

Facilitating policy learning about the multi-actor dimension of water governance

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ABSTRACT

The recent focus on governance in water management puts increasing emphasis on the role of the various societal actors in water resources management, whereas the focus on adaptive management puts increasing emphasis on the capacity to learn. Adaptive governance thus requires learning about how policies work in multi-actor systems. Such learning requires new methods and approaches. Whereas current efforts towards policy learning in water governance are mainly accountability-oriented, adaptive governance requires also theory-oriented learning. Theory-oriented learning assigns a central role to policy theories, which express what types of policy interventions are thought to work in a given situation, and why. Theory-oriented policy learning in multi-actor systems requires one to look at the policy theories of the various actors involved in the policy cycle. In this paper, we illustrate the use of an actor analysis method that can support such learning in multi-actor systems, Dynamic Actor Network Analysis. We use this method to draw lessons on the implementation of the EU Water Framework Directive in Turkey. The results from this case show that indeed actor analysis methods offer useful insights for policy learning about the multi-actor dimension of water governance.

Keywords: Water governance; policy learning; IWRM; actor analysis; multi-actor systems; Water Framework Directive; Turkey

1. INTRODUCTION

Policy-oriented learning is critical to water governance in a context of constant change. The complexity of water systems and the unpredictability of future changes require adaptive water governance. Such adaptive governance means that water policies and management plans should be based on the best available knowledge and should leave room for flexibility in their implementation. Their implementation should be monitored and evaluated at regular intervals, to enable learning about a policy's impacts as its implementation unfolds. This should ensure that adjustments are made when necessary and that emerging insights feed into subsequent policy cycles (cf. Geldof, 1995; Dietz et al., 2003; Gunderson and Light, 2006).

The increasing attention for water governance introduces a focus on the various societal actors and their roles and responsibilities in water resources management. A key difference between government and governance, is that governance is a more inclusive concept, taking into account also the relation between government and society (Rogers and Hall, 2004: 4). This naturally brings attention to the multi-actor networks involved in governance, and the processes of mediation and interaction among actors. However, this is a relatively new field of attention

for many of the more classically trained water engineers. Furthermore, the unpredictability and capriciousness of social processes make it difficult to understand how institutional and socio-economic policy measures work in the multi-actor networks, as well as to organize collaborative learning among those actors. Especially for this multi-actor dimension, there is a need for new methods and approaches that facilitate learning for water governance.

This paper addresses this need. After a short assessment of the current state of affairs regarding policy learning for water governance, it proposes actor analysis methods as a class of methods that seems promising to facilitate learning about the multi-actor dimension. The use of a specific method, Dynamic Actor Network Analysis, is then explored in further detail. This method is used to evaluate early experiences with efforts to support the implementation of the EU Water Framework Directive in Turkey. The results show some important strengths and limitations of the application of the Water Framework Directive to support water governance in Turkey, thus contributing policy relevant lessons on the Water Framework Directive and similar approaches. More generally, these case findings confirm that actor analysis approaches can make an important contribution to policy learning for better water governance.

2. POLICY LEARNING FOR WATER GOVERNANCE

Policy learning is a broad concept, which is not always used in a very precise way, giving rise to misunderstandings and miscommunications (Armitage et al., 2008). Specifying the meaning of policy learning for a given situation, requires one to address the questions of who learns, about what, when, how, and why/to what effect (cf. Bennet and Howlett, 1992; Van de Kerkhof and Wiczorek, 2005; Armitage et al., 2008, p.2).

Generally, purposive policy learning in water governance is supported by some sort of policy evaluation. The bulk of current water policy evaluations is intended mainly to support learning by policy initiators or policy sponsors about whether or not water policies or programs were implemented as intended, and if this implementation was efficient and effective (see also Hermans, 2007). For instance, the evaluation by the World Bank of its 1993 Water Policy focused primarily on implementation and effectiveness (World Bank, 2002). A recent evaluation by the Asian Development Bank of a local water resources development project in Bangladesh had a similar focus on impacts, where effectiveness, efficiency and related considerations of relevance and sustainability were also considered (ADB, 2008). These types of policy evaluations can be characterized as accountability-oriented. In contrast, our interest is in learning by the various stakeholders involved in policy development and implementation, about a policy's underlying theory and objectives, primarily to support a better understanding about the mechanisms involved in water resources systems. This can be characterized as theory-oriented or theory-based learning.

