



The ESPON 2013 Programme

ESPON TANGO
Territorial Approaches for New Governance

Applied Research 2013/1/21

Annex 4
Case Study 4: Cross-border Cooperation in the
River Rhine Basin

June 2013

Prepared by
Wil Zonneveld & Alexander Wandl
Delft University of Technology
OTB Research Institute for the Built Environment
Delft, The Netherlands



EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Table of content

1	Introduction to the case	3
1.1	Water management: A case of intrinsic cross-border relationships.....	3
1.2	Spatial planning and water management: two separate policy domains?	3
1.3	Main territorial focus of the case study	4
2	Integrating policy sectors.....	7
2.1	Introduction	7
2.2	Cross-sectoral policy integration in Germany	7
2.3	Cross-sectoral policy integration in The Netherlands.....	10
2.4	Cross border cross-sectoral policy integration	12
2.5	Barriers to cross-sectoral policy integration	13
3	Coordinating actions of actors and institutions.....	15
3.1	National level.....	15
3.2	Multi-level interplay.....	16
3.3	Transnational cooperation	17
3.4	Cross-border cooperation.....	19
3.5	Cross-border coordination: barriers and synergy	20
4	Mobilising stakeholder participation	22
4.1	Introduction	22
4.2	Mobilising stakeholder participation on the international and strategic level.....	22
4.3	Mobilising stakeholder participation on the cross border level	22
4.4	The organisation of the stakeholder involvement.....	23
5	Being adaptive to changing contexts	24
5.1	Introduction	24
5.2	Institutional learning	24
5.3	Institutional flexibility of the Dutch German working group for high water	24
6	Realising place based and territorial specificities.....	25
6.1	Introduction	25
6.2	The integration of territorial specificities and characteristics into territorial governance?.....	26
7	Conclusions.....	26
8	References.....	28
9	Appendix 1: Interview respondents and consulted experts	30
9.1	Respondents.....	30
9.2	Consulted experts	30

1 Introduction to the case

1.1 Water management: A case of intrinsic cross-border relationships

Due to hydrological and ecological conditions there are many intrinsic relationships within the catchment area of rivers. It is for this reason that river basins are conceived as the overall most important units for water planning and management (Meijerink & Wiering, 2009: 181-182). This is reflected by two important European Union environmental directives: the European Water Framework Directive (WFD)¹ of 2000 and the so called Floods Directive² of 2007. Both directives – in fact the Floods Directive is closely linked to the WFD in terms of its underlying principles as well as its governance approach – are based on the river basin concept. According to the WFD a river basin is the area of land from which all surface water run-off flows through a series of streams, rivers and, possibly, lakes into the sea at a single river mouth, estuary or delta (Van Rijswick et alia, 2010: 130).³

The WFD as well as the Floods Directive go back to the 1992 Helsinki Convention⁴ brought about in the context of the United Nations Economic Commission for Europe (UNECE). This convention, in force from October 1996 onwards, was signed by a large number of countries, including the Rhine states, and the European Community. Due to this convention and the two EU water directives river basin management has grown in importance over recent years.

In the case of the Rhine the origins of such an approach go back to the immediate post-war period however. In 1950 the 'International Commission for the Protection of the Rhine against Pollution' was established which received its legal foundation with the conclusion of the Convention of Bern in 1963. As the original name of this commission suggests the early cooperation in the Rhine basin was targeted at water quality and the prevention of environmental disasters. As the location of for instance chemical plants, electrical power plants and sewage systems – at least in those days – was closely connected to the presence of water systems there was already a territorial dimension to these early years of transnational river basin management.

However, this dimension increased in importance when water management spilled over into flood control and became even more important when flood risk management was introduced, especially after the occurrence of high water discharges and even floods in many river areas across Europe in the 1990s. There are two main reasons for this. First land-use is important in terms of the run-off of surface water. Hard surfaces to be found in urban areas but also for instance agricultural land-use – drainage systems, types of crop etcetera – influence the amount and speed of surface water entering streams and rivers. So territorial characteristics influence the behaviour of water systems. Second, is it increasingly recognised that there are limitations to a mere technical approach to flood control and that a new 'discourse' as well as practice is needed: water needs to be accommodated and flooding risks have to be managed accordingly. See for instance EEA (2012).

1.2 Spatial planning and water management: two separate policy domains?

As the original name of the 1950 Rhine Commission (see above) already suggests the early cooperation in the Rhine basin was targeted at water quality and the prevention of environmental disasters. As the location of for instance chemical plants, electrical power plants and sewage systems – at least in those days – were closely connected to the presence of water systems there was already a territorial dimension to these early years of transnational river basin management. However this dimension increased in importance when water management spilled over into flood control. There are two main reasons for this. First land-use is important in terms of the run-off of surface water. Hard surfaces to be found in urban areas but also for instance agricultural land-use – drainage

systems, types of crop etcetera – influence the amount and speed of surface water entering streams and rivers. So territorial characteristics influence the behaviour of water systems.

Interrelationships also go in the other direction: it is increasingly recognised that there are limitations to a mere technical approach to flood control. Dikes and dams and other works of civil engineering cannot fully exclude risks of flooding especially as over a period of many decades such works have made the overall territory available for water flows ever smaller while pumping installations and land-use have increased the speed with which surface water enters into these flows. So the new 'discourse' is that water needs to be accommodated. See for instance EEA (2012). This counts for coastal defence as well as for river policies as is reflected in – for instance – the new Dutch river management doctrine: space for the river (Wiering & Immink, 2006: 429; Woltjer & Al, 2007). This has brought spatial planning at the one side and water management at the other side ever more closely together. In the past we have seen a separation between the two domains: water management was expected to meet the needs of spatial planning by ensuring dry feet and good conditions for the use of land (Wiering & Immink, 2006: 429). Water management itself was not primarily concerned with considering the claims of other policy fields but, in principle, looked at its 'own' water system from a technical point of view (Wiering & Immink, 2006: 428). These qualifications relate to both the Dutch and German situation but we believe they aptly describe the situation in many other countries, at least those bordering the Rhine.

Apart from the precise nature of the relationships between spatial planning and water management at both sides of the German-Dutch border due to the very close relationship this case study will primarily focus on these two policy domains and the relevant policy actors active within these domains. We will also focus on issues of water quantity as the inclusion of water quality in this case study as well would make matters too complex.

1.3 Main territorial focus of the case study

River basin management forms the stage for new relationships between two policy domains which grew apart during the previous century. Focusing on a cross-border/transnational level seems a logic choice as river basins often tend to cross country borders. Choosing the Rhine Basin has for a large part to do with the fact that cooperation in this area has a history of about sixty years. Because in terms of practical actions and projects cooperation across country borders does not address the entire Rhine river basin area but smaller areas (Van Rijswijk et alia, 2010; Gilissen, 2009), this case study focuses on two so called sub basins or sub districts: Lower Rhine and Delta Rhine, with the emphasis on the latter. These areas are discussed in more detail below.⁵

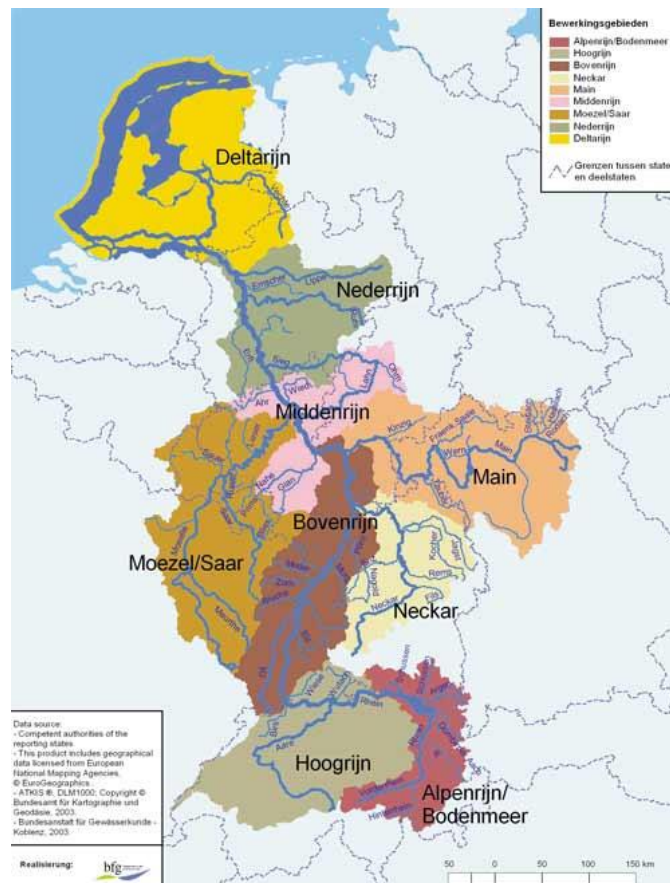
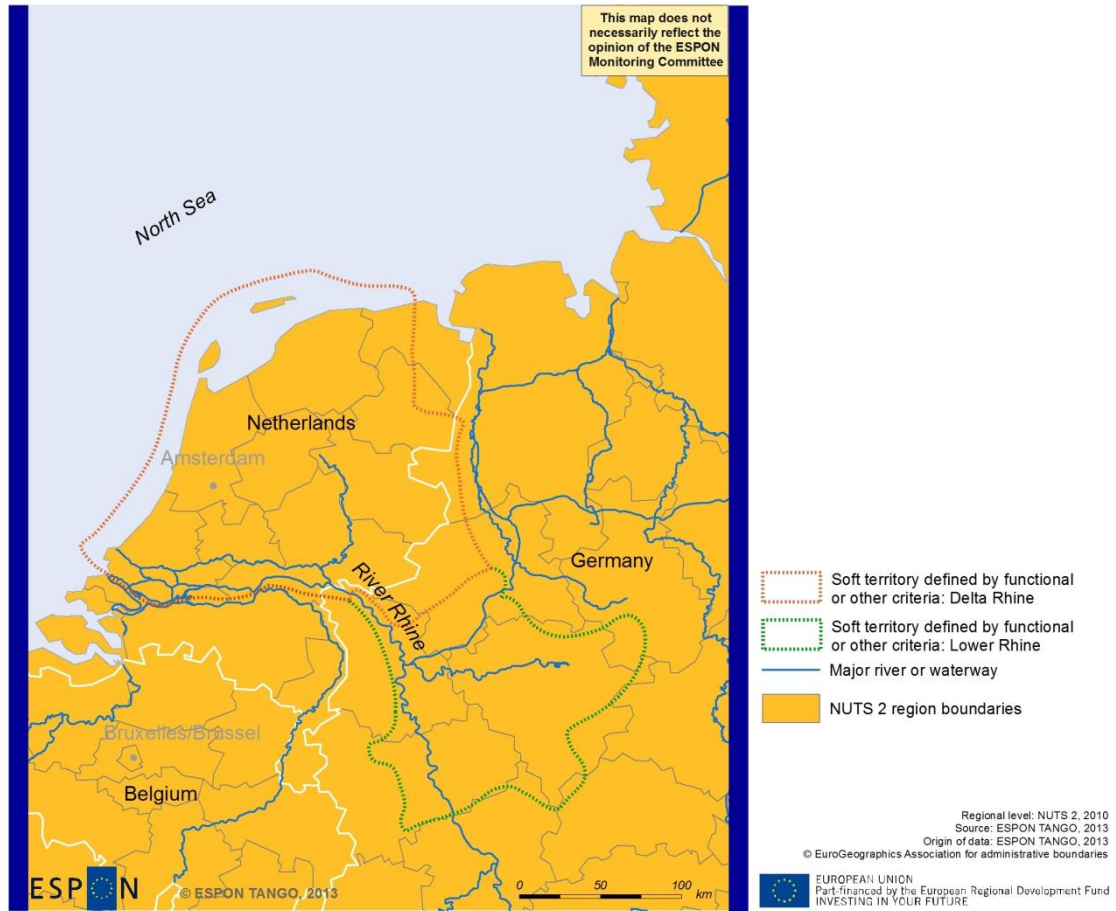


