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## **Evaluating conditions for Integrated Water Resources Management at sub-basin scale. A comparison of the Flemish sub-basin boards and Walloon river contracts.**

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**Key words:** integrated water resources management, coordination platforms, river basin management, *contrats de rivière, bekkenwerking*

### **ABSTRACT**

Integrated water resources management (IWRM) has long been advocated in academia and politics but appears difficult to pursue in practice. Defenders of IWRM call for governance institutions adapted to hydrological boundaries but these would be at odds with existing administrative ones. In this paper, we investigate how coordination platforms at sub-basin scale can contribute to IWRM. Most IWRM literature focuses on the catchment scale. It is however acknowledged by several authors that coordination is also needed at a lower level. Through document analysis and semi-structured interviews, a comparison is made of the Flemish sub-basin boards and the Walloon river contracts, two types of coordination platforms in different regions of Belgium. Belonging to the same federal state, they form valuable cases to compare divergent systems rooted in a similar administrative setting. A number of key factors appears to contribute to the effectiveness of the coordination platforms, as it is perceived by their stakeholders. These factors are a clear but flexible legislative framework, (financial) support of a higher government rather than command-and-control steering, the personal commitment of their coordinators, an independent status of their staff, a sense of urgency and a good connection with civil society and wider public.

### **INTRODUCTION**

Since the beginning of the 1990s, an international discourse has been on the rise, which calls for integrated water resources management (IWRM) (Savenije and Van der Zaag, 2008). IWRM stands in opposition to a single-sector approach, which has long dominated water management (Hooper, 2003; Verkerk and van Buuren, 2013). Whereas the latter limited its scope to one aspect of the water system (e.g. protection against flooding), IWRM addresses this system in its entirety, with its variety of physical, biological and socio-economic variables, and their mutual conjunctions (Hooper, 2003). The integration thus applies to multiple aspects: different water functions and objectives (water quality, quantity, recreation, drinking water supply, etc.), the involvement of several actors and policy domains, and so forth.

Consequently, IWRM calls for the inclusion of a wide range of governmental and non-governmental actors, active in different policy fields. Among academics and practitioners, it is argued that, ideally, decision-making on water issues should be based on the boundaries of the water system itself and thus be organised at the basin or sub-basin scale (e.g. Jaspers, 2003; Lee in Huitema et al., 2009). So-called

integrated river basin management (IRBM) is believed to be the most effective and efficient way to deal with the physical and social complexity of the river system. However, one could question how IWRM could be brought into practice in a governance arrangement that is not established along these hydrological boundaries. In many countries, historical developments in water management have resulted in a decision-making structure composed of different governmental organisations and levels, which is not determined by hydrological characteristics (OECD, 2015). Consequently, the establishment of formal river basin authorities could be perceived as a threat by the existing water management actors (GWP, 2000; Biswas, 2004). Some authors therefore claim that it is more important to enhance coordination between the current actors instead of introducing new organisations at (sub-)basin scale (Mitchell, 2005; Butterworth et al., 2010; OECD, 2015).

In this paper, we want to explore which are the necessary conditions for coordination platforms at hydrological scale in order to be accepted and perceived effective by its relevant stakeholders. These conditions can refer both to the context, process and content of the organisation (see also Warner, 2007). Hereto, the paper compares coordination platforms that have been created at sub-basin scale in Flanders and Wallonia, i.e. in two regions in Belgium. In Flanders, *sub-basin boards* have been introduced by the Flemish Government to coordinate water quantity and quality actions by all relevant stakeholders at sub-basin scale, and to contribute to the draft of river basin management plans (RBMPs). In Wallonia, *river contracts* are launched by local governments and supported by the Walloon Government to draft a common action programme for all stakeholders involved in a sub-basin.

The sub-basin boards and river contracts offer interesting material for comparison for two reasons. First, these cases allow the comparison of two divergent types of coordination platforms in a similar institutional setting, namely two regions in the same federal country. Second, the organisations are located at sub-basin scale, whereas most literature focuses on the basin scale. In fact, several authors point out that for a number of issues the basin scale will not be local enough and coordination at a lower scale is required (e.g. Bressers and Kuks, 2004; Blomquist et al., 2005). In this study, we take the conditions for effective river basin management as defined in literature as a starting point and investigate whether they are applicable at sub-basin scale as well.

In the following section, an overview of existing literature on IWRM and IRBM is presented. Based on this, we define the most relevant conditions for effective IRBM in terms of process, context and content. In the results section, these outlined conditions form the basis for the comparison between the sub-basin boards and river contracts. The discussion reflects to what extent our findings subscribe to the conclusions made by other scholars at basin and sub-basin scale. The paper takes a multi-disciplinary approach with contributions from legal and social scientists. In this way, sufficient attention is paid to both formal and informal characteristics of the examined cases.

## LITERATURE REVIEW

### *Integrated water resources and river basin management*

While traditionally water management has been steered by a single-sector, engineering approach, a call for an integrated water resources management (IWRM) emerged on the international agenda in the

1970s, with as milestones the UNESCO International Conference on Water at Mar Del Plata (1977), the International Conference on Water and Environment in Dublin (1992) and the UN Conference on Environment and Development in Rio de Janeiro (1992) (Jeffrey and Gearey, 2006; Savenije and Van der Zaag, 2008). IWRM implies the management of the entire water cycle in all its natural aspects, as well as including the interests of divergent water users (Savenije and Van der Zaag, 2008). Its integration is thus multi-fold, and addresses both the natural and the human dimensions of water. A balance needs to be found on the following aspects (ibid.):

- *Water resources*, including both surface and subsurface water, stock and flows, etc.
- *Water users*, including a wide variety of functions, e.g. water supply, navigation, recreation, biodiversity, etc.
- *Spatial scale*, including a variety of resources, users and managers in terms of space (delineated by catchments, administrative boundaries, etc.).
- *Temporal scale*, i.e. not only including the needs of the current users of the water system but also of future generations.

