement, actors tend to be more concerned with the distribution of benefits and in order to compromise often end up with solutions that are neither sustainable nor efficient (Young, 2006).

This opens the question as to whether the presence of a hierarchical shadow (Scharpf, cf. above) might remedy these problems of vertical interplay in either of the two patterns. We suggest that the interplay mechanisms identified by Stokke (2001) may serve as a hierarchical shadow to enhance integration of water management. If the analysis shows that norms, ideas and incentives promote positive coordination (Scharpf, 1994), this would mean that such institutions could be deliberately instituted to overcome the shortcomings of implementation structures.

The contribution of the implementation literature to this study is to identify strengths and weaknesses of different structural arrangements for implementation, which may guide the case analyses. The same goes for Young’s framework for interplay patterns, while Scharpf’s solution – a hierarchical shadow – offers an analytical concept that may link the analysis of structure with the analysis of institutional interplay mechanisms.

Methodology and data

The study is based on a comparative study of implementation of the Water Framework Directive in six countries around the Baltic, namely Denmark, Finland, Latvia, Lithuania, Poland and Sweden. The cases were chosen due to their geographical location around the Baltic. These countries face common environmental problems related to the eutrophication of the Baltic Sea, while their governance structures and water management traditions prior to the adoption of the WFD represent different institutional approaches. Moreover, the cases cover old and new member states as well as different political-administrative cultures. The findings may offer insights about implementation of the directive for the EU at large, although the geographical case selection criteria may limit the generalisability of the findings.

The case studies were carried out according to a standard guideline regarding the dimensions to be covered as well as methodological approaches. They were carried out by scholars from research institutions in each of the six countries, all of whom are partners in the WATERPRAXIS project under the Interreg IVB Baltic Sea Region Programme 2007–2013.¹ Structural setups were analysed at the national level, but to allow for in-depth analyses of decision processes, each case study narrowed its focus to a single river basin district.

Data were collected in the form of documents regarding implementation and interviews with officials at multiple levels of government in each country as well as non-governmental actors and other stakeholders. The number of interviews varied from 5 to more than 30. One report also included a survey among water planners. Case study reports varied in length from 15 to 59 pages (see list in the references section).

As the WFD involves a multi-stage implementation process, implementation outcomes cannot yet be measured. We focus on the stages of preparation of RBMPs and the PoMs and evaluate institutional performance by how well the institutional setups promote integrated water management.

Analysis of river basin management structures

The WFD espouses the principle of ecosystem-based water management, fitting territorial units of decision making to physical boundaries. However, it does not mandate a particular administrative structure. We first examine, therefore, how the six member states have implemented the ecosystem principle, addressing specifically whether re-scaling of administrative structures has taken place. Subsequently, we analyse consequences of structure for integrated management across vertical and horizontal levels.²

¹ Germany was also included in the WATERPRAXIS project, but is not included here, as the German case study concerned the transboundary river basin of the Oder, which involves 3 federal states on the German side, and focused more on international cooperation than the other case studies. See Will et al. (2011) for a report on the German case.

² The analysis of the section “Analysis of river basin management structures” is based on the case reports listed in the references section.

River basin administrative structures: spatial fit?

Article 3 of the WFD designates river basin districts as the main unit for river basin management. River basins are defined as “the area of land and sea, made up of one or more river basins together with their associated ground waters and coastal waters” (2000/60/EU article 2 (15)). This implies that ecosystem boundaries of the river basin districts constitute the decision making unit for water management. Article 3 also requires that each member state identifies an “appropriate competent authority” for river basin management but there is no requirement to establish new administrative units, as long as decisions are spatially based.

Most of the countries have not opted for a scalar fit, but have adapted the administrative structure of river basin management to the existing administrative structures at the national, regional and local levels. Of the six countries, only Sweden and Poland apply the ecosystem principle of organising water management administrations along river basin boundaries. Polish water management was organised along ecosystem boundaries prior to the implementation of the directive, while Sweden has appointed five county boards as river basin district authorities, rescaling decision making for water management to a new structure.³

Typically also those countries that have fitted river basin management within existing political-administrative systems have appointed one national agency as the competent authority for all river basin districts, again moving away from the spatial management principle. However, exceptions to this pattern exist. In Finland, river basin authority is vested in five regional centres for economic development, transport and environment (ELY centres). In Poland, the Ministry of Environment is the designated competent authority despite the river basin based structure. In other words, the division between ecosystem boundaries and political-administrative boundaries does not map straightforwardly onto a scale of centralisation vs. multi-level governance. We therefore need a more detailed examination of the organisation of water management structures.

