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TOWARDS UNDERSTANDING THE SCALAR RE-ORGANISATION OF NATURAL RESOURCE GOVERNANCE: FACTORS DERIVED FROM WATER GOVERNANCE IN SPAIN, PORTUGAL AND GERMANY

Andreas Thiel¹

Abstract

In Europe the scalar organization of water governance has transformed largely because of European Water Framework Directive (WFD). This paper presents a framework combining economic theories of institutional change that allows microanalysis of a combination of functionalist and interest-driven explanations. The framework is applied based on extensive qualitative field. It is concluded that changes in the value of the resources and technologies of production and exclusion shaped outcomes preferred by specific actors. These factors change the perceived (transaction) costs and benefits of governance arrangements. To make changes, the corresponding actors need to be able to bring their positions to bear on negotiations in the corresponding action situations. The paper specifically highlights differences in processes of scalar reorganisation developing between federal and unitary states (Portugal).

Keywords

Water governance, institutional change, Spain, Portugal, Germany

1 Introduction

Much research on water management in Europe addresses the way the European Union's Water Framework Directive (WFD) influences water management at the national, regional and local levels. Among other things, the directive suggests what might be the right scale at which to organize water governance (CEC (Commission of the European Community) 2000). Given its binding character, its advocacy of River Basin management, its requirement to undertake River Basin Planning, and its substantive requirements, the directive could be considered the principal driver of recent changes in the scalar organisation of governance.² However, as a variety of recent studies have found, the picture is much more complex. Against the background of a diversity of reforms and the complexity of the issues at hand, this paper aims to enhance our understanding of these processes by developing a conceptual framework which will be tested in the context of studies on re-scaling in three different contexts: the Southern Spanish Guadalquivir river, the Eastern German part of the Elbe river and overall water management in Portugal. Second, all cases are situated within the European Union, where the European WFD developed great influence over water management in recent years.

As cases I selected Portugal and Spain because of similarities concerning water availability throughout and within years, similar economic structures and traditions, and which became members of the European Union in 1986. The initial question was, therefore, how state structure affected the scalar (re-)organisation of water governance in these countries as a result of the WFD. Germany is included as a contrasting case. It is a country that has a uniformly established federal structure like Spain, and where water pollution is the principal management problem as opposed to quantities of water available, while Portugal is a unitary state.

¹ Humboldt-Universität zu Berlin, Landwirtschaftlich-Gärtnerische Fakultät, Department für Agrarökonomie, Gastprofessur Umweltgovernance, Unter den Linden 6, D- 10099 Berlin, a.thiel@hu-berlin.de

² In this text, I use scalar reorganisation and rescaling synonymously in order to stress that the process has an organisational-functional as well as the politics-related aspect which is usually being referred to with the concept of "re-scaling".

Data has been gathered for this study from a literature review including peer-reviewed articles and official government reports. This secondary data has been verified and further elaborated via semi-structured interviews with administrative actors involved at the national and regional scales in the cases. Interviewees have been identified through a document-based stakeholder analysis combined with a snowballing approach. Most of the data is of a qualitative nature and was coded in an interpretative fashion in order to link it to the explanatory framework.

2 Studying scale and the transformation of governance

The scale at which natural resources and their use is governed defines a) the spatial extent of the area to which a specific institutional and actor configuration applies, b) the administrative level with which resource management is associated, and c) its horizontal and vertical interrelation to other governance structures (cf. HOWITT 2003). We view formal institutions and governance as designed cultural products making cognition and emergent social construction important in understanding their shape; in addition, they are influenced by material use practices and inherent management challenges. Also, at times, challenges to regulation may in fact be introduced by external actors.

