
COLLABORATIVE GOVERNANCE OF INTERNATIONAL COMMISSION FOR THE PROTECTION OF THE RHINE

LESSONS LEARNED FOR FLOOD RISK REDUCTION IN PARTICIPATING COUNTRIES



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ABSTRACT

Due to climate change the number of flood events will increase making flood risk reduction an important topic. This importance was shown in the summer of 2021 with the flood that happened along the Rhine River and the Meuse River. Rivers cross borders and therefore international collaboration is needed, and it is important to see if these collaborations are successful. The question answered by this thesis is: How successful is the ICPR as both a form of collaborative governance and in reducing flood risk in the participating countries, and what lessons can be drawn from this?

By conducting desk research with documents of the committee and having interviews with current members of the delegations, secretariat, observing members and old members the answer to this question is found. First, the starting conditions of the separate countries are investigated, and all these conditions were in favour for the collaboration to take place. There was only a difference between the flood risk approaches in the countries, yet all have been integrated into the committee and the approaches in the countries have been changing because of this. Within the committee collaboration dimensions are investigated, here it is interesting to note that the ICPR has a quantitative approach, and the countries have a qualitative approach. The international obligations are decreasing the ambitions of the countries within the committee. Also interesting is that there are no protocols for who takes part in the work groups, and there are few mechanisms to include neutral mediators and external experts. The collaboration dynamics are also investigated within the collaboration, and these are well organised only it is found that there are few moments for informal interaction between the members and workshops are not held regularly. The evaluation elements are investigated in the separate countries, here it is found that in France there is no vertical and horizontal coordination on flood risk reduction. France and the Netherlands both lack monitoring capacity, and all countries say that flood risk awareness is critical. Switzerland has the most ways to improve risk awareness, and all countries mention that the ICPR has not directly influenced the perceived reduction of flood risk, but the countries themselves reduced this.

The conclusion of this research is that the starting conditions were good for the collaboration to take place. It would be smart to align the objectives between the countries and the ICPR, have workshops more often, create protocols for who takes part in the committee and create more mechanisms to involve neutral mediators and external experts. It would also be smart to create more opportunities for informal contact between the members. For the coordination France could learn from the other countries and both France and the Netherlands could learn from the others on how to increase the monitoring capacity. The other countries can learn from Switzerland how to increase public awareness. Overall, the ICPR is a successful form of collaborative governance, and the perceived flood risk has been reduced in the countries.

Key Words: Collaborative Governance – ICPR – Rhine River – Flood Risk - Evaluation

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1. INTRODUCTION

In Europe, floods are still one of the most common natural hazards that occurs, and climate change will only increase the probability of floods (Kaufmann et al., 2016; Wilby et al., 2008). The increase in probability is due to heavier precipitation events per season. Not only the probability is increasing, but also the consequences are increasing due to socio-economic developments (Kaufmann et al., 2016; Rojas et al., 2013). This is because of urban developments that take place in these flood-prone areas (Rojas et al., 2013). These developments make for a rise in damages created by floods.

In the summer of 2021, one of these heavy precipitation events led to disastrous floods affecting the Netherlands, Germany, Belgium, and Luxembourg (ECDC, 2021). The western regions of Germany were the most affected by the flooding of the Rhine River, which led to 175 deaths. Even more worrisome than the effects of these floods, is that they came as a complete surprise, even to researchers in the field (Fekete & Sandholz, 2021). Not only were the floods a surprise, but also communication during the floods was lacking, which led to more damage. In Germany, inhabitants were only notified shortly before the floods happened or not at all (NOS, 2021). In the Netherlands, it was not communication to the public that was lacking, but communication between the helping organisations that were lacking (NU.nl, 2022). This lack of communication came from the organisations being caught off guard, which shows that communication about the floods was also lacking between the countries.

Rivers often don't stop at the boundaries of one country but cross borders, this makes that they create a connection between countries (Bracken et al., 2016; Panten et al., 2018). When rivers cross the borders of countries, they are crossing physical borders and this can create complex governance issues (Bracken et al., 2016). These issues can be found in different policy styles and become visible once the different jurisdictions go from policy formulation to implementation. To tackle these problems many international river basins have been part of transboundary water regimes which deal with a broad range of topics connected to water (Renner et al., 2017). These collaborations may concern issues of pollution, navigation, resource allocation, or flooding, but may also be a combination of the different topics.

The Rhine, which is the largest river in Western Europe, created such a transboundary water regime. The Rhine River basin has nine riparian states: Italy, Switzerland, Liechtenstein, Austria, Germany, France, Belgium, Luxembourg, and the Netherlands (ICPR, 2020b). The transboundary organisation was created on the 11th of June in 1950 when Germany, France, Luxembourg, Switzerland, and the Netherlands created the International Commission for the Protection of the Rhine (ICPR) to analyse pollution in the Rhine (ICPR, n.d.-c). Nowadays the commission deals with not only water quality, but also ecology, and high and low water (ICPR, n.d.-k, 2020b). Floods were only added to the topics of the committee in 1998 after disastrous floods in 1993 and 1995 (ICPR, n.d.-a, 1998). In 1998 a separate Action Plan on Floods was created, and nowadays floods are part of the overall Rhine programme 2040 (ICPR, 2020b). The objective of the ICPR at this moment is: "The 'Rhine 2040' programme aims to create

a sustainably managed Rhine catchment area that is resilient to the effects of climate change, with valuable lifelines created for nature and people.” (ICPR, 2020b, p.7). This shows that the committee focuses on the whole catchment area, while also taking the different topics into account.

In these cross-border collaborations, collaborative governance must be used to help the collaboration (Emerson & Nabatchi, 2015). Considering the overall increasing flood risk and recent flooding of the Rhine River it is critical to explore how successful the ICPR is as a form of collaborative governance in the participating countries. To do so the ICPR, as a form of collaborative governance, is being investigated and the successfulness of this collaboration in reducing flood risk in the separate countries. The commission is currently implementing the ‘Rhine 2040’ program (ICPR, 2020b), and before this, the ‘Rhine 2020’ program was implemented (ICPR, 2020a) and this has been assessed by the commission itself. It is important to see if the countries are able to implement these programs to reduce the flood risk and what they can learn from each other.

1.1 RESEARCH AIM & RESEARCH QUESTION

As described above the problem that is focussed on in this research is the fact that flood risk is increasing and that the collaborations within river basins are therefore becoming more important. This makes it important to see if the collaboration that takes place in the Rhine Basin can be seen as a successful form of collaborative governance. Next to this is it also important to see if the outcomes of the collaboration are successful in reducing flood risk in the participating countries. By investigating these aspects there might be lessons found for both the collaboration itself and for the countries.

This makes the research question the following:

How successful is the ICPR as both a form of collaborative governance and in reducing flood risk in the participating countries, and what lessons can be drawn from this?

To answer the research question, the following sub-questions will be used:

1. What are the starting conditions of the ICPR as a form of collaborative governance in the participating countries?
2. What are the procedural and interrelation dimensions of collaborative governance within the ICPR?
3. How does the ICPR perform in the participating countries, looking at the evaluation aspects of collaborative governance?
4. What lessons are there to learn for both the ICPR and the participating countries?

1.2 SOCIETAL AND SCIENTIFIC RELEVANCE

The consequences that come from the increase in flood risk is faced by society and mainly by those living in flood prone areas. It is necessary for society to know if their tax money is spent wisely on this collaboration, and therefore if the collaboration in the Rhine River Basin is successful or if it could still increase. Next to the people living in flood prone areas, it is also important to see the successfulness of the commission for the governments that take place in the collaboration. For them, it is not only the collaboration but also the implementation within the separate countries that is important, as there might be lessons to be learned from each other.

The scientific relevance of this research is found in the evaluation of cross-border collaborative governance that takes place. This research fills a gap in the literature as the whole of the Rhine commission has not been evaluated yet, only smaller parts of the river basin have been looked at. Focusing on how the outcomes of the collaboration are implemented within the different countries will also show the lessons that the countries can still learn from each other. To determine the successfulness of the collaboration a new conceptual model is created by combining different parts of literature. This new conceptual model adds to the scientific relevance that the research holds and can be used in other research that also looks at collaboration. The increasing risk of floods also shows that it is necessary to investigate these river basin collaborations.

1.3 LAYOUT

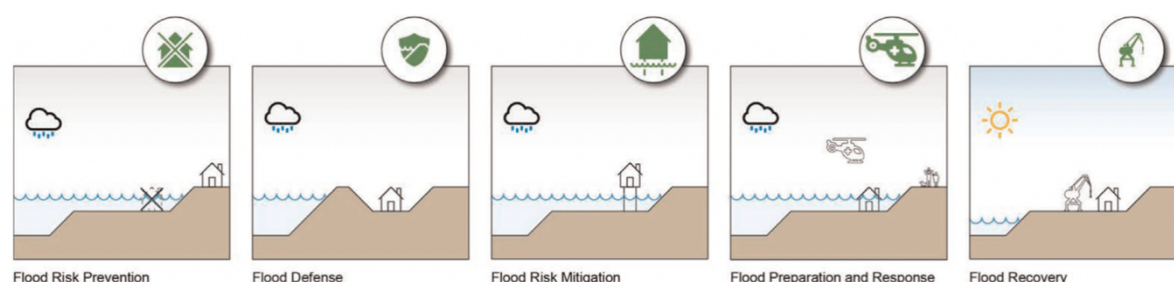
Chapter 1 of this research introduces the research problem, aim and the research questions that will be answered. In Chapter 2 the necessary theory is discussed and the conceptual model that will be used is defined. In the 3rd Chapter the research strategy methods, reliability and validity, and the research paradigm will be explained. Chapter 4 contains the results and the analysis of the results in connection with the research (sub)questions. Chapters 5 and 6, respectively, contain the discussion and the conclusion of the research.

2. THEORETICAL FRAMEWORK

2.1 GOVERNANCE OF FLOOD RISK MANAGEMENT

The governance of flood risk is being challenged by both the environmental changes and the socio-economic changes that are occurring (Wiering et al., 2017). Yet there are still large differences found in response to flood risk in different countries. This is influenced by the actors, discourses, rules, and resources that are involved in different countries. This makes that some countries put the responsibility on the national government, whereas others take the responsibility down to the regional and local/community levels. There are not only differences in the level on which governance takes place, but also in the strategies that are used. The possible strategies for flood risk governance are prevention, defence, mitigation, preparation, and recovery (Wiering et al., 2017). With the prevention approach countries will for example not build in flood prone areas and thereby prevent flood risk. The defence approach focuses on making sure that water is not able to enter the flood-prone areas, this can, for example, be done by dikes. These two approaches are both trying to reduce the probability of floodings. The other three approaches are about reducing the consequences of floods. Mitigation is about mitigating risk which for example can be done by building houses on poles so that there is limited damage when a flood occurs. The preparation approach entails having an evacuation plan in the event of flooding. The last approach is the recovery approach which focuses on how to rebuild fast after a flood occurs. Figure 1 shows these different types of flood approaches in a clear overview. It is possible for a country to focus on more than one of the flood risk approaches, as this is for example seen in the Netherlands when next to the defence approach also the preparation approach was used after big floods in the '90 (Avoyan & Meijerink, 2020).

FIGURE 1 FLOOD RISK APPROACHES (WIERING ET AL., 2017)



This change of going from one flood risk approach to multiple approaches is part of flood risk management (FRM) (Wiering et al., 2017). FRM is defined as dealing with flood risk based on the notion that risks cannot be taken away completely, only partly and always at the expense of other goals (Klijn, 2009). This makes that different approaches need to be used to reduce flood risk as much as possible. Next to this, there is also a trend visible to integrated water resource management (IWRM) (Butterworth et al., 2010). IWRM stresses that water use needs to be improved in

efficiency, equity in access needs to be promoted, and sustainability needs to be achieved. Often it is idealised that all three of these aspects can be maximised at the same time, while most of the time it is about finding a balance between the three. This balance is to be made with a minimal number of negative externalities. This approach of IWRM has become the most accepted water policy tool and has also been adopted by the EU (Rahaman & Varis, 2005; Richter et al., 2013). The EU has implemented this approach in the Water Framework Directive which is to be followed by all member states of the EU. Also, countries outside of Europe have implemented this approach, such as Chile and South Africa, which shows the popularity of this approach (Lenton & Muller, 2009). Overall, the governance of FRM is becoming more integrated by using multiple approaches, but also with the switch to go to IWRM.

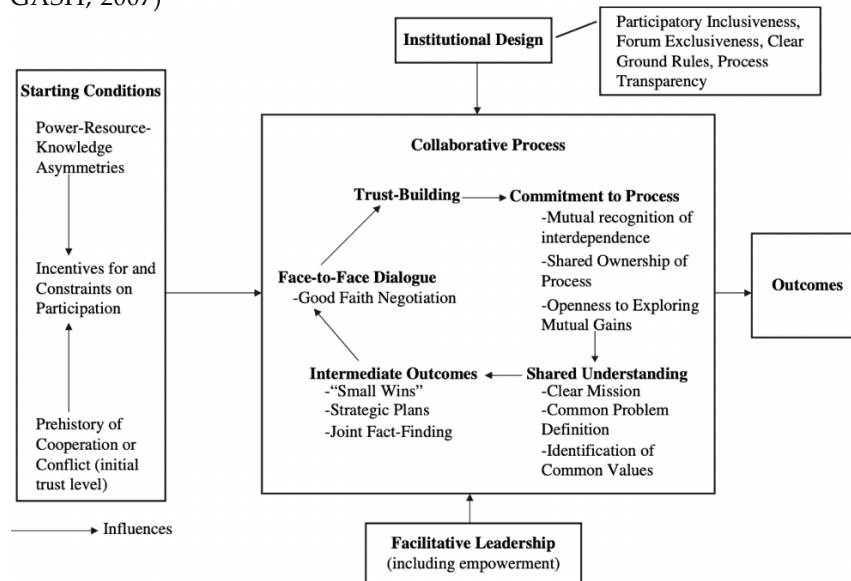
2.2 CONFLICT & COLLABORATION

Around the world multiple water conflicts are going on, yet these stay silent most of the time due to power imbalances that are found between the countries (Zeitoun & Warner, 2006). This power imbalance is formed as upstream countries use water to gain power over downstream countries. Between countries there are multiple ways to gain compliance with the other involved countries: coercive, utilitarian, normative agreement, and ideological hegemony (Zeitoun & Warner, 2006). Coercive compliance means that force or a threat of force is used to create compliance. Utilitarian compliance is achieved by bribes or trades of services (Zeitoun & Warner, 2006). The normative agreement is a conscious belief that it is in the best interest of the non-hegemon to comply and thereby the hegemon is reinforced. The ideological hegemony is where it is believed that the hegemon needs to be followed and compliance with the way things are is seen as common sense.

Water conflict is closely related to how it is governed and managed (Petersen-Perlman et al., 2017). Therefore, it is needed to have strong policies for transboundary water management, yet there are certain risks involved when collaborating on such a water conflict. These risks can for example be capacity for knowledge, accountability and voice, sovereignty and autonomy equity and access, and stability and support (Petersen-Perlman et al., 2017). The countries then must weigh if the risks that come with the cross-border collaboration are outweighed by the opportunities that it brings. If collaboration is created, it is of importance that this collaboration overcomes the risks and will also resolve existing conflict and prevent future conflicts from occurring. In these river basins, these cross-border collaborations are often forms of collaborative governance (Bell & Scott, 2020). This is as collaborative governance is used to address cross-border or cross-sector policy issues and it provides a structure that supports coordination and cooperation among decision makers from organisations. This form of governance also emphasises an inclusive and open process which is based on deliberation and consensus (Moodie & Sielker, 2021). All these factors make collaborative governance important for cross-border collaboration. In the next sections therefore the inner workings of collaborative governance will be explained further.

2.2.1 STARTING CONDITIONS

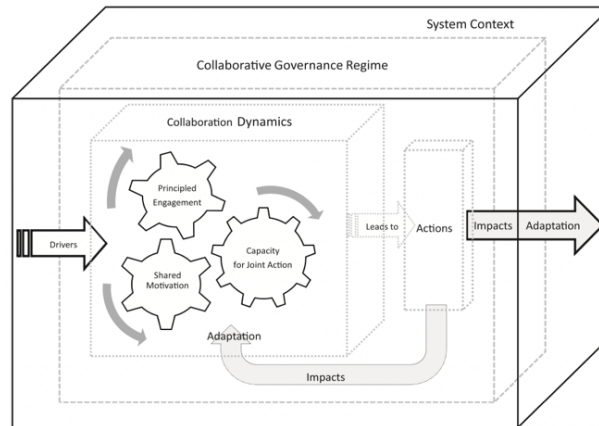
FIGURE 2 MODEL OF COLLABORATIVE GOVERNANCE (ANSELL & GASH, 2007)



For successful functioning of collaborations multiple starting or system conditions are important. Both Ansell & Gash (2007) and Emerson & Nabatchi (2015) show this in respectively Figure 2 and 3. Emerson & Nabatchi (2015) have the following system conditions: public service or resource conditions, policy and legal frameworks, socioeconomic and cultural characteristics, network characteristics, political dynamics and power relations, and history of conflict. Ansell & Gash (2007) are showing that starting conditions influence the collaborative process and therefore also the outcomes. In the starting conditions, they focus on the asymmetry that is found between the involved parties, this plays an important role in river basin organisations. The asymmetries can be found in power, resources, and knowledge. This is important as when there are large asymmetries in power and resources this can lead to a manipulative collaboration. The asymmetry of power is related to up-and down-stream positions of the countries, as also mentioned before by Zeitoun & Warner (2006). Next to the location on the river, the representation within collaborative governance is important, and all parties should have the organisational infrastructure to have this representation (Ansell & Gash, 2007). The other starting conditions are the incentives for and constraints on, and the history between the countries of cooperation and conflict. It is important to understand what the incentives were at the start of the collaboration and what the expectations are from the collaboration. When the collaboration shows effective outcomes the incentive to take part in the collaboration will improve, as the time that goes into the collaboration needs to balance the results. The power that different parties hold is also influencing the incentives to come to the table. The history between countries on collaboration or conflict is also influencing the collaboration and the successfulness of the collaboration. This is as a history of conflict can create a low level of trust whereas a history of collaboration will create higher trust levels, which will then lead to more successful collaborations.

