

Interview Report: Dutch-German ‘Arbeitsgruppe Hochwasser’

Long term flood management in the Lower Rhine region

BSIK ACER project



developing Adaptive
Capacity to Extreme
events in the
Rhine basin

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1. Introduction

This report summarizes the interviews held during February/March 2006 with the members of the Dutch-German working group ‘Arbeitsgruppe Hochwasser’ (AG) in the context of the ACER/NeWater projects. The AG was established after the extreme flood events of 1993/95 in order to develop joint flood protection policies in the Lower Rhine area that were supported by both The Netherlands and Germany and to intensify transboundary cooperation.¹

The province of Gelderland in The Netherlands took the initiative and in November 1997, the “Transnational cooperation Agreement on sustainable Protection against Floods” was signed. To support this process, the Arbeitsgruppe Hochwasser was installed, consisting of 17 decision-makers and experts of Rijkswaterstaat (RWS, NL), the province of Gelderland (NL) and North Rhine-Westphalia (NRW, Germany). The composition of stakeholders in the AG is summarized in Table 1:

Table 1: Composition of the Dutch-German Arbeitsgruppe Hochwasser

The Netherlands	North Rhine-Westphalia (NRW)
<ul style="list-style-type: none">▪ Province of Gelderland (2)▪ RWS-DON (2)²▪ RWS RIZA (1) Error! Bookmark not defined.▪ Water Board Rivierenland (1)▪ Association of Dutch River Municipalities (VNR) (1)	<ul style="list-style-type: none">▪ Ministry of Environment, Conservation, Agriculture and Consumer Protection (2)▪ Ministry of Economic Affairs and Energy (1)▪ State Environmental Agency (LUA, NRW) (1)▪ Regional Government Düsseldorf (1)▪ Association for Flood protection and Waters in NRW (1)▪ Environmental Protection Agency (StUA, Krefeld) (2)▪ Flood Centre Köln (1)▪ District of Kleve (1)

1.1 Main goal and Activities of the Arbeitsgruppe Hochwasser

The main goal of the AG is communication and research, i.e. the coordination of activities, studies and methodologies to improve the flood protection at the Lower Rhine (‘NiederRhein’). Their activities are mainly based on the principles of creating more room for allowing floods instead of purely focusing on enforcing defense systems. This philosophy has also resulted in the programs such as the Dutch programs ‘Room for the River’ and ‘Room for the Rhine branches’ policies, the German program ‘*Konzept für einen nachhaltigen Hochwasserschutz in NRW*’ and the ICPR ‘Action Plan on Floods’.

The work program 1997-2002 of the AG started with issues like crisis management and exchange of information and knowledge on measures and projects in the border area. In 1991, the AG took the initiative for the study on “Transboundary impact of extreme floods at the Lower Rhine” (Lammersen, 2004). The study confirmed the necessity standards, goals and planned measures in both countries. It was also concluded that river discharges of 18.000m³/s as predicted by the Commission “Noodoverloopgebieden” (2002) are not likely to happen because severe flooding

¹ Existing cross-border initiatives with specific tasks include: Dutch waterschap Rivierenland with the German Deichverband, Grenzwasser Commission, cooperation between the research institutes RIZA, LUA, BfG

² Rijkswaterstaat (RWS) of Ministry of Transport, Public works and Water management: Regional Directorate for the Eastern Netherlands (DON), Institute for Inland Water Management and Waste water treatment (RIZA)

will occur already in NRW at discharge levels between 11.000-16.0000 m³/s. Further research is recommended to quantify risks of future uncertainties like climate change.

The current 2002-2006 program took this up and included longer term issues like the project 'transboundary adjustment of high water reducing measures' (2005-2007) to investigate the most efficient application of measures to achieve synergy effects; like the development of appropriate models to estimate the effectiveness of possible measures; like risk analysis of the cross-boundary dike-rings and cross-border disaster management under the name VIKING, a computer software which calculates consequences of dike breaks and flooding risks. The impact of climate change and socio-economic developments will be studied as well.

The cooperation of the AG is based on the political agreement and a corresponding working program. 3- 4 conferences are held per year to discuss progress with additional, informal meetings between experts to discuss specific issues. During the first years, differences in language, knowledge and experience but also in norms, standards and methods have lead to some irritation between the Dutch and German actors. However, in the meantime, sufficient trust has been build up for frank and straightforward exchange of views, experience and knowledge, supported by the common interests as well as the understanding of the regional and local issues. An important factor to support cooperation was the technical background of the participants and the concentration on technical problems.

