

**WATER AND SPATIAL DEVELOPMENT: THE IMPLEMENTATION OF THE WATER FRAMEWORK
DIRECTIVE IN THE NETHERLANDS.**

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Abstract

This paper discusses how water managers and spatial planners could co-operate on local level in combination with the implementation of the Water Framework Directive and the Birds and Habitats Directives in the Netherlands. Recent evaluations of the European Commission show that implementation of environmental directives prove to be a challenging task for the responsible authorities. Studies show that legal and procedural aspects of planning and decision making gain the most attention at the EU level, the formal side, while environmental goals are fading into the background, especially on the EU level. The difficulties that arise in the implementation process on a local and regional level are discussed combined with the integration of both directives from policy and practice. The local co-operation between water managers and spatial planners depends heavily on its basic element: competing interests. Aspects that shape this co-operation and define its effectiveness are: language (discipline related jargon), contracts, trust, personal competence, policy tuning & policy instruments, institutional innovations, instrumental innovations and mental innovations. These aspects will be discussed based on two case studies with water management and spatial planning aspects. This local co-operation is mainly informal of character.

Keywords: Spatial Planning, Water Managers, Water Framework Directive

1. Introduction

The European Union (EU) is becoming an important actor in spatial planning and sustainable regional development (Beunen *et al*, 2009). In the last decades, it has adopted more than 200 directives, regulations and many other forms of legislation and amendments in the area of environmental policy that have direct repercussions for regional development. Many environmental directives, such as the Water Framework Directive (WFD), the Birds and Habitats Directives (BHD), the Ambient Air Quality Directive, the Flood Risk Management Directive and several Environmental Impact Assessment Directives have been formulated to include environmental issues in the planning and decision making processes. As argued by Barnes and Barnes (1999), European legislation is necessary to counterbalance the disadvantages of other economic instruments such as subsidies, taxes and voluntary agreements. However, implementing and integrating environmental policies in national or local policies is no easy task. The concerns about the problematic implementation and enforcement of EU environmental policies remain present, despite positive results in some policy fields (Howe and White, 2002; Knill and Lenschow, 2000; Barnes and Barnes, 1999). One of the main difficulties in implementing EU policy is the lack of political will from the implications or

threatens national political interests (Beunen *et al*, 2009). Studies of implementation processes show that implementation is not just a rational follow-up of decision making but a process in which different actors compete over the meaning and the consequences of a policy (Barrett, 2004). Implementation is thus the continuation of politics by other means (Pressman and Wildavsky, 1973). In short, the struggle over ideas that characterise policy formulation does not stop once a policy is drawn up but continues during the implementation phase. Hix (2005) describes the outcomes of political processes as the sum of personal wants and desires of actors (preferences) and the formal and informal rules that determine how collective decisions are made (institutions). Policy reviews, evaluation or implementation studies, and monitoring programs are necessary to identify problems that occur during the implementation process. Problematic implementation and the resulting limited success of the environmental directives is not the only reason for concern. The scientific community as well as the users of these directives have a strong criticism of the top-down approach, the technocratic nature and the uncertainties that EU directives cause in planning and decision making practices (e.g. Alphandéry and Fortier, 2001; Krott *et al*, 2000; Hiedanpää, 2002). Wheeler *et al*. (2009) also discuss this role of a top-down or

bottom-up approach but then linked to the climate change discussion.

In this paper we will discuss the implementation processes of the Water Framework Directive (WFD), and sometimes in combination with the Birds and Habitats Directives (BHD), in Dutch planning practices and what kind of criteria are involved when the implementation processes take place on the local informal level. Formally, the different European directives aim to strengthen each other, but in practice they might prove to be conflicting (see, e.g., Gómez-Limón *et al.*, 2002; Grimeaud, 2004; Beunen *et al.*, 2009). Understanding the specific Dutch situation may provide insights into the general nature of the processes taking place in other EU member states.

The objective of this paper is two-fold:

- (i) to explore the experiences from the Dutch situation and position them in the wider discussion on conflicting European environmental policy legislation in Western Europe and
- (ii) to determine the aspects on the project level when water managers and spatial planners have to co-operate.