2.2.2 DYNAMICS WITHIN THE COLLABORATION

FIGURE 3 INTEGRATIVE FRAMEWORK FOR COLLABORATIVE GOVERNANCE (EMERSON ET AL., 2012)



Ansell & Gash (2007) see the collaboration process itself as a five-step feedback cycle of face-to-face dialogue, trust building, commitment to process, shared understanding, and intermediate outcomes. The latter will then again lead to face-to-face dialogue and so on. These elements of the collaboration process mentioned by Ansell & Gash (2007) are also found in the collaboration dynamics as they are described by Emerson & Nabatchi (2015). Here the elements of Ansell & Gash (2007) are mainly part of the shared motivation dynamics of Emerson & Nabatchi (2015), the other two collaboration dynamics are principled engagement and shared motivation. Principled engagement is something that occurs over time and makes different stakeholders able to work together across institutional, sectoral, or jurisdictional boundaries. There is an emphasis on principled here as this shows that all those participating will act fairly and civil and all different perspectives of those involved will be listened to (Emerson & Nabatchi, 2015). Principled engagement entails the following process elements: discovery, definition, deliberation, and determination. The discovery process is about identifying both individual and shared interests, values, and concerns. The second process, definition, is about creating the same meaning of the common purpose and objectives but also using the same terminology. Deliberation is the process of reasoned communication between the involved parties. To achieve this deliberation collaborative governance needs to provide a safe space. It is also important there are predefined ways to manage conflict within the committee (Bryson et al., 2006; Emerson & Nabatchi, 2015). The fourth process is determination, which is about procedural decisions and substantive determinations. The procedural decisions are about the creating of agendas and assigning the working groups whereas the substantive determinations are about reaching goals, targets, or final recommendations.

The importance of shared motivation can be found in the fact that it creates mutual trust, understanding, internal legitimacy, and shared commitment (Emerson & Nabatchi, 2015). These four elements create a self-reinforcing cycle that is, as mentioned before, very similar to the cycle of Ansell & Gash (2007) (Figure 2). Mutual trust is a process that happens over time while the different countries are working together and comes from getting to know each other and providing predictable, reasonable, and dependable relationships (Emerson & Nabatchi, 2015). Trust is also built on the history that the countries have with each other on previous collaborations. This is a critical element as it makes that actors can go beyond their own institutional and jurisdictional systems to understand the other actors' interests, values, and needs (Bryson et al., 2006; Emerson & Nabatchi, 2015). This mutual trust is also the basis for mutual understanding, and this is about the ability to understand and respect the position and interests of other parties, even if one might not see this in the same light (Emerson & Nabatchi, 2015). Here a safe space is critical so that everyone is able to voice their point of view. It is also important to see if all different ambitions and intentions of the countries are considered. This will in turn lead to internal legitimacy, which is about understanding but is also about the fact that the collaboration needs to be seen as useful and that goals set by the collaboration are met. Bryson et al. (2006) mention that this legitimacy is something that needs to be built as it is not as recognised as traditional forms of governance yet. The last aspect of shared motivation is shared commitment which is needed when collaborating over boundaries that previously separated the parties involved (Emerson & Nabatchi, 2015). This commitment can be found in the legal bindingness of the collaboration and in the dedication of the different countries. The commitment level of the collaboration will either make for meaningful and substantive collaboration or meaningless and cosmetic collaboration (O'Flynn & Wanna, 2008).

Collaboration is created when the separate actors, organisations, or in this case countries, are not able to achieve goals on their own, this makes the capacity for joint action a critical part of the collaboration dynamics (Emerson & Nabatchi, 2015). The capacity for joint action is about institutional arrangements, leadership, knowledge, and resources. The institutional arrangements are about process protocols and organisational structures that are needed for the collaboration. With larger and long-term collaboration, such as the ICPR, there are also rules and regulations needed. These rules and regulations must be clear on both the collaboration level, but also the lower and/or higher level. The role of leadership in collaborative governance is important and is needed for all the different leadership roles and it is important to define these roles clearly. Knowledge is seen as the currency for collaboration as collaboration needs the knowledge that the different parties have, and collaboration is also about creating new knowledge together. Resources are the last element of the capacity for joint action, and this is also seen as one of the benefits of collaboration. Resources may include time, funding, and skills. Resources often are asymmetrically divided between the different parties. When these collaboration dynamics are implemented well this will eventually lead to actions, impacts, and adaptation (Emerson & Nabatchi, 2015).

Furthermore, Renner et al. (2020) mention that it is important to focus on regime evolutions, design-related strategies, and time that the collaboration had to form to understand the shaping of the collaboration. To analyse cross-border regimes it is important to look at the following six dimensions: objective, policy instruments, structures, actors, resources, and leadership and entrepreneurship. The objectives and goals differ for every party, and they also bring their own interests and ambitions to the collaboration. These objectives must be clearly formulated and analysed so that asymmetries in objectives are not leading to negative externalities. Next to this, objectives must formulate long-term policies and agreements on the scope, bindingness, compliance, and conflict resolution. There should also be a focus on implementation and evaluation of the implementation. The policy instruments are mainly about the possibilities that the different actors have to use policy tools and the kind of incentives that are used for cross-border collaborations (Renner et al., 2020). Here it is also important that policy instruments conform with the international and national obligations. With the structure dimension, it is about the institutional design for the different regimes. There are three important elements here, the institutional and organisational design, how the different actors can effectively be involved on the different levels, and the extent to which the stakeholder involvement is organised. Within institutional design, it is important to look at the organisation structure and the governance mechanisms that are provided (Schmeier, 2014). With the other two elements, it is important to see if and how the actors and external actors are involved (Renner et al., 2020). The dimension of actors is focussing on how different networks are organised to provide connections and stimulate trust building. It is important to know which actors are involved and if personal and professional commitment is ensured. The dimension of resources is also mentioned by Renner et al. (2020), just as by Emerson & Nabatchi (2015) and Ansell & Gash (2007), and this is about funding, time, and other resources that the parties have to offer. Renner et al. (2020) lastly state the leadership and entrepreneurship dimension, which is the dimension that moves, manages, and steers cross-border collaboration. With this, it is important to see who are in the leadership roles and that third parties are involved in the collaboration.

2.2.3 EVALUATION

For the evaluation of river basin organisations, the following four aspects are looked at: coordination, accountability, legitimacy, and environmental effectiveness (Huitema & Meijerink, 2017). Coordination is about public decisions and policy making. It is needed to see if governments in charge of implementation have the coordinating capacity to execute this. In water management, it is important to understand that most of the issues will be solved on lower government levels and in combination with other policy sectors. Accountability can be defined as a relationship between the actor and a forum where the actor must explain and justify the actions and may face consequences. There are three rationalities of accountability, it can be about the prevention of power concentrations, the enhancement of learning capacity of public administration, and the democratic means to monitor and control government actions. The last one is used to evaluate collaborations. Legitimacy is about the public perception of water management, the public awareness must stay high so that

legitimacy is enhanced. Raising awareness of flood risks is seen as a large challenge and only knowledge on the subject and direct experience are found to have a direct influence on the awareness of people (Lechowska, 2018). It is also noted that risk awareness of floods is affected by the social class, the higher the social class the higher the public awareness of people (Burningham et al., 2008). The last criterion that Huitema & Meijerink (2017) mention is environmental effectiveness, and this is about the attainment of the set goals of the collaboration.

Hegger et al. (2014) also evaluate flood risk governance, here the evaluation elements are: legitimacy, efficiency, and effectiveness. The legitimacy here refers to accountability and coordinating capacities of actors and transparency. Efficiency is about using resources in a cost-efficient way. Lastly, effectiveness is about the extent to which flood risk is reduced and if public awareness has been increased. There is a lot of overlap between the two forms of evaluation as both talk about accountability, coordination, and effectiveness (Hegger et al., 2014; Huitema & Meijerink, 2017). Both also mention legitimacy, yet there are different meanings connected to this term and public awareness is placed underneath different terms.

2.3 SHOCK EVENTS

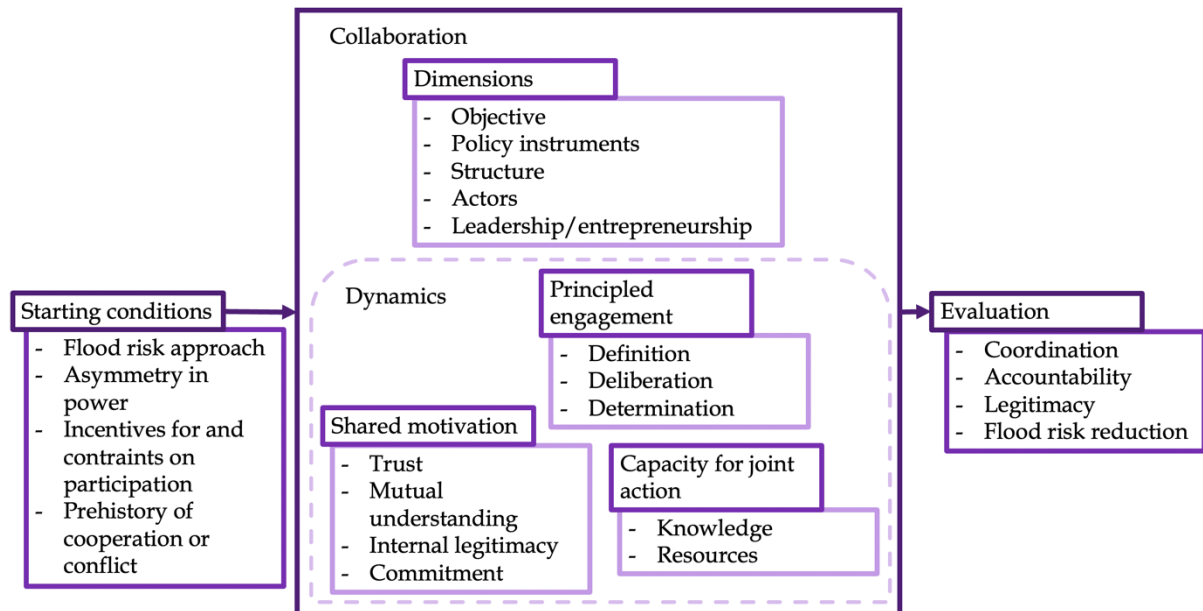
FIGURE 4 TRANSBOURDNARY WATER REGIME CYCLE (RENNER ET AL., 2020)



Considering the flood that occurred this summer in the Rhine River it is also important to understand shock events and their possible influence. A shock event is seen as an event that creates considerable stress waves in society (Kaufmann et al., 2016). This event is sudden, relatively uncommon, can be defined as harmful to a particular area or community, and is known to policy makers and the public at the same time. These kinds of events can draw action and/or possibly change policies on the long-term. Shock events can provide a critical impulse for policy change (Huitema & Meijerink, 2010), especially for policy entrepreneurs this will open a problem window that allows changes to be made. Renner et al. (2020) also see the importance of shock events as an influence on the creation of cross-border water regimes (Figure 4).

2.4 CONCEPTUAL MODEL

FIGURE 5 CONCEPTUAL MODEL



With the above mentioned literature, the conceptual model as shown in Figure 5 is created to understand and evaluate the ICPR. In the starting conditions, the first point that is investigated is the kind of flood risk approach that is used in the different countries. Here a distinction is made between prevention, defence, mitigation, preparation, and recovery (Wiering et al., 2017). For the collaboration, it is important to see where on the river the countries are located as this influences the asymmetries in power, which is the second starting condition that will be investigated (Ansell & Gash, 2007; Zeitoun & Warner, 2006). The asymmetry in knowledge and resources are not in the starting conditions as these two elements are looked at later on in the collaboration part. The last two starting conditions are in line with Ansell & Gash (2007) and are the incentives for and constraints on participation, and the prehistory of cooperation or conflict. With the incentives, possible shock events that might have influenced the creation of the collaboration are also considered (Renner et al., 2020).

When analysing the collaboration itself first the dimensions, as described by Renner et al. (2020), are investigated. These are the objective, policy instruments, structure, actors, and leadership and entrepreneurship. Only the resources are left out of these dimensions as this is also part of the capacity for joint action described by Emerson & Nabatchi (2015) and is being looked at in that part. The objective (Renner et al., 2020) that is mentioned in the dimension part does overlap with the discovery part of principled engagement (Emerson & Nabatchi, 2015), which is why this is left out in the dynamics part. In the capacity for joint action, the procedural or institutional arrangements and leadership are left out as these overlap with the structure and leadership and entrepreneurship dimensions (Renner et al., 2020). For principled

engagement, the research investigates the process of definition, deliberation, and determination (Emerson & Nabatchi, 2015). With shared motivation, trust, mutual understanding, internal legitimacy, and commitment are investigated. And in the capacity for joint action, the two elements are knowledge and resources.

To evaluate the ICPR's successfulness the research investigates coordination, accountability, legitimacy, and reduction of flood risk. This is a combination of Huitema & Meijerink (2017) and Hegger et al. (2014) as both mentioned coordination and accountability, for legitimacy the definition of Huitema & Meijerink (2017) is used as this form of legitimacy is part of the effectiveness of Hegger et al. (2014). Both mention effectiveness, yet the one of Hegger et al. (2014) is used as this focuses specifically on flood risk reduction, here the part of public awareness is left out as this is mentioned in the legitimacy part. The name is however changed from effectiveness to flood risk reduction as this is a clearer definition of what is being investigated. The efficiency mentioned by Hegger et al. (2014) is not included as the commission does not share the costs of measures and the evaluation is also about the whole commission and not one project.

2.5 OPERANILISATION

For the first starting condition the different approaches to flood risk are being investigated as defined by Wiering et al. (2017). Here it is explored if the countries have a focus on prevention, defence, mitigation, preparation, and/or recovery. It is also interesting to see if the flood risk approach has been changing and if there is a perceived influence of the ICPR in this. With the power asymmetries that are mentioned by Ansell & Gash (2007) it is investigated what location the countries have in the river basin. This shows the upstream and downstream countries which is important for the power position of the countries (Ansell & Gash, 2007; Zeitoun & Warner, 2006). Next to this, it is explored if all parties have the organisational infrastructure to represent themselves properly in the collaborative governance (Ansell & Gash, 2007). It is investigated if all the delegations are individually represented in the committee and if all of them are equally represented. With the incentives and contains it is important to understand what the incentives are for the stakeholders to engage in the collaboration. It is also interesting to look if there were shock events that were the basis of this collaboration (Renner et al., 2020). Next to this, it is investigated what the expectations are from this collaboration, in terms of results, and if there were any constraints for this collaboration (Ansell & Gash, 2007). Lastly, the research looks at the prehistory of cooperation and/or conflict that exists between the participating countries. All indicators used in the research for the starting conditions and their sources are shown in Table 1.

TABLE 1 INDICATORS AND DATA SOURCES OF THE STARTING CONDITIONS

Starting condition	Indicator	Data source
Flood risk approach	Kind of flood risk approach: prevention, defence, mitigation, preparation and/or recovery Is flood risk approach changing? Influence of ICPR	Literature & interviews
Power asymmetry	Location in the river basin	Literature
	Is every delegation represented?	Documents
	How many departments are represented per delegation?	Documents
Incentives for and constraints on participation	Reasons to take part in collaboration	Documents & literature & interviews
	Shock events that led to collaboration	Documents & literature
	Reasons not to take part in collaboration	Documents & literature & interviews
	Expectations of collaboration	Documents & literature
Prehistory of cooperation or conflict	History of cooperation	Documents & literature
	History of conflict	Documents & literatures

The first element of the collaboration dimensions is the objectives dimension of Renner et al. (2020). Here it is investigated if one clear common objective is formulated while taking all different interests and values into account. It is here also explored if this common objective is in line with the objective of the countries themselves. Next to this it is also analysed if joint policies are present looking at scope, bindingness, and compliance. There also needs to be a form of ensuring implementation, this is done by creating international and national plans. Lastly, the objective dimension will investigate the mechanisms in place to evaluate the results of the committee. With the second dimension, the policy instruments, and the kind of incentives that are being used are investigated. This can for example be financial incentives, reducing uncertainty, or reducing transaction costs. Next to this it is also explored if the policies and goals comply with the other international obligations, which in this case is the flood directive (European Commission, n.d.). The third dimension that is being investigated is structure (Renner et al., 2020). Within structure, there are three main elements explored: the institutional and organisational design, how the different actors can effectively be involved on different levels, and the extent to which the external stakeholder involvement is organised. The institutional design can be described by the organisational structure and the governance mechanisms that are provided by the commission (Schmeier, 2014). The organisational structure is about having an organisational chart, regular meetings, the availability of a secretariat and their tasks, and the financial structure. The governance mechanism is about the

decision-making mechanisms that can be found in the collaboration. The second element of structures is about how the different actors can effectively be involved, here mechanisms that are used to provide this are analysed (Renner et al., 2020). The involvement of external stakeholders is about if they are involved, and which external stakeholders are involved. With the actors dimension, it is investigated who exactly is involved in the collaboration and if this shows inclusive representation. Next to this personal and professional commitment is investigated by analysing the mechanisms in place to bridge cultural and language barriers. With the leadership/entrepreneurship dimension, it is investigated if skilled professionals are put in the working groups and leadership roles. It is also analysed if third parties, outside experts, and neutral mediators are involved. Here it is about the protocols for people taking part in the working groups and those leading them, and the mechanisms that are in place to involve the third parties, outside experts and neutral mediators. Table 2 gives an overview of all the indicators for the different dimensions and the data source used to find the indicator.

TABLE 2 INDICATORS AND DATA SOURCES OF THE COLLABORATION DIMENSIONS

Dimensions	Indicators	Data source
Objective	One common objective within the commission	Documents
	Objectives of countries comply with objective ICPR	Documents
	Presence of joint policies	Documents
	Creation of joint agreements on scope, bindingness, and compliance	Documents
	Creation of international plan	Documents
	Creation of national plan	Documents
	Mechanisms for evaluating	Documents
Policy Instruments	Kind of incentives used	Documents
	Are international obligations considered?	Documents
Structure	Organisational chart available	Documents
	Regular meetings	Documents
	Existence of secretariat and their tasks	Documents & interviews
	Financial structure	Documents
	Decision-making mechanisms	Documents & interviews
	Mechanisms to involve all actors	Documents & interviews
	Which external stakeholders are involved?	Documents
Actor	Inclusive representation	Documents
	Mechanisms to overcome cultural and/or language differences	Documents & interviews
Leadership/ entrepreneurship	Protocols for those taking part in the committee and those leading it	Interviews
	Mechanisms to involve third parties, neutral mediators, and experts	Documents & interviews

For the collaboration dynamics the first element of principled engagement is definition, this is about creating shared terminology that is used within the committee (Emerson & Nabatchi, 2015). With the deliberation part of principled engagement, all parties must have the opportunity to voice their opinions within the collaboration. To achieve this, it is needed to see what mechanisms are used to provide this and if actors also feel they have the freedom to voice their opinion. Next to this, it is also investigated if there is a conflict resolution protocol in place to help discussion take place in a civil manner. With determination two parts need to be identified, the first is the procedural decision. Here the protocols in place for agenda setting, tabling a discussion and assigning working groups are investigated. The second part is the substantive decisions which are about the protocols for reaching agreements for action plans and the fact that one common action plan is created.

