



NeWater

**COUPLING STRATEGIES IN WATER
MANAGEMENT. AN EXPLORATION
ON THE BASIS OF LITERATURE FROM
THE POLICY SCIENCES AND
RELATED FIELDS**

**Report of the NeWater project -
New Approaches to Adaptive Water Management under Uncertainty**

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1 Coupling in water management

The field of water management is evolving. The current paradigm of integrated water resources management has not even fully settled, and already there is talk of new paradigms such as Interactive Water Management and Adaptive Water Management.

There are some differences between Integrated Water Resources Management on the one hand and Interactive Water Management and Adaptive Water Management on the other (see e.g. Medema and Jeffrey, 2005). Integrated Water Resources Management is informed by traditional thinking on ways to make a bureaucracy work more effectively. Themes such as intra- and interpolicy cooperation come to mind. The goal is essentially a more optimal – in the sense of effective or cost effective, achievement of pre-established water policy goals. Interactive Water Management and Adaptive Water Management, on the other hand, accept the goal seeking nature of policy processes, meaning that they are accepting of other people's perceptions of water problems and actively seek to incorporate them into water management – as intended in Interactive Water Management- or assume that any policy goal can only be temporary and should be multifaceted, given the unpredictable nature of water ecosystems – as with Adaptive Water Management-.

Irrespective of which paradigm is proposed, those advocating it see an important role for the collaboration (cooperation, coordination) between actors that are involved in water management. Integrated Water Resource Management requires the collaboration between those involved in the management of groundwater, surface water, storm water, and wastewater. It also requires the coordination of different policy fields that are or could be water related. Interactive water management requires collaboration between water managers, stakeholders and ordinary citizens. Adaptive management implies collaboration between water managers, scientists and stakeholders at the 'bioregional' scale – that is, the river basin.

Collaboration implies challenges. Admittedly a caricature, the image of water management is one of a closed and technically dominated policy field, which attempts to facilitate decisions made in other policy sectors such as housing and land use planning. Collaboration requires other capabilities than facilitation or mere infrastructure construction. The 'soft' aspect of water management (see Gleick, 2003), that is issues from finance to maintaining network relations, becomes more important and these tasks require different skills than those of the traditional water engineer. There are relatively simple issues such as how one can effectively negotiate deals with others, but also more strategic issues such as the determination of when and where collaboration has an added value and where not. Obviously, collaboration can have advantages. Sharing tasks makes the task for each individual organization involved easier. At the same time, collaboration has a price; collaboration requires investments from the partners and potentially a loss of independence. To know where, when and with whom to collaborate is therefore an important question.

This paper looks for 'coupling strategies' for water managers. Coupling refers to the process of creating or avoiding linkages between water managers and others of which collaboration is one important form. These linkages may be personal, may relate to policies (e.g. adjusting timing and content), procedures, and even the foundation of common organizations. We are interested in the way in which water managers can start such linkages, but also in the way in which water managers can maintain and steer, that is influence or manipulate, linkages. In some cases the water manager may want to avoid or postpone linkages. We assume that there are strategies for that as well and we wish to include them under the heading of coupling strategies.

Imperial (2005) suggests that actors involved in water management can collaborate at three levels: the operational level, the policy level, and the institutional level. At the operational level, actors can start up a range of collaborative activities, including common land acquisition, collective license procedures, common education activities, joint environmental monitoring, and common enforcement. At the policy level, actors can share information and engage in joint fact finding, create common working groups, pool financial resources, formally share policy goals and work plans, etc. At the institutional level, actors can institutionalize shared policies, i.e. by making comprehensive land use plans, and they can found collaborative organizations such as a regional planning agency.

Each of these levels and forms of collaboration implies that linkages have been made between individuals and organizations. Our core question is: *what are useful and appropriate coupling strategies for water managers to create, maintain, steer and avoid such linkages?* The question stems from the realization that collaboration or avoidance of it – at either level- does not arise and cannot be maintained and steered without effort. Something has to be done to create such collaboration, certain activities have been undertaken to arrive at a stage where collaboration became possible and afterwards to keep it going and steer it in a certain direction. This ‘something’ is what we describe as coupling strategy.

To answer the central question, we survey the scientific literature in the field of policy sciences and other disciplines, which we have selected because they offer complementary and relevant insights. Each section below offers a summary of a certain scientific literature stream. This summary will focus on ideas on coupling strategies that are offered by that stream. As the literature streams in question are not fully independent from each other, there is a certain chance of overlap between the various sections. We do not consider this a major problem as this paper is exploratory in nature, and overlap may be a sign that certain ideas on strategies are essentially sound. Before we present the literature review, we also present some results of interviews with water managers in which they talked about their experiences addressing the need to collaborate. This enables us to compare these real-life experiences with the theoretical literature and to find out whether the strategies mentioned by the water managers fit in one or more of the strategies that are distinguished in the overview of theoretical literature. If this is the case, we will also compare the outcomes of the strategies mentioned by the water managers with those that would be expected based on the scientific insights. We will give some possible explanations for the results of these comparisons and conclude by pointing some lessons that can be learned from this expedition.

2 The relevance of coupling: water managers in the Netherlands

Before starting our theoretical exploration, we briefly illuminate the practical need for knowledge on coupling by highlighting the work of one particular water managing authority in the Netherlands, the waterboard ‘Regge en Dinkel’ in the East of the Netherlands. In addition, we introduce the literature stream that we will discuss in later paragraphs and relate them to statements made by our interviewees.

All or our interviewees agree that present day water management is something that can no longer be done without collaboration. One interviewee remembered the first time he realized this state of affairs. *“The water board intended to create a retention place in Hengelo, in the east of the Netherlands. After spending some time behind the drawing-table, I—being a project leader—took my car, drove around and selected a proper location. Then I informed the municipality about my plans, assuming that a quick start could follow”*.¹ The minister of Water Management refused to subsidize the plan, as this way of ‘project development’ was not in line with the paradigm of Integrated Water management, that she had advocated.² Conform this paradigm the interviewee had to develop the project together with experts with several disciplinary backgrounds, representing diverse stakeholders, rather than developing it in isolation. This would assure that all relevant stakes were integrated in this project. According to our interviewee, the Ministerial decision was not the only reason that caused him to try out a different approach. Another reason was that planning permission from the municipality was required for the project and such a permission was not forthcoming very smoothly as the municipality was not convinced if the need for a retention area and preferred other land uses such as recreation and industry.

The waterboard realized that collaboration with the municipalities implied new requirements to its staff. The waterboard decided to attract new employees that were specialized in ecology and spatial planning. This greatly improved communication with municipalities. It seems as if water boards and officers working at municipality speak a different language. Fortunately their negative attitude against water-issues turned into a positive one, when we, as water managers held multidisciplinary meetings with the officers of the municipality, conform the assignment of the Minister. The project became a huge success. *“People, including those working at the municipality, still refer to it with pride.”*³

The water board also created the position of ‘process manager’, which is currently occupied by two people. It was deemed important that one of them speaks the local dialect to allow for a smoother interaction with local landowners and the general public. The process managers appear to operate successfully as a duo, with one being more diplomatic and another more zealous.

The officials at the waterboard learned another lesson about coupling when it did apply the new strategy of collaboration with the municipalities. At stake was a large-scale infrastructural project that reconnects tributaries of a creek that have been separated by a canal several decades ago. A steering group was set up wherein municipalities, the province, and several stakeholders exchanged thoughts and brainstormed to connect and integrate ideas and interests. This had positive effects: some parts of the water project have been combined with other land use functions and plans, notably nature development plans and agricultural relocation plans. Combining forces meant that financial

¹ Mr. P. van Erp, Waterschap Regge en Dinkel, Almelo, March 25th, 2006.

² Derde Nota Waterhuishouding. Water voor nu en later. Ministerie van Verkeer en Waterstaat. Den Haag. V&W [1998].

³ Mr. P. van Erp, Waterschap Regge en Dinkel, Almelo, March 25th, 2006.

resourced could be bundled and each party was better off. On the downside however, it appeared that the representative of one of the municipalities was badly chosen as this person could not muster much authority within his own organization and could not deliver political support. *“Next time I make sure that an officer of municipality responsible and powerful with regard to spatial planning issues is involved during preparations of a project, rather than this ecologist.”*⁴

Collaboration with the landowners also turned out to be difficult. Previous accusations of involving them too late made the waterboard opt for an early warning approach, seeking publicity at a stage when then the plans were still relatively undeveloped. One of our interviewees explains: *“Although plans were not concrete, they [the landowners] perceived that the intention of the water board could be a threat to their property land. As we had to develop and negotiate the plan, a long silence followed after this vague message about our aims. Sometimes it is good to give people time to get used to an idea. However, this time, we had left them too long in uncertainty due to financial difficulties. This long pause has worked against us, as their insecurity turned into suspicion.”*⁵

The landowners interpreted the silence as a sign that the water board was drawing up its own plan without taking into account the stakes and feelings of citizens whose land would be needed for the project. This concern appeared to be warranted when the water board, apparently all of a sudden, presented rather concrete plans. The landowners decided to try and influence the municipality by seeking attention from the media: *“They strategically used media to express this feeling to a large public, including politicians of the municipality.”*⁶ The strategy did not miss its effect as the municipality decided it would not cooperate for the time being. As the water board by then had received subsidy from the EU, and a strict schedule was attached to this, the waterboard found itself in a bind.

Reflecting upon the lessons learned, one of our interviewees indicated the need for reflection of the strategies applied in collaborative enterprises: *“We lack time to reflect on what we have done and therefore miss the chance to learn lessons. Therefore we must learn by doing in spite of risks of failures, increased cost or delays. This is more because no overview exists of possible strategies water boards can use, let alone of the effectiveness of different strategies.”*⁷

The quote demonstrates the practical relevance of knowledge about useful and appropriate coupling strategies for water managers to create linkages, the central issue in this paper. The next sections will show whether such an overview could be gathered in scientific literature. Several research fields have been explored. The stories told by our interviewees show clearly the mutual unity between several parts of the system—the network existing from several stakeholders. The financial support from the province implied a definite loss of support from the citizens and consequently from the municipality. As a consequence of the interrelationships, interaction with one can cause chain reactions. This is exactly how reality is approached in the field of *adaptive management*. The narrative clearly shows the importance of knowledge about *agenda setting*. As one of our interviewees said, it is mostly projects for which they will definitely be rewarded in election times that dominate the agendas of officers working at the municipality, rather than water issues. Thus, answers to questions such as how to bring and keep a project on the agenda of stakeholders in a positive way are significant. Besides agendas, water managers might also want to know how to change policies, as water is not usually high on the list of matters that

⁴ Mr. H. Lansink, Waterschap Regge en Dinkel, Almelo, April 4th, 2006.