Decision making across levels of government

Structures for river basin planning: centralisation vs. multi-level governance

Table 1 summarises key features in the distribution of competencies for the preparation of RBMPs and of the programmes of measures necessary to achieve good ecological status (PoMs) as well as implementation of the plans and the measures. In the analysis below we will focus on some of the cases, as they represent different points along the continuum from centralisation to multi-level governance, indicated in the table by the shading.

The case of Denmark represents perhaps the most centralised planning process with a strong hand being played by the national policy hierarchy. The move towards centralisation has occurred particularly from 2006 to 2007 when the local government system was given an overhaul, eliminating the counties which had previously been in charge of river basin planning. An agency under the Ministry of the Environment and its regionally dispersed environment centres are charged with developing the RBMPs, which have been harmonised to a great extent through national expert and coordination groups across the agency. Moreover, the PoM has been designed in a highly centralised process, shaped by a political agreement, named Green Growth as pursues the twin objectives of promoting growth in the agricultural sector and implementing the

environmental objectives of the WFD. Local governments played only a minor role in the planning process, but municipalities are required by law to draw up action plans for implementation of RBMPs within their jurisdictions. However, as the RBMPs are rather specific they leave limited room for local imprint.

Latvia and Lithuania also have rather centralised planning processes. But both countries have softened the otherwise centralised character of planning through the involvement of advisory or coordination boards, established at the level of the river basin district to coordinate governmental and non-governmental organisations at the local level; these boards have been able to make proposals for RBMPs and PoMs.

Compared to these countries, Finland represents a significant step in the direction of multi-level governance. The regional ELY centres constitute the central unit in the river basin management structure. As ELY centre boundaries do not follow river basin boundaries, decision making power at the river basin level is vested in selected ELY-centres in the river basin, acting as a RBD coordinator, assisted by a steering group consisting of other ELY centres⁴ in the same river basin. Furthermore, at the regional level a water council is set up for each ELY for information exchange, including municipalities, industry representatives and stakeholder organisations representing farmers, recreational users, and environmental non-governmental organisations. Yet, other coordinating mechanisms have ensured a strong national imprint on the plans. Thus, a national level coordination group including the Ministry of Environment, the Finnish Environment Institute (SYKE) and the five river basin district coordinators was strongly involved in the development of RBMPs by developing guidance documents to ensure harmonisation of the planning processes across river basin districts. Moreover, five national teams of experts, divided according to topics such as agriculture and hydraulic construction, supported the preparation of RBMPs and the PoMs. Perhaps most importantly, the national coordination group required harmonisation of the PoMs across river basin districts, forcing a partial rewriting of the regionally drafted RBMPs. Despite the central role of the regional level in the formal structure, the regional level actors therefore viewed the decision process as being quite centralised. But given the opportunities for regional input and decision making the process may be characterised as multi-level.

In Poland and Sweden, the RBMP processes have seen a deeper involvement of more levels of government. The Swedish system has been described as a system of national cooperation and regional decision making (Sundström, 2011). River basin district authorities have been the key units in the administrative structures. As mentioned, five county administrative boards have been designated as river basin authorities. For each authority, the government has appointed a board of regional, local and other experts as the competent decision-making body on RBMP and PoMs. However, planning also involves the central government and key agencies such as the Environmental Protection Agency and Swedish Geological Survey. Finally, voluntary water boards consisting of stakeholders have been included in a consultative process throughout the planning of the RBMPs, although to varying degrees. For implementation, the circle of actors also includes all 21 county administrative boards as well as municipalities.

Clearly, the countries in this study have struck different balances between central direction and multi-level governance in their water management structures; the question is whether these

³ The Swedish setup changes in July 2011, when a new national authority, the Sea and Water Authority, took over planning responsibilities under the WFD. The case study is based on the institutional setup prior to 2011.

⁴ When the RBMP were prepared, the steering groups consisted of environmental authorities in regional environmental centers and fisheries authorities in economic and employment centers; these organizations have been merged to form ELY-centres.

Table 1
Organisation of water management planning in the six countries.