IWRM thus involves a wide range of disciplines, policy domains, managers and users. Consequently, it necessitates a broad and efficiently organised participatory decision-making approach (Jaspers, 2003; Savenije and Van der Zaag, 2008; Benson et al., 2012). The participatory approach forms the second principle of the Dublin Principles (1992) and has also been put forward by the 2000 EU Water Framework Directive (WFD), which requires the active involvement of stakeholders in the development of the RBMPs. Multi-stakeholder deliberation should facilitate the integration of different water aspects and allow trade-off and package deals (Warner, 2006). To make an integrated and participatory approach possible, the decision-making must be located at the appropriate scale. In international policymaking and academia, the river basin scale has been put forward as the most logical unit for water and environmental resources management (Jaspers, 2003; Huitema et al., 2009; Van Eerd et al., 2015). An integrated river basin management (IRBM) is advocated, which comprises the *'management of all surface and subsurface water resources of the river basin in its entirety with due attention to water quality, quantity and environmental integrity'* (Jaspers, 2003).

The integrated water resources and river basin management approaches are, however, contested (Newig & Fritsch, 2009; Butterworth et al., 2010). According to Jeffrey and Gearey (2006), *'empirical evidence which unambiguously demonstrates the benefits of IWRM is either missing or very poorly reported'*. Watson et al. (2009) claim that a policy process that focuses solely on the water environment cannot be effective. The catchment scale might be most appropriate for water management but not necessarily for land-based interests (see also Biswas, 2004). Schlager and Blomqvist (in Huitema et al., 2009) and Warner et al. (2014) remark that boundaries of river basins are not necessarily natural; they require political decisions.

### *IWRM institutions*

A prominent problem regarding the integrated river basin approach is that existing power structures are rarely organised along hydrological boundaries (OECD, 2015). Therefore, river basin governance institutions need to be established to facilitate multi-stakeholder coordination. These can have very

different forms, from loose networks to river basin authorities with formal competences and resources (Warner, 2006). These new institutions will have to deal with the tension they create with the pre-existing actor structure, e.g. local and supra-local authorities. Mitchell (2005) points out that it is impossible to remove the existing organizational boundaries in a river basin; they can be moved at best. Consequently, IWRM should focus on encouraging collaboration and coordination instead of replacing the current institutions (see also Butterworth et al., 2010; OECD, 2015).

Several scholars have looked into the conditions that institutional (collaborative) arrangements at river (sub-)basin scale should fulfil in order to make an effective contribution to IWRM (e.g., Blomquist et al., 2005; Warner, 2006; Verhallen et al., 2007; Hooper, 2010). Similarly to Warner (2007), we adopt Mitchell's (1990) focus on context, process and content to structure the assessment indicators derived from literature.

### **Context**

*Legal and governance framework:* According to Hooper (2010), IWRM should have a strong foundation and mandate in legislation, which should clearly identify its functions, structure and financial base. The surrounding governance structure of the basin should provide stable conditions for IWRM. At the same time, the legislative framework should enable enough flexibility to adapt the organisation's process and scope to local conditions (Dietz et al, 2003; Ebbesson, 2010; Hooper, 2010; Keessen and van Rijswick, 2012).

*Support-generating capacity:* In order to be effective, IWRM arrangements must be supported by sufficient human and financial resources (Blomquist et al., 2005; Warner, 2006; Warner and Verhallen, 2007; Hooper, 2010). To guarantee sustained resource availability, it is necessary that the river basin arrangement can count on sufficient commitment of its participating partners (GWP, 2000; Hooper, 2010). Therefore, it is important that the new institution links into the existing local situation. The arrangement has to be a mutually desired development by local and central actors, it cannot be pushed through either exclusively top-down or bottom-up (Blomquist et al., 2005; Warner, 2006; Currie-Alder, 2007; Butterworth et al., 2010; Benson et al., 2012).

### **Process**

*Decision-making process:* The decision-making in IWRM should be consensus-based and agreement-driven (GWP, 2000; Hooper, 2010). To facilitate this process, a skilled and charismatic individual or organisation is required to take on leadership (Blomquist et al., 2005; Warner, 2006). Also, the establishment of a non-profit organisation to coordinate is in some basins mentioned as a facilitating factor for deliberation across existing jurisdictional boundaries (e.g. Fraser basin in Canada, see Blomquist et al., 2005). A crucial factor for successful river basin coordination is time (Blomquist et al., 2005; Warner, 2006). Developing new institutional arrangements requires a slow process of building trust and trial-and-error. Consequently, a continuous commitment by all actors involved is indispensable for the success of the arrangement. In order to retain the relevance of the IWRM arrangement in the longer term, its decision-making needs to be flexible; it should have the capacity to

evaluate its activities and adapt them in terms of goals, means, participants, etc. (Verhallen et al., 2007; Hooper, 2010).