For the WFD-BHD study we mainly base our approach on papers about implementing environmental policies in Dutch local planning contexts and practices, e.g. described by van der Bolt *et al.* (2003), Elbersen *et al.* (2006), Hommes-

Folkerts (2006), Beunen (2006), Beunen and Van Ark (2007), Algemene Rekenkamer (2007), Bouwma *et al.* (2008), PBL (2008) and Beunen *et al.* (2009). We have paid specific attention to the interactions between the two directives to provide more insight into the consequences that they have for planning and decision-making practices in The Netherlands. With this elaboration on the experiences from The Netherlands we would like to contribute to discussions about the implementation and integration of European environmental directives across different scales.

To get a good WFD implementation result water managers should co-operate with spatial planners (Howe and White, 2004; Wiering and Immink, 2006; Woltjer and Al, 2007; Pijnappels, 2009; Neuvel and van der Knaap 2010). Over the last few years, different perceptions about the co-operation between water managers and spatial planners have arisen. Both disciplines not only meet each other more often in practice, but also the character of the problems faced – such as expected soil erosion, sea level rise, extreme river discharge, management and policy coordination – makes co-operation necessary. The willingness to co-operate is present, but it is not clear how water managers and spatial planners give meaning to this co-operation. This paper describes the research into the effectiveness of co-operation between both water managers and spatial

planners in the Netherlands in order to create new insights for researchers, designers, water managers, spatial planners and other people who work in both disciplines. A case study research method is applied, which focuses upon practices around the city of Almere and lake Volkerak-Zoom-meer. Four aspects that supported this case study research are described in this paper: spatial planning, water management, co-operation and effectiveness.

In the following section we briefly look at the discussions on the integration and the implementation European environmental directives as presented by Beunen *et al* (2009). In the third and fourth section the process of implementation at the local level is discussed based on case-studies by Pijnappels (2009) and Hommes-Folkerts (2006). First, four pillars of this co-operation are described in section three. It is followed by a description of the practice of co-operation between water managers and spatial planners during the implementation process. In the fifth section a discussion and conclusions are presented.

2. Discussion WFD and BHD implementation

Beunen *et al* (2009) described the multi-scale level implementation of the Water Framework Directive and the Birds and Habitats Directives in The Netherlands. The paper showed that the

implementation and integration of both environmental directives in The Netherlands has proven difficult. There are several aspects that explain the problematic implementation processes in practice. During the implementation processes of the directives, efforts from many people are required. Different governmental organisations are responsible for the implementation of the European directives in their own policies. Researchers and environmental organisations support them, but they also need to communicate and co-operate with a wide range of stakeholders that are tied to the social and economic activities in and around the areas where the new policies have to be realised (Natura 2000 sites, river basins). All these people and organisations have their own objectives and it came as no surprise that the European directives caused many discussions and even conflicts about land use activities and their possible negative impacts on the environment. Such discussions and conflicts are not new, but the European directives brought along a new framework for decision making. Many discussions were started because people feared negative consequences for social and economic activities. This fear was mainly caused by the uncertainty about the new directives and their impacts. After all the directives were new instruments and it takes time to implement them and to find out how they affect planning and

decision making (cf. Newig *et al.*, 2005). Although integration is aimed for at the European Union level, the current practices in The Netherlands show that this can be difficult. Due to the strong focus on formal compliance and limited possibilities for discretion, it is difficult for the involved actors to link the multiple objectives from the different EU directives with each other and with their own objectives. This is even more complicated because the implementation of different directives is done by different actors and often follows a sectoral approach. Changing and adapting environmental policies at different scale levels and all the communication and co-operation processes that were started as a spin-off of these changes generate many costs for all the involved organisations. The implementation of the policies, which include a wide range of management measures, will cost even more. The implementation of the European directives can only move on if it is clear who will pay for these extra costs. It is no surprise that this is one of the hottest issues in the debates about the European directives (see, e.g., SEE, 2006). Not only the Netherlands faces problems with the implementation of European environmental directives. Several authors report on somewhat similar problems in other member states (see, e.g., Gómez-Limón *et al.*, 2002; Hedelin, 2005; Chilla, 2005; Krott *et al.*, 2000; SEE, 2006). The lessons