⁵ Mrs. M. Neeskes, Waterschap Regge en Dinkel, Almelo, March 25th, 2006.

⁶ Mrs. M. Neeskes, Waterschap Regge en Dinkel, Almelo, March 25th, 2006.

⁷ Mr. W. Wassink, Waterschap Regge en Dinkel, Almelo, March 23th, 2006.

municipal policy makers take into account. Therefore also literature about *policy change* is appealing, as this deals with the question of how can actors strategically influence policy success and policy change.

Another sub stream in policy science that approaches reality as a system, or network, is the field of *network management*. In spite of the similar approach, insights about the coordination and collaboration of the dynamics of a multi-actor arena differ from those that can be found in adaptive management. The question after coordination which is addressed in this paper, includes also the specific question of how to enforce boundaries and break them down on the right time. The water board Regge and Dinkel might have been helped if it would have known how to keep certain actors, such as the media with its bad messages, at distance. Insights can be attained from *boundary work*.

The behaviour of the municipality can be labelled as strategic, focused on its own popularity among its citizens. Although actors do not always behave rationally and strategically, *game theory*, which assumes such strategic behaviour, is also worthwhile to be explored. A field that is interesting in our search after strategies is *discourse analysis*. The importance of language has been mentioned by one interviewee.⁸ He explained that he had become project leader because the person who led the project at first instance did not speak the local tongue, while they expected that speaking the local tongue would improve the negotiations with landowners. Finally, our review covers the stream of literature on *polycentric governance and scale*. This literature is relevant because water management takes place in a world with various centres of authority and the water managers needs knowledge on how to connect these levels.

⁸ Mr. P. van Erp, Waterschap Regge en Dinkel, Almelo, March 25th, 2006.

3 Adaptive water management

'It is clear, therefore, that to manage adaptively is a question of creating the right links, at the right time, around the right issues to create a responsive system' (Westley, 2002: 357).

The idea of adaptive management stems from ecology. We pose that the core message of this literature is in the fundamental realization of the unpredictability of ecosystems and their responses to human interferences. Given the characteristics of ecosystems, long standing paradigms of natural resource management such as that of the Maximum Sustainable Yield, lead to unexpected outcomes in the long run, often in the shape of negative surprises. This is because human interference, especially if focused on one particular parameter (e.g. maintaining a navigable water level, a certain level of fish stock), leads to a chain of reactions – sometimes long term- from the ecosystem that at some point will undermine the very efforts humans undertake. The ideas on ecosystems translated into proposals for new ways of managing ecosystems, which became known as 'adaptive management' (Lee, 1993, 1999; Gunderson and Holling, 2002; Folke et al., 2005). Adaptive management implies a shift in thinking about appropriate behaviour and norms for the resource manager: *'[t]he overall goal of adaptive management is not to maintain an optimal condition of the resource, but to develop an optimal management capacity. This is accomplished by maintaining ecological resilience that allows the system to react to inevitable stress, and generating flexibility in institutions and stakeholders that allows managers to react when conditions change. The result is that, rather than managing for a single, optimal state, we manage within a range of acceptable outcomes while avoiding catastrophes and irreversible negative effects'* (De Jong et al., quoted in Clark, 2002: 354)⁹.

Lee (1993, 1999) suggests that in institutional terms, adaptive management implies that decision procedures must be about collective problem solving and must be open to stakeholders and the ordinary public. *Collaboration* and *public participation* are warranted. In addition, adaptive management implies a greater emphasis on learning through *experimentation* than conventional management. One advantage of this is that unexpected outcomes are not automatically interpreted as failure but as merely a signal to a new round of experimentation. Lee (1993: 75-76) indicates that in the process of interpreting the outcomes of experiments, the traditional scientific bias against so-called type I errors is replaced with a more pragmatic attitude and hence a more action orientated approach that avoids type II errors¹⁰. Finally, adaptive management is holistic in the sense that certain boundaries, relevant in the human world (e.g. jurisdictional boundaries) are ignored. This means that adaptive management has a *bioregional perspective*. Adaptive management is also holistic in the sense that the focus is on all elements of the system, not on one particular one. As Lee (1993: 57) writes: *'Seeing the ecosystems as a whole must precede efforts to manage it'*. This approach clearly has advantages, for instance in the realm of water quality improvement, where measures to clean up water downstream are useless if they are negated upstream. The institutional implications just described are well founded in adaptive management, and many authors have explained their relevance. Clearly adaptive management hinges greatly on collaboration. The question

⁹ Terms such as resilience and vulnerability are explained in Schoon (2005) and Ionesco et al. (2005).

¹⁰ The type II error implies that a hypothesis is rejected whereas later on it turns out to be true. Take the fire department for instance. If mistakes are likely – and they are- then it is probably better to err on the safe side. It is better to respond to all report of all fires and then sometimes find out that the report was wrong, than not to respond because a report seems incredible and then find out that it was in fact correct.

how such collaboration is achieved is however less well addressed in the adaptive management literature.

One of the core publications in this field is Gunderson and Holling (2002) and we have searched this edited volume for suggestions for coupling strategies. A more general observation stemming from this literature is that large (government) organizations have a preference for a predictive and optimizing approach to their environment, rather than an adaptive approach. In their infancy, organizations tend to show enterprise and sensitivity to outside variability. After settling however, resource accumulation and rigidity set in. Organizations, in their drive for efficiency, then become progressively more myopic and rigid (Holling and Gunderson, 2002: 61). Thinking about efficiency is thus the enemy of adaptiveness, and the adaptive management literature suggests replacing this goal with other goals such as reflexivity, redundancy, variability and memory. Reflexivity implies a continuous process of reconsideration of frames and goals. Redundancy implies the maintenance of relations ('social capital') that are not immediately useful but could serve as a back up. Variability refers to the idea of trying out different approaches to a certain problem so that not all eggs are in one basket (Berkes and Folke, 2002). Memory refers to a desire to maintain experience in a certain organization, which can serve as a protection against the use of management approaches that have been tried out unsuccessfully already.

The adaptive management literature places the 'structures of signification' concept of Anthony Giddens at a central place in ecosystems management, suggesting that for management practices to change, the way the outside world is interpreted must be reconfigured (Westley et al., 2002). In that sense the adaptive management literature connects to the 'discourse approach' discussed in section 9. The way in which interpretation schemes alter is not elaborated upon very deeply in the adaptive management literature. However, it is suggested (Pritchard and Sanderson, 2002: 167) that a water manager should try and control: (1) whether certain debates take place or not, (2) how to frame the debate, (3) in which jurisdiction to address an issue, and (4) on what scale to organize. Storytelling by leaders is said to be the main strategy for influencing these factors (ibid.). The role of visionary leadership is stressed throughout Gunderson and Holling's (2002) edited volume. The adaptive management literature suggests that *creating disturbance* is also a good strategy for creating reflexivity moments. Disturbance can be the result of crises in ecosystems or a consequence of the arrival of competition. Pritchard and Sanderson (2002) suggest that crises provide an opportunity to reflect upon the governance structure. The creation of competition, for instance as the consequence of the dismantling of service or policy monopolies, also creates turbulence and a new wave of reflection upon tasks and task divisions.

Westley (2002) is one of the few authors who addresses the work of the individual water manager. She suggests that ecosystems management implies the juggling of four balls that needs to be managed, the political ball (managing up), the bureaucratic ball (managing in), the community ball (managing out) and the scientific ball (managing through). The manager needs to interact with others, build up social capital, and use it wisely. Wise use of social capital implies looking at the cycles that occur in each of these domains and seek to use 'windows' that may occur: *'The experience of managing in complex adaptive systems is more similar to catching waves or looking for emergent corridors for action than pulling strings or working levers'* (Westley, 2002: 354). In some cases, effective use of windows requires patience and work of the manager. One eternal risk is that one ball drops because too much attention is paid to another one. Another is the *'contagion between problem domains that coexist temporarily'* (ibid.: 359) and that may 'infect' the problem in question by creating gridlock. Westley refers here to unwanted linkages of course.

4 Theories on agenda setting

Agenda setting is the process in which problems and demands of various stakeholders are translated into issues that compete for the attention of the public or public policy makers. Problems with attention from the public constitute the *public agenda*. Problems on which politicians debate constitute the *political agenda*. Problems on which official policy makers have to decide constitute the *official agenda*. In general, authors writing about agenda setting describe it as a process in which a problem perceived by private stakeholders is translated into political demands. Then the media and political parties adopt it as an issue for public debate, social conflict and public decision-making. Finally, this results in public policy as a response to the perceived problem. Because the sequence of this process might vary, some models of agenda setting are distinguished (Cobb and Elder, 1972). The first model is the model of the *external initiative*, assuming that stakeholders with few or no access to official policy makers try to get their problems first on the public agenda and next on the official agenda. The second model is the model of *mobilization*, assuming that political leaders bring specific problems to the official agenda and then try to mobilize the public agenda to acquire support from the public for their policy proposals. The third model is the model of *internal access*, assuming political leaders of influential persons around them bring issues to the official agenda without a wish or need to mobilize the public agenda.

Various authors try to search for and identify *barriers or conditions* in the process of agenda setting. Bachrach and Baratz (1970) developed a barrier model with four types of barriers. First they identify an ideological barrier based on the dominating pattern of values. A problem can be debated on the extent to which it is recognized as a problem that needs to be solved. Secondly, institutional barriers, like required procedures and the way in which public tasks and competences are organized, could determine the chance and the way in which a problem proceeds in the agenda setting process. Third, the public decision making process determines if proposals to tackle a problem will be adopted, rejected or amended. A fourth barrier is in the implementation process where wrong interpretations or failures may prevent a successful problem approach. Hoogerwerf (1989) distinguishes four conditions that determine the chance to get a problem on the public agenda. First, the public should consider an existing situation as wrong or injustice. Secondly, the situation should repeat itself frequently or strongly appeal to public emotions. Third, the public should consider the situation as changeable. The problematic situation should include variables that can be manipulated. A fourth condition is that there should be issue space on the public agenda. The attention of the public for issues on the public agenda is limited, and therefore issues have to compete. While the previous authors mainly focus on barriers concerning the accessibility and functioning of public organizations, Van der Heyden and Hisschemöller (1983) add barriers that concern the tenability of the demands of stakeholders and barriers that concern the organization of stakeholders or participants and their methods of getting influence.