1.2 ACER / NeWater case study 'NiederRhein'(Lower Rhine)

The area of the NiederRhein has been selected by two research projects that cooperate on studying activities in the area of water management and especially future developments in water management. The first project, Newater supported by the European Commission's 6th Framework project, investigates new approaches for adaptive water management under uncertainty. Adaptive management aims at active learning of all stakeholders to continually improve the management process. It includes gathering comprehensive knowledge of the current system and expected changes. The 'ACER' project supported by the Dutch Government aims to develop new adaptive cross-boundary flood management strategies to cope with climate change and socio-economic developments (2050) in the Lower Rhine region. To assess the robustness of different strategies, an integrated basin wide atmospheric-hydrological model will be developed.

Both projects work together in a case study with the aim to support the Dutch-German Arbeitsgruppe Hochwasser (AG) developing a long-term view on flood management on the NiederRhein, such as the impacts of climate change. The AG has been asked to contribute to the research projects by participating in interviews and workshops, and by providing data, information and model expertise, as well as their views on future flood management in the region.

1.3 Case study goals & work plan

The goal of the case study NiederRhein is to support the development of a long-term view on transboundary flood management in North Rhine-Westphalia (NRW) and Gelderland. Participatory methods will be used to gain a broad perspective on the issues concerning longer term transboundary flood management and on possible strategic options and their effectiveness. Via interviews, the individual views and interests of the members of the AG will be elicited. In joint workshops with the AG and the two research projects, individual perspectives will be exchanged and similarities and differences identified. Several scenarios and strategies will be developed and assessed. A preliminary time frame is shown below (Table 2):

Table 2: Time frame of the ACER/NeWater case study

Time Plan phase 1	2006					2007					2008													
	J	F	M	A	M	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	
Initial information collection	[shaded]																							
Update / exchange information						[shaded]					[shaded]													
Interviews	[shaded]																							
Workshop 1.																								
Workshop 2.																								
Workshop 3.																								
Workshop 4.																								
Fast model development	[shaded]																							
Further development and application						[shaded]					[shaded]													

2. Methodology interviews

The perspectives of the 17 members of the AG (7 Dutch, 10 German) on current and future flood management in the Lower Rhine area have been elicited in the period February/March 2006. The interviews have been performed most times by two (sometimes 3) interviewers (one did the talking, the other(s) made notes) and were recorded for check purposes. A summary report of the interviews was produced, mostly in English, in some cases in German or Dutch, dependent on the preference and send to the interviewees for verification.

A semi-structured questionnaire was used, consisting of ten questions (See Appendix 1 for the full protocol) concerning:

- The interviewee's personal role in flood management;
- His/her opinion on the effectiveness and efficiency of current flood management, in their own country and transboundary aspects;
- Key trends in flood management in recent decades, main triggers and whether they reduced the flood risk;
- Expected changes till 2050, which will influence flood management and strategies to cope with them;
- The vision of an optimal situation in 2050, activities required and the biggest challenge to achieve it.

For most questions a list of essential elements was set up that directed further questioning when certain topics were not mentioned spontaneously. Due to limitations in time and the direction the interview sometimes took, it was not always possible to cover all topics.

Basically, the AG consists of water managers, 90% of them in civil service positions. The following Tables 3 and 4 classify their positions and key professional relations.

Table 3: Positions of AG members

	NL	NRW
Strategic	3	2
Administrative	2	3
Operational	1	2
Scientific/advisory	1	3

Table 4: Professional relations (more than one mention possible)

	NL	NRW
Intra-sectoral	7	10
Cross-sectoral	3	4
Between levels	4	4
International	5	4

It is interesting to note, that the strategic/administrative category seems well represented and that cross-functional and international relations (apart from the AG contacts) are more limited, particularly in the case of NRW. All members have a strong regional background and local reference.

The list of spontaneously mentioned priorities includes:

- to keep flood management in the political and public focus
- to promote spatial integration
- to develop further the cooperation and trust building
- to continue joint research, particularly to development common models, standards and methods
- to improve the knowledge on flood genesis and risk analysis

The Dutch members mentioned the necessity of a river basin approach and long-term aspects (climate change), whereas the German side put some emphasis on improved public awareness, successful implementation of current plans and risk management.

