

# Success Factors in Transboundary Water Management

## Critical Success Factors in Transboundary Water Management: a US-EU Comparison

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### Abstract

*In light of the increasing pressure on freshwater resources, good governance of rivers is key in meeting the challenges ahead. Integrated river basin management has been advocated both in the European Union and the United States. This paper will adopt a comparative approach to the analysis of river basin management by scrutinizing the legal regimes governing the Scheldt River in the EU and the Delaware River in the US. Based on these case studies, in combination with literature review, the article will set forth Critical Success Factors for integrated transboundary river basin management.*

### 1. Introduction

River basin management is advocated both in the European Union and the United States. In the EU, integrated river basin management has been formally introduced by the 2000 Water Framework Directive (2000/60/EC). In the US, river basin planning initiatives were undertaken in the US in an early stage, e.g. driven by the ideas of John Wesley Powell, then head of the US Geological Survey, who planned to introduce the “United Watershed States of America” in 1878. Powell proposed to delineate the political boundaries in the United States on the basis of hydrological ones.<sup>1</sup> This idea however was rejected, but it is at the root of river basin management in the United States today. Based on previous research, the starting point in this paper is that water resources should be managed at the appropriate hydrological, or bioregional scale.<sup>2</sup> This holds true for water bodies that are located within national boundaries, as well as for water bodies exceeding these boundaries. The question then rises, in which manner should the legislative framework be sculpted to support “good governance” at the hydrological scale to the maximum extent?

The paper will mainly focus on the joint bodies governing such waters, with a focus on the quantitative aspects of water management, i.e. floods, scarcity and droughts. The ever-present chip on the shoulder of such joint bodies relates to the issue of sovereignty

concerns of the states and regions sharing the basins in question. This does not only hold true in the EU, where states, especially with respect to topics such as spatial planning, choices of energy supply, and water quantity management, are generally hesitant to cede sovereignty to the supranational level, be it the EU level of the competent authority governing transboundary waters, but also in the US. Indeed, the center of gravity of competences with regard to water quantity management lies with the states. In inter-jurisdictional basins, the federal level disposes of certain tools to intervene in the management thereof. The following quote illustrates the omnipresence of sovereignty concerns that are especially delicate in the context of water resources management in the US: “Of course, no one expects Congress to obliterate the states, at least in one fell swoop. If there is any danger, it lies in the tyranny of small decisions – in the prospect that Congress will nibble away at state sovereignty, bit by bit, until someday essentially nothing is left but a gutted shell”.<sup>3</sup> Whilst it is important to stress the necessity of cooperation at the more local, interregional level, with proper cross-scalar linkages in place with the basin level,<sup>4</sup> this

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<sup>1</sup> J.W. Powell, Report on the Lands of the Arid Region of the United States, with a More Detailed Account of the Lands of Utah. With Maps. H.R. Exec. Doc. 73, 45th Cong., 2d Sess. (Washington, D.C., 1878).

<sup>2</sup> The weighing of (dis)advantages of governance at such levels are thus beyond the scope of this article. Andrea M Keessen and Marleen Van Rijswijk, *Adaptation to Climate Change in European Water Law and Policy* (2012) 8 38; Cathy Suykens, “EU Water Quantity Management in International River Basin: Crystal Clear?” [2015] *European Energy and Environmental Law Review* 134; Barbara Cosens, “Legitimacy, Adaptation, and Resilience in Ecosystem Management” (2013) 18 *Ecology and Society*; Bruce Hooper, *River Basin Organization Performance Indicators: Application to the Delaware River Basin Commission?: Supplementary File* (2010) 12 1; Bruce Hooper, “River Basin Organization Performance Indicators: Application to the Delaware River Basin Commission” (2010) 12 *Water Policy* 461. As for law and policy documents, see Water Framework Directive, ICWE 1992, UN 1992, Agenda 21, etc.

<sup>3</sup> Laurence Tribe, *American Constitutional Law* (The Foundation Press, Inc., 1978) 302.

<sup>4</sup> See, amongst others, Tanya Heikkila, Edella Schlager and Mark W Davis, “The Role of Cross-Scale Institutional Linkages in Common Pool Resource Management: Assessing Interstate River Compacts” (2011) 39 *Policy Studies Journal* 121; Sally J Priest and others, “The European Union Approach to Flood Risk Management and Improving

# Success Factors in Transboundary Water Management

aspect of transboundary water management is beyond the scope of this paper.

The main goal of this article is to provide an answer to the following research question: “what are the Critical Success Factors (CSFs) for achieving integrated transboundary river basin management drawing from the Scheldt and Delaware mechanisms?” Critical Success Factors (CSF) can be identified as elements that support the implementation of integrated river basin management in transboundary waters. Originally, a Critical Success Factor is a management concept used to indicate conditions that drive the success of a certain business.<sup>5</sup> The concept has been put forward in 1979 to define the information needs of a Chief Executive Officer and has since then been used in the governance context.<sup>6</sup> Such Critical Success Factors should be distinguished from Key Performance Indicators (KPI), whereas Key Performance Indicators are a quantitative measurement tool, i.e. have the form of a ratio or percentage to assess the effects of certain actions, CSFs are qualitative.

It is noteworthy that these Critical Success Factors should not be seen as self-standing and exhaustive evaluation criteria for integrated river basin management. First, these CSFs have not been drawn from a comprehensive study of *all* IRBDs in Europe. The CSFs are mainly drawn from the Scheldt and Delaware. However, several of the elements constituting the CSFs drawn from these case studies coincide with what has been stated in literature. Second, Critical Success Factors should be accompanied by Key Performance Indicators. Third, the CSFs are geared to the institutional mechanism for integrated river basin management. For this reason, principles of broader “water governance” such as the OECD’s water principles and the “ten building blocks for sustainable water governance” remain relevant and should be taken into account as well.<sup>7</sup>

The following section will explain the comparative approach adopted in this article and give an overview of the main characteristics of the Scheldt and Delaware cases before delving into the Critical Success Factors for integrated transboundary river basin management.

## II. A Comparative Approach

### 2.1 Relevance and Validity of the Comparison

Both in the EU and the US, environmental protection laws came to life starting from the seventies.<sup>8</sup> Whereas in the EU, the competences of the EU institutions to legislate with regard to water quality and quantity management are based on specific constitutional provisions of primary law,<sup>9</sup> this is not the case in the US. Federal competence to issue rules and regulations with regard to water resources mainly stems from its power to regulate interstate commerce and through Judgments of the Supreme Court.<sup>10</sup> Federal water related legislation in the United States thus has a more

reactive character, in the sense that federal intervention constitutes a response to specific problems justifying or necessitating national level action.<sup>11</sup> This is especially the case for issues related to water rights and allocation mechanisms, which are thus governed differently in the fifty states. As the primary responsibility and competence with regard to water quantity management lies with the states, interesting multi-level governance and multi-jurisdictional issues arise in water bodies crossing through the territories of several states. The manner in which states in the US deal with these issues through the applicable legal frameworks and agreements provide valuable lessons for the challenges related to International River Basin Districts (henceforth referred to as “IRBDs”) in the EU. In order to make full use of these comparative opportunities, two transboundary river basins in both continents will be looked at in more detail. Within the context of US water law, one river basin in particular has been analysed in-depth, namely the Delaware River Basin. In this basin, a centralized body with regulatory authority over the whole of the basin has been established. The 1961 Delaware Compact constitutes an important milestone in US water resources management, as it pioneered in bringing together the federal and state levels in a joint governing body competent to tackle pressing issues in an interstate river basin. On the EU side, the Scheldt River Basin has been studied, from the perspective of the manner

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Societal Resilience?: Lessons from the Implementation of the Floods Directive in Six European Countries” (2016) Under review, *Ecology and Society*; Herman Kasper Gilissen, *Internationale En Regionaal Grensoverschrijdende Samenwerking in Het Waterbeheer* (Sdu Uitgevers 2009).

<sup>5</sup> John Rockart, “Chief Executives Define Their Own Data Needs” (1979) 3 *Harvard Business Review* 81.

<sup>6</sup> *Ibid.* For the governance aspects, see e.g. Ziad Alreemy and others, “Critical Success Factors ( CSFs ) for Information Technology Governance ( ITG )” (2016) 36 *International Journal of Information Management* 907 <[http://eprints.soton.ac.uk/397195/1/csf\\_itg\\_ijim\\_accepted.pdf](http://eprints.soton.ac.uk/397195/1/csf_itg_ijim_accepted.pdf)> .