This type of theory-based learning, requires at least two things: a theory and empirical data. It is widely acknowledged that almost any type of policy learning, whether instrumental (single-loop) or innovative (double-loop), requires a theory (Argyris and Schon, 1996; Van der Knaap, 2004; Levine and Savedoff, 2006). In its most basic form, such a policy theory, or theory of action, states: "If you intend to produce consequence C in situation S, then do A" (Argyris and Schon, 1996). Thus, a policy theory describes the expectations that decision-makers held when deciding on a policy: what were the expected outcomes and impacts of a policy, *and why?* Learning occurs by comparing these expectations with actually observed policy processes and their results. Thus, empirical data function as a means to verify the accuracy of the previously held policy theory.

What complicates matters, is that policy learning not only requires some sort of scientific method, in the form of a theory and empirical data, but that it also needs to fit in with the context of ongoing policy processes. Similar to policy analysis and policy evaluation,

policy learning requires primarily ‘useable knowledge’ (Baskerville, 1997). Although scientific methods also provide the standard for ‘usable knowledge’, it is plausibility rather than certainty that counts (Dunn, 1994). Furthermore, policy evaluation should be client-oriented, pragmatic and should use the simplest methods that will do the job (Wildavsky, 1979; Miser, 1985; Patton, 1997; Walker, 2000). In this sense, policy learning and its associated tools of policy evaluation and lesson-drawing are closer to the applied sciences and engineering, than to the fundamental sciences (Rose, 2005: 6). Finally, given the multi-actor character of most governance processes, policy learning tools should be supportive of participatory or interactive processes, allowing for active involvement of the various actors in the learning process.

In sum, theory-based policy learning about the multi-actor dimension of water governance requires a learning process that is pragmatic as well as analytical. This process should be less heavy than the common scientific investigation, but should meet certain analytic standards, to ensure that the resulting lessons are sufficiently plausible to the range of actors involved.

3. ACTOR ANALYSIS METHODS AS MEANS TO SUPPORT POLICY LEARNING

Facilitating policy learning about the multi-actor dimension of water governance requires analytical support that meets certain standards of scientific rigor, while being flexible enough to be adapted to a range of policy contexts. Tools and methods that could provide such analytical support can be found in the (ex-ante) policy analysis literature. Here, methods for actor analysis, stakeholder analysis and network analysis have been increasingly popular in the last decade or so (Hermans and Thissen, 2008). Examples of such methods are the methods for stakeholder analysis that have been developed to support corporate strategic management (Freeman, 1984) and project planning (MacArthur, 1997), but also methods that analyze the perceptions of actors, such as Dynamic Actor Network Analysis (DANA; Bots et al., 2000), methods that analyze the course of strategic interactions in policy games, such as the Graph Model for Conflict Resolution (Fang et al., 1993; Kilgour and Hipel, 2005), and methods that analyze the exchanges of resources and power among actors, such as described for instance by Timmermans (2004). These actor analysis methods address the factors that influence the outcomes of actors’ interactions – including those that govern water policy making and governance. Past application of these approaches for policy development suggest that they yield interesting new insights and have the potential to contribute to the interaction and learning processes among actors (e.g. Van Eeten, 1999; Timmermans, 2004; Hermans, 2005).

Of the range of actor analysis methods, the methods to analyze actors’ perceptions are especially promising to support policy learning about water governance. These methods are compatible with the idea of participatory, theory-based evaluations, as they use actors’ inputs to reconstruct critical assumptions behind policy mechanisms and to identify different success criteria. In other word, these methods enable the reconstruction of policy theories as seen by the different actors involved. This offers a vehicle for participatory theory-reconstruction and discussion among groups of actors. Also, most of these methods offer analysts guidance in executing a comparative analysis of the different perceptions. Such a comparative analysis enables learning about the differences in beliefs and perceptions that could help to explain policy success or failure. This is important, because actors’ perceptions and their framing of policy problems and solutions are known to be important determinants of their behaviour (e.g. Sabatier, 1988; Rein and Schön, 1993; Van Eeten, 1999; Carton, 2007).