The first element of shared motivation is trust, here it is analysed if the members do have the opportunity to get to know each other, as this influences the trust level (Emerson & Nabatchi, 2015). Next to this, the other parties need to be seen as predictable, dependable, and reasonable which is something that builds on successful events of the collaboration. The second element is mutual understanding and here it is needed to see if the collaboration creates a safe space so that everyone feels free to partake in the discussion. Mutual understanding is also about all points of view, of the different countries being considered. Going into the internal legitimacy part is important that the collaboration is seen as useful by the participating countries. This usefulness is not only in reaching the goals set by the collaboration but might be found in other aspects. The last element of shared motivation is commitment, here the dedication of the different countries is being investigated. This is measured by the amount of time put into the committee by the individual countries, so if all of them are always taking part in the meetings if this is done actively and uninterrupted, so with uninterrupted membership of the committee.

The last part of the dynamics is the capacity for joint action, which first dives into the knowledge process (Emerson & Nabatchi, 2015). Here it is investigated if knowledge is shared between the different countries, but also that knowledge is created together. It is important to see which mechanisms are in place to share knowledge and create it. Lastly, the capacity for joint action explores other resources, first, it is analysed if and how financial resources are shared between the countries. Next to this, it is also investigated if other resources are also shared between the countries, this can for example be about expertise or technologies. Table 3 shows the overview of the indicators used and their sources for the collaboration dynamics.

TABLE 3 INDICATORS AND DATA SOURCES FOR THE COLLABORATION DYNAMICS

Dynamic	Element	Indicator	Data source
Principled engagement	Definition	Shared terminology is created	Documents
	Deliberation	Mechanism used to let everyone voice their opinion	Documents & interviews
		Perceived freedom to voice opinions	Interviews
		Protocol for conflict resolution	Documents
	Determination	Protocols for agenda setting, tabling a discussion and assigning working groups	Documents & interviews
		Agreement on one common action plan	Documents
		Protocols to reach agreement	Documents
Shared motivation	Trust	Mechanisms in place to get to know each other	Documents & interviews
		Successful events of current collaboration	Documents & interviews
	Mutual Understanding	Perceived safe space	Interviews
		Perceived tensions	Interviews
		Mechanisms to consider all points of view	Documents & interviews
	Internal legitimacy	Perceived usefulness of collaboration	Interviews
	Commitment	Frequency of taking part in the meetings	Documents & interviews
		Actively taking part in meetings	interviews
		Uninterrupted membership	Documents
Capacity for joint action	Knowledge	Mechanisms to share knowledge	Documents & interviews
		Mechanisms to create knowledge together	Documents & interviews
	Resources	Mechanisms to share financial resources	Documents & interviews
		Sharing other resources	Interviews

With the evaluation of the collaboration within the countries, first the coordination is explored. This first looks if there is vertical cooperation in the countries for the implementation of measures (Huiteima & Meijerink, 2017). Next to this, it is investigated if the coordinating authority works with other policy sectors. With accountability, it is important to understand which authority is monitoring the implementations, if they have the capacity to do so, and if there are any consequences if targets or goals are not met. With external legitimacy, it is explored if the countries are trying to increase public awareness of flood risk. Here it is analysed which tools are used, as only knowledge and direct experience increase public awareness (Lechowska, 2018). It is here also investigated if a certain part of the population is targeted with the tools, as it is shown that social status also influences public awareness (Burningham et al., 2008). Lastly, it is explored what the perceived level of flood risk reduction is in the countries due to the ICPR and due to the initiatives of the countries themselves (Hegger et al., 2014). The indicators and the sources used to find them are shown in Table 4.

TABLE 4 INDICATORS AND DATA SOURCES FOR THE EVALUATION

Evaluation element	Indicator	Data source
Coordination	Vertical cooperation within country for implementation	Documents & literature & interviews
	Working together with other policy sectors	Documents & literature & interviews
Accountability	Who is monitoring implementation?	Documents & literature & interviews
	Do they have to capacity for this monitoring?	Documents & literature
	Are there consequences if targets are not met?	Documents & interviews
External legitimacy	Tools used to raise public awareness on flood risk	Literature & interviews
	Population targeted with tools	Literature & interviews
Flood risk reduction	Perceived level of flood risk reduction by ICPR	Documents & interviews
	Perceived level of flood risk reduction by country itself	Literature & interviews

3. METHODOLOGY

3.1 RESEARCH STRATEGY

The research strategy is the overall design or logical procedure that is followed throughout the research (van Thiel, 2014). The four main research strategies are experiments, surveys, case studies, and desk research. In this research, a case study strategy is used in combination with the desk research strategy. A case study is used to investigate a phenomenon in a real life, it allows for investigation of what was planned to happen and what occurred (Noor, 2008). This is in line with the aim of this thesis as this is to explore and evaluate the collaboration of the ICPR and evaluate the ICPR in different countries. This research has a small number of units, the ICPR and the five participating countries, and a large number of variables, as shown in Chapter 2.5. This makes that only the case study and desk research are applicable for this research (van Thiel, 2014). The desk research strategy uses already existing data, which can either be primary or secondary and does not interfere with the researched situation. This strategy is used to support the case study on the inner workings of the ICPR, their programs, and to evaluate the successfulness in the participating countries. In selecting the ICPR there are two important reasons why this particular case was chosen. Firstly, the floods in the summer of 2021, which led to huge damages (ECDC, 2021), secondly the ICPR is one of the oldest international river organisations on environmental aspects as it was created in 1950 (ICPR, n.d.-c; Schulte-Wülwer-Leidig et al., 2018). Within the ICPR only the countries that are legally members of the ICPR are investigated. This is because they have been part of the committee from the beginning, they all have the same role, and also to limit the number of units measured.

3.2 METHODS AND DATA COLLECTION

In line with the strategies that are used in the research, case study and desk research, the methods used are content analysis and interviews (van Thiel, 2014). At the start of the research, content analysis is performed, which means that the contents of certain documents, spoken, or filmed data is interpreted (Bengtsson, 2016; van Thiel, 2014). With content analysis first relevant material is collected, for this thesis, these are convention documents, created programs, the rules and regulations, and the existing assessments of the ICPR. Next to this, documents from the Sustainable Governance Indicators are used to understand the implementation processes in the countries. These materials are all forms of primary data sources, as these documents are not created for research purposes (van Thiel, 2014). Secondary data, which means findings from other researchers, are also used when necessary to support findings and to gather more in-depth understandings.

Within the case study only the ICPR and the official members are chosen to investigate and to be evaluated: France, Germany, Luxembourg, Switzerland, and the Netherlands (ICPR, n.d.-f). These countries form a heterogeneous set of cases as they have different sizes and levels that the committee is important for the country (van Thiel, 2014). This makes that the differences between the cases will most likely be noticeable in the outcome of the evaluation.

For the research, there are also semi-structured interviews conducted. Interviews are a flexible way of collecting data as it provides the opportunity to ask supplementary questions to gain more background information or added explanation (Kallio et al., 2016; van Thiel, 2014). To perform semi-structured interviews base knowledge of the topic is needed as this provides the basis for the interview guide (Kallio et al., 2016), which can be found in Appendix 1. During the interviews first, an introduction to the research is given, after this, the interviewee is asked for consent to record the interview, so that it can be transcribed in detail. Here it is also mentioned that the research itself will not include any names so that everyone feels at ease to answer freely to the questions. After this, the questions part of the interview will take place, here the interview guide can loosely be followed as the conversation might create a different order of the questions and creates new questions. After this, the interview is concluded, and the interviewee is thanked and gets a chance to also respond to the interview.

For the interviews, it is important to see which participants are interesting, in this research these were the people taking part in the working groups, people from the secretariat, NGOs, observers, and old members of the committee. Via e-mail, these people have been asked to partake in the interviews and of the 18 asked, 10 responded and took part in an interview. Furthermore, the snowballing strategy was used and some of the interviewees recommended other people who could take part in the interviews. Table 5 shows the function of the interviewees and the date on which the interviews took place. Overall, 10 interviews have been conducted for this research.

TABLE 5 OVERVIEW INTERVIEWEES

Number	Function	Date
Interviewee 1	Delegation member	18-05-2022
Interviewee 2	Delegation member	19-05-2022
Interviewee 3	Leader working group	24-05-2022
Interviewee 4	Secretariat member	24-05-2022
Interviewee 5	Delegation member	30-05-2022
Interviewee 6	Old leader working group	01-06-2022
Interviewee 7	Delegation member	01-06-2022
Interviewee 8	Old member secretariat	07-06-2022
Interviewee 9	Observing member	09-06-2022
Interviewee 10	Old member secretariat	16-06-2022

3.3 DATA ANALYSIS

The data that is analysed is qualitative, which means that it is about non-numerical units of information (van Thiel, 2014). To analyse the data of the documents and the interviews a coding tree was made, which can be found in Appendix 2. To start analysing the data of the interviews they first need to be transcribed. This is done by creating an intelligent verbatim transcription (Brooks, 2021). This means that the whole interview has been transcribed while leaving out pauses, filler words, repeated words and punctuation can be added to long, run-on sentences. The documents of the ICPR and SGI and the transcriptions of the interviews are placed in Atlas.ti, which is a coding program. With this program, a clear overview of the gathered data is created, and the data can easily be analysed. It is important to note that some of the interviews are done in Dutch when this was the native language of the interviewee, which means that the findings of these interviews have been translated into English as close as possible. The Dutch version of the interview guide is also included in Appendix 1.

3.4 RELIABILITY AND VALIDITY

Reliability is about the accuracy and consistency of the research (van Thiel, 2014). Validity is divided into internal and external, internal validity is about what is measured is the same as what was supposed to be measured. External validity is if the research findings can be generalised. Case studies in general have lower reliability and external validity due to the small number of units used (Noor, 2008; van Thiel, 2014). Triangulation is used to help increase the reliability and the external validity. Triangulation is about processing and collecting data from different sources, using different operationalisations, and using different methods (van Thiel, 2014). By also using the desk research strategy and the content analysis the reliability and validity are increased. The fact that multiple heterogeneous cases are selected also increases the reliability and external validity of the research. The use of a semi-structured interview, and holding multiple interviews, also increases the reliability and validity of the research, as the questions are guided by the theoretical framework. The internal validity is also helped by interviewing people in different positions within the case. Next to this the use of Atlas.ti also helps to increase the reliability of the research, as all the documents and interviews are systematically coded.

3.5. RESEARCH PARADIGM

It is important to understand the philosophy of the researcher as this is about their personal beliefs (van Thiel, 2014). To understand the paradigm that the researcher has it is important to understand the ontological position, epistemological position, the model of man, and methodological position. Ontology is about the nature of what is being studied, so if reality truly exists. Epistemology is about if we can know reality and if there is only one reality that is the same for everyone. The model of the man is about the question if people have free will, or if they are predictable. With the methodical position it is important to see if natural science is used to study humanities. Answers to these questions make that there is either an empirical-analytical approach or an interpretative approach. In this research there is an interoperative approach as the researcher believes that reality is subjective and there is not one reality. It is also believed that humans have free will and that there is no natural science used to study humanity.

Guba & Lincoln (1994) divided the two paradigms of van Thiel (2014) into two more. The empirical-analytical approach is divided into positivism and post-positivism, the interpretative approach is divided into critical theory and constructivism (Guba & Lincoln, 1994). The difference between the last two can be found in the ontology and methodology. Critical theory believes that reality is influenced by history and that structures are seen as real. Constructivism believes that reality is culturally related and that constructs are created by those holding the construct. The methodology of critical theory says that dialogue between the researcher and the subjects is needed, constructivism also is about a conversation about researcher and subject. In this research the constructivism paradigm is held as the role of the researcher is important in gathering the data and interpreting the interviews. This makes that it is not only a conversation between but also about the researcher and the subject.

This is important to understand as the information gathered during the research is analysed through the lens of the researcher. As the researcher is part of the conversation and sees reality as subjective this influences the outcomes of the research.

4. RESULTS & ANALYSIS

4.1 STARTING CONDITIONS

Chapter 4.1 answers the first sub-question: What are the starting conditions of the ICPR as a form of collaborative governance in the participating countries? The flood risk approach, asymmetry in power, incentives and constraints, and prehistory of cooperation are investigated, starting with the flood risk approach.

4.1.1 FLOOD RISK APPROACH

With the help of an extensive literature review Table 6 was created. This shows the flood risk approaches that are traditionally found in the countries that participate in the ICPR. These traditional flood risk approaches of the countries are however changing in the countries, towards a more integrated flood risk management, which includes multiple approaches. Following the interviews, this can be connected to the collaboration between the countries. The collaboration influences flood risk approach as there is information exchange on how they handle the issue and there are discussions on the issue. This makes that the collaboration influenced the national program, but the commission also played an important role in the creation of the flood directive of the EU, as mentioned by most of the interviewees.

TABLE 6 FLOOD RISK APPROACHES

Germany	France	Luxembourg	Switzerland	Netherlands
Defence (Otto et al., 2018)	Prevention (Wiering et al., 2017)	Preparation (Centre for Climate Adaptation, n.d.)	Defence (Nordbeck et al., 2019)	Defence (Wiering et al., 2017)

In Germany, the flood defence approach was many about building dikes, channel straightening and detention basins (Otto et al., 2018; Thomas & Kottke, 2016). There is a shift going on in Germany from this defence toward flood risk management which is also about preparedness and prevention. This change, to a more integrated approach, is also connected to the EU water framework directive and the EU flood directive (Thomas & Kottke, 2016). In France, the main approach is prevention which is shown by the fact that there are non-buildable areas assigned by the state (Larrue et al., 2016). Nowadays defence is the second most important approach by building dikes, dams, and retention basins (Larrue et al., 2016; Wiering et al., 2017). The other three approaches are also already found in France in de forms of green roofs and urban green spaces (mitigation), flood warning systems, crisis communication, and forecasting (preparation), and insurance systems and repair works (recovery) (Larrue et al., 2016). Here the influence of the EU flood directive and water framework directive is also mentioned. In Luxembourg, the main strategy is preparation which is

mainly found in the fact that the water courses are continuously monitored (Centre for Climate Adaptation, n.d.). There is here a change going on towards more of a defence strategy by creating retention basins. In Switzerland, there is a shift from the construction approach, such as dikes and retention areas, towards a more spatial planning approach and nowadays an integrated approach (Metz & Glaus, 2019; Nordbeck et al., 2019). This mainly focuses on prevention by making sure that people don't live in certain places and in the last century preparation is also becoming more important by information exchange and information (Metz & Glaus, 2019). In the Netherlands, the defence approach can be found in the creation of dikes and other technical infrastructures, as the coastal defence works (Avoyan & Meijerink, 2020; Wiering et al., 2017). It is noted that the Netherlands still mainly focuses on defence measures and there is low diversification (Wiering et al., 2017). There are however still some changes in the flood risk approach as the environmental effects of these measures were not accepted anymore and eventually, a multilayer safety approach was created where prevention, mitigation and preparation were also considered (Avoyan & Meijerink, 2020).

As mentioned by some of the interviewees and some of the literature on the flood risk approaches of the different countries the EU directives (Water Framework and Floods) also play a role in the change of flood risk approach. These directives were inspired by the work of the ICPR, and both have a focus on the whole river basin. These changes are also in line with the worldwide focus on IWRM which is also used in the EU directives (Rahaman & Varis, 2005; Richter et al., 2013).

4.1.1.1 ANALYSIS

It is noticeable that the first starting condition, the flood risk approach, was different in the countries. However, all of the countries are indeed showing a change in the flood risk approach, which can be linked to both the collaboration of the ICPR and the EU directives. Switzerland is not part of the EU, and the delegation of Switzerland mentions that they are therefore not influenced by these directives. It is noteworthy that the countries are mainly adopting approaches that were historically dominant in one of the other countries. The three main approaches of the countries also play an important role in the current flood risk approach of the Rhine 2040 plan (ICPR, 2020b). Mitigation is also found in this plan, but in a less prominent role, and recovery is not part of the plan, this is also very limited mentioned in the other countries outside of the existence of insurance.

4.1.2 ASYMMETRY IN POWER

Figure 6 shows a clear overview of the catchment area of the Rhine River and the location of the different countries in this. This shows the upstream and downstream locations of the countries. Switzerland is the upstream country of the Rhine, together with Austria, Liechtenstein, and Italy. France, Germany, and Luxembourg are located in the middle, they are both influenced by the upstream, and they influence the downstream countries. They also have parts of the basin in these countries that are not being influenced by the upstream countries as new rivers enter the basin. The

Netherlands is the downstream country which makes that they are influenced by the upstream countries, and this gives them less power. This location in the river is also noticed by the interviewees as the delegation of Switzerland does not notice any of the flood measures taken by other countries, Germany, and Luxembourg both mentioned that they would notice France their measures. The Netherlands does mention that they do notice all the upstream measures, as the longer the water stays upstream the less the water affects them.

FIGURE 6 CATCHMENT AREA RHINE RIVER (SCHULTE-WÜLWER-LEIDIG ET AL., 2018)



The second element of power asymmetry is the representation in the ICPR, all the countries are represented in the committee (ICPR, n.d.-f). There is however a difference in the number of departments that are represented in the committee for the different countries. Germany is represented by four ministries/departments: the federal ministry for the environment, nature conservation and nuclear safety, the ministry of transport and digital infrastructure, the ministry of foreign affairs, and by the federal states of Germany that are part of the Rhine River basin. For France the delegation has representatives from three ministries/agencies: the ministry of foreign affairs, the ministry of ecological and inclusive transition and the Rhine-Meuse water agency. Luxembourg is represented by two ministries: the ministry of home affairs and the ministry of environment, climate, and sustainable development. Switzerland is also represented by two departments: the department of environment, transport, energy, and communications and the department of foreign affairs. And lastly, the Netherlands is also represented by two ministries: the ministry of infrastructure and water management and the ministry of foreign affairs.

4.1.2.1 ANALYSIS

With the second starting condition, power asymmetry, the upstream and downstream locations of the countries do influence how the measures taken in other countries affect the country. This is also seen by the countries themselves. There is also solidarity found between the countries, this means that even if one country does not feel much effect of a measure, but another will feel the effect, the country will still implement the measure. With flood risk, this means that even if an upstream country does not feel much effect of a measure, they will still implement it to help the downstream countries. This solidarity makes the power imbalances not that noticeable within the work of the committee. Next to this, floods happen in all the countries which makes it an important topic for all of the countries (Most of the Interviews). This makes that the upstream countries not only take measures for the downstream countries, but also themselves.