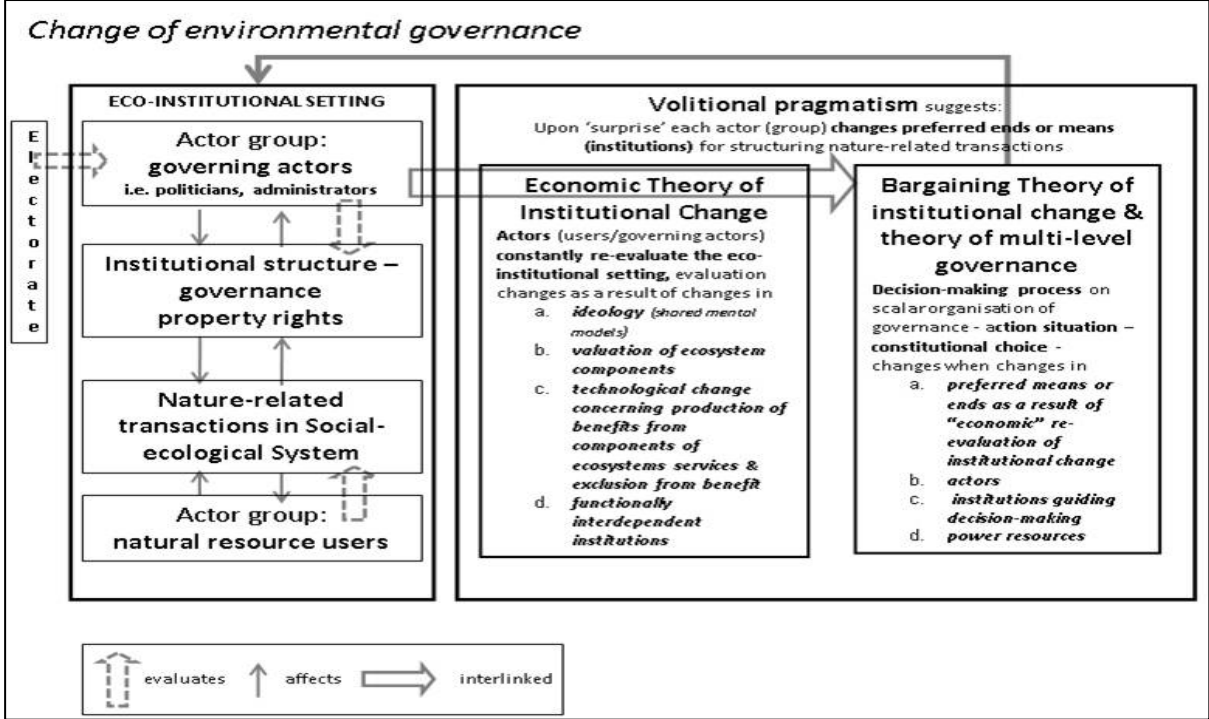
My perspective on institutional change is embedded within Bromley's conception of volitional pragmatism, where upon being surprised actors re-evaluate what they consider to be the best means as well as best ends of social practices and institutions (BROMLEY 2008). Actor-specific formulation of desirable institutional means and ends is followed by the need to enter into group action until a consensus emerges. The conceptual framework I propose combines theories of institutional change and multi-level governance in order to detail a) what shapes actors' "created imaginings", b) what shapes what actors hold to be desirable institutions for achieving them, and c) how to analyse the process of agreeing on specific institutions.

Institutions are understood as sets of working rules, such as property rights and governance structures (OSTROM 2005) – as "rules of the game" external to the individual (NORTH 1990). Property rights and governance structures are specific types of rules. The former are formulated and sanctioned by a higher body – usually the state (BROMLEY 1992) – while the latter coordinate processes such as nature-related transactions and enforcing of property rights. Governance is defined as "the establishment, reaffirmation or change of institutions to resolve conflicts [or to coordinate] over environmental resources" (PAAVOLA 2007, p. 94). Specifically, this study investigates changes in the scalar organisation of the provision function of governance, which entails decisions about quantity and quality of specific water-related "ecosystem services" and how they relate to each other (MCGINNIS 2011).

I use economic theories of institutional change to conceptualize how change in contextual factors shapes actors' perceptions concerning preferred institutional means and ends. Governance changes either as a result of alterations in the negotiation constellation (actors participating and rules of negotiations) or as a result of changes in actors' perceptions and what they prefer as governance. Specifically, institutional change may be the result of contextual changes such as: a) changes in the ecological, economic and social value of a resource (GROOT 2006) that depends on factor and product prices, motivating changes in monitoring and sanctioning schemes and engagement of specific user groups as governance embodies the value of ownership; b) technological change that alters costs of governance or costs of production of ecosystem services and their distribution, which can also change characteristics of transactions (e. g. rivalry, excludability, uncertainty) and motivate institutional modification because of changes in the cost-benefit calculus concerning specific rules; c) changes in nested or interrelated institutions that can lead to changes in costs Ostrom 2005 and benefits of coordination between sets of institutions; or d) changes in ideologies and derived mental models that alter people's evaluations and preferences regarding specific options (DENZAU UND NORTH 1994).