Figure 1. The Rhine River Basin and its Sub Basins: district and sub-districts respectively (source: www.iksr.org)

Although not primarily focused on social-economic issues the Rhine case is nevertheless important in relation to the Europe 2020 strategy. First off all the case addresses important sustainability issues. Existing documents and transnational agreements, like the Rhine 2020 – Program on the sustainable development of the Rhine, underline the need for approaches aiming for sustainability. According to Rhine 2020 this basically means that a holistic approach is being followed. So far water policy focused on improving water quality and on important uses. Under the new approach the conservation of an intact stream ecosystem is of equal importance.

Second the resilience of an area in terms of flood risks has important economic implications especially in the case of the Rhine with its vast concentration of people and economic activities. Water quantity in the Rhine – the most important transport waterway in Europe – has also a major impact on transport both in periods of (extreme) high and low water. Both issues of water quality and quantity obviously have important implications in terms of equality, for instance in terms of health and risks. This makes cross-border cooperation in water management also relevant in terms of territorial cohesion also because overcoming (administrative) divisions is a key element of territorial cohesion (EEA, 2012; EC, 2008).

CASE STUDY AREA 4: RHINE BASIN



2 Integrating policy sectors

2.1 Introduction

Above we have already addressed the relationships between spatial planning and water management, the two main policy domains which are the object of this case study. The closer relationships between spatial planning and water management as stimulated by the two EU water directives – at least potentially – point to the existence or rise of a new kind of territorial governance. First we look at the situation in Germany and after that the Netherlands. The actors and institutions will be discussed on the cross border level in the next chapter.

A major difference between the Dutch and the German situation is, that along the German part of the river Rhine, the mostly linear defence systems only have a vital function during extreme events, or seasonal high water, whereas in the Dutch situation water defence is vital from a day to day basis (Rederker 2013: 41). This difference influences also policy fields that are integrated in high water risk management. In the Netherlands a stronger integration of water management and spatial planning was observed, whereas on the German side the integration of water management and environmental planning is stronger. On the German side, due to the fact that flood risk management is here rather concerned with extreme events, than with the daily management of water, landscape planning, as one instrument for environmental planning, plays outside the cities a bigger role than spatial planning, which focuses on the areas within the urbanised areas.

2.2 Cross-sectoral policy integration in Germany

Spatial planning has, since the adaptation of the federal spatial planning law (Raumordnungsgesetz) in 2008, a coordinating and management function of all spatial relevant sectors. This includes also explicitly flood protection and management measures. Those have to be integrated into spatial planning documents. Mostly this is achieved at the regional scale, by using regional development plans. This seemed to contradict the communal planning autonomy which dominates the German planning culture, but was confirmed by a verdict Bundesverwaltungsgericht in 2006. As a consequence all spatial regulations concerning flood protection, which are set at the regional scale, are given preconditions for communal planning.

The implementation of the EU Floods Directive resulted in a number of changes of the federal *Wasserhaushaltsgesetz* as well as the federal *Hochwasserschutzgesetz* during the last decade. The major changes were (Hengstermann, 2011):

- the reformulations of the general principles of flood management;
- the introduction of different spatial zones for areas under flood risk (*Überschwemmungsgebiete*);
- the implementation of the *Hochwasserschutzpläne* (Flood management/protection plans) as instruments;
- the introduction of policy cooperation on the scale of the river basin.

The above described legal situation is the result of a decade long shift from a technical approach of high water protection until the late 1970's towards an integrated approach in the 1990's and 2000's towards a risk management based approach since 2008 with the implementation of the EU flood directive (Hengstermann, 2011, 113). Each of this shifts also resulted in changes and adaptation of the *Wasserhaushaltsgesetz* and related legislations.

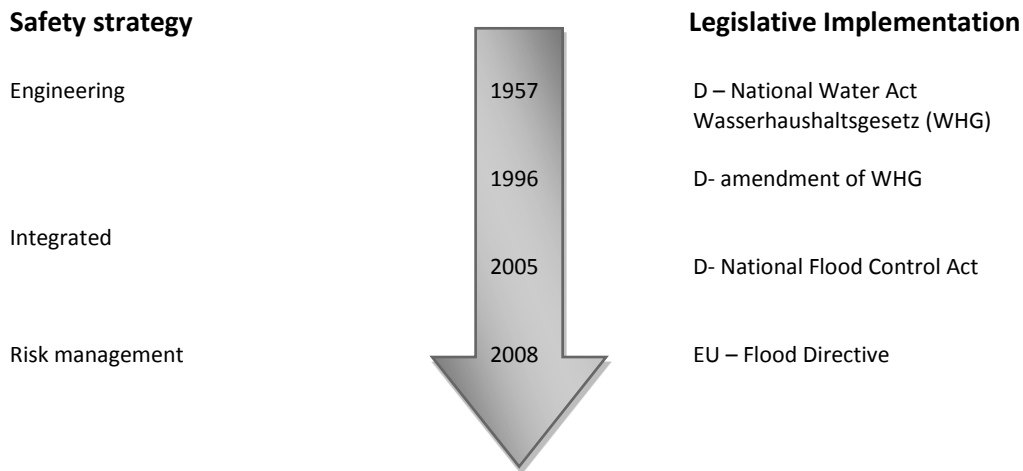


Figure 2: Shift in flood management paradigms and related changes in German federal law (Source: Kern, Bucher 2010; Translated by the authors.)

According to the federal structure of Germany those changes were implemented via the different Bundesländer and their *Landeswassergesetze*. Furthermore the changes of the *Hochwasserschutzgesetz* caused changes in other federal legislation among others in the *Raumordnungsgesetz* (spatial planning law) and the *Baugesetzbuch* (building law). In both the principle of preventive flood protection was introduced.

The administrative level of the implementation into spatial planning of the above named flooding areas is the *Bezirksregierung* (District government), in our case, the district government of Düsseldorf. The spatial planning instrument used is the *Regionalplan*, which is an integrated regional development plan.



Figure 3. Scheme of policy fields and subjects to be integrated into the sustainable development of the district of Dusseldorf⁶

In this plan three major aspects concerning water management have to be considered⁷:

- the spatial indication of floodplains;
- the flood risk management in areas behind the dikes;
- the water retention in the catchment areas of rivers.

The regional plan for the district of Düsseldorf is just under revision. In the latest working version⁸ two shifts concerning water management can be observed: First the integration of climate change mitigation measures, where flood management should play a crucial role. Secondly, flood zones should not only be graphically presented in the plan, but development goals should be formulated that go beyond keeping these areas free from buildings (Bezirksregierung Düsseldorf, 2012, 70).

The process of the implementation of the water framework directive as well as the flood directive is not managed by spatial planning authorities, but fall within the competences of environmental planning. In NRW the responsible administrative body is the Ministry for Climate Protection,

Environment, Agriculture, Nature Conservation and Consumer Protection of the German State of North Rhine-Westphalia. The same is true for the flooding directive.

On the operative level, again the District governments play a crucial role. As they are the administrative levels that are in charge to produce and monitor the instruments, like high water risk maps and river management plans. This secures that spatial planning, landscape planning and water management and high water risk management are integrated on the regional level. The German respondents all agreed that this is working well and that the directives only strengthened structures and mechanisms of integration, which were already in place beforehand, but force now also stakeholder which in the past only had minor interest in participation on the table.