<sup>7</sup> OECD, “OECD Principles on Water Governance” (OECD 2015) <<https://www.oecd.org/cfe/regional-policy/OECD-Principles-on-Water-Governance-brochure.pdf>> accessed 17 July 2017. Marleen van Rijswijk and others, “Ten Building Blocks for Sustainable Water Governance: An Integrated Method to Assess the Governance of Water” (2014) 39 *Water International* 725, 737.

<sup>8</sup> John A. Hoornbeek, *Policy-Making Institutions and Water Policy Outputs in the European Union and the United States: A Comparative Analysis*, vol 11 (2004).

<sup>9</sup> Namely, Arts. 191 and 192 of the Treaty on the Functioning of the European Union.

<sup>10</sup> Lynn A. Mandarano, Jeffrey P. Featherstone and Kurt Paulsen, “Institutions for Interstate Water Resources Management” (2008) 44 *Journal of the American Water Resources Association* 136.

<sup>11</sup> John A. Hoornbeek, *supra*, note 4.

## Success Factors in Transboundary Water Management

in which the EU Member States sharing the Scheldt have sculpted their coordination and cooperation requirements in the context of the implementation of the relevant EU legislation, i.e. the 2000 Water Framework Directive<sup>12</sup> and the 2007 Floods Directive. Putting these two cases in a legal comparative perspective, adds an empirical layer to the theory and existing literature on transboundary water management and the functioning of joint bodies governing transboundary waters. Furthermore, EU legislation has mainly focused on water quality management, which is reflected in, for example, agreements governing the IRBDs such as the Scheldt. One of the reasons for this lack of emphasis on water quantity management relates to the more stringent legislative procedure pursuant to EU primary law. The manner in which a US river basin, in this case the Delaware, tackles water quantity management and quality management from an integrated perspective, is thus interesting to analyse. Moreover, international customary law is relevant for river basins in both continents. This body of law feeds into the way these rivers are being managed, and can therefore act as a point of reference, if need be.

In comparing the EU and US legal frameworks for water management, the differences in competences of the relevant institutions should evidently be kept in mind, although these do not detract from the relevance of the comparison. In contrast to US federal states, the EU Member States have separate legal personality under international law as the EU is a sui generis legal order.<sup>13</sup> Within International River Basin Districts, such as the Scheldt, the DNA of States varies from decentralised unitary States (such as the Netherlands) to federal States (such as Belgium).<sup>14</sup>

The federal institutions in the US have more power and clout than those existing in the EU. The US Congress has more elaborate legislative powers.<sup>15</sup> Moreover, US institutions have more extensive competences to follow up on implementation of legal instruments and enforce should need be. The executive agencies have direct administrative authorities *vis-à-vis* the implementation of legislation, as well as oversight authority.<sup>16</sup> Whereas in the US, the Supreme Court has the power to apportion waters when proceedings are brought before it, and Congress, on the basis of the Commerce Clause, can allocate inter-state waters, the TFEU does not equip the EU institutions with analogue competences in IRBDS (partly) on the territories of EU Member States. Moreover, there is a difference in the effects of Acts, as federal legislation in the US is directly binding from the perspective of its population, whereas in the EU, with respect to the instruments most commonly used in the context of environmental and water law, i.e. Directives, the “direct effect” principle applies.<sup>17</sup>

Finally, an importance difference with regard to water management in the EU versus the US is that in the US mechanisms of private water rights exist,

whereas, in the EU, water is often considered as a public domain and public responsibility.<sup>18</sup> In the US, private water rights exist through doctrines that differ in the East, where the riparian doctrine is dominant,<sup>19</sup> and the West, where the prior appropriation doctrine is prominent.<sup>20</sup> However, this difference in legal characterisation of water resources does not form an impediment to a valid EU-US comparison for the governance of rivers. Whereas these water rights doctrines are crucial in determining the rights and obligations of private parties within the States, they are not quintessential in inter-State relationships and disputes.<sup>21</sup> This has been confirmed repeatedly by the Supreme Court, for example in *New Jersey v. New York*, where the Court held that it was not bound by a strict application of the private riparian rights doctrine in interstate water disputes, as usually applied within the state in question.<sup>22</sup> For the comparison between

<sup>12</sup> Directive 2000/60/EC establishing a framework for Community action in the field of water policy, OJ.L. 327, 1-37, 22 December 2000. Directive 2007/60/EC of 23 October 2007 on the assessment and management of flood risks, OJ.L. 288, 27-34, 6 November 2007.

<sup>13</sup> Nikolaos Lavranos, “The MOX Plant and IJzeren Rijn Disputes: Which Court is the Supreme Arbiter” (2006) 19 *Leiden Journal of International Law* 221, 233.

<sup>14</sup> Willemijn Van Doorn-Hoekveld, “Transboundary Flood Risk Management: Compatibilities of the Legal Systems of Flood Risk Management in the Netherlands, Flanders and France: A Comparison” (2017) *European Energy and Environmental Law Review* 81.

<sup>15</sup> Clíona J.M. Kimber, “A Comparison of Environmental Federalism in the United States and the European Union” (1995) 54 *Maryland Law Review* 1658, 1686. E.g. with regard to federal lands.

<sup>16</sup> John Hoornbeek, Policy-Making Institutions and Water Policy Outputs in the European Union and the United States: A Comparative Analysis, (2004) 11 *Journal of European Public Policy* 461, 465.

<sup>17</sup> This applies when the relevant provisions are sufficiently clear and precise and unconditional, in combination with the situation that the EU country has not yet transposed the instrument. Case C-26/62 *Van Gend en Loos* [1963] ECLI:EU:C:1963:1.

<sup>18</sup> Marleen Van Rijswick and Herman Havekes, *European and Dutch Water Law* (Europa Law Publishing 2012).

<sup>19</sup> This doctrine implies an intricate relationship between the land and the water, in the sense that the landowner is allowed to use the waters adjacent to the land, as long as it constitutes “reasonable use”.

<sup>20</sup> Which implies a “first come-first served” mechanism, i.e. in terms of using or diverting quantities of water, based on so-called “beneficial use” considerations.

<sup>21</sup> Josh Clemons, *Interstate Water Disputes: A Road Map for States* (2004) 12, 115.

<sup>22</sup> *New Jersey v New York* 283 US 336 (1931). Also, for example, the Supreme Court stated that one doctrine should not govern interstate disputes before the Court, see e.g. *Kansas v Colorado* 185 US 146 (1902), as the riparian doctrine was dominant in Kansas and the appropriation doctrine in Colorado.

# Success Factors in Transboundary Water Management

specific river basins in both continents, the doctrines that states apply within their state are not determinative. As the Court rules in *Kansas v. Colorado*, states may set forth rules on the manner in which water is allocated within the state boundaries, but these rules may not be extrapolated to inter-state water management.<sup>23</sup>

## 2.2 EU International River Basin Districts and US Compacts

In both the EU and the US, the legal frameworks for the management of river basins focus, at least in theory, on hydrological boundaries instead of administrative ones. In the EU, the cornerstone of the 2000 Water Framework Directive, the main legislative instrument governing water law at the Union level, is the institution of the River Basin District, which is defined as “the area of land from which all surface run-off flows through a sequence of streams, rivers and, possibly lakes into the sea at a single river mouth, estuary or delta”.<sup>24</sup> The International River Basin District is the term used for the situation where a river basin spans the territory of several (Member) States. The WFD requires Member States to ensure that a river basin covering the territory of more than one Member State is assigned to an IRBD. However, the concept “International River Basin District” is not explicitly depicted in the Directives as a unit of governance.<sup>25</sup> This rather loose character of the concept of IRBD is paired with the fact that it is often unclear which measures should be taken at the level of the IRBD, as opposed to the RBD – the RBD being the main unit of governance. For example, the WFD provides for issuance of long-term forecasts of supply and demand for water in the river basin district, as a basis of the economic analysis of water services. The WFD does not stipulate whether this forecast should be done at the level of the IRBD, in case of transboundary waters.<sup>26</sup> Then, the appropriate competent authority should be assigned for the application of the rules of the Directive within the portion of the IRBD lying within its territory. To this end, Member States may rely on existing international mechanisms.<sup>27</sup> There are large differences in how Member States have gone about the designation of competent authorities for IRBDs, for example, several authorities for one RBD, or one authority for several River Basin Districts. Moreover, where the existing authorities for transboundary waters ensuing from international agreements have been designated as the competent authority for the IRBD, again significant discrepancies exist in terms of powers granted to these authorities in the respective IRBDs. For example, whereas the Rhine Commission to some extent has binding powers over the IRBD Rhine, the Scheldt, which will be discussed in the sections below, and Meuse Commission hardly have any powers and are restricted to activities such as providing non-binding advices.