from the Dutch situation help to gain more insight into the implementation processes and can be used to formulate some recommendations for the integration and implementation of European policies in general. We must emphasise, however, that integration and implementation of European environmental policy is both politically and culturally determined, e.g. by the governmental arrangements, actors involved, planning approach and many other factors. Another question that could be raised is the issue if these regulations will help to solve the problems faced. Only experiences on a local-regional level will answer this. The earlier mentioned studies for the Netherlands show that there is a large gap to be crossed between EU-level regulation and local implementation. In the next section the local level integration between water management and spatial planning will be focused on.

3. Four pillars for local integration

1.1.1. Pijnappels (2009) distinguishes four pillars that are important in the local integration process: spatial planning approach, water management approach, co-operation and effectiveness. We will have a closer look at these pillars.

1.1.2. Spatial Planning

We explain the main developments in Dutch spatial planning by an elaboration of what

we describe as the 'The Wageningen School of Planning' (see also Van der Valk, 2002; Van den Brink *et al.*, 2006; Van der Valk and van Dijk, 2009). This school approaches planning as an activity within the borders of space, process and stakeholders within the metropolitan landscape. Figure 1 shows that all three aspects are connected and must never be approached separately. The aspect of planning as a process specifically focuses on rational planning; planning with stakeholders refers more to communicative planning and planning with a focus on space is more related to area orientated planning.

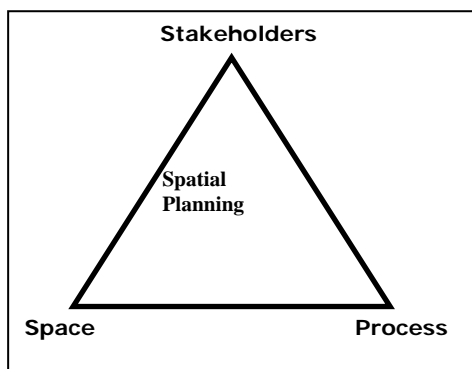


Figure 1 Spatial planning perspective (Pijnappels, 2009)

A specific planning approach will include all three elements but often focus upon one of these aspects more than the other two aspects. This is partly caused by the 'spirit of the age', in which for example the political climate and history are judged to be more important. Each of the aspects relates towards the main developments in

Dutch spatial planning. Planning and process strongly refer to rational planning, which was characterised by a systematic approach in order to make decisions. The key elements are the governmental thought of the 'malleability of society' using top-down approaches. Planning and stakeholders refers to communicative planning and is seen as an 'answer' to rational planning. It searches for the democratic nature of planning. Finally, planning and space refers more to area orientated planning. The spatial planning projects are no longer framed by administrative borders, but framed by its spatial structure, developments and problems.

Water management

Water management can be described by two developments: the 'battle against water' and 'accommodating water' (Wiering & Immink, 2006).

In the past water management focused upon the separation of functions, through which the water system lost its natural guiding principle. Due to this human intervention, problems at the local and national level arose. The leading perspective in the 'battle against water' is safety. Close links can be seen with the rational way of planning and the malleability thought, which leads to the adaptation of the water system in relation to land use. Human intervention in the natural water system caused problems, the

guiding natural system was lost and water related problems arose. Recent major river floods in the Netherlands and the increasing notion of climate change caused another water management perspective: 'accommodating water'. The now leading perspective of 'accommodating water' is the notion that water is the ordering element for spatial developments. Instead of 'fighting' against water, we have 'to live with water'.

Currently water is seen as one of the guiding principles in spatial developments. The (management) borders of spatial planning and water management began to overlap, increasing a co-operation between these disciplines. An important question is then: which stakeholders can be involved in spatial planning and how do they relate to water management stakeholders and vice versa, for what area and with what kind of processes? In practice the different parties can be distinguished on the basis of different administrative levels such as the national, provincial, local and inter-administrative level. The different parties co-operate horizontally, vertically and diagonally. The theory that vertical links are more evident was not confirmed (Pijnappels, 2009).