3. Interview results

3.1 Perspective on the current situation

Law/Politics/Measures/Implementation

Generally, all members judge the current flood management as effective and efficient (NRW: “leading position in Germany”) and support the “room for the river” strategy, i.e. not to continue to only heighten the dikes but to increase the discharge and buffer capacity of the river as well. The planned measures (dike strengthening, and re-location, spatial measures and excavation, increased public awareness and improved disaster management) -despite some doubts about the timely completion by 2015 – will further improve the protection level. The planned retention areas in NRW will delay the discharge at Lobith with about 12 hours and lower the discharge level by about 10 cm.

Institutional structures/Budgets

Flood protection is a national task with legal standards in the Netherlands, whereas it is an individual responsibility (supported by the governments) in Germany. The management style in the Netherlands is centrally lead; the ministry has the final decision power. In NRW, the administrative tasks (Government, municipalities, Deichverbände) and the technical tasks (LUA, StUA) of flood management run parallel. The strategic concept of the NRW ministry provides a framework, but is not legally binding. The cooperation between the different scales (for example RWS, provinces, water boards and ministry, StUA, Deichverbände), both in the Netherlands and NRW was generally judged as effective and trustful.

Some NRW interviewees had the view that the efficiency of flood prevention and disaster handling could be improved by streamlining the complicated administrative structure. Newly implemented (German Federal Act, 2005) or proposed legislation (EU directive) on flood protection was judged differently: The Dutch side puts great hopes in gaining more access and participation in NRW/German flood affairs, the German members are more skeptical and judge current legislation sufficient and centralizing legislation not beneficial. On the other hand, the view was also expressed that with a more basin wide view, cooperation and efficiency could be improved.

Decision-making/Participation

The decision process is still considered central, following the financial power. However, during the last years a more interactive style appeared. The regional steering committees in the Netherlands had a lot of influence in the preparation of the Room for the river measures (PKB) and formal stakeholders, NGOs are represented on national and regional level in both countries. The local expertise of “waterschappen” and “Deichverbände” provides them with a strong position (bottom up proposal process). Citizens have the possibility to comment/oppose in the execution phase. German interviewees mentioned the extensive administrative procedures (Planfeststellungsverfahren, ecological compensations) as a delaying element. Several NRW interviewees proposed to give navigation a more influential role in the early planning stage.

Safety and risk

The higher flood risk perceptions in the Netherlands lead to a more top-down “absolute” protection strategy (national task, safety review every five years) and to higher safety standard definitions (design discharges) compared to NRW (although in reality dike heights at the border are similar due to different construction norms). The yearly design discharges probabilities in the Netherlands are 1250 per year, in NRW, they increase from 200 per year (Köln), 350 per year

(Köln – Duisburg) to 500 per year (Duisburg – Lobith). The German approach is more oriented on minimizing damage and on individual responsibilities. Several interviewees of both side mentioned the need to review the current strategy and towards a risk management approach.

Long-term changes

Current planned measures to improve flood protection cover in both countries a period until 2015. In the Netherlands several political documents consider also implications of long term uncertainties as climate change (space reservation) and economic developments.

Water management and spatial planning

Generally, the cooperation and mutual understanding between water managers and spatial planners has improved over the last decade due to the strategic and legal changes. The more strategic levels consider “water” and “space” well integrated in organizational and legal terms and that the importance of water management has been strengthened (PKB, Flood protection Act). The more operational levels in both countries do not share this judgment: they feel that the opportunities for retention and dike movements are restricted and that the vision of spatial planning is rather limited, concentrating to defend existing stands, more led by economic and financial considerations. Most Dutch interviewees look upstream when they think about space for retention whereas the NRW side points out that there are only limited possibilities left due to urbanization and river training.

Transboundary cooperation

The view of all AG members on transboundary cooperation was extremely positive: the need for such an institution was stressed (common interests and dependencies, rivers do not stop at borders, mutual understanding of issues and options), the effectiveness of the cooperation within the AG was appreciated (synergy of knowledge, experience and resources) and the openness of discussions and development of trust within the AG was praised. Many of the interviewees considered the AG as a model for transboundary cooperation, more effective than the IKS and the upstream cross-border contacts.