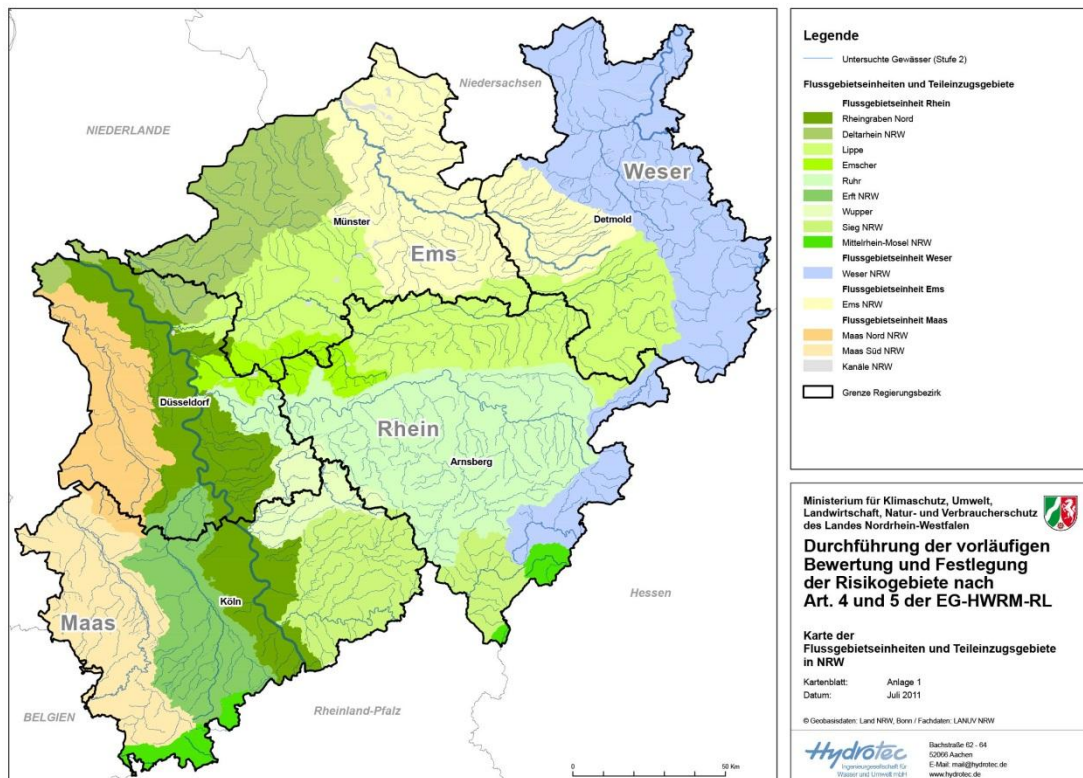


Figure 4. The difference between the sub basins (coloured areas) and administrative boundaries (black outlines) within NRW.

On crucial novelty is, that with the implementation of the WFD a set of new territorial management units was introduced. Which are, in accordance with the WDF, related to river basins and sub basins, which are also used for the implementation of the flooding directive. As figure 4 shows, the river basins differ from the administrative boundaries in place and made adjustment in the governing structure necessary, which are all working and in place at the moment⁹:

- To ensure the integration of on-site knowledge, in NRW the river basin areas again are further divided into 14 sub-basins.
- The boundaries of the sub-basins do not meet the administrative boundaries of North Rhine-Westphalia, therefore, lead districts for the coordination and integration of the work between all the sub-basins we assigned. These were installed at the district governments (BR).
- For the implementation of the water management plans the sub basins where too big, therefore, they were subdivided in management areas. Within each management area a round table coordinates the work.

2.3 Cross-sectoral policy integration in The Netherlands

A paradigm shift

In the Netherlands and elsewhere water quantity management until the 1980s was strongly focused on meeting the needs arising from spatial planning. Water management ensured 'dry feet' and good conditions for the use of land.¹⁰ Critical periods (near floods) in 1993 and 1995, and regular problems due to excess local rainfall, have led to important developments in the discourse about water management.¹¹ The new discourse is generally known as room for water (*ruimte voor water*).

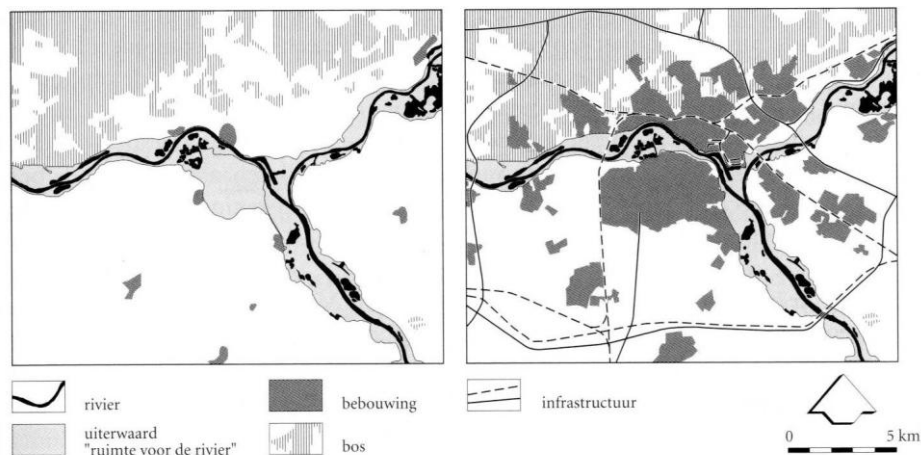


Figure 5: The curtailment of territory available for the Rhine and IJssel as the result of the growth of Arnhem: left situation around 1830 and right 2000 (light grey areas are river fore lands; source: Hidding & Van der Vlist, 2009)

Historically the land available for water in the Netherlands has sharply decreased over time, especially since the middle of the 19th century due to land reclamation and factors such as building urban areas in the forelands of rivers (see figure 5).¹² The room for water approach as a general approach has also led to a major revision of policies toward the management of the Dutch river system. This became known as *Room for the River*. The main components of this approach seeking to integrate water management and spatial planning/development are:¹³

- New developments like housing, buildings or flow obstructing infrastructure in the floodplains are no longer allowed; this also holds for expanding existing buildings.
- Water embankments and the zones they are protecting will be assigned a land use. Land that is part of a winter bed will be assigned to 'public works'. In the case of more than one land use assignment, the principal land use is to protect against high water. So this gets priority.
- A system of construction permits is needed for all activities that may hinder the draining of water or may cause a decrease in water storage capacity.

The fact that it became possible to get such an approach politically accepted and also in a binding form can only be explained as making use of a window of opportunity opened by the events of 1993 and 1995 (Wolsink, 2006).

Implementation

The components of the Room for River directive made their way into the statutory 2005 National Spatial Strategy and finally into a dedicated statutory national planning document which January 2007 came into force as well as a policy programme which is still being carried out. At 39 locations, measures have been or will be taken that give the river space to flood safely. Such measures include

depoldering, lowering of groynes, water storage (the retention areas mentioned above), dike relocation and the construction of secondary channels. Moreover, measures will be designed in such a way that they improve the quality of the immediate surroundings. Especially the link with urban development objectives is important here: the enlargement of river beds near urban areas can contribute to a renewal of urban water fronts or new recreational areas (Redeker, 2013). Also measures can contribute to more room for nature although it is not the case that the Room for the River approach and the objective to develop ecological values never clash or always lead to cross-sectoral synergy. For instance, the objective to develop an ecological main structure combined with Natura 2000 policies has led to overgrown areas in the flood plains of Dutch rivers at several locations. In some cases this had and has negative effects on the flow of water. A possible way out is dike relocation so there is room for water as well as for nature. Costs are very high though and there might also be negative effects in terms of cultural values (changes in the cultural landscape). The resulting spatial claim itself might also raise opposition.¹⁴ Apart from such an example the Room for the River programme can be seen as an integrative strategy trying to link water management goals with policy objectives relating to urban, nature and recreational development. The programme is expected to be completed by 2015.¹⁵ Figure 6 shows projects close to the Dutch-German border.

Spatial planning and water management

So on the level of the Room for the River programme water management policies and projects aim to link with spatial planning objectives where possible and feasible. In addition one can also say that spatial planning has taken a water management turn. Roughly from the late 1980 and early 1990s onwards a large number of smaller scale projects mostly in urban areas have been realised, for instance aiming at holding precipitation as long as possible instead of disposing as quickly as possible to drainage and sewage systems.

In order to prevent conflict between new spatial developments and the water system a new instrument was introduced: the Water Assessment (WA). The objectives of WA are to guarantee that water interests are taken into account in spatial and land use planning, so that negative effects on the water system are prevented or compensated for elsewhere. This integration of water in spatial planning works in two ways: a plan is assessed on its implications for the water system and the restraints that the water system puts on land use are made explicit.¹⁶ WA was introduced as an experiment in 2001 but became mandatory from 2003. There was initial opposition from the Union of Municipalities (VNG) against the legal establishment though. A main reason was that the test would become mandatory for municipalities and provinces and just voluntary for national government (Wolsink, 2006: 478-479).

- Salmon 2020;
- the improvement of flood mitigation by implementing the Action Plan on Floods;
- further improvement of water quality;
- groundwater protection.

The continuous surveillance of the state of the Rhine and further improvement of water quality continue to be an essential part of ICPR work. Rhine 2020 supports the implementation of the EC-Water Framework Directive and will contribute to achieving a “good chemical and ecological state” in the Rhine watershed. The programme also enhances the implementation of the EC-Flood Management Directive.

Management plan for the international Rhine river basin district

The ICPR is also responsible for the Management plan on the level of the entire Rhine. It therefore plays a crucial role in the cross national integration of policies related to the WFD. A key challenge was and still is to secure, that the involved countries, use the same standards and measure to assess the state of the rivers.

Flood risk management plans

The action plan on Floods, developed by the ICPR was one of the role models for the development of the Floods Directive. In the implementation of the Floods Directive the ICPR takes over the coordinating and reporting task for the whole Rhine basin for all three steps required by the Floods Directive:

- Preliminary flood risk assessment by end 2011;
- Maps of flood hazard and flood risk by end 2013;
- Flood risk management plan by end 2015.

