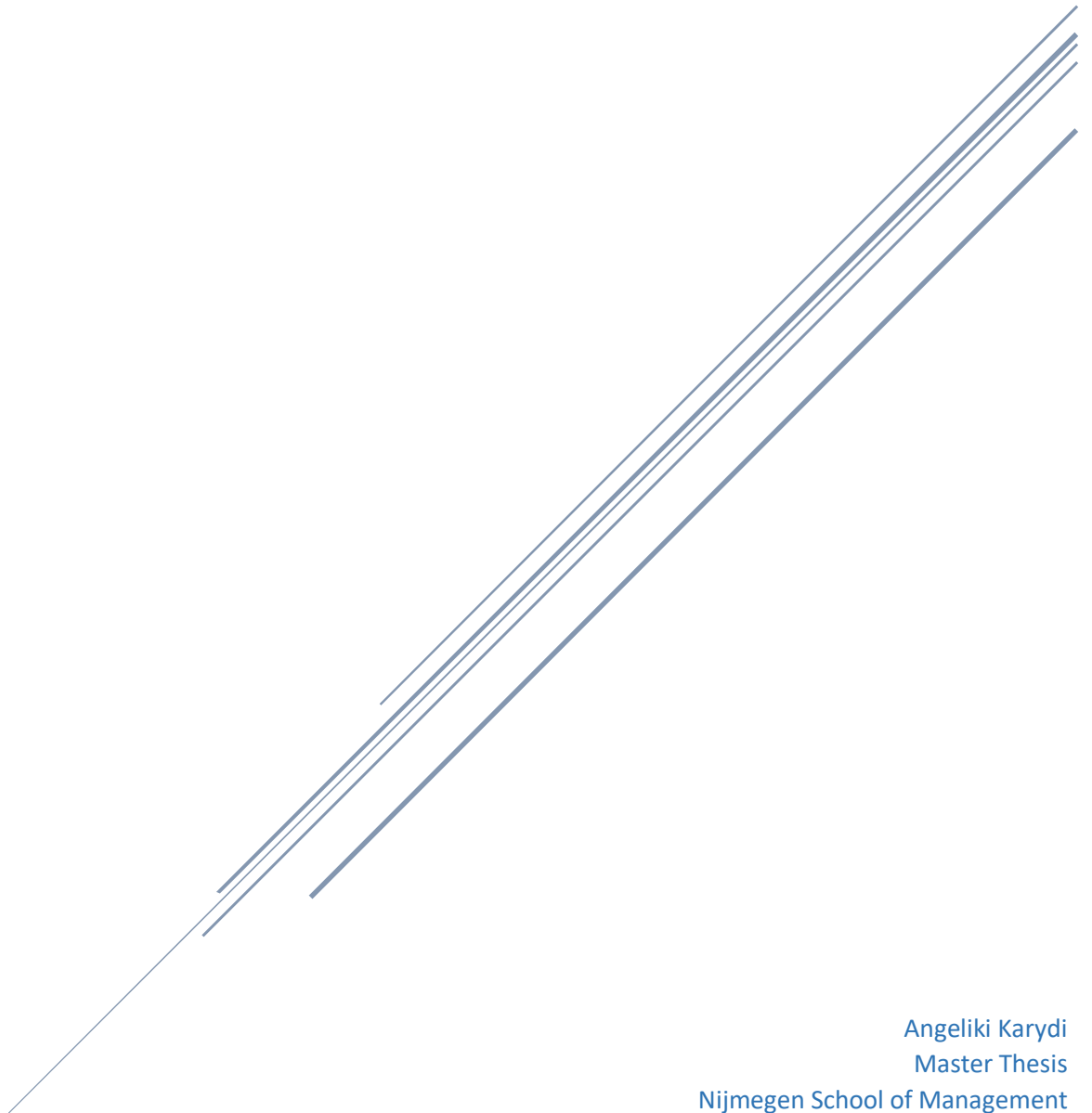


CROSSBORDER INTEGRATION BETWEEN THE NETHERLANDS AND BELGIUM

The case of water quality in the Meuse River Basin



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Master Thesis
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Colophon

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Faculty: School of Management

Degree: MA Environment and Society Studies

Course: Master Thesis

Date: 22.08.2019



Radboud Universiteit Nijmegen



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Summary

The threat to water quality accelerated by population growth and climate change emphasizes the importance of the wise management of water resources and aquatic ecosystems to ensure that clean water continues to be available at an affordable cost in the future. While obstacles to successfully coping with domestic river management problems can be formidable; issues of pollution along with other problems on transboundary rivers appear to be particularly difficult to solve. The adoption of the water framework directive (WFD) in Europe aimed to solve those problems by reinforcing crossborder cooperation between riparian states. The aim of this research project is to examine the level of crossborder integration in the Meuse River basin between the Netherlands and Belgium on water quality, after the introduction of the WFD. In order to measure the effectiveness of co-operation the Policy Arrangement Approach and the 3 C's (co-operation, coordination, collaboration) theories will be applied. To analyze the system context in place in the catchment, the Policy Arrangement Approach by Arts & Leroy (2006) will be used. This theory recognizes the interrelated dynamics within the policy domain, which encompasses four dimensions: actors, rules, resources and discourses. The 3C's framework will help identify the elements that can be used to characterize cooperative-coordinative-collaborative interactions in the Meuse river basin, account in what level of integration we are currently at and make recommendations to work on special characteristics to build foundations for a particular interaction.

This research is a single case study focused on the Meuse river basin with three sub parts: the Flemish-Dutch border area, the Walloon-Dutch border area and the shared catchment as a whole.

I have done semi-structured interviews with the relevant actors in the area from both countries. I was assisted by the ProgrammaBureau Maasregio in conducting the research process along with the interviews and better understanding the existing dynamics. I have been a participatory observer in an International Meuse Commission meeting and I have conducted a policy document analysis.

The system context of the Meuse and the integration dynamics within it are presented. Findings indicate that the integration in the area is at its infancy. Despite the high motivation and commitment of the partners, the findings demonstrate that the desired results are not achieved. This could be due to, among others, a lack of finance, official agreements and concrete targets and projects. The obstacles towards a more effective collaboration influence the integration dynamics and therefore the policy output. To be fully efficient, the integration effort will need further improvement. Recommendations as to how these may be addressed are presented at the end of this research.

LIST OF ABBREVIATIONS

CIW	=	Coordination Committee on Integrated Water Policy
DGO3	=	Directorate General for Agriculture, Natural Resources and Environment
DGO2	=	Directorate General of Mobility and Waterways
IMC	=	International Meuse Commission
IRBM	=	Integrated River Basin Management
IWRM	=	Integrated Water Resources Management
PAA	=	Policy Arrangement Approach
TMBC	=	Transboundary Mark Basin Committee
VMM	=	Vlaamse Milieu Maatschappij
VNBM	=	Flemish-Dutch Bilateral Meuse Commission
WFD	=	Water Framework Directive

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CHAPTER 1

1.1 INTRODUCTION

In post war Europe, there has been a transition from exclusive, self-interested and protectionist cooperative policies towards a more open, peaceful and beneficial co-operation. This cross border cooperation that was built on economy and trade has now expanded in other domains such as education, national security and water management. Crossborder cooperation in the later will consist the central theme of this thesis. The introduction of the EU Water Framework Directive 2000/60/EC (WFD) was one of the first institutionalized efforts in European water management, with the goal to understand and consequently integrate all aspects of the water environment to be effective and sustainable (Teodosiu et al., 2003). The directive's aim is to establish a framework for the protection of European waters bodies in order to achieve the chemical and ecological "good status" objectives throughout the EU. Along with the emergence of integrated river basin management (IRBM) in several countries throughout the world, the growing recognition of the multiple—often competing— uses of water, and the increased awareness of the interrelationships of water systems with other physical and socio-economic systems (Margerum, 1995) shaped the WFD's systemic intent. An important characteristic of the WFD is that it requires for countries that share river basins to work together to adapt to changing circumstances as well as from water managers to try and attune their activities to reach the European water standards thus rendering cooperation mandatory (Van Eerd, Wiering, Meijerink, 2014). The efforts to integrate water policies to attain national and European goals and at the same time deal with the political, social and economic complexities of water systems (Mees. et al., 2017) create a complex web of transboundary interactions. As water is not restricted by national or administrative borders, it is central for managing transboundary river basins to acknowledge the interdependencies of human and natural systems in all sides of the borders (Munia, Guillaume, Mirumachi, Porkka, Wada, Kumm, 2016). Furthermore, the challenges that are created by the allocation and preservation of resources between upstream and downstream countries and the peculiarities of the different catchment systems, complicate the relationships between the riparian states and often hinder the implementation of the WFD; therefore reducing cooperation (Voulvoulis, Arpon, Giakoumis, 2017). The Netherlands being a downstream riparian state receiving four international rivers (Rhine, Meuse, Scheldt, Ems) is well aware of those issues and has been promoting international water cooperation even since the pre-World War II period (Meijerink, 2008).

1.2 PROBLEM STATEMENT

Climate change and extreme weather events that are becoming more frequent, affect the water. The water quantity is not the only reason for worry, water quality is another growing global problem, limiting water resources for drinking water, domestic use, food production, recreation, as well as harming ecosystems (UNEP/WHO, 1996). The threat to water quality accelerated by population growth and industrial development makes it a prominent issue of cooperation to ensure our water is clean and safe (Bloesch, Sandu, Janning, 2012). Nevertheless, there are many challenges

associated with crossborder cooperation on water quality. Until recently, countries often worked independently to solve water quality issues. This is due to conflicting interests, contrasting priorities and a lack of trust between partners. Also, states often have different ideas on economic interests, environmental policies and ways of planning. Consequently, those conflicting ideas can affect the willingness of countries or regions to collaborate with riparian counties, while most water related projects and dangers in one country most likely affect the quality as well as the quantity of water in the other. In Europe, the WFD is meant to solve those problems by creating clean water systems (both on surface and groundwater) and getting citizens involved (European Commission, 2016). The WFD sets the general long term goals and leaves some freedom to the EU Member States for the accomplishment of said goals (Liefferink, Wiering, & Uitenboogaart, 2011). The directive, contains two provisions that are very important to crossborder cooperation (European Commission, 2000). Firstly, it obligates the EU Member States to define the river basin districts (Art. 3 WFD) where water management has to take place and secondly, it pursues a holistic ecosystem approach. Those provisions, are important because they introduce the ecological factor underlining the human-nature interdependencies and the need for interdisciplinary policies and also catchment management can transform the traditional upstream-downstream river dynamics where the downstream country suffers from water pollution while the upstream profits from the use of the resource. In that context. Holzwarth and Bosenius (2002) introduce the idea that the WFD has transformed the dynamics of cooperation that existed in international river basins by reinforcing the downstream country's position. The original deadline for the completion of those goals was 2015 and after the inability of the Member States to achieve them it was moved to 2027(Voulvoulis, Arpon, & Giakoumis, 2017). This proves the need to understand better how crossborder cooperation takes place in international river basins, in order to overcome some of the challenges mentioned above and attain good ecological and chemical water status. The Meuse river basin, will be used to shed some light on how international river basins can shape cooperation dynamics to reach their water goals and help produce relevant recommendations. The choice of this case study and the particular characteristics of the river will be elaborated further in sections 1.2 where scientific and social relevance are discussed as well as in chapter 3 of this project. For this research, I will analyze cooperation on a regional level, between the Netherlands and Belgium, drawing experiences from smaller tributaries of the Meuse while also looking on the catchment as a whole to understand how the Dutch and the Belgian governments cooperate to ensure the proper application of the WFD focusing on water quality. Understanding the degree of cooperation already taking place between the two countries and the existing links that connect them can help formulate better strategies. At the same time the current water quality results in Europe raise questions about the effectiveness of the regional cooperative regimes and the two perspectives meaning local and catchment wide will help me form a complete analysis. To address the problem of this research, it is crucial to comprehend the wider system context; who is involved, what the legal framework is, what resources are available to the local actors and especially the reasons and norms that drive these actors will provide insight in the forces driving the cooperative interactions in the Meuse river basin area. To analyze this, the Policy Arrangement Approach (PAA) (Arts & Leroy, 2006) is very suitable as it views policy processes from these four dimensions. After the system context has been charted, the focus will be on the cooperative dynamics between the actors involved, to provide insights into their interactions. These interactions, according to McNamara (2012), can be separated in

cooperative, collaborative and coordinative each one with distinct characteristics. Both theories will be extensively examined in chapter 2 of this thesis.

1.3 SCIENTIFIC AND SOCIETAL RELEVANCE

According to Wallensteen and Swain (1997) in river basins where we encounter serious water quality problems, there is a stronger incentive for cooperation. In general, the establishment of most European river basin institutions was founded on water pollution concerns (Kliot et al., 2001, p.323). Cooperating and financing measures against pollution, is more common for wealthier countries even in cases where direct benefits are not present (Linnerooth, 1990; Shmueli, 1999; Dinar, 2006). The difference between water quantity and quality issues lies in the fact that the latter is somewhat reciprocal. While one country can effectively withdraw water and deprive its downstream neighbors, even upstream countries may suffer from their own pollution (Kalbhenn, 2011). This leads to the assumption that environmental degradation encourages joint efforts to address it (Dinar et al., 2013). However, most studies on international river management concentrate on the subject of the quantity of water resources (Giordano, 2003), with only a few notable studies also considering water quality issues (e.g. Sigman 2001; Sigman, 2004; Bernauer and Kuhn, 2010). In the Dutch context, this trend continues with the majority of studies focusing on high water (Huisman, De Jong, Wieriks, 2000; Van eerd, Wiering, Diepernick, 2014, Renner, Meijerink, van der Zaag, 2017) cooperation and a smaller amount on water quality (Lulofs, Coenen, 2007; Meijerink, 2008) and river restoration (Nienhuis, Leuven, 1998; Van Eerd, Weiring, Dieperink, 2014). Recently however, the dominance of flood risk control has decreased to leave room for attention to the field of water quality. Despite the impressive investments aimed at improving water quality, the – perhaps too ambitious – targets have not been met yet (Voulvoulis, Arpon, & Giakoumis, 2017). In my opinion, crossborder cooperation on water quality is a key domain of research as it is a domain regulated by the EU where there are high standards to be achieved but at the same time it is an area there is still plenty of work to do as mainly due to the “one out all out” principal, regional waters targets for nitrogen, phosphorus and pesticides have not yet been reached (Cunningham R., 2012). Also, the hydromorphological condition of many waters also needs to be improved so that more room is available for riverbank plants and migratory fish to develop.

It is important to note here that a big part of the body of literature on transboundary water management (overviews can be found at Marty 2001; Bernauer 2002; Mostert 2003) has strongly focused on major international rivers due to the pressures and interests involved, and less on transboundary regional river systems, which in Europe alone accounts for the substantial number of 300 crossborder river basins, as recorded by a UNECE (2011) survey. Renner (2017) suggests that local and regional actors in border areas are crucial to the development and implementation of water policies and are directly confronted with the challenges of transboundary cooperation, as well as any inconsistencies and differences in national policies. Therefore, I believe it is important to research further regional cooperation including the Meuse tributaries to identify clearly the factors that enable or create barriers to that cooperation, understand what kind of cooperation actually takes place with the aim to contribute to existing academic literature.

Transboundary water cooperation in the Netherlands takes place mainly with two partners Germany and Belgium with which the country shares two international river basins. The cooperation between the Netherlands and Germany has

been extensively researched (Dieperink, 2000; Verwijmeren, Wiering, 2007; Van Eerd, Wiering, Meijerink, 2014; Marjolein, Van Eerd, Wiering, Dieperink, 2015; Renner, 2018) so this research will focus on water cooperation between the Netherlands and Belgium. Cooperation on water resources between the two countries has taken place in the Scheldt, Dommel and Meuse rivers. Meijerink (2008) researched policy arrangements and cooperation in the Scheldt River on issues of transboundary pollution and river restoration, concluding that even in cases with differentiated preferences, with issue linkage across policy domains we can attain positive results. Rijswick Van, Gilissen, Kempen Van (2009) in their research on the Dommel river pollution issues analyzed a case of “externality” common in upstream-downstream settings where the consequences of pollution in one country appear in another (van Kempen, 2014); this study underlined the difficulties in cooperation that can arise when countries are faced with extreme differences in their administrative and sociopolitical structures as well as in political priorities. Other research projects were oriented on flooding (Reuber, Schielen, Barneveld, 2005) and spatial planning in the Meuse (De Vries, 2014) as well as issue linkage in the Scheldt and Meuse as an instrument for cooperation (Warner, 2016).

Finally, in crossborder literature, we do not often encounter differentiations in the levels or stages of integration. Wiering and Verwijmeren (2012) developed an analysis of the various stages of collaboration in three cases around Europe, but not on the level of collaboration between the involved countries. It is, in my opinion, important to fill this gap as those different integration levels are the drivers behind collaboration, and understanding the different elements of integration can lead to improved policies. Therefore, comprehending the various circumstances and levels of transboundary collaboration offers a contribution to the literature on cross border cooperation, adding to the restricted knowledge on water quality.