	Planning of RBMP	Planning of PoM	Implementation of plans and measures
Denmark	Agency under MoE	Agency under MoE	Municipal govt. and national agency
Latvia	MoE	MoE	Multiple agencies across levels
Lithuania	National: EPA	National: EPA	National: EPA
Finland	Regional ELYs Cross ELY steering group National expert guidance	Regional level MoE and national experts nevertheless strongly involved	National, regional and local public and private actors
Poland	MoE: national water management Regional water management boards Drainage area boards	MoE: national water management Regional water management boards Drainage area boards	Water management units Regional, municipal govts.
Sweden	River basin district authority (and national agencies)	River basin district authority (and national agencies)	County administrative boards Municipalities

Abbreviations: RBMP, river basin management plan; PoM, programmes of measures; MoE, Ministry of Environment; EPA, environmental protection agency; ELY, Centre for Economic Development, Transport and the Environment.

differences are reflected in the degree to which water management is coordinated and integrated across scales.

Vertically integrated management?

In the countries with more centralised structures, coordination is achieved through a high degree of top–down direction. Involvement of national scientific institutes and experts in the preparation of RBMPs ensures that all levels of water management have access to the best available knowledge and methods. National guidelines for river basin planning ensure that the water management is applied consistently across all levels of water management. This one size-fits-all approach offers economies of scale and reduces coordination costs. Officials in these countries argue that a uniform approach to water management is necessary in order to have equitable conditions across regions. Moreover, they point out that national steering is important for effective decision-making, because the national level has access to the resources mentioned above, and, more importantly, because centralised decision making involves fewer decision points, each of which might slow down the river basin planning process. These arguments are in line with arguments in the implementation and governance literature (Pressman and Wildawsky, 1973; Hooghe and Marks, 2003; Scharpf, 1994). In fact, in several countries, including Finland and Lithuania, the pressure to meet WFD procedural deadlines has pushed the processes in the direction of more centralisation than was originally intended.

While the centralised decision-making may offer economies of scale, it also misses potential efficiency gains at the local level, confirming theoretical expectations (Scharpf, 1994; Young, 2006). The harmonised RBMPs cannot be adapted to local conditions to the same degree as local planning. For instance, Danish municipalities argue that they could provide more integration across policy areas and more cost-effective solutions, if the RBMPs allowed more flexibility at the local level. Likewise, in Finland, local and regional planners perceive the national guidelines as too binding and too superficial at the same time. The centralised institutional arrangements allow for alignment and steering across levels, but a rather shallow integration of water management.

In Sweden, on the contrary, national coordination has been rather weak, requiring a greater effort to coordinate among the river basin authorities to ensure similar conditions across the

districts (Sundström, 2011). The need for coordination was one reason for the establishment of a new national authority in 2011.

In general, a clear division of competencies emerges as a prerequisite for effective coordination. In Poland, a rather extensive dispersion of competencies across multiple levels of water management and political-administrative structures inhibits a comprehensive operation of water management. In Finland, it was also concluded that the division of responsibilities must be clearer for integrated river basin management to work.

The experiences of these six countries around the Baltic Sea cannot argue the superiority of either of the structural approaches; rather it points to advantages of both centralised and multi-level structures. In the first stages of implementation, adopting RBMPs and PoMs, the centralised approach has provided direction, which decision makers say was necessary in order to ensure timely implementation and to ensure equal conditions across river basin districts. On the other hand, the multi-level approach has indeed ensured input from more levels and different types of actors, which may result in measures that are better adapted to local conditions. One simple lesson stands out: time is a crucial factor for multilevel governance to work. Ironically, it appears that the WFD endorses decision-making across scales, but at the same time, due to its complexity and relatively tight schedule, also pushes countries towards more centralised decision making processes, regardless of formal implementation structure.

Decision making across sectors

Successful water management is inextricably linked to activities in other policy areas such as land use, urban development, agriculture, forestry and climate change, which affect water quality and quantity. This forces our attention on the organisation of decision-making across policy areas. Moreover, as there may be cross-level interaction across sectoral policies implemented on different scales we must pay attention also to patterns of vertical institutional interplay (Young, 2006).

In all six countries in this study, water management is placed organisationally under the ministries of environment. Spatial planning and nature protection are also typically within the

jurisdiction of the environmental ministries, although often in separate agencies. Typically, agricultural policy is organised in a separate ministry. This pattern of sectoral divisions presents a challenge for integrated water planning, particularly the separation of water and agricultural policy management, given the causal relationship between agricultural production and water quality.