All of the countries have representatives of the ministry that is in charge of water management and every country, except for Luxembourg, have representation of the foreign affairs ministry or department which is in line with the fact that international collaboration on water management is taking place. Luxembourg has instead chosen for representation by the ministry of home affairs, which is more logical as the department for planning and urban development is part of this ministry and they oversee the spatial planning process (The Luxembourg Government, 2022). Next to this, the France delegation has representation by the Rhine-Meuse water agency, which shows a difference in how the coordination in the country itself is organized. Germany has the addition of infrastructure, which has to do with navigation and this is important to them, and they have representatives for the different federal states which shows the way the country is organised as decisions are mostly made in the federal state. With the differences in the number of departments that are represented in the ICPR, this does not so much lead to power imbalances. This is partly since the size of the country is in line with the number of representatives and the fact that the largest part (56%) of the Rhine River basin is located in Germany, this is however not

the case with France (ICPR, 2020c). For the bigger countries, it is more important to have more departments take part in the committee as the coordination in these countries is more widespread. None of the countries do however feel that this creates a power imbalance which also has to do with the fact that in the secretariat they do specifically have people from all countries working there (Interviewee 7) and the leaders of the working groups are also never just from one country, and they should also represent the three official languages (Interviewee 3 & 4). The last reason why this does not lead to power asymmetries is as there needs to be a unanimous vote for decisions to go through (Interviewee 6, 7 & 9). So the power asymmetry starting condition of the ICPR is not felt due to solidarity and unanimous votes.

4.1.3 INCENTIVES FOR & CONSTRAINTS ON PARTICIPATION

In this part, there will be a separation between the incentives and constraints that existed when the ICPR was first created in 1950 (ICPR, n.d.-b) and the incentives and constraints that existed when floods were added to the commission (ICPR, n.d.-e).

4.1.3.1 CREATION OF ICPR

During the industrial revolution the Rhine River was used for wastewater from factories, this created a lot of pollution in the water (ICPR, n.d.-h). The Netherlands faced the consequences of this as it is downstream, while the river is of great importance as the country also uses water for the drink water supply and agriculture. The Dutch therefore first mentioned the state of the water quality in 1922 and again in 1928 in the Salmon Commission together with the impact of the water quality on the Salmon (Mostert, 2008). Later on, in 1932, the Dutch also went to Paris and Berlin to discuss the problem (ICPR, n.d.-h). This made that the problem was once again discussed in 1933 in the Salmon commission, at this moment de Salmon also started to disappear quickly, due to overfishing and the water quality (Mostert, 2008). At this point, it was however not possible to consider the water quality due to the recession that was happening at the time, and later on, the Second World War happened. In 1946, right after the war, the Dutch did manage to raise awareness of the water quality problem again and in 1948 the Salmon commission added water quality to the agenda. It was however later decided that this issue would need a new commission, which led to the creation of the ICPR.

The incentives for the Netherlands were very clear as they were focussing on increasing the water quality as they needed the water for drinking water and agriculture. For the other countries, the water quality was mainly important when looking at the salmon population and this was their incentive to start the ICPR. Next to this, another incentive to create the committee was to establish peace in Europe (Interviewees 3, 6, 10). This ICPR is then also seen as the first successful collaboration that took place after the Second World War (ICPR, n.d.-b).

The Second World War did however on its own also created some constraints on the collaboration. This was mainly seen in the fact that Germany in the beginning only was allowed to participate under the supervision of the allied forces (Interviewee 10). This shows that the involvement of Germany, which is the country with the biggest surface area of the Rhine Basin, created some constraints for countries to participate in the collaboration.

The expectations that the countries had were at the beginning of the cooperation only to monitor the water quality (ICPR, n.d.-h). When the cooperation was officially founded this expectation was altered a bit as this monitoring was also done to find joint solutions for the problem (ICPR, n.d.-b).

4.1.3.2 ADDITION OF FLOODS

The incentive for adding floods to the commission was created after the disastrous floods in December 1993 and January 1995 (ICPR, n.d.-e). These floods happened in Germany and the Netherlands, and these floods were the main driver to add floods into the commission. The Sandoz accident also played an important role in the incentive to add more topics to the committee. On the first of November 1986, after a fire in a warehouse, thirty tons of pesticides mixed with firefighting water flowed down the Rhine River killing fish and other organisms along hundreds of kilometres (ICPR, n.d.-j). This created that the public along the whole Rhine showed solidarity and public pressure was also put on the states to work together in the ICPR. This led to the creation of the first combined action plan and the success of this created the incentives for the countries to also work together on the topic of floods. With the addition of floods, it is seen that a shock event does create new impulses for international cooperation, this is also mentioned by Interviewee 8. Interviewees 3, 4, 6 and 10 also mention that there was also a lot of public pressure for the states to work together on the topic of floods.

The addition of floods to the committee made that a new convention on the protection of the Rhine was signed in 1999 (ICPR, 1999). This new convention made the objective of the ICPR much more integrated as both the qualitative and the quantitative aspects of the surface and groundwater is now considered (ICPR, n.d.-e). This also lead that this new principle of integration was also found in the fact that the industry, energy, agriculture, and navigations also needed to be taken into account. This same, more integrated approach can be found in the fact that at the time the EU water framework directive was created (European Commission, n.d.). The creation of the EU directives on this topic was done simultaneously, also to create a more integrated approach, and sometimes even with the same people (Interviewee 4). The way that the ICPR created this integral approach was used as an example for the European Commission (Interviewee 4, 6, and 8).

Even though there was a strong incentive to add floods to the ICPR, there were constraints to this by Germany (Interviewee 8). This was as the experts of the countries believed this would make the cooperation too complicated, as in Germany there already is a lot of coordination needed between the different federal states and adding in the other countries this would become too complicated. Yet due to the pressure of the public and the high public awareness at the time the country did give an accord on adding floods to the ICPR.

The expectations at this time were high as the first Rhine Action Program was already seen as a success, and this made that it was this time also expected that a new action plan would be created (ICPR, n.d.-e). This also made that, as mentioned, the public this time expected a lot of the Action Plan on Floods as well. By the participating countries, it was expected that the action plan would protect people better against floods, the countries would be better prepared for floods, and the floodplains would be expanded and upgraded by 2020 (ICPR, n.d.-a).

4.1.3.3 ANALYSIS

The starting condition of the incentive is both at the start of the ICPR and when flood risk was added similar, as in both instances there is a problem that needs to be fixed, yet the creation of the ICPR was also for ensuring peace. With the addition of floods there was also a shock event that made it possible to widen the view of the committee, this was not the case when the ICPR was created.

The constraints for the collaboration when the ICPR was created was from the other countries working with Germany, yet as mentioned by Interviewee 10 due to the collaboration trust between the countries was once again established which made these constraints were not found again. The constraint of Germany to add floods is something that is found in other moments of the collaboration. Interviewee 2 mentioned that the ICPR want to shift the focus more to the side rivers, and this is in their opinion also making the collaboration too complicated.

The starting conditions of expectations of the collaboration did change a lot over time, in the beginning, it started with creating a combined monitoring system and finding joint solutions, when flood was added this was also for creating an integrated approach and an action plan. This does show that the actions of the ICPR have changed over the years to taking more active measures. The countries are however all on the same page on what they expect from the collaboration.

4.1.4 PREHISTORY OF COOPERATION OR CONFLICT

The first collaboration that happened internationally at the Rhine River was at the end of the 18th century (Broseliske et al., 1991). This had to do with shipping and freedom of navigation which resulted in the international system for shipping rights in 1815 and was followed by an international treaty on navigation in 1831. In 1885 the Netherlands, Switzerland, and Germany created the Salmon Commission to protect the Salmon in the Rhine, in 1894 Luxembourg was also added to the Salmon Commission (Ecolex, n.d.-b).

In 1887 there was a treaty which involved France, Germany, and the Netherlands, this treaty is about traffic on the North Sea (Ecolex, n.d.-a). France and the Netherlands were both part in treaties on fishery commissions for the South Pacific and the Asia Pacific in respectively 1947 and 1948. Both countries also withdrew their memberships of these committees as they do not have colonies here anymore. In 1950 there was a treaty signed by France and Luxembourg, together with Belgium, for a committee to focus on water pollution in these three countries.

All of the countries have been part of big international treaties that were deemed successful, these were the international convention of the regulation of whaling, in 1946, and the treaty regulating the status of Spitsbergen in 1920 (Ecolex, n.d.-a).

In the 20th century, there is also conflict found between the countries, especially with Germany because of the two World Wars that happened (Mostert, 2008). These conflicts were big and still leave their mark on the countries, yet they were not water conflicts.

4.1.4.1 ANALYSIS

With the last starting condition, the prehistory, the Salmon Committee was the most important as this created the basis for the ICPR (Mostert, 2008). This makes that this collaboration plays an important role in the existence of the ICPR, yet there is a combination of good collaboration, also in the other committees and treaties that all influence this. It is also seen that water quality was an important topic at the moment of creation and that international collaborations were also popular, as the same kind of committee was established in the same year between France, Luxembourg, and Belgium.

The wars did also influence the collaboration, as it was harder to come together, and Germany was only allowed to participate with the approval of the Allied Forces (Interviewee 10). Next to this, the conflict did also provide more need for collaboration as it was also used to establish peace (Interviewee 3, 6, and 10).

4.2 COLLABORATION

In Chapter 4.2 the second sub-question will be answered: What are the procedural and interrelation dimensions of collaborative governance within the ICPR? To do so first the collaboration regime dimensions are explored and after that, the collaboration dynamics are investigated.

4.2.1 COLLABORATION REGIME DIMENSIONS

4.2.1.1 OBJECTIVE

It is important for the collaboration that one shared objective is created; this is done in the ICPR. In 1999 a new convention was signed that for the first time had an integrated approach (ICPR, 1999). In the Rhine 2020 program there was no overall objective created (ICPR, 2001b), in 2020 a new overall objective for the committee was created in the Rhine 2040 program (ICPR, 2020b). The first objective on flood risk was created in 1998 at the 12th conference of Rhine ministers (ICPR, 1998b), and a new one is included in the Rhine 2040 program (ICPR, 2020b). All the objectives are shown in Table 7.

TABLE 7 OBJECTIVES ICPR

Focus & year	Objective
Overall objective 1999 (ICPR, 1999, p.3)	<i>"Sustainable development of the Rhine ecosystem, the production of drinking water from the waters of the Rhine, improvement of sediment quality in order that dredged material may be deposited or spread without adversely affecting the environment, general flood prevention and protection, taking account of ecological requirements, to help restore the North Sea in conjunction with the other actions taken to protect it."</i>
Overall objective 2020 (ICPR, 2020b, p.7)	<i>"The 'Rhine 2040' programme aims to create a sustainably managed Rhine catchment area that is resilient to the effects of climate change, with valuable lifelines created for nature and people."</i>
Flood risk objective 1998 (ICPR, 1998b, p.7)	<i>"The Action Plan on Flood Defence aimed at the improved protection of man and material goods against floodings and including the aims of an ecological improvement of the Rhine and its alluvial areas. This Action Plan on Flood Defence ensures that all actors concerned by flood defence are involved in the work and that all plans are co-ordinated."</i>
Flood risk objective 2020 (ICPR, 2020b, p.9)	<i>"Flood risks are reduced by at least 15% on the Rhine and its tributaries by 2040 in comparison to 2020, through an optimal combination of measures."</i>

Next to this, it is relevant to look into the objectives of the countries to see if these comply with the objective of the ICPR. Table 8 gives an overview of the different objectives that are found, in Switzerland the objective is for hazards overall and not just flood risk as they always look at all hazards.

TABLE 8 OBJECTIVES OF COUNTRIES

Country	Objective
Germany	<i>"Avoidance of new risks in the risks area, reduction of exiting risks in the risk area, reduction of adverse consequences during a flood event, and reduction of adverse consequences after a flood."</i> (FGG Rhein, 2021)
France	<i>"Promote cooperation between actors, improve knowledge and develop the culture of risk, sustainably develop territories, prevent risk through balanced and sustainable management of water resources, and prepare for the crisis and promote the return to a normal situation."</i> (Préfet coordonnateur du bassin Rhin-Meuse, 2022)
Luxembourg	<i>"Reduce possible flood damages, that is the negative consequences of floods on human health, the environment, cultural heritage, and economic activities."</i> (Administration de la gestion de l'eau, 2021)
Switzerland	<i>"Switzerland is resistant. The effects of natural events are to be bearable by both society and economy. Switzerland is able to recover. Society and the economy are to be capable of rapidly regaining functional capacity following natural events. Switzerland is able to adapt. Society and the economy adapt in a timely manner to changes in conditions."</i> (National Platform for Natural Hazards, 2018)
Netherlands	<i>"The Netherlands is prepared for future development, will be climate proof and water robust by 2050, and is prepared to provide adequate protection in the event of a (threatening) flood."</i> (Ministerie van Infrastructuur en Waterstaat, 2022)

Next to the common objective there is also a need for joint policies and agreements to be present. In the official Action Plan on Flood Defence the following policies were created and agreed upon by all states (ICPR, 1998a, p.13):

1. **Water is part of the whole:** Water is part of the natural ecological cycle of all surfaces and of land use and must be consider by all fields of policy
2. **Store water:** water must be stored in the catchment area and along the Rhine as long as possible
3. **Let the river expand:** we must let the river expand so that the runoff may be slowed down without any danger
4. **Be aware of the danger:** in spite of all efforts a certain risk remains, we must again learn to live with this risk
5. **Integrated and concerted action:** integrated and concerted action in the entire catchment area is a prerequisite for the success of the action plan

In the Rhine 2040 program the new policies that are agreed upon are the following (ICPR, 2020b, p.19):

1. The flood information, forecast and warning systems are up to date and adequate training is undertaken The nations and/or federal states/regions continue to support each other in the event of a flood
2. The measures to reduce flood levels planned for 2020+ will be implemented by 2030. These represent an effective reduction in flood levels on the Rhine, meaning that the flood risk on the Rhine is significantly reduced
3. Other spaces that go beyond the scope of the measures already planned for 2030 are charted, secured by spatial planning and kept free for use, with regard to flood retention on the Rhine and on the tributaries
4. Synergies are drawn upon between measures to improve flood protection and to improve the ecological situation on the Rhine and its tributaries
5. Underdeveloped flood areas are kept free from development
6. New building and, where applicable, also existing building in flood-prone areas are adapted to the flood risks
7. Consciousness of flood risk and through this, also personal precautions are strengthened through information, training, and the raising of awareness

Then looking at the agreements of the scope on which the created policies apply, this has already been agreed upon in 1999 (ICPR, 1999). The policies apply to the Rhine, the groundwater that interacts with the Rhine, and the aquatic and terrestrial ecosystems which interact or could again interact with the Rhine. It also applies to the Rhine catchment area, insofar as its pollution affects the Rhine, or the catchment area is of importance for flood prevention and protection.

The convention is legally binding and mentions the following ways in which the countries need to show compliance (ICPR, 1999). All parties that signed need to step up their cooperation and inform each other about actions taken. They need to implement the international measuring programmes and inform the commission about the results and analyse pollution to find the cause and parties responsible for this. Next to this it is also agreed upon to initiate action they deem necessary in their territory and inform the commission and other countries in the event of incidents of accidents that could threaten the water quality or floodings.

To ensure the implementation of these agreements an international plan must be created. This was done with the Action Plan on Flood Defence in 1998 (ICPR, 1998a), which was put into the Rhine 2020 program in 2001 (ICPR, 2001b), and is now again created with the Rhine 2040 program (ICPR, 2020b) and the international flood risk management plan (ICPR, 2021b). Next to this, it is important that the countries taking part in the collaboration also create their national plan and this is also done, as shown in the annex of the international flood risk management plan (ICPR, 2021b).

The evaluation of the Action Plan on Flood Defence happened after each implementation period (ICPR, 1998a). This means that the first evaluation did take place in 2000, the second in 2005 and the last in 2020. Between these moments progress is shared in the working group. In the first assessment, four performance targets that were put in the Action Plan on Flood Defence were investigated to see if these targets were reached (ICPR, 2001a). Here it was mentioned that it was not yet possible to determine if the flood risk had not increased, but it was mentioned that the reduction of flood stages is being implemented largely according to schedule, awareness is rising and the expenditures are developing as planned. In the next evaluation, the same targets were looked at, only now what should have been reached by 2005 (ICPR, 2007). In this evaluation it is noted that all of the targets are reached except for reducing the extreme flood stages by 30 cm, this was only achieved in the Upper Rhine. In 2020 the evaluation was done for the whole Rhine 2020 program and not separately for the Action Plan on Flood Defence, and here it was mentioned that all the targets, except for reducing the extreme flood stages by 70 cm, were reached (ICPR, 2020a).

For the Rhine 2040 plan, there will be a regular evaluation of the progress, and the official evaluation will be done in 2030 to see if the goals set for then are reached (ICPR, 2020b). Every six years there are however also reviews of the effectiveness of measures that are taken and those that are planned. The last time this was done was in 2016 when a technical report was published to show how this is calculated and a synthesis report with the outcomes of the calculations for the different types of measures (ICPR, 2016a, 2016b).

4.2.1.1.1 ANALYSIS

The first part of the procedural dimensions, when looking at the objectives of the ICPR, shows that the overall objective is quite broad and the objectives created for flood risk management are more concrete and quantitative. This is in line with the fact that the working group on this topic is more technical/scientific (Interviewee 1 & 2). The objectives of the countries are then again more qualitative and broader, yet all but one do mention the two stages of floods, during and after. Next to this, it is also seen that all the countries and the overall ICPR do show objectives that comply with the IWRM approach, which is logical as this is also used by the EU.

Joint policies and agreements on scope, bendiness, and compliance are present and there are also international and national plans found which ensure the implementation of the objectives. It is however noticeable with the evaluation that, even though this is done consistently, the ICPR does this themselves. There is no outside perspective used in this evaluation.

4.2.1.2 POLICY INSTRUMENTS

Firstly, it is important to see what the overall principles are of the ICPR on which they base their policies (ICPR, 1999, p.4):

1. Precautionary principle
2. Principle of preventative action
3. Principle of rectification, as a priority at source
4. Polluter-pays principle
5. Principle of not increasing damage
6. Principle of compensation in the event of major technical measures
7. Principle of sustainable development
8. Application and development of state of the art and best environmental practice
9. Principle of not transferring environmental pollution from one environment to another

Now looking at the policy instruments that were created with the Action Plan on Flood Defence these were mainly focused on reducing the change with the creation of retention areas and technical solutions, such as creating dikes (ICPR, 1998a). Next to this, some measures focussed on reducing the financial risks by changing the land use in flood-prone areas and measures that reduce uncertainties by improving the forecasting systems and the collaboration between countries.