Main issues

A number of issues were mentioned, similarly distributed between the Dutch and NRW interviewees, including:

- a lack of resource, which might lead to delays in completing the planned measures within the budget. NRW interviewees complain particularly the lack of man power which restricts research
- the need to invest more research in future uncertainties like climate change to acquire the necessary knowledge to develop appropriate strategies. This should include the basin wide harmonization of standards and methods and an improved basin wide model to better predict application of measures and potential synergies.
- to intensify the development of a new approach on risk management in view of continuous increase in potential damage and flooding risks.
- the need to keep the political focus and to increase the public awareness on rest risks.

3.2 Key trends of the last decades

Political, organizational changes

The growing awareness of the environment but also of the other water functions in the 1970/80s was picked up by RWS (3rd nota 1988) and the NRW government (Generalplan 1989, Gesamtkonzept 1992), leading to the integration of water, space, nature and other interests and

considering a basin wide water management. From a “problem-technical solution” approach the perspective has widened towards sustainable, multi-functional solutions.

The 1993/1995 floods reinforced these trends and the move to the “room for the river” approach. These trends also required the change from a central top-down management style to a cross-functional, vertical integrated and more interactive style, involving more potential actors (particularly documented in the Netherlands by the reorganization of the RWS and the merger of waterschappen). The floods also intensified the internationalization of flood management (Flood Action Plan of the IKSR) and the cross-border cooperation (AG, 1997). In NRW, the sometimes exaggerated nature restoration happened at the expense of flood protection.

Technologies

The dike constructions technology and the strength of renovated dikes have significantly improved.

Trends in Agriculture, Nature, Economy

Since the 1970s, the importance and the space requirement near rivers for agriculture, particularly in NRW has ceased. This, however, may be assumed by an increasing demand for economic and urbanization developments, particularly in the Netherlands.

Risks, Responsibility

The shock of the 1993/1995 floods (later confirmed by the Oder/Elbe floods 1997/2002) increased political focus and public awareness and led to improved flood protection, for example:

- dike renovation programs were accelerated and spatial measures initiated (Delta plan large rivers, NRW Konzept 1996)
- the public awareness and in NRW the self-responsibility increased for example in Köln: lower damage in 1995 compared to 1993 at the same flood level. People became more sensible and acceptable to planned measures. The media improved the information levels.
- in NRW, the 3 pile strategy of flood prevention was launched (technical measures, spatial measures, damage minimization including mapping of risk areas)
- flood warning systems, data and information systems and disaster action planning were developed and improved (including cross border cooperation).

It was the general view of most interviewees that the flood risk as the product of probability and potential damage has not reduced as economic development continues. This and more recently, the threat of climate change, however, intensified the discussion on more effective and adaptive strategies and risk management approaches.

3.3 Expected changes until 2050

Atmospheric / Hydrologic / hydraulic changes

Climate change was mentioned as the main physical change in the river basin system. The majority of the interviewees considered climate change to be a fact, leading to more and higher peak discharges, and thus an increase of the probability of flooding. Some stated even that climate change will happen faster than expected, or suggest that we should start thinking about building on the higher grounds, such as the Dutch Veluwe. A minority of the members of the AG, however, expressed that climate change is still too vague and expert opinions are too contradictory to say the probability of flooding will increase. Another physical change that has been going on (and will continue too) is the deepening of the river bed, which can lead to

problems at connections between the main river and tributaries, but might as well contribute to reducing water levels.

Socio-economic developments

The interviewees agreed that economic developments, urbanization and industrialization will continue in most parts of the NL and DE. This means that the potential damage potential in flood prone areas will increase. Another potentially relevant development is the increase of paved area due to urbanization in upstream areas, which might lead to faster discharge and higher peak flows downstream. However, in rural areas spatial pressure might decrease as agriculture decreases. This might mean that land near the river could be used for other purposes, such as storing water.

Technological changes

Major technological changes in dike / floodwall construction were not expected.

Institutional development

Part of the interviewees did not expect large institutional changes. Some expected changes in transboundary institutions. The EU Flood Directive that has been developed might stimulate transboundary cooperation, might have an impact on the distribution of resources, and might promote the harmonization of standards and measures. Others thought the EU Directive will have limited impact, because local processes are and will be important. The possibility of one Rhine authority (or increase of authority of the ICPR) was not expected by the majority.

Possible changes in institutions in NL include the realisation of an Integral Water Act, the establishment of a joint water department by the ministries of V&W and VROM, and scaling up of water boards such that they might be spread over multiple provinces. Most NRW interviewees believe that federalism will stay in Germany, may be even strengthened, i.e. the Länder will continue to be fully responsible for flood protection. Some mentioned the possibility to improve efficiency of flood management by streamlining the middle administrative level.