Described, interrelated contextual factors shape what I call the eco-institutional setting, which is composed of actors (direct or indirect users, regulators and politicians, and the electorate), nature-related transactions (HAGEDORN 2008) between individual users and, usually, a state (regulator) that acts on behalf of other users and the general population. Together with the contextual factors, the eco-institutional setting shapes the envisioned practices that actors bring to an action situation (OSTROM 2005). In the action situation participants negotiate in institutionally defined positions over the transformation of governance and its scalar organisation (cf. BROUSSEAU 2011) which are structured by national constitutions (e.g. federal states – as domestic two-level games – and unitary states). I conceptualize these negotiations relying on the distributional theory of institutional change which describes institutional change as “the process of institutional change [...] through differentially resourceful actors that negotiate about institutional change in view of their interests” (THEESFELD, 2005) (Figure 1). Power is conceptualized as “the ability to affect one’s feasible set (of choices)” and payoffs associated with different options. To transpose Knight’s theory to state-driven institutional reform, further details of what state involvement implies needs to be considered. Power resources concerning negotiation over the reorganization of governance, based on KNIGHT (1992) cf. (SCHLÜTER 2001; THEESFELD 2005; THIEL AND EGERTON 2011), are for example 1. Credibility³ 2. Relative changes and differences in time preference⁴; 3. Network membership⁵; 4. Transaction and transition costs.⁶ Below I first situate the cases describe the institutional starting points, and reconstruct recent changes in water governance.

Figure 1: Conceptual Framework for this Study



Source: own graphic

³ Credibility makes other actors less likely to 'risk' adopting an opposing (non-cooperative) strategy from which they may expect unfavourable distributional outcomes. It depends on exit costs from failure of coordination, and positional power that lowers decision costs (KNIGHT, 1992).
⁴ i.e. dynamic considerations, preferences for early or late realization of projects are a power resource (THEESFELD, 2005), because impatient actors evaluate losses from failure higher than patient ones.
⁵ It allows access to information and lowers efforts necessary for persuading other actors. Consequently, it lowers transaction costs “to be subtracted from the bargaining outcome” (KNIGHT, 1992, quoted by THEESFELD, 2005).
⁶ Dependent on characteristics of transactions and how they change and ways to distribute them. Transition costs also depend on the political implications and organisational changes entailed.

3 The case studies

3.1 The Portuguese case

Continental Portugal is located on the South-western end of the Iberian peninsula and borders Spain and the Atlantic Ocean. It is a water rich country which suffers from spatial and temporal variation in availability. 60% of its surface water resources come from Spain, upstream. Biggest water consumer is agriculture (almost 80%, 9% industrial use, 7% urban use and 4 % other uses). Highly seasonal demands lead to temporally and spatially focussed water scarcities. Droughts and floods are also a matter of concern. Furthermore, in urban and farming areas ground- and surface water pollution are important problems⁷ (MINISTÉRIO DO AMBIENTE 2008). Water supply and sanitation services have improved throughout recent decades.⁸ Portugal is a democratic, unitary state with relatively strong local authorities and member of the European Union.

In 1994 the newly created Ministry of Environment started operating. Competencies for managing water resources were shared between the National Water Institute (INAG – Instituto da Água) and five DRARNs (Direcção Regional Ambiente e Recursos Naturais – DRARN) as subnational executive agencies. In 2003 environmental, land use and water management competencies and territorial and regional development competencies were subsumed under the CCDR (Comissão de Coordenação e Desenvolvimento Regional – Commission for Coordination and Regional Development).

Until the transposition of the EU WFD into national law in 2005, Portuguese water law was considered fragmented and malfunctioning (CUNHA SERRA 2003). The concept of river basin management was sidelined in favour compliance with European water supply and sanitation standards (THIEL 2010). First, it was criticized for creating overlapping, intransparent competencies. Horizontal coordination between sectors was lacking (NUNES CORREIA 1999; MINISTÉRIO DO AMBIENTE 2008). Although for national basins deconcentrated management agencies were formally in charge, they were considered “letter boxes” (THIEL 2009). Second, legislations are ineffective with regards to water pricing, licensing, environmental conservation, pollution prevention and implementation of river basin plans. Little data was available and dialogue and participation between the administration and users and among stakeholders hardly existed. Reasons were limited financial resources of the public administration at the subnational level, lack of political interest in environmental protection and management, and lacking democratic culture (NUNES CORREIA ET AL.).

