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Towards a rights-based approach in EU international river basin governance? Lessons from the Scheldt and Ems Basins

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ABSTRACT

This article finds that the introduction of a rights-based approach in EU transboundary river basin management to remedy observed systemic difficulties and to better achieve legal water quality standards could be a next step in achieving integrated river basin management. However, its effectiveness largely depends on the willingness of member states to share river basin districts to subordinate their separate socio-economic interests to ecological needs, as well as to grant a clear mandate and partly transfer responsibilities and powers to a competent supranational authority.

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Introduction

A great deal of effort has been expended in the European Union (EU) to meet the environmental requirements of the Water Framework Directive (WFD) since it was issued at the beginning of this century. Nonetheless, despite considerable progress, the chemical quality and ecological potential of many surface water systems still fail to meet prescribed standards (Wuijts, Driessen, & Van Rijswick, 2018). One reason for this is the absence of effective mechanisms for coordination and cooperation for the many transboundary river basins (Van Rijswick, Gilissen, & van Kempen, 2010). Existing approaches appear to have reached their limit, necessitating consideration of unconventional approaches to EU water quality law and governance. Among these are recognizing that natural entities such as rivers have legal rights. While far from a new idea (Stone, 1972), legal recognition of such rights is a very recent phenomenon globally (Hutchison, 2014; Morris & Ruru, 2010; O'Bryan, 2017). Since rivers are 'voiceless', implementation of their rights requires representation by an authoritative body, or *custodian*, that can act *in jure* to safeguard it from unlawful infringements of its rights (Stone, 1972).

This article builds on the idea of introducing a rights-based approach in EU water quality governance, drawing inspiration from such developments. In this article, an authoritative body as mentioned above is referred to as the river's *custodian*, and its assigned set of tasks and competences as its *custodianship*. The central question of this article is what constitutes custodianship, and what are the opportunities for and barriers to the implementation of such a rights-based approach. This question is discussed in

the light of the EU's 'river basin management approach' in general (Keessen, van Kempen, & van Rijswick, 2008), and then focusses on the international river basin districts (IRBDs) of the Scheldt and the Ems.¹ In this article, 'the Scheldt' and 'the Ems' refer to the respective IRBDs, unless explicitly stated differently.

The Scheldt has its headwaters in the French Hauts-de-France region, follows its course through the Walloon, Flanders and Brussels regions of Belgium, and runs into the North Sea through the Western Scheldt Estuary in the Dutch province of Zeeland; thus, the IRBD of the Scheldt (including its tributaries) partly covers the territory of three EU member states (France, Belgium and the Netherlands). The Ems has its headwaters in the German state of Nordrhein-Westfalen, follows its course through the state of Niedersachsen, and runs into the Wadden Sea through the Ems-Dollard Estuary; thus the IRBD of the Ems (including its tributaries) partly covers the territory of two EU member states (Germany and the Netherlands).

The article substantively and methodologically builds on empirical research and desk studies conducted by the authors within the frameworks of a combination of earlier and current mono- and interdisciplinary research projects (Gilissen, 2009; Mees, Suykens, & Crabbé, 2017; Suykens, 2018b; Van Rijswick et al., 2010).²

This article is structured as follows. First, it discusses the substantive and institutional dimensions of the concepts of river rights and custodianship to create a general framework for further analysis. Then, it delves into the physical characteristics and 'needs' of river systems, in particular those of the Scheldt and the Ems. This is an important first analytical step, as these needs, which can vary per river system, are – based on this article's line of argument – inextricably linked to a river system's rights, on the safeguarding of which custodianship focuses. Third, the current EU river basin management approach is briefly discussed, followed by further scrutiny of the institutional arrangements for the governance of the Scheldt and the Ems. This is another important analytical step, because it gives insight into the particular legal and governance landscapes in which custodianship has to be rooted. Fifth, the added value and particularities (e.g., opportunities and constraints) of granting rights and custodianship to rivers are discussed. Finally, on the basis of these findings, we preliminarily assess whether granting rights to rivers might abate current observed flaws in EU river basin management, and thus whether transboundary EU rivers, in particular the Scheldt and Ems, could benefit from obtaining rights.