This also includes the definition of the amount of new retention space that has to be provided along the Rhine.

2.5 Barriers to cross-sectoral policy integration

Although over the last two decades spatial planning and water management have become closer, one barrier that is named in the literature and in the interviews is that water management and spatial planning personnel come from different professional cultures and have developed their own institutional structures, ways of acting and geographical scales of operation (Woltjer & Al, 2007: 221).

Looking at the Netherlands: at one side of the continuum a discourse could be identified in which water is regarded as a fundamental ‘guiding principle’ for spatial development and planning (Ibid.: 432). See also Tjallingii (1996). Development and planning should not be in conflict with the principle of sound water management. This discourse finds support in both EU water directives. The discourse at the other side of the continuum, more present in Germany, sees water issues – due to the rise of importance of water management in general – as one of the basic conditions for spatial planning, but will not be given priority above other relevant features such as the general quality of the environment or economics (Ibid.,431-432). In the past and at both sides of the border these discourses have clashed, for instance when it came to the location and future land-use of flood and retention areas.

We can conclude that there is a clear tendency towards *policy packing*, and that spatial planning plays a crucial role. This role differs, according to the planning tradition in Germany and The Netherlands. In Germany the regional level plays a more important role in bringing together policies, which are generated at different administrative levels. In comparison, in the Netherlands the national scale plays a more important role. In both countries it is clear that water management

interests on the whole will prevail. The 2006 statutory planning document on Room for the Rivers contains the following disclaimer: “In the event that the main objective of this [planning document] (achieving the required safety levels) conflicts with its secondary objective (spatial quality), the main objective will prevail.”¹⁸ Similarly the decision of the German High Court in 2006, prioritized regional high water protection measures over local spatial planning goals. There is a significant limit to policy packaging at the cross national level though, because spatial planning is not included in cross-border water management.

If we instead look at *cross-sector synergies* then it is clear that these are addressed at the cross-border level. First via the ICPR which specifically also includes the public sector as well as civil society. Second on the regional cross border level where the German-Dutch Working Group on High Water is the driving force to seek cross-fertilisation between different administrative actors, as well as the broader public and civil society. Within the two states, cross-sector synergies are again achieved differently according to the different traditions, with a focus on integration high water management and spatial development in the Netherlands on the one hand, and a focus on the integration of environmental planning and high water management on the German side.

Promoters and inhibitors territorial governance

As promoters of territorial governance concerning the integration of different policy sector we found:

- A very long tradition in cross border cooperation (the European concept of Euregio stems from German-Dutch cooperation) and accompanying political agreements, that (in the current case) provide the structure and financial support to tackle flood management across borders and sectors.
- A strategic development framework, that includes relevant sectors and actors and goals, based on a hierarchy of territorial units (river basins and sub basins) and that defines the responsibilities as well as how actors across different levels of scale cooperate.
- A combination of legal binding agreements and sufficient structural flexibility within the above strategic framework, that allow different national states to organize policy integration according to their traditions but nevertheless stimulates cross-border synergies.

3 Coordinating actions of actors and institutions

3.1 National level

Germany

Spatial planning has since the revision of the federal spatial planning law (*Raumordnungsgesetz*) in 2008 a coordinating and management function in relation to spatially relevant sectors. This includes also explicitly flood protection and water management measures. The latter have to be integrated into spatial planning documents. On the whole this is done at the regional scale via regional development plans. This seem to contradict the communal planning autonomy which dominates the German planning culture, but was confirmed by a verdict of the *Bundesverwaltungsgericht* in 2006. This means that all spatial regulations set at the regional level concerning flood protection constitute preconditions for communal planning.

According to the 2006 changes of the German constitution the *Bund* has a so called concurrent legislative power (*konkurrierende Gesetzgebung*) in relation to water management meaning that there is a competence to adopt federal legislation going further than framing legislation. This competence has not been used at the federal level: the *Länder* have been charged to elaborate the obligations of the WFD. This means that the most important part of German legislation in relation to water management is to be found on the level of the 16 *Länder* (Gilissen, 2009: 66-67).

The Netherlands

The Dutch planning system as a whole is often characterised as a comprehensive-integrated approach (CEC, 1997). Spatial claims are balanced against each other so different sectoral as well as societal interests have to be weighed. Some aspects or dimensions which in the past often showed a tendency to be overlooked or neglected are strengthened in planning processes, partly as the result of EU directives. So it has become mandatory to address certain interests on a formal basis like environmental aspects through environmental assessment procedures, ecology in the case of Natura 2000 areas and water via the Water Assessment (see below).

Characteristic for the Dutch spatial planning system is that each of the three levels of administration (national, provincial and municipal) has discrete planning competences. Since the new 2008 Spatial Planning Act (*Wet ruimtelijke ordening*) the relationships between these three levels have slightly changed. Before that every spatial plan or project from whatever level of government or governmental agency had to be laid down in a municipal land-use plan (*bestemmingsplan*). Since 2008 each level can establish land use plans of its own. The fact that higher levels of government are now able to do that has important repercussions for decision-making about especially infrastructural plans, a major rationale to open up this possibility in the new planning act.

Water management is a prime responsibility of the water boards and the national Directorate General for Public Works and Water Management (*Rijkswaterstaat*).¹⁹ This means that the Netherlands has dedicated, purpose-led governmental agencies involved in water management. The water boards are even (much) older than the Dutch state. For instance the water board Rhineland – the area around Leiden – was established in 1160. In the past there have been even several thousands of water boards. Their number have been reduced over the course of years to 27 at the present. (New) mergers are to be expected in the future because national government seeks to bring back the number to 10-12. Every now and then the discussion crops up that the tasks of the water boards should go to the provinces as this would – as is expected by some – reduce the costs of governance in general. This is opposed by others who claim that this would lead to a tremendous loss of expertise. Currently no concrete proposal are to be expected to dismantle the water board and transfer their tasks to the provinces.

The recognition that there are strong *internal* connections in the water system has led to *external* connections between policy domains like for instance expressed by the tighter relationships between water management and spatial planning discussed above. These stronger external relationships has also led to a rise of not only the number of stakeholders in water management but also to a much greater variety in interests and objectives. This does not mean full integration between all these domains and stakeholders. The prime interest of a stakeholder like the national Directorate General for Public Works and Water Management is still water defence but there are clear *integrative* developments taking place.

3.2 Multi-level interplay

The most relevant issue in relation to this case study is how the river basin approach of the Water Framework Directive and the Floods Directive has been connected to the existing territorial division of competences. Although in this case study we do not address the issue of water quality policies the WFD is important as in terms of the delineation of areas it lays the foundation for the Floods Directive and therefore cross-border cooperation in relation to water quantity.

The WFD requires the designation of a competent authority or competent authorities for its implementation (Junier & Mostert, 2011: 3). Although both countries do not have a tradition of managing water on the basis of river basins (Ibid.) in neither country special authorities with their own territorial perimeters covering (parts of) river basins have been created as a response to both EU water directives. In the Netherlands the councils of all water boards, provinces and municipalities have been designated as competent authorities. The Minister of V&W (currently known as Infrastructure & Environment or I&M in Dutch) has been designated as ‘coordinating competent authority’, ‘when needed together’ with the Minister of VROM (the relevant parts of this ministry are now integrated in I&M) and the Minister of Economic Affairs. All these authorities kept the competencies that they had and are accountable for their part in the implementation of the WFD (Ibid.:3). See also Liefferink, Wiering & Uitenboogaart (2011).

Table 1: The structure of the water management administration in Germany and The Netherlands (adapted from Van der Molen, 2011)

<i>Nordrhein-Westfalen</i>	<i>The Netherlands</i>
Bund: concurrent legislative power (not used)	Min. I&M & Min. EA ² : legislation
NRW: MUNLV & LANUV ¹	
Bezirk	Province
Kreis	
Deichverbände & municipalities	Water boards & municipalities

¹ Ministry for Climate Protection, Environment, Agriculture, Nature Conservation and Consumer Protection; Agency for Nature, Environment and Consumer Protection

² Ministry of Infrastructure and the Environment; Ministry of Economic Affairs

In NRW the ministry for Climate Protection, Environment, Agriculture, Nature Conservation and Consumer Protection (German acronym: MUNLV) together with the Landesamt für Natur, Umwelt und Verbraucherschutz are the competent authorities (Van der Molen, 2011).²⁰ As the most important authority on the Dutch side of the border is the water board it is the *Kreise* at the German side, the smallest governmental body above the level of the Municipality. For the maintenance of waterways and dikes so called *Verbände* play an important role. There are *Verbände* for water and soil (*Boden*) as well as for dikes. Also the districts (Bezirke) play a crucial role as one the one hand, it is their task to define the flood prone areas and on the other hand to integrate them into spatial planning documents.

This all means that the situation in Germany (NRW) involves more governance levels than in the Netherlands (Redeker, 2013). The implementation of the WFD was used in NRW to introduce a system of policy integration and actor involvement, from the local to the federal level (see chapter 2.2). Nevertheless to connect these two different government systems into an effective cooperation structure has been quite a challenge.

3.3 Transnational cooperation

Cooperation in the Rhine basin requires the establishment of cooperation bodies. In general such bodies – although they sometimes start informally – are grounded upon a formal basis, either in terms of treaties or conventions or in terms of some kind of political agreement signed by administrators. Table 2 identifies the most important treaties/conventions and (political) agreements and the relationship with relevant organisations: the bodies from which cooperation in transnational and cross border cooperation in the Rhine basin departs. The most important frameworks for cross border cooperation are the International Commission for the Protection of the Rhine (ICPR), and the German-Dutch Working Group on High Water (Working Group).

The International Commission for the Protection of the Rhine (ICPR)

The ICPR is responsible for the development of the strategic goals on the international level and integrates its core policy fields: flood management, water quality and water ecology. It is responsible for international agreements and reports in relation to both EU water directives (WFD and FD). The organisational structure of the ICPR is presented in Figure 7.