*Multiple and equitable stakeholder involvement:* IWRM should form a platform for all stakeholders present in the basin (Jaspers, 2003) or at least for a selection of stakeholders with a well-spread availability of different competences, roles and contributions (Verhallen et al., 2007). Stakeholders are defined as ‘*individuals, groups and institutions that are concerned with, or have an interest in water resources and their management*’ (Warner, 2007), and thus include both governmental and non-governmental actors. An excessively disproportionate distribution of political influence among stakeholders is considered to impede the decision-making process (Blomquist et al., 2005; Warner and Verhallen, 2007).

### **Content**

*Scope and scale formulation:* Considering the complexity of the socio-ecological water system, it is not possible to take into account all variables and their relationships (Mitchell, 2005). Instead, a selection is to be made, which should include the most relevant water resource issues (Blomquist et al., 2005). The scope of the IWRM arrangement should consist of ‘*well-defined objectives with mutually beneficial and desirable goals*’ (Hooper, 2010). The stakeholders should have a realistic and informed understanding of feasible options.

A key principle of IWRM is subsidiarity; water governance should be located at the lowest scale appropriate (Jaspers, 2003; Savenije and Van der Zaag, 2008). For a great number of issues, this implies that the river basin scale is not local enough (Bressers and Kuks, 2004; Blomquist et al., 2005). Instead, coordination and deliberation will also be needed at sub-basin scale; with sufficient cross-scale linkages and coordination with higher spatial scales (Garmestani and Benson, 2013).

*Information:* A key element in IWRM is sharing and pooling information and knowledge between different sectors and actors (Blomquist et al., 2005; Verhallen et al., 2007; Hooper, 2010). Hence, a well-developed data and knowledge system lies at the basis of the IWRM arrangement. All participants should have access to information relevant for IWRM decision-making. The generation of knowledge takes place through joint fact finding; i.e. a mutual process by which cognitive appreciation is attached to facts based on the interests of participants and the context (Verhallen, 2007).

*Outcome:* According to Mitchell (2007), tangible evidence of progress in IWRM is needed in order to keep all involved actors committed. But whether the arrangement sufficiently achieves its goals is to be evaluated ‘*in the eye of the stakeholders themselves*’ (Verhallen et al., 2007).

In this paper, we apply the conditions for IWRM arrangements that have been set out in literature to IWRM coordination platforms in 10 sub-basins in Flanders and Wallonia, with the goal of evaluating their performance as perceived by their relevant stakeholders.

## **METHODOLOGY AND CASE SELECTION**

This paper explores the conditions required for effective coordination at sub-basin scale, by comparing the Flemish sub-basin boards and Walloon river contracts. These two coordination platforms offer a particularly fruitful base for comparison since they are embedded in similar governance frameworks. Indeed, Flanders and Wallonia are two regions of the federal state of Belgium, and until 1989, water management used to be a federal competence. After regionalization, both regions developed their own water management policy but the foundations of the two arrangements remain comparable. Both regions have a four-layered water management structure, including polders and wateringues<sup>1</sup>, municipalities, provinces and the region. Under influence of the international discourse on IRBM in the beginning of the 1990s, coordinating bodies at sub-basin scale have been created in both regions. However, the design and scope of these two coordination platforms differs significantly. In this paper, we explore these differences and investigate their impact in terms of acceptance and perceived effectiveness by the stakeholders involved.

In this regard, we analyse the functioning of five sub-basin boards (Demer, Dender, Nete, Low Scheldt, Polders of Bruges) and five river contracts (Dyle-Gette, Vesdre, Senne, Low Meuse, Dendre) (See Figure 1 Figure 2). In our selection we have attempted to include a platform in each province, in order to ensure sufficient geographical and institutional diversity. In Wallonia, however, we have not succeeded to speak to a river contract in the province of Luxemburg for practical reasons. Moreover, most selected river contracts are located in the northern part of Wallonia and thus relatively close to the Flemish border. We consider this an advantage rather than a disadvantage because it limits the hydro-physical differences between the regions. Our selection varies in terms of the age of the coordination platforms. The river contracts were approved in 1993, 2000, 2003 and 2014, the sub-basin boards established in 1990, 1991, 1993, 1997 and 1998. In this way, we can evaluate the impact of time on our cases.

The article takes a multi-disciplinary approach with contributions from both legal and social scientists. In this way, sufficient attention is paid to both the formal and informal characteristics of the examined cases. In terms of legal analysis, all relevant legislative documents concerning the sub-basin boards and river contracts have been scrutinised.<sup>2</sup> This analysis has been complemented by the results of semi-structured interviews. Between May 2014 and March 2015, the coordinator of each of the selected coordination platforms was interviewed. Additionally, 60 other interviews have been conducted with public officials from different organisations and civil society actors, involved in Belgian water management, in the framework of the STAR-FLOOD project (more info on [www.starflood.eu](http://www.starflood.eu)). These interviews addressed a wide range of flood risk management topics but in 16 of them the interviewees were specifically questioned on their viewpoint on the river contracts and/or sub-basin boards. The interviews have been transcribed and analysed with the qualitative coding software NVivo. Afterwards, our findings were presented on a STAR-FLOOD workshop on 26 March 2015, which gave the attending officials a chance to react to them. To analyse the ‘outcome’ of the investigated platforms, we have not evaluated effectiveness based on our own criteria but refer

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<sup>1</sup> Polders and wateringues are local water managers, composed of riparian landowners.