General framework: substantive and institutional dimensions of custodianship

Assuming that introducing the concept of custodianship per se can be beneficial for safeguarding 'river rights' and improve the ecological potential of river systems under pressure from economic use, two key questions emerge when contemplating the introduction of this concept in the EU domain of river basin management. The first is substantive, and the second is institutional: what would custodianship over specific river systems substantively constitute, and how could this be implemented in the existing governance structures of specific IRBDs? Constituting the backbone of this article's analysis, these dimensions are first generally elaborated on below. In the following sections, the IRBDs of the Scheldt and the Ems are further analyzed through

the lens of these dimensions to assess whether the introduction of the concepts of river rights and custodianship could be of added value in the governance of these IRBDs.

Before being able to meaningfully discuss forms of custodianship in relation to river systems, a sound construct of 'river rights' is to be created. How do we define river rights, and how do these relate to other rights and demands, including those of humankind? In defining river rights, we first have to recognize that river systems have a 'will' which is essentially dictated by the laws of nature and physics. What a river 'wants' is to freely and undisturbedly pursue this will, regardless of institutional or other man-made boundaries. From the perspective of the river itself, i.e., a purely ecocentric perspective, the freedom to undisturbedly pursue its will can be seen as the most comprehensive and abstract right, from which more specific rights can be derived (see below). Any disturbance can be seen as an occurrence or an act against this will and thus as an infringement of these rights. However, whereas these rights can only be fully respected in the pure absence of any disturbing factors, including other rights, needs and demands, which is currently not the case, these rights can never be absolute but have to be balanced against the needs of others, notably human beings. Nonetheless, such river rights can formally be recognized (e.g., through granting legal personality to river systems), and they can be subject to safeguarding by a custodian.

But what specifically are these more concrete river rights? It should be understood that ecological characteristics of river systems and ecological, hydro-morphological, climatic and other relevant circumstances vary across the world. While ecosystem value and functioning are difficult to measure and characterize, they are strongly coupled to the physical characteristics and geographical setting, together pragmatically called the natural system. A close determination of such characteristics and circumstances is needed to determine a specific river system's 'will' and needs. In addition to more general conceptions of river rights, such as the right to flow, the right to perform essential functions in its ecosystem, the right to be free from pollution, the right to feed and be fed by sustainable aquifers, the right to native biodiversity, and the right to restoration (Earth Law Center, 2017), and in anticipation of a closer analysis in the following sections, examples of ecological needs of river systems which can be considered as river rights are the availability of a temporally variable but on average constant salinity gradient from the river to the sea; natural variability in conditions of freshwater supply, sediment and tides; perpetually migrating channels and dynamic shoals and bars; and a constant volume and area of salt marsh and flood basin area. Such ecological needs should be distinguished from other needs, such as navigability and quantitative or trajectory controllability, which are important from an anthropocentric perspective but are no criteria for calling a river a river from an ecological point of view. In representing a river system, a custodian would primarily focus on that system's rights and needs and thus take an ecocentric approach.

Since perspectives differ (Van Rijswijk, 2008), needs for or uses of water resources can be at odds, even incompatible. This creates a need to systematically balance interests. Indeed, combatting environmental and ecological degradation and conflicts between differing needs and interests has been on political and legal agendas for the previous decades. Yet the anthropocentric perspective remains dominant in ecologically and environmentally oriented agreements and regulations. Striking examples are the possibility of designating artificial or heavily modified bodies of surface water as exempt

categories under the WFD, and more generally the directive's exemption clauses as such. To balance diverging needs and interests from an ecocentric perspective, a custodian would estimate the degree to which human activities would interfere with ecological processes and judge their allowability accordingly, instead of trying to give ecological interests a place in a man-made environment.

In this sense, the concept of custodianship can be seen as a novel response to the idea of the malleability of earth systems, which is predominant in most current environmental policies (Gilissen, 2015). Apart from rethinking the position of mankind in relation to its living environment, introducing a concept such as custodianship raises questions about its implementation in current governance settings. Just as ecological, geological and climatic circumstances vary across the world, governance structures vary politically, legally and culturally. Thus, just as river rights can differ regionally, there is and can be no one-size-fits-all construct for custodianship. Instead, tailored arrangements should be made to root custodianship in existing legal and institutional frameworks and societal context. General aspects to be taken into account are the division of responsibilities and competences among relevant actors in regional water governance structures, and regulations or customs relating to the engagement of interested parties in policy- and decision-making procedures, as well as their admissibility in court. This becomes even more important – and potentially more complex – when a river system covers the territory of two or more states (Gilissen, 2009; Suykens, 2018b).