In order to overcome sectoral divisions, all of the countries in the study have charged the ministries of environment with coordinating river basin planning across ministries. At the national level, coordination of the RBMP and PoM planning processes typically has been vested in ad hoc working groups led by the Ministry of Environment, but with participation from other relevant ministries. In Poland, a cross-ministerial steering committee participates in the making of RBMPs.

Cross-sectoral implementation is complicated by the fact that competencies are distributed across governmental levels in heterogeneous patterns. Agricultural policy may be decided upon primarily at the national level, while spatial planning and nature conservation may be dispersed across national, regional and local scales. Moreover, the hydrological boundaries of river basins do not follow the boundaries of local political-administrative structures involved in implementation of the RBMPs and related sectoral policies.

Thus, conflicts may arise when spatially based policy measures under the PoMs interact with other claims to land use, and it is not always evident how different spatial interests are reconciled. A typical instrument for land use coordination would be territorial development plans. These serve to ensure that different interests can be weighed against each other, and the EU CIS guidelines advises that “land-use and water planning support each other” (CEC, 2003). However, some countries, Denmark and to a certain extent Poland, have given RBMPs priority over the regional or local development plans. In Sweden, Finland and Latvia, reference to water planning is made in development planning or vice versa, but no clear hierarchy is established among objectives.

A structural response to the challenge of policy integration and vertical interplay has been to establish coordination fora at the level of the river basin district with representatives for different policy sectors, local authorities such as municipalities, non-governmental organisations, private parties and others who may affect water management. The authority of these boards varies. In some cases the local boards serve in an advisory capacity and bring ideas and concerns to the table to be resolved through dialogue. This is the case for Latvia and Lithuania as well as the currently dormant nature and water councils in Denmark. Sweden and Poland have delegated actual decision making powers to cross-sectoral fora at the local or regional level. In Sweden local fora include both the water district boards with decision making powers and the water councils, which include local governments and interest groups, which serve in an advisory capacity. In Poland, the regional water boards coordinate among local actors. In Finland, the newly established regional ELY centres also house agricultural and economic development administrators; while cooperation across sectors was minor in the first round of RBMPs the establishment of this agency offers the potential for cross-sectoral decision-making in the next round of RBMP process. Furthermore, regional cooperation groups consisting of representatives for municipalities, interest groups, ministries and water owners created a forum for information exchange and debate during the planning process.

Applying Young's categorisation of vertical interplay patterns, the case studies indicate that cross-level interactions across sectoral regimes take the form of negotiated coordination. Although the water management regimes embedded in the environmental ministries is responsible for coordinating across sectors, these do not generally impose solutions on lower-level actors of other policy sectors; rather, the cross-sectoral components of RBMPs and PoMs

are negotiated among regimes. In the words of Young, this pattern recognizes “the need to devise mutually agreeable rules and procedures” (2006: 6). The question is how this setup has performed with regards to integrated water management.

Vertical interplay and horizontally integrated water management?

So far it is difficult to point to much evidence of actual integration across policy sectors at the local level. Across the countries, spatial planning, nature conservation and river basin management planning have largely followed their own trajectories in this first RBMP period, owing to two factors. One has to do with the timing of decisions, as planning schedules have not been coordinated upfront; by all accounts, river basin planning has posed an immense task, and meeting the deadlines of the WFD has taken precedence in the member states and prevented deeper coordination across sectors. The other factor concerns the lack of clear legislative hierarchies among different sectoral policies, leaving decision makers with an unclear foundation for conflict resolution and policy integration. This does not offer a strong base for negotiated coordination.

At the central level, the case studies indicate that inter-ministerial coordination at has provided for some integration of water policy with sectoral policies, not least agricultural policy. The drafting of the PoM provides an important vehicle for this, a point to which we shall return in a subsequent section. Moreover, the analysis shows that central government may play an important role with regards to conflict resolution. Thus, in Denmark conflicts at lower levels are resolved by pushing decisions to higher levels of government. This happened, for instance, during the RBMP planning process when disagreements between agricultural and environmental interests could not be reconciled by the agency responsible for RBMP planning. Eventually, the issue was decided by the government. In Sweden and Finland, conflicts between hydropower expansion and water management remain unresolved. This owes in part to a lack of coherence between the WFD and the renewable energy directive, but also to a lack of national interference to settle the conflicts.