Co-operation

Co-operation refers to working jointly for mutual benefit or profit. Participation can be

described as a special form of co-operation, namely how policymakers will allow inhabitants to co-operate in their process. Different levels of participation can be distinguished that have influence on the level of co-operation, but this is not elaborated in this paper (Neuvel and van der Knaap, 2010; Overbeek *et al.* 2008). Co-operation can be established between organisations, groups and individuals. Within co-operation a distinction can be made into formal and informal forms of co-operation. In practice co-operation is often consciously informal of character. If co-operation is formal of character this is often the result of formal structures such as formal contracts or environmental impact assessment procedures. Co-operation is a complex concept that includes next to formal & informal, different forms in horizontal, vertical & diagonal levels (see e.g. Smith *et al.* 2005; van Dijk, 2008). Co-operation can be made operational by examining different elements of co-operation. These elements are (Smith *et al.* 2005; van Dijk, 2008; Wiering and Immink, 2006; Howe and White, 2004; Kidd and Shaw, 2007, Pijnappels, 2009): *language, trust, contracts, personal competence, policy tuning & instruments and innovation (institutional, instrumental & mental)*. These elements must not be approached as separate elements, but in coherence. All these elements will be further discussed below, in which public participation is always an important aspect.

Language

Analysing theory and practice, language can be found at different levels, in different types and forms: (1) Language between different disciplines such as water management and spatial planning. (2) Language between policy makers, administrators and spatial projects. (3) Formal & informal language.

In spatial projects people using different disciplinary languages have to co-operate in order to understand each other. Different disciplinary concepts can lead to misunderstandings, problems and changes. First, disciplinary concepts can lead to miscommunications. Secondly, a concept such as 'sustainability' gives insight into how different disciplines give meaning to concepts. A shared language is advocated in both theory and practice as an element for good co-operation; if parties do not speak the same language, how is it possible to really understand each other? The current area orientated character of spatial planning leads to a situation in which more disciplines and land uses become involved; hence the need for a shared language becomes more important. In order to understand each other a shared language must be created by different strategies and instruments. In practice two strategies are applied. First, one of the disciplines will take the initiative to understand and learn the other disciplinary language.

Secondly, one of the disciplines will translates their own language and makes it understandable for others. Books, reports and visions are all instruments that can produce a shared language. In summary, forming a collective language is a promising element of co-operation that is becoming more and more important. Thirdly, there is a difference between the levels where language exists, such as between policy makers, administrators and spatial projects. Within a spatial project the language of policy makers and administrators is very important to have good communication. Language is also important to communicate between spatial projects. In theory formal and informal language forms exists. In practice almost all language applied is informal. Formal language can only be found in formal contracts.

Contracts

In theory, contracts are seen as an aspect to maintain or stimulate co-operation. A distinction can be made between formal, which can be legally enforced and informal contracts. In practice contracts are not often formal and people rather use informal contracts and the term 'regional-arrangements' (van Ark, 2005). In practice, the ideas behind 'co-operative visions' are regarded in the same way as 'contracts'. In the case studies, the lack of continuation of involved

persons, due to changing position or job description, was mentioned as a negative element that discourages co-operation and decision making. Among practitioners there is a belief that a contract can contribute to continuation. In addition to the contribution of contracts for co-operation, critiques also arose. In the case studies, it was mentioned that contracts can be symbolic by nature - even a hype - and do not have any contribution to the development of spatial projects at all. This point of view is strengthened by the coherence between contracts, financial issues and trust. When finances become involved and parties have to pay, then suddenly they become less reliable. In general it could be argued that formal contracts refer to distrust, whereas informal contracts relate to trust.