In the Rhine 2040 program, there is less of a focus on incentives that reduce the change of floods, yet of course, there are still retention areas that need to be created and new areas to create them are still looked for (ICPR, 2020b). Reducing the financial risk has become a larger focus of the measures, still there should not be built in retention areas and undeveloped areas that are located in flood-prone areas are advised to stay undeveloped. For properties that are located in these areas property protection measures should be examined to decrease the financial costs and new buildings that are built in flood-prone areas are to be flood adapted. Next to this, non-technical measures are also looked at such as damage prevention, building precautions, and insurance, but also informing the public about the risks to try and reduce the financial costs. Same as in the Action plan on Flood Defence there are incentives to reduce the uncertainty by improving the flood information, forecasting, and warning, but also by exchanging experiences with parties in civil protection and crisis management. In the Rhine 2040 program, there are also measures added that are focussed on the shared benefits of the countries as they are about improving the knowledge about risk and the effectiveness of different measures. Also, by picking area specific measures that have positive effects on the ecology of the whole Rhine and by exchanging information about property protection and flood adapted buildings.

In the Action Plan on Flood Defence, there were no other international obligations considered (ICPR, 2001b). Yet in the Rhine 2040 program, international obligations are considered (ICPR, 2020b). the EU directives, specifically the Water Framework Directive and the Flood Risk Management Directive are supported by this program.

These directives are only obligatory for EU members, yet Switzerland does support the EU member states in achieving the directives. Next to this, the ICPR does support the EU member states in achieving the directives and also supports the Sustainable Development Goals (SDGs) set by the United Nations. For the SDGs, there was even a separate report created in which the connection between the Rhine 2040 program and the SDGs is explained (ICPR, 2020c).

4.2.1.2.1 ANALYSIS

With the second element of the procedural dimensions of the ICPR it is found that in the Action Plan on Flood Defence the main flood risk approach in the countries was defence. Prevention and preparation were also found in this action plan, but less. In the Rhine 2040 program, it is seen that the flood risk approach is becoming more integrated as also recovery and mitigation are part of this. There are also more diverse incentives used in the Rhine 2040 program which is in line with the trend of making flood risk management more integrative.

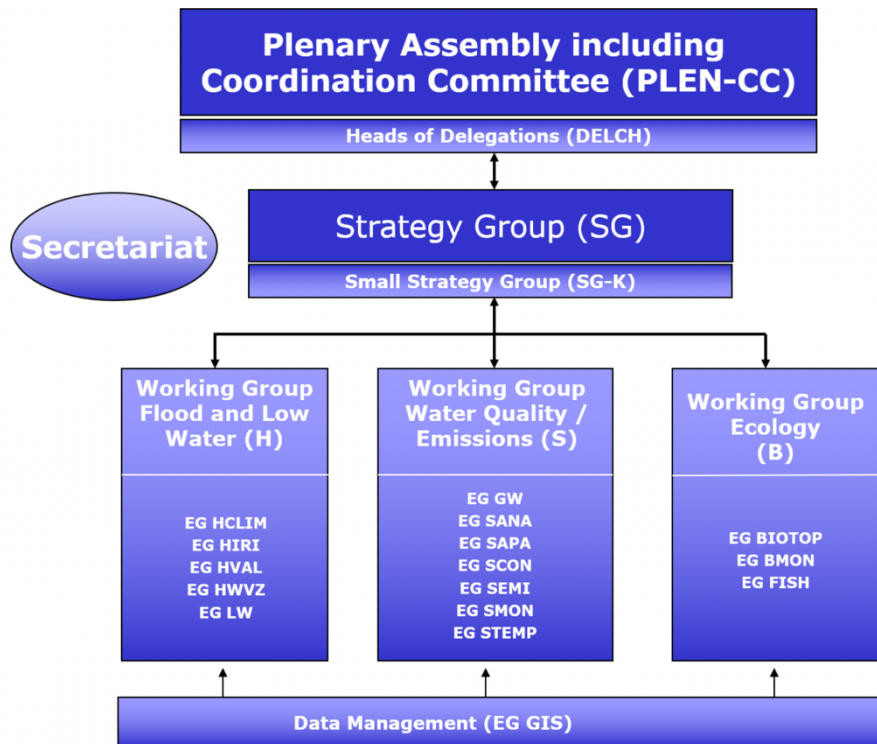
With the international obligations, it is noteworthy that Switzerland is also supporting the EU directives. Switzerland does help the rest of the countries to come to objectives as they have a boarder scope because they do not have to follow the directives (Interviewee 4). It is then also mentioned by three interviewees that the directives do not always help the ICPR, as the goals of the directives are less ambitious, and countries are more hesitant to put ambitious objectives in the national plans now.

4.2.1.3 STRUCTURE

It is important to first look at the institutional design of the commission which firstly focuses on the organisational structure. Figure 7 shows the organisational structure of the ICPR. The plenary meetings are yearly and are prepared for by the strategy group (ICPR, 2022a). The strategy group plays an important role as they are there to direct monitory and assess all activities of the ICPR. They also ensure that there is coherency in the work and the activities for the ICPR and they provide guidance to consultation groups, the small strategy group is helping them and connects the working groups and strategy group. The strategy group meets twice a year whereas the small strategy group might meet more often if this is deemed necessary.

There are three working groups within the ICPR, the high and low water working group, the water quality/emissions working group, and the ecology working group (ICPR, 2022a). The working groups are supported by expert groups and both the working groups, and the expert groups meet a maximum of twice a year. All these meetings, also from the strategy groups, can now also be attended online if this is necessary. Next to this, there is also the data management group which creates maps and provided results in the form of calculations, tables, figures, etc. This data is provided to support the working and expert groups.

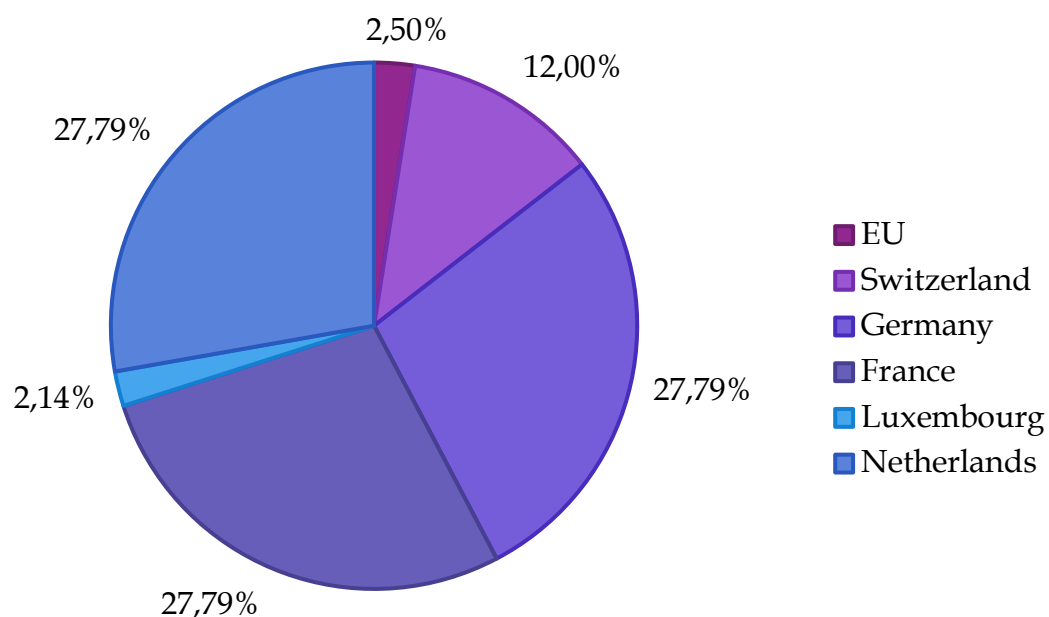
FIGURE 7 ORGANISATIONAL STRUCTURE (ICPR, 2022B)



The secretariat is there to support the commission, the president, and the working groups by sending invitations for meetings and by preparing these meetings (ICPR, 2018). The secretariat is a neutral party in the commission and is not there on behalf of any of the countries. It is also their task to participate in the working groups and following interviewee 2 it is also their task to come to a solution between the delegations. Interviewee 4 specified that within the secretariat people are doing the administrative work, and some scientific assistants follow the working groups and expert groups. These scientific assistances also help to write reports and there is an aspect of public relations as they also help the visitors or students to gather information.

The financial structure of the commission is shown in Figure 8 and this is the money that goes to the secretariat (ICPR, 2018). The budget for the committee is created per calendar year and is approved in the annual plenary meetings. The contracting parties will be notified of the contribution they have to make after the budget is approved. The total sum of the budget must not be exceeded, so if an item on the budget exceeds the prediction (by a maximum of 20%) this needs to be saved in another location of the budget. Here you see that three countries by far pay the largest part of the budget which might affect the power asymmetry as two of these countries also have the most departments represented in the committee.

FIGURE 8 CONCENTION EXPENDITURE TO COVER ANNUAL BUDGET (ICPR, 2018)



The mechanisms for decision making in the ICPR are the following two, in the plenary meeting, or outside of the plenary meeting in writing (ICPR, 2018). In the second option, one of the delegations submits a signed draft of a resolution to the president who will pass this on to the other delegations. The other delegations will have to respond in two months, if the draft is not accepted within these two months by all the members it will be rejected and put on the agenda for the next plenary meeting. The decisions are made by unanimity and the mechanism that is used to come to this unanimity is by having discussions (all interviewees).

The mechanisms that are used to involve all the actors start with the fact that the secretariat invites all the actors to the meetings (ICPR, 2018). Next to being invited and attending the meeting, everyone must participate in the conversation. Following the interviews, the chair is making use that everyone is listened to and also has the opportunity to speak. The chair first does a general round and after this, the agenda will be followed or a document will be gone through per page (Interviewee 3). It is also possible to react to each other. To make sure that all the right people get invited to the meetings it is also important that the delegations notify the secretariat when the representatives in the committee change (ICPR, 2018).

Then it is also important to see which external stakeholders are involved in the committee. First starting with the observer states, who together with the committee create the Coordinating Committee Rhine (CC) (ICPR, 2010). The observer countries are: Austria, Liechtenstein, Wallonia, and Italy. Yet Italy is only formally involved in the river basin, but due to the small share of the catchment area, it does not participate in this CC. These countries are involved in the committee as they take part in the plenary meeting, and the president of the CC is also the co-chairman of the strategy group. Interviewee 8 mentions that the reason that these countries are still officially observers is because the ICPR did not want to renew the convention again. Then there are also intergovernmental organisations (IGO), nongovernmental organisations (NGOs), and cooperations that want to observe the ICPR and want to work together (ICPR, n.d.-g). A complete overview of these organisations can be found in Appendix 3.

4.2.1.3.1 ANALYSIS

With this part of the procedural dimensions, it is found that there is a clear organisational chart available of the committee, regular meetings are ensured by the ICPR, and the role of the secretariat is clear. Following the interviewees, this role is also clear for the delegations, and it is seen as a good functioning secretariat in comparison with other international river collaborations (Interviewee 3 & 5). This is as the communication is well done and meetings are always well prepared.

With the financial structure that is found in the committee it is noteworthy that the countries that have the most representation, France and Germany, also are among the highest payers, together with the Netherlands. These factors combined might have an influence on the power relations that can be found within the committee. As the money is only used for the secretariat and not for the implementation of measures, notably, the contribution is not equally distributed.

With the external stakeholders that are involved, it is noteworthy that the observer states are not on the same level as the IGOs, NGOs, and corporations. These last three do have to apply to take part in the discussion but do not have a vote in the committee. The observer states do have more to say in the committee and are also seen as equals by all of the interviewees.

4.2.1.4 ACTORS

Table 9 shows all the involved actors of the ICPR (ICPR, n.d.-f). For all the countries there is either the ministry of foreign affairs or the ministry of home affairs included with at least one ministry that is in charge of the implementation of flood risk management. This shows that all the countries are included in the Committee in the same way which ensures inclusiveness. Here it is possible to see how water management is found in the country as in the Netherlands the ministry has water management in its name, which shows its importance to the country. In France, there is a different agency only focused on the Rhine and Meuse waters. In Germany, France, Luxembourg, and Switzerland the ministry that is sent is also in charge of

either the environment and/or ecology. This shows the connection to the environmental aspects of water management in these countries. The fact that these countries are connecting these aspects also connects to a more integrated approach, this is in line with the literature as the Netherlands has the least integrated approach to flood risk management.

TABLE 9 INVOLVED ACTORS ICPR (ICPR, N.D.-E)

Germany	France	Luxembourg	Switzerland	Netherlands
Federal ministry for the environment, nature conservation and nuclear safety	Ministry of foreign affairs Ministry of ecological and inclusive transition	Ministry of home affairs Ministry of environment, climate, and sustainable development	Federal department of the environment, transport, energy, and communication	Ministry of infrastructure and water management Ministry of foreign affairs
Federal ministry of transport and digital infrastructure	Representatives of the Rhine-Meuse water agency		Federal department of foreign affairs	
Ministry of foreign affairs				
Representatives of the federal states in the German part of the Rhine watershed				

With the actors it is not only important to know who is involved, but also that the personal and professional commitment is ensured. The ICPR does this by making sure that all the meetings have interpreters there as there are different languages spoken by the delegations, and there are three official languages (ICPR, 2022a). The documents also get published in these three working languages, which are German, French, and Dutch and publications on the website are also published in English (ICPR, 2018). Following the interviews, there are differences noticeable between the countries, as it is mentioned that France has distanced itself a bit. But there are also differences in communication as the French first explain why they would want to do something before saying what they want to do whereas Germans and Dutch people just say what they want to do without the explanation of why. The Dutch also have a more diplomatic side and together with the Swiss, they are the most compromise friendly in the committee. It is also mentioned that with some countries it is noticeable

in the committee if there have been elections, as the members of the delegations change, and it takes a while before decisions can be made again. All of the interviewees do however not see these cultural differences as problems, and some describe them even as enriching. The others mention that mainly by talking and getting to know each other these differences are resolved.

4.2.1.4.1 ANALYSIS

With this procedural dimension the involved actors show that for some countries water management is really a big topic within that country wherein it is more integrated in other countries. The involved actors also show some of the coordination within the country as in Germany also representatives of the federal states are involved, which shows that this is where the coordination takes place and not at the national level. For France, there is also a separate agency that focuses on water management involved which is not a ministry.

For the language differences, the solutions are in place by having live interpreters and by publishing in the three main languages. The cultural differences are there, but none of the interviewees see these as obstacles that could not be handled with clear communication. One of the interviewees also mentions that these differences are only small as the countries are all located in central Europe.

4.2.1.5 LEADERSHIP & ENTREPRENEURSHIP

It is important that skilled professionals are in the working groups and that they are also in the role of leadership. Following the interviews (3, 4, & 9) there are no official guidelines within the ICPR on who is allowed to participate in the committee and who is in charge of the working groups. For the representatives who participate in the working groups the countries themselves nominate people, from the represented ministries/departments. This does mean that the members of the working groups are working in the field and for the governments of the countries. With the leaders of the working groups, the countries also nominate someone for this function and then the strategy group and delegation leaders are voting on this if they seem this person to be suitable to lead the group. It is also mentioned here that it is needed to have a bit of guts, some knowledge, and experience in international collaboration. For the expert groups, it is more important that the leader of this group is really knowledgeable on the topic as this is more scientific in nature and not political. The ICPR does always try to make sure that the leaders of the groups are from different countries so that all languages are represented and this most of the time leads to leaders from Germany, France, and the Netherlands.

Then it is also important to see which mechanisms are used to involve third parties, neutral mediators, and experts. For the IGOs, NGOs, and companies mentioned earlier, it is possible to apply for the observership (ICPR, 2018). This means that they are allowed to participate in the meetings of the commission and voice their opinions. If one of the observers has not been engaging with the committee for 2 years, they could lose their observer status. These organisations will receive invitations to the

meetings so that they are able to participate. NGOs have not always been a part of the committee only in the 90s they were for the first time invited (Interviewee 10). At this point they were there in a separate meeting and were only listened to, after this there was a separate meeting with discussion and only after that, the NGOs were allowed to take part in the official meeting with the delegations. All the interviewees mention that the third parties do really have the opportunity to voice their opinions during these meetings. Some also mention that these parties often also have relations within the countries where they also can voice their opinions. Interviewee 10 does however also mention that it is important that the third parties do still understand their place in the committee as they cannot vote.

When the opinion of external experts is asked for it is possible that they only get invited to one meeting, or even only a part of the meeting (ICPR, 2018). For them, there is no official part in the committee and therefore can only join when this is deemed necessary by the committee. Within the committee, the secretariat is the neutral party and they, together with the leader of the working group, are the mediators of the group. Next to this one last mechanism to involve outsiders in the committee is that when plans are created there is always the opportunity to react to them, not only on the level of the ICPR but also on the national level. However, not many people took advantage of this opportunity with the creation of the Rhine 2040 program (Interviewee 4).

4.2.1.5.1 ANALYSIS

With the last part of the procedural dimensions, leadership and entrepreneurship, it is noteworthy that the countries themselves oversee who represents the country. This makes that country itself has the responsibility to have good representation there if they want to have good outcomes. The leaders of the working groups do have to be approved by the committee, yet it is here noticeable that the leaders of the working groups are always either German, French, or Dutch. These are also the countries that pay the most contribution and this could show some form of power asymmetry. They do have however a neutral role in the committee.

With the third parties, there are a lot of mechanisms in place to involve them in the committee. For the outside experts there are also some mechanisms, but not as many. The neutral mediators are part of the secretariat or leaders in the committee, these people are however often inhabitants of one of the contracting countries.