Described set-up was reformed, leading to re-scaling of governance, starting in 2005. Corresponding formal decision-making is organized as regular legislative process where all Ministries were consulted followed by a parliamentary vote. Simultaneously, politics of consultation, participation and lobbying took place involving. When it was transposed in December 2005 as Lei da Água (Water Law), it had a parliamentary majority of 90%. Of particular importance was the new financial regime (TRH – Taxa de Recursos Hidricos), which regulated taxes for various activities. Another important aspect was the introduction of Regional Hydrographic Administrations (Administrações das Regiões Hidrográficas- ARH). The ARHs assumed water competencies from the CCDRs and took over important competencies from INAG. The ARHs are deconcentrated organs of the Ministry of the Environment and have a considerable degree of administrative and financial autonomy. They are responsible for river basin management plans, monitoring of water resources, registration, licensing, enforcement of licenses, execution of works, Environmental Impact Assessments and participation. The ARHs were established according to river basin areas, and are not territorially congruent with

⁷ River Basin Management Plans, technical reports (2011)

⁸ ERSAR.pt, accessed 22.10.2012

the CCDR. INAG retained responsibility for coordination and regulation, and international cooperation. The CCDRs lost all competencies for water.

Explaining re-scaling in Portugal - Contextual factors

Among contextual factors several interviewees highlighted that gradually the public water administration's attention shifted from improving water supply and sanitation for populations to guaranteeing good ecological and chemical status of inland freshwater more in general. Other than that context factors had not changed.

Explaining negotiation outcomes in Portugal

Field work established that re-scaling of water governance in Portugal was principally driven by changes in participating actors as well as power resources that actor groups presented in national level legislative negotiations. First what we called dynamic considerations and time preference explain the schedule of adopting the reform as well as it added to state actors' credibility (dealt with in the next section). In 2005, the socialist party had just come into power. Water governance reform was urgent because Portugal needed to implement the WFD (River Basin Plans including measures to improve basin management by 2009) (MINISTÉRIO DO AMBIENTE 2008) in order to avoid penalties and negative publicity. Nevertheless, in such urgency a minor modification of the existing law could have been expected. Nonetheless, other factors favoured more radical change.

Exit costs of actors, i.e. losses of not effectively reforming water management, are explained by both, re-scaling and the economic-financial regime. They are established by 1) changes in perceived political losses because of non-agreement on the economic-financial regime, and 2) implementation failure, as drivers of institutional change. Perceptions about exit costs in both categories had increased at the time because the European Commission threatened to take Portugal to court. Further, the Ministry of Environment increased its credibility once it obtained additional competencies over European funds and regional development. These vast competencies helped to overcome opposition by the agricultural sector and municipalities concerning the economic-financial regime. With regard to the content of the reform, credibility of the Ministry of Environment also depended on support from its administration, particularly the CCDRs and INAG. However, the Minister was responsible for both entities which put him into a strong position to overcome their opposition at relatively low bargaining costs.

Further, the personality of the Minister of the Environment made a significant difference to the content of the reform. Being a former academic and Director of National Water Institute he had good understanding of the sector, which was backed up by an extensive network of experts. River Basin Management had been advocated over a long period of time by this group of experts, lowering bargaining costs. In contrast, the political economy aspect of the reform was irrelevant because 90% of the Members of Parliament supported it after this was the sixth time this legislation had been presented. Opposition was raised only by the electricity sector and the municipalities resulting in a number of amendments to the proposed regime.

Finally, transaction and transition costs of alternative institutional arrangements and their distribution shaped the details of the reform. The Ministry of Finance opposed the reform most vehemently because it would create new public entities (the ARHs) raising administrative costs. Therefore, the Water Law was shaped to minimize additional costs, e.g. the reform was to be self-financing, administrative burden for the state was minimized by saving transaction costs through use of new technologies of communication. Also, the five ARHs have been headquartered in the same locations and facilities.