Trust

Trust is a complex aspect, which can be seen at the different levels where trust can be found; trust between officials, between different administrative levels and between different spatial projects (Van Ark, 2005; Smith *et al*, 1995; Woltjer and Al, 2007; Van Dijk, 2008). Also trust is not a solitary concept, but has much coherence with other aspects of co-operation such as language and contracts. Both in theory and practice people agree upon the importance of trust as an aspect for the creation, building and maintenance of co-

operation. Trust is also used to deal with uncertainties and tensions. Although theory puts much emphasis upon the creation of trust, this must not to be overestimated. Water managers and spatial planners meet each other on a regular basis - in some cases already for decades - through spatial projects and are often involved in the same geographical area; therefore in most cases trust is already build up. Water managers and spatial planners apply different strategies to create and maintain trust. This includes an open and transparent process, where expectations, interests and apprehensions are exchanged.

Personal competence

Status, power and position of a person can define personal competence. In practice project leaders, administrative and official representatives, and project ambassadors are often selected on the basis of status, power and position. The personal competence become even more relevant when regarding the complexity of current area orientated planning approaches; large groups of involved stakeholders, many different interests and a large amount of available information and reports. However the most difficult is decision making and implementation. Especially at the administrative level, it seems that co-operation is going smoother when someone's status and power is acknowledged. Almost all of

the respondents in the case studies agree that personal competence is one of the most – maybe the most - important element to make progress in a project. With the current popular area orientated approach to planning in mind, we expect a growing role for personal competence in the future.

Policy tuning & instruments

Policy tuning and instruments could best be defined as measures to improve co-operation between water managers and spatial planners. Policy tuning focuses upon the water assessment and the water opportunity map as elements to gain closer co-operation between water managers and spatial planners. In practice, the influence of both instruments resulted in the fact that water is now taken into account at an earlier phase of the planning process

Innovation – institutional, instrumental & mental

Innovation is elaborated in multiple ways; institutional, instrumental and mental. In this paper we approach innovation as a means to stimulate co-operation between water managers and spatial planners. However, one of the most visible and common forms of innovation can not be placed among the above mentioned innovation types: technical innovations. The case studies showed examples of technical solutions

that can be disciplinary or interdisciplinary of nature. Despite the tangible result of technical innovation, some respondents argue that more money, time and effort should be invested in order to stimulate other kinds of innovation.

Institutional innovation

Regarding theory, institutional change can be reached by a fully integrated approach (Howe & White, 2004), which distinguish disciplinary, strategic and operational integration. From practice, a disciplinary integration is not desired, different interests must remain separated. An example is the unique situation of the water board, which represents only the water interest and do not have to compete with other interests within the organisation. Administrative change by combining or removing administrative levels can stimulate decision making in spatial projects. How such a new administrative structure looks like and must be implemented is not yet clear. The two other elements of institutional change - strategic and operational integration - are justified and can be found in practice by amongst other things co-operative visions, contracts and agreements.

Instrumental innovation

In addition to the aim of stimulating co-operation, the use of instruments can be interpreted differently. There are several

disadvantages linked to instrumental innovation, more specifically; towards computer steered instruments. The first point of critique regards the lack of software flexibility; sometimes software must be changed during a project, because it can not handle the specific context dependent situation, as a result updating the software takes much time. In the worst case scenario, the project finishes before the instrument can be used. Secondly, 'old' non-innovative instruments are used, because the costs of innovative instruments do not balance with the expected outcome. Computer based innovations are still relatively new; therefore there are practical problems in such a phase. Despite this, some advantages of innovative instruments can be noted. In practice respondents state their willingness to use new instruments. Even when instruments are not working according to plan, the idea and attempts are judged positively. Secondly, computer systems offer huge possibilities for sharing and transferring knowledge during a spatial project. The use of network systems, such as a Wikipedia-system, offers stakeholders the opportunity to share and explain their own information and language.

Mental innovation

In theory mental innovation refers to 'thinking outside of the box'. Current developments such as climate change and 'land

become brackish' are taken into account and interpreted differently by water managers and spatial planners. Regarding these developments water managers often suggest that they are leading, because their plans are sustainable. Critique on spatial planning focuses upon the interpretation of these developments; their plans are too superficial and in reality not sustainable. On the other hand spatial planners lack the flexibility of water managers, in the sense that they argue that besides the water interest, other interests can be equally important.