Changes in politics / resources

Many interviewees stressed the relevance of politics, which impact the resources that are available for flood management. A decrease in political attention might lead to a decrease of resources. Furthermore, (transboundary) cooperation in the river basin might increase and networks might develop. Other potential developments are towards a more rational debate, more influence of the regions, more political responsibility or on the other hand more self-responsibility and better cost recovery.

3.4 Possible strategies 2006-2050

Prevention of flooding

In order to prevent floods, giving more space to the river seems to be a generally accepted strategy. An essential part of this strategy is formed by controlled (upstream) retention polders, which could be optimised basin-wide. This room for the river approach is also reflected in the Dutch WB21 idea that water should be held back locally in the basin, stored (also in side rivers) and only then discharged to the sea.

Most interviewees agreed that large scale increases of dike heights are not desirable, although some stated that local improvements are required including proper maintenance of existing dikes. The 5 yearly review of dike system in NL improve the safety quality (reduce the risk). Some stated that changes in land use strategies have little effect on downstream discharges. Different views were expressed about the usefulness of green rivers.

Control / disaster management

Many interviewees raised the need for a better coordination (national and international) of disaster management. To improve the forecast of flood events, better models and better exchange of information are needed. This would give more time to evacuate areas when necessary. Improvement of disaster and evacuation plans and clear responsibilities on the other hand would decrease the time required for evacuation. By assigning special emergency flood detention areas and by compartmentalization the flooding can be better controlled and damage decreased. Also the need to accept floods was mentioned: where possibilities for defence are limited (lack of space) such as in Köln and Duisburg people have to be prepared (example Baufibel) to minimize damage.

Prevention of consequences

Most interviewees agreed that it is not feasible to stop (economic) developments in flood prone areas. Still, in strategic areas near the river some thought it useful to make spatial reservations (e.g. to be able to facilitate discharges of 18.000 m³/s). Furthermore, some raised the possibility to give citizens in risk areas the opportunity to insure them against damage caused by floods or to compensate them for suffered damage by government.

Institutions

There is a lot of disagreement about the possibility for and desirability of institutional changes. Many NRW members but also Dutch local parties fear that centralisation (one Rhine authority or more power to the EU) and in their eyes EU legislation is not the right way. Sustainable local solutions have to be developed and the Deichverbände, Waterschappen have to stay. On the other hand, many Dutch members have great expectations of the centralization of flood management in the ICPR, the German Bund and/or the EU. Many interviewees are quite happy with current level of the safety standards. Still some think that the standards should be discussed, maybe differentiated further, and/or harmonized within the river basin.

Process

All interviewees agreed that flood management is of central importance. In order to receive more resources, more political attention is needed. Furthermore, more responsibility could be given to citizens to protect themselves and costs could be better recovered from all that benefit from flood management. This might require actions to stimulate the awareness of the risk of flooding at first.

To include all useful information in the flood management process, sectors (particularly spatial), functions and perceptions should be more integrated. More local knowledge should be used, and there should be more thinking about risk management and longer term impacts. The discussion of the information should be transparent. Better understanding of the impact of measures should be produced.

Most interviewees advocated for a river basin approach. More communication between the riparian states would be useful, as well as the development of a joint Rhine basin plan. Cooperation between NL and NRW, but also between the German Länder, should be further intensified in order to better understand each others problems and options. Creative approaches

should be considered to improve the harmonisation of transboundary measures and to finance upstream measures by downstream parties.

3.5 Ideal situation 2050

General views

Three general opinions on the desired situation in 2050 prevail. The first is that flood management is already good at present and no radical changes are desired. Another vision is to go back to the old, more natural, meandering Rhine, but the feasibility of the vision is considered very limited. A third group envisions more unity, harmony and integration in the whole Rhine basin.

River basin

There should be enough space and precautions to store floods and to guarantee availability of water in dry periods. All Dutch interviewees would like the system to be able to safely discharge 16.000 or 17.000 m³/s at Lobith. This refers to the desire for high safety levels.

Most agreed that the planned measures in NL and Germany need to be implemented. To create synergies, this would include a basin wide optimized system of controlled retention. Some would like green rivers to be realized. For discharges higher than 16.000 or 17.000 m³/s at Lobith, some would like to see differentiated norms in 2050, with safety levels related to potential impacts. Additionally, the inner-dike system should be improved, e.g. by compartments that allow for controlled flooding. Urban areas should be 100% safe, by allowing for controlled inundation in open areas.