To conclude, what is the role of a custodian, and how can this role and the custodianship be implemented? The key role of a river's custodian would be to represent that river and give voice to its interests, needs and rights in crucial stages of decision making that potentially affect that river's essential conditions, preferably not only in court. Functioning as the 'environmental conscience' in policy and decision making, a custodian should not be blind to any other interests or needs, but would argue from the perspective ('will') of a river system and would approach and value other interests from an ecocentric perspective. Importantly, to sharpen the focus and assign tasks to a custodian, the specific ecological needs and other characteristics of a river system need to be understood. Likewise, it is crucial to understand the river's governance environment in which a custodian is to operate, as the institutional form in which custodianship is moulded can be decisive for the effectiveness of the execution of its tasks among other actors. Lastly, but considerably most important in such a politicized domain as river system management, a custodian (and the river rights it seeks to safeguard) should be recognized by all relevant parties as a key actor in the decision-making process and should be given the space and mandate to properly fulfil its tasks. This requires considerable independence.

Analysis of river system characteristics: specifying the substantive focus of custodianship

Connectivity as a key characteristic of river systems

River systems are best characterized by connectivity in a number of basic properties that interact locally, in the downstream direction along the entire system, and upstream over a considerable distance. The upstream drainage basin, meaning the entire area

from which precipitation flows into the river, supplies freshwater, sediment ranging in size from mud to boulders if the streamflow can carry it, nutrients, organic matter, seeds and living species (Kleinhans, 2010). This means, for example, that upstream changes in overland and channel flow affect downstream flood levels and frequency, and that upstream water quality affects downstream ecological functioning. Thus, fluxes of matter connect the entire system from headwaters to the sea in hydrologic, sedimentary and ecological ways.

This connectivity is the reason the river basin approach was formulated (Van Buuren, Gerrits, & Teisman, 2010). In governance terms, it translates into integrated river basin management, which can be understood as ‘the process of coordinating conservation, management and development of water, land and related resources in a given river basin, to maximize the economic and social benefits derived from water resources in an equitable manner while preserving and, where necessary, restoring freshwater ecosystems’ (Global Water Partnership, 2000).

Connectivity also exists in an upstream direction in most rivers. Flow in lowland rivers is slowed by the downstream reduction of gradient and presence of vegetation, structures, dams and dikes, all of which raise water levels. The water level rise is not only local but extends upstream through the backwater effect. The upstream distance over which water level effects are noticeable depends on water depth and inversely on gradient and range, from one to tens of kilometres inland. This affects areas both along the river and across its floodplains, where vegetation steers floodwaters that spread sediments and seeds. Below, we provide case studies with more specific information on the Scheldt and the Ems.³

The Western Scheldt estuary

In the case of estuaries such as the Western Scheldt and the Ems there is much greater downstream-to-upstream connectivity. Focusing on the Scheldt, the width and depth of the mouth where the river debouches into the sea is so much larger than that of the upstream river that the contribution of the river discharge to the flow of water is negligible. On the other hand, saline water and sediment from the sea flow in and out of the estuary, driven by the tides (Savenije, 2015). The gradual mixing of saline and fresh water causes a salinity gradient that strongly affects mud dynamics and species. Zones with relatively high mud concentrations are unique to estuaries, as are plant and animal species that can survive in habitats with variable salinity and good water quality. The strong tidal currents cause perpetual movement of channels and bars, while mud flats and salt marshes are destroyed in one place and recreated in another (Leuven, Kleinhans, Weisscher, & Van der Vegt, 2016), and precisely these dynamics are required by the species specific to estuarine habitats (Cozzoli et al., 2017).

Furthermore, the vertical tidal water level fluctuations in the sea propagate upstream as a tidal bore; in the Scheldt system, far landward of Antwerp. The upstream speed of the wave depends on water depth, meaning that channel deepening by dredging enhances tidal propagation. More importantly, the decay of the wave in the landward direction depends on the width of the entire estuary and the presence of intertidal area, salt marsh and flood basins (Smolders, Plancke, Ides, Meire, & Temmerman, 2015). This means that reduced decay due to channel deepening and estuary narrowing in the

seaward part raises the flood level far upstream. The upstream tidal effects interact with the backwater effects far upstream of the zone where the currents no longer reverse during the tidal cycle (Hoitink & Jay, 2016). Good water quality, a variable salinity gradient, the movement of channels and continuous natural formation and destruction of tidal flats and marshes are system characteristics and needs that a river custodian should focus on when representing the voice of the river.