Effectiveness

Effectiveness can be partly defined by the aspects of co-operation. Effectiveness was analysed by applying a 'conformance and performance' approach. Conformance is theoretical of character and defines effectiveness on basis of the comparison between initial plan and final physical implementation. According to the conformance principle, the intended plan and physical outcome has to be compared to measure the effectiveness of co-operation. When a plan will be implemented as intended it refers to high effectiveness. This is a highly theoretical perspective and was not used during this research. Conformance measures effectiveness by focusing upon the initial plans and projects and their current status.

Performance emphasises that effectiveness is interpreted differently and focuses on how the different parties give meaning to the effectiveness of co-operation. It is also about how co-operation can perform outside the frame of a project, such as its influence in discussions or other practices. Performance acknowledges uncertainty and advocates that effectiveness is impossible to measure, because it's highly interpretable. According to performance, new information will arise during the project that can influence the project content, process and decision making. Moreover, performance also means that a project can provide lessons that can be applied in other projects. Instead of measuring performance focuses upon the meaning of intentions, interests, new information and discussions.

4. Co-operation in practice

Figure 2 explains co-operation in a spatial project context; it takes all the aspects discussed in the previous section together. The whole circle represents a spatial project and can be divided into two layers. The main element of co-operation is interests, displayed in the inner layer of the circle. The second layer represents the aspects, which shape co-operation and define its effectiveness. In practice, co-operation is not possible without competing interests. Without

communication between different interests, co-operation in a spatial project can not exist. The way in which co-operation is formed is represented by the outside layer. A spatial project must not be approached as one isolated circle, but always in coherence with other projects. The circle on the right represents another project and the arrows show that co-operation between the different layers of project is present.

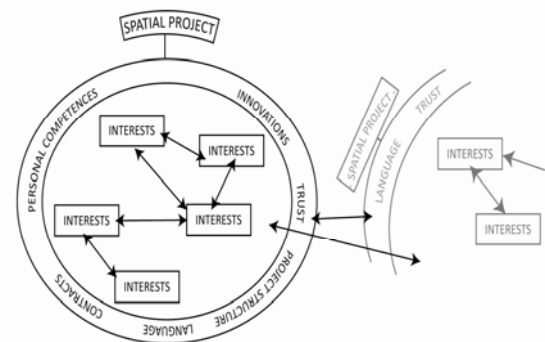


Figure 2 Co-operation in a spatial project context (Pijnappels, 2009)

The effectiveness of co-operation is not only dependent on what happens within a project, but also on a higher level, the co-operation with other spatial projects. Horizontal, vertical and diagonal forms of co-operation between water managers and spatial planners can be found in both case studies. The co-operation is mainly informal of character, which stimulates co-operation more than formal forms of co-operation. The place where co-operation can be found focuses on the difference between administrators, policy makers

and spatial projects. Each discipline has its own language. Practices try to create a mutual language. The cases showed that water management takes the initiative to translate their own language and try to speak spatial planning language. Trust is another important aspect of co-operation. The creation and maintenance of trust can be reached by different means, such as the just mentioned attempts to speak the language of different disciplines. Using an open participative process where interests, expectations and fears are shared contributes to trust as a means to deal with uncertainties. In the Almere case contracts were used that are informal of character and can be approached as strategic instruments. Informal contracts have great potential to tackle problems concerning continuation of projects. Trust will always be an important aspect that can not be replaced by contracts. Both cases acknowledge the importance of personal competence for co-operation. Effectiveness is closely related to the aspect of co-operation. For example, the better the parties understand each other's language the more effective co-operation will occur. The planning of the Almere case is going according to plan. At the case Volkerak-Zoommeer, the project 'water quality' had some delays because new representatives took place in the project structure. Both cases performed outside their own frame

through new ideas implemented in other visions or project structures applied in other projects.