Institutions

Some would like a (new) river basin management authority or more ICPR or EU power. Others strongly disagree and would desire a decentralised governance with little top-down regulation and more local cooperation. A vision in-between advocated for more voluntary cooperation, such as in the AG. Furthermore, some wished for harmonised safety levels.

Process

The visions on flood management processes included more cooperation, a river basin approach with basin wide goals, integration of water management and spatial planning, and facilitation of multiple functions (e.g. economy and ecology). Furthermore, good knowledge and (basin wide) models should be available and the long term should be considered. Furthermore, it is envisioned that citizens feel safe, although other desire citizens to be aware of flood risks and have self-responsibility. A final desire was a more pronounced role of a risk approach in which safety norms are based on damage potential.

3.6 Biggest challenge

The biggest challenge to reach this vision could be the need to take action in time for an uncertain future without knowing the consequences. The lack of full knowledge of climate change impacts and flood genesis was mentioned as well. Other barriers are individual, local interests and hierarchies. Institutional changes such as a basin wide centralization might be very slow, because sovereignty aspects, local resistance but also because many still believe in technical solutions. The realization of the EU Flood Directive could therefore be a great challenge.

In the policy process, it will be hard to maintain political support (and sufficient resources) for flood management, in particular when no extreme events occur. Successful projects and new approaches to prove success would be beneficial. A strong river basin management coalition is required. It will be essential to develop an active cooperation between upstream and downstream

parties and to develop trust (e.g. by technical experts). It might be difficult to find the right scale and the right platform for discussions (time, space, political authority) and to deal with the sometimes coloured interpretation of information by politicians.

4. Discussion

4.1 Transboundary cooperation: Success factors

All interviewees were very positive about the excellent cooperation of the AG and judged the work as effective with useful results. Over the years, a trustful atmosphere has build up and the need for such a cross-border institution has been confirmed. The AG members highlighted the added value of joint research, of knowledge and experience exchange and praised the open and trustful discussions of options, issues and new ideas. As members expressed it: “if this AG would not exist, it needs to be invented” or “this AG is a model for transboundary cooperation”.

A number of factors were mentioned, which might contribute to the success of the group:

- the common objectives, basic strategies and risk appreciation of all partners
- the regional background of the members
- the technical focus of the AG and their technical expertise
- the proactive role of the downstream partner, coupled with sufficient resources
- the common understanding of increased weight and political power of a joint international AG

Many interviewees mentioned the advantage of a low/none involvement of politicians and the concentration on scientific or technical objectives. The political power design within the IKSR but also between the “Lander” was seen as a hampering element for efficient cooperation.

Some additional favorable conditions supported the success of the AG:

- similar characteristics of the political and legal systems, particularly the same strategic philosophy of the “room for the river” approach
- the characteristics of the perceived problems promoted the development of the AG. Extreme events like the 1993/1995 floods raised public and made governments receptive to the technical and administrative ideas.
- the possibilities to solve the problems helped to increase the status and the self-confidence of the AG
- motivating support from the EU of transboundary projects

Some differences between the Dutch and the German institutional set ups and their impact on the work of the AG are discussed in the following chapter.

4.2 Similarities and differences: Transboundary cooperation

Cognitive factors

Both, the Dutch and German interviewees agreed that there are differences in flood risk perception and that this influences the political and strategic protection approaches. Following the different historical experience and the objective dimensions of flood risk it can be concluded that:

- the general risk perception level is lower in Germany and danger to life is of minor concern. Dutch people expect to be safe and the administration to take the required measures at a national and local scale to keep this legally defined “guarantee”. Individual citizens do not feel the necessity to anticipate a possible flood. In NRW (Germany), flood protection is an individual responsibility, supported by governmental information, advice and legislative frameworks.
- the approaches to solving flood risks are different: the Dutch strategy follows more the protective approach of safety standards, guaranteed by the government, whereas NRW puts

more emphasis on “prevention” and damage reduction and on self-responsibility and awareness programs, on information and risk mapping.

- the seriousness of climate change is interpreted differently. Climate change and long-term impacts are more on the political agenda and considered a future threat in the Netherlands than in Germany. Anticipation plays an important role in the Dutch flood discussion whereas the NRW concept of 2006 indicates a more passive attitude. The Dutch plans for measures until 2015 include for example reserved areas for future retention or storage options. In NRW, the general view is that there will be always sufficient time to react in an appropriate way.