The Conferences of Rhine Ministers decide on important political issues. Their decisions are binding for the Governments concerned. The presidency of the Commission alternates every three years. The Plenary Assembly is staged annually together with the Coordination Committee Rhine. Decisions are taken in the Plenary Assembly. Technical questions are dealt with in working and expert groups with permanent or fixed-term mandates and passed on to the Strategy Group preparing the Plenary Assembly. Problems related to water quality and emissions, groundwater, ecology and floods are discussed. Expert groups support the working groups. Furthermore, work in the international working groups is prepared by national committees (ICPR, 2013).

Table 2: International conventions declarations and involved organisations

Treaties, Conventions, Declarations	Organisations
<i>Multilateral</i>	
1963 Bern convention	1950: International Commission for the Protection of the Rhine against Pollution (formal status from 1963 onwards)
1999 Rhine Convention (NL, D, F, L, CH & EU)	ICPR: International Commission for the Protection of the Rhine (working domain: WFD & Floods Directive) <ul style="list-style-type: none"> - Ministerial Meetings - Working groups
<i>Bilateral</i>	
1963 'General Treaty' on cross-border and other bilateral issues (D, NL)	1963: Permanent German-Dutch Border Water Commission <ul style="list-style-type: none"> - sub-committees on the 7 sub basins - Commission and sub-committees dormant since about 2000
Based on General Treaty: 1963 Border Convention (D, NL)	
<i>Cross-border</i>	
2007 Common Agreement ('Gemeinsame Erklärung') on Flood Protection (Province of Gelderland; Ministry of Transport, Public Works and Water Management (NL); Ministerium für Umwelt und Naturschutz, Landwirtschaft und Verbraucherschutz des Landes Nordrhein-Westfalen); time frame: 2007-2012	German-Dutch Working Group on High Water

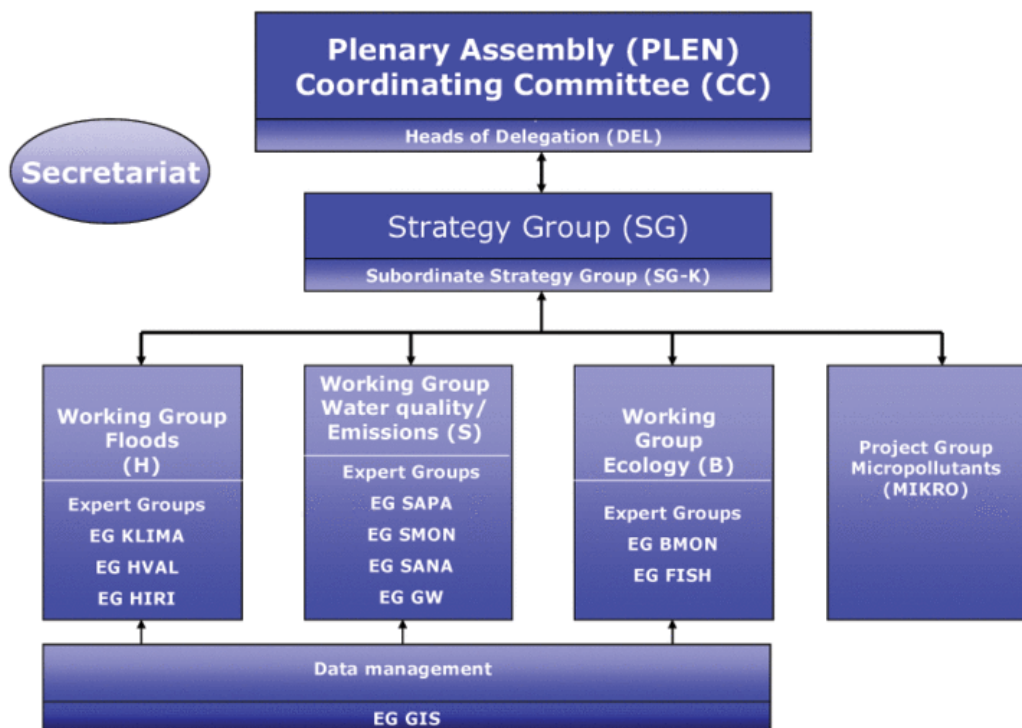


Figure 7. The organisational structure of the ICPR (Source: ICPR)

3.4 Cross-border cooperation

The Dutch-German Working Group on High Water

The initiative to start the Working Group in the mid-1990s – after the main flood incidents recorded above – came from the Dutch province of Gelderland, in the east of the Netherlands, on the basis of several arguments (Wiering et alia, 2010). First existing cooperation in the Rhine basin was until then too much focused on water quality and did not pay much attention to implementation, according to the province. Second, existing initiatives were at state-level and cooperation between regional bodies was lacking.

The province of Gelderland contacted North Rhine-Westphalia in order to establish some form of cooperation in flooding policies in their border area. Together with the eastern, regional office of the Directorate General for Public Works and Water Management these two became the lead participants in the Working Group which started its activities in 1997 with the water board Rivierenland ('Land of Rivers') as another important member. Since 2007 the activities of the Working Group are politically embedded in a so-called Shared Declaration (*Gemeinsame Erklärung*) which lasted until 2012. The signing of a follow-up declaration is delayed as the result of elections at both sides of the border. Although the Working Group is still active this hinders the implementation of concrete projects.

According to eye witnesses members of the Working Group gradually started to develop a shared understanding about flood control in the sense of addressing the entire cross-border water system.²¹ The first period of activities was dominated by joint research projects, mostly modeling of flood risks. Techniques have been used which were developed for the Dutch Room of the River policy document. An important high light so far has been the finalization of the so called *Niederrheinstudie* (Lower Rhine Study) in 2004. So although the relationship between both sides of the border may be regarded as asymmetrical Dutch participants in the Working Group had something to offer to their German counterparts namely knowledge and expertise.

The Working Group consists of civil servant and researchers. Politicians are not closely involved in its activities. In fact members of the Working Group regard this as an asset as they would probably have been pressured into getting (quick) results. Also regional (policy) actors – simply because they are more rooted in concrete areas and locations – tend to have a greater sense of the urgency of problems and also more local/regional knowledge than national state actors (Wiering et alia, 2010: 2665).

Reaching a shared understanding of such a complex issue as flood control needs time though. Because so far much emphasis has been put on technical issues there is less need and also less interest to involve societal stakeholders like NGOs active in for instance landscape and ecology.²² Organisations like this however participate in the bi-annual High Water Conferences (Hochwasserkonferenz Rheinzugsgebiet) organized within the framework of the Shared Agreement (see below).

Key issues of the Working Group

The major issue discussed in the Working Group is the level of flood risk. Of a general nature are differences in terms of attitudes towards possible long term developments. Dutch respondents generally think the German attitude can be characterized as somewhat laid back while in the Netherlands a policy culture has developed in recent years which pays more attention to the likelihood of developments resulting from climate change and possible effects and scenario's in this respect. How much water could pass the Rhine at the town of Lobith – which is located at the border – in cases of high water is the most important issue here. The Dutch policy document 'Room for the

River' departs from 16.000 m³ per second while for the more distant future the expectation in the Netherlands is that this could become 18.000 m³ or even more. The Niederreinstudie accepts 16.500 m³ per second. In Germany the idea is that this figure will not be reached because upstream – in German – so many areas will already be flooded that such a high figure at Lobith will not be reached. Differences in geography – in Germany the Rhine has cut itself much more deep in the landscape than at the Dutch side of the border – also influences attitudes towards risk.

One important area where Dutch respondents think Germany is clearly ahead of the Netherlands is the so called object protection (Objektschutz). First, areas and objects which could be affected by flooding are very well mapped in the context of the Gebietsentwicklungspläne (GEP). Second, in Germany the responsibility for the effects of building in a flood prone areas is for the initiator. So the feeling amongst Dutch respondents is that in terms of actual spatial layout German policies are more sophisticated. This has changed somewhat in recent years thanks to the so called three-layer approach of the 2008 National Water Plan (Redeker, 2013: 97). The first layer is prevention by reducing the probability of floods through flood retaining structures and preserving space for their future improvements. The second layer is a sustainable spatial layout, reducing the amount of damage and number of casualties. The third layer is disaster mitigation through evacuation, information systems et cetera.

Although there is a General Agreement and a German-Dutch Working group, cooperation – above all: active cooperation – is not self-evident due to asymmetrical upstream-downstream relations. From the perspective of the interests of North Rhine-Westphalia co-operation with the Dutch may not look very obvious, although flood measures taken in The Netherlands may affect part of the water system in Germany (Wiering et alia, 2010: 2665). The availability and accessibility of Dutch knowledge especially, might improve the position of North Rhine-Westphalia vis-à-vis other German states though (Wiering et alia, 2010: 2666).²³ There is also an important discourse dimension here: the story line of transboundary co-operation. North Rhine-Westphalia is itself largely dependent on measures taken in upstream German states. As a result, it is greatly in the interest of North Rhine-Westphalia to stress the storyline (or discourse) of 'solidarity between people upstream and downstream' which in itself is enshrined in the EU Flood Directive. The consequence of stressing this storyline is that co-operation with actors in the area downstream of North Rhine-Westphalia, i.e. actors in the Netherlands, also becomes important and in a sense even inevitable (Wiering et alia, 2010: 2666). In this sense cross-border cooperation shows (or might show) a spillover pattern.

3.5 Cross-border coordination: barriers and synergy

We can conclude that the 2007 EU Flood Directive, preceded by the 2000 Water Framework Directive, landed in a context of well-functioning governing organisational structures, with sufficient personnel and funding. Or like one responded called, we do what we did already for decades, but now within a stronger (legal) framework, that provides us with a stronger position to take initiatives. National and regional government structures were supported by well-established transnational and cross-border governance bodies that actually were instrumental in the setup of both EU directives.