Adding to this, there is a societal relevance to this project. As actors who are directly involved in the river, such as residents and businesses, are increasingly vulnerable and dependent on the river for their well-being, bad water quality will have a great impact on them (IPCC, 2013). As it has been pointed out, water issues transcend national borders, making integrated water management necessary in the Meuse basin. Improving crossborder cooperation in the field of water quality could reduce the risks for implicated actors in the long term. Also, this research can provide new insights into crossborder cooperation. With these new insights, this research could contribute to prevent water quality issues and the impact on the actors involved. Also, the research can provide insight into barriers between the different countries and cultures. Its application to a river basin such as the Meuse, especially with adopting the regional perspective has not yet been investigated. Finally, the societal relevance of this research is underlined by the fact that still, transboundary integration in the Meuse is far from perfect, and it is such a complex case that Rijkswaterstraat dedicates resources on interdisciplinary approaches to increase cooperation in the basin. This will be explored further in chapter 3.

1.4 RESEARCH AIM AND RESEARCH QUESTION

The objective of this research is to analyze the transboundary cooperation between the Netherlands and Belgium in the Meuse river basin on the application of the WFD focusing on water quality. The focus will be on small transboundary streams as well as the main catchment and the case study will be divided in the sub cases; cooperation

in the border with Flanders, in the border with Wallonia and in the multilateral level with all parties involved. The case study will be analyzed further in chapter 3. The analysis will be done through the use of the Policy Arrangement Approach to examine the system context of the policy processes and McNamara's Cooperation-Coordination-Collaboration (3C's) Framework to evaluate the degree of relational integration between the two countries on this subject. To elaborate on this topic the following main research question has been formulated:

“What is the degree of integration between the Netherlands and Belgium in the Meuse River with respect to water quality?”

The main research question is constituted of a synergy of complex and distinct elements. To better understand them and naturally produce answers as well as valuable recommendation I have formulated three sub-questions that will help lead the research. Those questions are meant to sketch the existing national and transnational systems in place, identify commonalities and differences that will then help me explain the level of current integration. Those are:

1. “What is the system context of crossborder cooperation in the Meuse river basins as defined in the actors, resources, rules and discourses dimensions of the Policy Arrangement Approach?”
2. “What are the differences and similarities of the Dutch and Belgian water quality management systems?”
3. “What are the present obstacles to transboundary cooperation between the Netherlands and Belgium?”

1.5 READING STRUCTURE

This thesis is structured as follows. In chapter 2, theoretical insights relevant to this research will be discussed, resulting in a conceptual model. After the detailed description of all elements is given, the operationalization of their application for the analysis of the data will follow. In chapter 3 the methodology, will be described including the research philosophy, research strategy, data collection and data analysis methods. In chapter 4, the findings of this research will be presented including an analysis of the characteristics of crossborder integration in the Meuse. The final chapter comprises a concluding reflection on the different theoretical insights and findings of this research. The main research questions will be answered and a number of lessons will be drawn and translated into recommendations for future policy planning. This chapter will also provide a discussion of the limitations of this research project as well as suggestions for further research.

CHAPTER 2

2.1 THEORETICAL FRAMEWORK

This chapter provides a deeper understanding of the theoretical framework, including the conceptual framework and operationalization of the theories which will be used in this thesis. They will be used to analyze the existent cooperation regime, the dynamics that have been formed and the effectiveness of regional co-operation within the case study. The two main theories used are the Policy Arrangement Approach (PAA), as developed by Arts and Leroy (2006), and the integrative 3 C's framework namely co-operation, collaboration and coordination first developed by McNamara (2012). The differences and similarities in the institutional arrangements of the countries are significant and it is evident that co-operation is more easily established when differences between countries are small. This is why I will first make use of the PAA that has been applied in several studies related to the environmental policy domain and water management to paint the image of the various layers of arrangements between the two countries. The PAA consists of a descriptive theory that will help understand the system context of the policy processes and provide background information for the cooperation dynamics. Then having built the context the 3C's framework will be used as it is meant to identify the elements of cooperation-coordination-collaboration in crossborder interactions in Meuse river basin. Through this theory, I will show what kind of interactions are currently active in the areas examined by this case study. Of course, depending on the end goal, the use of a particular interaction may vary. As a result, for every unique situation we need a certain distinct mixture and having a sense of the overall placement in the continuum can help identify where interactions aggregate. The reason for combining this theories is that the PAA provides a more static framework that has an explanatory use whereas the PAA is a more fluid framework that will assist me in producing an "active" theory that will be effective for the ever-changing landscape of crossborder relationships as well as provide more precise recommendations.

The chapter is organized in four sections; the first section presents the general concept of crossborder cooperation. The second section focusses on the 3C's framework, with the third section explores the PAA. The last section operationalizes these theories and concepts and presents the conceptual framework.

2.2 CROSSBORDER COOPERATION AND POLICY FRAMEWORK

As the significant concept under study is crossborder co-operation, it needs to be defined, as does the policy framework that surrounds it. First of all, there are different definitions of crossborder co-operation. Perkmann (2003, p. 156) for example describes it as "a more or less institutionalized collaboration between contiguous subnational authorities across national borders". This definition presupposes the existence of transboundary regions for the initialization of crossborder cooperation, which is often the case in international waters such as river basins (Perkmann, 2003). Therefore, crossborder water cooperation is increasingly viewed as a logical continuity of an integrated perspective on the management of major river basins (Wiering, Verwijmeren, Lulofs, Feld, 2010). Scott (1999) refers to crossborder cooperation at the local and regional level as "a means of managing complex processes of globalization while eliminating structural and cognitive barriers to problem-solving within international border regions" (p.3). Later in this research, we will explain more the term cooperation and how it will be operationalized but as a general term I will use Perkmann's definition as it takes into account that the process of crossborder cooperation can take place on a sub-national or regional level. Elhance (2000) describes the role of transboundary water resources by stating that "they

tie up all the states sharing a river basin into a tightly knit and highly complex web of environmental, economic, political and security interdependencies that are more likely to end up in cooperation” (p.63). Along with the Floods Directive (2007/60/EC) they provided a starting point for intensified crossborder co-operation in water management by introducing specific water-related projects and common policies such as the INTERREG I & IV projects.

2.3 POLICY ARRANGEMENTS APPROACH

According to Arts, Leroy & Van Tatenhove (2006, p.98) “the main aim of this approach is to understand and analyze this on-going institutionalization of policy arrangements, as a result of the interplay between the interactions of actors participating in putting policy into practice on a daily basis on the one hand, and processes of social and political change on the other hand”. So this framework will be used to analyze and describe water quality cooperation, related policies with the aid of four dimensions. The interconnections between the four dimensions are depicted in Figure 3. The first three dimensions, actors, resources and rules, deal with the organization of these policy arrangements; the last, discourses, deals with their content. All four aspects are interrelated, meaning that “a change in one dimension seldom stands alone and tends to have an impact on one or more of the other dimensions” (Arts & Leroy, 2006, p. 45).

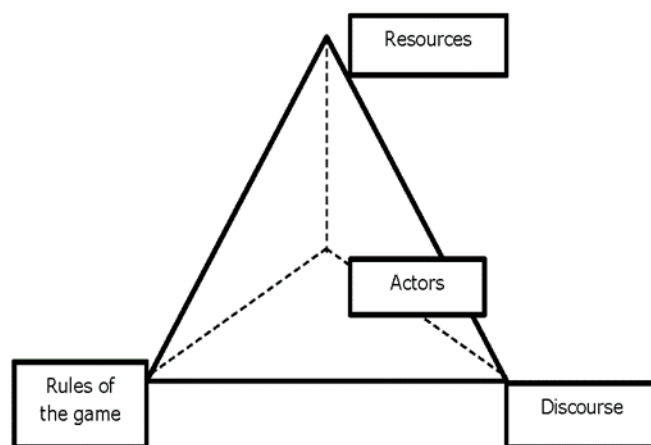


Figure 1. Policy Arrangement Approach (Arts & Leroy, 2006)

Therefore, to analyze a policy arrangement, all dimensions will have to be taken into account to capture the full dynamics of change within them. This approach thus provides “an excellent basis for an encompassing and dynamic

analysis of policy processes” (ibid). The PAA thus incorporates the complexity of society, through these interrelated dimensions, which is essential in understanding the policy domain and the associated policy processes. However, I have chosen to use the PAA as this theory is very fitting to analyze policy processes and it helps to structure the analysis and chart all aspects of this policy. Therefore, this theory is suitable to analyze the system context and policy processes as present in the case study. Additionally, the four dimensions of the PAA can be easily linked with the 3C’s dynamics as well. Next, these four dimensions and their link with the 3C’s will be explored. In section 2.4, the relation between the two theories will be operationalized.

2.3.1 ACTORS

The actors involved in the investigated domain play a key role as do their interactions with the other three domains. It is crucial to analyze who is involved, at what level and how actor coalitions work to truly understand the policy processes at work (Arts & Leroy, 2006). The actors may include authorities from different levels, regional, such as the water boards and the provinces even international such as the International Meuse Committee (IMC). Additionally, actors may be experts, NGO’s, businesses, civilians, organizations and other involved players. In this research, the importance of actors lies in their central position to answering the main research question. To understand the level of cooperation between two countries, we need to understand the actors that shape it and their perspectives. Actors are involved by public or private participation and even power relations. Within the cooperation framework, actors hold a central position as it is important they have a level of autonomy, shared goals and capacity for joint action.

2.3.2 RESOURCES

The resources, involve the division of power and influence between these actors, division of power meaning of resources and influence meaning who and in what way impacts policy outcomes. Actors can be either empowered or limited by resources as they enable them to implement certain policy arrangements (Verwijmeren & Wiering, 2007). As disparities in resources create differences in power relations, it is important to understand the relationship between actors and the available resources as this impacts policy choices (Arts & Leroy, 2006). In this case study, understanding how specific resources namely finances, time and expertise are distributed and managed is crucial in understanding the cooperation process. The resources are involved in different levels of the cooperative capacity in the Meuse area, as drivers, and also in the enhancement of joint planning and action. Analyzing this allows us to better understand the effect of certain resources, how their allocation influences integration and will help answer the research question.

2.3.3 RULES

The dimension “rules of the game” refers to the rules of the cooperation-in this case-game currently in place, in terms of actual policy rules but also other forms of interlinkage between the two countries as well as in terms of formal procedures for decision-making; some examples are regulations, norms, procedures, legislation, covenants, plans and projects that are not necessarily formal and binding (Eerd Van, Wiering, & Meijerink, 2014). According to Veenman et al. (2009), rules “demarcate ‘the room to maneuver’ for policy actors, e.g. their access to policy arenas, their participation in decision-making, their role in implementation processes, etc.” (Veenman, Liefferink & Arts, 2009, p. 203) Thus rules can like resources, help or limit the involved actors and influence the process of building a more systematic cooperative relation between them, especially in the field of joint planning and action as is the case with resources. Therefore, having a clear picture of the rules that are in place in our case study is important as it is closely related with decision making and conflict resolution.

2.3.4 DISCOURSES

The current policy discourses and programs, meaning the existing narratives of the various actors concerning cooperation and water quality, the way they perceive the problem, the different approaches to solutions and also the existing policy documents and measures is crucial as they influence their interactions and cooperation dynamics (Wiering, 2006). An example in the water quality discourse, is in which manner quality is monitored and expressed. According to Lulofs and Coenen (2007) it is mostly based on professional standards and not so much in interests and personal positions which is more common in upstream-downstream water authorities. Analyzing the discourses present in this case study is crucial to understand the systems context and trust that affect cooperation dynamics.

2.4 3C's FRAMEWORK

As the subject of cooperation is central to this thesis, it is important to note that the fragmentation of policies and the inability to provide integrated services that are demanded from European legislation as well as national state laws, is considered one of the mostly costly and complex problem of effective and efficient governance (Peters, 1998; Keast 2001). Consequently, there is a need for programs and projects to become better integrated not only across operational levels but also horizontally across organizations and sectors (Peters, 1998; Keating, 2001). As a result of this, there has been a number of integration concepts that have been developed or “companion C-words” according to Lawson (2002)—including cooperation, coordination and collaboration—as key themes in public policy discourse. In the early literature, the terms cooperation, coordination, and collaboration were often used interchangeably or subsumed under each other (Alexander, 1995; Lawson 2002). In recent theories however they have been differentiated and placed in an integration continuum defined by the intensity of connections and relationships between actors involved. This basic horizontal integration continuum is presented in Figure 1. For this thesis, we are going to use the 3C's framework, introduced by Keast, Brown, and Mandell and then further elaborated by McNamara (2012). According to this theory, in the horizontal integration continuum there is a progression from actors that perceive themselves as individual units to those who consider themselves interdependent and work together to achieve common goals changing their internal

structures as well as the relationships between them. McNamara places cooperation which she defines and the interaction between actors that decide to work together within existing frameworks to serve individual goals at the one end of the continuum (McNamara, 2012). In the research by Keast, Brown, and Mandell (2007, p. 17), cooperation is described as “getting along with others so that you can both achieve your own goals.” Coordination is placed in the middle of the continuum and is defined as an interaction between actors in which support from others is needed to achieve set goals so formal relations are structured (McNamara, 2012). At the other end of the continuum, collaboration is defined as an interaction between actors that work together to achieve goals collectively (Mattessich, Murray, Close & Monsey, 2001). Collaboration differs from cooperation and coordination in that it “requires much closer relationships, connections, and resources and even a blurring of the boundaries between organizations” (Keast, Brown, & Mandell, 2007, p. 19).

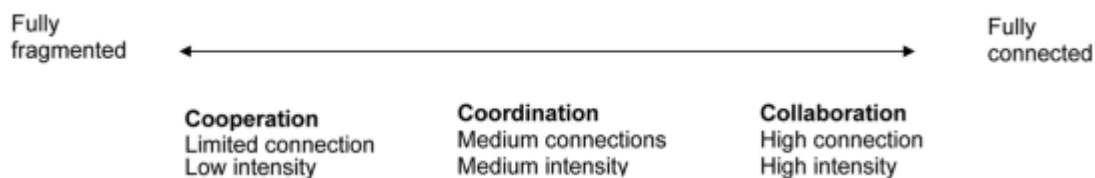


Figure 2. *Integration Continuum* (Keast, Brown, & Mandell, 2007)

The three types of interaction have overlapping characteristics and build on each other to develop. The main elements that can be used as evaluation criteria of the degree of relationship between actors are: Design, Formality of agreement, Key Personnel, Information Sharing, Decision Making, Resolution of Issues, Resource Allocation, Systems Thinking and Trust, as pictured in Figure 2.

Design refers to the structures that exist and support the collective efforts; depending on who carries the administrative load for a project, if it is shared or separated across the partners, if operational responsibility is split or there is equal sharing of responsibilities and competences, the possible interactions vary through cooperating in the existing arrangements to collaborating to address collectively set goals. Formality of Agreement is connected to the roles and responsibilities of the actors involved, to the organizational autonomy of the participating organization, the level of policy adaptation to common goals as well as the setting of interaction, whether that is bilateral or in the context of an international organization or steering group (McNamara, 2012). In cooperative relationships, working together is informal and mainly based on personal contacts of civil servants from both sides focusing on information exchange and capacity building. In collaborating interactions we notice both formal and informal arrangements that develop joint responsibilities as participants relinquish some of their autonomy to the group (Keast, Brown, & Mandell, 2007). Coordination rests somewhere in the middle as it does not need full alignment of procedures, as is the case with the various bilateral steering groups dealing with water quality issues. Key personnel can be defined as personnel from both countries that will have “the responsibility of implementing the partnership” (Thatcher, 2007, p. 8). By examining

the stakeholders and understanding who has formal authority, who controls important resources and who manages legitimacy we can evaluate which strategies are truly collaborative and who are not. This involves technical personnel, civil servants and politicians in higher level of government. Cooperative relationships, usually occur at lower levels of authority in this case water boards and municipalities, they are mostly personal, without the involvement of higher levels of the central government and no participant has formal control over the relationship (Keast, Brown, & Mandell, 2007). On the contrary, coordination combines the bottom up approach with top down support to legitimize implementation responsibilities between the partners. Finally, in collaborative interactions, participants are actively involved in implementation. They have authority to negotiate rules and make organizational decisions at the programmatic level based on group deliberation (McNamara, 2012).

Information sharing, concerns the extent to which the two sides communicate or jointly produce information concerning the subject of the joint effort. Practically, this could mean casual exchange of information on bilateral meetings for instance to joint monitoring or in higher integration, common river basin management plans. As we progress to the integration continuum, we end up in a situation where there is continuous dialogue, basis for shared knowledge and understanding coupled with common planning initiatives (McNamara, 2012). Decision making is the way in which “consensus is reached to move ahead on goal implementation of the interorganizational arrangement”. In this case, decision making has three sub-categories. First, is the national setting of decision making, how both countries make decisions and in the case of Belgium how federality influences national policies. Second, is the bilateral setting which is influenced by national priorities, European projects and even public consultations for projects on regional level involving both parties. The third sub-category is decision-making in international structures such as the International Meuse Commission, which operates under different rules and requires a different approach. Nevertheless, generally in cooperative interactions decision making is separate and independent, in coordinative interactions, the decision making process is more centralized and in collaborative interactions, decisions regarding operations, planning and goals are made collectively through a participative process (Mandell, 1994).