Kingdon (1984) considers the agenda setting process or the generation of policy alternatives as a selection process, analogous to biological natural selection. In what he calls the 'policy primeval soup', many ideas float around, bumping into one another, encountering new ideas, and forming combinations and recombinations. While the origins of policy may seem a bit obscure, hard to predict and hard to understand or to structure, the selection process is not. Through the imposition of criteria by which some ideas are selected out for survival while others are discarded, order is developed from chaos, pattern from randomness. These criteria include technical feasibility, congruence with the values of community members, and the anticipation of future constraints, including a budget constraint, public acceptability, and politicians' receptivity.

Considering the sequence of the agenda setting process, Kingdon thinks in terms of *windows of opportunity* where a *problem stream* (public attention for issues: the public agenda), a *political stream* (political attention for issues: the political agenda) and a *policy stream* (attention of policy makers for policy options: the official agenda) have a chance to be coupled. The separate streams come together at critical times. Sometimes, the window opens quite predictably. At other times it happens quite unpredictably. The short duration of the open window lends powerful credence to the old saying “Strike while the iron is hot”. For instance, the policy window is an opportunity for advocates of proposals to push their solutions, or to push attention to their specific problems. The probability of an item rising on the official decision agenda is dramatically increased if all three streams – problems, policies, and politics – are joined. None of the streams are sufficient by themselves to place an item firmly on the decision agenda. If none of the three elements is missing – if a solution is not available, a problem cannot be found or is not sufficiently compelling, or support is not forthcoming from the political stream – then the subject’s place on the decision agenda is fleeting. The window may be open for a short time, but if the coupling is not made quickly, the window closes. A subject can rise on the agenda abruptly and be there for a short time. Generally, the rise of an item is due to the joint effect of several factors coming together at a given point in time, not to the effect of one or another of them singly.

Kingdon considers developments in the political stream as powerful agenda setters. Consensus is built in the political stream by bargaining more than by persuasion. Proposals are evaluated in terms of their political support and opposition, but partly against logical or analytical criteria as well. On the other hand, the policy stream is more a process of consideration in the policy community, where ideas themselves are important and where rational reasoning as well as evidence of effectiveness is required. The problem stream is dominated by statistics providing feedback on the state of the world, by activities of action groups, and so on. Kingdon distinguishes between *visible and hidden participants* in the agenda setting process. The visible cluster of actors includes those who receive considerable press and public attention. The relatively hidden cluster includes academic specialists, career bureaucrats, and congressional staffers. While the visible cluster affects the agenda, the hidden cluster affects the alternatives. Relatively hidden participants form loosely knit communities of specialist. Ideas bubble around in these communities.

In Kingdon’s model of the agenda setting process, the coupling of streams largely depends on the specific role of so-called *policy entrepreneurs*. Trying to identify qualities that contribute to the policy entrepreneurs’ success, he mentions at least three distinguishing personal characteristics. First, the person needs to have some claim to a hearing. This claim has one of three sources: expertise; an ability to speak for others, as in the case of the leader of a powerful interest group; or an authoritative decision-making position. Second, the person should be known for his political connections or negotiating skill. Third, and probably most important, successful entrepreneurs should be persistent.

The special role entrepreneurs play in joining the streams highlights two rather different types of activity: on the hand *advocacy* is involved, on the other hand *brokerage*. Entrepreneurs advocate their proposals, as in the softening up process in the policy stream, but they also act as brokers, negotiating among people and making the critical couplings. Sometimes, the two activities are combined in a single person; at other times, entrepreneurs specialize, as in the instance of one pushing from an extreme position and another negotiating the compromises. Kingdon also warns that we should not paint these entrepreneurs as superhumanly clever. They push for their proposals all the time; long before a window opens, they try coupling after coupling that fails; and by dumb luck, they happen to come along when a window is open.

5 Policy and institutional change

In the policy sciences it is widely accepted to make a distinction between incremental and major policy change. Incremental change is the normal step-by-step pace of change in policy. Major change is transformation of policy. In this paragraph we analyze two theories that apply this distinction, namely Sabatier's Advocacy Coalition¹¹ framework, and Baumgartner and Jones' theory of Punctuated Equilibrium. Basically two types of policy and institutional change can be distinguished: incremental change, which is characterized by instrumental decisions and major change, which is characterized by changes in fundamental policy propositions. Central question for analysis is: how can actors strategically influence incremental and major policy change?

Learning is central in the process of incremental change (Sabatier and Jenkins-Smith, 1993). Information and policy analysis are generally used to support a predetermined position and therefore the learning they cause will not by itself lead to changes in policy core of a public policy or coalition. The advocacy coalition framework gives some suggestions when learning across coalition is more likely, namely: when issues are analytically easy to manage, when an intermediate level of conflict is involved, and when a professional forum is utilized (Sabatier and Jenkins-Smith, 1993). Creating fora is therefore an important institutional strategy. In these fora it is important to appoint a policy broker who mediates between advocacy coalitions. Advocacy coalitions gain power by broadening up the coalition and by 'outlearning' other coalitions. Advocacy coalitions can act strategically in two ways: they can try to directly affect an agency's decisions or they can try to indirectly affect them by other sovereigns who control the agency's budget and legal authority (Sabatier and Jenkins-Smith, 1993). Concerning direct strategies the relevant agency is approached, concerning indirect strategies the relevant agency is not approached but another agency that influences the relevant agency is approached. Direct strategies are: persuading agency officials through testimony, changing the personnel making decisions, changing the professional background of agency staff, obtaining media publicity, providing research reports, and offering inducements. Indirect strategies are: conducting systematic review of agency rules, altering political appointees, pursuing litigation, pursuing major changes in legislation or legal authority, pursuing major changes in agency's budget, pursuing electoral strategy, and changing public opinion (Sabatier and Jenkins-Smith, 1993). These strategies will only lead to major changes when external events create beneficial conditions.

The advocacy coalitions framework stresses the importance of advocacy strategies, or to put it in other words convincing strategies. Convincing can be done by power or by resources, but also by argument. Baumgartner and Jones also stress the importance of convincing others by argument. Often this strategy is indirect: actors try to influence the media and thereby influencing major policy change. The media have an important role in building an image of current policy as well as the suggested new policy. Actors can try to influence the media, but this is an unpredictable strategy because it depends, among other things, on available space on the agenda.

Policy actors often employ image building as a dual strategy next to venue shopping. "On the one hand, they try to control the prevailing image of the policy problem through the use of rhetoric, symbols, and policy analysis. On the other hand, they try to alter the roster of participants who are involved in the issue by seeking out the most favorable venue for the consideration of their issues. In this process, both the institutional structures within which

¹¹ An advocacy coalition is composed of people from various governmental and private organizations that share a set of normative and causal beliefs and engage in a nontrivial degree of coordinated activity over time (Sabatier and Jenkins-Smith, 1999: 120).

policies are made and the individual strategies of policy entrepreneurs play important roles” (Baumgartner and Jones, 1991: 1045). Institutional strategies are therefore creating structures that have multiple venues or forums. These venues can be at the same level (horizontal venue shopping) or at another level (vertical venue shopping) and therefore demands either a polycentric governance structure or a multi-level governance structure. ‘In-game’ strategies are image building and venue shopping.

6 Policy networks and network steering

The policy network approach developed due to the dissatisfaction with previous models of decision-making that consider government as a single actor and 'in control'¹². The reality of policy making as a complex and multi-faceted process led by the beginning of the 1980s to the birth of the policy network approach. It helped to move beyond the stalemate to either assume elite theory or pluralism in policy science (Börzel, 1998). Multi-actor perspectives replaced single actor perspectives (rational actor and subjective rational actor). The suggested analysis of the multi actor process can get fuzzy; it is assumed that actors might change preferences over time (March and Olsen, 1976). Table 1 highlights some of the central contrasts:

Table 1 Characteristics of the single actor and the multi actor perspectives. After Klijn, 1996.

Single-actor/Rational perspective	Multi-actor/Network perspective
Rational and subsequent steps from problem to solution	Game in which actors show strategic behaviour and try to serve their own interest
Right – wrong	Gains-losses
Solutions for problem	Package deals
Content, factors, information	Process, actors, relationships
Hierarchy, unilateral power bloc, objective and orderly information	Mutual interdependencies, no consensus about applicable rules, subjective information

A network is a more or less stable pattern of social relations between interdependent actors, which take shape around policy problems and/or policy programs (Hufen en Ringeling, 1990: 6, Bressers 1993, Kickert, Klijn et al. 1997: 6, Klijn 1996). Börzel perceives networks both as a perspective from which interest mediation can be described and understood as well as sets of public and private actors that try to deal with 'policy overload' caused by differentiation, sectoralization and specialization in society (1998).

6.1.1.1 Some types of networks

Lulofs and Hoppe (2006) categorize sub-sets of actors by the degree in which actors share policy relevant beliefs and the degree in which actors coordinate their behaviour strategically in order to strive for derived concrete goals:

¹² Pluralism emphasizes the non-hierarchical, loose and hoc relations between interest groups and government while neo-corporatism emphasizes long lasting monopoly relations between interest groups and government based on trade: interest group discipline their members and get influence on policy in return, a clear trade relation based on mutual interests.

Table 2 Typology of sub-sets of actors. Based on Lulofs and Hoppe (2006: 30).

		Degree of strategic co-ordination	
		High	Low
Degree of shared policy relevant beliefs	High	Policy community	Latent policy community
	Low	Resource dependency network	Issue network

Rhodes and March describe a *policy community* as a tightly integrated long lasting network, involving few organizations that interact frequently and depend upon each other for resources. This type of network is stable over time in terms of membership and values, and consensus is seen as an important parameter (1990). A policy community can be in an *emerging* stage for a long time. This implies that sub-sets of actors show considerable congruence in their policy relevant beliefs, but show a limited level of strategic coordination. Actors in the two types of networks just discussed are dominantly driven by their beliefs and ideas and therefore will show a pronounced policy oriented type of coordination (Lulofs and Hoppe, 2006). This in contrast to the other two types of networks: The *resource dependency network* is characterized by strategic co-ordination, meaning that co-ordination is limited to safeguarding and expanding the resources. Resource (inter) dependency and the drive to maximize resources are the dominant motives to cooperate strategically. In contrast, the issue network is a loosely integrated set of actors, with variable access and interaction patterns, and consensus is rarely reached (Rhodes and March 1990 and March and Rhodes 1992 as cited in Daguerre 2000). It therefore does not show a high degree of strategic co-ordination and is centred on interests (Lulofs and Hoppe, 2006). The first section suggested that actors can collaborate at three levels: the operational level, the policy level and the institutional level (Imperial, 2005). One might assume that actors in policy communities might also collaborate on the institutional and the policy level while resource dependency networks and issue networks might restrict themselves to collaboration at the operational level. This seems plausible for collaboration within a policy sector. We are however especially interested in collaboration across policy sectors. And for that situation we are not so sure about this analysis, policy communities tend to be rather rigid and closed communities, so it might as well be assumed that policy communities enter into collaboration with a rather limited, sector perspective.