4.2.2 COLLABORATION DYNAMICS

4.2.2.1 PRINCIPLED ENGAGEMENT

4.2.2.1.1 DEFINITION

Principled engagement is the first dynamic of the interrelation dimensions within the ICPR and it is important to see if there is a shared terminology created. In the convention of 1999, the Rhine is identified as (ICPR, 1999, p.2):

““Rhine” means the Rhine from the outlet of Lake Untersee and, in the Netherlands, the branches Bovenrijn, Bijlands Kanaal, Pannerdensch Kanaal, IJssel, Nederrijn, Lek, Waal, Boven-Merwede, Beneden-Merwede, Noord, Oude Maas, Nieuwe Maas and Scheur and the Nieuwe Waterweg as far as the base line as specified in Article 5 in connection with Article 11 of the United Nations Convention on the Law of the Sea, the Ketelmeer and the IJsselmeer;”

In this convention also the principles by which the committee is guided are formulated, these are already mentioned in Chapter 4.2.1.2 of this thesis. Next to this the EU directive also helped to increase the shared terminology (Interviewee 4). This makes that all delegations are known with the different scenarios (EXCIMAP, 2007), and the categories for measuring the consequences (ICPR, 2016a), as shown in Figure 9

FIGURE 9 USED SCENARIOS AND CATEGORIES FOR MEASURING FLOOD RISK

Scenarios	Measured categories
<ul style="list-style-type: none">• Floods with low probability, or the extreme scenarios• Floods with a medium probability (like return period \geq 100 years)• Floods with high probability	<ul style="list-style-type: none">• Number of affected inhabitants• Damage for environment• Cultural (heritage) damage• Economic damage

Next to this the ICPR also has a data management group, this makes sure that all the data of the committee is put in the same terminology (ICPR, 2022a). This is mainly important as the different countries supply this data management group with information. The creation of common terminology did in the beginning however create some issues, as when the first Rhine Atlas was created all the countries did have different maps and all the countries wanted their way of maps to be the one used (Interviewee 10). This in the end led that a new system needed to be created for mapping as no one wanted to use someone else's way of creating maps.

4.2.2.1.2 DELIBERATION

Within the deliberation aspect it is important that all the actors have the opportunity to voice their opinion. The first mechanism to do so is the fact that the chair of the working group will first ask all the delegations to do a general say and after this, the agenda will be followed and here also every participant has to opportunity to raise their hand and to voice their opinion. The other mechanisms to have everyone voice their opinion is by the discussions that are held about the topics that are talked about. Another mechanism is that there is the possibility to add topics to the agenda of the meeting, by doing so it is guaranteed that the topic that the country wants to discuss will be discussed in the meeting. If the topic is not on the agenda, it is necessary to see if there is a different topic that it connects to, or if there is the possibility to add the topic during the meeting. It is even by one of the interviewees mentioned that the question sometimes is, how much of my opinion do I share with the committee, as there might be diplomatic reasons to hold back a little bit.

Next to the mechanisms, it is important that people feel free to voice their opinions in the group. All the interviewees mention that they do feel the freedom to do so. Some say this is to with the scientific nature of the group, other also mention the friendly nature of the leader of the working group. Next to this, it is also mentioned that as most of the people in the working group know each other sometimes, this also makes that you feel free to voice your opinions. Another interviewee also says that they do not mind if other people agree or would judge them on their point of view. Next to this interviewee 6 also mentions that it is the opinion of the country that needs to be told in the committee and that this does not always align with the personal opinion of the person that is the representative. In these instances, most of the time the other delegations also know that this is not the personal opinion, but the political opinion of the countries. Here it is once again important that the representatives know each other as then they are more aware of the difference in someone's personal and political opinion.

It is also important to have a protocol for conflict resolution in place, and the ICPR does have an article on the settlements of disputes (ICPR, 1999). First it is expected that the countries that are in dispute with each other will together try to come to a solution. But if the conflicting countries cannot come to an agreement themselves the dispute will be settled by an arbitral tribunal. The mechanism used for the countries to agree before the arbitral tribunal is by having discussions on the topic of the disagreement.

4.2.2.1.3 DETERMINATION

When looking at the protocols for agenda setting, tabling a discussion and assigning working groups the secretariat plays an important role in this. The secretariat sends out the agenda, first a draft version on which the delegations can react to add topics, and after this, the final version is sent out (ICPR, 2018). The secretariat is also in charge of tabling the discussion by sending out the invitations for the meetings. Next to this Koblenz is also, when possible, the location for the meetings and this is where the

secretariat is located. The working groups are not changed often, but if this would change this would be done in the plenary meetings. These existing working groups are then monitored by the strategy group, whose task is to make sure that the program which is determined till 2027 is followed (ICPR, 2022a).

The committee has been able to agree on one action plan, at this moment this is the Rhine 2040 program (ICPR, 2020b). Within this there is a separate document which shows the more precise action plan that will be followed on flood risk management, this is the International flood risk management plan for the International River Basin District 'Rhine' (ICPR, 2021b). Right now, there is a working plan created and agreed upon for the period of 2022-2027 (ICPR, 2022a). It is also mentioned by interviewee 3 that if a measure or action is not in the plan, or only for later in the plan, and therefore falls outside of the agreement it is also not easy to put this in after the plan is agreed upon.

The protocols to come to these agreements are first of all discussions that are held within the meeting, on all the different levels, from expert groups to the plenary meetings (Interviewee 4, 6, 8 & 10). The agreements often are made official during the plenary assembly, but this could also be done outside of the plenary assembly (ICPR, 2018). A decision can be made outside of these meetings by submitting a draft for a certain action or measure and if this is approved by all the delegations it is accepted. If this draft is not accepted, it will be put on the agenda for the upcoming plenary meeting.

4.2.2.1.4 ANALYSIS

Looking at the interrelation dimension of principled engagement there is a clear definition created in the committee on the level of the whole committee, but also on the working group level on the topic of floods. The EU directives did play an important role in this, even though the committee played an important role in creating the directives.

With deliberation it is noticeable that the chair does play an important role in making sure that everyone can voice their opinions. Interviewee 5 also mentioned that it would be harder to voice your opinion if there was a grumpy person in charge of the meetings. Interviewee 8, who has worked at the committee for a long time does mention that they never heard about anyone not feeling free to voice their opinions in the committee and this is confirmed by all the other interviewees, as they all mention to feel or to have felt safe to do so. There is also a clear protocol for settling agreements in place, yet following the interviewees, there are very few disputes within the committee that need conflict resolution.

The determination part of the committee is well organised, it is clear what the protocols are for agenda setting, tabling a discussion, assigning working groups, and reaching agreements. This is also shown by the fact that there is an agreement on one common action plan for the whole committee. This agreement is also quite strict and to change it very good arguments are needed (Interviewee 3).

4.2.2.2 SHARED MOTIVATION

4.2.2.2.1 TRUST

The second dynamic of the interrelation dimension is shared motivation, which consists of trust, mutual understanding, internal legitimacy, and commitment. For the creation of trust, it must be possible to get to know the other members of the committee, especially as the members of the committee are also changing over time. Following the interviews, there are no official activities organised by the committee to help to get to know each other. There are workshops organised by the committee and conferences/symphonies, this is the only place that the members have a chance to get to know each other within the committee (Interviewee 4; ICPR, 2021a). Following the interviews, the meetings are however the most important place to get to know the other participants. Interviewee 5 does note that during COVID-19 it was not really possible to get to know the other representatives as the meetings were held online. Most of the interviewees also note that the informal parts that happen before, in between, and after the meetings are also critical. Not only to get to know each other but in these moments, there are also agreements being made. Half of the interviewees also mention that there with the ICPR meetings there is not a lot of time for these informal interactions as the meetings are held only on one day. With other international committees, these meetings are often spread out over two days, from the afternoon of the first day till the morning of the second day. This makes that there is the opportunity to have dinner together and get to know fellow representatives. Interviewee 7 did however mention that the next meeting, which will be in person again, might be spread out over two days. Interviewee 10 also mentions that in the past the meetings of the committee did in fact already take place spread out over two days. Next to these informal interactions, it does also help when the representatives of the committee take part in the committee for a long time as the bond between the participants also grows over time (Interviewee 4, 7 & 9).

The most successful event in this collaboration is the action plan that was created after the Sandoz accident (ICPR, n.d.-j). This is the first time that solidarity was shown by all the countries and also by the public of the countries. Most of the interviewees also mention this success as an important part of the collaboration. Interviewee 6 also mentions that this solidarity has often been turned to in moments of disagreement.

4.2.2.2.2 MUTUAL UNDERSTANDING

With mutual understanding there needs to be safe space within the committee, as previously explained people do feel safe voicing their opinion. Following the interviews, the representatives in the committee do also feel safe to voice concerns or objections when they have those. It is mentioned that they feel so to do so as the committee is based on consensus and the fact that they are representing the political opinion of their country. Interviewee 3 does say that voicing concerns should always be done properly, without raising your voice. It is also mentioned that also the observers of the meetings do feel safe to speak up with any concerns or objections with the committee. It is also mentioned by all the interviewees that are currently

participating that there are no current tensions between the participants which helps with the creation of a safe space. It is however mentioned that there have been some tensions in the committee, Interviewee 2 says that this might be when people don't understand each other right away but these kinds of tensions were always resolved quickly by explaining yourself again. Interviewee 9 mentions that there were some tensions, not in the flood risk part, but with the implementation of the Water Framework Directive, these tensions were politically driven and solved by having discussions. Interviewee 10 also mentions another moment which created tensions, which was on the amount of salt discharged into the river. Interviewee 6 also mentions some tensions that occurred when financial resources were shared between the countries, this is then also the reason that this is not done anymore.

For mutual understanding, it is also interesting to see if all points of view are considered, and which mechanisms are used to do so. The interviewees mainly mention the fact that all plans only can go into action with unanimous agreement. And as all countries are working on the documents in the end will always be a consensus among all the different delegations. This makes that another mechanism is that all the delegations are sitting at the same table, where consensus can be reached, and experiences and ideas are shared here. The third parties can both participate within the committee and share their points of view there in the discussion, and also outside of the meetings through their connections with the separate delegations. Interviewee 8 does however mention that the influence of the third parties is becoming less, as the approach of the committee has become more integrated. For example, NGOs that focus on environmental effects are less needed as this point of view is more and more considered by the committee itself. There is also the possibility for people and organisations outside of the committee to voice their opinions as all steps of implementation must go through public participation.

4.2.2.2.3 INTERNAL LEGITIMACY

All of the interviewees see the collaboration as useful, one of them also mentions that if it was not seen as useful the delegations would not show up anymore. This is as the time put into the committee needs to be equal to what is gained by the committee. Useful aspects that the participants mention that are outside of achieving the goals are the fact that the new generation also can learn from this collaboration (Interviewee 3). Interviewees 4, 7, 8 & 10 also mention the role model position of the collaboration. This is because the collaboration is the oldest one out there and there are many other countries that are looking at this collaboration to see how it is done, even the EU used the ICPR as their role model. The ICPR is also seen as a role model on the lower levels because when different countries can work together and come to a consensus this should also be possible between parts of the county or between municipalities of bordering regions. Next to this Interviewee 10 also mentions that the committee provides a space where new topics can be added and discussed while they are becoming more important. This has happened with the climate change topic and the topic of droughts, and this will likely happen with the topic of the smaller rivers, as these were flooded in the summer of 2021.

4.2.2.2.4 COMMITMENT

Commitment in the ICPR was officially made when the first legal basis was created in 1976 (ICPR, n.d.-d). In the beginning, the commitment was only about water quality, after this ecology was added and nowadays floods and droughts are also part of the program (ICPR, n.d.-e). With the creation of the Rhine 2040 program commitment was again shown by the members (ICPR, 2020b). Next to the official commitment, it is also important that all delegations take part in all the meetings and do so actively. A few of the interviewees note that in the frequency of taking part in the meetings there is a difference between the official member states and the observer states. It is however mentioned that all the delegations are actively involved in the meetings when they are there. This is mainly seen by the fact that all delegations do read the material that is sent beforehand, and no one is sitting in the meetings without saying anything. It is however mentioned by Interviewee 6 that the commitment to the ICPR will always be within the boarder of their own countries, so the representatives might want to go to all the meetings yet are not allowed to do so from their county, this is however not the case in any of the member states. Lastly, it is also noted that all of the countries that were part of the committee since the beginning have never terminated their membership (ICPR, n.d.-b, 1963, 1999, 2018).

4.2.2.2.5 ANALYSIS

With the shared motivation part of the interrelation dimension of the ICPR it is found that the committee does not allow for much informal interaction between the member states, which is very important for getting to know each other, but also for reaching agreements. The meetings should also, when possible, take place in real life again as the online meetings did not give the chance to get to know the other members at all. Within the collaboration, the Sandoz incident also is seen as a success. The collaboration does provide a safe space even though there were some tensions in other parts of the committee. There are enough mechanisms in place to make sure that all points of view are considered in the committee and there is also a good internal legitimacy. This is as all the delegations see the collaboration as useful, also on aspects outside of the goals of the committee. The commitment of the countries that are official members is also good, as they all show up to all meetings, participate actively, and have uninterrupted membership. Here it is noticeable that there is a difference between the member and the observer state as they are less often part of the meetings.

4.2.2.3 JOINT CAPACITY

4.2.2.3.1 KNOWLEDGE

In collaboration there is knowledge shared and there should also be knowledge created together. The sharing of knowledge in the case of the ICPR was the reason to start the collaboration (ICPR, n.d.-c). Nowadays there are also obligations to share data on when and where countries are working on the rivers. Interviewee 6 mentioned the importance of this as during the floods of 2021 there were dam constructions ongoing in Belgium which increased the problem. A few of the interviewees also mention that experiences are shared in the meetings and at workshops. The workshops are created by the ICPR and have a different topic related to the committee each time (ICPR, 2021a). Also, outside of the committee the representatives share knowledge by contacting each other when there are questions.

The ICPR does also create knowledge together, and there are two important examples of this. The first one was the creation of the Rhine Atlas (ICPR, n.d.-i), which was following Interviewee 10, the first time that the countries worked together on creating flood maps. The Rhine Atlas is still being updated and was also used as an example for the EU flood directives (EXCIMAP, 2007). The ICPR did help to create the handbook on good practices for flood mapping and is therefore also sharing the knowledge that was created together. The second example of where knowledge is created together is the FloRiAn tool, which is a flood risk assessment tool (ICPR, 2016b). This tool measures the change in flood risk when certain measures are taken. Next to these two examples, the ICPR also has the data management group which makes sure that the gathered knowledge of the committee is also put into understandable data (ICPR, 2022a).

4.2.2.3.2 RESOURCES

First it is important to look at the financial resources that are shared within the committee. The contribution that the countries pay is already explained in chapter 4.2.1.3. The contribution is only paid for the functioning of the secretariat and not for taking measures. This was done a few times in the past, yet interviewees 6, 8 & 10 have mentioned that this led to issues between the countries. Interviewees 4 & 9 do however mention that on a smaller scale the border municipalities do still share financial resources, yet this is done outside of the committee.

Other resources that are shared within the committee that the participants see being shared are experiences, networks, and skills but also educating students and trainees. Skills are for example being shared when measures need to be taken and one of the delegations advised a certain company to take these measures. Lastly, interviewee 8 also mentions that the collaboration does initiate more cross-border activities between the participating countries.

4.2.2.3.3 ANALYSIS

There is a lot of knowledge shared and created by the committee which is of great added value. Interestingly, the financial resources are only used for the secretariat and not for the measures that are proposed by the committee. The workshops, where knowledge can be shared, are however not held regularly (ICPR, 2021a). It would help the sharing of knowledge if they were held regularly. There are also several other resources shared with the committee. This makes that the interrelation dimension of joint capacity is well formed in the ICPR. The more resources are shared within the committee the more the members work together on different topics.

4.3 EVALUATION

In Chapter 4.3 the third sub-question of this thesis will be answered: How does the ICPR perform in the participating countries, looking at the evaluation aspects of collaborative governance? To do so coordination, accountability external legitimacy, and flood risk reduction in the countries are investigated in this chapter.

4.3.1 COORDINATION

4.3.1.1 ICPR

For the ICPR it is clear which authorities oversee the implementation of the plans that are created by the committee, this is one of the tasks of the small strategy group (Interviewee 3). As the committee itself does not implement the measures there is no vertical coordination taking place in the ICPR self. There is however already some horizontal collaboration within the ICPR, as there are representatives of different ministries of all the member states involved and there is a collaboration with third parties (ICPR, n.d.-f, n.d.-g).

4.3.1.2 GERMANY

In Germany the Rhine River flows through multiple federal states and therefore different ministries are involved in implementing plans for flood risk management (ICPR, 2021b). the Rhine goes through Baden-Württemberg, Bavaria, Hesse, Rhineland-Palatinate, Saarland, North Rhine-Westphalia, Lower Saxony, and Thuringia. All of the ministries of the different federal states are the supreme water authority of the federal state, have the legal and technical control, and are in charge of the coordination. For the first time, the different federal states of Germany have created one flood risk management plan for the whole area of the Rhine River basin (ICPR, 2021b). The targets set in this plan apply to all the at risk areas in the different basin districts. It is however mentioned by interviewee 2 that it is difficult to create this plan as there are different ways of working in the different states. There are different governance styles found in the federal states, from bottom-up to top-down approaches (Hartmann & Spit, 2016). This makes it logical that in the committee not only the national but also the federal state level is involved (ICPR, n.d.-f). The implementation of the measures is done at the community level as mentioned by Interviewee 2. This shows that there is vertical cooperation in the implementation of the plans, yet there are some obstacles to this at the federal state level.

The involved ministries are all focussing on not just water management, but on environmental aspects overall. In most federal states the ministry combines the environment with for example energy. Within the different federal states, the ministry also works with other ministries to create plans and implement measures (Interviewee 2). This shows that the flood risk sector is working together with other sectors as well.

4.3.1.3 FRANCE

In France the coordination of plans and policies is done through the coordinating Perfect for the Rhine-Meuse Basin (ICPR, 2021b). This authority oversees the implementation and coordination of state policies that concern water management and have legal compliance. There are national objectives created by consulting the stakeholders, and these objectives are supported by the local authorities as they oversee the implementation of measures. The national government does however not actively cooperate with these local authorities (ICPR, 2021b). This has to do with a permanent imbalance between the different levels of government (Hartmann & Spit, 2016). This makes that when local authorities do get to create plans, they are not well done, then the Perfect takes over again, but then the plans are not incorporated locally. This shows that there is very little vertical cooperation within France.

The Perfect that is overseeing the coordination of flood risk reduction focuses only on water management and not on other policy areas. The collaboration with different policy sectors does mainly take place on the local level, and not the national level (Hegger et al., 2020).

4.3.1.4 LUXEMBOURG

In Luxembourg the coordinating organisation is the ministry of environment, climate, and sustainable development (ICPR, 2021b). This authority has legal and technical control over water management. According to interviewee 1, the ministry works close together with the lower levels of authorities. The lower levels are the ones in charge of implementing, but to do so they rely on the central government (SGI, 2020c). The flood risk management plan of Luxembourg is created for the whole country and the objectives are also applicable for areas without risk (ICPR, 2021b).

The coordinating authority not only focuses on flood risk but also on different policy sectors (ICPR, 2021b). Interviewee 1 also mentions that there is close collaboration with other policy sectors and with other authorities in the country.