This aspect of comparative analysis of perceptions is strongly embedded in the method for Dynamic Actor Network Analysis (DANA) (Bots et al., 2000). This method represents the views of the actor in cognitive maps, which are conceptual models that show the perceptions of actors as a combination of objectives, factors and instruments, which are linked by arrows that

depict the assumed influences among the elements. The construction of these models can be done in a specific DANA software environment, which links the different models to an underlying database. This database is then used as a basis for a comparative analysis of the different perceptions of the actors in a network (Bots et al., 2000). A DANA model, or cognitive map, is another way to represent the policy theory of an actor, containing policy objectives and the actions that would influence their realization.

4. CASE STUDY: THE EU WATER FRAMEWORK DIRECTIVE IN TURKEY

4.1 Introduction to the case

In this section we will illustrate the use of DANA to support theory-based policy learning about the EU Water Framework Directive. The EU Water Framework Directive (EC, 2000) provides a framework to support activities in the field of water policy in the EU member states. The EU Water Framework Directive reflects the policy relevant lessons and insights that have been reviewed, discussed, and finally accepted in various EU platforms and decision making structures. Thus, the EU Water Framework Directive itself is a result of policy learning, capturing a policy 'lesson', as discussed by Rose in his works on policy learning (1993; 2005).

After a policy lesson has been drawn, two questions remain (Rose, 2005): should a lesson be adopted, and can a lesson be applied? These questions are not only relevant to the countries in the EU, which are legally required to implement the Water Framework Directive, but also to non-EU countries, as it has been suggested that the principles embodied in the Water Framework Directive could also benefit water policy making in other countries and regions (Van der Sommen et al., 2006). These questions are especially relevant for countries that are currently seeking models and approaches to establish IWRM plans and to strengthen their water governance systems, including their monitoring, evaluation and reporting systems (WWAP, 2006: 471). Also, countries that are in dialogue with the EU about possible future membership, need to decide whether or not they want to adopt the EU Water Framework Directive, and the lessons embedded therein. Our case focuses on exactly this question: *can the lessons embodied in the EU Water Framework Directive be applied in Turkey?*

The logical first step in addressing this question is to describe the main elements and concepts that provide the building blocks for the lesson, or policy theory, embedded in the EU Water Framework Directive. Then, this policy theory can be compared with the policy theories held by different actors in the country or region where the lesson is to be applied. For this second and main part, Dynamic Actor Network Analysis was used for the reconstruction and comparison of the policy theories as expressed by the different actors in the local water governance network. Comparing these local actors' policy theories the policy theory that is expressed in the EU Water Framework Directive, is expected to generate useful insights into the EU Water Framework Directive, its strengths and limitations, and the implications for efforts to use the Water Framework Directive as a best practice for river basin management in Turkey and similar countries outside the European Union.

4.2 Lessons incorporated in the EU Water Framework Directive

In practice, the main policy objective associated with the implementation of the Water Framework Directive is to support integrated river basin management (IRBM) and integrated water resources management (IWRM), by offering a framework for the IWRM planning process as well as for continued monitoring, evaluation and reporting (WWAP, 2006: 471-2; Van der Sommen et al., 2006). We will outline three important elements that are required under the Water Framework Directive to support sound water resources management. In doing so, we

will omit an important fourth element, which is less relevant to our case, which is the need to recognize water as an economic good.

1. *Administrative arrangements: river basins as main planning and management units.* The Water Framework Directive calls for the establishment of River Basin Districts, which provide the main planning and policy unit. Administrative arrangements should be coordinated within such River Basin Districts, and the competent authority for each District should be identified. For each River Basin District, a River Basin Management Plan should be produced.

2. *Systematic and comprehensive planning procedures, driven by environmental objectives.* River Basin Management Plans should be developed through a planning process that is modeled after the 'DPSIR' framework (Driving forces, Pressures, State, Impacts and Responses) and related frameworks that are being used by the OECD, the European Environmental Agency and various UN organizations (see e.g. Walmsley 2002). This requires, among other things, the identification of the ecological status of water bodies, based on an assessment of hydromorphological, physicochemical and biological indicators. Then the anthropogenic pressures on surface waters should be assessed, including sources and substances of pollution, water abstractions for various uses and seasonal variations in demand, water transfers, flow diversions and water balances, morphological alterations, land use patterns and activities that are likely to have significant impacts. Thus, the WFD prescribes a comprehensive and systematic planning approach. In this approach, the substantive focus of planning is on ecology and water quality, driven by environmental objectives that relate to water bodies (cf. Van der Sommen et al, 2006).