6.1.1.2 Typical policy network strategies

It is important to realize that sub-sets of actors link into networks for varying motives. Therefore also mixed types of networks might emerge. Situations in which more than one of the binding elements is active. This is of course easily empirically illustrated by policy-communities that, while policy oriented, admit that embedding some issue networks is unavoidable to overcome opposition. Typical strategies might include initiating and constituting some types of networks (i.e. finding the right partners and engaging them in partnerships). It comes down to creating favourable process conditions such as developing joint societal and individual values, building trust developing joint problem/ issue definitions and chances for revenues and their allocation. And therefore supporting the 'readiness to act' in favour of the water-goals/water project, for instance by supporting joint 'framing of reality', i.e. shared policy problem and policy issues definitions and shared perception of joined benefits and their allocation over relevant actors. Those favourable process conditions are however not created easily and should be focused upon in the following two main strategies (Kickert, Klijn en Koppenjan 1997, Meier and O'Toole 2001; Klijn, 2005, 1996: 77, 2005):

1. Management of interactions:

Continuous monitoring and process management of interaction processes in networks, seeking agreements, providing mediation and safeguarding channels and modes of communication; keeping in mind the relevant policy relevant beliefs, resources and interests of sub-sets of actors.

2. Management of networks:

Initiation, direction and guidance of networks; keeping in mind the relevant policy relevant beliefs, resources and interests of sub-sets of actors.

In Klijn's view, these types of strategies should cover four aspects crucial for comprehensive and successful network management: activation of actors and resources, developing and applying goal achieving strategies, strategically using organizational arrangements and guidance of interaction. The table below provides an overview of project management strategies:

Table 3 Overview of network management strategies. Based on Klijn 2005 and 2006.

	Activation of actors and resources	Goal achieving Strategies	Organizational arrangements	Interaction guiding
Management of interactions	Selective activation, resource mobilizing, stabilization, deactivation of actors and resources, initiating new series of interaction, coalition building	Searching for goal congruency, creating variation in solutions, influencing (and explicating) perceptions, managing and collecting information and research	Creating new ad hoc organizational arrangements (boards, project organizations, etc.)	Mediation, brokerage, appointing of process manager, removing obstacles to cooperation, creating incentives for cooperation
Management of network	Network activation, changing composition of networks, changing position of actors	Reframing of perceptions, changing decision rules in networks, changing information flow permanently	Creating permanent organizational constructions	Changing or setting rules for conflict regulation, for information flow, changing pay-off rules or professional codes

One should interpret this table dynamically. Selective activation of actors for instance might be realized by adding new organizational arrangements, for instance a sub-committee. And, although interaction in networks is often horizontal and informal, also in networks there is hierarchy and there are rules.

7 Boundary work

Strategic alliances, joint working arrangements, networks, partnerships and many other forms of collaboration across sectoral and organizational boundaries increasingly characterize policy (Williams, 2002). In this policy landscape collectives and individuals who span boundaries are needed. These boundary spanners have many names in the literature, e.g. policy entrepreneur (see the paragraphs on agenda setting and policy change), public entrepreneur (Roberts and King, 1996) and policy broker (see the paragraph on policy change). Boundary spanners can be collectives that are known as collective entrepreneurs (Roberts, 1998) or boundary organizations (Guston, 2001).

The dynamics and complexity of a multi-actor arena makes coordination and collaboration essential for a successful project. Institutional arrangements can set the stage for a successful collaborative process, but it is “*clear that whatever else might help explain success in the collaborative process, the efforts and creativity of what I call purposive practitioners is an essential explanatory ingredient*” (Bardach, 1998: 6).

A competent boundary spanner is not only managing complexity, but is also trying to introduce, translate, and implement and innovative idea into public practice (Roberts and King, 1996). Put in another way, the boundary spanner *designs* change. Kingdon’s policy entrepreneur is skilled at coupling problems, policies and politics. Solutions (policies) are already prepared opportunistically in anticipation of future opportunities or ‘policy windows’. Baumgartner and Jones’ policy entrepreneur seeks venues for ideas to give them the most leverage for change (see the paragraphs on agenda setting and policy change).

Usually the boundary spanner has a ‘mainstream job’ and does not have time to do all the work through various stages of the policy process. Therefore ‘the boundary spanner’ is often not one individual but several individuals, a group, or even an organization; this is called collective entrepreneurship (Zito, 2001; Roberts and King, 1996). Boundary spanners modify strategies and behavior depending on their position in the policy system and the nature of change they pursue. Those outside the government are more likely to rely on collective entrepreneurship because they lack official resources. Because they are free from governmental constraints they are also more likely to pursue major change than incremental change. Inside the government individual entrepreneurs pursuing incremental change are more common (Roberts and King, 1996). Sometimes collective entrepreneurship can take the form of a boundary organization. Boundary organizations serve under different principals and serve a mediating role, with accountability to the organizations involved. An important strategy of the boundary organization is to speak differently to different audiences (Guston, 2001). An epistemic community¹³ (Haas, 1992) can also be a collective entrepreneur by strategically introducing new scientific ideas and causal beliefs (Zito, 2001).

Individual or collective boundary spanners often use certain entities or objects to span boundaries. Objects can bring actors together by creating an overlap in ideas and interests. “*Boundary objects are both adaptable to different viewpoints and robust enough to maintain identity across them*” (Star and Greisemer, 1989: 387). Objects and other non-human entities (actants) play more or less the same role as human actors (see e.g. Latour, 1988). Star and Greisemer (1989) identify four types of boundary objects: repositories, ideal types, coincident boundaries, and standardized forms. Also spatial zoning schemes, rivers or

¹³ An epistemic community is a network of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge (Haas, 1992: 3).

even regions can function as boundary entities. Boundary events, such as floods, can also be recognized. All entities and events often mean different things in different ‘worlds’ and therefore actors have to work hard to reconcile and translate these meanings for effective coordination. For effective coordination crafting, diplomacy, and the choice of clientele and personnel are important (Star and Greisemer, 1989).

We have seen already that an entrepreneur is a special type of boundary spanner in the sense that an entrepreneur also wants to change policy. On closer examination the policy broker is also not identical to a boundary spanner or policy entrepreneur, but rather a special type of boundary spanner. A broker is an intermediary or a go between. The broker does not promote ideas as the entrepreneur does, but stands neutrally between two or more coalitions. In boundary spanning leadership style is important. Three basic types of leadership style have been identified: advocacy, facilitative, and directive leadership (Bardach, 1998; Williams, 2002). The most important leadership strategies identified are capacity building, brokering, facilitation, negotiation, coordination, networking, project management, resource packaging and building trust (Williams, 2002).

Through advocacy, facilitative and directive strategies boundaries are spanned. However, it is too simple to state that there are either spans or no spans. A boundary span has many dimensions. Whetten (1982) distinguishes seven dimensions of boundary spans (see Table 4).

Table 4 Based on Whetten, 1982.

Type of boundary span or dyadic linkage	Which means...
Multiplicity	The number of different types of relations connecting two organizations
Stability	The extent to which relations of a given type remain the same over time
Standardization	The fixedness of the units and terms of exchange for any two actors of a network
Formalization	The extent to which the actors interactions are formally organized
Intensity	The extent of the organizations’ resources committed to the relationship, both in terms of amount of resources exchanged and frequency of exchange
Reciprocity	The extent to which the relationship is symmetrical. Also referred to as mutuality or symmetry
Redundancy	The extent to which the purpose of a given relation is unique or superfluous

Boundary spanners can coordinate by adjusting these dimensions of a relationship. By adjusting a relationship they can also (accidentally) change relationships with other actors or their position in the network.

Boundary management is particularly challenging because boundary spanners must not only be adept at breaking down boundaries but they must also be adept at enforcing boundaries to protect themselves from unnecessary complexity and dynamics. The art of boundary management is a balancing act between inclusion and separation, and between dependence and independence (Williams, 2002). Literature on boundary work addresses the issue of inclusion or separation. Yan and Louis (1999) make a distinction between buffering boundaries, bringing up boundaries, and spanning boundaries. Boundaries are an essential condition of existence for a system because they protect the system from its environment.

Boundary buffering means maintaining the existing boundaries, which requires monitoring and regulation around the system. Bringing up boundaries is creating boundaries. This not only refers to purposively shutting out other actors, but also refers to a more natural process that brings up boundaries, namely the focus of activities on the sub-unit's task. Working on a task automatically leads to tight coupling and that's where boundaries naturally emerge between the tight-coupled task unit and the loosely coupled environment. Buffering and bringing up boundaries are orientated towards keeping stability and order, or in other words towards efficiency. To be effective however external adaptability is needed and this requires boundary spanning, which consists of creating an interface for transactions with the environment (Yan and Louis, 1999).

8 Game theory

Game theory is a variant of rational choice theory. In noncooperative game theory the assumptions are that actors will rationally maximize their own self-interest in situations where they have complete information and their computational capacities are unlimited (Scharpf, 1997). These assumptions often do not come true in the real world where actors have a bounded-rational view (see e.g. Simon) or even an irrational view (De Bruijn and Ten Heuvelhof, 1995). Nevertheless the basic notions of interdependent strategic action and the types of game that are central in game theory are appealing to the task at hand. In this paragraph we discuss Scharpf's and Axelrod's contributions to game theory. We discuss Scharpf because his relatively realistic approach to using game theory in a complex political world and Axelrod because of his focus on smart collaboration strategies.