<sup>2</sup> For Flanders, relevant legislation includes the DIWP (2003) and its 2013 reform and 2005 Basins Order. For Wallonia, amongst others, the 1993 Ministerial Circular, 2004 Water Code, 2001 River Contract Circular, 2008 River Contract Order have been studied.



to the effectiveness perceived by the stakeholders involved. In order to illustrate this evaluation, we have added some citations from our interviews.

## RESULTS

### *Coordination platforms in Flanders and Wallonia*

#### **Sub-basin boards in Flanders**

For decades, *integrated water policy* (*'integraal waterbeleid'*) has played a central role in the Flemish discourse on water management (Crabbé, 2008). The first steps towards its operationalization were made in 1990-1993 with the creation of the first sub-basin committees, in the sub-basins of the Demer, Yser, Dender, Nete and Upper Scheldt. These committees assembled representatives from different governmental institutions and from interest groups to deliberate on issues at stake of water quality, quantity and ecological management. In the years following, new sub-basin committees were established in the remaining sub-basins and their functioning was made uniform (see Figure 1).



**Figure 1: Sub-basins in Flanders.** Source: [www.integraalwaterbeleid.be](http://www.integraalwaterbeleid.be).

In 2001, the Flemish Government initiated the development of sub-basin management plans (SBMPs) (Crabbé, 2008). In parallel, attempts were made to create a legal framework for integrated water policy, which had, amongst other things, the intention to provide the sub-basin committees with an official status and a defined role. This policy process resulted in 2003 in the adoption of the Decree on Integrated Water Policy (DIWP)<sup>3</sup>. This decree contains provisions to regulate both water quality

<sup>3</sup> The Decree on Integrated Water Policy, 18 July 2003, *Belgian Official Journal* 14 November 2003.



and quantity issues and, until the 2013 reform, required the development of sub-basin management plans on a six-year basis. These plans were integrated into the RBMPs, required in the context of the European WFD. The Order of 9 September 2005 further provided for the geographical categorisation of sub-basins and sub-sub-basins (2005 Basins Order).<sup>4</sup> With the 2013 reform of the DIWP, the planning cycles at the river basin and sub-basin level have been integrated. Currently, RBMPs are drafted for the Flemish part of the rivers Scheldt and Meuse, with respectively 10 and 1 sub-basin specific part(s). These parts are prepared by the sub-basin boards but formally adopted by the Flemish government. The flood risk management plans (FRMPs) required in the context of the 2007 Floods Directive (FD) are integrated into these RBMPs.

Besides their impact on planning processes, the various DIWP reforms have also impacted the organisational structure of the sub-basins. The sub-basin committees have been replaced by a structure of 4 organisational bodies in each sub-basin (CIW, 2015). Together, these structures are referred to as the sub-basin boards (*'bekkenbesturen'* or *'bekkenwerking'*):

- The **Sub-Basin Secretariat**, composed of the sub-basin coordinator and one or more planners. These public officials are in charge of the daily management of the sub-basin organisation. They are responsible for the investigation of bottlenecks in the sub-basin, the preparation of the sub-basin management plans, the organisation of meetings, etc.
- The **Sub-Basin Management**, which is divided into a **General Assembly** and a **Sub-Basin Board**. The first brings together seven representatives from Flemish governmental departments (Environment, Spatial Planning, Economy, etc.) and a political representative from each local government in the sub-basin to discuss the management's general direction, approve the SBMPs, etc. In addition, they appoint the members of the Sub-Basin Board, which consists of a smaller number of political representatives and Flemish government officials who deliberate on a monthly basis.
- The **Sub-Basin Council**, assembling civil society actors representing different sectors (nature, agriculture, tourism, etc.). In this council, consensus-based advice is given on the SBMP's development and implementation.

Recently, an additional form of deliberation has been added, namely the **Area-Specific and Thematic Deliberation**. Here, public officials from different governmental layers can discuss issues at stake in smaller groups.

### River contracts in Wallonia

In 1993, the first *contrats de rivière* (hereafter called river contracts) were installed on the basis of a Ministerial Circular of 18 March 1993. The initiative was a response to specific problems in water management and to the environmental agenda defined at the 1992 Rio Summit (Poncelet, 1998; La Jeunesse et al., 2003). The platforms were inspired by IWRM-projects in France and have later emerged in other countries as well (e.g. in Burkina Faso and Italy). A river contract is an "*association of persons constituted under the form of a legal person with legal personality, bringing together, on a voluntary basis, all the actors that are concerned with the sustainable management of the water in the*

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<sup>4</sup> Order of the Flemish Government of 9 September 2005 related to the geographical categorisation of water systems and the organisation of the integrated water policy, *Belgian Official Journal* 2 December 2005.