3.2 The Spanish case

The Spanish case considers the recent transformation of governance the Guadalquivir. 90% of the surface of the basin, 97.4 % of its population and 99.2 % of its uses are situated in Andalusia (CONSEJERÍA DE MEDIO AMBIENTE DE LA JUNTA DE ANDALUCÍA 2008). The basin accounts for 58% of all water use and 50% of the population of Andalusia. The principal user is agriculture. Interviewees called it the “spine of Andalusia”, underlining its symbolic value.⁹

Spain is an emerging “quasi-federal state” in which the distribution of competencies between the central state and each *Comunidad Autónoma* (Autonomous Communities – CA) is bilaterally negotiated (MARTINEZ-HERRERA UND MILEY 2010). The Spanish constitution stipulates that management of water of the 15 inter-communitarian river basins that cross several CAs such as the Guadalquivir, is competency of the central state. They are organized within so-called Confederaciones Hidrográficas (Hydrographical Confederations CH), which depend on the Ministry of the Environment but enjoy significant independence. They develop, and monitor basin management plans, administer water and related public resources, and develop public infrastructure.¹⁰ In decisions made by the CH, central sectoral administrations, territories concerned, and CAs are represented along with water users that hold water titles. In contrast, newly emerging management issues and users are underrepresented. The historic achievements of the CH in terms of economic and social development in continental Spain are widely acknowledged.¹¹ They became known as “hydrological paradigm” (SAURI AND DEL MORAL 2001), with water management associated with strong state agency, surface water works for agriculture and associated symbolism of national unity (SWYNGEDOUW 1999). On the other hand, today they are seen as responsible for many management problems, e.g. pollution, encroachment of shore areas, and degradation of wetland ecosystems uncontrolled illegal irrigation (MINISTÉRIO DE MEDIO AMBIENTE Y MEDIO RURAL Y MARINO 2010).

Actors chose a reform of statutes as pathways towards reform of water governance. As a result the CA gained “Exclusive competencies over the waters of the Guadalquivir which flow through its territories and do not affect another Autonomous Community”. While the contingent political constellation allowed for the reform the constitutional rules did not allow for it so that in 2011, competencies fell back to the central government.

Explaining re-scaling in Spain – Contextual factors

In the Spanish case interrelated contextual changes played an important role. Demand for water has increased in Andalusia since the sixties because of irrigation, the Common Agricultural Policy and large scale growing of olives. Further, water demand in the tourism, construction, renewable energy sectors and the domestic sector has been increasing. The ecological flow regime requested by the EU establishes “demand” and requires modifying water rights (MINISTÉRIO DE MEDIO AMBIENTE Y MEDIO RURAL Y MARINO, 2010).

Increasing ecological, social and economic valuation of clean water by administrations is the outcome of tighter European regulations. It can be assumed that problem perceptions have additionally changed because of better knowledge on the subject. Increasingly, surface waters and groundwaters are contaminated with nitrogen, and coastal aquifers suffer from saline intrusion because of overexploitation (MINISTÉRIO DE MEDIO AMBIENTE Y MEDIO RURAL Y MARINO – CONFEDERACIÓN HIDROGRÁFICA DEL GUDALQUIVIR 2010). The above-described scarcity of water and unsatisfactory quality are in stark contrast with the low monetary costs of actually using water, which does not include “environmental and resource costs” (2010).

⁹ Interview: Nueva Cultura del Agua, & Confederación Hidrografica del Guadalquivir, 11.3.2010

¹⁰ Interview: Confederacion Hidrografica del Guadalquivir, 10.3.2010

¹¹ Interview: Consejería de Agricultura y Pesca. 16.3.2010; Confederacion Hidrografica Guadalquivir, 18.3.2010

Technological change facilitated described changes: changes in pumping technology due to electrification, recycling of water for irrigation, sewage water treatment (MINISTERIO DE MEDIO AMBIENTE Y MEDIO RURAL Y MARINO 2010)), use of fertilizers and pesticides. Also, water meters satellite imagery to survey irrigation, intensification of electronic communication and increasing knowledge of aquifers need mention. The relative importance of transaction characteristics relevant to governance has changed. Groundwater use and diffuse pollution have increased. They were unrelated to the perceived spatiality, biophysical boundaries and directionality of surface water basins. Further, interrelated institutions changed. Of specific relevance were land use management and agriculture which had been decentralized and the European WFD's requirements.¹² In consequence, experts demanded integration of water management, land use planning, urban policies, industrial policy, and environmental policy. Important changes were the establishment of Andalusian water administrations and funding programmes and the transfer of competencies for intra-communitarian rivers to Andalusia.