Scharpf (1997) focuses on institutions and how they affect interaction. The institutional setting, the actors' orientations and capabilities, the actor constellations and the mode of interaction are contexts that directly influence actors' strategies. Actor constellations could be zero-sum (win-lose) and positive-sum constellations (win-win) or somewhere in between. In two by two games we can distinguish some archetypal game constellations, namely pure coordination, pure conflict, assurance, battle of the sexes, the prisoner's dilemma, chicken, deadlock and Rambo (Scharpf, 1997). Strategies in these games are either collaborating or defecting. Sometimes zero-sum games can be transformed in positive sum games. This requires a 'bigger pie'. Brandenburger and Nalebuff named this bigger pie the value net, which represents an encompassing system of value creation with its players and interdependencies. Players include possible helpers but also possible adversaries. Knowing how to read the value net accurately and being capable of perceiving how much others value your role in the system grants organizations a great advantage. Thinking strategically on this level means to be able to view several interlinked value nets and read them simultaneously, in order to act ahead of time, and therefore, create an environment where your organization will gain, but will enable others to do so as well. Changing the game often requires both cooperation and competition or as Brandenburger and Nalebuff put it 'co-opetition'.

There are basically four modes of interaction but each mode has some very interesting subtypes. The first mode is a non-cooperative game when strategies are chosen by unilateral action. Three submodes are non-cooperative games, mutual adjustment and negative coordination. The second mode is a cooperative game when strategies are chosen by negotiated agreement. Submodes are spot contracts, distributive bargaining, problem solving and positive coordination. The third mode is the voting game when strategies are determined by majority rule and the fourth and last mode is the hierarchical game when the strategies of actors can be determined by the unilateral choice of another actor (Scharpf, 1997).

Scharpf provides an advice for the best structure to achieve the welfare maximum. He concludes that "...the combination of positive coordination, practiced within relatively small leading coalitions, and negative coordination or bargaining with the remaining members of the population is able to achieve intermediate levels of general welfare relatively efficiently" (Scharpf, 1997: 271). Positive coordination is a combination of bargaining (including issue linkage and package deals) and problem solving. In this combination transaction costs are likely to be very high and will increase exponentially as the number of actors increases. Therefore Scharpf argues that positive coordination should be employed only in a small leading coalition. Negative coordination is also a variety of negotiation, but here certain actors have veto power. In Scharpf's best structure negative coordination and bargaining should be used with other actors outside the positive coordination coalition. For bargaining and negotiation to be more effective it is important to

do this within a hierarchical authority structure otherwise there could be problems of commitment and compliance. A hierarchical authority structure is something else than the actual use of hierarchical direction. The actual use is not advised most of the time because of information and motivation problems (Scharpf, 1997).

This does not give insight in the difference that moves of players (strategies) can make, but more on how changing different levels of structure can make a difference. Scharpf does not address this, but this issue is addressed by Axelrod. Axelrod advises on structure that mutual collaboration can be promoted by: *“making the future more important relative to the present; changing the payoffs to the players of the four possible outcomes of a move; and teaching the players values, facts, and skills that will promote cooperation”* (Axelrod, 1984: 126). Especially enlarging the shadow of the future (i.e. making it more important relative to the future) is important to make reciprocal interaction collectively stable. Enlarging the shadow of the future is either possible by increasing the frequency of interaction or by increasing the duration of interaction. Limiting the number of actors involved is a good way to set the conditions for frequent interaction.

Axelrod also gives advice for strategies of players. Based on computer experiments he advises four things in durable iterated prisoner's dilemmas or repeated games (Axelrod, 1984: 110):

1. Don't be envious;
2. Don't be the first to defect;
3. Reciprocate both cooperation and defection;
4. Don't be too clever.

The best strategy is to practice reciprocity (tit for tat, or an eye for an eye). Collaborative moves by actors are rewarded by collaboration, and defective moves are punished by defection, but only once. This creates sufficient understanding or even trusts for the actors involved for collaboration to thrive (Axelrod, 1984). This strategy is undoubtedly the best in two-player games, but the effectiveness becomes less and less clear when more players are added to the game (Scharpf, 1997).

9 Discourse approach

Discourse analysis is a currently fashionable approach to policy sciences that owes intellectual debts to the field of knowledge studies, philosophy of science, and science and technology studies. Although often associated with post positivism, there are certainly also more positivistic accounts of discourse analysis. Discourse analysis implies the analysis of conversation or reasoning, and thus attention to language. The basic premise of the discourse analysis stream is that the ways in which problems and their solutions are discussed (or ‘framed’) have significant political implications as each account of these ends to have implicit or explicit assumptions about causes of problems and directions for solutions. The ‘original’ approach to discourse analysis is often associated with Michel Foucault, who studied the way language shapes and structures power, starting at the micro-level of ‘practices’ such as the working of a prison. The original approach is not very popular in the policy sciences because the approach contains very few hints of an instrumental nature, even though the analysis that language shapes power has led to a more overt opposition to the usage of politically laden terms and an agenda to subsequently label these as politically incorrect.

There are various policy scientists who pay attention to the operation of language in policy processes and the acts involved in shaping such language. Deborah Stone (1996) is one of the more influential ones. Stone defines the struggle over ideas as the core of policy processes, and the representation of issues (‘framing’) as the main activity (see also Schön and Rein, 1994). Framing is used by those engaged in policy making to portray the desires of some wishes as ‘self interest’ others as ‘public interest’, to allow for cooperation between some and competition between others, to shape alliances and to persuade, and finally to gain power and to achieve certain publicly valuable goals. A shrewd politician succeeds in shedding light on a certain condition and thereby create a range of consequences. Stone suggests that in the sphere of problem framing, an important framing strategy relates to stating the cause of a certain situation. If that situation is portrayed as unavoidable (a flood as ‘an act of god’) nobody is to blame and nothing needs to be done. If a problem is seen as an outcome of a mechanical failure -the dikes were not strong enough and ruptured-, the blame is assigned more or less to bad luck. If problems descriptions change however to assign blame -‘the dikes broke because the waterboard wasn’t prepared’-, the implications for the waterboard management may be serious. Stone does not provide for simple recipes on how to accomplish problem framing, and to look for these in her book ignores the main message of her work¹⁴, but whilst reading her analysis one can see that she does point out the schemata or lines that reasoning may follow. For instance, when it comes to choosing policy alternatives, she suggests that one strategy is to frame these in such as way that almost everyone will pick the alternative that the framer of the choice desires. Mazey and Richardson (1997) confirm that policy framing is not easy, but suggest that a long-term approach that includes doing research and publishing reports, helping politicians make sense of complicated matters may be useful. An analysis of Dutch nature policy by Keulartz (1999) supports this thesis.

If frames or so important one may legitimately ask what happens if people with different mindsets interact. There are different lines of thought here. Once again there are those who see frames as unchangeable, implying that there is little hope for resolving differences of opinion (e.g. Bovens and ‘t Hart, 1995). This line of reasoning sometimes leads to a plea for the creation of hierarchies, implying that someone, despite there being

¹⁴ This is because Stone adamantly objects to pure instrumental logic and defends the unbound flow of political discourse and argumentation.

different analyses of a problem, simply decides. There are also those who analyze the quality of debates by asking the question whether all frames -from a predetermined set- was represented in that debate (Van Eeten, 1999). If not, the authority responsible for the debate should make sure that access to the debate by the 'missing' frame should be organized by inviting e.g. a certain ngo. This approach is not entirely credible as it would seem impossible to predefine the relevant set of frames in every debate. On the other hand if one wants to be complete, and that is no small if, one can probably make a strong attempt of 'voicing' certain interests that may currently be absent. Hajer (1997) uses communications theory to enrich the discourse approach; thereby placing himself squarely in the corner of those who assume that agency is possible in framing. Core elements in his explanation of framing are 'discourse coalitions' and 'story lines'. Discourse coalitions are groups of actors that agree upon the relevance of a certain frame of reality. Story lines are essential in forming such coalitions as they help people with different understandings of a phenomenon to get behind one set of ideas. This is especially likely if there is a certain level of 'discursive affinity' between the arguments that they bring forward. The art of formulating story lines is akin to devising a commercial campaign: the story line must be broad and ambiguous so as not to raise opposition and strong enough to gain supporters. To make a frame relevant in a certain policy process, the discourse coalition in question must institutionalize that frame, e.g. by setting up decision rules that emphasize the relevance of that frame and founding organizations that use the frame. The actual use of the frame is the referred to as structuration. Keulartz (1999) shows how the discourse of 'nature development' – which implies

creating new nature which is 'wild', that is undisturbed by man- gained the upper hand in Dutch nature policy circles, and how it became institutionalized in government policies. Actors with different frames, such as farmers but also nature organizations that do see an important role for man in the maintenance of nature, are seriously disadvantaged in the policy processes that followed the adoption of these policies. Huitema (2002) suggests that effective structuration may depend on the presence of certain enforcement mechanisms such as courts, fines and exclusion mechanisms.

10 Polycentric governance and scales

A focus on water governance means an interest in collective action with respect to water issues, which is not restricted to government action by public authorities, but also includes involvement and participative action by private stakeholders. Furthermore, it means not only an interest in the 'action aspect' of collective action, but also in the complexity of the institutional context in which collective action is embedded and achieved. For instance, the first water boards in the Netherlands could already be labelled as institutions for water governance, because they were self-governing networks of actors, irrespective of their legitimacy as official government authorities. Besides the use of the term 'governance' for self-organizing networks, other uses are also distinguished in the recent literature, such as the minimal state, corporate governance, the new public management, good governance and socio-cybernetic system (Rhodes 1996). In his analysis of the concept of governance, Rhodes makes a distinction between chaos of the unregulated 'market', the overly rigid notion of 'hierarchy' established by a traditional bureaucratic government, and 'governance' which he defines as an emergent property of self-organizing, inter-organizational networks. Björk and Johansson (2000) have formulated the following notions that constitute a common ground and the lowest denominators for a governance theory. Such a theory: is about the society governed with new means and methods, which create new prerequisites for organizing societal actors; points out that actors are coordinated in other ways than through traditional hierarchies; is about the state having ambitions to govern and thereby the state as a more or less important actor; is not primarily about the outcome, but about processes in a more or less static political system; is not normative.