3. *Participatory approach to river basin management.* The WFD requires the involvement of all interested parties in the river basin management planning cycles. It requires the publication of draft working schedules and draft river basin management plans, while allowing sufficient time for comments by interested parties. Although this arguably is a rather limited form of participation, it has been sufficient to label the Water Framework Directive as a piece of legislation that promotes participatory water management (e.g. Van der Sommen et al., 2006; Caille et al., 2007).

4.3 Policy theory behind the introduction of the Water Framework Directive in Turkey

The evaluation of the introduction of the Water Framework Directive in Turkey that we present here is related to a project that started in 2002. The purpose of this project was to support Turkey with the implementation of the Water Framework Directive (Senter, 2001). Under this project, a pilot River Basin Management Plan was to be prepared for a selected River Basin District, the Büyük Menderes river basin, to serve as an example to be applied on a wider scale in Turkey. Within the project's limited time frame (two years), it could not aspire to cover the complete Water Framework Directive. Thus, the pilot focused on the elements that were most important in the early phases of adoption.

In Section 2 of this paper, we cited Argyris and Schon (1996) to introduce a general form for a policy theory: "If you intend to produce consequence C in situation S, then do A". We can use this form to summarize the policy theory underlying the introduction of the Water Framework Directive in Turkey: "If you intend to adequately protect the water bodies in a Turkish river basin, then you need to establish a River Basin District and prepare a River Basin Management Plan, aimed at the realization of environmental objectives, based on a wide-ranging assessment of indicators for ecological status and anthropogenic pressures, with the involvement of all interested parties."

4.4 Reconstructing and comparing the policy theory of local actors

The Büyük Menderes river basin was selected as the pilot region for the introduction of the Water Framework Directive. This river basin is located in the south-western part of Turkey (see Figure 1). The river with a length of almost 600 km has its source in the Anatolian plateau, then it expands into a broad flat-bottomed valley, where it meanders, finally discharging into the Aegean Sea. The river basin covers an area of almost 25,000 km² across six different provinces and contains approximately 2.5 million inhabitants. The main land uses are agriculture and forestry, and economic activity is mainly related to agriculture, textile and leather industries and tourism. The delta of the river basin is a wetland with international importance for wildlife (IWFD Turkey Newsletter, 2002).

The perceptions of the various local actors involved in river basin management in the Büyük Menderes river basin were analyzed using Dynamic Actor Network Analysis (DANA) (Bots, Van Twist and Van Duin, 2000). The input data for the analysis were obtained through interviews with selected actors in the river basin, allowing them to express their view of water management in the Büyük Menderes river basin. These interviews were conducted using a short list of open questions. Two provinces located (almost) entirely within the river basin were selected to conduct interviews, the more downstream province of Aydın and the more upstream province of Denizli. We held a total of nineteen interviews with actors who represented several interests and sectors in the river basin, such as the chambers of agriculture and of commerce and industries, the provincial governor, irrigation unions and several provincial and/or regional directorates of government agencies. Twelve interviews were held in Aydın, which was not only the seat of provincial organizations, but also of some regional directorates that spanned different provinces. Nine interviews were held in Denizli. The results of these interviews were captured in transcripts and in DANA models (Figure 2), which were sent back to the respondents for verification. The resulting nineteen DANA models provided the basis for comparative analysis.