Federal and state authorities in the US have experimented with various forms of river basin management, ranging from the most informal platforms to more centrally steered joint governance mechanisms, with a general tendency of decentralization from the federal levels to the state levels.<sup>28</sup> At a more local level, there is a possibility of instituting watershed councils, which are primarily governed by states with little interference of the federal level. These are informal, consensus oriented, grassroots organizations focused on the watersheds, i.e. at a more local scale than the river basin level.<sup>29</sup> At a state-to-state level, various models have been created, for example, the “title-II-Commissions”, which have been established pursuant to the Water Resources Planning Act, where the center of gravity lies with the federal level and which were dissolved in 1981, the “Regional Authority”, functions quite similarly to the Single Federal Administrator, but is focused around a

<sup>23</sup> Josh Clemons, *supra*, note 10, 95. On the other hand, if both states have adopted the same doctrine, this doctrine should prevail in the Supreme Court’s allocation method, as was the case in *Wyoming v. Colorado* 259 US 419 (1922).

<sup>24</sup> Article 2(13) WFD. According to the Commission, the consultation process had revealed an “almost” universal support for using these River Basin Districts as the unit for governing the water resources. Proposal for a Council Directive establishing a Framework for Community Action in the Field of Water Policy, Explanatory Memorandum, COM(97) 49 final.

<sup>25</sup> Cathy Suykens, “EU Water Quantity Management in International River Basin: Crystal Clear?” [2015] *European Energy and Environmental Law Review* 134.

<sup>26</sup> The river basin approach has been weakened in the run up to the adoption of the WFD on other occasions as well, e.g. the Parliament had proposed an amendment to article 1(a)(i) of the Directive, which sets out the goals of the Water Framework Directive. The Parliament had proposed as a goal of the WFD, “Promotes sustainable and efficient water use based on long-term protection of available water resources within a hydrological area or river basin”. The words “within a hydrological area or river basin” do not appear in the final text of the WFD, namely, article 1 (b) WFD. In the final text of the WFD, this part of the purpose is formulated: “promotes sustainable water use based on a long-term protection of available water resources”.

<sup>27</sup> Art. 3(4) WFD. Marleen Van Rijswijk and Herman Havekes, *European and Dutch Water Law* (Europa Law Publishing 2012); Marleen Van Rijswijk, Herman Kasper Gilissen and Jasper van Kempen, *The Need for International and Regional Transboundary Cooperation in European River Basin Management as a Result of New Approaches in EC Water Law* (2010) 11 ERA Forum 129.

<sup>28</sup> Hooper, River Basin Organization Performance Indicators: Application to the Delaware River Basin Commission.

<sup>29</sup> Jerome Delli Priscoli, *Case Study of River Basin Organizations*, available on the Internet at: [http://www.transboundarywaters.orst.edu/research/case\\_studies/River\\_Basin\\_Organization\\_New.htm](http://www.transboundarywaters.orst.edu/research/case_studies/River_Basin_Organization_New.htm). These councils are akin to the Walloon river contracts.

# Success Factors in Transboundary Water Management

centralized regional agency,<sup>30</sup> and the “Federal-State Interstate Water Commission”. The latter type is embodied by the joint body governing the Delaware basin, and will be discussed below. In this Commission, both states and the federal level are represented, and its role is based on an agreement, the so-called “Compact”, that is transposed both into federal and state law. Compacts are authorized under article 1, section 10 of the Constitution, however, with the caveat that interstate compacts are only effective when these have received consent from Congress. The Compact is thus a contract between states to regulate issues of interstate importance, which, once approved by Congress, becomes a federal statute.<sup>31</sup> In general, not all compacts require congressional consent. The rule of thumb in this regard is that all compacts that have an impact on the federal-state balance should be subject to consent of the congress.<sup>32</sup> If the compact results in the increase of political power of the states to the detriment of the supremacy of the federal level, congressional consent is required.<sup>33</sup> One of the indicators in assessing whether consent is required, is whether or not the compact would touch upon area where Congress can legislate. In terms of interstate resources, *i.e.* transboundary waters, this question is often answered affirmatively. Congressional consent does not imply that the federal level should have an equal voice in the negotiations of interstate compacts as the states. Indeed, it is in line with the spirit of the Constitution to grant states the necessary degree of discretion and freedom to resolve regional issues amongst themselves.<sup>34</sup> The federal government does not have the constitutional authority to draft the central elements of the compact, as this device is meant to develop and grow as a “grassroots” process.<sup>35</sup>

## III. Zooming in on the Scheldt and the Delaware

### 3.1 Characteristics of the Scheldt and Delaware River Basin Districts

The Delaware is shared between the states of New York, Pennsylvania, New Jersey and Delaware, whereby New York City is the most important upstream user.<sup>36</sup> The Delaware River Basin is shared between four States and is faced with significant multi-level governance challenges. Stakes in the Delaware River urged reconciliation of nineteen federal agencies, fourteen interstate agencies and forty-three state agencies that were involved in the management of water resources in the basin. Moreover, 38 counties are involved and 838 municipalities. There are different sets of regulations related to water quality, floods, and so forth in the four involved states and their counties, cities and towns.<sup>37</sup> The Delaware River Basin spans 20.543 square kilometres, is 482 km<sup>2</sup> and supplies drinking water to 16 million people.<sup>38</sup>

The International River Basin District of the

Scheldt (hereinafter also referred to as “the IRBD Scheldt”) is determined as the area of land and sea, delineated by the Parties to the Treaty in accordance with the Water Framework Directive that consists of the river basin of the Scheldt, the related basins and the related groundwaters and coastal waters.<sup>39</sup> The IRBD Scheldt has a surface of approximately 36.500 km<sup>2</sup>, and comprises France, Belgium (the Flemish Region, Walloon Region and Brussels Capital Region) and the Netherlands – totaling 12,8 million inhabitants, thus a population density of 352 inhabitants/km<sup>2</sup>, triple the average European population density.<sup>40</sup>

### 3.2 Cooperation within the Basins

#### 3.2.1 *The Delaware*

The main trigger for cooperation in the Delaware was a dispute between New York and New Jersey resulting from a decision of NY to significantly increase the use of the Delaware River as a source for the water supply of NY City.<sup>41</sup> This led to Supreme Court proceedings in 1931, *New York v. New Jersey*, a case that has been described as “the most significant original litigation over water to arise in the eastern states”.<sup>42</sup> The Supreme Court allocated 440 million gallons per day to the state of New York, thereby applying the doctrine of equitable apportionment. This allocation is legally enforceable upon the states in questions.

<sup>30</sup> Interstate Council on Water Policy, *Interstate Water Solutions for the New Millennium*.

<sup>31</sup> Dellapenna, “Interstate Struggles over Rivers?: The Southeastern States and the Struggle over the ‘Hooch’”, *supra*, note 23, 833.

<sup>32</sup> Patricia S Florestano, “Past and Present Utilization of Interstate Compacts in the United States” (1994) 24 *Publius: The Journal of Federalism* 13, 14.

<sup>33</sup> *Virginia v Tennessee*, 148 U.S. 503 (1893).

<sup>34</sup> Kevin Heron, “The Interstate Compact in Transition: From Cooperative State Action to Congressionally Coerced Agreements” (1985) 60 *St John’s L. Rev.* 1, 22.

<sup>35</sup> Felix Frankfurter and James M. and Landis, “The Compact Clause of the Constitution. A Study in Interstate Adjustments” (1936) 45 *Yale Law Journal* 685, 702.

<sup>36</sup> Lynn A Mandarano, Jeffrey P Featherstone and Kurt Paulsen, “Institutions for Interstate Water Resources Management” (2008) 44 *Journal of the American Water Resources Association* 136, 364.

<sup>37</sup> Gerald Kauffman, *Governance, Policy, and Economics of Clean Water in the Delaware River Basin* (University of Delaware 2014).

<sup>38</sup> Ken Bovee.

<sup>39</sup> Art. 1(d) of the Treaty of Ghent.

<sup>40</sup> ISC website.

<sup>41</sup> Emily Jeffers, “Creating Flexibility in Interstate Compacts” (2009) 36 *Ecology Law Quarterly* 209.

<sup>42</sup> Joseph Dellapenna, “Interstate Struggles over Rivers?: The Southeastern States and the Struggle over the ‘Hooch’” (2005) 12 *N.Y.U. Environmental Law Journal* 828, 841.