The term multilevel has become the most common prefix attached to governance. It relates not only to its multiple nature but also particularly to the interdependence between levels (Smith 1997). According to Lundqvist (2001), the challenge of environmental governance is to develop "social choice mechanisms that combine two ostensibly incompatible qualities: authoritative (including the possibility of state intervention) and flexible, self-adjusting and 'reflective', with a considerable influence on those governed." Further, there is a "more encompassing multilevel view of governance needed" for one reason because "problems (like sustainability issues) are multifaceted." The component problems "require different scales and the interactions between the scales require multilevel coordination." Without such coordination, there may be a race to the bottom with disastrous implications for the social problem. But this does not have to involve a higher authority. In certain circumstances, multilevel or inter-level games can lead to a race to the top (Scharpf 1997). Blomquist and Schlager (1999: 7, 39-43) also emphasize the relationship between many facets of the problem and the horizontal and vertical coordination this requires. The same is true for Rosenau (2000: 10-11). Exworthy and Powell (2004) argue for the need to re-assess models of policy implementation in the 'congested state'. The focus of traditional implementation studies on the link between one central government department and a local agency (the vertical dimension of 'central-local') fails to give sufficient stress to the other horizontal dimensions of 'central-central' and 'local-local'. While paraphrasing Kingdon's terms, they advocate that implementation models need to incorporate the 'little windows' at local level as well as the 'big windows' at national level.

In search for an elaboration of the governance concept, Bressers and Kuks (2001, 2003) argue that such a concept should take into account multi-level, multi-actor, multi-perspective, multi-instrument and multi-resource dimensions of collective action.

5. The multi-level dimension is about the fit between the hydrological scale of water systems, the problem scale at which water problems become manifest, and the administrative scale at which water problems and the human solutions to those

problems are administered. The space dimension of water governance leads to the awareness that the solution to a water problem might be found in an area other than that in which the problem is experienced. For instance, the Netherlands experiences as a downstream country in the delta of four European river basins it has to receive excessive river flows, which may be reinforced due to river canalization in upstream countries, as well as pollution from transboundary sources. This has consequences for the spatial dimension of the river system, as well as for the potential use of downstream river water as drinking water;

6. The multi-actor dimension is about participation issues. Water governance is no more a matter of isolated engineering. The politicizing of water engineering has created an arena through which a broad variety of interest groups and other stakeholders want to be involved and participate in decision making. Water governance has also become more complex due to an expansion of the public domain and increasing interrelatedness with other policy sectors (land use planning, environmental management, nature conservation). The process of policy making requires more interactions with policy making in other policy sectors;
7. The relevance of a multi-perspective-dimension stems from the variety of interpretation of water problems over time and among stakeholders. For instance, this is evident by the paradigmatic change of water governance in the Netherlands in the mid-1990s, where new river floods have fundamentally changed the perspective on flood protection and resulted in a more adaptive strategy. In general, different stakeholders have different perspectives on the structure of water problems and the solutions that they think are needed;
8. The multi-instrument dimension is about the question of how to control the human dimension of water management (human behaviour that affects water). Excessive use and pollution of water resources need regulation of human behaviour. Three steering models are often debated: the regulatory model based on a command and control strategy, the economic steering model based on financial incentives, and the communicative steering model based on knowledge and opinion transfer;
9. The multi-resource dimension perceives the importance of resources and resource transfers for policy implementation. Water governance needs all kinds of resources to become effective. The transfer of such resources could be rather complicated and also raises the question of how efficient water governance could be. One could think of spatial resources in terms of land property that is needed for the realization of water works and for the allowance of more natural dynamics in river flood plains. The transfer of this resource type raises questions about expropriation and compensation for property loss.¹⁵ One could also think of financial resources, needed for the production and delivery of water services. In this context three financing

¹⁵ In this context it could be noticed that property rights do matter as an issue of governance. The transition in European states after the French revolution has settled a demarcation between the public and the private domain. Since then, the public domain has expanded, resulting in an increasing communalization of the use of water resources. Privatization tendencies in the late 20th century have reopened the debate on the desired public/private divide in water governance.

principles are often discussed in relation to water governance: the principle of full cost recovery, the affordability principle, and the polluter pays principle. Finally one could think of information resources that are necessary for water policy making, for monitoring water systems, and for monitoring human behaviour in order to enforce regulations.

Institutional responses in the five dimension model of Bressers and Kuks could be: 1. restructuring levels and scales (positioning the river basin level); 2. involving new actors (participation of all users); 3. reformulating the policy problem (including all water values); integrating policies (using planning and integrated water resource management); redistributing resources (limiting rights, internalizing costs, full cost recovery).

11 Conclusions

11.1.1.1 Approach

There are several paths to derive conclusions from this paper, each with their own strengths and weaknesses. One path is the '*eclectic route*' (Bovens and 't Hart, 1995), which implies mixing theories by a combination of variables at different levels. The strength of this approach is located in the generation of multiple and strongly different explanations. The weakness is in specifying which explanations are best supported by evidence and detailing how partial explanations relate to each other. In addition, eclectic models appear to be weak on the replication side, meaning that the models tend to be so encompassing that one cannot refute them anymore (ibid.). The second path is the '*inductivist way*', which implies a review of pertinent literatures, drawing explanations from them and inductively grouping them in several categories. The strength of this method is said to be that it spells out variety very well (ibid.), but the problem is that one may have difficulty in moving beyond low-level generalizations. The final path is that of '*regimented comparison*', implying that different frameworks are used side by side to shed light on a matter of interest. The strength of this method is that there is less likelihood of empirical data being overlooked, but the downside is that there is no clear-cut criterion for comparing the performance of various explanatory models.

Bovens and 't Hart (1996) suggest that there is no single appropriate way to choose between these three approaches to the grouping (or not) of rivaling models and theories. In that case, the approach can be determined by functional considerations. The goal of this paper has been to explore explanations that are given for the degree to which collaboration is achieved, maintained and steered by parties involved. The goal was not to assess the comparative relevance of either of these models, not to assess their explanatory powers. Because of that an inductive approach is called for, meaning that we look for explanations that are embedded in the various literatures and group them in several categories. There is a slight 'eclectic' twist to our approach because we do know what kind of explanations we want. These should be either to the creation, the maintenance or the steering of collaboration.

11.1.1.2 Summary of the collaboration issue in the literature

The tables below provide an attempt to summarize the various theories that we have come across. The cells are filled with an assessment of the question whether or not a certain literature stream addresses a certain aspect of collaboration, how it addresses that matter, and what explanations are then given.

Table 5 A summary of literature streams.

Literature stream	Emergence of collaboration addressed?	Level of collaboration addressed?	Maintenance of collaboration addressed?	Steering of collaboration addressed?
Adaptive management	Yes. Collaboration is needed and works better than central control.	Yes. Collaborative institutions must be flexible and therefore not too strongly institutionalized.	Yes. Collaborations must allow for reflexivity, redundancy, variability and memory.	Yes. It is like catching waves or looking for emerging corridors. Visionary leadership and framing very important.
Agenda setting	Yes, addressed as mobilization, advocacy or brokerage by policy entrepreneurs.	Yes, the level could be low because collaboration could be based on negotiation and making critical couplings.	No, collaboration is more considered as occasional collaboration, not necessarily based on reciprocity.	Yes, the critical role of policy entrepreneurs is stressed to make critical couplings and to overcome institutional barriers.
Policy change literature	Yes. Collaboration emerges through rivalling advocacy coalitions that share a vision of the world.	Yes, predicts a low level of collaboration between coalitions and a strong level within coalitions.	Not really. Follows 'automatically' from shared outlooks and goals. At the interorganizational level: yes. Suggestion to create collaborative fora for exchange between coalitions.	Yes. Influence an organization directly, or steer its principals. Do venue shopping to have things your way.
Policy networks	Yes, collaboration emerges to strive for shared goals, secure scarce resources and defend interests.	Yes. Policy community, latent policy community, resource dependency network, issue networks and between networks needed.	Yes, multiple mechanisms among which through activation, mobilizing, and coalition building conflict resolution mechanisms and organizational arrangements.	Yes. Creating favourable process conditions such as developing joint societal and individual values, building trust developing joint problem/issue definitions and chances for revenues and their allocation.
Boundary work	Yes. Emphasis on purposeful practitioners. Also attention for attempts to stop collaboration.	Yes. Fine grained typology of 'spans', including their intensity, redundancy, reciprocity.	Yes, through leadership style (advocacy, facilitation, direction).	Yes. Speak differently to different audiences.
Game theory	Yes, emergence of collaboration is based on actor orientations. One actor must initiate collaboration, i.e. by making a gesture to the other(s). This creates trusts which helps further collaboration.	Yes. Based on the type of game that is being played.	Yes. By giving certain ground rules stressing reciprocity and taking the initiative for collaboration.	Yes. Enticing actors to collaborate by showing the shadow of the future. By positive and negative coordination. Based on transaction cost considerations.
Discourse approach	Yes. Collaboration emerges when actors view the world in a similar way or become convinced to do so (discourse coalitions).	No.	Yes, through story lines, institutionalization and structuration.	Yes, although many adherents of this approach do not really believe in the ability to steer debates. If they do, they focus on 'framing'.
Polycentric governance	Yes, emphasis on coordination between different centres of decision-making.	Yes, collaboration not only requires multi-level coordination, but also multi-actor, multi-perspective, multi-instrument and multi-resource coordination.	Yes, multiple and institutionalized connections are important for success.	Yes, institutional responses could be restructuring levels, involving new actors, reformulating the policy problem, integrating policies, redistributing resources.

The table demonstrates that most of the approaches discussed in this paper address several of the relevant topics. We will briefly discuss the various rows in the table before we move to a discussion of coupling strategies that we have found.

As for the *emergence of collaboration* the emphases in the various theoretical streams appear to be slightly different. Explanations for the reasons why collaboration would arise are generally sought at the actor level. These actors either share a common vision of the world, or they are (inherently) characterized by a disposition towards collaboration. Two theoretical frameworks predict the formation of coalitions on the basis of such shared views. In one theoretical framework it is suggested that formal obligations to collaborate will play a large role in the decision to collaborate. The normative case for collaboration is made quite strongly by the adaptive management literature. Game theory suggests that the adaptive management literature is right in assuming superiority of collaboration as a strategy. It also suggests that to start collaborating one should express faith in the partners in question and the best strategy is to retort the other's strategy (tit-for-that). Game theory also suggests that over a set of repeated games, trust can emerge, which helps collaboration further. It appears that there is a high degree of normative consensus on collaboration. In most literature streams, non-cooperation is treated mainly as a *failure* to collaborate, a deviation from a desirable state. There are exceptions however. The game theory literature suggests that the institutional setting and the actor constellations affect actor behaviour greatly and explicitly suggests that attempts to create linkages should be aimed at establishing a winning coalition, not at achieving collaboration all around. The boundary work literature also has a keen eye for conscious efforts to limit collaboration. This literature distinguishes between spanning boundaries, buffering boundaries and bringing up boundaries. Especially the latter approach implies the deliberate exclusion of certain actors in a decision process or more durable form of collaboration. Interestingly, the adaptive management does, to some extent, acknowledge the importance of bringing up boundaries, as it discusses the possibility that 'contagion' occurs between policy fields, creating unproductive linkages. Unfortunately, this literature does not address how to distinguish between wanted and unwanted linkages.