The analysis thus appears to confirm the theoretically claimed trade-off between a strong central government keeping implementation on track and ensuring some coordination and a multi-level structure ensuring the best fit of each RBMP. The experiences of these countries indicate that the central governments play a crucial role in setting up a framework for integrated management across functionally linked policy areas. But it would be premature to conclude that lower level coordination matters less. Rather, we would conclude that the potential gains from locally integrated decision making have not yet materialised. Local for a ensure exchange of information, but integrated management across related policy areas is prevented in part by asynchronous decision processes, in part by unclear legislative hierarchies or outright policy contradictions. We turn our attention therefore to the analysis of institutional interplay mechanisms.

Integration through norms, ideas or incentives

Drawing from the literature on institutional interplay, we examine whether any normative, ideational or incentive mechanisms are at play, affecting implementation of the WFD. We expect that the mechanisms may apply to vertical and as well as horizontal dimensions of institutional interplay. Adapting Stokke's framework to the hierarchical context of EU member states, we interpret normative compellence as required integration of sectoral policies. Ideational interplay is interpreted as policy ideas shared among different policy sectors to allow for integration of objectives. Finally,

we interpret utilitarian interplay as financial mechanisms or other incentives that may compel relevant agencies and actors to contribute towards implementation of the Water Framework Directive.

Normative compellence

Integrated water management requires an integration of sectoral policies. We therefore examine how functionally linked policies interact, whether they include mutual references that would promote integration, and whether hierarchies of objectives have been established.

As mentioned above, the WFD itself requires integration of measures across a number of directives. The analysis shows that establishing strong policy coherence remains a challenge in all countries, regardless of structural setup. For some policy areas, problems are primarily related to coordination in planning procedures, for other areas mechanisms to settle conflicting policy objectives are lacking.

Generally, the planning guidelines for RBMP, nature planning and land use planning include obligations to consider the impact of regulatory initiatives and planning documents within each of these areas upon the others. In Poland, for instance, environmental guidelines include a requirement for coordination of the three areas. Thus, activities of substantial importance for the implementation of the WFD must be reflected in strategic documents at the national level and in regional and provincial spatial plans. In Finland, RBMPs must be considered in environmental permit processes under the Environmental Protection Act. However, the RBMPs in their current form are considered too general to be applicable to specific permits, as they cover very large areas and are not very specific in handling individual water bodies. But RBMPs must also consider related plans such as land use planning documents, and in most countries the RBMPs are subject to strategic environmental assessments.

Despite these formal requirements for coordination, water planning and land use planning processes have been only weakly to moderately integrate in the countries. The absence of clear or operative legislative hierarchies among planning documents appears to inhibit policy integration. In Lithuania, Latvia and Finland, a clear hierarchy among the policies is lacking. While in these countries outright conflicts between river basin planning and land use planning have been cleared, integrated planning has not materialised. In Denmark, the legislative hierarchy establishes that RBMPs overrule municipal spatial plans, but municipal planners argue that the land use plans represent the more comprehensive planning document and would therefore be better suited to ensure policy coherence. Thus, in general, the normative compellence of the policy frameworks is not strong enough to provide positive interplay. Moreover, the timing of planning processes has been an obstacle to coordination, as river basin planning schedules did not match existing cycles for land use planning. This has been an issue in nearly all countries.

For policy issues intersecting other sectors such as agriculture and renewable energy, policy coherence fails to materialise due to more fundamental conflicts among policy objectives – again inhibited by a lack of legislative hierarchy. In the case of agriculture and river basin management, conflict resolution has required coordination at relatively high levels of government. Conflicts between hydropower and river basin management in Finland and Sweden may be due partly to contradictory objectives in the EU policy, as the renewable energy directive (2009/28) requires national targets for the use of energy from renewable sources, including hydropower, which is not necessarily compatible with the objectives of the Water Framework Directive. Thus, in countries where the hydropower sector is important, policy dilemmas arise, and there are no institutional mechanisms short of direct interference by hierarchical authority to resolve them.

We would conclude, then, that the normative compellence of intersecting policies is strong enough to ensure mutual consideration of the impact on related land use planning frameworks, but not strong enough to provide a platform for integrated decision making, because it is unclear how RBMP objectives rank in relation to other planning objectives. Regarding coordination with other sectors, such as agriculture, the legislative frameworks offer relatively weak imperatives with no or only few cross references in policies.