The Ems-Dollard estuary

The Ems basin spans northern Germany and the Netherlands. Its estuarine system comprises the lower Ems River (or Tideems) in Lower Saxony (Germany) and the Ems-Dollard estuary. The Dollard originated in a series of storm surges in the thirteenth and fourteenth centuries AD (RWS, 1966; Stratingh & Venema, 1855). Ever since, the morphology of the river and estuarine system has been dramatically altered by human intervention, including land reclamation, sluices, dams and barriers, channel deepening and straightening, to benefit navigation and the regional economy. In the 1950s, the Ems-Dollard was engineered into a single (main) channel, unlike its previous multiple-channel system characteristic of natural estuaries (Bos et al., 2012).

The main concerns regarding the extensive construction and dredging works in the river are the high concentration of mud in the water and an increase in tidal range (De Jonge, Schuttelaars, Van Beusekom, Talke, & De Swart, 2014; Van Maren, Van Kessel, Cronin, & Sittoni, 2015a). The zone of maximum sediment concentration has moved 25 km upstream (De Jonge et al., 2014). This is highly destructive to the ecosystem, which relies on light penetration for primary production of single-cell organisms at the bottom of the food chain. Primary production has decreased by about 50% compared to 1970s, especially at the seaward area of the estuary (Taal, Schmidt, Brinkman, Stolte, & van Maren, 2015), and is disruptive of the entire aqueous ecosystem (PRW, 2012). Flood risk has also increased as the inland tidal range at Papenburg increased from 1.6 m in 1950 to 3.6 m in 2010 (Van Maren, Winterwerp, & Vroom, 2015b). These adverse changes, mainly caused by human interference, are evident in other European estuaries and foreshadow ecological degradation, in particular in the Scheldt and Ems.

From river needs to river rights

The key role of a custodian is to represent a river system in the safeguarding of its rights. These rights can be derived from the system-specific characteristics and needs of river systems. On the basis of the preceding analysis, some concrete examples of needs of both the Scheldt and the Ems that could be considered rights that constitute custodianship, are:

- A temporally variable but on average constant salinity gradient from the river to the sea. This is important for species, and could be disrupted by changing the upstream freshwater supply and by downstream barrages that reduce salinity intrusion (as in Lake Grevelingen) or increase salinity due to channel deepening (as in the Nieuwe Waterweg/Meuse estuary at the city of Rotterdam).

- Natural variability in conditions of freshwater supply, sediment and tides. Downstream storm surge barriers reduce the tidal amplitude that supports natural dynamics (Cozzoli et al., 2017). Upstream dikes and dams change or remove natural variation in discharge, which strongly affects cyclic rejuvenation of floodplain plant species and makes invasion of species more likely (Van Oorschot, Kleinhans, Buijse, Geerling, & Middelkoop, 2018). Reduction of sediment input leads to lower sedimentation rates or even erosion of wetlands (Van der Deijl, van der Perk, & Middelkoop, 2017).
- Perpetually migrating channels and dynamic shoals and bars. This is as important as meander migration and cut-off in rivers to rework the habitats from higher to lower intertidal, and to rejuvenate populations (Leuven et al., 2016; Van Oorschot et al. 2018). But it is disrupted by hard bank protection and by dredging that tends to fix channels in place, and by disposal of dredged material on shoal margins.
- A constant area and volume of salt marsh and flood basin area. This is reduced by land reclamation (as in the Braakman) and by sedimentation (as in the Verdrongen Land van Saeftinghe), but increased by tidal wetland creation (Smolders et al., 2015).

Analysis of legal and governance arrangements for transboundary river basins: determining the custodian's institutional environment

EU river basin management

Before focusing on the legal and governance mechanism of the Scheldt and the Ems, it is relevant to scrutinize the EU context. The countries sharing the Scheldt and the Ems are EU member states and thus are responsible for implementing relevant EU legislation. Quintessential in this context is the so-called river basin approach put forward by the EU with the entry into force of the WFD in 2000, which also lies at the basis of the 2007 Floods Directive (FD) (Keessen et al., 2008; Van Rijswick et al., 2010; Van Rijswick & Havekes, 2012). The river basin approach entails that EU member states sharing a river system govern it on the basis of its hydrological boundaries, as opposed to the administrative and legal boundaries separating their respective territories (Keessen et al., 2008). The relevant hydrological units are referred to as international river basin districts.