*sub-river basin and which is materialised in a protocol agreement*".<sup>5</sup> Hence, river contracts unite public and private actors involved in water management in a sub-basin, and let them define an action programme for an integrated management of the water system in the area. With the Order of the Walloon Government of 13 November 2008 (henceforth referred to as the "2008 River Contract Order"), the system of river contracts has been elaborated to the entire territory of Wallonia. Currently, 13 river contracts are active in 14 out of 15 Walloon sub-basins.<sup>6</sup>



**Figure 2: Basins and sub-basins of Wallonia** (source: [www.uvcw.be](http://www.uvcw.be)).

The instalment of a river contract requires the initiative of a local actor to bring all interested parties together. In most cases, this is a municipality or province. In a first phase an inventory of the sub-basin is made, which maps all the bottlenecks in the area (SPW, 2015). Based on this inventory, goals and actions are discussed among the participating organisations. These organisations include the regional water managers, municipalities, province(s) and stakeholder groups (concerning nature conservation, fishing, agriculture, etc.). Once a consensus on the required actions is reached, a **protocol agreement** is drafted which needs to be approved by the Walloon government. This action programme has a horizon of three years. The majority of its actions are to be implemented by the participating parties, which are followed up through yearly activity reports drafted by the river contract's coordinator. By the end of the three-year period, a new basin inventory is made and the programme is evaluated. Based on this evaluation, in turn, a new action programme is developed.

In order to execute the daily management of the river contract, a **coordination cell** is created, which is composed of a coordinator and several employees. The coordination cell has the status of a non-profit organisation. Its operating budget is funded by the public authorities involved in the river contract. For

<sup>5</sup> Article R.45, 4° Water Code.

<sup>6</sup> The territory of the Oise sub-basin is attached to the river contract of the Upper Meuse. No river contract is active in the Moselle sub-basin.

every euro financed by the municipalities and provinces, the Walloon government adds another EUR 2,33 (2001 River Contract Circular). The river contract does not have its own resources to carry out the actions of the programme. Instead, every action is funded and implemented by one of the participating partners. In some cases, however, river contracts do participate in European Interreg-projects for which they receive own financial resources.

The partners of the river contract meet each other at least twice a year in the **river committee**, i.e. the organisation's general assembly. Among the participating partners an **administrative board** is elected, which meets about four times per year and is responsible for the financial and organisational management. Within every river contract, **working groups** can be installed on a number of key issues in the sub-basin, e.g. floods, invasive species, awareness-raising, etc. The working groups are composed of a diverse set of interested stakeholders.

### *Comparing the Flemish sub-basin boards and Walloon river contracts*

In the following section, we will compare the sub-basin boards and river contracts based on conditions for effective river basin coordination retrieved from literature. These conditions concern the context, process and content of the coordination platforms.

## **Context**

### *Legal and governance framework*

Both the Walloon and Flemish coordination platforms are anchored in legal frameworks. In the Flemish Region, the sub-basin boards are primarily governed by the 2003 DIWP and the 2005 Basin Order.<sup>7</sup> The Walloon river contracts are legally addressed by the 2008 River Contract Order. Both Flemish and Walloon legislative acts set out in detail the tasks of the coordination platforms, their decision-making procedures and organisational structure. They do however differ in approach. Whereas the Walloon river contracts result from bottom-up, grassroots initiative and are supported in their development and implementation through legal instruments, the Flemish sub-basin boards have a more top-down character whereby the legal framework sets out stringent procedural requirements.

An important aspect in determining the effectiveness of any governing body is the question of whether it has sufficient clout to take decisions and measures where relevant, among other things through legal personality. The latter is the case in Wallonia but not in Flanders. The 2008 River Contract Order requires that river contracts have legal personality to carry out activities enabling the achievement of the goals set forth by the Order. The river contracts are legally sculpted as non-profit organisations.<sup>8</sup> As a result, the river contract's coordination cell has a neutral position towards all the partners of the organisation. The sub-basin secretariats, in contrast, formally belong to the Flemish government. 50 %

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<sup>7</sup> Order of the Flemish Government of 9 September 2005 related to the geographical categorisation of water systems and the organisation of the integrated water policy, Belgian Official Journal 2 December 2005.

<sup>8</sup> More specifically, a non-profit organisation in the sense of the Act of 27 June 1921 on non-profit organisations.

of the sub-basin coordinators and planners are employees of the non-navigable water manager VMM, the other half of navigable water managers W&Z and De Scheepvaart<sup>9</sup>.

#### *Support-generating capacity*

The Walloon river contracts are initiated by a local authority (municipality or province) but approved and financially supported by the Walloon government. The membership of a river contract is exclusively voluntary; each municipality, NGO, etc. can choose whether or not to become a partner. The participating members decide collectively on the exact scope of the river contract. Similarly, the first sub-basin committees in Flanders were founded on the enthusiasm of local actors. In the meantime, however, they have been replaced by a uniform sub-basin structure, installed by the Flemish government on the basis of the 2003 DIWP. Stakeholders in several sub-basins indicated a lack of sufficient goodwill among the actors involved. The lack of support is prevalent among certain local authorities but even more so amongst the water managers at Flemish level themselves. Many public officials consider the sub-basin boards superfluous, and the input required by them as time-consuming.

Important differences between the Walloon river contracts and the Flemish sub-basin boards also exist with regard to financial support. In contrast to the sub-basin boards, the river contracts are in control of their own budget. With the exception of civil society actors, each partner of the river contract has to contribute financially to the platform. With this budget, the river contract can staff its secretary and develop its own activities, e.g. inventories, awareness-raising campaign, etc. Concerning the Flemish sub-basin secretariats, the 2005 Basin Order provides the coverage of its operational costs by the budget of the Flemish Environment Agency.<sup>10</sup>

Thanks to their own budgets, the river contracts enjoy great independence in terms of staff management. They are free to spend the available budget on the size and profile of staff of their preference, and to search for additional funding. In contrast, the coordinators and planners of the sub-basin boards are staff members of the Flemish water managers assigned to the task. In many cases, they have to combine their work with other assignments. Whereas the staff number of the researched sub-basin boards varies between one and 2,5 full-time equivalents, the river contracts can count on three to six full-time staff members.