Institutional factors

In the Rhine basin, the principal features of flood protection are triggered by the same extreme events. Also the need to coordinate strategies and measures across the basin is widely acknowledged. There is common agreement on the “room for the river” approach developed in both countries over the last 2, 3 decades. In both countries the measures are basically fixed until 2015, perhaps with a more “nature bias” in Germany and a more “multi-functional bias” in the Netherlands.

An institutional factor, which has an impact on cross boundary cooperation are the complicated interactions of and within the Federal structure of Germany. The Länder are responsible for their flood management including the main functions and resources. A number of potential issues were mentioned:

- in the international arena, it may cause confusion about the involvements of the most appropriate actors at the right level;
- on the Federal level, it leads automatically to a fragmentation of capacities and resources;
- within NRW, the parallel administrative and operational axes may not be the most efficient manner for operational implementation of flood protection.

The introduction of space into flood management was seen as an interesting, further institutional feature that influences national as well as cross boundary water management. Whereas Dutch water managers assume sufficient available free areas for retention measures in NRW, the German view is that not much more can be done.

In NRW (Germany), spatial planning is the responsibility of the Länder. They have the local knowledge and a tight legal net for regional development which for example requires mapping of flood risk and flood prone areas, providing a strong position for water managers and public participation. This more local view may also decrease the interest to consider downstream flood issues and limit the will to cooperate.

Political factors

The interview demonstrated that in a multiple border river basin, there is always the upstream-downstream issue. Solidarity is expected from upstream party but needs also to be applied downstream. In this context the benefit and cost relation is important and examples mentioned of added value were:

- the benefit of increased resources i.e. capacity by joint scientific and technical research. Synergies of measures will be created and improve the efficiency and effectiveness;
- the benefit of cross border financing: a first approach was done by Dutch financing of a NRW retention measure (Bislicher Island);
- the benefit of a stronger position due to an international set up.

The political will to act is also hampered by the “not in my backyard” feature, particularly if the risk perception and the level of cross boundary information are low. This was overcome by openness of the discussions and the trust developed, which helped to understand each others issues and options.

Downstream parties need persistence and initiative to get cooperation upstream, trying to create the necessary appreciation to influence the measures river upwards. This has to happen with tact and sensitivity supported with sensible political, financial and technical offers. The AG seems an excellent “instrument” to achieve this.

4.3 Similarities and differences: Scale level and functions of interviewees

An analysis of differences in perspectives between interviewees operating at different scale levels (national, regional, local) and in different functions revealed the following results.

‘National’ vs. local actors

As expected, most local actors (e.g. municipalities and water boards) tend more towards governance structures in which the local influence is large, and the central role of the Bund, EU and ICPR is low. Integrating local knowledge in flood management is necessary and provides additional value to transboundary cooperation. According to some AG members, centralised rules and local influence can be well combined: centralization and decentralization are not necessarily contradictory.

The interviewees operating more at the larger scales (and strategic levels) are heavily divided in the centralisation-decentralisation discussion. Some support regional approaches and emphasize the traditional local responsibility. Others foster basin wide governance, but express also some doubts about the efficiency. Interesting is further that all levels see local interest and local resistance as a challenge to achieve their vision.

Specialists vs. generalists

It was tried to make a distinction between specialists (more scientifically oriented experts of flood management, e.g. hydrologists) and generalists (more involved in integrating specialist knowledge into integrated flood management, strategies or policies). Although not all interviewees would fit clearly into one or the other category, the discussion on current flood management issues revealed some different views. Specialists tend to emphasize the lack of sufficient knowledge and the need for additional research and new models. Many specialists also emphasize the lack of resources and the importance of keeping flood management in the political focus. Generalists put more emphasis on the “process” and the strategic developments, e.g. improved transboundary cooperation, better integration of functions (space, nature etc) and a risk approach. Interestingly, neither specialists nor generalists did support a closer link with politicians or a stronger participation in the political decision process. This seems a contradiction if one considers the wish for more political focus and the options for future developments into even closer basin wide transboundary cooperation.

5. Conclusions

The Arbeitsgruppe Hochwasser can serve as an excellent example of well-functioning transboundary cooperation. A number of success factors have been identified, such as similar interests and strategies, as well the regional background of the members and their technical focus.