Solution of conflicts is related to problem solving when territory or control issues arise. Such issues also can arise when there are conflicting goals, for example one country can be more focused on water quality or flooding control whereas the other on drought management. In coordinative interactions problems are solved usually through a neutral facilitator whereas in collaborative ones, participants work together to find acceptable solutions and procedures to reduce conflict (McNamara, 2012).

The resource allocation parameter will be explained in more detail as part of the PAA in section 2.3 but generally in cooperative interactions, resources are not joined, in coordinative interactions, they are exchanged to create mutually beneficial relationships that enhance common abilities to achieve individual goals and in collaborative interactions, resources are pooled to leverage personnel, expertise, and funding, in drawing integrated river basin plans on drought for instance and achieve collective goals together.

Systems thinking refers to the adoption of a holistic approach to integrate all aspects of both service delivery systems. In cooperative interactions, each side functions independently in the operational level organizing for example small scale regional projects, in coordinative ones there is sometimes “compatibility of systems” to promote individual goals

and in collaborative interactions, there are linked systems that connect personnel from all layers of integrated partners (Thatcher, 2007).

Finally trust, is based on mutual understanding and belief that all actors work together towards the same goals. In cooperative interactions, trusting relationships are not necessary as interests of individual organizations remain paramount and independent roles are maintained. In collaborative interactions, relationships are built and communication-formal and informal- intensifies, so trust between participants at all levels increases as does the likelihood that collective action will occur. It is important for participants to believe that partners are committed to the collective objective, will act within the established rules, and negotiate honestly with one another (Keast, Brown, & Mandell, 2007). The various components of the 3C's framework, form the essence of the unit of analysis of this thesis "cooperation"- but in a broader sense depicting all the parts that compose crossborder interactions in this case on water quality and they are encountered in various degrees.

Elements Distinguishing among Cooperation, Coordination, and Collaboration			
Element	Cooperation	Coordination	Collaboration
Design	Work within existing organizational structures	Centralized control through hierarchical structures	Shared power arrangements
Formality of the Agreement	Informal agreement	Formalized agreements	Informal and formal agreements
Organizational Autonomy	Fully autonomous; policies to govern the collective arrangement are not developed	Semi-autonomous; policies to govern the collective arrangement may be developed by higher authorities	Not autonomous; policies to govern the collective arrangement are developed jointly by participants
Key Personnel	Implementation of the partnership occurs at the lowest levels; leaders are not involved	Implementation of the partnership is based on a higher authority; a boundary spanner may be used to foster linkages	Implementation of the partnership is based on the participants; a convener may help bring participants together
Information Sharing	Basic information shared through informal channels	Information is exchanged through more formal channels	Open and frequent communications through formal and informal channels
Decision Making	Independent decision making	Centralized decision making	Participative decision making
Resolution of Turf Issues	Conflicts avoided through independence	A neutral facilitator may help resolve conflicts	Participants work together to resolve conflicts
Resource Allocation	Information is exchanged	Physical and nonphysical resources are exchanged to achieve individual goals	Physical and nonphysical resources are pooled in support of collective goals
Systems Thinking	System integration does not occur	System integration may occur to better achieve individual goals	System integration does occur to better achieve collective goals
Trust	Trust relationships are not required but may develop	Leaders work closely to create relationships based on trust	Trust between participants is needed to sustain relationships

Figure 3. Elements Distinguishing among Cooperation, Coordination, and Collaboration (McNamara, 2012)

2.5 OPERATIONALIZATION

The 3C's framework presents a useful tool to implement successfully integration initiatives and policies. Nevertheless, it is required to know upfront the results we expect to achieve through it. If all that is required

Is the exchange of information then a cooperative interaction is enough. Similarly, if we want to achieve a more systematic operation of the already in place structures, then coordination is the preferred interaction. Finally, if "business as usual" does not get us the needed results, collaboration may be the appropriate interaction. To effectively operationalize the conceptual framework, I believe we have to refer to the Ambition Pyramid (Figure 4) presented by Programmabureau Maasregio as a proposition for the planning and organization of crossborder cooperation in the Meuse River. According to the Pyramid, the current situation in the area is at the level of joint fact finding and each

country has its own water programs. There is a shared awareness of the problems and goals in the area and there are relations being built based on that awareness. The ultimate goal however is to reach a point where trust between partners, creates a common vision for the Meuse along with joint planning and funding; a relationship based on shared awareness but also shared ownership. Therefore, it is clear that the expected relationship is closer to collaboration. At the same time, it should be noted that although this is not a view expressing all the involved stakeholders but a part of them, it is nonetheless an indicative element of the relationship ambitions that inherently exist in the area. This is where the 3C's come in as the integration spectrum offers diverse methods to reach the collaboration ambition. However, it is likely that to arrive at an optimal interaction we might need to mix and blend the available mechanisms to best accommodate the set goals and the operational context. The PAA framework will be used as a tool for the description and analysis of the system context of the policy processes in the case study.

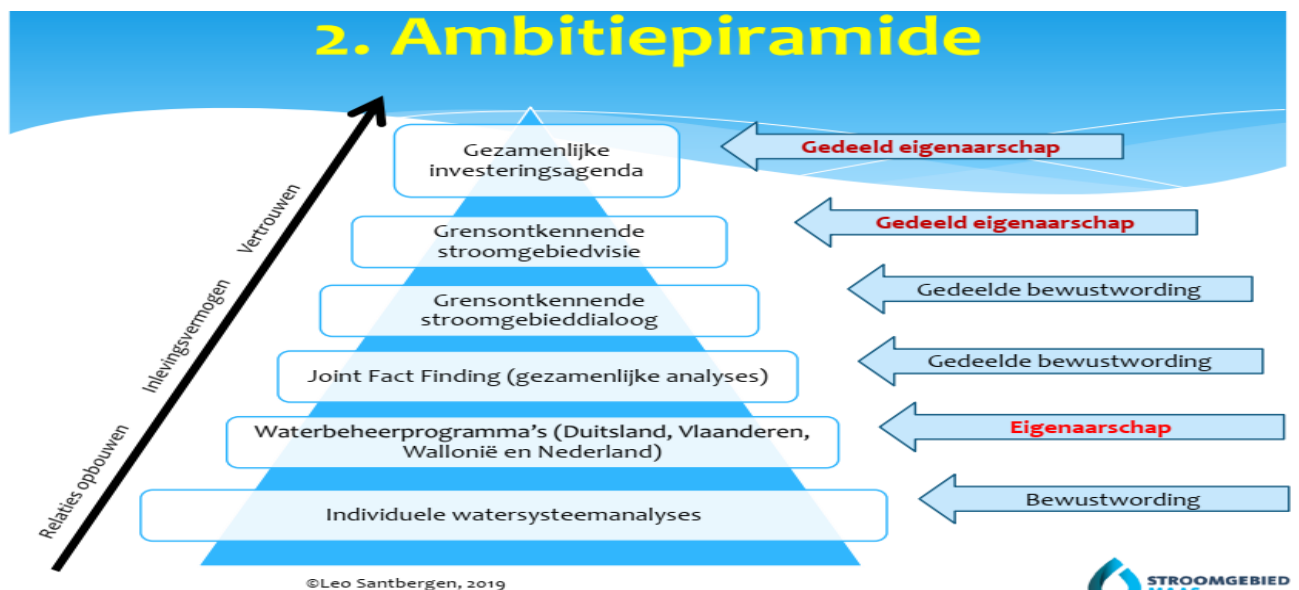
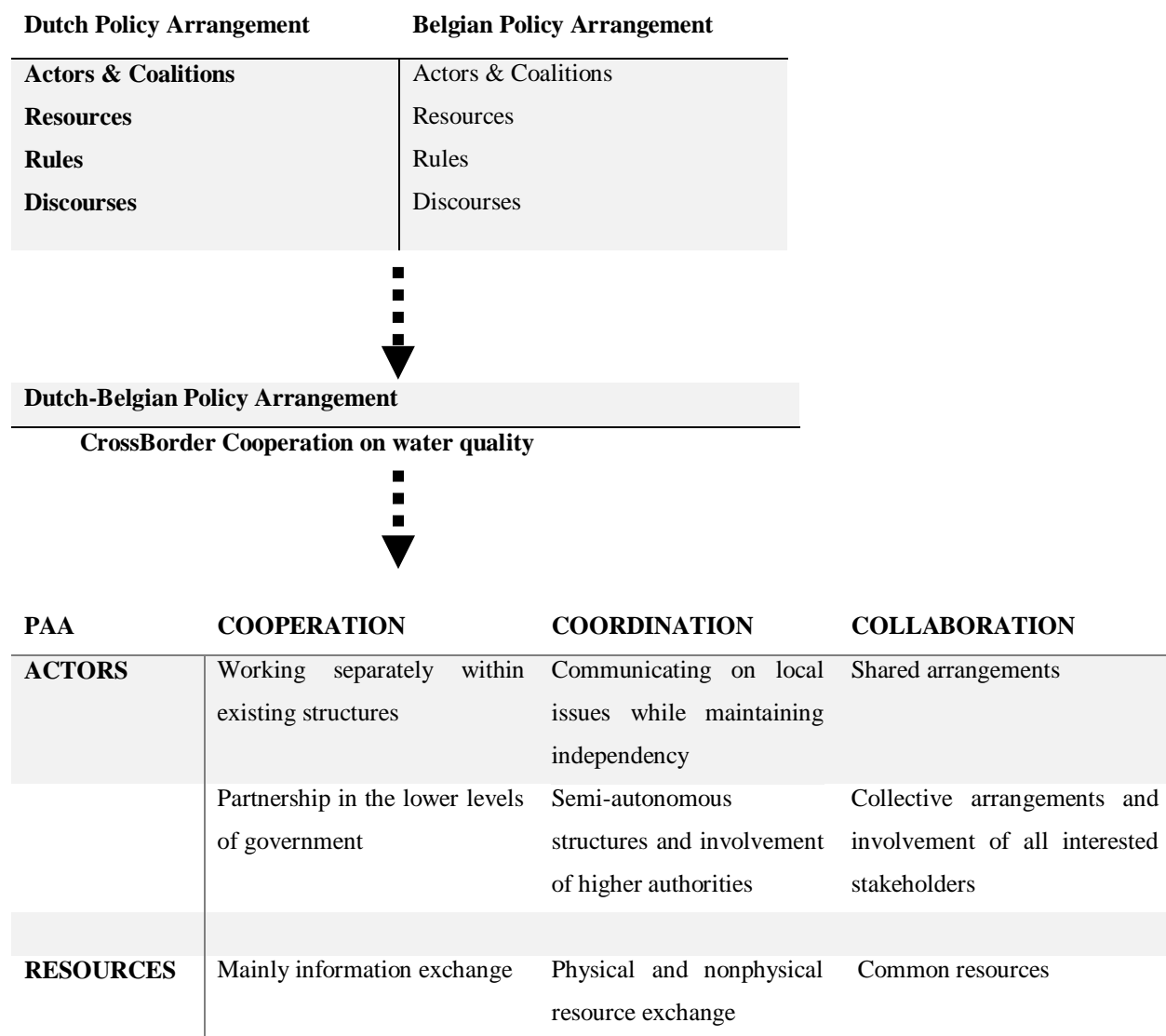


Figure 4: Ambition Pyramid (Leo Santbergen, 2019)

A key aspect of the PAA is that within the water management sector and specifically water quality in this case, it examines the “establishment of the dynamism and the stability” (Arts & Leroy, 2006, p.25) recognizing the processes that provoke change political or social and thereafter help define what interactions are desirable and which have a chance to lead to better policies. The framework will depict the interplay between actors, resources, rules and discourses in the operational and structural level that provides an interpretation of the policy arrangements but also of innovative forms of steering and will grant this research with an insight into these processes, answering sub-question 1; understanding the processes that lead to arrangements, also provides that basis to identify the main differences and similarities between the regional water policies of Belgium and the Netherlands in the Meuse catchment and, in addition, the enabling and constraining characteristics of the different national arrangements. If we understand the integration dynamics that are present in this case study we will be able to identify agents which creates obstacles that hinder the progress of collaboration practices. This will help answer sub-questions two and tree. Simultaneously, all four dimensions of the PAA are linked with the three levels of the integration spectrum. This is presented in Figure 4,

the arrow depicts the three possibilities that arise from the processes between the countries and the influence they have to the overall result. So the PAA will serve as an auxiliary framework that will provide the baseline to proceed with the 3C's framework, analyze the current situation in the Meuse and thus answer the main research question. Figure 2 will be used as well, as I will research how each variable that characterizes integration is present in our case study and how it influences water quality cooperation. The theoretical assumption here is that the three dimensions of collaboration are related to the four aspects of the policy processes and therefore influenced by the policy arrangements. Consequently, to determine the overall degree of collaboration, I will have to analyze the presence of each component as explored in the answers to the sub-questions. I will work under the assumption that the ideal degree of integration for our case study are policy arrangements that include "collaboration" characteristics. This conceptual model will help place findings into their context and ensures that all relevant data is interpreted correctly, providing structure to my research and help answer the questions adequately.



	Basic information sharing	Continuous Information exchange	Joint Fact Finding
RULES	Independent decision-making and conflict avoidance	Separate decision making through bilateral dialogue and consultations	Decision making jointly
	Informal agreements and organizational independence	Formal agreements	Both
DISCOURSES	Trust relations optional	Creation of trust relationships	Trust is needed to sustain relationship
	Avoiding conflicts	External facilitators to resolve conflicts	Working together to resolve conflicts
	No system integration	System compatibility to achieve individual goals	Integration to achieve common goals

Figure 5. Conceptual Framework (authors own)

CHAPTER 3

3.1 METHODOLOGY

This chapter focuses on the methodology used in this study. It starts with a description of the research philosophy adopted in this study in section 3.1, followed by a section that explains the research strategy. Section 3.3 subsequently provides an overview of the case study that will consist of the central theme of the thesis. In the final section, I will present how the literature will be analyzed and assessed.

3.2 RESEARCH PHILOSOPHY

Before going into the methodology of this proposed research project it is important to delve into the research philosophy that is going to be pursued as it is directly connected to the research methods as well as the data collection and analysis (Guba & Lincoln, 1994). According to Moses & Knutsen (2012) research philosophy is defined as “the understanding of the nature of the world and how it should be studied” (p.1) and you can describe it with three elements, ontology, epistemology and methodology (Guba & Lincoln, 1994) In the case of water system concepts as

they are secular and at the same time, social (Swyngedouw, 1996) they call for a synthesis of ontology and epistemology where they are concerned, as difficult as this might be. Some writers have expressed the contradiction that is intrinsic in socio-nature constructs with Castree (1995) noting that it "...appears paradoxical: how can one be ontologically realist about produced "nature" and yet epistemologically skeptical?" (Castree 1995, 15).

To begin with the ontology, which focuses on the basic idea of what 'reality' is; what is real and what can we know about it? (Guba & Lincoln, 1994, p. 108), in this research I am going to follow the critical realism paradigm. This is a post-positivist approach that explores the objective but also the socialized is one perspective that has been seen by political ecologists a solution to these divides (Watson, 2014). For critical realism, reality is assumed to exist but impossible to know perfectly (Farthing, 2015), thus the researcher is not able to know reality with certainty. As an approach, it differs from constructionist perspectives in that it considers the 'social world as reproduced and transformed in daily life' (Bhaskar 1989, p. 4). Critical realism, is a middle approach between positivism and post-modernism that includes characteristics from realism and epistemic relativism and allows the researcher to be aware of the knowledge the "socio-nature" dialectical relationships create while at the same time maintaining that reality exists independently from the researcher and that our access to the social world access is always mediated and thus subjective (Bryman, 2012). Critical realism suggests that claims about reality must be critically examined to get the closest, possible estimation of reality but this will never be perfect as all observations can be fallible (Trochim, 2006). Critical realists also believe that all observations are theory-laden and that scientists are inherently biased by their cultural experiences and world views. For instance, in crossborder cooperation patterns arise from people's interaction and behaviors, thus the information the researcher can collect from actors active in cooperative interactions, will be biased and therefore subjective as the reality of the research is imperfect. As cooperation can differ between domains and coalitions, there is no reality as a whole to comprehend and the only way to achieve objectivity is by data triangulation.

From the perspective of epistemology I investigate as Guba and Lincoln (1994) put it, "what is the nature of the relationship between the knower or would-be-knower and what can be known?" (p.110). This paper analyzes the aspects of collaboration between two countries the Netherlands and Belgium that will consist of our unit of analysis. The epistemology of a research project is often affected by the ontological paradigm that is used (Guba & Lincoln, 1994). This study will research the crossborder integration and illustrate how organizational settings influence structures of cooperation, hence it is necessary to look into the various aspects of crossborder interactions, in both sides of the border and gather empirical insights from the actors involved in this sector. Based on a critical realist ontological stance as mentioned above an objectivist epistemology and a combination of inductive and deductive reasoning.