## **Process**

#### *Decision-making process*

Both the river contracts and the sub-basin boards have a consensus-based decision-making process. With respect to the latter, the 2005 Order determines that, in case no consensus can be reached, decisions and advices can only be adopted through a special majority, whereby an allocation key with

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<sup>9</sup> VMM, W&Z and De Scheepvaart are agencies belonging to the Flemish government, which are in charge of the management of navigable waterways and 1<sup>st</sup> category non-navigable watercourses.

<sup>10</sup> Art. 18 2005 Basin Order.

regard to the different stakeholders has been set out.<sup>11</sup> The 2008 River Contract Order does not determine the voting procedure that should be followed by the river committees. In both organisations, the topics discussed result from the inventory made in preparation of the management plans/action programme, or they are brought to the table by one of the involved parties. In this sense, both the river contracts and the sub-basin boards have a rather flexible decision-making process. But the decision-making itself occurs more rigidly in the sub-basin boards than is the case with the river contracts, namely through a fixed set of formally structured meetings. In some cases however, ad-hoc deliberation is organised in parallel with the official structure, in which more specific issues are addressed. Also the recently introduced *area-specific and thematic deliberation* is to contribute to more flexible decision-making.

Leadership in the sub-basin boards follows a hierarchical structure. The meetings of the sub-basin board are presided over by the provincial governor. In some cases, this public person exercises an important moral leadership within the sub-basin, e.g. to create a cooperative environment after a flood event. The sub-basin coordinators are centrally steered from within the Flemish government and thus have an executive rather than a leading function. Nonetheless, in some sub-basins the coordinator has adopted a leadership role by enthusing the actors involved and facilitating deliberation and conflict resolution. With regard to the river contracts, the legal framework does not stipulate who should preside the meetings of the river committee. In practice, a leadership role is adopted by an actor with a specific interest in the river contract and/or the required charisma, e.g. the coordinator, a local authority, etc.

There is a large variety in the age of the different river contracts and sub-basin boards in the study. The Nete, Demer and Dender basin belong to the oldest sub-basin boards (1990-1993), although their original functioning differs from that of today. Among the river contracts, the oldest was established in 1993 (Dyle-Gette) and the youngest in 2014 (Dendre). Particularly within the river contracts, many coordinators stress the fact that time is a crucial factor for building trust and thus for the effectiveness of the river contract.

#### *Multiple and equitable stakeholder involvement*

Variety exists in the extent to which non-governmental stakeholders are involved in the activities of the sub-basin boards. In the Demer basin, for example, focus is put on multi-stakeholder deliberation within specific projects. In most other sub-basins, however, the involvement of non-governmental actors is limited to their representation in the formal sub-basin councils. In these councils, they can advise on the plans and reports developed within the sub-basin board and deliberate on more general issues of integrated water management, e.g. how to deal with problems of erosion in the sub-basin, etc.

The river contracts, on the other hand, form the interface between civil society and the authorities in the Walloon water governance. Pursuant to the 2008 Order, public participation is inherent to the structure of river contracts; every river contract contains a number of non-governmental stakeholder groups (e.g. nature organisations, fishing associations, etc.) among its partners. These stakeholders are

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<sup>11</sup> Art. 14/2 2005 Basin Order.

involved in the draft of the inventory and the action programme of the river contract. They also participate regularly in the execution of specific action points, e.g. awareness-raising activities, management of invasive species, etc. In addition, the interest groups can participate in working groups on specific projects within the river contract. Stakeholder involvement is thus strongly interwoven into the river contracts' management structure, whereas it is organised as a separate process in most sub-basin boards.

An important role of the river contracts, which is entirely absent in the sub-basin boards, is awareness-raising. Although their extent and scope varies largely, each river contract develops programmes to raise awareness among local authorities, the population or specific groups (farmers, school children, etc.) on particular water topics.

Due to these activities, the river contracts are better known among the local population than the sub-basin boards in Flanders are. Consequently, they are regularly contacted by residents on local water issues, e.g. when a watercourse is obstructed by branches, etc. This way, the river contract functions as an information gate between local residents and the formal water authorities.

Despite their close connection with the population, river contracts are rarely used as an official tool for public participation. Most water managers consult the public in hearings organised apart from the river contract system. The river contracts are, however, involved in the organization of the public consultation on the FRMPs. In Flanders, no direct points of contact exist between the sub-basin board and the general public. Residents are exclusively represented by interest groups in the advisory sub-basin council.

## **Content**

### *Scope and scale formulation*

The primary tasks of the sub-basin boards according to the DIWP are to draft management plans at sub-basin scale and progress reports thereof, and to issue advice when requested by the Flemish government and its agencies. The plans form the building blocks of the management plans required in the context of the European WFD and FD.

Hence, while the sub-basin boards have a strictly delineated set of formal tasks, the goal of the river contracts is formulated more broadly. Pursuant to the 2008 River Contract Order, their main goal is to draft and implement an action plan, of which the scope and content is determined by its members. This programme covers a wide range of actions and issues within the sub-basin, e.g. fighting invasive species, flood risk management, etc. In addition, the river contracts should contribute to the development of the RBMPs and FRMPs, by organising a field inventory, contributing to the consultation of the public, and so forth. Moreover, the river contracts can be called upon by the Walloon Government to contribute to specific technical tasks.<sup>12</sup>

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<sup>12</sup> Art. R.48 2008 River Contract Order.