The normative compellence to implement the WFD across levels of governance varies according to the implementation structures. In Sweden, for instance, the river basin districts have no formal power over municipalities or other actors who might participate in implementation and must resort to financial incentives to spur cooperation. In Denmark, municipalities are required by the law that transposes the WFD into national legislation to develop action plans for implementation of the RBMPs, but also here the government must lay out specific regulatory requirements or bring money to the table to compel participation. On the other hand, the Polish water management system clearly spells out responsibilities regarding water management for different layers and sectors of government.

Ideational interplay

As indicated by *Stokke's* (2001) framework, regime interplay emerges as ideas spread among related policy regimes or sectors through a learning process. What seems to happen in the implementation of the WFD is not so much a diffusion of ideas across sectors, but an active linking of policy sectors *through* ideas. This linking is typically provided by national governments through the PoMs which to some degree serve to integrate water management objectives with measures affecting other sectors. Most countries have implemented regulatory measures aimed at diffuse pollution, primarily from agricultural production. This may help achieve the objectives of good water quality as well as objectives for sustainable agricultural production, where these exist. More importantly, several countries actively set up their PoM to achieve objectives under multiple policy frameworks, most often using spatially based policy measures. For instance, the PoMs of Finland include climate-proof buffer zones and measures for sustainable agriculture; and the PoMs of Denmark include measures such as buffer zones, wetlands and river valley restoration, which could potentially integrate water and nature policies. Another example of deliberate ideational interplay in the Finnish PoMs is development of guidelines for forestry regarding environmental and water protection.

Generally, it is expected that there are possibilities for integration of water management with other policy objectives through such measures, but the extent to which this potential has been exploited is limited as of yet. Availability of financing and the planning cycles of parallel schemes such as the Rural Development Programme play an important role here.

The horizontal coordination fora set up at national, but primarily at local and river basin levels, may also provide a vehicle for diffusion of ideas across policy areas as may the hearings regarding the RBMPs and the PoMs. In Lithuania the coordination board, including municipalities and stakeholders, were able to give comments and suggestions to the plans as they evolved, which presented an opportunity to bring to the process knowledge and ideas from different fields. So far, however, it appears that the policy measures set out in the PoMs have provided the stronger ideational interplay, but the role of local coordination fora for policy integration may grow stronger as the PoMs move into the implementation stage involving more activity at the local level.

As for vertical interplay, the common guidelines for preparing RBMPs ensure that river basin management is approached in a similar manner both across river basin districts as well as across levels

of decision making. The guidelines very clearly transfer ideas and knowledge across governance levels and spur learning. In Denmark and Finland, for instance, the guidelines were produced by experts from across several policy fields and therefore presented local planners and water managers with the best available knowledge and methods.

Utilitarian interplay

Utilitarian interplay revolves around incentives as determinants of behaviour. The theory holds that coordination is improved when cost-effectiveness gains are possible through coordination, while negative externalities between regimes will decrease the effectiveness of incentives (Stokke, 2001). More generally, economic incentives affect the utility calculations of actors, making it more or less advantageous to undertake initiatives or to enter into cooperative relationships with other actors.

It is quite clear from the case studies that economic incentives offer an important impetus for integrated water management. Firstly, EU and national funding provides the grease that turns the wheel in the local implementation of measures. EU structural funds finance part of the infrastructure investments, in waste water treatment, for instance, undertaken particularly in the more recent member states, e.g. Poland. In Sweden, the river basin management districts have no formal enforcement tools to entice local participation in river basin management, but they dispose of financial resources with which they may persuade the local water councils to participate. In Denmark, municipalities are formally required to participate in implementation of the water plans, but so far the national government has chosen to include also a carrot in the form of national funding in order to facilitate implementation. Secondly, funding provides the key mechanism for integrative measures across policy sectors. The EU Rural Development Programme makes reference to the WFD as well as provisions for financing of measures; in fact this programme figures as a prominent source of funding for measures that integrate water management with agricultural policy and in some cases nature and forestry policy objectives. In the case of Finland this has meant that funding for the PoMs must await the next planning cycle of the Rural Development Programme, as WFD objectives were not incorporated into the Rural Development Programme funding cycle for 2006 through 2013. In Denmark, the programme was revised to provide financial support for the implementation of the WFD.