Figure 1: Location of Büyük Menderes river basin in Turkey

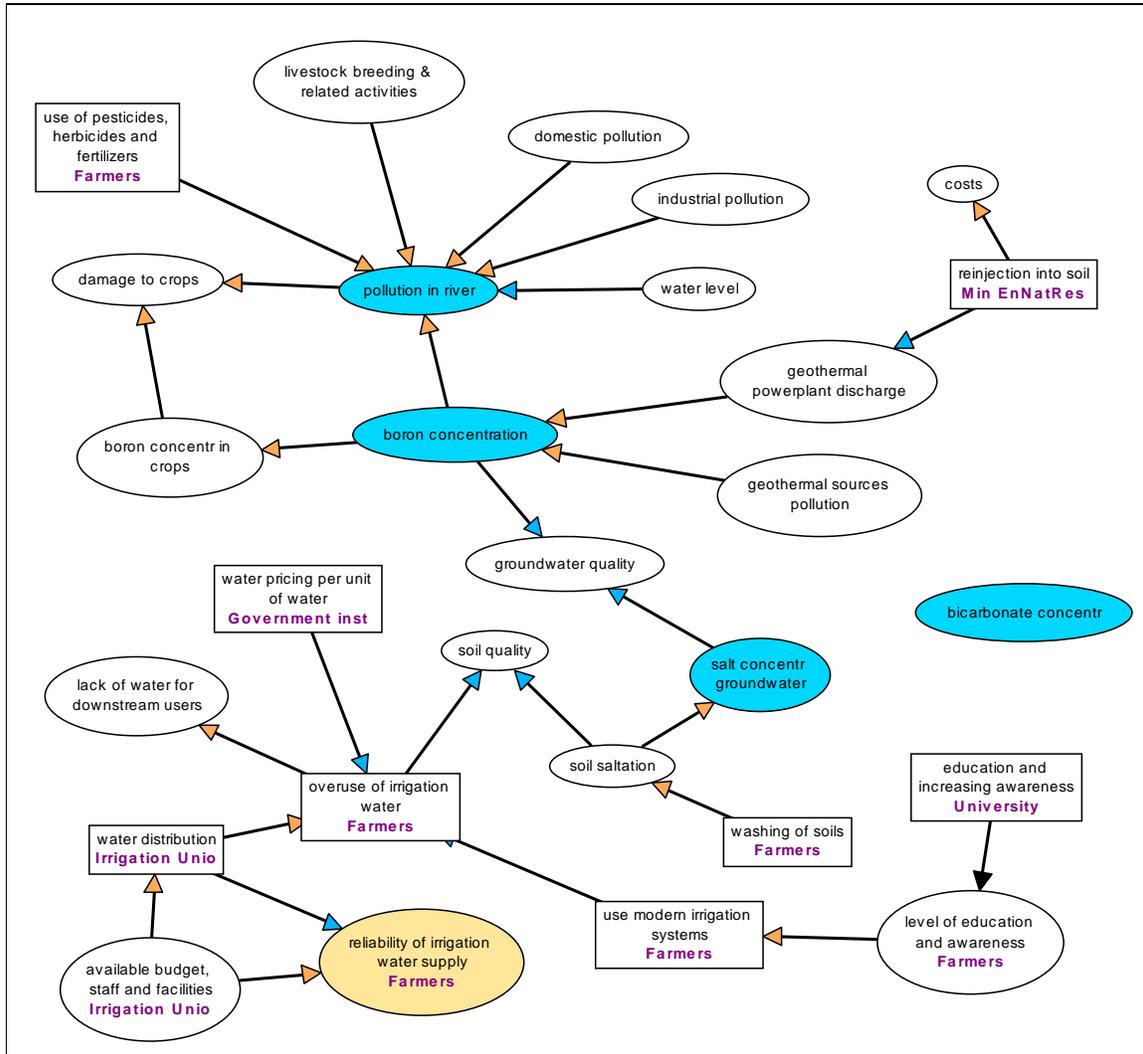


Figure 2: Example of DANA model constructed for the introduction of the WFD in the Büyük Menderes River Basin

Table 2 Relevance of problem categories (fraction of respondents that mentioned a problem)

Name of category	Total	Aydin	Denizli
Pollution at large	1.00	1.00	1.00
Administrative and institutional factors	0.95	1.00	0.86
Industrial pollution factors	0.95	1.00	0.86
Agriculture & irrigation factors	0.79	0.75	0.86
(Agricultural pollution)	0.37	0.35	0.57
(Other factors related to agriculture)	0.68	0.58	0.86
Domestic pollution factors	0.74	0.83	0.57
General water and soil quality	0.68	0.58	0.86
Geothermal boron pollution factors	0.63	0.75	0.43
Other impacts on water & soil quality	0.37	0.58	0.00
Water quantity (other than agriculture)	0.37	0.42	0.29
Nature conservation	0.16	0.17	0.14
Tourist activities	0.11	0.17	0.00
Rest category	0.53	0.75	0.14

The comparative analysis of the perceptions of the local actors, offers a basis to learn about the extent to which the policy theory incorporated in the Water Framework Directive match the context in the Turkish pilot river basin. For instance, Table 2 shows the relevance of various problem categories according to the local actors. This table seems to confirm the importance of two issues that are also the focus of the Water Framework Directive: Administrative and institutional arrangements, and of environmental objectives, embodied in the concern over pollution and water quality issues. Both types of issues are placed at the top of both tables and merit a closer look.