A series of requirements exists for states to cooperate in these IRBDs (Gilissen, 2009; Hey & van Rijswick, 2010; Suykens, 2018b; Van Rijswick et al., 2010). More specifically, states should adopt the appropriate administrative arrangements to assign individual river basins in their territories to (international) river basin districts. Subsequently, the WFD requires member states to designate a competent authority (Articles 3.1 and 3.2). This competent authority is not necessarily the entity operating at the international district level. Member states are not obligated to designate the entity acting at the IRBD level as the competent authority *vis-à-vis* the EU level (European Parliament, 1999, Amendment 5).

Remarkably, in the process of adoption of the WFD, the provisions related to the power of the competent authorities were loosened. The commission's initial proposal explicitly required member states to ensure that these authorities would be granted

sufficient power to execute their tasks (European Commission, 1997), but this provision was not retained in the final version of the WFD. In practice, there is widespread incoherence in the manner in which these authorities have been designated for (international) river basin districts across the EU. For example, some member states have designated several authorities for one river basin district, whereas others have designated one authority for several river basin districts (Suykens, 2018b).

The cooperation paradigm is mainly reflected in the coordination of plans (river basin management plans for the WFD and flood risk management plans for the FD). However, the legal value of the applicable cooperation requirements can be questioned. Member states need to ensure coordination with the aim of submitting one single international plan, but if they fail to do so, they may promulgate plans for the parts of the IRBD in their respective territories. Although there are coordination requirements for the adoption of the plans as a whole, albeit obligations of effort as opposed to obligations of results, neither the WFD nor the FD makes substantive requirements for cooperation with regard to specific elements that constitute the relevant plan, e.g., the setting of objectives (including the needs of the river basin itself as described above) or the preparation of maps (Suykens, 2018b).

In conclusion, the river basin approach constitutes a landmark shift in EU environmental and water law (Van Rijswick & Havekes, 2012), but tangible requirements and mechanisms to actually sculpt governance in international river systems, necessary to bring the river basin approach to life, are weak and vague. Apparently politically infeasible at the end of the previous century, strengthening this transboundary dimension of the directives should be reconsidered to increase the effectiveness of integrated and transboundary river basin management (Suykens, 2018b). Perhaps it is time to revisit the institutional mechanisms governing transboundary river basin management in the EU.

This is where river rights and custodianship come into play. Would river rights and custodianship be an appropriate instrument to enhance the currently applicable river basin approach, and thus be helpful to improve the water quality and ecological potential of transboundary water systems? And would the authority operating at the level of the IRBD be an appropriate custodian to enforce the rights of the river, or would this rather be (one of) the national authorities or even a newly established institution? The subsections below further explore the governance regimes of the Scheldt and the Ems (see the online supplemental data at <https://doi.org/10.1080/02508060.2019.1649629> for more information), with the goal of demonstrating the practical relevance of this question.

The IRBD of the Scheldt

A complex web of authorities

Since the Scheldt runs exclusively through the territories of three EU member states (France, Belgium and the Netherlands), the EU river basin approach and the administrative arrangements associated with the designation of the status of IRBD apply to this river system. In other words, the IRBD of the Scheldt should be governed as a hydrological unit, despite the territorial boundaries separating the three states (and regions). But almost two decades after the entry into force of the WFD, this has proven

to be much more easily said than done. The institutional arrangement for the Scheldt is complex and fragmented (Suykens, 2018b).

This complexity can be traced back to several factors. First, the number of competent authorities at all levels of governance is significant (Gilissen, 2009; Gilissen et al., 2016). At the highest level of governance, this means that negotiations are not limited to three countries but to five, as competences in Belgium with respect to environmental and water-related matters belong to the level of the regions, namely the Flemish Region, the Brussels Capital Region and the Walloon Region. Second, there is a mismatch at administrative and political levels in terms of authorities responsible for river basin management in the countries involved (Chilla et al., 2016; Gilissen, 2009; Suykens, 2018b). Dutch regional water authorities truly are ‘hydrological-scale entities’ as they operate at the appropriate hydrological scale and have legal personality, binding decision-making power and financial autonomy. In contrast, their Flemish counterparts, the so-called ‘sub-basin boards’, do not have legal personality and are dependent on the Flemish government for human, financial and administrative resources (Mees et al., 2017).