4.3.1.5 SWITZERLAND

In Switzerland the federal office for the environment is the coordinating authority for implementing the flood management plans created by the committee (ICPR, 2021b). This authority operates on a national level and has legal and technical coordinating control over water management. The implementation of policies does take place at the lower level, the community level (SGI, 2020e), and there is also close collaboration with the communities (Interviewee 7). The decision on how to exactly implement the hazard plan is made by the community (SGI, 2020e).

In Switzerland, the official planning targets are not only for flood risk but there is a plan created for all natural hazards. Interviewee 7 mentions that while creating this hazard plan there is close collaboration with other ministries in the country. However, the integration of flood risk in other policy sectors is still limited (Metz & Glaus, 2019). This means that for the implementation of flood risk measures there is collaboration with other policy sectors, yet other policy sectors do not yet implement flood risk in their measures.

4.3.1.6 THE NETHERLANDS

The authority in the Netherlands that oversees flood risk management plans is the ministry for infrastructure and water management (ICPR, 2021b). In the Netherlands, the Waterboards also play an important role in this and they work with the provinces. Within the ministry, there is also the executive agency, Rijkswaterstaat. This ministry, together with the waterboards, are strong institutional bodies and the most important institution is Rijkswaterstaat (Hartmann & Spit, 2016). The structure with the waterboards, of which there are 23, makes that there is also a lot of influence from the region level to the national level. The national level creates the plan, but always in cooperation with the waterboards. This makes that there is significant vertical cooperation on the topic of flood risk reduction.

Interviewee 5 mentions that there is collaboration with the other ministries that oversee different policy sectors. This is mainly because water management (including flood risk) influences the other policy field, such as land use planning (Hartmann & Spit, 2016). The influence of other policy fields on flood risk is however still very limited (Lieberink et al., 2018).

4.3.1.7 ANALYSIS

Looking at the first evaluation aspect, coordination, the ICPR is performing well in most countries. However, in France, there is little vertical cooperation found. In Germany, there is vertical cooperation, but there are differences between the federal states which makes it difficult to coordinate on a national level. France is also the only country that does not have a coordinating authority that does also focus on other policy domains, and cooperation with other policy fields is only found at the local level. The other countries work together with other policy sectors from the national level. It is also noted that even though flood risk works together with other sectors, other sectors do not yet work together with flood risk.

4.3.2 ACCOUNTABILITY

4.3.2.1 ICPR

According to interviewee 3 the committee itself does not have a monitoring role, this role is more found in the EU. It is however needed that the member states do notify the ICPR about the measures that are taken in the countries (Interviewee 3 & 4). The ICPR does also not give any consequences to the countries if the targets are not reached. It is however mentioned by some of the interviewees that if a country does not implement anything this will lead to a bad name within the committee. The EU does however have the possibility to give sanctions if the goals of the directives are not met (Interviewee 3, 4, 5, 6, & 8).

4.3.2.2 GERMANY

In Germany the ministries at the federal state level are responsible for the monitoring of flood risk measures (SGI, 2020b). There is a high rate of implementation of the policies that are created by the government, which shows that the ministries on the federal state level have the capacity to monitor the implementation. In most of the federal states, there is collaboration needed between the different water institutions to manage the implementation, yet this does not seem to give any problems (Hartmann & Spit, 2016). Interviewee 2 mentions that there are some monitoring issues on the national level, but not on the federal state level, this is again due to these differences between the states. There are no consequences within Germany itself if the goals are not met, only those of the EU.

4.3.2.3 FRANCE

The local authorities are since 2015 legally competent for flood risk planning, yet there is still a centralised, top-down system found in France (Hartmann & Spit, 2016). This makes that non legally the Perfect is still in charge of monitoring the implementation. Often there are ambitious environmental goals set by the Perfects, yet often these goals are not reached (SGI, 2020a). This has to do with conflicting interests between the parliament and lobbying on lower levels for weaker goals. Next to this there is found to be no systematic check to review the effects of policies. This all has to do with the central system that is found in France, which makes it unable to monitor all the implementations (SGI, 2020a). The line ministers are the only ones being monitored effectively and this lack of monitoring makes for large regional differences in the level of implementation of policies. The authority in charge of water management, the perfect, is also subject to this challenge of the central government which makes that the policies do not get implemented everywhere. Overall, this makes that the Perfect does not have the monitoring capacity. There are consequences within France as ministers can easily be held accountable as they can be dismissed at any point, this makes that they do follow policies carefully. There are no other consequences within the country if goals are not met.

4.3.2.4 LUXEMBOURG

The water management agency oversees monitoring the implementations (Interviewee 1) and this agency is part of the Ministry of the Environment, Climate and Sustainable Development (ICPR, 2021b). Due to the small size of the government and the transparency, there are no explicated monitoring tools needed in Luxembourg (SGI, 2020c). It is clear that the guidelines from the government need to be followed, even on the lower levels of government. There are plans to centralize land use regulations due to conflicts between local and national interests. Interviewee 1 did mention that there are no consequences in the country itself if goals or targets are not met.

4.3.2.5 SWITZERLAND

The monitoring authority in Switzerland is the federal office for the environment and natural hazards. There is a consociational democracy model which is about sharing power by having a broad coalition, the inclusion of minorities, and cooperative behaviour (Vatter, 2016). This together with the rule of collegiality and the high level of cooperation at the lower levels of government creates the monitoring system (SGI, 2020e). The monitoring is built into the cooperative process and therefore leaves little possibility to steer away from the government line. This is done while also giving a lot of flexibility to the lower levels on how to implement policies. There are no official consequences in Switzerland, but all the measures only receive the needed governmental funding once it is up to the needed standards (Interviewee 7). This makes that measures that do not comply will not be able to be carried out.

4.3.2.6 THE NETHERLANDS

The ministry of infrastructure and water management is in charge of monitoring the implementation of flood risk measures (ICPR, 2021b). On the national level, the Netherlands lacks the capacity to monitor policy proposals and their implementation (SGI, 2020d). There is also a low evaluation of measures as there is more focus on creating new measures. There were also large policy failures when policies were delegated to line ministers. The monitoring capacity of the Netherlands is lacking, and this is mainly due to budget cuts and decentralisation. Interviewee 5 mentions that there are no consequences to not meeting the goals, but in such moments the government should react.

4.3.2.7 ANALYSIS

The performance of the ICPR in the countries, looking at the accountability, shows that Germany, Luxembourg, and Switzerland do have the capacity to monitor the implementation. In France, this capacity is lacking due to the high level of centralisation and in the Netherlands, it is lacking due to a high level of decentralisation and budget cuts. France and Germany both have consequences within the country, in France, the consequence is getting fired and in Switzerland it is not receiving funding for the measure. The ICPR does not give any consequences except for a bad name, but the EU does have consequences for not following the directives. This is applicable for all EU member states in the committee.

4.3.3 EXTERNAL LEGITIMACY

4.3.3.1 ICPR

The ICPR has increasing public awareness as part of their plan and this is mainly done by creating brochures, informing visitor groups, flood maps, and for two years also the usage of Twitter. It is however mentioned by Interviewee 4 that the Danube committee, and other international river basin committee, does also have a Danube Day every year to gain awareness for the whole river, the issues, and the committee. This committee does however have more money. Interviewee 4 does however mention that awareness also needs to be risen at the local levels. This is also done outside of politics by the NGOs, and they can reach the community level. Most of the interviewees mention that public awareness is an important and very difficult topic. Interviewee 3 even suggest that a whole new approach should be developed to tackle this topic.

4.3.3.2 GERMANY

Germany is actively trying to increase public awareness, and this is mainly done through articles that inform about the risks (Interviewee 2). At the community level, the public administration also goes to the villages and the mayor to talk to them and inform them on where to build houses and where not. In the articles that are spread there are prevention measures mentioned that people can take on their own property (Thieken et al., 2016). There are also so-called risk awareness campaigns held in most of the federal states, yet this did not lead to an increase in preventative measures, so it is questionable if these increase public awareness (Surminski & Thieken, 2017). With these campaigns, there is also a desire to get more households to have flood insurance. Next to this Germany has also created hazard maps, yet these maps are not readable for the general public (Thieken et al., 2016). Interviewee 2 did mention that the floods that occurred in 2021 did increase public awareness, yet it is expected that this result only lasts for a short period. These tools are mainly focused on government employees, as they oversee where new houses get build, and homeowners. The homeowners are the ones that are targeted with the campaigns and who can get insurance. Next to this people with special needs are also identified and tailor-made information is given to them (Thieken et al., 2016). With the flood of 2021, the people that live in these flood-prone areas were targeted.

4.3.3.3 FRANCE

In France they are mainly focussing on sharing data on flood risk management and making this available to the wide public (Préfet coordonnateur du bassin Rhin-Meuse, 2022). They are also actively trying to use actors to spread this data, that are active in these communities. In France, there is also an act that says that citizens are responsible for their own safety, which makes that on a local level, mayors are providing flood risk information (Mees et al., 2016). France is part of the EU, which makes that they also must provide hazard maps on flood risk (European Commission, n.d.). The occurrence of floods have also influenced flood risk awareness in France and is often also the driving force behind measures to increase awareness even more (Tourment et

al., 2021). Overall, it is mentioned that there is still limited flood risk awareness found in the country (Hegger et al., 2016). The plans that are created by France to increase public awareness do not target any particular groups in society. All inhabitants that live in the flood-prone areas are targeted by these tools.

4.3.3.4 LUXEMBOURG

In Luxembourg there is a focus on public awareness as they want to inform people of the measures that are taken on the community level (Interviewee 1). This is done by brochures, flood maps, and inviting people to evenings where the planned projects are explained. The floods that happened in the summer of 2021 also influenced flood risk awareness, but only for those who had their houses flooded. The people that are targeted by these tools are the general public and the people that live near the flood risk measures. Next to this the people who live in the areas that flooded in 2021 were targeted.

4.3.3.5 SWITZERLAND

In Switzerland having a small flood every few years is seen as the best way to increase public awareness (Interviewee 7). Next to this, an App is created which a lot of inhabitants have, and hazard maps are widely distributed. The association of civil engineers and architects, the association of homeowners, and the banks together established a platform which focuses on providing information on all natural hazards, when building and buying houses. And the insurances are also helpful, as the insurance companies also provide information on how to decrease damages. As in Switzerland, it is already mentioned that they believe small floods keep the awareness high, it is then also believed that the floods of 2021 have increased the flood risk awareness of those affected. The people that are targeted with these tools are the general public, the app targets those with a smartphone and the associations and insurances target homeowners or aspired homeowners. With floods, all those who live in flood-prone areas are targeted.

4.3.3.6 THE NETHERLANDS

In the Netherlands it is believed that public awareness needs to be increased, and right now this is mainly done by the creation of maps (Interviewee 5). These maps are however too technical, and the Netherlands is right now trying to find new ways to increase awareness. This is as right now flood risk awareness is still very low within the country (Hegger et al., 2016; OECD, 2014). The waterboards in the Netherlands do have a saying that mentions that it is ideal to have small floods regularly to keep awareness high (Interviewee 5). The floods in the summer of 2021 did also increase flood risk awareness, yet only for those affected. With the current tools only the general public is targeted, and no specific groups. Only with the floods, those who live in flood-prone areas are targeted.

4.3.3.7 ANALYSIS

The performance of the ICPR based on external legitimacy is not very well yet. All the countries do mention that flood risk awareness needs to be increased and have tools to do so. Switzerland has some unique tools with the App and the associations that work together to provide information for homeowners and home buyers. In Germany, people with special needs are separately mentioned to be considered in providing flood risk information and they also target homeowners and buyers. France and the Netherlands both only provide information to the general public, Luxembourg does target those living near places where measures are taken separately. All the countries mention that the floods of 2021 did influence awareness, but only for those who were affected and most likely this effect will only last a short amount of time. Next to this the ICPR could also look at the Danube river committee to organise a Rhine Day to raise awareness.

4.3.4 FLOOD RISK REDUCTION

4.3.4.1 ICPR

In the Action Plan on Flood Defence there were four targets created on which the work was also being evaluated (ICPR, 2021b). Here it is mentioned that the goal of reducing flood risk by 25% is achieved, the goal of creating flood risk maps for 100% of the flood-prone areas was also achieved and so was prolonging the forecasting periods by 100%. The goal of reducing the flood levels by 70 centimetres was however only partly achieved. Interviewee 10 does mention that the reduction of flood risk is becoming more difficult due to climate change, which could explain this, Interviewee 8 also mentions that while we are moving in the right direction a lot more still needs to be done by both the ICPR and the countries.

4.3.4.2 GERMANY

According to interviewee 2 the perceived reduction of flood risk is not directly influenced by the ICPR. This is as the ICPR only provides the aims in which the country should work, yet not the specific measures that need to be taken. There is also a large gap between the level of the ICPR and the local level at which the measures do take place, it is not expected that the local governments take a look at the ICPR on how to reduce the flood risk. The goals and aims of the ICPR are translated into the federal states' goals and aims, which are looked at by the local governments. The perceived flood risk reduction is, therefore, more found in the initiatives of the country itself, or better said of the local levels. Overall, there is a reduction found in the flood risk in Germany, in one federal state this reduction was even 75% (Surminksi et al., 2020). As the responsibility for flood risk reduction is at the federal state level there are differences found in how much it is reduced between the states. Overall, there is a perceived reduction of the flood risk found, yet it is believed that this is created by the country itself and not by the ICPR, while the ICPR does influence the reduction.

4.3.4.3 FRANCE

The overall flood risk has been reduced in the Upper Rhine area, which is partly located in France (ICPR, 2020a). France right now is implementing the flood risk management plan for 2022-2027 (Préfet coordonnateur du bassin Rhin-Meuse, 2022). It is here not explicitly mentioned if the flood risk is perceived to have been reduced in the country. There are however many measures taken in the country to reduce the flood risk, and this is mainly done at the local level, with area-specific solutions (Hegger et al., 2016). This would so that the flood risk can be perceived to reduce, yet the impacts of climate change are still uncertain, which makes it difficult to say if these measures will be enough.

4.3.4.4 LUXEMBOURG

Interviewee 1 mentions that it is hard to say if flood risk has been reduced in the country. This is because all flood events are different, and it would not be right to only look at the costs. Next to this Climate change also increases the flood risk again, which makes it even harder to say if the flood risk has been reduced. For Luxembourg, the ICPR is not directly involved in implementing the measures and therefore if there is a perceived reduction this would be from the initiatives of the country itself. The ICPR is mainly seen as an inspiration on how to tackle the problem of floods.

4.3.4.5 SWITZERLAND

In Switzerland the perceived flood risk reduction cannot directly be linked to the ICPR, but the ICPR does help with giving direction on how to tackle the problem (Interviewee 7). There is however a perceived flood risk reduction found in Switzerland, yet this is due to local initiatives and also measures taken on private properties. These are measures that people living in flood-prone areas themselves have implemented on their land and/or houses. It is however worth mentioning that with climate change the risk is again believed to increase over time and this makes the measures taken now important to be resilient for the future (Alfieri et al., 2018).

4.3.4.6 THE NETHERLANDS

It is difficult to see if the ICPR has had any direct effect on the perceived flood risk reduction in the Netherlands (Interviewee 5). This has to do with the fact that the Netherlands already started to implement flood risk reduction measures in the 90s by themselves. Yet the discussion that is held within the committee does help with developing new ideas and plans within the Netherlands, to reduce flood risk. There is a perceived reduction in flood risk by the initiatives of the country itself. The risk in the Netherlands will however always be high, due to the consequences if a large flood were to happen (Hegger et al., 2016). As the Netherlands is the downstream country of the Rhine River they do notice the measures that are taken upstream (Interviewee 4 & 5). This makes that the ICPR does have more of an effect on the perceived flood risk reduction.

4.3.4.7 ANALYSIS

When looking at the performance of the ICPR in the different countries on the reduction of flood risk it is noticeable that Germany, Switzerland, and the Netherlands all perceive flood risk reduction, but from their own initiatives. For France and Luxembourg, it is difficult if there is a perceived reduction, yet they also do mention that the ICPR does not directly influence flood risk reduction in the country. For all countries, it is important to note that climate change will increase the flood risk again. Overall, it can be said that the ICPR does not directly influence the perceived reduction in flood risk, but it does inspire the countries on how to tackle this problem on a local level.

5. DISCUSSION

In the starting conditions it is found that there were different flood risk approaches in the countries, yet these have been changing. This can be linked to the collaboration and the more integrated approach that the EU has to water management. Due to the unanimous decision-making style, the influences that can lead to power asymmetry seem to be minimal, yet not only are the two biggest countries represented by more departments, Germany, France, and The Netherlands also pay the highest amount of contribution and are the countries in charge of the working groups. This could lead to more power for these countries, and this should be monitored closely. The location of upstream and downstream does not seem to have much of an effect on the power relationships. The expectations of the collaboration have changed a lot, from focusing on one topic to multiple topics and from just monitoring to creating joint plans. For Germany, these changes are making the collaboration more and more difficult, and this makes that they do not want to add any new parts to the collaboration. It is important that all the countries can still manage the amount of work within the committee. Water has always been an important topic for the different countries which made it easier to start the collaboration. The Salmon Committee was the starting ground of the ICPR, and the wars also created an impulse for the collaboration, as it was used to establish peace within the EU.

Answering the first sub-question: What are the starting conditions of the ICPR as a form of collaborative governance in the participating countries? It is found that the starting conditions, as mentioned by Ansell & Gash (2007), were good, especially the incentives for and constraints on participation and the prehistory of cooperation and conflict were in favour of the collaboration. The upstream-downstream location did not influence the collaboration and from the beginning all the delegations were represented. Nowadays the power relations should be carefully handled, as the countries with the most represented departments, together with the Netherlands, also pay the most contribution and these countries are also leading the three working groups. All the countries also did have one of the flood risk approaches as mentioned by Wiering et al. (2017) and nowadays all have a more integrated approach in which the approach found in the other countries of the collaboration play an important role.