# Success Factors in Transboundary Water Management

However, the states sharing the Delaware River considered the Judgment inadequate, as the equitable apportionment applied by the Court fell short of creating a comprehensive basin-wide management.<sup>43</sup> Moreover, this Court allocation by the Court can be considered as having a static character, in the sense that a readjustment of the allocation framework would necessitate re-introduction of proceedings. Following this Judgment, the states sharing the Delaware basin entered into negotiations, which resulted in several versions of inter-state cooperation, ranging from a voluntary model<sup>44</sup> to a more formal cooperation model.<sup>45</sup> Finally, the Delaware River Basin Compact (“the Delaware Compact”) was concluded in 1961.<sup>46</sup> This Compact created the Delaware River Basin Commission (“the Delaware Commission”) and aimed at addressing both water quantity and quality issues.

The scope of competences of Delaware Commission and the International Scheldt Commission are different as night and day. The Delaware Compact, which created that Delaware River Basin Commission (henceforth referred to as the “Delaware Commission”) on the basis of the Delaware Compact ensued, amongst others, from the urging needs of the states to remediate water allocation issues.<sup>47</sup> The win-win character of joining forces between the federal government and the states was emphasized at time of Congress’ ratification of the Compact: “The establishment of a single agency to coordinate Federal interests in the Delaware River Basin is of as much importance as the joining together of the four States and the resultant coordination of their various State activities”.<sup>48</sup> The Delaware Compact provides for direct federal participation in the Delaware Commission, by including as a member a representative of the federal government.<sup>49</sup> The Commission also consists of the governors of the four states, which are commonly acting through delegates.<sup>50</sup> Federal involvement in the Delaware Commission decreased over the years. In 1997 the federal level ceased its funding contributions, both for the Compact and for the federal commissioner represented in the Commission.<sup>51</sup> From that year onwards, the federal representative in the Commission has been the U.S. Army Corps of Engineers. The rationale behind the fact that the federal level pulled back from the Delaware governance mechanism is that Congress reasoned that interstate river management was primarily a state concern and that there was more added value in these Commissions for the states than for the federal level.<sup>52</sup> The Compact refers to the fact that the water resources of the basin are subject to the sovereign right and responsibility of each of the signatory parties, and that these parties have agreed to jointly exercise these powers of sovereignty in the common interest of the citizens of the region of the Delaware river.<sup>53</sup> The parties have indeed ceded a substantial part of their sovereignty over the inter-state waters to the Delaware Commission.<sup>54</sup> This broad package of

competences is considered as one of the major strengths of the Delaware Commission.<sup>55</sup> Studies have shown that the Delaware Compact, due to its adaptive nature, which allows tuning into new and unexpected developments, is an appropriate tool to face, amongst others, future climatic pressure.<sup>56</sup> Water quality has improved tremendously under its governance realm – the Delaware basin was once referred to as one of the most polluted areas of the US, and is now seen as a best practice for integrated river basin management in the country; for example, the later adopted Susquehanna River Basin Compact

<sup>43</sup> *Ibid.*, 841.

<sup>44</sup> The Interstate Commission on the Delaware River Basin (INCodel) functioned on the basis of voluntary cooperation. See Frank Grad, “Federal-State Compact: A New Experiment in Co-Operative Federalism” (1963) 63 *Columbia Law Review* 825.

<sup>45</sup> The 1949 Delaware River Basin Commission Compact, which was the predecessor of the current Compact and which created the Delaware River Basin Commission. The Supreme Court revised its judgment in 1954, mainly resulting in the increase of the allowed diversions of New York City from 440 million gallons a day to 800 million gallons a day, and requiring New York City to release the necessary amount of water so that a basic flow rate of 1750 cubic feet per second could be maintained. Following this Judgment, the parties considered that the Commission did not have the necessary tools to govern the basin effectively. See, *New York v. New Jersey*, 347 U.S. 995 (1954).

<sup>46</sup> Pub. L. No. 87-328, 75 Stat. 688 (1961). Besides the necessity ensuing from the Supreme Court litigation, the negotiation of this Compact was also induced by an external shock event, i.e. the occurrence of hurricanes Connie and Diane in 1955.

<sup>47</sup> Jeffers.

<sup>48</sup> Senate Committee on the Judiciary Report No. 87-854, “Delaware River Basin Compact” (August 31, 1961).

<sup>49</sup> Art. 2, § 2.2 the Delaware Compact.

<sup>50</sup> Art. 2, § 2.2 the Delaware Compact. Also see Dellapenna, “Interstate Struggles over Rivers?: The Southeastern States and the Struggle over the ‘Hooch’”, *supra* note 23.

<sup>51</sup> See section 3001 (a) of the 1997 Emergency Supplementary Appropriations Act for recovery from natural disasters, and for overseas peacekeeping efforts, including those in Bosnia. 2 U.S.C. 59, 61 and 65f.

<sup>52</sup> Gerald Kauffman, *Governance, Policy, and Economics of Clean Water in the Delaware River Basin* (University of Delaware 2014).

<sup>53</sup> Art. 1.3 (b) Delaware Compact.

<sup>54</sup> Charles Schwan, *The Delaware River Basin Commission: Apportioning the Current Expense Budget* (1977).

<sup>55</sup> Cindy G Roper, “Interstate Water Compacts?: Partnerships for Transboundary Water Resource Management”, Proceedings of the 2014 South Carolina Water Resources Conference (2014). At the time of development of the Delaware Compact, this broad conferral of powers to the Commission was controversial, for example, 7 federal agencies expressed reservations.

<sup>56</sup> Watermark Initiative, *U.S. Water Stewardship: A Critical Assessment of Interstate Watershed Agreements* (2009).

## Success Factors in Transboundary Water Management

is a replica of the Delaware Compact.<sup>57</sup> The Commission indeed has extensive powers to attain the goals set forth by the Compact. It has legal personality and can thus negotiate contracts, lodge proceedings and in turn be sued, borrow money, acquire, control and sell property, exercise all corporate powers pursuant to the goals of the Compact, and own and operate any facility or project and regulate on the use thereof.<sup>58</sup> The Commission may issue rules and regulations to effectuate the provisions of the Compact and develop instruments to enforce these rules and regulations. There are two main conditions for these to be effective, namely a public hearing needs to be organized prior to their adoption and the signatory states need to integrate them into their respective legal frameworks.<sup>59</sup> It may effectuate all aspects of project management, from the planning stage to the implementation phase, through to operation and maintenance.<sup>60</sup> For example, the Delaware Commission is empowered to develop projects for the use of the water for supply reasons,<sup>61</sup> and may thus construct, acquire and operate dams, reservoirs and all other facilities to this end.<sup>62</sup> The actions may also be directed toward regulating the flow of the water, and storing and releasing them. The signatory parties are then prohibited from carrying out any activities that may impact the flow level, for example, when the Commission has ordered the waters to be released from storage with the goal of augmenting the flow. Before any project can be executed, the Commission must review all existing rights, plans and programs with relevance to the project.<sup>63</sup>

### 3.1.2 *The Scheldt*

International cooperation<sup>64</sup> with regard to the Scheldt was initiated in 1994. This cooperation was formalized through the Agreements on the Protection of the Rivers Meuse and Scheldt.<sup>65</sup> The Meuse and Scheldt Agreement has been adopted prior to the entry into force of the 2000 EU Water Framework Directive and 2007 Floods Directive. The Agreement thus does not form an implementation thereof, but stems from international agreements, specifically the UNECE convention.<sup>66</sup> As mentioned above, the reliance on international agreements for the implementation of the EU Directives is in conformity with article 3(4) WFD. The adoption of the WFD did provide impetus for the revamping of the cooperation structures for the rivers Meuse and Scheldt. In 2001, the Ministerial Declaration of Liège was signed, on the basis of which the countries (and in the case of Belgium, also the Flemish, Walloon and Brussels Capital Region) have agreed to work together in the context of the implementation of the WFD.<sup>67</sup> The Declaration further stipulates that IRBDs for the Scheldt<sup>68</sup> are delineated, in accordance with maps that have been attached as annexes to the Declaration. The Declaration expressly states that all the EU Member States are individually responsible for the implementation of the Water

Framework Directive, but that a coordinated approach with regard to the river basin of the Meuse and Scheldt is necessary. Following the Ministerial Declaration of Liège, the Treaty of Ghent was concluded in 2002. The Treaty further provides for the multilateral cooperation within the meaning of the WFD.