5. Discussion and Conclusions

From the studies of the WFD- and BDH-implementation process in The Netherlands we can deduce some important lessons. First of all, it takes time to learn to work with new EU directives. Policy changes cannot be reached in a short time. When discussing implementation problems it is important to take this into account and allow lower (local) governments the time to adapt their policies and working methods. Second, we noticed that the integration of different European policies is difficult due to the different routes that the directives follow. This means that each directive is dealt with by different people and organisations and at different scales. Communication and co-ordination (horizontal and vertical) between these different organisations is difficult. Despite all problems, the Dutch situation shows that environmental policy integration (EPI) can be achieved on local and regional levels. In many areas in The Netherlands an integrative approach has become the current practice. Water boards, for example, already successfully adopted such an integrative approach years ago. However, the implementation of the European Directives might frustrate such an integrative approach, because too much focus is put on formal

compliance, and separate goals for surface water, groundwater status and protected areas have to be set by different authorities. A rigid and static interpretation of the Birds and Habitats Directives for example conflicts with the management of highly dynamic ecosystems (cf. Ledoux *et al.*, 2000; Lee, 2001). The strong focus on formal compliance causes frustration among local and regional authorities and some of them consider these European policies as a step backwards because they re-emphasise a sectoral instead of a more integrative approach, but again, time is needed to adopt new policies. EU and national government should understand this and facilitate the 'adaptation process'. Monitoring should focus not only on formal compliance but also on environmental objectives. Member states, which are responsible for transposing EU politics into national laws, need to take the first step when they implement EU environmental policies. This step will largely determine the outlook of the implementation process at the regional and local scales (Kaika, 2003). Political embedding is thereby important to assign and equip responsible or newly instated authorities with effective instruments, financial means and legislative powers to implement this policy further.

This study of the Dutch practice shows that the implementation of the Water Framework Directive, the Birds and Habitats Directives and

the CAP (SEE, 2006), as well as other EU environmental directives, has led to a Gordian knot of legal and administrative procedures, especially when looking at the implementation at the local or regional level. Choices about local and regional developments need to be made, but each actor is waiting on someone else and their focus is not often directed towards the needs of a region. Most actors focus on formal compliance with the EU directives and, as a result, the environmental objectives are fading into the background. This Gordian knot of EU environmental directives shows the shortcomings and limitations of sectoral policies. In our opinion a further emphasis on integration at a European level or on uniform implementation in all member states will only tie this knot much tighter. We suggest cutting the knot. This means that the EU should not try to control local and regional development. Instead, focus should be placed on sensible instruments such as social involvement and social learning to understand complex systems before action is taken (see, e.g., Van Ark, 2005; Pahl-Wostl, 2007a, 2007b). The type of policy action depends on the context of the region, where in some cases top-down policy is desirable, for example, in transnational global challenges; in other circumstances, bottom-up policy is the most effective solution (cf. Löwgren, 2005). Implementation and its monitoring must

not be limited to legal and procedural compliance but must encompass the whole process, including the results and external spatial impact. Commitment cannot be forced through control; actors will always search for and find ways around EU directives. Political pressure from the European Union, other member states, NGO's or the public is likely to have more effect. Of course, it has to be noted that the EU faces a great dilemma: on the one hand, it must safeguard equality of rights for all member states and prevent distortion of trade, but, on the other hand, there are many differences between member states and environmental issues. The role of subsidiarity places even more pressure on the member states, as they are accountable for the formulation of objectives and translation in national policy strategies (Jordan and Jessepén, 2000; Jordan, 2005). The Netherlands has a long tradition of integrative approaches in both water management and nature conservation. These are not automatically a guarantee for success, but experience shows that such an approach leads to more commitment of different stakeholders. In the long run this commitment might prove to be much more valuable than bureaucratic procedures and control mechanisms to improve the quality of the European environment.

To support the local and regional decision process in order to deal with the Gordian knot, it is

important that the co-operation between water managers and spatial planners is well organised. The following section will discuss the effectiveness of this co-operation.

How effective is the co-operation between water managers and spatial planners in practice?

Effectiveness is nearly impossible to measure consistently, because everyone interprets co-operation differently. During the interviews and elaboration of literature several elements regarding the effectiveness of co-operation arose. The elements that contribute to effective co-operation can be placed among aspects of co-operation such as language, trust, contracts, personal competence and innovations.