Then answer the second sub-question: What are the procedural and interrelation dimensions of collaborative governance within the ICPR? Firstly, the results look at the regime dimensions. With the objective, interestingly, the overall objective of the ICPR and the objectives of the countries on flood risk are vaguer and more qualitative, whereas the objective that is created on flood risk within the ICPR is quantitative. This shows that even though there is one common objective created within the committee on flood risk, this is not completely in line with the objectives created in the countries. The two mechanisms for the implementation of the plans are well in place as all the countries have national strategies and there is also a joint international plan created. In this plan, there are joint policies and in the other official regulations of the ICPR, there are also joint agreements on scope, bindingness, and compliance. The evaluation of the work done by the committee is done consistently, yet only by the committee

itself. There is no third party that is conducting the evaluation. With the policy instruments, there are clear principles which are followed by the committee and the international obligations are also well considered. There is a shift going on in the kind of incentives used, this is going from predominately technical solutions and the reduction of financial risks and uncertainties to a more integrated approach. Reducing the financial risks has become more important, but also the non-technical measures have been more looked at that focus on prevention and mitigation and shared benefits are now also added. This is in line with the changing flood risk approach and the IWRM approach that can be found in the EU. With the international obligations, it is worth mentioning that some of the interviewees say the EU directives have hindered the progress by creating consequences and having less ambitious goals. The structure of the collaboration is well organised: there is a clear organisational chart, regular meetings are ensured, and so are the tasks of the secretariat and the financial structure. The decision-making mechanisms are also in place and so are the mechanisms to involve all participants in the meeting. There is also a clear overview of all the third parties that are involved in the committee. With the actors, it is also clear who is involved, and the language differences are handled well. There are no protocols from within the ICPR that set requirements on who is taking part in the working groups and who is leading them. This is all up to the countries and could lead to differences in how qualified the participants and leaders are. There are a lot of mechanisms in place for involving third parties, neutral mediators and outside experts are less involved. Mechanisms to include neutral mediators could be about hiring people from outside of the participating countries and experts could be involved more by inviting them to give workshops, but also to attend them.

It is found that all the dimensions as mentioned by Renner et al. (2020) are all found in the committee, yet there are some lessons to be learned. There is a difference found in the objectives of the ICPR and the countries, the international obligations might be taken into consideration too much and therefore lowering the goals, the opportunities to share experiences and learn together could be held more frequently, the requirements for who participates could make those involved in the discussion more equal, and neutral mediators and experts should be more focussed on by the committee. This makes that the leadership/entrepreneur dimension does need to be improved the most.

Looking at the dynamics, all aspects of principled engagement are in place and performed well. With the shared motivation the participants must get more opportunities for informal interaction. This can be done by letting the meetings take place over two days and having the meetings in person again. Next to this mutual understanding, internal legitimacy, and commitment are all well in place. In the commitment, the difference between the official members and the observers is however noticed. Lastly, the capacity for joint action is well in place as both knowledge is shared and recreated together, there are skills and networks shared between the countries, and there was a conscious choice made to not share financial resources other than for the secretary anymore. Yet opportunities to share experiences and learn together could be held more frequently. Looking at the literature of Emerson

& Nabatchi (2015) the collaboration dynamics are all in place, only the trust element could be improved, and workshops could be held on a more regular basis.

To answer the third sub-question: How does the ICPR perform in the participating countries, looking at the evaluation aspects of collaborative governance? It is found that all countries except for France to have collaboration with other policy domains and with the lower level. This shows both vertical and horizontal collaboration and this is important for the coordination and implementation of the measures. Here France could look at the other countries to see how this is done. In Germany the country would also benefit from a more nationalised approach to overcome differences between the federal states, this is however being worked on. With accountability, France and the Netherlands could both learn from the other two countries, in France the monitoring is done on a too high level and in the Netherlands, it is too decentralised. By looking at the other countries they could learn from this. Switzerland and France both have consequences within the country if targets are not met. In Switzerland, this is by not financing projects when they are not up to standard, which is working well as the government is actively involved with the local initiatives this way. In France, the consequence is that people can get fired easily when targets are not met. For Germany, France, Luxembourg, and the Netherlands there are also possible consequences of the EU, but one of the two of the interviewees mentioned that these consequences are lowering the ambitions of the countries. All the countries do work on legitimacy, yet often no clear population groups are targeted, and the tools used are too complicated. Both Germany and Switzerland target those who own homes or are moving homes, but Germany also creates special information for specific groups in society, such as special needs. Luxembourg tries to target whole communities in places where measures are taken. In Switzerland, most people do really know the risk when they buy a house as there is mandatory insurance and they notify people of these risks and associations also help spread this information. For countries that have these kinds of insurances, this might a good solution. Next to this Switzerland also created an App for people to use which tells about risks, this is interesting for all the other countries to investigate. For the whole ICPR it might also be interesting to look at a Rhine Day, inspired by the Danube Day, which is hold each year. Flood risk is reduced in the Rhine River, just not as much as planned yet. The countries all say that the ICPR has had an influence on how the flood risk approach, but that the reduction itself is achieved within the country. This is as the countries do have freedom on how the targets of the committee are reached. For the Netherlands, the ICPR does have a bit more effect as the measures taken upstream also do a lot for them.

The following lessons can be learned for the participating countries following the literature of Huitema & Meijerink (2017) France does need more coordination and in both, France and the Netherlands, the accountability needs to be improved. The legitimacy should be improved in all the countries, the Danube River for example also has a day dedicated to the river. This could be an idea and for countries with flood or risk insurances on houses, it is smart to look at Switzerland on how they make people aware of the risks. The creation of an App and the distribution of this is also interesting and the other countries could look at how Switzerland has done this.

The approach taken in this thesis was to both look at the collaboration and how this collaboration performs in the separate countries. This is important to know as due to different political systems the implementation of measures is done in different manners. This research does show one way of how this can be investigated, yet there are still steps to be made. There might be other elements that need to be added to the evaluation part of the model, such as a form of governance and cost-effectiveness. For the form of governance, this would first need information on which form of governance is the most successful in implementing the measures created in cross-boundary collaborative governance. Cost-effectiveness would mainly be interesting to look at when the countries also fund measures together. It would be helpful to look at smaller cross-border collaborations as well with this model to see if it is possible to get a more in-depth view on the evaluation criteria used.

6. CONCLUSION

The research question of this thesis is: How successful is the ICPR as both a form of collaborative governance and in reducing flood risk in the participating countries, and what lessons can be drawn from this? The answer to this is that the ICPR can be seen as a successful form of collaborative governance as the starting conditions were preferable, and overall, the procedural and interrelation dimension are all there performing well. The success in the participating countries is not as straightforward as the results are different for each country. In Germany, Luxembourg, and Switzerland the coordination and accountability are all well in place. In the Netherlands, accountability is lacking and in France, both are lacking. For external legitimacy, it is notable that all countries have low public awareness, yet Switzerland does have the most tools in place to increase this. With the flood risk reduction Germany, Switzerland, and the Netherlands do perceive there to be a reduction, yet not directly influenced by the ICPR. The other countries do not perceive a reduction in flood risk.

Then looking at the lessons that can be learned for the ICPR are, these are:

- Make objectives of committee comply with those of the countries, or the other way around
- Evaluation should be done by a third party for credibility
- Power relations should be closely monitored
- International obligations should not decrease ambition
- Workshops should be held on a regular basis and invite external experts
- Secretariat could look for employees outside of the participating countries for true neutrality
- Meetings should take place over two days to provide informal contact
- Organising a Rhine Day to increase awareness of flood risk

Now the lessons that the countries can learn from each other are:

- France should look at the other countries to create more vertical and horizontal cooperation within the country
- Both France and the Netherlands should look at the other countries to increase their monitoring capacity
- All countries should look at Switzerland for inspiration on tools to increase flood risk awareness
- All countries should look at Germany for targeting specific groups of society with tools to increase flood risk awareness

The limitations to the research are that no representative of France nor from an NGO was interviewed, and the overall limited number of interviews. Some documents were also not available in English and in some countries less research has been done. For future research it is interesting to look at other collaborations (in other parts of the world) and to compare them. It would also be interesting to investigate how public awareness of flood risk can be increased as all countries and ICPR see this as an issue.

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APPENDIX 1: INTERVIEW GUIDE

ENGLISH

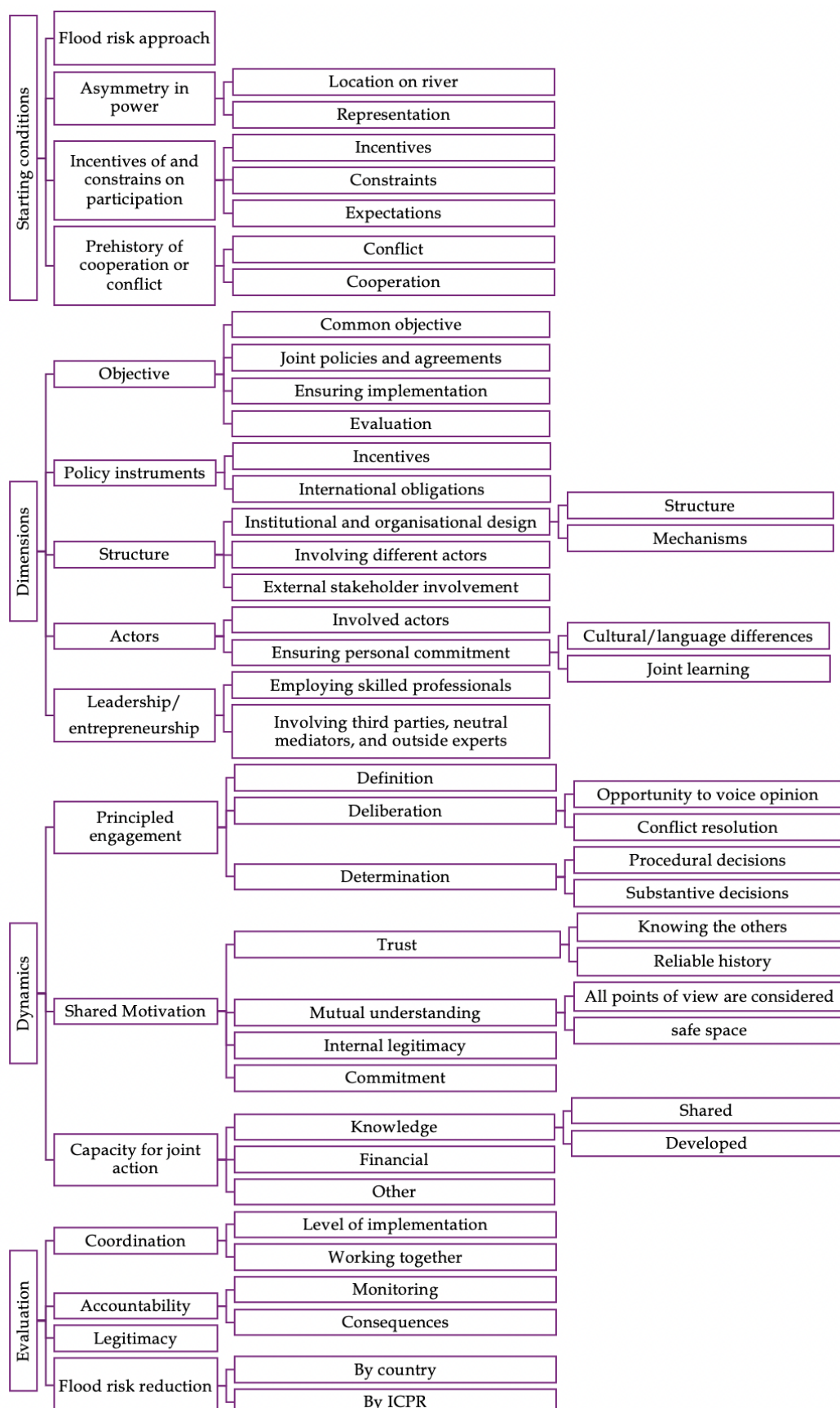
General	<ul style="list-style-type: none"> - What is your function? - What is your background?
Starting conditions	<ul style="list-style-type: none"> - Does the committee have influence on the flood risk approach that can be found in your country? (Why?/How?) - Do you know of any hesitations when flood risk was included in the committee? - Why is flood risk management important (for your country?)
Collaboration	<ul style="list-style-type: none"> - While defining the targets of the flood defence plan, where there any disagreements? If so, how were these handled? - Do you notice any cultural differences within the committee? If so, how are these handled? - Are there opportunities for outside entrepreneurs to voice their opinions? - Do the observers also have the opportunity to speak up when they have concerns? - Does everyone have the opportunity to express their point of view during the meetings? (How is this done?) - Does the chair use mechanisms to include everyone in discussions? (How?) - Do you feel save to voice concerns or objections within the committee? (Why?) - How is it decided who takes part of the working groups? - Are there requirements on skills to take part? How is it decided who is in charge? - Are there opportunities to get to know the fellow members of the working groups? (How is this done?) - Do you feel that the committee and/or the working group provide a safe space? Or are there any tensions? (Why?) - Do you feel that different ambitions and intentions are taken into account? (How is this done) - Are there other aspects that make the ICPR an useful cooperation next to main objectives? - Are all of the delegations actively dedicated to the committee? How does this show?

	<ul style="list-style-type: none"> - What kinds of resources are shared between the countries aside of money and knowledge? - How are these resources shared?
Evaluation	<ul style="list-style-type: none"> - Does the coordinating authority work together with other authorities to achieve the goals? (How do they work together?) - What happens in the committee when goals are not met in one country? (Why?/How?) - Is there an authority within your country monitoring if the goals of the committee are met? - What happens within your country if these goals are not met? - Is your country actively trying to increase the public awareness of floods? (How?) - Do you believe the recent floods have affected the public awareness? (How?/Why?) - Has the flood risk in your country been reduced due to the goals of the committee? (How?) - Were there additional plans that helped? (Which?) - Does your country also feel effects of the measures taken in other countries? (How?/Which?)

General	<ul style="list-style-type: none"> - Welke functie heb jij? - Welke achtergrond heb jij?
Starting conditions	<ul style="list-style-type: none"> - Heeft de commissie een invloed op de overstromingsaanpak die de verschillende landen hebben? (Hoe/Waarom) - Weet jij of er enige twijfel was om overstromingen ook in de commissie te betrekken? - Waarom is overstromingsrisico beheer zo belangrijk voor jou land?
Collaboration	<ul style="list-style-type: none"> - Waren er tijdens het zetten van de doelen voor het overstromingsplan meningsverschillen/onenigheden binnen de commissie? En hoe is hiermee omgegaan? - Merk je culturele verschillen binnen de commissie? Hoe wordt hiermee omgegaan? - Zijn er mogelijkheden voor entrepreneurs (ondernemers/mensen met nieuwe ideeën) om ook hun mening te geven? - Hebben de observerende landen ook de mogelijkheid om echt deel te nemen in het gesprek als zij bijvoorbeeld het oneens zijn of vragen hebben over de plannen? - Heeft iedereen in de werk groep ook echt de mogelijkheid om zijn of haar standpunt te vertellen tijdens de vergaderingen? Hoe is dit gedaan? - Heeft de voorzitter verschillende manieren om ook te zorgen dat mensen inderdaad echt betrokken zijn bij de discussies? (Welke?) - Voel je je vrij om binnen de commissie ook echt jouw standpunten te laten weten? Hoe komt dit? - Hoe wordt er bepaald wie er deelnemen aan de werkgroep? - Zijn er vereisten waar je aan moet doen? - Hoe wordt er bepaald wie de leiding heeft? - Is er de mogelijkheid om de andere deelnemers van de werkgroep goed te leren kennen? (Hoe wordt dit gedaan?) - Heb jij het gevoel dat de werk groep een veilige plek biedt? Of zijn er spanningen binnen de groep? (Waarom voelt het als een veilige plek?) - Heb jij het gevoel dat met alle verschillende ambities en intenties van de verschillende actoren rekening gehouden wordt? (Hoe gebeurt dit) - Zijn er andere vlakken waarop de ICPR een nuttige samenwerking is, buiten de doelen om? - Zijn alle landen even toegewijd bij de commissie? Hoe merk je dit?

	<ul style="list-style-type: none"> - Worden er nog andere middelen gedeeld binnen de commissie, behalve geld en kennis? - Hoe worden deze gedeeld?
Evaluation	<ul style="list-style-type: none"> - Werkt de coördineerde organisatie binnen Nederland ook samen met andere ministeries en autoriteiten om de doelen te behalen? (Hoe werken ze samen?) - Zijn er gevolgen binnen de commissie voor het land als de doelen niet worden behaald? (Wat voorn?) - Welke autoriteit monitort binnen het land of de doelen die gesteld zijn behaald worden? - Zijn er gevolgen binnen het land als de doelen niet behaald worden? (Wat voorn?) - Is Nederland bezig om het publieke besef van de overstromingsrisico te vergroten? Hoe? - Geloof jij dat de overstromingen die vorige zomer (2021) zijn gebeurd dit publieke besef beïnvloed hebben? (Hoe?) - Is de overstromingsrisico ook echt verlaagd door de doelen van de ICPR? Hoe? - Zijn er binnen Nederland nog veel extra doelen gezet waardoor dit is gebeurd? - Voelen jullie de effecten die door de andere landen worden genomen?

APPENDIX 2: CODING TREE



APPENDIX 3: OVERVIEW OF ALL INVOLVED IGOs, NGOS AND COOPERATIONS

IGOs	NGOs	Cooperations
<ul style="list-style-type: none"> - Commission Internationale pour la Protection de la Meuse - Oslo and Paris Commissions - Internationale Kommissionen zum Schutz der Mosel und der Saar - Internationale Kommission zum Schutz der Elbe - Ständige Kommission für den Ausbau des Oberrheins zwischen Straßburg / Kehl und Lauterbourg / Neuburgweier - Zentralkommission für die Rheinschiffahrt - Internationale Gewässerschutzkommission für den Bodensee Amt der Vorarlberger Landesregierung - Commission internationale de l'Hydrologie du Bassin du Rhin Internationale Kommission für die Hydrologie des Rheingebietes 	<ul style="list-style-type: none"> - AK Wasser im BBU e.V - Alsace Nature - Arbeitsgemeinschaft Revitalisierung Alpenrhein/Bodensee c/o WWF Regiobüro - Arbeitsgemeinschaft Renaturierung des Hochrheins - Bund für Umwelt und Naturschutz Deutschland - Landesgeschäftsstelle Rheinland-Pfalz - Conseil Européen de l'Industrie Chimique (CEFIC) - Deutscher Angelfischerverband e.V. - DWA Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall e.V. - EBU – UENF - EurAqua Network – Deltares - European Federation of National Associations of Water Services – EurEau - Fédération Nationale de la Pêche en France et de la protection du milieu aquatique 	<ul style="list-style-type: none"> - Bundesanstalt für Gewässerkunde (BfG) - HochwasserKompetenz Centrum e.V. (HKC)

	<ul style="list-style-type: none"> - Greenpeace International - Hochwassernotgemeinschaft Rhein Gemeinde- und Städtebund - IAWR - Internationale Arbeitsgemeinschaft der Wasserwerke im Rheineinzugsgebiet - NABU- Naturschutzstation Niederrhein - Rheinkolleg e.V. - Sportvisserij Nederland - vgebe energy e.V. - Wereld Natuur Fonds - WWF Schweiz 	
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