The International Scheldt Commission (“ISC”) is the competent authority under the auspices of which coordination at the level of the International River Basin District takes place.<sup>69</sup> In the ISC, federal and regional governments are represented, namely France, Belgium, the Walloon Region, the Flemish Region, the Brussels Capital Region and the Netherlands. The International Scheldt Commission does not function as a supranational organ with binding powers, as its role is more restricted to providing non-binding advices and constituting a platform for coordination.<sup>70</sup> Moreover, on the basis of the Meuse and Scheldt Agreements, the International Commissions for the Protection of the Meuse River, respectively the Scheldt River, do not have competences beyond the quality of the water.<sup>71</sup> The 2002 Treaty of Ghent broadened the scope of

<sup>57</sup> Gerald Kauffman, *Governance, Policy, and Economics of Clean Water in the Delaware River Basin* (University of Delaware 2014). Gerald J Kauffman and others, “Water Quality Trends in the Delaware River Basin (USA) from 1980 to 2005.” (2011) 177 *Environmental monitoring and assessment* 193.

<sup>58</sup> Art. 14.1 Delaware Compact.

<sup>59</sup> Art. 14.2 Delaware Compact.

<sup>60</sup> Namely, planning, designing, acquiring, constructing, reconstructing, completing, owning, improving, extending, developing, operating and maintaining. See art. 3.6 (a).

<sup>61</sup> Be it of domestic, municipal, agricultural and industrial nature.

<sup>62</sup> Art. 4.2 Delaware Compact.

<sup>63</sup> Art. 4.5 Delaware Compact. A limit to the extensive powers of the Commission *vis-à-vis* water management is that the Commission is expressly prohibited from entering into the distribution of water.

<sup>64</sup> Bilateral Treaties already existed, e.g. the 1863 Treaty on the Regulation of Water Supply from the River Meuse concluded between the Netherlands and Belgium.

<sup>65</sup> Agreements on the Protection of the Rivers Meuse and Scheldt (Belgium (Brussels Capital Region, Flemish Region and Walloon Region), France and Netherlands) (adopted 26 April 1994) ILM 1995 851.

<sup>66</sup> Convention on the Protection and Use of Transboundary Watercourses and International Lakes (17 March 1992, Helsinki), 31 ILM 1312 (1992).

<sup>67</sup> International Commission for the Protection of the Meuse, ministerial declaration of Liège, Available on the Internet at: [http://www.isc-cie.org/images/Documents/Verklaring\\_van\\_Luik\\_NL-FR-DU.pdf](http://www.isc-cie.org/images/Documents/Verklaring_van_Luik_NL-FR-DU.pdf) accessed 12 October 2017.

<sup>68</sup> And Meuse.

<sup>69</sup> Same goes for the International Meuse Commission.

<sup>70</sup> In contrast to, for example, the Commission for the Protection of the Rhine.

<sup>71</sup> Article 5 of the Scheldt Agreement.



# Success Factors in Transboundary Water Management

competences of these commissions.<sup>72</sup> Even though the task package of the ISC has been broadened by the Ghent Treaty in comparison to the 1994 Agreement, the competence of this Commission is, as mentioned above, mainly limited to advisory tasks.<sup>73</sup> The ISC does not have binding legal powers, except with respect to its own operations and functioning, such as personnel matters.<sup>74</sup> Moreover, the Commissions only have legal personality with regard to the execution of the tasks that have been assigned to them by the Agreements.<sup>75</sup> Furthermore, the Commission does not have a lot of room to manoeuvre in this regard, as its competences do not go beyond what is strictly necessary to accomplish their tasks.<sup>76</sup> Implementation throughout the basin is dependent upon the willingness of states.<sup>77</sup> None of the Scheldt countries and regions dedicates significant legal and policy attention to cooperation throughout the basin.<sup>78</sup> All these signatory parties do refer to some extent to international coordination in their applicable legal frameworks, but this is rather limited. For example, in the context of flood risk management, the Flemish Decree Integrated Water Policy<sup>79</sup> has transposed the provision of the Floods Directive,<sup>80</sup> which states that Member States should cooperate with the aim of producing one single FRMP.<sup>81</sup> However, the Decree Integrated Water Policy also states that an FRMP for the Flemish part of the Scheldt basin should be issued, should this coordination fail. The Walloon Region has set forth a similar provision.<sup>82</sup> The obligation to cooperate with other countries in the International Scheldt District in the Flemish and Walloon Regions can thus be considered as an obligation of best effort. The applicable legal frameworks and plans in France and the Netherlands also refer to international coordination within the realm of the relevant Commissions; however, these do not provide for the nuts and bolts of transboundary cooperation. It is thus difficult to find enforceable obligations for cooperation and coordination throughout the IRBD Scheldt within the national and regional legal frameworks of the parties.

## IV Critical Success Factors for Integrated Transboundary River Basin Management

This section will explain the Critical Success Factors for integrated transboundary river basin management, drawn from an analysis of the Scheldt and Delaware regimes and as visualised in the following figure.

### 4.1 Integrated approach to water management from the outset to enable further operationalisation on the basis of the supporting legal framework

The first Critical Success Factor relates to the scope of the agreement governing the cooperation between the States and the regions sharing the body of water in question, and underpinning the actions of the joint

body. Integrated Water Resources Management, i.e. tackling the management of water, land and related resources in a coordinated manner, has been widely advocated internationally for several decades.<sup>83</sup> Just from the perspective of water resources, there is growing international traction for an integrated approach to water quantity and water quality management. A concept that embodies this approach is the environmental flow regime, which implies that an appropriate flow should be maintained in order to safeguard the ecological health of water bodies, *in casu* International River Basin Districts.<sup>84</sup> This environmental flow regime

<sup>72</sup> International Scheldt Agreement (Ghent, 3 December 2002), Available on the Internet at: <http://www.isc-cie.com/members/docs/documents/20809.pdf>. Moreover, the Commission were renamed to the International Scheldt Commission and the International Meuse Commission.

<sup>73</sup> Article 4 of the Scheldt Agreement.

<sup>74</sup> André Nollkaemper and Carel de Villeneuve, "Recht van Internationale Waterlopen" in Nathalie Horbach, René Lefeber and Olivier Ribbelink (eds), *Handboek Internationaal Recht* (TMC Asser Press 2007).

<sup>75</sup> Herman Kasper Gilissen, *Internationale En Regionaal Grensoverschrijdende Samenwerking in Het Waterbeheer* (Sdu Uitgevers 2009) 42.

<sup>76</sup> *Ibid.* Article 5(4) of the 2002 International Scheldt Agreement. The Treaty of Ghent also leaves room for regional cooperation at a smaller scale. Indeed Article 4 § 5 of the Treaty stipulates that the coordination work for transboundary sub-basins within the IRBD Scheldt may take place within a suitable regional framework.

<sup>77</sup> Santbergen L, *Ambiguous Ambitions in the Meuse Theatre* (Eburon 2013) 196.

<sup>78</sup> Cathy Suykens, *The Law of the River: The Institutional Challenge for Transboundary River Basin Management and Multi-Level Approaches to Water Quantity Management*, Intersentia, forthcoming.

<sup>79</sup> Decree of 18 July 2003 on integrated water policy, Belgian Official Journal 14 November 2003.

<sup>80</sup> Art. 8(2) Floods Directive.

<sup>81</sup> Art. 34 of the DIWP.

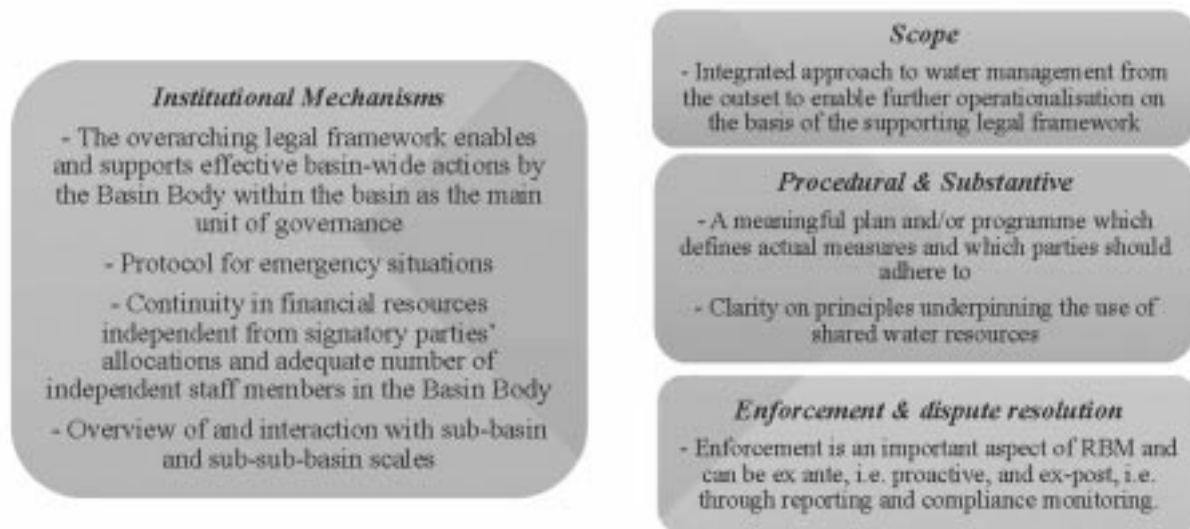
<sup>82</sup> Art. D.12-D.15 Walloon Water Code.