Leadership

Confronted with increasing flood risks and a lack of project initiatives from their respective national constituencies to address cross-border issues, the regions of Gelderland and North Rhine-Westphalia took the initiative and therefor the leadership in establishing the Dutch German working group on high water. It is this Working Group which is the prime agent for cooperation on the cross-border regional level focussing on the Rhine. On a transnational level it is the ICPR that take a clear leadership in developing strategic goals and setting up and implement working programmes.

Governing capacity

Clearly the Working Group – politically embedded via an agreement and a steering group²⁴ – as well as the ICPR – politically embedded via a transnational treaty – have developed institutional capacity in relation to water management. It should be emphasized though that actions are not directed towards actual spatial interventions. The Working Group for instance is so far carrying out preparatory technical projects mainly on the level of research. There is no shift yet towards joint policy and implementation projects.²⁵ These are still the responsibility of the present territorial administrative units at either side of the border, including the province, water board and the Directorate General for Public Works and Water Management (Rijkswaterstaat) add the Dutch side and the Deichverbände, municipalities and districts at the German side.

Subsidiarity

The implementation of the EU water directives improved two aspects related to subsidiarity in NRW, the first is that responsibilities became clearer and more transparent, the second is that, through the involvement of private actors and civil society from the local scale on, stakeholders outside government are involved.

In the Netherlands the responsibilities for water management are distributed across a range of government administrations, although the various water bodies (surface water, ground water) are clearly related to each other. The water boards, the oldest form of territorial governance in the Netherlands, are responsible for water quality as well as quantity; the Directorate General for Public Works and Water Management is responsible for the main water system formed by rivers and canals.²⁶ Historically the water boards have been developed bottom up, by local citizens. In fact up to the present they have to be considered as a form of local government including elected councils.²⁷ The Directorate General for Public Works and Water Management is generally considered as a very centralised organisation although the main work is done via ten regional branches. Both EU water directives did not change the division of responsibilities in the Netherlands.

Promoters of territorial governance

Promoters of territorial governance concerning the coordination of actors and actions are:

- Urgent issues of a cross-border and transnational nature – i.c. problems in relation to the quality and in a later stage the quantity of water in the Rhine river basin – have led to the establishment of cross-border and transnational organizational structures even ahead of EU regulations which demanded such an approach.
- These structures have contributed to a rather smooth adoption of both EU water directives in relation to one of its more challenging demands: the setup of cross-border/transnational organizational structures capable of assessing the need for interventions and the development of strategic frameworks (working bodies; general policy frameworks) to carry out such interventions.
- These strategic development frameworks, that include the relevant sectors, actors and goals, are based on a clear nested structure of territorial units (river basins and sub basins) indicating the challenges and division of responsibilities across the various stakeholders.
- Differences in planning cultures have been addressed by: 1) a stability in relation to organizational structures; 2) on the whole a stabile memberships of these structures (i.e. long lasting memberships of personnel) which prevent breaks in terms of cross-border and transnational learning and which also stimulates the building up of trust across country borders.
- Differences in (spatial planning) legislation seem to have prevented joint projects in the sense of joints spatial interventions. Research and joint policy frameworks which include policy objectives and policy concepts have nevertheless led to a high level of synergy between actual interventions.

- Sharing knowledge and assessment methodologies contribute to a shared feeling of urgency across a (sub) river basin.

4 Mobilising stakeholder participation

4.1 Introduction

In this case study water management meets spatial planning at different levels of scale. As ‘new generation’ Directives, the WFD and the Flood Directive ask for public involvement in the implementation process. This is generally interpreted as involving important stakeholders and the broader public in formulating river basin management plans (Lieverink et alia, 2011: 716). The implementation of both directives was a challenge on both sides of the border as in both countries, spatial planning has an extensive tradition in stakeholder involvement, whereas in water management this used to be far less the case: the organisation of participation in what used to be a very technical domain is not self-evident.

4.2 Mobilising stakeholder participation on the international and strategic level

The ICPR is responsible for the development of the strategic goals on the international level and integrates its core policy fields: flood management, water quality and water ecology. The core competences discussed in the previous chapter are also behind the structure of the organisation and its way of working in working groups (see Figure 7) **Error! Reference source not found.** The involvement of civil society takes place at the level of the working groups. The working groups and the plenary meetings are open to NGOs²⁸ and intergovernmental organisations.²⁹ According to the respondents the NGOs play a crucial role in integrating the different working groups, as they have often less compartmentalised interests and ways of working. Other instruments used by the ICPR to involve and inform a broader public are the organisation of (expert) workshops, the provision of information material both in form of brochures and interactive online content.

4.3 Mobilising stakeholder participation on the cross border level

The policy coordination and integration between the province of Gelderland and the State of Nordrhein-Westfalen is organised in the Dutch-German working group on high water. The working group focuses primarily on technical and administrative aspects of the cooperation, but plays also an important role in the information of the concerned public. It publishes an annual bilingual magazine, the *Hoogwatermagazin/Hochwassermagazin* and organises the bi-annual conferences as already mentioned above.

As discussed in the previous chapter, municipalities and other local actors send representatives to the working group. Therefore, when concrete projects at the local level are planned, they are involved from the beginning and also play a crucial role concerning the integration of this projects into local planning documents and processes.

Different interviewees emphasised, that it is crucial under which heading concrete measures are put forward. High water protection measures are in general accepted and lead to a constructive way of working together between the public, the private sector and civil society. If concrete projects are put forward under the heading of river ecology or improving environmental qualities, strong opposition especially from agricultural lobbies often takes place, which makes stakeholder participation more difficult. Therefore, the public sector sometimes uses the topic of high water protection as the prime

project aim to implement other more conflict bearing topics in the shadow of the flood protection measure.

The legal necessity of the involvement of the public and other stakeholders, stipulated by the two EU directives, was seen by most respondents as one of the most important aspects in the implementation process: public actors which in the past would not be concerned with high water issues, are forced to take part in the process of developing flood management plans and measures. Therefore, all concerned parties sit on the same table from the beginning. In Germany the fact that institutions in charge of the protection of historic buildings and cultural heritage are now involved was one example named by respondents. Considering that the Rhine is the artery of one of Europe's most urbanised areas, this aspect streamlined the process.

4.4 The organisation of the stakeholder involvement

In NRW stakeholder participation was and is organised within the implementation of the river management plans. Participation focuses on the concerned public (*Fachöffentlichkeit*) during the whole process, and allows the wider public to express opinions and concerns before plans and programs are implemented. The participation process is organised bottom up and starts at round tables in the management units, which are subunits of sub-basins. These are then integrated horizontally, through the different territorial levels until the river basin. At all levels working groups and forums are implemented to organise stakeholder participation. Online media play a crucial role in documenting and also informing the wider public. A combination of wiki's, standard webpages and online factsheets for every water body provide a wide range of partly interactive information and, therefore, a certain transparency of the processes.

In the Netherlands the water boards are definitely learning, according to the literature (Van Slobbe et alia, 2009). All water boards have procedures for public participation. According to the interviewees at the Dutch side of the working area of the German-Dutch Working Group local action groups and other civil society actors play a stronger role, as soon as concrete projects leave the technical domain and spatial impact becomes apparent. One example named was the discussion about the location of emergency retention areas, like in the Ooijpolder and Rijnstrangen. Here local action groups have been very influential and even contributed to the demise of this concept altogether, while in Germany retention areas are still being developed although resistance from the civic society is growing (Redeker, 2013).

Public accountability

In both countries as well as in the cross border cooperation it is clear who is responsible for which actions.

Transparency

The institutional inclusion of the civil society on several levels of decision making as well as informing the wider public through traditional as well as online media and conferences and events contributed to a high level of transparency. Nevertheless in the case of conflicts between strong lobbies public participation was deliberately kept at a minimum and not enforced.³⁰

Democratic legitimacy and public accountability

Cross-border and transnational cooperation in (sub) river basins have led to organizational structures which do not know democratic participation like elected councils. Legitimacy and accountability is organized through treaties and political agreements discussed and decided in elected councils. Actual cooperation is carried out within the framework of these agreements and treaties. No executive bodies have been created with a brief to carry out (hard) spatial interventions, neither on the cross-

border nor on the transnational level. So democratic legitimacy and public accountability is organized via step-wise structures and principles which authorize people and (working) groups.

Prohibitors of territorial governance

Prohibitors of territorial governance concerning the mobilisation of stakeholder participation are:

- A legal frame work that obliges public actors to involve the civil society.
- An institutional openness and acceptance, that the involvement of private sectors and the civil society is fruitful.
- The use of multiple new and old media to inform the wider public as a base for further actor involvement.

5 Being adaptive to changing contexts

5.1 Introduction

The management of the Rhine in the cross border region of Germany and the Netherlands had to deal with several changing contexts. Above all the legal context changed with the implementation of two EU directives. Both directives themselves are the result of societal and political changes, partly in relation to changing risks:

- The increasing flood risk, both in terms of frequency and intensity. The ICRP targets are -25% damage risk and – 70cm extreme downstream flood level until 2020 (Conference of Rhine Ministers 2001:15).
- Increasing ecological awareness of the population and therefore higher public demand concerning the ecological and landscape quality of flood protection measures. This involves the integration and participation of multiple also non-governmental actors and stakeholders.
- A paradigmatic shift concerning flood management away from an engineering approach towards sustainable flood protection (hoogwaterplatform, 2004:2). Examples are the '*Ruimte voor de Rivier*' programme in the Netherlands as well as the guideline for sustainable flood and river management (*Konzept für einen nachhaltigen Hochwasserschutz*) in NRW.

As a result of the above mentioned changes in the context, integrated approaches towards river management are in place, which are grounded in the understanding that only a combination of the improvement of the ecosystem of the Rhine, the protection and improvement of the water quality as well as integration of the adjacent territories into the flood management can deliver a sustainable flood risk and water management.