With deductive reasoning the researcher explores the world and the various social contexts, based on a pre-determined theory that serves as a leading instrument. In this approach, an inquirer ultimately aims to find a confirmation (or not) of the theory in question by empirically testing in advance set-up hypotheses with collected research data (Trochim, 2006). Inductive reasoning, on the other hand, is the reverse approach. The researcher initiates observations and based upon these observations, detects patterns or consistencies in the observations, which ultimately leads to developing a theory or to coming up with a conclusion (Trochim, 2006).

The deductive research approach was used for developing the conceptual model, while inductive reasoning was used later in the research process when the interviews were conducted and obstacles and opportunities to cooperation were pursued. Based upon these facts, in turn, general conclusions were drawn about the main research question and recommendations on future policy arrangements.

3.3 RESEARCH STRATEGY

To answer the main research question and sub-questions, I will use a pluralistic approach where, as mentioned before, multiple theories are used to analyze crossborder interactions in the Meuse river basin. Finally, for the methodology a case study will be used as it is ideal for gaining in-depth knowledge for a particular subject and analysis of these complex situations (Creswell, 2007). According to Yin's (2001) definition: "Case study research is a qualitative approach in which the investigator explores a bounded system (a case) (...) over time, through detailed, in-depth data collection involving multiple sources of information (...) and reports a case description and case-based themes" (p. 1). Additionally, "case studies are the preferred strategy when 'how' or 'why' questions are being posed [...] and the focus is on a contemporary phenomenon within some real-life context"(Yin, 2001, p.1). This is applicable for this research as it focuses on a subject that is still in process and in the center of European legislation and national objectives. Nevertheless, case studies often lack rigor, can be biased and often they do not provide a basis for scientific generalization (Yin, 2001). I will tackle those issues in part 3.5 of this research.

3.4 CASE STUDY

In this project, I am going to look into the cooperative interactions on water quality in the Meuse river catchment and especially in the part that is shared by the Netherlands and Belgium. Specifically, I will research three different sub-parts of cooperation that will as a result provide a complete image of the cooperative dynamics in the river basin. The first one is crossborder cooperation between the Netherlands and more specifically the Noord-Brabant and Limburg areas and Flanders, the second Limburg and Wallonia and the last one will be the trilateral cooperation in a higher level ranging the total of the shared catchment. That way I will look into the three sub-units of cooperation that take place and reach comprehensive and inclusive results. Simultaneously, that geographical separation will be cross-cutted by an analysis on the diplomatic, strategic and operational levels of crossborder interactions. The diplomatic level, is basically the three governments' visions and policies on water quality and it is the same in all cases. The strategic level refers to specific directions for national organizations, as well as strategies to pursue to achieve set targets. Finally, the operational level is the day-to-day tasks in a lower level required to sustain crossborder interactions. The diplomatic level is the same in all the geographical levels but the strategic and operational differ in every area depending on the unique actors and special conditions. Those three cases are in a state of constant interaction and influence each other on the way crossborder relationships are formed. By combining them in the analysis, I will achieve a more holistic and exact representation of the current situation.



The Meuse source is in France and the drainage area involves Belgium, Germany and Luxembourg before emptying into the North Sea. It is a rain-fed river with a changing discharge system that easily moves from flooding (1993) to drought (Berger, 1992). Moreover, the river provides drinking water for the 6 million inhabitants that populate the border area between the Netherlands and Belgium, it is in general, a fresh-water resource for the canal system of the province of Noord-Brabant supporting agricultural activities in the area and has high recreational and ecological value (Voltz et al., 2002). In Limburg, the river is also used as a source of hydropower. All of those different functions depend heavily on the rivers water quality which is influenced by various factors. For example, in periods of drought, where water quantity is decreased, there is not enough water for agriculture, an important economic activity in the area nor cooling water for power plants (Tu et al., 2005). Also, as the Meuse is not fit for navigational purposes, it is suitable for the fostering of various species of rare fish, a fact

Image 1: Meuse river Basin (Wikipedia 2019) that makes the conservation of water's quality significant. Except the regional and ecological importance of the river, it is an interesting case study also due to the fact that we notice a spatial variability in water quality. Upstream in France the river is least polluted and while flowing downstream the water quality deteriorates, mainly from the inflow of the Belgian Sambre river, and remains poor when pouring into the Netherlands. This also is an important factor that influences cooperation in the river basin. The Dutch national water plans, that lay the principles for domestic water policy until 2021, take into account the National Delta Program and other related water policies but at the same time underline the importance of transboundary cooperation in all transboundary rivers to attain the national water goals (Rijkwaterstraat, 2016) which is then explored further in the river basin management plans specific to the Meuse (Rijkwaterstraat, 2016b). An important actor in the area is the International Meuse Committee (IMC), created in 2002, who is responsible for sustainable and comprehensive management of water in the river basin district of Meuse. The IMC has an action plan and meets once a year; for preparation, the committee has 5 permanent working groups and different groups of temporary projects (Sjerps, ter Laak, Zwolsman, 2017). There are various other bilateral structures between the Netherlands and Belgium that influence interactions in the Meuse such as the Flemish-Dutch committee for the Grensmaas, who are also in communication with the IMC and whose role is going to be analyzed further in the next chapter. All the characteristics numbered above, make the Meuse an interesting case as not only is a river susceptible to climate change but also the only river basin in the Netherlands for which a mandate was created-Programmabureau Maasregio- that concentrates specialists pertaining to water quality, quantity and flooding and is responsible for policy propositions to facilitate crossborder cooperation on river issues.

3.5 DATA COLLECTION AND ANALYSIS

3.5.1 Data Collection

For the data needed to answer the research questions, I plan to use methods pertaining to qualitative research: semi-structured interviews, participatory observations and document analysis (Verschuren & Doorewaard, 2007). Primarily, I did 8 semi-structured interviews with relevant civil servants. These semi-structured interview guides were formed by looking at the different indicators from the operationalization process and combining these to the different interviews. During most of the interviews, I had the possibility to record most of the interviewees in a memo recorder. Two interviews were conducted over the phone. Their answers have been processed anonymously but the names and functions of the interviewees have been gathered in Appendix I. I have spoken with 4 Dutch civil servants working in different government branches and well as representing the Dutch government in the International Meuse Commission in order to get insights in the different priorities that exist in all government levels. Also, I interviewed a Flemish civil servant working as policy advisor in the Flemish Environment Agency, a Walloon functionary on the Directorate General for Agriculture, Natural Resources and Environment (DGO3), an employee of a Walloon river contract and a functionary of the International Meuse Commission. I used semi-structured interviews to be more flexible, emphasize on how the interviewees perceive the issues at hand and their views on events, patterns and future possibilities (Bryman, 2012). Furthermore, the semi-structured approach to interviewing, created more space to keep an open mind and to let the data speak for itself. These interviews were steered by a list of questions about cooperation and trans-border relations. The questions I asked the interviewees can be found in Appendix II

The formulated questions were abstracted from the theoretical concepts studied thus far. Whenever a theoretical concept frequently returned in the cooperation literature and it could help in answering the research question, an interview question about the topic was constructed. However, the questions were not postulated in a fixed order, nor were they the same for every interviewee. Since the interviews were semi-structured, they left space for additional questions that could arise during the interview his left the opportunity to specify the questions to each individual interviewee. The interviews averaging around 45-60 minutes, were based on snowball sampling. Participants were purposefully selected due to their professional knowledge and insight related to water quality, crossborder cooperation and international relations, therefore a nonrandom recruitment approach was adopted (Hennick et al., 2012).

I have been a participatory observer (Bryman, 2012) at the International Meuse Commission to collect data on the cooperation dynamics, its effectiveness and how this takes place in this multilateral setting. This helped me gain an insight into the multiple actors that are involved and the different roles these actors play within this collaborative framework. Also for this thesis, I cooperated with the Programmabureau Maasregio and specifically Noud Kuijpers with whom I conversed and exchanged views and ideas over the subject. A list of the relevant meeting where I was an observer can be found in Appendix I.

Lastly, I have conducted a policy document analysis of public documents. Specifically, the documents include reports by governments concerning water policy and crossborder cooperation such as the Flemish Commission of Coordination Integral Water Policy reports, Rijkswaterstaat water management plans for the Dutch part of the Meuse as well as European reports on the state of the implementation of WFD in the two countries. Finally, I used Walloon reports on the state of national waters to gain enough data to complement the interviews. All documents can be found

in the references. The method of analyzing documents is regarded as an essential task to be executed within research (Creswell, 2013). This method is used for exploring what has been written on the subject of crossborder cooperation from different perspectives and within different contexts. It is important to note that the documents on cooperation, national policies as well as water quality differ depending on their author/organization, the scale they focus on and the perspective they write from (scientific or political). During the documentation analysis, I have taken account of this differentiation. The data collection method of document analysis is applied in presenting the different policy arrangements approaches of Belgium and the Netherlands in combination with the interviews. In the case of the federal state of Belgium, due to the low number of responders to the interviews, documentation analysis has as well been used as a primary data collection method.

3.5.2 Data Analysis

For the data analysis I will make use of coding to examine policy documents, interview results and observations. This will take place through deductive and inductive methods; based both in theory and in my own experience and background to make sure the quality of results is correct and that all relevant information is taken into account (Bryman, 2012). Coding has been defined as “the reviewing of transcripts and/or field notes and giving labels to component parts that seem to be of potential theoretical significance and/or that appear to be particularly salient within the social worlds of those being studied” (Bryman, 2012, p.569). When coding the data, I analyzed the transcripts in order to define the significant parts for my research in the context of the theoretical framework and research questions, as well as being aware of any unexpected finding. Following the coding of the empirical data I formed code families. These categories are more abstract than the codes (Bryant & Charmaz, 2007). The resulting code families are based on the relationship between the codes and the overall context of the research project (Wiener, 2007). The resulting categories were the main instrument for the analysis (Ter Haar, 2014). The coding was done by hand and all the coding lists will be uploaded at the University server. In order to put codes into categories, I appointed a general term for each category. All the codes within those categories served as an illustration of the category concept. Those categories functioned as guides for the analysis of the empirical data. When the relations between concepts are made, the some categories can be used as building blocks of the final theoretical results (Bryman, 2012). All the coding families as well as examples can be found in Appendix II.

3.6 VALIDITY AND RELIABILITY OF RESEARCH

The reliability and validity criteria will ensure that the research is well done and the results scientific. Evaluating reliability and validity for a qualitative study is challenging as they display a ‘contextual uniqueness’ (Bryman, 2012, p. 392) which makes measuring reliability and validity complicated. A criterion that can be used is trustworthiness. The trustworthiness of the research increases when the researcher asks feedback from other researchers and keeps good track of all data collected (Bryman, 2012). In this case feedback came from supervision at Programmabureau Maasregio and Radboud University.

The issue with single case studies is that they cannot be easily generalized. When participant observation is used or when qualitative interviews are conducted with a small number of individuals in a certain organization or locality, they argue that it is impossible to know how the findings can be generalized to other settings. According to Mitchell (1983) ‘the cogency of the theoretical reasoning’ rather than statistical that is decisive in considering the generalizability of the findings of qualitative research. Meaning that the findings of qualitative research are to generalize to theory rather than to populations. This is what Yin (2009) calls ‘analytic generalization’. Nonetheless due to the focus on a single case study, it is possible that other structures generate different results; however, the methods used in this proposed research proposal could be applied similarly and by interpreting the results through existing literature, I believe the validity and reliability of this research are warranted (Verschuren & Doorewaard, 2007). Ethics are crucial in research as well; When doing interviews, I explicitly asked for the interviewees consent for using their answers as well, after explaining this research and its purpose, and they were informed that their answers are processed anonymously (Bryman, 2012).

To facilitate the validation of data in social research, it is helpful to involve cross verification via two or more sources. This is what has frequently been referred to as triangulation. As the main type of triangulation, combining different methods in one research allow observers to “partially overcome the deficiencies that flow from employing one single research or one method” (Nachmias, 2007, p.12). In this study, different types of methods- interview, observation and secondary sources- were used to improve the research’s validity. Apart from triangulating between different methods, triangulation between opinions from different stakeholder groups, such as project managers and civil servants on different levels were also included in the study, which was summarized as another type of triangulation- data triangulation- by Denzin (1978). By employing different methods and including different stakeholder opinions, it is possible to reduce the bias in the research.

CHAPTER 4

4.1 RESULTS

In this chapter, the findings of this research are presented. Prior to answering the main research question concerning the level of integration between the Netherlands and Belgium on water quality in the Meuse, the three sub-questions will be answered. Those are:

- “What is the system context of crossborder cooperation in the Meuse river basins as defined in the actors, resources, rules and discourses dimensions of the Policy Arrangement Approach?”
- “What are the relevant differences and similarities between the Dutch and Belgian water quality management systems?”
- “What are the present obstacles to transboundary cooperation between the Netherlands and Belgium?”

The present chapter discusses the answers to these sub-questions, whereas the next chapter answers the main question and formulates recommendations for future policy. To answer the sub-questions, as mentioned in the previous chapter the codes and the codes families formulated by the interviews with civil servants as well a participatory observations will direct the analysis. Lastly, the data will be reinforces with the results of the interviews on cooperation in the Rhine River, to substantiate and contextualize the results from the three sub-cases of this study and help formulate recommendations.

4.2 POLICY ARRANGEMENTS IN THE MEUSE

To synopsise, before we can understand the level of integration in the Meuse, we need to understand the policy processes that exist in the different levels in which cooperative interactions take place; namely the regional/border level which is spatially separated mainly due to the federal Belgian state and the international. Understanding who is involved in water management in the area, what the legal framework is in both regional and international levels, what resources are available to the local actors and especially the reasons and norms that drive these actors will provide insight in the system context of crossborder cooperation in the Meuse. These will be discussed in terms of the Policy Arrangement Approach.

4.2.1 ACTORS

Due to the Belgian federal system, we encounter Flemish and Walloon actors that are independent of each other and they interact with the Dutch government at a national level but also a regional level in various structures. We also encounter bilateral and international actors that influence crossborder relations in the area.

The *Flemish* water management system is mainly consisted of government actors and is divided between the national, provincial, municipal and sub-local level. The rivers and consequently the responsible managers are divided in navigable and non-navigable water courses. The latter are further divided in categories depending on the extent of their watershed. The Coordination Committee on Integrated Water Policy (CIW) is responsible for coordinating all the Flemish actors involved in water policy and is therefore designated as the competent authority in Flanders for water policy-making and for the implementation of the WFD (CIW, n.d.c., c). The provinces, municipalities and polders and wateringues¹ constitute the other layers of basin organizations.

	ACTORS
Navigable Water Courses	Central Government Ministry of Mobility and Public Works
	Vlaamse Waterweg N.V

¹ The Wateringue is a decentralized public administration elected and managed by its adherents (owners in the district of the wateringue). It receives technical and administrative assistance from the region and is financially controlled by the Permanent Delegation of the Province. The same applies in Wallonia (AWW,n.d.c).

Non Navigable water courses 1 st Category	Flemish Environmental Agency (VMM)
Non Navigable water courses 2 nd Category	Provinces
Non Navigable water courses 3 rd Category	Municipalities
Non Navigable water courses 2 nd , 3 rd Category	Polders & Wateringues

Figure 6. Flemish water actors (author's own)

In *Wallonia*, there is also a four-layered water management structure similar to that of Flanders. The Walloon government is the competent authority for implementing national and European environmental policy, including the WFD. In a more decentralized level, the authority is dispersed to the Public Service of Wallonia Service public de Wallonie, SPW) and two directorates-general: Directorate-General for Agriculture, Natural Resources and Environment (DGO3) and Directorate-General of Mobility and Waterways (DGO2) (European Commission, 2015). Also, since 1993 there are the *contrats de rivière* (hereafter called River Contracts) that unite public and private actors involved in water management in a sub-basin, and let them define an action program for an integrated management of the water system in the area, currently, 13 river contracts are active in Wallonia (Mees et al, 2017).

	Policy Development	Implementation
Navigable watercourses	DGO2	DGO2
Non-navigable watercourses 1 ST Category	DGO3	DGO3
Non-navigable watercourses 2 ND Category	DGO3/ River Contracts	Provinces
Non-navigable watercourses 3 RD Category	DGO3/ River Contracts	Municipalities/Wateringues

Figure 7. Walloon water actors (author's own)

Water management in the *Netherlands* is the joint responsibility of the central government and local actors. The management of large watercourses, so-called national waters, is carried out by the regional office of the Ministry's Directorate-General for Public Works and Water Management (Rijkswaterstaat). The management of smaller, so-called regional waters comes under the responsibility of provinces, water boards and municipalities. They bear responsibility for the translation of national water policies, such as the Water Act, into regional measures and has operational tasks for a part of the water management (Havekes et al, 2015). The water boards, are functional, decentralized government institutions with tasks exclusively in the field of water management and they have an interprovincial character (Havekes et al, 2015). Currently, there are 24 water boards, in the Netherlands and their employees vary from 300-500 people exclusively working on water.