The implication is that a lack of funding will reduce the incentive to participate in implementation of the directive. The analysis shows that all member states in this study lean on EU funds to ensure implementation of their programmes of measures. Likewise, local implementation depends on national funding. Thus, a lack of independent local funding and inadequate national funding introduces uncertainty as to whether the PoMs will be implemented as envisioned, as does the fact that some countries have not yet determined how their programmes of measures will be financed.

Conclusion: how do different institutional arrangements promote or inhibit integrated water management?

Implementation of the WFD has proceeded largely on schedule in the countries included in this study; all countries have adopted RBMPs and PoMs; Denmark representing the laggard, exceeded the deadlines by two years. In this sense one might argue that implementation is successful. However, this achievement relates largely to the procedural aspects of the directive; it is less obvious from this analysis that the principle of integrated water management has been implemented to any significant extent. This may develop as countries move further into implementation of RBMPs and PoMs.

But through analysis of the implementation experiences of the six countries this article has aimed to uncover what institutional features promote, respectively inhibit, integrated water management.

The analysis has shown that central governments have played a central and necessary role in the implementation process overall, but also in planting the seeds for integrated water management. This has happened by providing guidelines for river basin planning, by establishing policy requirements to consider the impact of land use plans and nature plans, etc. on river basin management plans and vice versa; and by setting up policy measures that address multiple policy objectives. At this point, funding opportunities also play a significant role in bringing about integrated water management, especially when coupled to measures that aim to integrate several policy objectives. So far the EU structural funds and the Rural Development Programme under the Common Agricultural Policy have provided focal points around which the PoMs have been designed. In other words, national governments and the EU funds have provided a platform for integration through interplay mechanisms. However, direct coordination has also contributed to some level of integration, i.e. national governments have coordinated across relevant ministries. As for coordination across decision scales, for at other governance levels, involving governmental actors as well as non-governmental stakeholders, have also played a role and provided some level of integrated water management plans.

The analysis also indicates factors inhibiting integrated management in the current institutional setups. The centralised implementation processes, while providing direction, have not allowed for significant incorporation of local knowledge in the RBMPs, thus missing out on potential for efficient local solutions. National guidelines and PoMs may be both too superficial and too restrictive for decision makers at lower levels of governance. Moreover, integrated planning has been inhibited by a lack of clear and operational legislative hierarchies, leaving local and sectoral decision makers without a strong mandate to coordinate the plans. When there are outright policy conflicts, as is the case with hydropower and water management, decision makers lack legislative guidance for how to resolve such conflicts. Finally, adequate financing remains an issue, both at the national and local level. Such financing is important not only for implementation in general, but it also provides an important vehicle for integrated policy management through projects.

As for the institutional setups, these findings confirm that choosing the best implementation structure is fraught with trade-offs. The countries that have employed a centralised approach have not achieved much integration across governance levels in the sense that river basin planning has incorporated local knowledge to any significant extent, but they have provided strong central direction. On the other hand, countries that have attempted to apply the principle of spatial fit by re-scaling to a river-basin based structure have achieved greater activity across levels, but have also realised a need for a strong national hand in the policy formulation stage. The potential for local influence may improve now that the RBMPs and the measures are to be implemented, but only where these are sufficiently flexible.

This indicates that one feasible institutional path towards integrated water management would be to have a multi-level governance structure, but with a relatively strong central direction. To obtain the efficiencies possible in tailoring river basin planning to local conditions, the central level rather than controlling decisions may guide interplay by deliberately setting up institutional mechanisms including a coherent policy and planning framework with clear legislative hierarchies, measures that accommodate several policy objectives and not least funding. Referring to Scharpf (1994), such measures resemble a shadow of the hierarchy that may direct and coordinate the process, but allows for some adaptation to local conditions.

The study also suggests that the need for strong central guidance may be more pronounced in the early stages of setting up a complex new governance framework. Thus, future research might explore the merits of different institutional setups for different stages of policy implementation. In general, the case studies point to the importance of timing and learning. Accomplishing truly integrated management takes time. In that regard it is ironic that the procedural focus in the implementation requirements of the WFD, i.e. the focus on implementation deadlines, seemingly has moved focus away from the more substantive objective of achieving integrated water management, as countries to some extent have taken to central steering rather than multi-level integration in order to meet the deadlines.

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