<sup>83</sup> Hannelore Mees, Cathy Suykens and Ann Crabbé, "Evaluating Conditions for Integrated Water Resource Management at Sub-Basin Scale. A Comparison of the Flemish Sub-Basin Boards and Walloon River Contracts" (2017) 27 *Environmental Policy and Governance* 42.

<sup>84</sup> Permanent Court of Arbitration, *Indus Waters Kishenganga Arbitration* (Pakistan v. India), Final Award, 20 December 2013, <[http://archive.pca-cpa.org/PK-IN%20-Final%20Award,%2020%20December%202013d770.pdf?fil\\_id=2471](http://archive.pca-cpa.org/PK-IN%20-Final%20Award,%2020%20December%202013d770.pdf?fil_id=2471)> accessed 11 October 2017; Owen McIntyre, "The Emergence of an 'Ecosystem Approach' to the Protection of International Watercourses under International Law" (2004) 13 *Review of European Community and International Environmental Law* 1; Owen McIntyre, "The Protection of Freshwater Ecosystems Revisited: Towards a Common Understanding of the Ecosystems Approach to the Protection of Transboundary Water Resources" (2014) 23 *Review of European, Comparative & International Environmental Law* 88; Alistair Rieu-Clarke and Christopher J Spray, "Ecosystem Services and International Water



# Success Factors in Transboundary Water Management



**Figure 1** Graphic Overview of Critical Success Factors

goes hand in hand with flow assessments, basin-wide planning and allocation techniques. Also, the integrated management of groundwater resources and surface water resources is of paramount importance. For example, if administrative requirements for the abstraction of surface water are more strict and cumbersome than these applicable to the abstraction of groundwater, this can result in perverse effects, i.e. over-abstraction of groundwater so as to avoid the administrative requirements related to the abstraction of surface water.<sup>85</sup> The two case studies have also shown that it is important to also consciously include the risk aspect of water management into the scope. Reciprocal benefits arise from addressing these various aspects associated with water resources in a coordinated manner.

Water management is characterized by an overwhelming level of fragmentation, both from the vertical and the horizontal point of view, and this holds true both in the EU and the US.<sup>86</sup> The difference in this regard, however, is that the Delaware river basin management mechanism has remedied this fragmentation at basin level, whereas this has only occurred to a lesser extent in the Scheldt. The Delaware Compact addresses water quality, water supply, sharing of the resources in terms of use, emergency situations such as droughts, flood risks, and so forth. These have been integrated at the outset, i.e. in the basic legal framework, and this allows taking into account the relevant aspects of water management from an integrated approach at the operational levels. Indeed, the Delaware Commissioners, i.e. the governors of Delaware, Pennsylvania, New York, New Jersey and the federal representative, adopted the Water Resources Plan for the basin in 2004, which explicitly addresses integrated water resources management.<sup>87</sup> This plan was adopted to serve as a guidance policy document for the next thirty years,

based on the principles of integrated management, i.e. acknowledging that water supply and water quality should be considered jointly instead of separately and that groundwater and surface water are interrelated.<sup>88</sup> The plan connects the associated “Key Result Areas” in the context of water management<sup>89</sup> in order to promote a systematically integrated approach by the stakeholders in the Delaware basin and Commission.<sup>90</sup> Furthermore, the Flexible Flow Management Plan allows the Delaware River Basin Commission to reap

*cont.*

Law: Towards a More Effective Determination and Implementation of Equity?” (2013) 16 *Potchefstroom Electronic Law Journal* 12; Robert Speed and others, “Basin Water Allocation Planning” (2013).

<sup>85</sup> Kerstin Mechlem, *Groundwater Governance: A Global Framework for Country Action – Legal and Institutional Frameworks* (2012) <[http://www.groundwatergovernance.org/fileadmin/user\\_upload/groundwatergovernance/docs/Thematic\\_papers/GWG\\_Thematic\\_Paper\\_6.pdf](http://www.groundwatergovernance.org/fileadmin/user_upload/groundwatergovernance/docs/Thematic_papers/GWG_Thematic_Paper_6.pdf)>.

<sup>86</sup> Marleen Van Rijswijk and Herman Havekes, *European and Dutch Water Law* (Europa Law Publishing 2012); Monika Ambrus, Herman Kasper Gilissen and Jasper J.H. Van Kempen, “Public Values in Water Law: A Case of Substantive Fragmentation?” (2014) 10 *Utrecht Law Review* 8.

<sup>87</sup> The Delaware River Basin Commission, “Water Resources Plan for the Delaware River Basin” (2004) <[http://www.nj.gov/drbc/library/documents/BasinPlan\\_Sept04.pdf](http://www.nj.gov/drbc/library/documents/BasinPlan_Sept04.pdf)>.

<sup>88</sup> *Ibid* 11.

<sup>89</sup> These are: sustainable use and supply, waterway corridor management, linking land and water resource management, education and involvement for stewardship and institutional coordination and cooperation.

<sup>90</sup> Guy Pegram and others, “River Basin Planning: Principles, Procedures and Approaches for Strategic Basin Planning” (2013) UNESCO <<http://unesdoc.unesco.org/images/0022/002208/220875e.pdf>> accessed 17 July 2017.

# Success Factors in Transboundary Water Management

mutual benefits from the management of reservoirs both in terms of water quantity and water quality.

Another example of the importance of an “integrated approach at the outset” is the Flemish water test, which entails that each spatial planning-decision, both building permits and spatial plans, should be accompanied by an assessment of the impact of this decision on the water system. This impact assessment relates to both the quality of the water resources and the quantity and safety aspects.<sup>91</sup> This integrated approach is enabled by the fact that these various aspects of water management are included in a single legal framework, the Decree Integrated Water Policy. The outcome of the water test should be coherent with the goals of the Decree, which, in turn, automatically promotes a comprehensive protection of the water system in all its elements. The basic framework, the DIWP, thus enables operationalization of the integrated approach. Whereas the Scheldt countries show traits of integration, this is still lacking at the level of the IRBD itself. This CSF therefore mainly relates to national policies, in contrast to the Delaware, where the integration is carried through to the basin level.

This means that adopting an integrated approach in the basic cooperation agreement is crucial in order to achieve integration in subsequent plans, programmes and instruments.

## 4.2 The overarching legal framework enables and supports effective basin-wide actions by the Basin Body within the basin as the main unit of governance

There are several components to this CSF: (i) the basin should be seen as the main unit of governance, and (ii) the legal framework should be sufficiently supportive and clear. The Delaware basin is viewed as the main unit of governance, which has enabled the Delaware Commission in making progress in the basin and steering the basin through emergency situations, such as drought events. The Delaware Compact requires the submission of projects to the Commission in order to check compliance and coherence with the Comprehensive Plan and the basin-wide overview. State interests are represented through participation in the Commission and the decision-making procedures, but the DRBC is the “go-to” competent authority with regard to issues affecting the quantity or quality of the basin. This has been illustrated by the fact that citizens’ organisations have directed their complaints to the DRBC, as opposed to the individual states. As explained in the introductory section of this article, the main unit of governance in the context of the WFD and FD is the national River Basin District. On the basis of the EU legal framework, the IRBD level is the sum of measures taken at RBD levels. The Scheldt mechanism consisting of the Treaty and the Commission represents a loose coordinative framework at the basin level.

Furthermore, the legal mandate of the entity should

be sufficiently clear and robust, and rooted in enforceable legislation, whilst ensuring its accountability and striving for broad support.<sup>92</sup> Creating a broad material scope of competences with regard to all aspects of water management to the joint entity is linked to the first Critical Success Factor<sup>93</sup> and supports the development of integrated water resources management for the whole basin.<sup>94</sup> Associated with the clarity of the mandate of the entity, is the importance of public participation processes at the level of the basin.<sup>95</sup> Hearings of the Delaware River Basin Commission are open to the public, and reports of meetings and news updates are regularly posted on its website.