Based on the shared 'Room for the River' strategy, similar measures are being implemented at a similar timescale, although a number of differences in the underlying assumptions have been identified as well:

- The interpretation of the climate change debate
- The inclusion of future scenarios and impacts
- The different approaches in dealing with risks: safety guarantee versus damage minimization
- The political focus and available resources.

These differences might be explained by the differences in potential damage and the resulting differences in risk perception, leading to a more precautionary approach in the Netherlands

Appendix 1.

Arbeitsgruppe Hochwasser: Interview protocol

A. Introduction (to set the scene)

Tell (in own words)

The ACER and NeWater project are aimed at coping with future change and uncertainty (e.g. climate change & land use change). Both explore the concept of adaptive management (continuously learning of all stakeholders, policy experiments & continuously improving management strategies). The transboundary cooperation in the Dutch-German Working group is a shared case study. Both participatory process and modeling are important, in order to develop a vision on future flood management.

In this interview we would like to get your personal view on the issues.

B. Personal position

Check

Is the form with personal details filled in?

Ask

1. What is your involvement or role in flood management?

Essential elements (ask if not mentioned)

- Role organization in flood management
- Personal role within the organisation?
- Most important working relations in and outside the organisation?
- Personal objectives and priorities

C. Perspective on the current situation

Ask

2. What is your opinion on the effectiveness and efficiency of current flood management in 1) your own country and 2) transboundary?

Essential elements

- Opinion on politics, law, policies, measures and implementation
- Opinion on organizational structure and finances
- Decision-making and planning (who initiates, decides for which measures, participation, information, cooperation)
- Safety norms, risk-estimation, disaster management, insurance, compensation
- Incorporation of long term changes and uncertainties (e.g. climate change, economic change, EU Directives)
- Role of water management in relation to spatial development and agriculture
- Stakeholder interests and influence
- Most pressing problems / shortcomings

D. Key trends last decades

Ask

3. What do you think have been the key trends of thinking and acting with regard to flood management in the last 10, 20 years?

Essential elements

- Political, juridical, organizational (participation), financial changes
- Strategic, technological changes
- Dealing with risks, own responsibility / compensation
- Trends in agriculture, nature, economy, other functions
- Transboundary cooperation
- Causes of trends

Ask

4. Do you think these trends have (sufficiently) reduced flood risks?

E. Expected future flood management (2050)

Ask

5. What changes do you expect until 2050 with great influence on flood management?

Essential elements

- Climate change & other physical processes
- Socio-economic trends (including land use)
- Institutional change (new (EU) legislation, new policies, new distribution of responsibilities (Bund-Land, ICPR, AG))
- Actor networks (new players, relations, coalitions, power distribution (politicians, civil servants, NGOs, civilians))
- Future conflicts: who are losers and winners?
- NRW/NL: Typical problems /solutions (legal, organizational, financing changes?)

Ask

6. What strategies for flood management do you consider to be possible to cope with these changes?

Essential elements

- Physical measures (technical, infrastructural)
- Spatial planning (urban, land use, settlement policy)
- Soft strategies (e.g. information supply, disaster plans, insurance, risk-awareness, own responsibility)
- Institutional change (e.g. cooperation, new 'borders')

F. Desired future flood management (2050)

Ask

7. What is your vision of the optimal situation of the river system and flood management in 2050?

Essential elements

- Physical system (flooding probability, discharge, dikes, etc)
- Socio-economic situation (consequences flooding: economic, human lives)
- Rules, law, policy, administrative structure, actors and networks

Ask

8. What would be the biggest challenge and what management activities would be essential for achieving this situation?

9. Closing

Tell

To end the interview, we only have some final practical questions left.

Ask

10. Do you see any improvements to this interview?

Tell

Besides the members of the Arbeitsgruppe, we would like to interview a broader public to get a richer perspective on transboundary flood management in the Niederhein area, including other sectors (spatial planning, agriculture, etc.) and NGOs (environment, residents, etc.)

11. Do you know specific organisations / people that we need to interview?

We prepared a work plan for our research, which you will receive as input to the Arbeitsgruppe meeting on March, 14th. After we have conducted and processed all interviews, we will organise a few workshops with the Arbeitsgruppe, starting in September. We would like to form a small 'coordination group' with some members of the Arbeitsgruppe to discuss contents of the process.

12. Are you interested in joining this 'coordination group'?

Tell

Thank you very much for your time. You will be sent a report of the interview soon. In the summer we will have a report ready that includes the interviews and you will receive a copy.