Ideologies and derived mental models have also changed. Since the nineties emphasis was put on the ecological value of water, integrated and demand management (SAURI UND DEL MORAL 2001, p. 356). In 2001, the phase of polarization started when the conservative government proposed a revised National Water Plan which redistributes water across Spain. Opposing were regional actors, the scientific community, and social and environmental movements. The unexpected advent of the socialist government in 2004 led to a reorientation.¹³ Water transfers were abandoned, but efficient water use and demand management, and proposed desalination plants were promoted. Also, groundwater management was given attention.

Explaining negotiation outcomes in Southern Spain

The status quo of water management regarding the Guadalquivir had been challenged by the above-mentioned developments. Still, formally recognized, traditional water users did not change their positions on governance, because their rights to water are stable and guaranteed independent of scarcity. Also, on the national level, the Ministry for the Environment and the concerned CH of the Guadalquivir¹⁴ feared loss of competencies from such a change; they distrusted the regional administration, were apprehensive about lack of coordination and feared a precedent being set for decentralisation of inter-communitarian rivers all over Spain¹⁵. Environmental NGOs similarly advocated integrated River Basin Management also because their representation was stronger at the central level.¹⁶ "New" users favoured re-scaling through decentralisation. They promoted technologies of substitution, changes in property rights and more effective governance in order to access to water. They comprised of actors from the regional level state, as well as industry, the renewable energy sector, golf tourism, and farmers that do not hold use rights.¹⁷

The Andalusian renegotiation of statutes was launched by the President of the Junta de Andalusia in 2001. In 2004, after the unexpected arrival of a socialist government at the national level, demands emerged for transferring competencies over waters for Andalusia as part of statute renegotiation, in order to implement a "new water management culture", regional cooperation and coordination (AGUDO ZAMORA 2005). Officially, as a consequence of the symbolic charge of the issue and its link to the statutes, the transfer was carried by a strong network of support constituted by most sectoral, regional actors. With regard to power resources, therefore, the constellation illustrates the role of network membership.

¹² Interviews: Consejería de Agricultura, 16.3.2010; Confederación Hidrográfica Guadalquivir, 18.3.2010.

¹³ Interview: Consejería de Medio Ambiente, 29.3.2010.

¹⁴ In fact, the environmental Minister and the Director of Water at the time opposed the transfer.

¹⁵ Interview: Ministerio de Medio Ambiente, 26.3.2010; Confederación Hidrográfica Guadalquivir, 10.3.2010.

¹⁶ Interview: Consejería de Agricultura, 16.3.2010; Nueva Cultura del Agua, 11.3.2010; WWF, 30.6.2010.

¹⁷ Interviews: Arede, 15.3.2010; Nueva Cultura del Agua, 11.3.2010

The transfer was a “political decision”, negotiated at the “highest level” between the Prime Minister and the President of the regional government. In addition to the above-outlined dynamics and arguments in favour of rescaling (decentralisation), the regional government also wanted the transfer to make the new statutes symbolically attractive to the electorate. Further, several characteristics of the transfer implied great credibility for regional actors’ stances. Consequently, Andalusia used this favourable constellation and rushed the agreement before the window of opportunity could close. The transaction and transition costs of the rearrangement of governance did not play a role.

3.3 The German case

Germany is a member of the European Union and a federal republican state (*Bundesrepublik*). It is situated in a moderate climate zone. The case addresses the Elbe, which is shared by ten states within Germany (65,5%), the Czech Republic (33,7%), Austria and Poland (1,5%). Roundabout 25 million people live in the basin (75 % in Germany, 24% in the Czech Republic). Within the basin, water usage by chemical, paper, metal, leather, food, and mining industries; shipping; and sewage-water discharge, and water abstraction for mining play important roles. Several cross-state nature conservation areas are comprised of and flooding represents an important risk. Across Germany, including in the Elbe basin, dominant pressures are morphological changes, building on river banks and obstacles for migratory fish, as well as pollution with nutrients, whereas abstraction only plays a minor role. Household and industry consumption are decreasing, representing less than 20% (BUNDESMINISTERIUM FÜR UMWELT 2010). In Germany we need to complement understanding of formal minor changes with understanding of deliberate informal changes. Traditionally, the German states had executive functions in water protection and legislative roles. Changes in competencies require a two-thirds majority in the German parliament (*Bundestag*) and the Council of the States (*Bundesrat*). Most recent reforms of water management competencies were decided in 1994 and 2006 (GRANDJOT 2007). Since 1994, the German Federal State had had the framework competency of setting out the aims of water regulation. *Länder* were most important players implementing prescriptions. The Board for Water Affairs (*Bund/Länderarbeitsgemeinschaft Wasser – LAWA*) has been coordinating activities among the states and the federal level (www.lawa.de, accessed: 15.2.2012). To coordinate water management in hydrographic regions as required by the WFD, in 2003 the Elbe states opted to introduce consensus-based River Basin Organisation (RBOs) with a rotating presidency and a permanent secretariat (*Flussgebietsgemeinschaften – FGG*) (KÖCK AND UNNERSTALL 2006).