	Actor
National Level	Ministry of Infrastructure & Water Management (I&W)

	Rijkswaterstaat
Regional Level	Provinces
	Municipalities/ Water boards

Figure 8. Dutch water actors (author's own)

In a multilateral level there are regular stream committees that are organized on the basis of small crossborder catchments of the Meuse and in which the Netherlands, Flanders, Wallonia and Germany come together twice a year to discuss water issues on “an operational level” (interview 4). The International Muse Commission (IMC) is the only international venue outside the EU where all relevant actors of the Muse river basin come together to discuss issues pertaining to the management of the basin.

4.2.2 RESOURCES

As mentioned in the previous chapter, there are different kinds of resources that influence policy. In the context of this research project we will mainly focus on finances, time, expertise and water itself. Wallonia has substantial water resources, while Flanders and Brussels cannot cover all of their needs with natural water supplies on their territory. Wallonia, has 55% of the national water resources, with only 37% of the population of Belgium. This situation implies large transfers of drinking water from one region (Wallonia) to the other two (Flanders and Netherlands) (Aubin & Varone, 2001). In Flanders, the budget for water policy is decided every year by the central government and then distributed across all the departments (CIW, n.d.c., d). In the subject of expertise, Flemish officials rely on knowledge institutions and consultancy firms. The expertise available within municipal administrations is limited compared with that of supra-local water managers and local officials are, therefore, supported by the VMM, which organizes information sessions and training on the WFD and the FD.

In terms of financing, Wallonia is struggling as the main revenue for water authorities is based on subsidies from the national government as well as funding from provinces and regions. The household environmental tax is another source of income at the regional level. Regardless, because in Wallonia almost all water management is in one institution (SPW), the entire budget could be spent on issues deemed important at any given moment by the central government, therefore local needs are sometimes not prioritized (Etat Environnement Wallonie, 2018). As river contracts do not have their own resources, every action is funded and implemented by one of the participating partners mainly the municipalities and provinces with the Walloon government adding 2.33euros for every euro they finance (River Contract Circular,2001). However, river contracts do participate in European Interreg projects, for which they receive separate financial resources. Concerning expertise, Walloon managers tend instead to cooperate with universities and knowledge is often produced from the bottom-up (e.g. by provincial water managers). The participation in Interreg- and Life-projects, is important for the acquisition of expertise, but also additional budget. The Netherlands has a national fund for water management: the Delta Fund. Up to and including 2028, more than €1 billion in government funding is available in this fund for investments in water issues including quality. Water boards,

municipalities and provinces have their own budgets separate from general taxes (European Commission, 2019b). Water boards, they have their own staff and budget that is independent of the national government and the provinces' and do not have to compete with other policy priorities. Half of the budget is covered by inhabitants, and the remainder would be shared by the owners of buildings, of agricultural land, and of nature areas (Mostert, 2017).

For monitoring both countries have their own plans and stations. At the border with Belgium, however the Eijden measurement station monitors pollution levels in the Meuse and transmits information to the Dutch and Belgian water authorities together. It is one of the few examples of transboundary common fact finding in such a big scale.

On the subject of expertise, it is important to mention European Interreg projects, as they are the main providers of the resource in the area along with knowledge institutions.

4.2.3 RULES

The WFD provides a common framework for water management and protection in the European Union. The Directive applies to surface water as well as groundwater and obliges the Member States to set up policy plans for river basins and to write programs of measures to improve the chemical and ecological status of surface waters and the quantitative and chemical status of groundwater. Except for the WFD both countries have their national legislations. These laws guide the policies on the national level. It can be concluded from the interviews that the regulations in the Netherlands are stricter than in Belgium. Examples of national legislation from the Netherlands include environmental impact assessments (EIA) and the Delta Program. Flanders and Wallonia issued the Decree on Integrated Water Policy (DIWP) and the Water Act respectively to promote multi-sector coordination and implement the European Water Framework Directive (European Commission, 2019a). In Wallonia except for the Water Act, river contracts are legally addressed by the 2008 River Contract Order. The responders do not experience national legislation as relevant to crossborder cooperation and only European legislation is seen as leading for transboundary interactions.

4.2.4 DISCOURSES

The last dimension of the PAA is discourses; which ideas or perceptions do the actors have regarding both the policy process and on broader ideas, such as 'crossborder cooperation' and 'water quality' in general. From the total of the conducted interviews, an important discourse that was highlighted, was the **interdisciplinary approach** towards water issues. In Belgium especially, it is very strong. The CIW for example that coordinates all water policy in the region is comprised from various thematic groups pertaining to water issues from agriculture to spatial planning (interview 5). The fact that the Flemish delegation in the IMC is comprised from representatives of different domains such as transport, is indicative of this discourse. In the Netherlands according to Jordan and Schout (2006) despite the internal political support for integrated water policy especially in the European level, the domestic coordination mechanisms between sectors or departments are relatively weak (pp. 166-186). This was confirmed by many respondents who also underlined the fact that only recently policies in the local level have followed an interdisciplinary approach combining issues with solutions (interview 4).

Another important discourse is the **national policy discourse on water** which is crucial for the stakeholders' intention to interact but also, to their interest on certain issues or specific geographical areas and the general framing of water quality issues. In the Netherlands, the main issue policy focus from the provinces and water boards, was flooding and since the WFD also water quality whereas Flanders, and especially Wallonia, have a greater interest in tackling low-water issues. According to a Dutch civil servant "they [Wallonia] find things interesting which do not fill our biggest needs" (interview 4). This **discourse** is equally influenced by the political actualities in all regions. Politicians for instance are very interested on the image they project to the public and especially in the Netherlands where the water boards have their own regional elections. Therefore it is significant for a politician to be seen as accepting to cooperating on water issues that are seen as important for a big part of the stakeholders in the regional scale, whether that is water quality or not (interview, 4). In the province of Limburg for example, that shares crossborder streams with Wallonia, in the previous years, there was a rapprochement towards the province of Liege to initiate and co-finance water quality projects, mainly due to the fact that the deputy in charge was very eager to make contacts with the Walloon side (interview 4). Related to this is the fact that, according to all responders' politicians on a higher level are mostly interested in investing in projects that will create jobs and stimulate the economy such as roads and transportation than water quality.

Furthermore, another discourse can be distinguished for crossborder interactions, **cultural differences**. Respondents indicate that the cultural differences in the area are large and have an impact on cooperation. In terms of content, these differences are in the way of working, on the language and overall mentalities. In the Netherlands, there is a high degree of technocracy, and people try to work pragmatically on issues. Belgium is a lot more hierarchical, and it is important which people are involved in the decision making and for which organization they work. Also, in the Netherlands people are a lot more informal to each other, compared to Belgium where they treat each other with formality and are less direct. The extent to which these differences can be seen as barriers will be explored in the part 4.4.

Many organizations, institutions and stakeholders are involved in the Meuse basin. River managers and water boards are the most important actors for regional cooperation. The IMC is the main stimulator of international interactions at the river basin level. In terms of rules, European legislation is an incentive for cooperation. European regulations are perceived by the actors as leading since they are binding on all EU member states. In the area of resources, the main focus is on funding, knowledge and capacity. In the area of finance, there are several differences in the t area, mainly due to the domestic financial situations. A discourse that emerge in the research and is also prevalent in the literature are the different (national) ideas and plans. This is because the impact of different types of water issues is different for the different countries and regions in the river basin. In Wallonia, for example, the low water problem is a greater problem than water quality, while this is the case in the Netherlands the other way around. So there are differences in ideas in the Meuse basin, and they can sometimes conflict with each other. This is where the relevance of crossborder integration lies, to come to joint solutions despite the different views of countries and regions. Another aspect, which is not underlined in the literature, but which came up from the data are the cultural differences. All of the factors mentioned above influence crossborder arrangements in the Meuse area shared by the Netherlands and Belgium.

4.3 DIFFERENCES AND SIMILARITIES OF WATER MANAGEMENT SYSTEMS

Having already presented a rough image of the policy arrangements on water quality for both countries, in this section, I will look closer on these arrangements in order to understand how crossborder interactions are organized and to answer the second research question of this thesis namely the differences and similarities of the water management systems between the Netherlands and Belgium that influence water quality cooperation. I will make use of the components of the 3C's framework to present a more complete picture.

As mentioned in the methodology, this case study focused on three different geographical stages that combined sketch a holistic image of the situation in the Meuse. Those are interactions with Flanders, interactions with Wallonia and interactions between the two countries as a whole. The geographical dimension will be complemented with a review of the interactions in the diplomatic-strategic-operational levels. The diplomatic level is the same in all the geographical levels but the strategic and operational differ in every area depending on the unique actors and special conditions. As already mentioned in chapter 3, the different stages and the way crossborder interactions are organized in each of them will illustrate the role developments in one geographical stage can have in another and if the same obstacles apply in every stage.

Following this, it is crucial to explain which specific actors are involved in this case study. From the Dutch side on a central level the main actor is the Rijkswaterstaat. In the regional level, in interactions with Flanders the main actors are the province of Noord Brabant and water board Brabantse Delta as well as the province and water board of Limburg and in interactions with Wallonia mainly the province and water board of Limburg. With regard to international consultations, the provinces depends on the ministry, whereas for the regional system, the provinces can act autonomously, and only Limburg is represented in the IMC.

On the Belgian side, competences are more complicated especially since the country is divided in separated regions. It is not very clear which regional structures are exclusively responsible for water quality on the areas of the case study as authority is dispersed depending on the issue, the location and the availability of resources. On a central level the VMM oversees all non-navigable watercourses, contributes to the realization of the policy objectives by reporting on the state, and prevents and minimizes harmful impacts on water systems. It interacts with both Dutch provinces and water boards. The same applies to the Vlaamse Waterweg N.V. holds an important position in regional interactions as it is a member of the Flemish delegation in the IMC and manager of the Flemish part of the Grensmaas, the natural border with the Netherlands (Swanenvleugel, 2007). Also, in the regional level, the province of Antwerp is an important actor. The same conditions applies in Wallonia where regional authorities are even less active in crossborder interactions than in Flanders. The main actors involved is the government departments DG02 and DG03, local communities along the Geul and the river contract of Meuse Aval.

4.3.1 SIMILARITIES

The similarities between water systems in the regions involved are based not only on their organization but also on the fact that they face the same internal difficulties.

Firstly, through the interviews was very clear the **willingness** from both sides to organize common projects and collaborate. An example of this was the European project Aquabonem between the province of Limburg and Wallonia on water quality on the Geul, which in the end was not realized but showed intent for coordinating policies. This positive disposition slows down when financing issues come to light. But as mentioned above all sides are open to help each other financially, the problem is that no side easily accepts funding from the other due to political reasons (interview 3). This does not change the fact that there is a collaborative attitude from both sides especially at an *operational* level, where all stakeholders face similar issues with water quality. It is essential to note here that among civil servants in both countries, which were more or less on the same level there was a sense of mutual understanding. One participant observed “we do our best, we the workers know where the problems come from and we'll have the contacts and we can work together and have a good relationship but it should be more than only just informing each other on what we're doing” (interview 4).

This *collaborative* inclination is particularly present in the IMC. It is important in the context of the Commission to find partners on the issues you face so that it will be placed on the agenda. If for example, the Netherlands is the only one who faces a problem concerning the water quality, for instance, nutrients levels it is very difficult to put it on the agenda as the other countries do not share that sense of urgency (interview 3). Within the IMC the Netherlands usually has the same stance as Flanders and Wallonia is closer to France. Regardless, the fact that the Netherlands and Belgium can find common ground in the IMC talks even partly, shows that they can do so also on the regional level.

Another similarity concerning the **resource allocation** aspect is that all countries have limitations on the available resources they can spend on water quality issues, especially in international projects whether that is time, personnel or expertise. So a common theme in all the interviews, from all the sides is the inability of civil servants to attend crossborder meetings or attend them unprepared (interview 2). This, of course, has an impact on the results and the progress of the relationship. European projects that offer extra funds and expertise have been cited as a possible enabling factor, but only temporary as after the funding is over it is difficult to make the experience last. “It is difficult to take the experience to other farmers and make them last and stimulate more people to take action” one responder explained (interview 1).

Another similarity shared between the regions is the nature of **national problems**. As in Belgium, there is a divide concerning competences and authority but also a divide between Flanders and Wallonia, in the Netherlands, there is fragmentation, on the level of transnational interactions. In Wallonia, internal communication between the national government and regional authorities in the sub-basin level is scarce (interview 7). At the same time relationships and integration between Flanders and Wallonia is also problematic, with more intense interactions introduced only recently after European suggestions (European Commission, 2019a). In the Netherlands water board Brabantse Delta, communicates more with Flanders, whereas water board Limburg as well as the province with Wallonia. But the water boards do not communicate internally about their interactions with the separate regions of Belgium. So there are separate bilateral or trilateral meetings that involve representatives from all the aforementioned actors and it is not uncommon, for one water board not to be informed as to the development of bilateral relations with Belgium in

different parts of the common river. That way a lot of information goes missing or not all partner are at the same level of briefing, even in the same country.

Finally, one of the most important similarities is the aspect of **Trust** in inter-organizational arrangements that are based on mutual understanding and confidence that all partners are working toward collective goals. As cooperation is an organic growth process and in the bottom line involves people working together it is important to incorporate the element of trust between partners. All of the responders agreed that there “is mutual respect on both sides of the river but also trust” (interview 5). This is complemented by the fact that there are people who work for a long time and create a constant factor. Also when a new project is initiated all respondents agreed that all participants do their best to make it a success as it is the realization of long talks, there is a common budget and is an opportunity to know each other.

To sum up, the aforementioned similarities can function as *enablers* of cooperation and work as a common basis between the regions that will intensify communication and progress the relationships. Next I am going to look at the differences that evolve as obstacles in reaching collaborative interactions.

4.3.2 DIFFERENCES

The main differences are situated in the following aspects of crossborder interactions:

- **DESIGN**

Another form of transboundary interaction consists of the structures that facilitate operational competences; in our case, administrative systems, research and management plans as well as support organizations. This is the aspect of organizational **Design**. One of the main issues that appeared from the interviews was the fact the design in the Netherlands is simpler than in Belgium particularly on a *strategic* level. One respondent noted that “in the Netherlands in each area we have one organization responsible for water quality, in Wallonia it depends on the size of the area flowing to the river, you can have to deal with four different organizations to make progress on an issue” (interview 3). This was corroborated also by Belgian partners that recognized this issue. In Wallonia for instance, there are two different ministries responsible for water quality which complicates internal planning as well as information gathering (interview 8). As a result of this, building common structures to support joint efforts is rendered difficult and parties are restricted to cooperative interactions. Simultaneously, there are variations in the *operational* level. In the Netherlands, according to one respondent, “there are subdivisions in each water board and in each subdivision there is an area manager responsible to make contact with all kinds of crossborder organizations. There are around 3 people in each division frequently involved with Belgian colleagues [on issues of water quality & quantity]” (interview 1). On the other hand, in Belgium in the case of the province of Antwerp that manages most of the regional watercourses between the Netherlands and Flanders, the water department is composed by less than 10 people responsible for everything from recreation to low water and quality (Mees et al., 2016). The Walloon DG02 has a total of around 6

people working on issues of international river cooperation in general (interview 7). This results in the difficulty of conducting joint research and planning as the administrative structures available are unequally designed. Nevertheless, in the *operational* level there are examples of successful linkages such as the case of the Common Belgian-Dutch Border Consultations (BENEGO) that bring together representatives from the municipalities of Antwerp and Breda for cooperation proposals, working groups and other common efforts on several issues, including water quality in the area (Benego, n.d.c). Different designs are also present. In the Netherlands, there is a high degree of technocracy, and functionaries work on issues by conducting many studies whereas in Belgium the focus is put on present urgencies and priority issues (interview 1) as well as “the acquaintance, the creation of a relationship” (interview 3). This points out that there is a divergent mentality on how the organizational design is set and executed and the achievement of collaboration with shared arrangements for water quality issues between the countries is hard on an operational as well as a *strategic* level.

- **ORGANIZATIONAL AUTONOMY**

This aspect centers on the policies that govern crossborder interactions. The greater the internal autonomy of involved actors, the easier it is to achieve collaborative structures. For this component, the respondents were asked about the mandate they have as well as the internal structures of their organizations. It became clear, that in the Netherlands the organizations responsible for managing water quality had a lot more autonomy inside the country than the Belgian ones. One respondent went as far as to note that regionally the Dutch water boards consist of “another democracy even entirely on its own” (interview 2). In Flanders, the mandate is different as all decisions concerning water policy and planning have to be taken in by CIW and then the Flemish government (interview 5). In Wallonia, the same issues apply and similarly with Flanders the authority levels are fewer and concentrated on a higher level. There are the higher officials and then the rest of the civil servants that work as intermediaries, have a very specific mandate and essentially express the views of the central government (interview 7). The limited autonomy of the Belgian water structures, sometimes hinder the interactions between the parties especially on a *strategic* level as the difference in organizational levels, create difficulties for the Dutch civil servants in finding the right counterpart and getting quick responses from the other side (interview 4), limiting the evolution of strategic contacts to anything more than cooperative. On an *operational* level there is some coordination as there is no need of national approval for small regional projects aimed at citizen sensitization and information exchange. The signature of a cooperation charter between Brabantse Delta and Dommel water boards, the province of Antwerp and the VMM on the operational water management of a handful of crossborder and border-forming streams and rivers is an example of coordination on a regional level. The charter contains agreements on the exchange of water quality data, information on water drains and water level data. The concrete elaboration of the charter takes place within the crossborder water consultation working groups (GoW) Molenbeek-Mark and Dommel-Thornerbeek and means extra capacity for the operation of these crossborder working groups (Nieuwsbrief Maasbekken, 2015).