Administrative arrangements and institutional reform

Looking at the specific factors that are included in the ‘administrative and institutional’ category (Table 3) shows that the lack of co-ordination between organizations is not as high-placed as more down-to-earth administrative problems such as lack of funds and resources, and the perceived negative influence of politicians on water management, which makes it difficult to implement and enforce existing regulations, as local politicians are sometimes more inclined to favour short-term economic benefits over long-term environmental benefits. Further, it was felt that budget and resource constraints severely hinder the implementation and enforcement of existing policies for water management and environmental protection. The co-ordination and co-operation between different organisations should be improved, especially in cases where their responsibilities overlap. Some respondents mentioned the need for better legislation, for example the need for an official legal basis for Irrigation Unions. However, in general, problems were perceived more in the implementation and enforcement of laws and plans, than in the development or lack of laws and regulations.

Table 3 Relevance of factors in relation to administrative and institutional issues

	Relevance (#)		
	Total	Aydin	Denizli
administrative and institutional factors	18	12	6
political influences	10	6	4
costs, budgets, staff and facilities	10	6	4
coordination between institutions	5	5	0
functioning of Irrigation Unions	4	2	2
land use plans	4	3	1
overlap in responsibilities organizations	4	2	2
(N=	19	12	7)

The impression that the main problems are of practical nature, rather than demanding institutional reforms, is further strengthened by looking at the instruments that were perceived by local actors as most promising ways to support better river basin management (see Table 4). The overview of these instruments indicates that the actors in the pilot region focused mainly on operational instruments to address practical problems and law enforcement rather than institutional reforms and the development of new laws and regulations. Technically, most of the instruments would not be difficult to implement, but finding the necessary funds, people and equipment would be more difficult. This indicates that the main bottlenecks in water resources management according to the actors are on the operational level rather than on the institutional level.

Table 4 Instruments per category and the frequency with which respondents mentioned them

Instrument categories and names	Freq	Instrument categories and names	Freq
Pollution		Agriculture & Irrigation	
industrial wastewater treatment	8	land reconsolidation & development	7
financial support wastew. treatment plants	7	(limit) use agro-chemicals	7
(limit) use of agro-chemicals	7	use modern irrigation systems	4
domestic wastewater treatment	6	stimulate modern agricult. techniques	3
pollution standards based on next water use	4	volumetric water pricing	3
re-inject geothermal water into soil	4	Rest category	
advanced (chemical) wastewater treatment	3	education and increasing awareness	7
share treatment plants for industrial areas	3		
Administrative and Institutional			
monitoring & control of law implementation	8		
land reconsolidation & development	7		
pollution standards based on next water use	4		
establish and enforce land use plans	4		
development of new laws	3		
volumetric water pricing	3		

When specifically asked about the idea of co-operation and co-ordination in a River Basin District, this idea was widely supported. However, there also seemed to be a consensus about certain conditions and requirements that should be met to ensure its proper functioning. A river basin management organization would need a legal basis along with certain (implementing) powers to ensure an independent position and it would also need an umbrella organization at the national level. Furthermore, a river basin management organization would be a good institution to form in the long run, but for the short-term it would be better to use the existing institutional structures in the basin. Finally, some respondents mentioned that if co-operation between institutions and the implementation of existing laws and regulations was improved, the need for a new river basin management organization would decrease.

The opinions differed on the members of a new river basin management organization and on who should be its “competent authority”. Some respondents wanted to include a wide range of actors, others favoured a more limited selection to keep the size of the organization manageable, for example, including only the government organizations with decision making powers on water management issues. As for the competent authority, this would probably be a position contested by the local representatives of the Directorate for State Hydraulic Works (DSI), the Ministry of Environment, or the Governor, with the latter being most favoured for the short term. This preference for coordination by the Governor is presumably based on the current institutional set-up, in which the Governor coordinates all government activities within a province. However, it does not suggest who should take the lead when different provinces, and thus Governors, are jointly included in a River Basin District.