As part of a constitutional reform in 2006, “[. . .] the federal level obtained the right to regulate water management in a uniform way ...” to make uniform environmental legislations (“complete regulation” *Vollregelungen*) (REINHARDT 2007, p. 10). *Länder* still retained the right to diverge. The new water law in 2010 upscaled existing state laws to the federal level. It also included provisions for ecological status and passability for migratory fish into the competency of the Federal Water and Shipping Agency. On the European level, the Federal Ministry and the LAWA began representing German interests.

Described formal changes must be viewed in the context of significant changes in informal practices across scales: At the transnational level, as a result of deepening cooperation, increasingly trust has been established although commitments have become less ambitious. Within Germany, the RBO has successfully structured and accompanied cooperation in elaborating River Basin Plans. During stock-taking state-level administrators were involved at various scales. Over time decentral collaboration improved. In contrast, decision-making procedures proved complex and slow, so that issues were often referred to higher levels.¹⁸

¹⁸ Interview: Ministerium für Landwirtschaft und Umwelt, Sachsen-Anhalt, 13.12.2010.

The Federal Ministry of the Environment gained in informal importance as a partner on different levels. The LAWA started to use its position in European negotiations more effectively. Also, the mandate of the Federal Waterways Agency to work towards achieving ecological status of federal waterways will require collaboration between the federal level and the states. Thus, informally, water management has become more collaborative across scales. Higher scales have gained in importance, and state bureaucrats often request a stronger role for the federal level.¹⁹ Furthermore, environmental NGOs have gained access to discussions at all levels. They recognize that their claims are increasingly being taken seriously.²⁰

Explaining re-scaling in Germany - Contextual factors

With regard to changes in the ecological, economic and social value of water components of the Elbe basin, water of good quality has become more abundant and overall water availability has increased. Still, water pollution from diffuse sources remains a key problem. Furthermore, water retention in the watershed has diminished, increasing its value.

Relatedly technology changed: sewage water treatment has improved and farming practices have changed. Further, changes in consumer behaviour and water-saving technologies decreased water extraction. Concerning technologies of governance, metering and water quality monitoring has been expanded and standardized. Finally, since 2000, new communication tools (e.g., the internet, email) contributed to decreasing of transaction costs (KESSLER 2006). Concerning functionally interdependent institutions we need to refer to requirements formulated by the European WFD. National or international administrations needed to be named to coordinate comprehensive plans, information provision and participation. Concerning changes in ideologies all interviewees confirmed that the approach has changed significantly since the adoption of the WFD.²¹ Awareness of interdependencies has risen, and an integrated approach is now being pursued.²² Communication between the separate Ministries of the Environment and Transportation has decisively intensified.²³

Explaining negotiation outcomes in the Elbe, Germany

This section describes four instances out of which changes in the formal and informal scalar set-up of water governance in Germany emerged. First, a shift in scale was result of the new role of the LAWA as coordinating German states vis-à-vis the European level. Transaction costs reduction and efforts to increase political clout led to empowerment of the LAWA.²⁴ Basin-wide coordination led to informal upscaling to the ICPRE (STRATENWERTH 2006).²⁵

Second, the foundation of the RBO Elbe implied upscaling of governance. Three alternative organisational options were discussed at the time within Germany. Majorities, which prevented constitutional change as well as path dependence associated with the existing administrative and institutional set-up led to creation of the RBOs, at least for the Elbe²⁶. Operational coordination of water management was upscaled (STRATENWERTH 2006, p. 60).