The *level of collaboration* is not discussed in the terms specified by Imperial's (2005) framework and the items on which water managers can collaborate is at a much more concrete level than can be offered by our theoretical streams. The network literature offers a typology of the level of cooperation to the extent that it suggests that networks differ in what we may call coherence. Some networks hardly deserve that name as they are ad hoc and temporary collaborations, whereas others have a very strong ideological core and all network members essentially share the same outlook. The policy learning literature, specifically the Advocacy Coalition Framework, suggests that within a certain policy domain, and assumedly within the relevant policy network, there tend to be different coalitions that disagree with each other about the appropriate course of development, which try to 'out couple' each other in their relations with the political system. The game literature emphasizes that collaboration is dependent on the type of game that is being played, suggesting that 'win-win' games result more easily in collaboration than 'win-lose' games. At the same time, the fact that games are repeated implies that reputations and levels of trust develop, which make actors comfortable with allowing each other short term wins and losses because they know they are in a mutually advantageous relationship in the long run. The boundary work literature appears to have the most far evolved typology of collaborations of the literature discussed here, suggesting that this typology could be useful in conjunction alongside or even instead of Imperial's distinction. Whereas Imperial's typology is essentially one based on the intensity and formalization dimensions of the collaboration, the boundary work literature offers the insight that other factors matter as well. Amongst these: multiplicity, stability,

standardization, reciprocity and redundancy. When ‘designing’ linkages, water managers should be aware of these dimensions, as each of them is likely to influence performance. As for the *maintenance of collaboration* game theory suggests the importance of trust and reciprocity. The adaptive management literature suggests several things. First it emphasizes the importance of reflexivity, meaning that the parties involved should remain open to change the way they operate. The adaptive management literature also shares a fondness of redundancy with some of the network literature. Redundancy is about creating multiple linkages that are not always immediately useful, but that may serve as backups for current relationships in the future and may provide for an additional information channel. The adaptive management literature stresses the importance of memory, that is, keeping experienced personnel on the staff with experience and knowledge of the ecological and the social system. Finally, the adaptive management literature agrees with the boundary work literature points on the importance of leadership style, be it that adaptive management stresses the importance of visionary leadership and the boundary work literature is open to other leadership styles as well. The policy change and network literatures suggest that the establishment of fora for collaboration can be beneficial for the maintenance of collaborations as these provide for opportunities to exchange thoughts and need be to solve conflicts. The discourse approach highlights the importance of institutionalization and structuration of collaborative discourse.

The *steering of collaborative entities* in a certain direction is possible according to several theoretical frameworks. The adaptive management literature and the agenda setting literature highlight the importance of timing, that is, waiting for the right conditions to arrive. The two literatures suggest that the ‘streams’ (community, scientific, bureaucratic and political opinion) need to be coupled before decision-making can proceed. Especially the political stream is important from the perspective of generating the momentum for change. The policy change and policy networks literatures elaborate most extensively on the ways in which collaborations can be steered. These literatures make a distinction between navigating smartly within the confines of networks, and constitutive or change strategies that alter the relationships within networks or even create entirely new ones. The boundary work and discourse approach highlight the importance of ‘framing’, that is the use of words in a certain way so that some collaborations become natural and others illogical. The boundary work insight that linkages between organizations vary along a set of dimensions also implies a set of steering strategies, as each dimension can be ‘attacked’ by the actor in question.

11.1.1.3 Coupling what?

We feel that Imperial’s levels of collaboration provides a good starting point for a discussion of what can be coupled, i.e. between which aspects linkages can be created. We pose that linkages can be at the following levels:

- The person;
- The organization;
- Games (projects);
- Policies and plans;
- Rules and laws.

Linkages between persons are in the realm of personal networks. Linkages between organizations can also be called networks, but unlike purely personal networks, they are more formalized and controlled and those maintaining such networks do so from the perspective of their organizations. Linkages between games occur in time or in place. This means that the actors involved in various projects may make their position in one game dependent on promises regarding future games and/or games that are functionally distinct. Linkages between policies occur either when there is an obligation to take other policies into account or when those developing water policies see it fit to do so. Rules and laws can be linked in several ways, i.e. procedurally or through the requirements that decisions under a certain law need to take the other law into account. Rules and laws can be coordinated in these senses, but sometimes they become one, which means that they are effectively integrated.

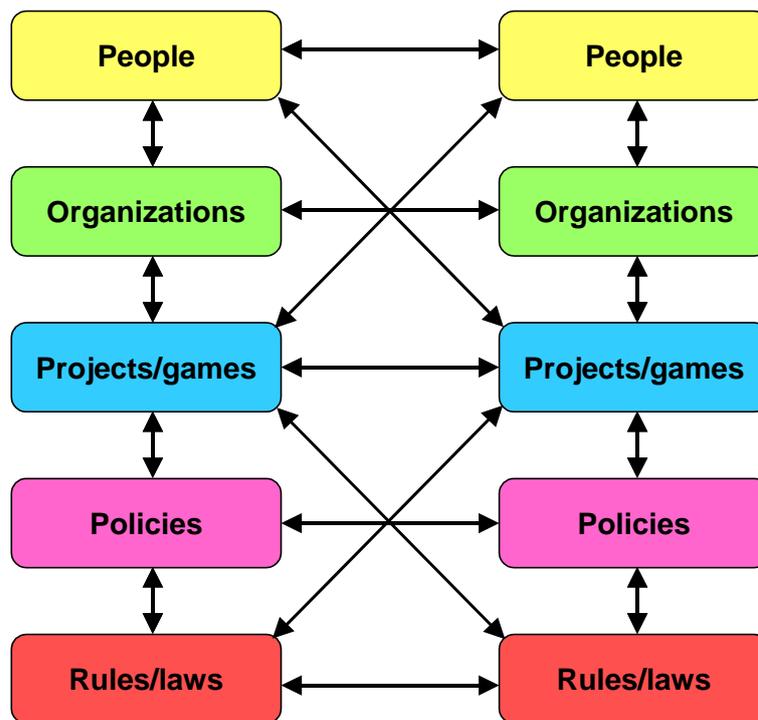


Figure 1 Levels at which linkages can be made. Shown are two different policy fields, each with different actors, organizations, projects, policies and rules. Linkages can essentially be made between the two sectors at the same level (horizontal linking), between different levels in the same sector (vertical linking) and from one level to another in a different policy field (diagonal linking).

The existence of various levels for creating linkages implies that coupling work at one level (i.e. the work of creating personal links) is taking shape in the context of developments at the other levels. In other words, personal coupling work is structured by the organization, by games, by policies, etc. The reverse is also true however. What we mean is that the process of linking policies will depend, in part, on the linkages that exist of the 'lower' levels because linking policies will be easier in a network with a high degree of social capital, that is, a dense web of relations between persons and organizations involved in the policy processes related to these policies. In this sense the choice of a level at which to study coupling work is bound to have many implications because it is logical to assume that linking persons is different from linking policies.

A second observation is that attempts at linking do not necessarily limit themselves to linkages at the same level. In other words, linking is not only about linking levels from one policy field to another policy field ('horizontal linking'), it is also about linking people in one field to policies in that field ('vertical linking') and about linking a project - functionally from one policy field- to policies from another policy field ('diagonal linking').

Finally, we suggest that coupling does not occur in a stable environment. Particularly relevant for now is the fact that other actors are also engaged in coupling work. In other words, coupling requires an awareness of and strategy vis-à-vis attempts of others to create linkages as well.

11.1.1.4 Contexts setting the coupling space

So far we have only discussed the levels at which coupling work may occur and we have described how the various levels provide a context for each other. There is however a wider context for coupling work and to sketch this context, we take cue from the agenda setting and adaptive management literatures. We pose that there are four relevant streams in the wider context of coupling work:

- The scientific/technological stream;
- The political stream;
- The bureaucratic stream;
- The public opinion stream.

Kingdon's thinking behind these streams is that they need to come together, creating a window, before policies can be adopted. This line of thinking could be relevant for coupling too, and what we would be saying then is that windows for the creation or blockage of linkages open and close when the four streams come together. One difference between our ideas and those of Kingdon however is that we do not see the necessity for the simultaneous convergence of all four streams. Instead we pose that developments in either of these streams change the context and therefore provide new opportunities and barriers for coupling work. In order to explain this, we should probably describe the four streams with a bit more detail. The scientific/technological stream refers to insights developing in the fields of engineering, hydrology and related disciplines. These insights could relate to future trends such as climate change, the effectiveness of current measures such as dike construction, and more fundamentally to 'paradigms' of water management. It can be argued for instance that Dutch water management underwent a paradigmatic change in the 1990s, when policies changed from stopping water to storing water and living with water. The political stream refers to the thinking on issues amongst politicians, elections, changes in government, etc. As politicians are often the gatekeepers for policy changes and their approval is needed, it matters a great deal whether the thinking in politics for instance develops in a direction of seeing greater connections between policy fields or the opposite. The bureaucratic stream relates to the way the bureaucracy is organized and to the thinking about the proper role of the bureaucracy. Regarding the organization of the bureaucracy, one can observe that having

water management tasks and land use planning tasks in one organization may have advantages in terms of planning. Regarding the thinking on bureaucracy, one can observe various trends, varying from emphases on coordination to specialization, and varying from a focus on efficiency to a focus on effectiveness. The public opinion stream is about the degree to which the general public and stakeholders are aware of certain problems and attach importance to them. In the Dutch context, the public has come to assume flood safety in the past decades. This explains why the need to take certain measures is not always understood or accepted. The public may be out of phase with the technical/scientific stream in the sense that classical ways of guaranteeing flood safety are still preferred and the living with water agenda is not shared.