Another important component of organizational autonomy, are the rules of the game that are involved in crossborder interactions. Earlier, the most important rules were mentioned. Now, I will focus on the extent that national legislation

can influence transboundary interactions. The Belgian institutional system implies a division of competences with the federal level retaining most environmental attributions as well as important levers, notably economic ones which can influence environmental policies. Still, on a local level where there are larger interdependencies, diverting national policies can have different consequences in different sides of the river. As a result, national legislation is something that actors cannot ignore and that is also where the importance of international consultation lies. Despite conflicting national legislation, countries must meet each other so that implementation does not lead to conflict. An example of this, is the case of the Grensmaas, where Dutch authorities need to consult with Flanders even on national measures so that there are not any indirect negative effects on the Belgian side of the river. Another side of this dimension, is the different rules and policies that participants have for measure and comply with the WFD. In the Netherlands, many substances are being measured for the chemical water status when in Belgium on the contrary fewer substances are being measured (European Commission, 2019a). This produces different results on the water quality status and shows that there is no interconnectivity in policies even on crossborder waters and no multi-organizational decisions.

- **DECISION MAKING**

The aspect of **Decision Making** refers to the way the two countries reach decisions concerning water quality issues on an operational and diplomatic level and affects the form of crossborder interactions. Here I got mixed responses from the interviews. The main issue is the fact that the two countries have different structures and ways to make decisions on a *strategic* level, therefore it is difficult to meet each other on water quality issues. For instance, one respondent noted that often there is a miscommunication with Belgium as they do not have functionaries that can make decisions on water quality projects at the same level as regional Dutch water boards (interview 1). In the Flemish government, all the decisions are made at the ministerial level. As one participant said there are “functionaries who can prepare everything they want but they can’t make the decision” (interview 5). Still, there is some room for decision making mostly on an *operational* locally confined level, for smaller projects such as transboundary factsheets for water pollution, which of course are restricted on the amount of money spent and the range of action. Nevertheless, decision making in Belgium is more centralized than in the Netherlands, which in itself influences the cooperation discourses between the countries. As one respondent put it “if you talk with a civil servant from Belgium and they do not have the mandate from their supervisor you can exchange information but you cannot be sure about the final result of the interaction” (Interview 1). In the context of the IMC, also all participants represent their governments and are there to exchange views and information, with many talks focusing on protocol and diplomatic issues. From the interviews and the literature, there was not any evidence of common decision making. Each region makes independent decisions on policy, measures and implementation according to the national needs and goals. There is a very clear distance on a *diplomatic* level on water quality policies between the countries. They are made on a different level- central in Belgium and more decentralized in the Netherlands- and despite informing the other side on their content they are developed in parallel. Decision making is a significant element of integrated interactions since it is very hard to move from cooperation to coordination since issues of national sovereignty are raised. Moving towards coordination

but principally collaboration, meaning joint decision making, would signify transforming the way we understand sovereign states and this is something really challenging.

- **KEY PERSONNEL**

The aspect of **Key Personnel** deals with the stakeholders involved and their respective roles in building, maintaining and implementing a crossborder relationship. In the Netherlands the competent authorities for water quality issues in the area, water board of Limburg employs around 314 people working on water issues whereas the water board Brabantse Delta around 500. To make a comparison, the VMM that in regional level is responsible for cooperating with the relevant stakeholders in order to transport and implement the European directive on water quality as well as the preparation and financing of the River Basin Management Plans (CIW, n.d.c a), consists of a personnel of 900 people with around 42 of them focusing only on water management and even less dealing with international water issues (interview 5). In Wallonia, this number diminishes ever further with the DGO2 having around 6 people focused on international water relationships. Therefore, to begin with there is a big fluctuation on the available personnel involved. Adding to this the division of Belgian authorities for water quality then it is logical that to create a constant rapport that could evolve in crossborder collaboration, the focus is put on building contacts with people you know personally on the other side or with whom you have frequent communication. Meaning that functionaries in both sides of the border, communicate in an *operational* level with their “contacts”, creating personal working relationships with specific people instead of going through more official channels and addressing national organizations in a more strategic level. This has two outcomes; first, implementation of measures on a regional level is mainly carried out by the relevant participants while diplomatic contacts on water quality issues are not frequent and second, it is common, that when there are personnel changes or in case of health issues, the contact consequently the relationship is broken and has to be built anew from the beginning (interview 4).

As a “new generation” directive the WFD asks for public participation for implementation. Citizens and other relevant stakeholders are important in creating crossborder interactions, as they are affected by bad water quality, in cases when people cannot swim in the rivers or of over-fertilization which causes water stress. Nevertheless, citizen participation barely exists in Flanders and possibilities for participation are limited to the official public inquiries organized annually in the form of advisory councils of strategic meetings (CIW,n.d.c., d). The situation is similar in the Netherlands, especially concerning international coordination on public participation this exists only for the Rhine river basin and not the Meuse. It is interesting that the final WFD fact sheets and the 2010 to 2015 Brabantse Delta Water Management Plan only include information from the public actors despite the local attempts for joint fact finding with multiple stakeholders (Santbergen L., 2013). Private sector involvement in the Netherlands is equally absent and the country is said to suffer from an awareness gap on water-related risks (OECD, 2014). Yet, as the agricultural sector is very important in the Netherlands, an important stakeholder in the policy field is the Limburg agricultural and horticultural association (LLTB). Due to the strong agricultural lobby in the area, WFD-related measures have not been able to address diffuse pollution by agriculture. Especially since the water boards do not have authority on that sector, and agriculture is a strong economic domain in both countries that is also a major source of

water pollution, there have not been any citizen initiatives by either sides on crossborder streams. Despite the moderate public participation, regional authorities try to gather relevant stakeholders when meeting on a specific problem or trying to organize new projects (interview 4). This has reinforced collaborative interactions locally.

- **RESOURCE ALLOCATION**

This another form of crossborder interaction, meaning the independent resources of the parties and the ability to pool them together to further enable the partnership. From the interviews, I found that Belgium and especially Wallonia has fewer available resources than the Netherlands. Those resources are mainly used on national water quality or low water issues than on regional crossborder projects, a choice reinforced by the upstream downstream relationships in the area (interview 1).

According to a respondent in Belgium, there are “not enough people and not enough time” (interview 5) to spend on bilateral interactions. Human resources deficiency has been mentioned at all Flemish governmental levels. This deficit is primarily felt by the sub-basin boards, of which most do not have the staff required to develop an effective deliberation structure. At the municipal level, a lack of personnel forms a barrier for enforcing legislation. With the start of the economic crisis in 2008, many administrations faced a recruitment stop, the impact of which is still felt today (Mees et al., 2016). In the VMM that is mainly responsible for bilateral relationships in all levels, there are 14 people responsible for international contacts. There are other smaller groups, such as the secretariat of the VMM and the water quality groups that work on the field that also have international contacts and exchange information when needed with crossborder partners but the system is fractured and there is not always internal communication the need for contacting relevant authorities across the border (interview 5). As a result of the resource disparities, resource exchanges in a strategic as well as operational level is centered on information exchange.

Here, I should add that it is common for the Dutch, Flemish and Walloon partners that the available personnel for crossborder projects or the available time they have to spend in crossborder talks and committees is limited and has to be shared with other “regular” duties. So for example the province of Limburg can have 4 or 5 people who work on international projects or meetings but it is not full time a fact that influences the amount of work and the progress they can offer (interview 4). Adding to the human resources imbalances is the fact that the Dutch have a long history of managing water resources and have invested in water treatment plans and other similar projects for the rivers water quality. On the contrary, in the Belgian state, water management has been passed on to the regions only in the early 1990s. As a result, the Flemish and Walloon institutions had to make an enormous catch-up compared to the Dutch and French water services. The Vlaamse Waterweg N.V., for instance can spend around 2, 5 million euros per year on the Grensmaas border projects (Masterplan Waterbeheersing Waterwegen Vooruitblik, 2019) whereas water board Limburg gathers around 70 million euros from taxes only (Begroting, 2019) that are available for water policies in the region. So even if only parts of the finance go to water quality projects, the net amount of available funds is very different.

There are also differences in the monitoring schemes of the two countries. This can be caused by different load situations on both sides of the border, different valuation methods which may differ on both sides of the border or

different instruments used (European Commission, 2015). Therefore, data comparison is difficult as is joint analysis (interview 2). Especially in Wallonia due to the economic disparity with the Netherlands, there is a big difference on the frequency and amount of substances that are being followed in the Meuse as mentioned above. This in turn, creates different norms and a need for continuous dialogue and exchange to reach a harmonization of results; and effort that is not always successful (interview 7).

The EU funded projects known as Interreg hold an important position in the resource allocation aspect. For these projects countries from a certain river basin, or between multiple river basins, collaborate on a current topic (van Eerd et al., 2014). Well-known projects in the Meuse basin include Adaptation of the Meuse to the Impacts of Climate Evolutions (AMICE) and Aquadra. Both projects are examples of (EU-initiated) Interreg projects. AMICE was an Interreg project where they wanted to increase knowledge about climate change for the Meuse basin. This project aimed to establish a joint definition of a strategy for the impact of climate change (van Eerd et al., 2014). Various actors have collaborated and provided insight into their national approaches to the climate problem. A concrete result of these provisions is that modeling systems are now connected and that a joint system for the river basin has been established. Another important result is that mutual understanding has arisen for tackling such a problem as the climate problem (Ibid). Aquadra is another crossborder project where water management agencies in South Limburg and Belgium have worked together to prevent flooding and increase water quality in four tributaries of the Meuse: the Geul, Voer, Jeker and Berwinne rivers. The goal of the project is to create a feeling of transboundary water solidarity by initiating upstream measures to avoid downstream problems (interview 3-4). The program was successful in terms of creating a dialogue and sharing of experiences in the area and was completed in 2013. However, especially in the border area with Wallonia, there has not been any continuation of data sharing and information since the conclusion of the project. One respondent said that happened because those kinds of projects need “tremendous energy and investments» (interview 8) that were not available in Wallonia. The availability and different use of resources in the three regions of this case study consists of a very clear obstacle in integration that will be analyzed in part 4.4 of this thesis.

- **SYSTEMS THINKING**

The final aspect is based on the adoption of a holistic approach to expand and integrate appropriate from the respectable water management systems of water quality.

From the interviews, it appears that in a regional and mostly operational level there were coordinative inclinations. The province of Limburg has a strong focus on water quality as it receives a lot of water from the Walloon part of the Meuse, and according to the respondents, on the Walloon side, “they don't have that problem and they have lower targets for standards” (interview 4) so often there is a miscommunication of needs and discourses on that point. So sometimes from the part of the Netherlands they are willing to pay for projects and are always trying to initiate projects, which increases the compatibility of the two systems, helps both sides to achieve individual goals and increases coordination.

On a more *strategic* level however, the priorities are different. In the Flemish part of Belgium, they are not focused so much on a specific issue, in this case water quality, but mainly on priority areas, most of which do not lie on the Flemish-Dutch border (interview 5). The Dutch focus is on the smaller crossborder catchments where “many small streams [with water quality issues] come in the country” (interview 1). According to a civil servant, in Belgium “the Scheldt and greater Meuse river basin need more attention than the regional rivers that have a small part in Belgium and then go to the Netherlands” (interview 1). This issue coupled with the position of the Netherlands as a downstream country which makes Holland “more interested in working together [with Flanders] because they have more problems” (interview 1) restricts crossborder interactions in the level of cooperation.

Finally, it became apparent in the course of the interviews, that the political position the two countries hold towards the WFD is different. Both countries realize that they will not reach good water status by the 2027 deadline, even if they do not express publicly it. Even so, in the Netherlands the policy continues unadapted, whereas in Belgium, civil servants are clear on the fact that neither part of Belgium will reach the 2027 goals and are thus working with different priorities and planning differently for a 2035 deadline (interview 5).

Water quality management in Belgium and the Netherlands, have many similarities that bring the countries together and enable crossborder talks. Even areas such as the division of competences or the insufficient internal communication that is considered problematic, are elements that exist in all the regions and naturally are expressed in their crossborder interactions. On the other hand, there are many differences mainly on the organizational pillar of water quality policy that expand to decision-making and resource allocation and influence the organizational design as well as the role of the key personnel. This creates a divide and raises obstacles to effective cooperative interactions in both local and national level.

A visual representation of the form of crossborder interactions will follow, one for Flanders and one for Wallonia.

NL-FL interactions	COOPERATION	COORDINATION	COLLABORATION
Design	In the border between cooperation and coordination, mainly autonomous structures with occasional common proposals and working groups on specific areas(e.g. BENEGO)		
Key Personnel		Implementation of projects by the partners and leadership support from provinces, the VMM and other actors for coordination	
Organizational Autonomy		Participation in specific collective activities such as the common management of small	

		streams but preservation of individual national authority	
Resource Allocation		Information exchange, common monitoring schemes and small crossborder projects (e.g. pollution factsheets)	
Systems Thinking	Different priority areas and planning systems for the WFD deadline		
Trust			Trust relationships between partners that promote communication
Decision Making	Independent with occasional information on relevant decisions		
Formality of Agreement		Plethora of formal agreements that sustain the relationship, some informal contacts also present	

Figure 9: Crossborder Integration with Flanders (authors own)

NL-Wallonia interactions	COOPERATION	COORDINATION	COLLABORATION
Design	Distinct administrative structures with no apparent linkages		
Key Personnel	In the border of the interactions, mainly with lower levels contacts in the beginning (communities, water boards) and based on centralized authorities (DG02, DG03) in recent years.		
Organizational Autonomy	Also in the border of the interactions, due to the working group formations in the context of the WFD that blur the lines especially in a regional/local level (e.g. GOW Jeker-Geul-Voer)		
Resource Allocation	Information exchange, common monitoring and		

	physical resources only on EU projects		
Systems Thinking	No Walloon priority on water quality and different monitoring methods		
Trust	No apparent trust relationships due to the inconsistency of the interactions		
Decision Making	Completely independent		
Formality of Agreement	Informal agreements on cooperation with some formal agreements recently on initiating cooperative interactions		

Figure 10: Crossborder Integration with Wallonia (authors own)

What is clear is that the two Figures, depict two different pictures. In Flanders coordinative and even collaborative form can be noticed whereas in the interactions with Wallonia, collaboration is absent. The reason for this will become clearer in the next section and afterwards, a summarizing figure with the overall forms of integration between the Netherlands and Belgium as a whole will be produced.

4.4 OBSTACLES

In the previous sections, the results from both the systems context as well as the relationship between the 3 distinct systems in question have been outlined to show some of the difficulties that might affect integration dynamics. In this section, it will be explored how these results can act as obstacles towards a successful collaboration in the Meuse both in the local but also at a river basin level, together with obstacles mentioned by the participants and/or found through observation. This is done through an analysis of the results, based on the theoretical assumption that that the ideal degree of integration for our case study are policy arrangements that include “collaboration” characteristics. These obstacles can be analyzed in terms of the PAA.

- **ACTORS**

The main obstacle that is viewed as hindering crossborder cooperation in the area and especially the realization of crossborder projects locally is **geography**. The **upstream-downstream relationship** that exists between Flanders and Netherlands and also between Wallonia and Flanders creates different priorities for the involved actors in the area and hinders joint efforts for policy harmonization. It is important to address here the fact that as the Netherlands is

downstream from both Flanders and Wallonia, and at the same time Flanders is downstream from Wallonia which puts the region in a similar position as transboundary coordination demander. The various countries have their own interests within the catchment area and especially in bi-/trilateral communications it is difficult to reach consensus on priorities. Even in times of increased understating as was the case around five years ago (interview 5) that uneven relationship created more barriers. According to one respondent, despite repeated requests by the Flemish Water Policy Department the Dutch politicians were not able to provide a clear agenda of their high priority issues with the Flemish partners, a fact that aggravated the difficulties.