Third, after RBOs and similar bodies had gained importance, the role of the LAWA in the overall process came in doubt. For the Elbe, the RBO led the process,²⁷ for reasons which can be found in the action situation and interrelated institutions at the state and European levels.

¹⁹ Interviews: Ministerium für Landwirtschaft, 14.12.2010; FGG Elbe, 13.12.2010.

²⁰ Interviews: Grüne Liga, 17.12.2010; Phone Interview: WWF, 23.12.2010.

²¹ Interviews: UBA, 8.12.2010; FGG Elbe, 13.12.2010; Ministerium für Umwelt, 26.11.2010.

²² Interviews: FGG Elbe, 13.12.2010; Ministerium für Umwelt, 26.11.2010.

²³ Interviews: Bundesministeriums für Umwelt, 25.11.2010; Grüne Liga, 17.12.2010

²⁴ Interviews: Ministerium für Umwelt, 26.11.2010; Bundesministeriums für Umwelt, 25.11.2010.

²⁵ Interviews: Bundesministeriums für Umwelt, 25.11.2010, ICPR Elbe, 16.12.2010

²⁶ Interviews: Bundesministeriums für Umwelt, 25.11.2010; FGG Elbe, 13.12.2010

²⁷ Interviews: FGG Elbe Magdeburg, 13.12.2010

The LAWA was unable to assist states in meeting tight deadlines.²⁸ Second, the RBO was led by Schleswig Holstein, which was a well-resourced water administration and great interest in instrumentalising River Basin Planning to achieve its interests.^{29, 30} Finally, described new technologies and changes in use patterns and ideologies facilitated coordination.

The final, fourth instance in terms of up-scaling concerns the explanation of negotiations about above-described formal, constitutional changes. In 2006, the Federal Ministry of the Environment was strengthened after its framework legislative competency had become a competing legislative competency. At that moment in time, at the national level a coalition of the two main German parties was in government, securing a two-thirds majority for constitutional reform in the parliament and in the Council of States because it had been recognized that timely transposition and implementation of European Directives and uniform regulations for the German water sector required stronger guidance by the national level (Sachverständigenrat für Umweltfragen (SRU) 2004).

4 Conclusions

From the presented cases we can infer that a necessary condition for re-scaling is a sufficient, political, temporally defined window of opportunity in which an actor constellation, that holds sufficient power resources (i.e. credibility, means to achieve its stance at low cost, coinciding with a broadly legitimized ideology) is able to bring its position to bear on formal decisions. Such a window of opportunity concerning fully fledged re-scaling of water management competencies was not given in the case of Germany, and ultimately it was also not given in Spain. In Germany, early recognition of this obstacle led to informal re-scaling to accommodate changes in ideology, European requirements concerning water governance. It was facilitated by changes in water use patterns. The cases of Germany and Spain further highlight the difficulties in bringing about re-scaling in the context of federal states where allocation of competencies are decisions that can hardly circumvent constitutional changes.

Furthermore, a pre-condition for a specific change in governance is its legitimization by an important part of the relevant stakeholders, experts and decision makers, as implied in the ideologies and paradigms they associate with. It may be brought about by changes in the valuation of specific water-related ecosystem goods and services and their governance by at least some actors, as a result of changes in use patterns or as a result of changes in production and exclusion technologies. Further, transaction and transition costs and their relation to characteristics of transactions (as a result of specific use patterns) and changes in exclusion technologies clearly play a role in governance reform and re-scaling, but a secondary one. Hereby transition costs are a proxy of path-dependence. They determine the specificities of how governance reforms (e.g. re-scaling), once decided, are brought about. Only in Portugal, because of tight budget constraints already at the time of reform, they were close to inhibiting the reform.

Further, from the cases we learn that national institutions are decisive in the way supranational legislations are implemented. Where they impinge on national economic interests and conflict, they may be sidelined altogether, as it seems has been the case in the Southern Spanish case of the Guadalquivir. Most of all, where convenient supranational governance requirements are instrumentalized in political negotiations over governance by those whose interests they serve. This could be observed in all three cases.

²⁸ Interviews: Ministerium für Landwirtschaft, 14.12.2010; FGG Elbe 13.12.2010.

²⁹ Interview: Ministerium für Landwirtschaft, 14.12.2010.

³⁰ Interviews: Ministerium für Landwirtschaft 13.12.2010; FGG Elbe 13.12.2010.

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