5.2 Institutional learning

To allow a well-functioning cooperation across the borders, a common understanding of the problem and how this problem could be addressed was essential and stressed by most of the respondents. This was achieved by commissioning research about the water capacity of the rivers, expected rain and flood amounts as well as the capacity of technical and other measure to manage risk and damages. This was, on the one hand achieved by jointly commissioning research as well as based on the result of this research jointly accepted tools, methods and norms. In this sense knowledge was coproduced by the main actors involved in water management along the river Rhine.

5.3 Institutional flexibility of the Dutch German working group for high water

The most important body of gross border collaboration is the Dutch German working group on high water in the Rhine river basin. Its foundation alone is a sign for a high flexibility and adaptability of the local and regional institutions involved in the river management: It was initiated by the province

of Gelderland, which was unsatisfied with the existing situation, which focused too much on water quality and was too bureaucratic (Wiering et alia, 2010: 2663).

Two examples of institutional flexibility and adaptability were specifically named by respondents. The first, was the situation that within an INTERREG B project, measures on the German side of the border were financed with a budget that was originally reserved for Dutch projects. The second one concerns the present situation. The recent elections and changes in governments on both sides of the border, led to a temporary vacuum of political responsibility. As a result the joint agreement – which is the legal basis for cross border collaboration – was not prolonged. According to the respondents this does not influence the daily operations and collaboration, as during the last years enough trust between partners on the personal level was developed. Nevertheless, the situation brings difficulties concerning the information of the public, as events like the bi-annual high water conference have to be funded and this requires a new agreement.

6 Realising place based and territorial specificities

6.1 Introduction

The river Rhine stretches from the Swiss Alps to the Dutch delta at the North Sea. It is not only one of the most important rivers in Europe but also an important economic, urban and cultural axis.³¹ The Rhine river basin is, according to the International Commission for the Protection of the Rhine, divided into nine, mostly international, sub-basins (see Figure 1). The two lowest basins, the Lower Rhine (NiederRhein/Nederrijn) and the Delta Rhine (Deltarhein/ Deltarijn) are the two most relevant for the case study at hand, especially the latter.

The Lower Rhine Basin

The area of the lower Rhine basin is about 18.884 km² which is around 10% of the whole Rhine area and is entirely situated within Germany. The major part of the area is located in Nordrhein-Westfalen (around 18.200 km²), smaller parts (about 650 km²) in Rheinland-Pfalz and the smallest part in (0,68 km²) Hessen.³² For the implementation of the WFD this area is divided into a number of sub-regions (see Figure 4): about three times more areas when compared with Delta Rhine. The Rhine-Ruhr metropolitan region with its more than 10.000.000 inhabitants – one of Europe's largest, and most densely populated and most prosperous metropolitan areas³³ - is in the centre of the river basin and defines largely the challenges a sustainable river management faces.

The Delta Rhine Basin

90 % of the Delta Rhine sub-basin is in the Netherlands; the remaining part is situated in the northern area of Nordrhein-Westfalen. The Dutch provinces Gelderland, Utrecht, South-Holland, North-Holland and a small part of Noord-Brabant are in this sub-basin. The Dutch area is subdivided into four districts called Rhine-West, Rhine-Centre, Rhine-East and Rhine-North. Typically for a delta the Rhine splits into several branches (see Figure 6). In several places, the lower courses of these river branches are naturally and artificially interlinked in the Rhine-Maas-Delta and with the Meuse. A considerable part of the Delta Rhine lies below the +1 meter NAP line. This means that this area not only faces flood risks from the rivers but also from tidal storms. Therefore around 3.000 km of dikes protect the delta.

6.2 The integration of territorial specificities and characteristics into territorial governance?

'The concept of river basin management incorporates at least three integrative ambitions concerning water systems and policy making' (Wiering et alia, 2010: 2663):

1. To connect and combine different aspects of water systems, such as water quality and water quantity, groundwater and surface water, as well as relations in the water chain.
2. It stresses the need for external relationships between water management and other policy domains, such as spatial planning, agriculture, housing, nature conservation and tourism
3. The river basin as starting point for administrative co-operation and, as such, is crossing administrative and geographical borders (aiming at cross border integration).

An additional important quality of territorial governance along the river Rhine is the high level of territorial knowledge. The territorial necessity of working together within one river basin led to the awareness that a common knowledge basis as well as a common language in terms of formulating risks, chances and goals is necessary. This was, on the one hand achieved by jointly commissioning research as well as the development of joint tools, methods and norms. In this sense territorial knowledge was coproduced by the main actors involved in water management along the river Rhine. In relation to the five dimensions of territorial governance the river basin concept helped to integrate relevant policy sectors and to co-ordinate the actions of actors in a multilevel setting. This in itself addresses place based characteristics. The implementation of the two EU water directives led to the development of management and coordination bodies, that integrate different policy sector across national and regional administrative borders. Nevertheless, as one respondent called it, 'at the end, especially within in spatial planning, we have to work in traditional administrative boundaries'³⁴.

7 Conclusions

Due to hydrological and ecological conditions there are many intrinsic relationships within the catchment area of rivers. It is for this reason that **river basins** are conceived as the overall most important units for water planning and management as is reflected by two European Union environmental directives: the European Water Framework Directive (WFD) focusing on water quality and the directive on the assessment and management of flood risks, focussing on water quantity.

In case of the Rhine the origins of a cross-border or even transnational approach towards water management go back to the immediate post-war period: in 1950 the 'International Commission for the Protection of the Rhine against Pollution' was established which received its legal foundation through the conclusion of the 1963 Convention of Berne in 1963. **Formal arrangements like treaties or EU directives** – which in themselves are based upon a treaty – were important for transnational as well as cross-border cooperation, in this case in relation to water management.

The nature and focus of cooperation changed drastically through the floods of 1993 and 1995. Through these flood there was a sudden awareness that there are limitations to a mere technical approach to flood control. Dikes and dams and other works of civil engineering cannot fully exclude risks of flooding especially as over a period of many decades such works have made the overall territory available for water flows ever smaller while pumping installations and land-use have increased the speed with which surface water enters into these flows. So a new 'discourse' emerged basically implying that water needs to be accommodated.

In 1999 a new Rhine convention came into force and on a lower level of scale – Netherlands and North Rhine Westphalia – a political agreement signed in 2007 formed the **framework for a**

productive process of cross-border cooperation in the so called Dutch German Working Group on High-water. 'Productive' does not imply actual joint territorial interventions or joint water management works but necessary preparatory activities. These activities focussed on research on risks and how to measure these risks. **Coproduction of knowledge** and **knowledge transfer** across the border have been taken place in the years following the agreement. Due to differences in the division of competences across administrative levels and across policy sector the integration of water management and spatial planning has not been dealt with at the cross-border level but via different trajectories at both sides of the German-Dutch borders.

The room for the rivers approach in the Netherlands and similar approaches in Germany have resulted in a **territorialisation of water management** and the incorporation of water management frameworks in spatial planning. There is a clear tendency towards **policy packing**, and that spatial planning plays a crucial role within. This role differs, according to the planning tradition in Germany and The Netherlands. In Germany the regional level plays a more important role in bringing together policies, which are generated at different administrative levels. In the Netherlands the national scale plays a more important role. In both countries it is clear that high water risk management interests on the whole will prevail. There is a significant limit to policy packaging at the cross national level though, because spatial planning is not included in cross-border water management.

Looking at **cross-sector synergies** then it is clear that these are addressed at the cross-border level. First via the ICPR which specifically also includes the public sector as well as the civil society. Second, on the regional cross border level where the German-Dutch Working Group on High Water is the driving force of seeking cross-fertilisation between different administrative actors, as well as the broader public and civil society. Within the two states, cross- sector synergies are again achieved differently according to the different traditions, with a focus on integration high water management and spatial development in the Netherlands and the focus on the integration of environmental planning and high water management on the German side

The 2007 EU Flood Directive, preceded by 2000 Water Framework Directive, landed in a context of **well-functioning governing organisational structures**, with sufficient personal and funding. National and regional government structures were supported by well-established transnational and cross-border governance bodies that actually were instrumental in the setup of both EU directives. But the 2007 political agreement on cross national cooperation ended in 2012. This did not lead to an end towards cross-border cooperation but it continued albeit with a different speed and impact. Really effective cooperation though, does need a political framework for the maintenance of a sense of urgency.

8 References

Bezirksregierung Duesseldorf (2012). Leitlinien Regionalplanfortschreibung, Arbeitsentwurf, obtained via www.brd.nrw.de/planen_bauen/regionalplan/pdf/Leitlinien_Arbeitsentwurf_Januar2012_4c.pdf
Access date: 22-01-2013.

Butler, C., Pidgeon, N. (2011) From 'flood defence' to 'flood risk management': Exploring governance, responsibility, and blame. *Environment and Planning C*, 29 (3), pp. 533-547.

Clark, M.J. (2002) Dealing with uncertainty: adaptive approaches to sustainable river management. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 12, (4), pp. 347-363.

EC, European Commission (2008) Communication from the Commission to the Council, the European Parliament, the Committee of the Regions and the European Economic and Social Committee 'Green Paper on Territorial Cohesion: Turning territorial diversity into strength' (COM(2008) 616 final).

EEA, European Environment Agency (2012) Territorial cohesion and water management in Europe: the spatial perspective, EEA Technical Report No.4/2012, Copenhagen: EEA.

Gilissen, H.K. (2009) Internationale en regionaal grensoverschrijdende samenwerking in het waterbeheer [Transnational and crossborder cooperation in water management], Waterstaatreks, The Hague: Sdu publishers.

Hengstermann, A. (2011) *Hydropa, Einflussstrategien dee Europaeischen Politik des territorialen Zusammenhalts auf raumrelevante Sektorpolitiken am Beispiel des Hochwassermanagments*; Master Thesis, TU Dortmund

Hidding, M., & Van der Vlist, M. (Eds.) (2009a) *Ruimte en water [Territory and Water]; Planningsperspectieven voor de Nederlandse delta*; Reeks Planologie Nr.10, Den Haag: Sdu Uitgevers.