Environmental objectives in river basin management: pollution and water quality

Pollution problems in general are clearly most relevant according to Table 2, as they were mentioned by all respondents. More specifically, industrial pollution was mentioned by most of the respondents, related to the activities of the leather and textile industries in the upstream provinces of Uşak and Denizli. The problems with industrial pollution mainly consist of heavy metals and other chemicals that are used in the production processes and that are not removed from the effluent before it is discharged. A second important source of pollution is the domestic pollution, mostly from the urban areas where wastewater treatment facilities are not being

operated, even though they are in place in some municipalities. Also the villages in the rural areas contribute to domestic pollution, as they usually lack sewage systems and wastewater treatment facilities. The geothermal sources are another important pollution source. The high temperature of the water in these sources causes the boron that is present in the underground layers to dissolve, which makes it available for uptake by plants, affecting crop growth and possibly also human health. The geothermal powerplant is responsible for most of the boron pollution in the basin. In addition to these three major sources, also other pollution sources were identified. Agriculture causes pollution due to the use of pesticides, herbicides and fertilizers, but also due to inadequate irrigation and drainage methods.

The negative impact on agricultural activities was the most mentioned consequence of pollution, because the bad water quality affects the soil and the crop production. One result of this is the increased growing of cotton in the region, as this crop is most resistant to the boron pollution caused by the geothermal power plant.

Other important issues in the perceptions of local actors

Besides water quality problems, also other problems were connected to agriculture were mentioned by several respondents, related to water shortages and water demand for agriculture, problems with water distribution and with inadequate land management, causing soil salinity and erosion.

In some of the dryer years water shortages occur, causing some conflict between upstream and downstream users. Most farmers in the region are considered to use too much water to irrigate their lands. Although farmers pay a fee for water distribution services to irrigation unions, but they do not pay for the amount of water that they use, which does not provide an incentive to reduce water use. Most of the farmland is divided over several small plots that do not allow for the use of modern and efficient irrigation techniques, and the general level of education and awareness of farmers in relation to on-farm water management is thought to need improvement.

The irrigation unions are responsible for water distribution on the secondary and tertiary channels. They have been established a few years ago, to take over these responsibilities on local level from DSI. However, their quick establishment together with the lack of a clear legal basis is thought to have caused some organisational problems. Resolving the legal unclarities and improving their operations are thought to be necessary to improve the maintenance of the local water distribution infrastructure and the reliability and equity of water distribution.

The current agricultural practices and groundwater extraction lead to increased soil salinity in some areas, as observed by five respondents. The Regional Directorate of Forestry has often difficulties with the agricultural activities taking place in or around protected forests and wetlands. Agricultural activities such as livestock breeding cause deforestation and erosion and increase the risk of forest fires, and the use of pesticides and fertilizers affects endangered species in the national parks in the coastal areas. Finally, land of good quality is officially reserved for agricultural activity in the basin, but such lands are increasingly used for the construction of industrial and housing facilities without the required consent of the involved government institutions.

Summarizing it in a local policy theory

The combined policy theories of local actors suggest a local policy theory that covers a great deal of elements, and which can be summarized as follows: “If you want to achieve sustainable river basin management in the Büyük Menderes River Basin, there are some (operational) measures that should receive priority, such as: wastewater treatment facilities to reduce

industrial, domestic and boron pollution; resources to monitor and enforce compliance with existing laws and regulations; and improvements in agricultural practices for irrigation and the use of agro-chemicals. This requires an adequate budget, responsible politicians that are not easily corrupted by short-term wins, and effective coordination and cooperation among government institutions”

4.5 Policy learning about the Water Framework Directive in Turkey

The above local policy theory and the previously presented Water Framework Directive policy theory are not necessarily in contradiction, but clearly they emphasize different issues. The question that remains is: can and should the policy lessons articulated in the Water Framework Directive be applied in Turkey? In response to this question, five relevant insights emerge.

First, the Water Framework Directive helps to address water resources management problems that are caused by an absence of adequate water resources management plans or institutions. However, in the Büyük Menderes river basin, the main problems are the implementation and enforcement of existing plans and regulations. This does not mean that the Water Framework Directive offers no improvement over existing planning procedures and institutions in Turkey, but it means that the implementation of the Directive will not specifically target the problems that stand most in the way of improved water quality or quantity of local water bodies.

Second, even if improved institutional structures and planning procedures for river basin management alleviate some problems identified by local actors, reforms that focus solely on an institutional restructuring of the water sector will not be sufficient. Reorganizing water institutions will neither change the prevalent political culture, nor increase budgets for water management. Restructuring water institutions may help improve water management in Turkey, but other water management issues, outside institutional reform, may be more pressing.