One of the questions relevant to this CSF relates to the type of decision-making procedure. The Delaware Compact allows both for majority voting and unanimity voting. The fact that the Compact provides majority voting helps the Commission to move things along, decisions that have the broad support of the Commissioners have appeared to be the most successful and the Commission continuously seeks such support.<sup>96</sup> Binding decision-making power therefore does not necessarily equal effective management. Furthermore, the regulations’ effectiveness is dependent on implementation by the various parties involved.<sup>97</sup> In the EU, the unanimity procedure included in the EU Treaty with respect to quantitative

<sup>91</sup> See Article 8 of the Decree Integrated Water Policy.

<sup>92</sup> The importance of clarity in the legal mandate has already been stressed by numerous authors, e.g. Ellen Hey and Marleen van Rijswick, “Transnational Water Management” in Oswald Jansen and Bettina Schöndorf-Haubold (eds), *The European Composite Administration* (Intersentia 2010); Bruce Hooper, “River Basin Organization Performance Indicators: Application to the Delaware River Basin Commission” (2010) 12 *Water Policy* 461. The importance of clear allocation of roles and responsibilities is also emphasized in the OECD Water Principles and by Van Rijswick and others in *Ten Building Blocks: OECD, “OECD Principles on Water Governance”* (OECD 2015). van Rijswick and others (n 1129).

<sup>93</sup> CSF 1: “integrated approach to water management from the outset to enable further operationalisation on the basis of the supporting legal framework”.

<sup>94</sup> Muys, Sherk and Leary. Bruce Hooper, *Integrated River Basin Governance: Learning from International Experience* (IWA Publishing 2005).

<sup>95</sup> Meaningful public participation has also been explained in Chapter I, and applied in Chapters III and IV.

<sup>96</sup> Telephone interview with senior staff member Delaware River Basin Commission, 15 December 2016.

<sup>97</sup> Indeed, the Commission may issue rules and regulations to apply the provisions of the Compact and develop instruments to enforce these rules and regulations. Before these can be applied, a public hearing needs to be organized and the signatory States need to integrate them into their respective legal frameworks. Article 14.2 Delaware Compact.

## Success Factors in Transboundary Water Management

management of water resources has hampered an integrated approach to water management.<sup>98</sup> The Scheldt Treaty is geared more strongly to listing obligations of best efforts to be strived for by the signatory parties, than to providing an operating basis and mandate for the International Scheldt Commission. This is translated in the functioning of the Commission as a good-will discussion and data-exchange platform.

### 4.3 A meaningful basin-wide plan and/or programme which defines actual measures and links with the sub-basin scales

Both in the EU and in the US, there are a number of procedural requirements that the parties should adhere to in the transboundary water bodies. These procedural requirements mainly relate to the development of plans and programmes. Determining the balance between substantive and procedural requirements deserves vigilant attention. For example, when shifting from substantive obligations toward a focus on procedural rules in EU water law, especially with regard to flood risk management, issues such as access to justice of citizens become more apparent.<sup>99</sup> However, plans and programmes may constitute useful additions to the more static basic legal framework, which in turn further enables adaptive governance. This is important in light of the various uncertainties the basin as a whole is subject to.

The Delaware Commission has to fulfil certain procedural obligations. The Commission has three main tasks in this regard: (i) to develop a Comprehensive Plan, (ii) to draft a Water Resources Program, and (iii) to issue an annual current expense and capital budget. The parties sharing the Scheldt district are obligated, on a five-year basis, to issue River Basin Management Plans (RBMPs) and Flood Risk Management Plans (FRMPs) pursuant to the WFD and FD. An important difference between the Scheldt RBMP and FRMP and the Delaware Comprehensive Plan is the level at which these plans are developed. In the Delaware basin, it is the Delaware Commission that is responsible for developing the Comprehensive Plan on the basis of the Compact, which the States should then comply with. In the Scheldt basin, the States are responsible for developing the RBMPs and FRMPs, with a best-effort obligation to coordinate the plans with the aim of adopting one single RBMP and FRMP, but the possibility to develop plans for the part of the IRBD situated on their territories if such efforts fail.<sup>100</sup> The process in the Delaware basin is top-down, whereas in the Scheldt it is a more of a bottom-up process. In the IRBD Scheldt, each of the States and regions involved have adopted RBMPs and FRMPs for the currently applicable reporting period, i.e. 2016-2021, and have agreed on one RBMP roof report and one FRMP roof report for the whole IRBD. This means that for the implementation of the WFD, six plans have been issued by the parties, i.e. the

Belgian federal level, Brussels-Capital Region, the Flemish Region, the Walloon Region, France and the Netherlands and roof reports issued under the auspices of the ISC. The Scheldt roof reports are more of an informative nature, providing an overview of important data for the district, such as population density, quality and abstraction levels of groundwater volumes, natural characteristics, and so forth. The plans do not include specific measures to be implemented by the parties.<sup>101</sup> In contrast, the Comprehensive Plan developed by the Delaware Commission plays a major role in the governance of the river basin and as such is more strongly determined by policies of the States than the RBMPs/FRMPs and their umbrella plans in the Scheldt district. It relates to short-term and long-term development and usage of the basin and its water resources, and should be subject to consultation with water users and interested public bodies. In general, neither federal agencies nor state and local agencies may authorize the construction, acquisition or operation of a project or facility if it has not been included in the Comprehensive Plan.<sup>102</sup>

In terms of the top-down versus bottom-up planning process, in line with the subsidiarity principle in EU law, the top-down approach, where the joint body develops a plan which the parties should then comply with, does not seem feasible in the EU institutional setting. Moreover, this top-down approach in planning followed by the Delaware Compact has been criticised for being outdated, as, in terms of planning processes in water bodies, the individual States usually have a better overview of local water needs and projects to be developed compared to the centralised competent authority.<sup>103</sup> However, coordination as such is necessary, and plans should either be reviewed by the competent authority in light of coherence and the maximization of mutual benefits or States should have more incentive to produce one single plan, which

<sup>98</sup> Cathy Suykens, “EU Water Quantity Management in International River Basin: Crystal Clear?” [2015] *European Energy and Environmental Law Review* 134.

<sup>99</sup> Sally J. Priest and others, “The European Union Approach to Flood Risk Management and Improving Societal Resilience?: Lessons from the Implementation of the Floods Directive in Six European Countries” (2016) 21 *Ecology and Society*; Marleen Van Rijswijk and Herman Havekes, *European and Dutch Water Law* (Europa Law Publishing 2012).

<sup>100</sup> Article 13(2) WFD.

<sup>101</sup> International Scheldt Commission, “Umbrella Part of the River Basin Management Plan for the International River Basin District Scheldt 2016–2021” (2014) [http://www.isc-cie.org/images/Documents/ODB2-PFPG2\\_RAP-PORT\\_NL-FR\\_VDEF.pdf](http://www.isc-cie.org/images/Documents/ODB2-PFPG2_RAP-PORT_NL-FR_VDEF.pdf) accessed 12 October 2017.

<sup>102</sup> Article 11.1 Delaware Compact.

<sup>103</sup> Jerome C. Muys, George William Sherk and Marilyn C.O. Leary, *Utton Transboundary Resources Center Model Interstate Water Compact* (2006) 68, *ibid*.

# Success Factors in Transboundary Water Management

should exceed the informative character of the roof reports for the Scheldt district for the period 2016-2021, for example.

It is important to provide links between hydrological scales throughout the basin.<sup>104</sup> The main actors operating at the sub-basin scales in the Delaware basin, such as the Lower Delaware Wild and Scenic Council, the Upper Delaware Council and the Partnership for the Delaware Estuary have a dynamic link with the DRBC. There is vertical cross-fertilisation between these entities and their roles have been clearly defined and are complementary. The plans issued by the entities at the sub-basin scales take into account the DRBC's Comprehensive Plan.

In short, the emphasis of this CSF is not on the top-down versus bottom-up development of the plan, but on the consideration that the plan should be meaningful, entailing that (i) the plan should be the plan of reference for the basin, (ii) the plan would ideally cover the entire basin or consist of a roof report which is the main document containing basin-wide data, risk assessments and measures and sub-plans for the different sub-basins accessory to the main plan, (iii) the Basin Body plays a key role in the development of and the implementation of the measures contained in the plan, and (iv) there is a link with the plans issued at the sub-basin scales.