Once again, we pose that developments in these streams do not necessarily have to 'flow' to a predetermined place in order to convulse. Instead, changes in either stream, especially if they are paradigmatic, are bound to ripple through the entire context and therefore, changes in one stream are already bound to have implications for coupling work. Indeed, changes in bureaucratic structure alone, may already may the establishment of linkages at the personal and organizational level much easier, regardless of any other developments. Additional comments are in order. The first is that the four streams themselves are influenced by certain developments. We know from Kingdon that the public opinion stream is influenced by focusing events and the work of NGOs. The technological/scientific stream is influenced by innovations, new discoveries and the movement of scientific opinion. The political stream is influenced by elections, budgets, etc. The bureaucratic stream is influenced by developments in the thinking on the proper role of the bureaucracy, but also by the organizational lifecycle, i.e. some organizations are starting, vital and on the lookout for new tasks, other organizations are old and tired and will want to resist change. A third remark that we wish to make is that the four contexts interact with each other. Obviously, the political stream is connected to the bureaucratic stream and to the public opinion stream, and vice versa. In addition, science/technology 'co-construct' with the political and the bureaucratic streams, meaning that science is funded by the government and on its turn fulfils a certain role is legitimizing certain policy developments. Together the four contexts create what could be referred to as a 'coupling space', that is the primeval soup of opportunities that exist for coupling. We assume that water managers differ in their capacity to recognize coupling opportunities and also in their capacity to realize such opportunities.

The graph below summarizes our argument so far.

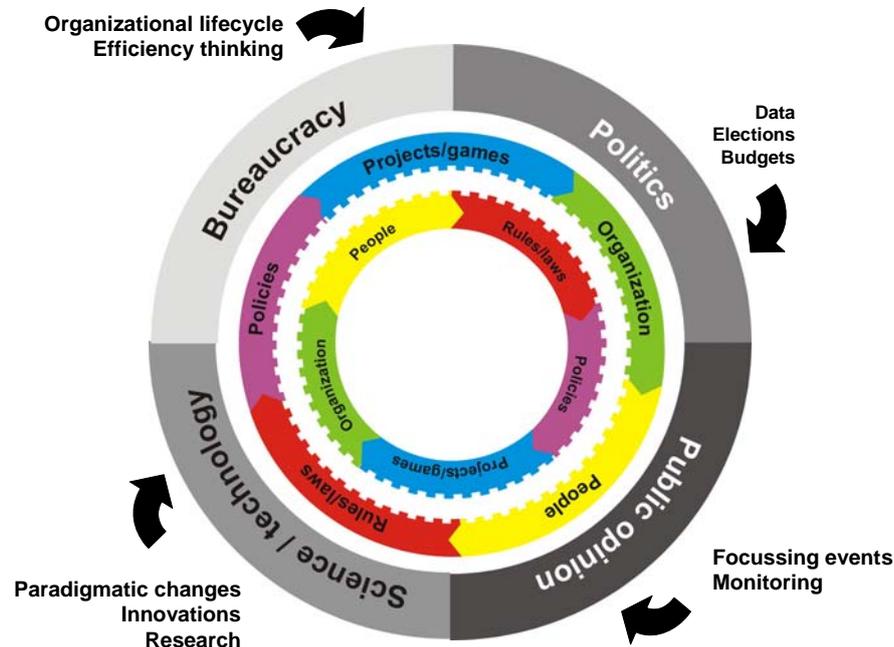


Figure 2 *Coupling space as shaped by the contextual factors bureaucracy, science/technology, public opinion and politics and their drivers. Within the coupling space, public officials from two different policy areas are active in linking people, organizations, projects, policies, or laws. Linkages can be vertical, horizontal or diagonal and are achieved by turning the two wheels in the centre of the figure.*

11.1.1.5 Coupling strategies

Our literature review revealed that especially the literature on boundary work has come up with a very well developed approach to describing linkages. Linkages differ -according to this literature- in the following respects (Whetten, 1982):

- Multiplicity. The number of different types of relations connecting two organizations;
- Stability. The extent to which relations of a given type remain the same over time;
- Standardization. The fixedness of the units and terms of exchange for any two actors of a network;
- Formalization. The extent to which the actors interactions are formally organized;
- Intensity. The extent of the organizations' resources committed to the relationship, both in terms of amount of resources exchanged and frequency of exchange;
- Reciprocity. The extent to which the relationship is symmetrical. Also referred to as mutuality or symmetry;
- Redundancy. The extent to which the purpose of a given relation is unique or superfluous.

It is obvious that these seven characteristics of linkages are tailored to one level of coupling that we are interested in here, namely the organizational level. We lack space to fully assess the usability of these characteristics to qualify the linkages that may exist at other horizontal levels (e.g. policy-policy links or person-person links). A first glance

suggests that these characteristics may also work well at the person-person level, but that qualifying linkages between games, policies, or laws may require adjustment of the list. The observation we wish to make here is that the list of characteristics is one entry point for the development of a generic typology of coupling strategies. For certain, it seems possible to assess the degree to which linkages that are established between water managers and 'score' on these aspects, so we can find out how formalized, how redundant, etc. these linkages are. In addition, it would seem possible to derive a list of 'attention points' and strategic considerations from this list. Space prohibits the full treatment of the matter but we use the element of 'formalization' as an example. Formalizing linkages- at either level- would seem to imply advantages in the sphere of predictability and commitments to the linkage. This has a downside in speed, formal approval of linkages costs time, and flexibility because the link cannot easily be dropped. Stability, on its turn, has advantages in terms of the built-up of trust, but may also lack flexibility. We are interested in the considerations and dilemma's related to these characteristics, as they are perceived by those engaged in coupling work. In addition, we would like to get access to the rules of thumb they apply for deciding on such dilemmas and how such rules of thumb include the expected 'counter strategies' of people outside the organization.

We want to press the point that coupling is as much about creating linkages as it is about attempts to avoid them. The boundary work literature offers interesting insights by suggesting that boundary work is about spanning, buffering and bringing up boundaries. Whereas spanning boundaries is about the creation of linkages, bringing up boundaries is about the opposite, preventing that linkages are created. It is interesting to take notice that the literature analyzed focuses most upon spanning boundaries and less on bringing-up boundaries and almost not on buffering boundaries. This could be a research gap, but it is also likely that buffering boundaries requires a significant lower amount of strategic capacity because often buffering happens without doing anything.

When it comes to coupling strategies, we can also build on the distinction between horizontal, vertical and diagonal coupling strategies. Horizontal coupling strategies essentially relate to the creation of linkages between people, projects organizations or policies from different policy areas. However, in some cases, the real battle for the water managers (see e.g. Van Eeten et al., 2000) might be located at a different level. For instance, in order to get a certain project moving, it may be wise to secure approval at the policy level in sphere of land use planning. Such coupling work is called 'diagonal coupling' here. In other cases, 'vertical coupling' will be necessary; implying that approval for a project needs to be secured within the water management column before one can proceed (the example in paragraph 2 provides a case in point). Vertical and diagonal coupling may seem attractive, but are bound to create dilemmas for the water manager. For instance, 'jumping level', that is bypassing counterparts and moving to actors engaged in higher levels in a different policy field, may leave the counterparts at the same level feel neglected. Young (2002: 140-159) addresses these issues under the heading of scale. Freely applied to the issue of coupling, Young suggests that the problem structure, agency and social contexts at different levels will be greatly different. In this respect, it is likely that vertical coupling will imply the reframing of issues, transforming them to a format that will be understood at that level. We hypothesize that such framing work is likely to be an important aspect of successful coupling. In boundary work terms, it requires the creation of a boundary object (e.g. a project) that can be viewed in various different ways, each fitting to the problem structure, agency and social setting that prevail at a different level.

The issue of perception is highly important to coupling work. As an analyst one needs to be acutely aware of the fact that perceptions of strategies may differ greatly. What is intended as a very friendly request for collaboration may be perceived as a hostile takeover

bid from the perspective of another actor. To complicate matters even further, Stone (1996) and Van Eeten et al. (2000) both suggest that failed attempts to influence decision-making at higher levels may in fact be beneficial in the long run. This is because for instance a loss at one point in time can result in ‘credits’ that can be collected later on (e.g. a land use plan did in the end not take water issues into account but at the level of the building plan, space for water is reserved). In addition, visible losses can be publicized and used as a story line in explaining a problem at a higher order. In that sense, losses can be used to demonstrate the ignorance of others and provide for the possibility of institutional changes at a higher level. In addition, one needs to be aware of the fact that in any given situation there is not one single appropriate set of goals to evaluate the interactions with. More specifically, even though an attempt to achieve a certain project may be very necessary from the water management perspective, this does not make those actors that have different goals irrational, their resistance silly, nor are their goals necessarily illegitimate or even less worthwhile. In this sense, it is likely that coupling strategies involve dilemmas, as Van Eeten et al (2000) already concluded. Such dilemma’s are about achieving goals now or in the future, about giving trust and become vulnerable or withholding trust and stay safe, about staking clear claims or remaining vague, about investing in network relations or go alone, about collecting evidence or rely on somebody else’s information, etc., etc.

Taking the issue of perceptions further, we wish to discuss one last entry point for our work on coupling, which relates to the way in which linkages are created and then steered. It would seem that there are three basic explanations at the personal and organizational levels for the desire to create a linkage or to resist against attempts in that direction. One explanation would highlight the importance of information and perceptions, another interests and yet another power. Regarding the first explanation, several of the theories discussed here (i.e. discourse approach, advocacy coalition framework) highlight shared (problem) perceptions as the glue holding together coalitions of organizations and persons. There is a distinction between frames and information that can roughly be explained as the difference between data and analysis. Frames help select and filter information and provide for a framework for interpreting these outcomes. The implication is that in a situation of diverging frames, the same information will be interpreted differently, a risk that the coupling worker needs to be acutely aware of when she or she tries and sway other actors. Changing frames is, according to the discourse approach, not easy, although this literature stream also stresses the importance of communication and practice in the continuous exchange between frames. The interest-based explanation of linkages assumes that linkages will come about when they are perceived as being in the common interest of various parties involved. This approach to explaining coupling has been amended quite fundamentally by work emerging from the game theory literature and from the literature on social capital (e.g. Putnam, 1993). These literatures stress the ‘under explanation’ of collaborations by a framework based purely on explanations emanating from individual interests. Instead, the difference between the short- and the long-term is emphasized, suggesting that actors, if they trust each other, are able to exchange gains and losses in different games and games taking place at different moments in time. The power-based explanation finally, emphasizes the importance of resources to control the behaviour of other actors, e.g. through legal means. Here too, the emerging consensus in the policy sciences is away from simple explanations. For example the network approach is juxtaposed to the idea that one single actor can determine the course of policies and projects. Having warned against simple approaches, we suggest that strategies related to frames and information, to interests and to power may play a role in coupling work. Gaining hegemony in the sphere of discourse may result in institutionalization and structuration of debates. Bargaining may bring otherwise actors on board. Gaining power, for instance by changing regulations, laws and policies, may be effective in forcing collaboration.

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