Third, related to the limited resources for water management, which clearly is a concern in the case study area, one starts to wonder if adherence to the guidelines of the Water Framework Directive is really the best thing to do. Basically, the actors in Turkey suggest: “we are pretty sure about what our urgent problems are and we have good idea about where to look for solutions”. Nevertheless, the Water Framework Directive requires the local actors to embark first on a complete assessment, to make absolutely sure they are targeting the right problems and that they are considering the most cost-effective packages of measures. Although such complete assessments make analytical sense, in the face of competition for scarce planning resources, it may be a luxury that cannot, and need not, be afforded. Sound planning is a balancing act between analytical rigor and practical constraints. The Water Framework Directive specifically elaborates on the standards for analytical rigor, but in this process, the ‘best’ should not get in the way of the acceptable.

Fourth, our case confirms that the Water Framework Directive provides an integrative directive, integrating across the ecological dimension, along the way risking to lose some other crucial aspects of integrated water resources management out of sight. One of those other crucial dimensions is the so-called ‘utilitarian perspective’, which puts human activities central, rather than ecosystems (Steyaert and Ollivier, 2007).

Let us illustrate this point more clearly. The Water Framework Directive organizes the river basin planning procedures around ecological objectives, suggesting that the main concerns of local actors should be about environmental quality of water bodies, and that in all cases the primary water management objective should be to reach a good ecological status of all water bodies. Of course, no-one could be against a healthy natural water system, if only because such a system could support a range of human activities. However, in many cases and for many actors, these human activities may be considered more important than, or at least equally important as, the ecological health of water bodies. Healthy water bodies are not an end in

themselves for everyone, but the Water Framework Directive elevates them to that level. In doing this, the Directive hides many trade-offs inherent in water management and water usage. For instance, inadequate water management may ruin soils or spoil harvests – which is a concern in the Büyük Menderes river basin. Yet, in the Water Framework Directive, these impacts are subordinate to healthy water bodies; if the water bodies are in good condition, never mind land permanently lost for agricultural production. While in many countries of the European Union, it may be sensible to promote the ecological perspective over the utilitarian perspective in water management, this is a normative rather than an objective choice, which is not necessarily acceptable to other countries or regions.

Fifth, the EU Water Framework Directive contains inconsistencies between the predefined content and the supposed participatory nature of river basin planning procedures. If participation and input from actors is taken seriously, then why should status assessments cover a long range of items, even if the local actors clearly single out certain priority sources and substances of pollution? Why not start by investigating the suspicions of local actors on priority problems in their specific situation, rather than wasting money on a full-scale comprehensive assessment of all possibilities that scientists and experts could think of in general situations?

These insights may all sound like easy criticism now that the Water Framework Directive has been around for some years already. The Directive reflects policy theories of the period before its adoption in 2000. Only by implementing it, we learn and draw lessons like those identified here. This does not mean that the Water Framework Directive is a bad directive, but it simply suggests that some of its elements could be reconsidered, in light of the evidence that becomes available while it is being implemented. Especially when thinking about exporting its principles, or using it as a model for other countries. Finally, these insights may not seem surprising to some, but we should point out that many of the insights pertaining to the Büyük Menderes case were reported as early as 2002 (see Hermans and Muluk, 2002)

5. SUMMARY AND CONCLUSION

Policy learning requires, among others, careful evaluation and analysis of past and existing policies. The increasing emphasis on governance raises the question of how to evaluate the success of governance arrangements such as participatory, decentralized and economic policies, which typically target the multi-actor systems involved in integrated water resources management.

Learning about such water policies requires methods and tools that are different from the ones currently used. These tools should combine analytical soundness with a pragmatic orientation that enables analysts to use them in practical policy settings. As such, actor analysis methods can help, specifically those methods that enable a comparative analysis of the policy theories held by various actors.

We illustrated the use of one such method, Dynamic Actor Network Analysis, on a case of the introduction of the EU Water Framework Directive in Turkey. The Water Framework Directive is a typical example of a ‘soft’ governance instrument, focusing primarily on policy, planning and management processes, rather than directly targeting infrastructure construction and rehabilitation. Comparing the policy theory embodied in the Water Framework Directive with the policy theories of the local actors, through the use of this actor analysis method, supported the identification of at least five insights that enable learning about the policy theory underlying the Directive. This could support new policy cycles in adaptive water governance.

What is needed now, among other things, is further experience with the use of these and similar methods to support policy learning as a social process among various actors involved. Methods for actor analysis, such as Dynamic Actor Network Analysis, offer promising building blocks, but the larger challenge remains.

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