#### 4.4 Clarity regarding principles underpinning the use of shared water resources and protocol for emergency situations

The WFD and FD do not regulate the use of shared waters in terms of agreements of water sharing or allocation mechanisms.<sup>105</sup> The Scheldt Treaty does not provide for an agreement on such use, nor a reference to the principles which constitute the basis for the water sharing. The Delaware Compact and its subsequent instruments, in particular the Code and the Comprehensive Plan do provide for allocation mechanisms. Moreover, the legal instruments governing the Delaware basin have provided for emergency situations, such as impending shortage of available water supply. Such an emergency situation is declared by the DRBC, following a public hearing, on the basis of which special conditions apply.<sup>106</sup> In this context, uses are prioritised, where first priority is given to uses sustaining human life, health and safety and the use of water needed to sustain livestock has second priority. The Code details the action plan in terms of implementing scheduled reductions in times of drought in terms of maximum allowable diversions and minimum compensation releases.<sup>107</sup> The tools available to the Commission in light of emergency situations, and the protocol in place, have been important in its successful management of the river. Indeed, one of the success factors of the Delaware mechanism in practice has been its ability to step up in times of impending calamities. The DRBC has been able to efficiently take the necessary measures to manage a basin-wide drought, which would have had

less favourable outcomes had the parties to the Delaware Compact each addressed the issue separately.<sup>108</sup> The DRBC gained traction and trust because of these “shock” events, which leveraged the ability of this hydrological scale entity to continue making a contribution to river basin management.

The added value of controlling emergency situations and changes in water variability in general, which are entirely inherent to water management, in transboundary river basins in combination with the fact that this is often overlooked in the relevant agreements, has been emphasised in literature as well.<sup>109</sup> It is also the reason why the “ten building blocks method” has a separate block for conflict prevention and resolution.<sup>110</sup>

#### 4.5 Continuity in financial resources independent from signatory parties' allocations and adequate number of independent staff members in the Basin Body

This CSF is relevant to the basin level as well as for the sub-basin levels. The Delaware basin has shown that securing other means of funding in addition to the signatory parties' contributions is conducive for the continued viability of the entity in question. The DRBC has been able to function adequately despite diminishing and volatile contributions by the States and the federal level. Having a dedicated number of staff available to work exclusively under the auspices of the Basin Body is a success factor in river basin management. In the Scheldt, comparative research between the Flemish sub-basin boards and the

<sup>104</sup> Sally J. Priest and others, “The European Union Approach to Flood Risk Management and Improving Societal Resilience: Lessons from the Implementation of the Floods Directive in Six European Countries” (2016) 21 *Ecology and Society*.

<sup>105</sup> Jasper Van Kempen, *Europees Waterbeheer: Eerlijk Zullen We Alles Delen?* [European water management: a fair share for all?] (Boom Juridische Uitgevers 2012).

<sup>106</sup> Article 10.4 Delaware Compact.

<sup>107</sup> These reductions have been defined in regulations, which have been consolidated into the Code. Section 2.5.3 of the Delaware River Basin Water Code.

<sup>108</sup> Telephone interview with senior staff member Delaware River Basin Commission, 15 December 2016. For an objective confirmation of this success factor for the DRBC, see the GAO report of 1981: Comptroller General of the United States, *Federal-Interstate Compact Commissions: Useful Mechanisms for Planning and Managing River Basin Operations* (1981).

<sup>109</sup> Olivia O. Green, Barbara A. Cosens and Ahjond S. Garmestani, “Resilience in Transboundary Water Governance?: The Okavango River” (2013) 18 *Ecology and Society*. Shlomi Dinar and others, “Climate Change and State Grievances: The Resiliency of International River Treaties to Increased Water Variability” (2010) 3 *Insights* 1.

<sup>110</sup> Marleen van Rijswijk and others, “Ten Building Blocks for Sustainable Water Governance: An Integrated Method to Assess the Governance of Water” (2014) 39 *Water International* 725.

# Success Factors in Transboundary Water Management

Walloon river contracts has shown that means that are fully allocated to the functioning of the hydrological scale entity and the autonomous management of its own budget are success factors. Sub-basin boards are staffed with personnel from the Flemish water managers who have been assigned to perform the task, but often combine these tasks with other tasks. Their Walloon equivalents do have several full-time staff members, in part because these river contracts are in control of their own budgets and can use them for hiring purposes.<sup>111</sup>

## 4.6 Enforcement is an important aspect of RBM and can be *ex ante*, i.e. proactive, and *ex post*, i.e. through reporting and compliance monitoring

Implementation of decisions made is an important element of river basin management, as has been established in Chapter I and is widely acknowledged across the board.<sup>112</sup> The Delaware Compact also provides for enforcement through Article 3.8 of the Compact, which provides that projects that have a substantial impact on water resources in the basin should be submitted to the Commission for a check of compliance with the Comprehensive Plan. In addition to implementing decisions, monitoring and reporting mechanisms, which are associated with implementation in general, this provision enables proactive and basin-wide enforcement of measures and initiatives. This proactive implementation has promoted coherence as projects are in line with the goals and provisions of the Comprehensive Plan.

## V Conclusive Remarks

Examining the legal and governance mechanisms related to two specific river basins, the Scheldt in the EU and the Delaware in the US, has shown that these face similar challenges but are substantially different. The Scheldt river basin mechanism stipulate states' engagements in the agreement rather than delegating a package of competences to the respective joint bodies. The cooperation platforms of the rivers Scheldt and Meuse have organically grown from informal intentions to a more formalised cooperation mechanism. However, it is doubtful that the ISC would have sufficient clout to ensure a coordinated approach towards the implementation of the Directives in question. First, on the basis of the legal agreements for the governance of the rivers (particularly the 2002 Scheldt Treaty), the focus is put on water quality management. The, already very limited, powers of the joint body are also limited to the qualitative aspects. It will thus be difficult to reach the integrated approach to water management as cheered by the European Directives and as widely supported at the international level. Secondly, the Agreements do not provide the respective joint bodies with sufficient clout to push forward an ambitious approach to governance in these shared waters. A body with an exclusively advisory

function, restricted legal personality, financial dependence and lack of dispute resolution powers can hardly be expected to book structural and systemic progress in terms of transboundary water cooperation. In comparison, the Delaware River Basin Compact in the United States does provide its inter-state-federal joint body with financial independence and real decision-making powers. It can be concluded that the provisions in the Delaware Compact are drafted with the purpose to facilitate effective action by the Commission. The way that the river basin agreements for the IRBDs in the sense of the WFD are drafted today, seem to follow an opposite approach. The agreement is drafted in a way that maintains a maximum of sovereignty and a minimum of state engagement, with commissions that play a facilitating role and, in practice, constitute a more informal platform for states sharing the IRBDs to get together.

This article has set forth six Critical Success Factors for integrated river basin management. These relate to the institutional set-up of the joint entity and the elements of the basic agreement. It is important for this basic agreement to adopt an integrated approach to water management from the outset, and it is important that plans and programmes are coherent throughout the basin, that there is clarity with regard to the use of shared waters including in times of impending emergencies, and that links with the sub-(sub-)basin scales are in place e.g. through the review of plans. These Critical Success Factors can be applied to the legal regimes governing transboundary waters and their underlying legal frameworks. For example, applying the CSFs to transboundary waters in the EU implies that the EU primary and secondary legal framework needs to be addressed as well as the operationalization at the levels of the International River Basin District.<sup>113</sup>

<sup>111</sup> Hannelore Mees, Cathy Suykens and Ann Crabbé, "Evaluating Conditions for Integrated Water Resource Management at Sub-Basin Scale. A Comparison of the Flemish Sub-Basin Boards and Walloon River Contracts" (2017) 27 *Environmental Policy and Governance* 42.

<sup>112</sup> See e.g. Marleen van Rijswijk and others, "Ten Building Blocks for Sustainable Water Governance: An Integrated Method to Assess the Governance of Water" (2014) 39 *Water International* 725, 737. Olivia O. Green and others, "EU Water Governance: Striking the Right Balance between Regulatory Flexibility and Enforcement?" (2013) 18 *Ecology and Society*, Art. 10.

<sup>113</sup> For example, translating the first Critical Success Factor to the level of the European Union would imply that the discrepancy in decision-making procedures for water quantity management and water quality management is remediated through a revision of the relevant Treaty provision, i.e. Art. 192(2) TFEU. See Cathy Suykens, *The Law of the River: The Institutional Challenge for Transboundary River Basin Management and Multi-Level Approaches to Water Quantity Management*, Intersentia, forthcoming.