Figure 2 showed that different interests form co-operation and therefore interests are part of effectiveness as well. In theory, everyone will interpret effectiveness differently. This relates to the fact that a judgement always needs a reference frame. In this light the effectiveness of co-operation is based upon the stance of stakeholders towards their own interests versus public interests. In theory the formation of mutual interests by 'forgetting' your own interests is mentioned. Examples from practice also showed that it is important to watch over the project and be sure your own interests are well placed. What arises is the dilemma of 'own versus public interests'. This also indicates that co-operation can

be more effective for one party than another. Thus the second dilemma arises; for who does the effectiveness count?

Figure 2 also shows that different spatial projects will influence each other and that there should be communication between the projects. In practice the case study projects are part of a bigger structure that also shows coherence with other projects and developments in the area. The solutions and designs for one project will have direct influence on other projects. In such circumstances it is important to make integrated decisions, project results must support each other.

The final part of this section will represent the most important discussion points. Also recommendations regarding water management and spatial planning are given, which will hopefully provide insight into how both disciplines can increase co-operation, so it can be used by designers, researchers, water managers, spatial planners and policy makers.

It is all about interests

The previous section ended with the conclusion that dilemmas arise regarding own versus public interest. Also, that section described that co-operation is formed by communication between different interests. If we accept that conflicting interests form the basis of co-operation, how is it possible to 'forget' your own interest and search for the mutual interests? Instead of an

integration of interests we would like to argue that a certain level of conflict between interests must be present to form effective co-operation. Regarding this dilemma we can ask ourselves two questions:

- Is it possible and desirable to form a mutual interest?
- Are conflicts between interests not the basis of co-operation?

Continuation: strategic contracts & teams and competence

In theory and practice one of the elements that can negatively influence co-operation is the lack of continuation in a process. Two instruments to deal with continuation problems are strategic contracts and teams/competence. Contracts are often associated with formal procedures. In the fields of spatial planning and water management contracts or arrangements must be used as a strategic instrument. In circumstances where we can expect that the process will develop with difficulty, due to many involved stakeholders or a complex project topic, it can be worthwhile to also use informal contracts and address matters such as continuation of project teams and financial issues. In the research no evidence was found that informal contracts negatively influence the process and project content. The case studies show that if a certain project structure is judged

positively, other projects use the structure as an example. The case studies also show that the project structure and process is highly dependent on the personal competence of project leaders, officials and representatives. Although both elements influence co-operation, the performance mainly focuses upon the project structure. A recommendation is to shift the attention more towards the personal competence and project team's qualities. Further research must focus towards the possibility of using project teams in other spatial oriented projects.

Finances & content

In order to develop the best possible solutions in spatial projects, finances and content can best be separated. In practice content and finances are closely related and can not be approached separately. The 'problems' that arise in both case studies all regard to financial issues. The main obstacle focuses upon the questions 'who will pay?' and 'how do we fairly calculate relative financial contributions from interested parties?' In order to address these questions informal contracts can be used. An informal contract can appoint and include a budget and also include what will happen if the project passes the budget limit.

Innovations

Regarding literature and practice, the predominant form of innovations is technical in nature. However some respondents argue that more investment must go to mental forms of innovation. The presupposition is that technical innovations are often applied, because money and effort then results in something tangible on a short term. On the other hand other elements of innovation can be found within or in coherence with technical innovation. The example of an extra shore can include in addition to technical aspects different land uses and disciplines. The proposed presupposition must not be approached as black or white; there is clearly a grey area. In our opinion further research should focus upon different forms of innovations and investigate in particular the potential of mental innovation.

Administrative change

In practice, administrative change by combining or removing administrative levels is mentioned as a means that stimulate decision making processes in spatial projects. But this idea is still a concept without available plans for how administrative change could be executed or even what administrative structure should be adopted. Clearly further research should be conducted to investigate the potential benefit of restructuring

administrations in projects and the mechanisms required bringing about this change.

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