One form of crossborder interaction are **formal and informal agreements** between the partners that can act as an obstacle to effective cooperation. Except the formalized structures, all of the respondents underlined the existence of informal structures to reach colleagues across the border for things that vary from asking questions, to announcing upcoming policies and preparing reactions in public consultations (interview 5, 7). With Flanders, we notice an abundance of formal agreements that vary greatly. On an *operational* level, the Transboundary Mark Basin Committee (TMBC, Meuse tributary) was created in the Dutch-Flemish border to harmonize bilateral policies in the stream. The committee was supposed to publish reports indicating the state of the waters, something that has not happened since 2000. Simultaneously, there are some irregular WFD information exchange meetings take place at the level of the Meuse River Basin. For example, at a 2006 the WFD coordinator at the Brabantse Delta water board met with Flemish and Dutch actors and presented emission figures for the transboundary water courses (as aggregated by a Dutch consultancy firm). The Flemish actors did not consider those figures representative and plied for joint analysis, while also expressing the inability to provide the human and financial resources available for conducting such transboundary projects (Santbergen, 2013). Also there have been efforts from the Brabantse Delta water board to approach the Water Policy Department from the Antwerp Province and initiate local, transboundary coordination and cooperation efforts (Santbergen and Soens, 2010). In a regional *operational* level, on 2010, Flemish stakeholders (including the Flemish Environment Agency), signed a bilateral cooperation agreement on the management and maintenance of border-forming and border-crossing water courses with Brabantse Delta Water board (Waterschap Brabantse Delta et al., 2010). In continuation, Flemish partners invited Dutch politicians in their Meuse River Basin Committee (Bekkenbestuur Maas). According to the interviews, there are also many informal contacts on the operational level always, meaning there are many instances where functionaries from all partner sides telephone or mail each other for issues such as substances measurements in a small stream or arrangement of public consultations. In the case of Wallonia, the agreements were mostly informal and on an *operational* level, only “recently” it was formalized with the signature of an official agreement for biyearly reunions that is expected to reinforce bilateral meetings (interview 4, 8). This is done also in the context of the WFD

On a more *strategic* level, the Flemish-Dutch Bilateral Meuse Commission (VNBM) meets twice a year on a high official level and discusses all crossborder water issues and future policies including water quality. The main focus on the table however is the management of the Grensmaas, the natural boarder between Netherlands and Flanders (VNBM, n.d.c). As already mentioned before, the integration dynamics between the Netherlands and Flanders on the one hand and Wallonia on the other are very different. The continued interactions in a regional level were formalized

recently after years of being in a stalemate or just limited to European projects. It is a very new coordinative relationship that still needs to produce more formalized agreements and spill over to informal contacts to be able to move closer to collaboration.

The most prominent crossborder institution in the field of international *strategic* and *diplomatic* interactions in the Meuse basin is the International Meuse Commission (IMC). All the states that are part of the Meuse catchment come together in five working group formations each focusing on a specific problem and work together in a coordinated way across the river basin, for the purpose of jointly addressing important multilateral management issues. One of those groups is dedicated to the WFD and is attempting to compile a collective River Basin Management Plan for the 3rd cycle of measures. In practice, the IMC is a monitor of international cooperation. One of the most important results of the IMC is a homogeneous monitoring network (HMN) (van Eerd et al., 2014). On the basis of this HMN, a number of points along the Meuse have been designated for monitoring, including water quality. The HMN consists of harmonized measurement methods that make the collected data comparable. It is also ensured that a balance sheet is drawn up at least once a year. The IMC therefore focuses on making recommendations to parties that (in contrast to the IMC) do have formal powers (van Eerd et al., 2014). That means that despite being an international structure, the IMC is primarily a voluntary organization with advisory competencies. It helps riparian counties harmonized different standards and acts as a principal vessel for information exchange in the basin (interview 6).

The informal arrangements, create the base for the continuation of the cooperative interactions in the regional level especially where the scope of the issues is smaller and it is easier for the actors to come together informally. Problems arise when societal partners want to see tangible results, as depicted in formal arrangements such as policy documents or formal statements. So it is a double end sword; informal agreements help the relationship progress by offering an open environment where participants can be more relaxed and discuss issues that they otherwise would not and even binding agreements down the line. But, it is crucial for the EU and the national government to see the progress on regional level somehow. Diplomacy is very important in those case and fine handling to face the situation as tensions that lead to distance can arise easily. This is the problem that the Netherlands faces mostly with Flanders, as their interactions are more intensive (interview 1).

- **RULES**

The **organizational barriers** have been mentioned by almost all participants and were present also in the IMC meeting I was able to observe. The different organizational structures in the Netherlands compared to Flanders and Wallonia do not help bilateral talks. For instance, the fact that Dutch politicians, want to have talks on crossborder projects at a *strategic* level but with lower political representatives, clashes with the way the Flemish government is organized is not helpful for the progress of the relationship. In Wallonia organizational barriers are strongly connected with capacity issues and it is common policy to postpone or delay contacts and meetings due to those issues. Simultaneously, internal communication between national actors is insufficient (interview 7, 8). That way there is a lot of information loss and difficulty to harmonize national initiatives. This poses a serious barrier to bilateral

crossborder interactions as the high internal autonomy makes it difficult to coordinate internationally to achieve common quality goals. This is made possible only with the power dynamics enforced by the EU.

Additionally, the responsible personnel for initiating and executing crossborder talks in all regions, has to do that in parallel with other responsibilities. Coupled with the limited resources in Belgium it is difficult to find funds to begin joint research or analysis (interview 2). This IMC could work as a solvent for that but it has been identified by respondents is a slow moving commission where decisions and results are obtained at a slow pace.

The inability to fund common projects has led mainly the Flemish and Dutch sides, to proceed to individual crossborder studies (e.g. transboundary basin map by the WFD Meuse Project Bureau which is based on Dutch figures only) a fact that sometimes creates tensions in the relationship (Santbergen, 2013). There is a significant divergence here from the opinion of the regional water authorities- namely water boards- and the Dutch and Flemish national policies, on the role of transboundary stream committees. The former support their practical role helping harmonize policies and initiatives, whereas the latter focus on insufficient financial and human resources as well as mandate issues- for the Flemish side-. In the case of the TMBC, this has led to difficulties in coordinating activities and in 2010, the Flanders expressed an intention for termination of the bilateral, transboundary committees, as part of a new strategy for cost-efficient bilateral coordination talks (CIW, n.d.c b). The fact that the WFD has not intensified the activities of the commission, whose momentum now has faded is remarkable. We should note, nevertheless that for the Brabantse Delta Water Board, informal contacts with Flemish actors at the local level, coalition building with the Antwerp Province and participation in European projects for regional development and transboundary cooperation have paid off in a pragmatic way. This is proved by the renewed collaborative interactions in the Mark river where there are since 2018 efforts to create an integral joint action plan that will include all objectives and initiatives in the area (cultural-historical, nature objectives, recreation, agriculture ...).

Another challenge within crossborder integration are the **different government structures**. For international cooperation it is therefore important to understand how a government structure of another country works before consultation takes place. This issue transpires in cases of regional agreements and project decisions. While in the there is an independence of decision making locally, in Flanders and Wallonia the government is more hierarchical, so any agreement leaves the regional level to be decided higher and then it comes back again for implementation (interview 5). This results in a very slow process with minimum results and can create tensions. This is why now, the province of Limburg for instance, is focusing on Walloon border communities. They do not have big means or authority but the investment is on building relationships and working on themes related to water quality (interview 4).

- **RESOURCES**

Another factor that influences international cooperation is the financial situation of countries, **the allocation of resources** (Verwijmeren& Wiering, 2007). The financial structure of the countries in the Meuse basin has been discussed in the first sub-question. As mentioned before the financial strength differs per country or region in our case but each involved actor has enough money to realize what is being discussed internationally. Especially after 2011, when Belgium was taken to the European Court of Justice for failing to adopt and report its RBMPs to the European

Commission in time, the case has closed and there are no actors in the area who do not comply with the agreements, or adopt free-riding behavior vis-à-vis other actors. In spite of that, as explained earlier all sides face economic restraints when it comes to investing in crossborder projects. Respondents also underlined that there are cases where Walloon partners have diplomatically declined taking up local crossborder projects due to budgetary constraints (interview 4). Especially in the case of EU funds that are seen as a helpful factor, one respondent noted that actually, participants in crossborder projects have to invest the money in advance and European subsidies can take up to two years to arrive (interview 8). This works as a blocking agent especially to regional initiatives as small basin boards in Flanders or river contracts in Wallonia often do not dispose of the necessary funds beforehand. Yet, there is willingness often from the Netherlands to try and compensate the other sides or to meet where possible to be able to realize water quality projects that are important to the border areas. Those efforts are not always accepted positively. Even so, a lot of respondents maintained that economic disparities are not real obstacles as if “everybody focused on the singularities and on shared ownership then the differences are no longer differences. People use it as excuse or perceive it as obstacles” (interview 1)

- **DISCOURCES**

The different **culture and language** have been cited as another barrier. In cooperation with Flanders that is not the case as the language is the same as with the Netherlands, a fact that is considered “an advantage” (interview 2) as the same dialect gives you the opportunity to understand each other better and the problems are more concentrated on a specific area so it's easier to co-operate on the lower level (interview 4). An example of this is the VNBM where the cooperation between Flanders and the Netherlands is so intensive, because people speak the same language. With Wallonia, where the official language is French, the need for interpreters creates difficulties in communication. Also, it is harder to create more personal contacts between civil servants that can intensify contact and foster the creation of trust between parties. The comparison with Germany and the cooperation in the Rhine has been made in the regards in various instances. On the cultural front, what was highlighted was the fact that there is a difference on the cultural narrative concerning crossborder relationships. As mentioned before the Dutch civil servants and politicians are mainly focus on putting together concrete plans, building an agenda. On the other hand, in Belgium the focus is on building a relationship, getting to know your partners and discussing about the issues before going forward with assembling plans and reports. This in turn creates sometimes miscommunication issues but most of all takes time, which slows down processes. Some civil servants also referred to differences on contacting other cultures, as the Netherlands is much more informal compared to each other as opposed to Belgium where people are treated each other with more respect and less direct. Furthermore, a more informal difference is that there is a separation between the Meuse basin a Romanesque culture (Wallonia) and a Germanic culture (Netherlands, Flanders).

A **political obstacle**, rests with the role of the IMC in river basin relations. As the commission does not have an administrative summit, it is completely dependent on the participants and their preparation, to recognize the interests of other parties or present national information that will be beneficial to the procedures. Additionally, the limited mandate of the committee coupled with limited resources that are not well connected with actual needs of the initiated

projects, create a slow tempo and delay the organization of plans (interview 2). Throughout the interviews, there was a constant comparison between the IMC and the Rhine commissions on the subject of effectiveness and results pointing to the fact that the IMC lacks in budget, there is a big difference between upstream downstream countries and there is a lack of a middle stand country inside the commission that could help reach compromises easily. All of the above, create a barrier to international cooperation in the Meuse River Basin. Here it would be interesting to make a comparison between the discourses in the IMC and in bilateral relationships. In the former the focus is on policy, on the WFD goals and the measures that would help the countries to achieve them, so there is little focus on the amount of money needed to realize the proposed policies. In bilateral relationships though, the focus of the countries is not on the policy but on the cost of the policy realization. So representatives from the same countries appear to have different priorities in different contexts.

An important discourse that can be considered a barrier is that the **sense of urgency** is essential to take measures in water policy and even more to invest in crossborder projects. Water issues are not subject of competition and especially on water quality nowadays there are not urgent problems, such as dead fish in the river or so much pollution to render the water unfit for use. So politicians focus on economic issues that are less technical and more appealing to the public (interview 4). It is also crucial that studies on water quality, required by the EU are very expensive and in regions like Wallonia, where resources are limited it is difficult to get public support for more projects or legislation on water quality issues. The lack of urgency therefore is an important barrier, as there is the necessary push for civil servants to take initiatives, as was the case with flooding or low water whose results are felt immediately in the economy or daily life.

Of the aforementioned factors, politics, institutions, language, culture and national priorities have been established as barriers to international cooperation in the Meuse basin. Language differences are a problem especially in the interactions with Wallonia and combined with cultural differences it becomes a greater factor. Secondly, politics and institutions are paramount as in multilateral consultations, there are many different interests and priorities, which makes the interactions counterproductive. Belgium is more than a federal state, in the case of water policy especially, there are three different states. That fact, has not been taken into account completely by the Dutch government and combined with the lack of internal communication between the Dutch provinces and water boards, the institutional barriers become even greater. There is also the political-geographical aspect, based on upstream- downstream relationship dynamics. To conclude, cooperative interactions are further impaired by the absence of top down initiatives that can promote interactions. The IMC being a voluntary based organization lacks the top down authority and most productive cooperation takes place in the local level with limited development potentials.

CROSSBORDER ARRANGEMENTS	COOPERATION	COORDINATION	COLLABORATION
ACTORS	Independent administrative structures, sometimes cases of loose		

	linkages between countries		
	Cooperation among regional personnel at the local level when addressing water quality issues rather than involving higher officials		
RESOURCES		Continuous information exchange between countries in quality measurements and polices and occasional funding and personnel exchange for small range projects	
	Mainly separate planning, organizing, implementing water quality policies with occasional communication only on the context of those policies		
RULES	Completely independent decision making on water quality issues		
		Between the two interactions as in the case of Flanders there are mostly formal agreements and in Wallonia informal with some exceptions in recent years	
DISCOURSES		Trust has been created between partners but it is stronger in relationship with Flanders than with Wallonia	
	No apparent systems integration, different discourses on planning		

	and prioritizing when it comes to water quality		
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Figure 11: Crossborder Integration between the Netherlands and Belgium (authors own)

CHAPTER 5

5.1 CONCLUSION

The goal of the present study was to investigate the level of integration in crossborder relations between the Netherlands and Belgium on water quality. This has been studied with the help of a literature study, the interviewing of eight knowledgeable people who carried much expertise about water quality management as well as the observation of IMC meeting and cooperation with a Dutch civil servant working on the Meuse river basin. This chapter is divided into three sections. Firstly the most important empirical and theoretical conclusions of the study are presented. Secondly recommendations to intensify crossborder interactions are given. The chapter finishes with a reflection on the entire study.

The main research was broken down in three sub-questions, which will be answered below before we return to the main research question. The first sub-question of this thesis was: “What is the system context of crossborder cooperation in the Meuse river basins as defined in the actors, resources, rules and discourses dimensions of the Policy Arrangement Approach?”

The system context consists of both local, regional and national actors, rules and resources and national discourses. Crossborder interactions are initiated by regional actors and national governments as required by the WFD support such efforts. Local stakeholders are very active regardless of the absence of private participation. Regarding rules, there is a variety of formal and informal crossborder agreements that influence interactions on water quality with national legislations existing separately and with no interaction in crossborder relationships. The available resources, differ in every region, with the exception of European funds that are available for the whole basin. Lastly, regarding the discourses dimension, there is a general agreement on the need of crossborder cooperation that creates a sense of solidarity among the actors. However, this shared discourse does not necessarily lead to collaborative results.

The second sub-question was: “What are the relevant differences and similarities between the Dutch and Belgian water quality management systems?”

Through empirical and literature research several similarities as well as differences appeared between the two water management systems on water quality. The similarities were mostly based on the fact that both countries were faced with the same problems internally. National obstacles on water quality management include resource restrictions, autonomy issues as well as inconsistencies on the information chains. Those problems were common everywhere,

reinforcing the other important similarity; the willingness to collaborate. Even if it does not show in the end result, it was clear that all respondents realized the need to analyze and plan jointly crossborder to obtain good water status.

The main differences were on the organizational structures, the department and personnel sizes, on the available resources, the autonomy to make decision and take initiative in all government levels, cultural practices and in the national discourses on cooperation and water quality policy. It is important to note that in the Netherlands the approach to issues is more technocratic, informal and straight forward whereas in Belgium formal, hierarchical and more complicated. Also an important difference is in goal setting and how that influences cooperation. In Belgium, for the WFD goals all regions have some target areas where good status is going to be reached in 2027 and the rest of the waters, including the Meuse, new goals for 2035 are being planned. In the Netherlands, it is clear that the 2027 deadline will not be reached but still there is no planning and redefinition of policy.

The third sub question was: “What are the present obstacles to transboundary cooperation between the Netherlands and Belgium?”

Based on the research, the differences of water management systems in the two countries are expressed as barriers to integration. The shortcomings include cultural and linguistic obstacles, resource restrictions, organizational and geographical obstacles as well as political ones. The bottom line is that water quality is not an important diplomatic issue as the results of bad water quality are seen in the long run only. The lack of urgency and therefore top down initiatives to take measures and intensify crossborder interactions. All collaborative interactions are based on bottom up initiatives in a regional level. What transpired from the interviews was a lack of concrete crossborder projects that are not funded by the EU.

The main research question of this research was: “What is the degree of integration between the Netherlands and Belgium in transboundary river cooperation with respect to water quality?”