Hidding, M., Van der Vlist, M. (2009b) *Ruimte en water in Nederland; opgaven voor een rode delta [Territory and water in the Netherlands: challenges for a red delta]*, in: Hidding, M., & Vlist, M. van der (Eds.) *Ruimte en water [Territory and Water]; Planningsperspectieven voor de Nederlandse delta*; Reeks Planologie Nr.10, Den Haag: Sdu Uitgevers, pp. 13-30.

Hoogwaterplatform (2004) *Der Rhein kennt keine Grenzen/De Rijn kent geen grenzen; deutsch-niederländischen Arbeitsgruppe Hochwasser*

Immink, I. (2007) *Risiconorm; Nieuwe relaties tussen ruimte, water en risico*, Delft: Uitgeverij Eburon.

Junier, S.J., Mostert, E. (2011) The implementation of the Water Framework Directive in The Netherlands: Does it promote integrated management?, *Physics and Chemistry of the Earth*, Doi: 10.1016/j.pce.2011.08.018

Ker, U., Bucher, B. (2010) *Hochwasserschutzkonzept in einem Verbandsgebiet am Beispiel des Erftverbandes*. *Fachzeitschrift für die Energie- und Wasser-Praxis*. Bonn, pp. 14-18

Land Nordrhein-Westfalen, Provincie Limburg, Provincie Gelderland, Provincie noord-Brabant, Provincie Overijssel, *The Environment: Shared concern in the German-Dutch border Region*.

Liefferink, D., Wiering, M., Uitenboogaart, Y. (2011) The EU Water Framework Directive: A multi-dimensional analysis of implementation and domestic impact, *Land Use Policy*, Vol. 28, pp. 712-722, doi:10.1016./j.landusepol.2010.12.006.

Meijerink, S., Wiering, M. (2009) River Basin Management in Europe: The 'Up- and Downloading' of a New Policy Discourse, in: Arts, B., Lagendijk, A., Van Houtum, H.J. (Eds.) *The Disoriented State: Shifts in Governmentality*, Series Environment & Policy, Vol. 49, Heidelberg, Dordrecht, London, New York: Springer, pp. 181-200.

Redeker, C. (2013) *Rhine Cities/Urban Flood Integration (UFI)*, PhD Delft University of Technology, Faculty of Architecture, Department of Urbanism, Delft: Delft University of Technology.

Silva, W., Dijkman, J.P.M., Loucks, D.P. (2004) Flood management options for The Netherlands, *International Journal of River Basin Management*, 2(2), pp.101-112.

Tjallingii, S.P. (1996) *Ecological conditions; Strategies and structures in environmental planning*, IBN Scientific Contributions 2, Wageningen: DLO Institute for Forestry and Nature Research (IBN-DLO).

Van Rijswijk, H.F.M.W., Gilissen, H.K. & J.J.H. van Kempen, 'The need for international and regional transboundary cooperation in European river basin management as a result of new approaches in EC water law', *ERA Forum*, Volume 11, Number 1, 2010, pp. 129-157.

Uitenboogaart, Y., van Kempen, J.H.J., Wiering, M., van Rijswijk, H.F.M.W. (Eds.) (2009), *Dealing with complexity and policy discretion; The implementation of the Water Framework directive in five Member States*, The Hague: Sdu publishers.

Van der Molen, J. (2011) *Crossing Borders; Een kader voor het tot ontwikkeling brengen van grensoverschrijdende samenwerking in watermanagement*, Thesis University of Twente, <http://purl.utwente.nl/publications/78080>.

Van Slobbe, E., Jiggins, J., Röling, N. (2009) *Interactieve planvorming [Interactive plan making]*, in: Hidding, M., Van der Vlist, M. (Eds.) *Ruimte en water [Territory and Water]*, The Hague: Sdu Publishers, pp. 257-267.

Van Stokkoma, H.T.C., Smits, A.J.M., Leuven, R.S.E.W. (2005) Flood Defense in The Netherlands; A New Era, a New Approach, *Water International*, 30(1), pp. 76–87.

Wiering, M., Immink, I. (2006) When water management meets spatial planning: a policy arrangement perspective, *Environment and Planning C*, Vol. 24, pp. 423-438.

Wiering, M., Immink, I. (2009) *Nieuwe beleidsarrangementen voor waterbeheer en ruimtelijke ordening [New policy arrangements between water management and spatial planning]*, in: Hidding, M., Van der Vlist, M. (Eds.) *Ruimte en water [Territory and Water]*, The Hague: Sdu Publishers, pp. 219-236.

Wiering, M.A., Rijswijk, H.F.M.W.v., et al. (2009) *General Conclusions*, in: Uitenboogaart, Y.J., Kempen, J.H.J., Wiering, M.A., Rijswijk, H.F.M.W. van (eds.) (2009) *Dealing with complexity and policy discretion : a comparison of the implementation process of the European Water Framework Directive in five member states*, The Hague: Sdu uitgeverij.

Wiering, M., Verwijmeren, J., Lulofs, K., & Feld, C. (2010). Experiences in Regional Cross Border Cooperation in River Management. Comparing Three Cases at the Dutch–German Border. *Water Resources Management*, 24(11), 2647-2672. doi:10.1007/s11269-009-9572-5.

Woltjer, J., Al, N. (2007) Integrating Water Management and Spatial Planning, *Journal of the American Planning Association*, Vol. 73, No. 2, pp. 211-222.

9 Appendix 1: Interview respondents and consulted experts

9.1 Respondents

Evert Hazenoot, Water Board Rivierenland

Frans Verhoef, Province Gelderland

Erik Buschhüter, Ministerium für Klimaschutz, Umwelt, Landwirtschaft, Natur- und Verbraucherschutz NRW

Ben van de Wetering – Geschäftsführer Internationale Kommission für den Schutz des Rheins

Wolfgang Rembierz – Abt. Raumordnung und Landesplanung, Staatskanzlei NRW

Reinhard Vogt, Geschäftsführer Hochwasserschutzzentrale Köln

9.2 Consulted experts

prof. dr. H.F.M.W. van Rijswijk – Utrecht University

dr. T. Ruijgh-van der Ploeg, Delft University of Technology

dr. M. Wiering, Radboud University Nijmegen

Mag. A. Hengstermann, TU Dortmund

¹ Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, OJ L327/1.

² Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks, OJ L 288/27.

³ Article 2.13 WFD;

⁴ The Convention on the Protection and Use of Transboundary Water courses and International Lakes, done at Helsinki on 17 March 1992. In force on 6 October 1996; 31 ILM 1312 (1992).

⁵ The term district stems from the Water Framework Directive: 'River basin district' means the area of land and sea, made up of one or more neighbouring river basins together with their associated ground waters and coastal waters, which is identified under Article 3(1) as the main unit for management of river basins.

⁶ Source: www.brd.nrw.de/planen_bauen/regionalplan/pdf/Leitlinien_Arbeitsentwurf_Januar2012_4c.pdf

⁷ Handlungsempfehlungen der Ministerkonferenz für Raumordnung zum vorbeugenden Hochwasserschutz (GMBl. 2000 Nr. 27 S. 514)

⁸ Leitlinien Regionalplanfortschreibung; Version January 2012

⁹ Ministry for Climate Protection, Environment, Agriculture, Nature Conservation and Consumer Protection of the German State of North Rhine-Westphalia

¹⁰ Butler & Pidgeon, 2011; Clark, 2002; Wiering & Immink, 2006: 428-429.

¹¹ Wiering & Immink, 2006: 429.

¹² Van Stokkoma, Smits & Leuven, 2005.

¹³ Wolsink, 2006: 477.

¹⁴ Information from a Dutch respondent.

¹⁵ www.ruimtevoorderivier.nl/meta-navigatie/english/; accessed 24 May 2012.

¹⁶ www.espace-project.org/publications/library/English%20version%20of%20Water%20Test.pdf; accessed 24 May 2012.

¹⁷ ICPR: <http://www.iksr.org/index.php?id=30&L=3&cHash=455fdab52ce6eafb6f72632159564bf>

¹⁸ Approved Decision Room for the River, 20066, p. 19, see: www.ruimtevoorderivier.nl/media/21963/pkb%204%20approved%20decision%20h01-h086.pdf accessed 31 January 2013 [English summary].

¹⁹ In a wider sense water management includes water quality, water provision, sewerage and sanitation. Various agencies are involved in these tasks so from an organizational point of view there is no integral water management (Wolsink, 2006: 476).

²⁰ The LNUV falls under the ministry of MUNLV (see: www.lanuv.nrw.de/wuebu/wuebu.htm).

²¹ Information from Dutch and German respondents.

²² Information from a Dutch respondent.

²³ According to one German respondent.

²⁴ A follow up of the General Agreement covering the period 2007-2012 has not been decided yet as the result of elections at both sides of the border. The steering group is temporarily not active.

²⁵ Wiering et alia, 2010: 2666.

²⁶ The provinces are responsible for ground water bodies; the municipalities for 'urban water' and sewage.

²⁷ The councils use to be elected directly. Mainly through the very low turnout at elections there are plans to elect the boards indirectly, via municipal councils.

²⁸ A list of NGOs involved in the work of the ICPR can be found here: www.iksr.org/index.php?id=121

²⁹ A list of intergovernmental organisations involved in the ICPR can be found here: www.iksr.org/index.php?id=157&ignoreMobile=1&L=3&cHash=a52ca60c14a8e66cc2d1118321bd9a4e

³⁰ According to a German respondent

³¹ www.iksr.org/index.php?id=12&L=3 (16-04-2012)

³² www.niederrhein.nrw.de/niederrhein/index.html (16-04-2012)

³³ See Eurostat urban audit

³⁴ Information from a German respondent.