Both the river contracts and the sub-basin boards include partners from different political echelons. Consequently, the coordination platforms contribute to cross-scale policy linkage. In accordance with the principle of subsidiarity, the organisations address IWRM at one of the lowest hydrological scales, namely the sub-basin. In the Flemish Low-Scheldt basin, however, one respondent considered its size still too large to allow in-depth cooperation. In the river contract Low-Meuse, the organisation is in practice split into three sub-sub-basins.

In relation to the organisation's scope, the role of the river contract's secretariat is broader than is the case for the Flemish sub-basin secretariats. The latter's primary task lies in the organisation of formal meetings and the preparation of the sub-basin management plans and progress reports. In addition to that, the basin boards' coordinators are able to organise deliberations between stakeholders on relevant issues, similar to the river contracts. This role has been recently institutionalised with the *area-specific and thematic deliberation*. However, most of the interviewed coordinators indicate that they do not have the necessary resources to organise these projects in addition to their procedural requirements. The tasks carried out by the river contracts' staff vary widely; they prepare the inventory for the development of the action programme, organise awareness-raising campaigns, contribute to the execution of certain action points, form a point of contact for the population, etc. Because of this broad mandate, the river contracts appear well-equipped to respond to the most relevant issues in changing circumstances.

#### *Information*

Both the sub-basin boards and the river contracts aim to improve information exchange between the different stakeholders within the sub-basin, as required by respectively Art. 5 of the 2005 Basin Order and Art. R.48 of the 2008 River Contract Order. Actors in both regions indicate that they are more aware of other actors' activities and issues than 15 years ago, due amongst other factors to the coordination platforms. Hence, the river contracts and sub-basin boards appear to contribute to joint fact finding.

#### *Outcome*

Our aim is not to evaluate whether the coordination platforms achieve a more effective water management in the field. Instead, we will focus on how their particular impact is perceived by the actors involved. The functioning of the river contracts and sub-basin boards varies from sub-basin to sub-basin and so does their perceived effectiveness. In general, however, the river contracts are evaluated much more positively by their members than the sub-basin boards. In some specific Walloon sub-basins, the river contract is regarded by water managers as a threat to their own competence, but most stakeholders consider them an important step forward towards IWRM.

*“The river contracts allow all the users to come with their own viewpoints and problems and this creates the atmosphere needed to consider each other's problems within the eco-system.”*

(Translated excerpt from an interview with a provincial official)

In interviews with Flemish governmental actors, in contrast, several flaws of the sub-basin board



system are regularly brought to the forefront: the sub-basin boards do not have any financial means, neither do they have the needed clout. Consequently, they are given little room to manoeuvre by the water managers, who want to protect their own competences. The boards' meetings are said to be structured too rigidly and are too heavily focused on formal planning, and as a result, have little impact in the field.

*“If we need to choose between filling in Excel-tables for the sub-basin boards or realizing projects in the field, we know what to do...”*

(Translated excerpt from an interview with a provincial official)

More positive feedback is heard regarding the recently established *area-specific and thematic deliberation*. These platforms have been created to discuss specific, local issues at administrative level, and are particularly applauded by the municipalities.

The table below provides an overview of the evaluation of both coordination platforms, based on the criteria defined in literature.

	<b>Flemish sub-basin boards</b>	<b>Walloon river contracts</b>
<b>Context</b>		
<b>Strong but flexible framework</b>	Stringent legal framework and requirements. No binding decision-making power.	Bottom-up initiative with top-down legal support. No binding decision-making power.
<b>Sufficient human and financial resources</b>	No independent budget or personnel.	Independent staff budget and management.
<b>Commitment of partners</b>	In several sub-basins lacking.	Participation is voluntary and thus only committed partners join.
<b>Process</b>		
<b>Consensus-based decision-making</b>	Yes	Yes
<b>Leadership</b>	By provincial governor and sometimes by coordinator.	Depends on local context.
<b>Neutral position</b>	No, staff members belong to the Flemish government.	Yes, due to NGO statute and independent staff management
<b>Time</b>	Installed between 1990 and 1998, reorganisation in 2003.	Installed between 1993 and 2014.
<b>Involvement of all relevant governmental and non-governmental stakeholders</b>	Inclusion of all relevant governmental actors but non-governmental stakeholders only in advisory council.	Partners include both governmental and non-governmental actors, participation is voluntary.
<b>Content</b>		
<b>Addresses most relevant issues</b>	Topics defined by legal requirements and inventory.	Topics defined by inventory.
<b>Subsidiarity and cross-scale linkages</b>	Low hydrological scale but in some cases still considered too large. Linkages through participation of different political levels.	Low hydrological scale but in some cases split up further. Linkages through participation of different political levels.

<b>Well-developed knowledge system and knowledge exchange</b>	Knowledge exchange based on inventory and input of partners.	Knowledge exchange based on inventory and input of partners.
<b>Evidence of progress</b>	Perceived by stakeholders as insufficient.	Perceived by stakeholders as significant.