In the previous chapters, the 3 C's approach and the PAA, the two theories used in this thesis, have been explained and applied to the case of the Meuse. The results, found through interviews, observations and document analysis, from the system context, differences and similarities, together with the obstacles towards more intense integration. The theoretical assumption was that the state of collaboration was the best to achieve the goals set by the WFD. According to the findings, there are some domains where collaborative interactions have been made possible. Those are the aspects of trust where all respondents indicated that trusting relationships exist between the two countries that can be used as a strong base for further progression of the crossborder relationship. For example, when asking how they feel about the collaboration, one responder said that “it is easier to contact each other now”, signifying they feel positive towards the aspect of communication. On the aspect of key personnel only locally, there were examples of joint implementation of actions and projects by functionaries but they were restricted on the operational level. Also collaborative interactions were encountered on bilateral negotiations where many formal and informal agreements were reached in an operational level to develop jointly roles and responsibilities. On a strategic and diplomatic level,

the efforts were mostly coordinative as the focus is on formal agreements and public statements. Coordination is also noticed in a regional operational level, on the organizational design with linkages being created between independent actors to pursue the common goal of good ecological and chemical water status. Finally, all other aspects of crossborder relations are restricted to cooperative if not independent interactions. Decision Making is completely separated and there are only informational exchanges. Resources are separated also, except in the case of non-physical resources namely information exchange. There I noticed frequent exchanges, as most crossborder projects were based on data sharing. Still, there are not currently common information pools accessible by all the parties and the information exchange is not continuous. Among the transpired barriers, the different organizational structure of the involved agencies was dominant as was the limited understanding of those structures. Also, it is surprising that most crossborder interaction focused on information exchange and yet nationally there was an information deficit between the involved parties. So it is expected for transboundary integration to be problematic since already in inside the national borders there are problems. The data also showed that most projects and talks are focus on information and data exchange. Actually in my spectrum of research I did not find any recent project that involved anything more than that. Citizen participation is also minimum where crossborder programs or talks are concerned.

So, this analysis leaves us with a cooperative relationship that shows potentialities for further development. The level of integration is low in most aspects with high integration on basic issues as trust and communication. It is important to note here that the aspect of turf issues resolution was barely present in this thesis, as I did not notice any real conflict in the examined area.

5.2 REFLECTION

The results of this research have been presented and the research questions have been answered. In this section, the process of the research will be reflected upon, including a theoretical and methodological reflection, followed by the limitations of this research.

When starting this project, I expected more aspects of the crossborder interactions to work more effectively than they actually did. Wallensteen and Swain (1997), in their research suggested that water pollution was a strong incentive for crossborder cooperation. From my findings, that was only partially confirmed. From the research it was clear that all participants really believed that there is need to collaborate more or at least coordinate policies and projects but at the same time the actual initiatives taking place were limited. This was mainly due to the fact that even if water quality is not up to European standards in the area, it is not that bad as to create an actual economic or a social barrier thus calling for immediate measures. Also, the involved stakeholders had different perceptions of on the integration dynamics, even from participants working in similar organizations or in the same national context. Therefore, I would say that from my findings, water pollution poses an incentive for integration only if it poses problems to other areas of social life as well.

What came up as significant in the research, was the role of regional actors who were incremental to the implementation of cooperative-coordinative and collaborative interactions. This is in agreement with Renner's (2017)

denotation on the role of local actors in dealing with the challenges of crossborder relationships. It also underlines the absence of concrete top down initiatives that could help overcome some of the barriers mentioned above and drive integration.

Finally, in relation with the literature, another point worth mentioning, in the upstream-downstream dynamic in water relations. According to some researchers (Moellenkamp, 2007; Holzwarth and Bosenius, 2002) the introduction of the WFD can play a role in transforming traditional dynamics. The findings do not show that to be the case. As Moellenkamp (2007) suggests, it has increased solidarity in the basin, as the interviews show a sense of common understanding towards the problems and of interdependence. At the same time though, the upstream downstream dynamics, still pose an important barrier to the intensification of integration. The Dutch water authorities due to their downstream position and material power have adopted a proactive position throughout the study period, but they never assumed a hegemonic role in coercing or imposing a regime.

The theoretical framework was helpful in many ways, one of them being the wide overview it gave on the aspects to take into account when examining crossborder interactions. The empirical results did not contradict the framework very much, yet occasionally additions to the theoretical framework can be supportive. In the following paragraphs these are discussed in more detail.

According to McNamara (2012) the 3C's establish a cogent, more nuanced and importantly a practical framework on which to base future integration initiatives. The terms cooperation, coordination, and collaboration differ in terms of level of intensity of linkages between organizations, the degree of formalization involved, the presence of decision rules, the amount of resources and primary actors involved, and the relative threat to autonomy. All those elements were present in the case study. The different aspects of the integration possibilities were highlighted in crossborder interactions, with some being closer to collaboration and other to cooperation. McNamara (2012) among the characteristics of the 3C's includes the element of information sharing and resolution of turf issues. During the research, the first element did not emerge as separate from the data rather as part of the resource allocation aspect. On the resolution of turf issues, as mentioned already in this case, it was not one of the examined elements as there were not any conflict issues in the area of the case study. Keast, Brown, and Mandell (2007) stipulate that "integration is not a static process". This also emerged from the empirical data as I noticed that from the introduction of the WFD that initiated the intensification of crossborder interactions until today, there were many fluctuations in the relationship especially with Flanders. Around 2010-2013 crossborder interactions reverted from coordination to cooperation but recently there are again coordinative actions.

As mentioned in chapter 2 the 3C's framework argues that the choice of a particular crossborder interaction may vary depending on the function or goal. Therefore, an "overall sense of placement within the framework can be identified by seeing where interactions aggregate" (McNamara, 2007, p. 399). This is something that also emerged from the data and helped me understand some of my findings. In the case of Key personnel for example, in the case of crossborder interactions with Flanders, drafting and implementation of policies often took place by local managers and lower level politicians on the Dutch side, but on the Flemish the weight of organizing crossborder interactions was carried by higher authorities. That is why in the end, the interaction was mostly coordinative instead of collaborative.

What I missed from the theoretical model and was very present in the data was the element of communication. Not only in the sense of information as a resource but also as the way actors understand each other and how information (policies, prospects, rumors) circulates between organizations. While “lack of communication” is often cited as a problem in crossborder interactions, its reason behind it is as difficult to diagnose as it is to solve it. The deficient communication, for instance, is often presented to managers and regional actors who are recommended to communicate more frequently and clearly by holding more meetings or writing more reports. This in times act as a barrier to functionaries accepting their personal responsibility in leading this communication by listening or observing. Most people are better at producing information than really accepting it. And this need for communication was very clear on the findings, and actually expressed as an ambition and a possible solution. So it could be a way to refine the model and evaluate data differently if this point was more integral to the framework.

Using the two theories, and especially the one by McNamara (2012), allowed me to look at aspects that I otherwise might not have. For example, the aspect of trust, was something which I would have overlooked the importance to collaboration. Using the two theories was helpful, as they provided a good foundation for this research. However, using them together was more difficult than I thought and especially combining them and finding the overlap between them proved a bigger challenge than anticipated. However, I do feel that using the PAA as well alongside the 3C’s framework did make the system context more understandable.

In this research, qualitative methods were applied to the case, including semi-structured interviews, participatory observations and a document analysis. Using qualitative measures allowed me to gain an in-depth understanding of the feelings, opinions and perspectives of the interviewed partners. This made it possible to understand their motivations to join, their hesitations and perspective on the future of the collaboration. It was quite difficult, especially time-wise, to interview this many people. Some interviews were much more helpful than others, especially as some were done over the phone. However, interviewing almost everyone directly involved helped me make sure that I included all of the important perspectives, opinions and aspects. Supplementing the interview data with both the document analysis and especially with observations provided help, as using this data helped me to understand integration dynamics better.

Beginning this thesis with the assumption that collaboration is the ultimate goal of the evolution of crossborder interactions, now finishing it I have the idea that maybe a coordinative model would work best in this particular situation. Coordination is placed in the middle of the integration continuum and in those interaction participants create formal linkages because some assistance from others is needed to achieve organizational goals. In this case study, integration is examined between two countries with strong water management systems and common European goals but with fundamentally different organizational structure and mentalities in the way of working. As water is not restricted by administrative barriers, good water status cannot be achieved in a transboundary river by the efforts of one country alone. Having the commitment of the partners as high as currently is, is a great starting point for cooperation. At the same time, what I understood is that it is important to realize that with the current national issues of each region, it is highly difficult to achieve collaborative dynamics and presently even not useful. There are two complete different systems and to achieve collaboration each country will need to fundamentally change the national structures. Is that really needed? In my opinion for now, no. What I think is needed is to put the effort to achieve

coordination, an interaction we are still not close at achieving. This level of integration is more effective and realistic. Both countries have different priorities but in the bottom line the goals are the same, but the different ways of doing things work as obstacles to achieving these goals. So it will be better to harmonize the distinct ways of working instead to try to build new continuous systematic ways of working before there can be talk about collaboration dynamics. The aspects of the integration that will need improvement will be made more specific in the recommendations.

Doing my research with ProgrammaBureau Massregio was very interesting, as it provided me with an insight into the different approaches and views on the issue. Additionally, it made doing the research easier as I was close to all the important events and actors. The interview process was very rewarding, as all the responders were very interested in this research and motivated to help improve the collaboration. What I thought was interesting, is the fact that all the respondents even the ones that worked in the same organizations had different viewpoints on the issue of crossborder cooperation. There was a vast agreement on the problems and the obstacles, but the way each respondent approached the issue of cooperation was different. A fact that is indicative of the complicated nature of the issue. Also, I think it is important to note that it was challenging to find Flemish and Walloon participants, a testament to the resource obstacles mentioned in the results. This study has taught me valuable communication skills. The process of researching and gaining an in-depth understanding of the topic was very enjoyable and it enabled me to apply these theories to a real-life case. Formulating recommendations that can be applied in a real-life situation was very rewarding and I feel that it has been a great practice for my future career.

5.3 LIMITATIONS

Doing a single case study was a limitation of this research; as well as the total number of participants. However, interviewing expert civil servants that were presently involved in the crossborder relationships very useful. It provided me with recommendations and suggestions that I would not have formulated otherwise. Further research could work on this point and focus also in the role of citizen participation in crossborder integration on water quality. Also, the theoretical model I adopted was mostly used in interorganizational settings so refining it for transboundary settings was not without toil. I think it would be beneficial, if it would be used in more studies on crossborder water integration as to have a more typified model through different case studies.

On a more general note, the restricted amount of empirical knowledge about crossborder integration that I began this study with turned out to be an unexpected advantage when analyzing the data. It made it easier to let go of any preconceived ideas and assumptions about best practices for integration, simply because I had none of these preconceived ideas. Therefore I was able to look for emerging patterns in the data as unbiased as possible. However, a critical remark concerns the memo writing during the research process. It would have been better if I had been more consistent in doing so. As it was my first time conducting a coded research, I learned much along the way but the usefulness of memo writing was something that I realized too late. As memo's help to capture peculiarities, keep track of thoughts, note emerging questions or connect observations (Wiener, 2007) it would have supported my research process and contributed to the traceability of the study.

5.4 RECOMMENDATIONS

In this final section, I will present my recommendations for achieving transboundary coordination in the future.

Continuous Communication

From the data, it was clear that all involved actors in this case study have a long history of transboundary interactions concerning water management in general and since the WFD increasingly on water quality. Effective partnerships depend on effective communication. It is therefore important to think about how, when and with whom partners will to communicate. Communication through information flows is high, with partners investing more and more on the exchanges but they vary in frequency and are dependent a lot on positive circumstances. Thus, I believe it is important to introduce a permanent formation- such as an online database- with all the relevant information on water quality from substance measurements, already completed projects (national, bilateral, trilateral) to proceedings from working groups and other formal meetings. This formation should be public and preferably in the languages of the involved actors as well as in English, to be accessible to outside observers and researchers too. This way, relevant information will have a permanent storage. A common awareness of the issues through a resource pool accessible to all will work as a base for coordination and joint planning.

Key Personnel

For the evolution of the relationship, it is important to invest in people that will work full time in intensifying crossborder relationships. That means that, to achieve coordination and improve the current situation, the practice of having various civil servants working partly on transboundary water quality is not enough. Since budgets are restricted in all regions, it would be helpful to appoint personnel that will occupy with the subject of crossborder integration full time, even in the context of a traineeship. This can be done in the frame of the IMC, representing the interests of cooperation and not any state in particular. Moreover, national actors can do something similar so as to have one person (or more) that has sustained and in depth knowledge on crossborder water quality in the Meuse and coordination between parties will be simpler. In the future this position can evolve to permanent civil servants positions or even specific departments for integrated river basin management.

Clear Targets

Policy goals and expectations from crossborder interactions have to be clear and specified not just generally stipulating reaching the WFD targets. Sharing one's expectations about the relationship creates the opportunity to design the interaction in such a way that it is most likely that expectations are met. Therefore it is constructive to be open about the expectations one holds for both the process and its desired outcomes. That way planning and monitoring will be

made more effective and concrete and it will be clear to actors what crossborder coordination entails and costs. Also, this will provide the local authorities with guidance and the space to take initiative in their area of authority that will show tangible results and intensify the momentum. It would be therefore a good idea, to set small interim targets concerning crossborder problems or even communication initiatives in both sides with a close deadline. Those targets should not be designed the same for both countries, or have the same standards, instead, they can be tailored to the different circumstances in each side of the border so that they are feasible, realistic and most of all accepted.

Involve citizens

The role of citizen participation to initiate crossborder projects is significant, especially for the regional and local level where smaller streams do not get national attention and therefore funding. Citizens can work as an enabling power to promote coordination and increase actions. This preconditions that there is enough awareness in local communities. From the research appears that this is not the case for the Meuse regional rivers. Since successful crossborder interactions come up in the regional, operational level from bottom up initiatives, it works on the strengths of the actualities to invest in raising awareness and sensitizing citizens and private associations.

Top Down initiatives

Finally, to really move towards coordination and real conversations on harmonized measures the bottom up approach is not enough. Testament to that is the current state of affairs. Even if there are examples of coordinative and collaborative interactions, cooperation is the dominant exchange, and all regions research, analyze, plan, monitor and implement basically separately. To move past this stage, traditional top down approach is needed. The involvement of higher level officials even just in the initial stages of the interactions will help overcome some of the barriers and add legitimacy to the coordination efforts.

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APPENDIX I: LIST OF INTERVIEWS

	Function	Form
Interview 1	Waterschap Brabantse Delta	Face-to-face
Interview 2	Rijkswaterstaat	Face-to-face
Interview 3	Waterschap Limburg	Face-to-face
Interview 4	Province of Limburg	Face-to-face
Interview 5	Flanders Environment Agency (VMM)	Face-to-face
Interview 6	International Meuse Commission (IMC)	Face-to-face
Interview 7	Service Public de Wallonie Agriculture, Ressources naturelles et Environnement (DGO3)	Telephone Interview
Interview 8	Contact de riviere Meuse Aval	Telephone Interview

Meeting Observed: IMC, Working Group DCA (A) 32rd meeting, 10/7/ 2019, Liège

APPENDIX II: INTERVIEW GUIDE

- What are in your opinion the biggest successes and positive sides of crossborder cooperation between The Netherlands and Belgium in the Meuse river basin?
- What are in your opinion the biggest obstacles and negative sides of crossborder cooperation between The Netherlands and Belgium in the Meuse river basin?
- Can you explain your experiences in working on crossborder water projects?
- What do you believe could be better/more effective regarding crossborder cooperation in the Meuse between the NL and BE? What else do you/your organization wants to achieve within it?

APPENDIX III: CODING

Coding Families

- Actors
- Resources
- Rules
- Discourses
- Bilateral Relationships/Regional Level
- International Relationships/Level
- Obstacles in Cooperation
- Communication/Linkages
- Internal Policy/National Issues
- Comparison with Germany

Coding Examples

1. “The main obstacle is that we are the downstream partner and the Flemish the upstream partner”

Code→ Upstream-downstream relationship

Code Family → Obstacles in cooperation

2. “If I have a water quality issue I can go to the other side and talk about it and try to make the connection and sometimes you have to invest in the problems of the other side and build up the credits”

Code → Building connections

Code Family → Communication/Linkages

3. “In the past there was only one person [responsible] to answer questions about Belgium, now there are more people working on stimulating cooperation”

Code → Responsible personnel for cooperation

Code Family → Actors

4. “The water department of the province of Antwerp has less than 10, they are called wateringue, they are not really a water board, and it is very small”

Code → Different department sizes

Code Family → Resources

5. “In the commission we have several participants mostly from other government departments like traffic or spatial planning, agriculture And all this kind of things so they are all members of this commission we have several thematic working groups working on several aspects”

Code → integrated water management

Code Family → Discourses

6. “The tempo of the Muse commission is very slow and you can see that in the Rhine commission they have a plan like this ready within a year and in the muse committee you see that it is only in the very beginning”

Code → Differences in planning

Code Family → Comparison with Germany

7. “Most of our borders about 3/4 are with Germany and Belgium and the rest is with Brabant and a small piece with Gelderland so have a lot of borders, we are a border province”

Code → internal reasons for cooperating

Code Family → Internal Policy/National Issues

8. “We want to do a project about fish immigration and the other community had also problems with rainfall water so we're also working on that issue and sometimes work together with the water board and community on the Dutch side and community in the Belgian side and the province of Limburg and the province of liege”

Code → Working together on common problems in a regional level

Code Family→Bilateral Relationships/Regional Level

9. “We use our contacts of the formal and informal structures to ask questions, to announce things, to prepare reactions in public consultations”

Code→ Communication through formal and informal channels

Code Family→ Rules

10. “...in the International Meuse Commission when there is an issue on the table you see that they are often on the same page Flanders and Netherlands so they create a big block in the North...”

Code→ cooperating on an international context

Code Family→ International Relationships/Level