**Table 1: Overview evaluation Flemish sub-basin boards and Walloon river contracts**

## DISCUSSION

Before diving into the discussion it should be stressed that this evaluation is based on generalised findings and that there exists considerable variety within the two coordination systems. Some sub-basin boards in Flanders are widely applauded for their coordination efforts, while some Walloon provincial officials consider the river contracts on their territory as an interference. In general, however, the river contracts are remarkably better perceived than the sub-basin boards in Flanders. Also, their legal framework and functioning in practice corresponds better to the conditions put forward in literature for effective IRBM.

We found the higher appreciation of the river contracts to be based on four key differences between the two types of coordination platforms. First, the Walloon river contracts are based on bottom-up development and a supportive rather than a stringent legal framework, while the Flemish sub-basin boards are embedded in a more rigid, uniform legal framework, imposed top-down with little relevant discretionary powers granted to the boards. In the river contract, all parties interested can contribute on a voluntary basis to the development of an action programme, which forms the start of further cooperation and is (financially) supported by the Walloon government. This creates a very different dynamic to that of the sub-basin boards, which are primarily focused on meeting the legal obligations of the EU WFD and FD. This is in line with findings of Blomquist et al. (2005), Warner (2006), Benson et al. (2012) and others, who claim that a river basin approach can neither be pushed exclusively top-down nor bottom-up. According to a respondent in Flanders, the original sub-basin committees did form an asset to IWRM since they had a flexible governance structure and scope. With the DIWP, the Flemish government has attempted to institutionalise the system by giving it a legal framework but it has thereby sacrificed its flexible structure for a uniform, centrally-steered system. Hence, we can subscribe to the call made by other authors for a strong but flexible legal framework (e.g., Ebbesson, 2010; Keessen and van Rijswick, 2012).

A second difference between the two institutions relates to their human and financial resources. The river contracts administer their own budgets and are better staffed than the sub-basin boards. This confirms the findings of Benson et al. (2012) at basin scale. Based on their research in the US, Australia and the EU, they claim that instead of imposing deliberation at catchment scale top-down, central governments should financially support deliberative, bottom-up initiatives.

Sufficient resources are important but, as a public official from the Walloon Government points out, it is the dynamics within the river contract that are key for a well-functioning platform: *“If the participants are dynamic and of good will, the better the river contract will function. Then the budget they have is of little importance.”* Hence, in relation to several other studies (e.g. Blomquist et al.,

2005; Warner, 2006), enthusiastic leadership and commitment appear key conditions for river basin coordination. Also among the Flemish cases, the personal commitment of the sub-basin coordinator appeared to be a vital point to explain differences between them.

A third significant difference between the river contracts and sub-basin boards is the legal status of the organisations' secretariats. Whereas the coordinators in Flanders formally belong to one of the parties involved, they are organised in an independent NGO-structure in Wallonia. This independent position appears advantageous for trust-building within the coordination platform.

In relation to trust-building, many coordinators stress that time is a crucial factor, but there seems to be no strong linear causal relationship between the age of the coordination platforms and their effectiveness. Indeed, the organisations need a certain amount of time to develop themselves but what is found even more important is a sense of urgency. The platforms are most successful when they can respond to practical needs, e.g. flood problems in Senne basin, local IWRM projects in Demer basin, etc. In order to do so, the entities must have sufficient independence and financial and human resources to respond to changing circumstances.

A fourth key difference between the river contracts and the majority of the sub-basin boards is their link with civil society. The river contracts form the interface between government and society on divergent water issues. Not only do they count civil society actors among their partners, but they also play an important role in terms of public awareness-raising. In most Flemish sub-basin boards, NGOs are only represented within the advisory sub-basin council. Sub-basin boards that do provide for more intense deliberation with non-governmental stakeholders are perceived to be more effective in achieving IWRM. By focusing on the link between state and society, coordination platforms create a specific role for themselves, which is complementary to the competences of other actors. As a result, it has a positive influence on the trust-building process within the organisation.

## CONCLUSION

In this paper, two systems of coordination and deliberation at sub-basin scale were studied within a similar governance context. Our findings are largely in compliance with the conditions for effective river basin coordination set out in literature. A number of key factors are found to contribute to the perceived effectiveness of the coordination platforms by the stakeholders involved. These factors are a clear but flexible legislative framework, (financial) support of the higher government rather than command-and-control steering, personal commitment of their coordinators, an independent status of their staff, a sense of urgency and a good connection with civil society and the wider public.

Coordination platforms which fulfil these conditions appear to deliver a significant contribution to IWRM at sub-basin scale. According to stakeholders, these platforms facilitate communication amongst them and thereby contribute to the prevention and resolution of conflicts. In addition, the coordination platforms offer a holistic expertise to natural resources management. More than any stakeholder, they have a perspective that integrates all the different interests present in the sub-basin.

Butterworth et al. (2010) suggest that top-down, comprehensive IWRM reforms work less well in developing and transitional countries. Instead, a more pragmatic, people-centred approach should be pursued, based on local arrangements. In our analysis, this approach also appears most effective in a Western European country. One drawback is that this bottom-up development highly depends on the effectiveness of the local arrangement and the commitment of its actors. Further research should clarify how these local conditions could be anticipated upon in the pursuit of IWRM.

With our findings, we subscribe to the analysis made by Benson et al. (2012). Instead of its current command-and-control approach, we believe European water management would benefit from a participatory network governance style, whereby local developments at sub-basin scale are supported at national and European level, rather than steered. This way, higher governments can offer the necessary guidance and resources, while at the same time allowing for an IWRM adapted to specific and changing circumstances at local hydrological scale.

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