The International Scheldt Commission and the Flemish-Dutch Scheldt Commission

Besides the national and regional authorities, bilateral and international entities have been created to enable cooperation in governing the Scheldt. The entity operating at the level of the Scheldt IRBD is the International Scheldt Commission (ISC). This is the relevant authority for the multilateral governance of the Scheldt in the context of the EU river basin approach, as its geographical scope extends to the whole river basin (Gilissen, 2009; Suykens, 2018a). Cooperation under the auspices of the ISC takes place on the basis of the 2002 Scheldt Treaty (Gilissen, 2009; Van Rijswick et al., 2010). This treaty enables the multilateral cooperation process necessary for the implementation of the WFD and FD. The Scheldt Treaty provides that ‘states work together’ to coordinate the implementation of the requirements of the WFD for the IRBD and adopt a single management plan for the WFD. Such coordination constitutes an obligation of best effort, mirroring the EU provision the treaty aims to implement.

But the ISC has not been designated as the competent authority in the meaning of the EU directives. Instead, the national-level authorities have been put forward as the appropriate competent authorities. This is an important element to consider in considering which of the current entities (if any) would be the most eligible to be considered the custodian of the Scheldt (see below). Nonetheless, the ISC does constitute the platform for international cooperation, for example, for the coordination of the joint ‘roof report’ which supplements the national river basin management plans and flood risk management plans.

There is yet another authority that operates in parallel to the ISC, but only for a part of the IRBD, namely the Scheldt Estuary. This is a bilateral entity that addresses relations between the Netherlands and the Flemish Region is the Flemish-Dutch Scheldt Commission (FDSC). The geographical scope of the FDSC extends to the Scheldt Estuary, which is the area of the Scheldt where freshwater and seawater mix and which is constituted by the Seaschedt landward of Antwerp and the Western Scheldt that debouches into the North Sea. The treaty which underlies the functioning of the FDSC dates from 2005 and requires this commission to evaluate whether and

how the objectives set forth in the treaty have been achieved and to advise the parties to the treaty on measures in this regard (Technical Scheldt Commission, 2001; De Jong, 2010; Flemish-Dutch Scheldt Commission, 2014, 2015). The FDSC is involved in the preparation of permits for dredging for shipping channel maintenance. This indicates that the main focus of the treaty and the FDSC is on maintaining navigability for economic reasons. The well-documented increase of flood levels due to the deepening of the estuary in the Netherlands is monitored and compensated for by the Sigma Plan in Flanders (Levy, Plancke, Peeters, Taverniers, & Mostaert, 2014). Maintaining sufficient ecologically valuable habitat is also regulated, particularly for the intertidal area in the Netherlands and for water quality, which has consequences for the disposal of dredged material.

The IRBD of the Ems

Governance of the Ems basin is spread across several administrative levels in two countries (Germany and the Netherlands), tied to the WFD, the FD and the Birds and Habitats Directive (BHD), including provisions on Natura2000 sites. The Permanent Dutch-German Ems Committee settles practical matters relating to the use of the disputed border area (Ems-Dollard Treaty 1960), but management for compliance with the WFD and FD is in the hands of the German states (*Länder*) North Rhine-Westphalia and Lower Saxony, joined in the Flussgebietsgemeinschaft Ems (Ems River Basin Community), and the Dutch central government. The environment and infrastructure ministries are the competent authorities that form the Ems Steering Group on the strategic level, and the Ems Coordination Group on the operational level (SGD Eems, 2015).

The ecological state of the Ems, in terms of the WFD, was considered poor and difficult to ameliorate, especially in the Tideems. Therefore, an extra five-year management cycle was decided on to reach the WFD standards by 2021 (SGD Eems, 2013). The BHD is integrated in the river basin management plan, which focuses on habitats and flora and fauna species in 12 'special areas of conservation or protection' within the Ems basin. The competent authorities in that respect are the German states and the Dutch province of Groningen. The federal/national governments are involved only for decisions in the disputed area and law making (Netherlands), or when it touches on national matters of water management and navigation (Germany). At lower administrative levels, the regional water management authorities (Netherlands), Landkreise (districts in Germany) and municipalities (Netherlands and Germany) are involved.

In the Ems-Dollard area, economic use (navigation, harbours, shipyards) and nature conservation have conflicting interests when it comes to managing the estuarine system. The situation and possible plans for compliance with both the WFD and the BHD, along with views and interests of other parties and stakeholders, are described in the Integral Management Plan. This plan explicitly does not weigh interests for decision making, nor is it legally binding; however, it does provide the specialist grounding for management (IMP, 2016), which is further specified for each country in the Masterplan Ems 2050 (D) and MIRT (NL) (Ministry I&M, province Groningen, 2015), which are legally binding. These policy documents express a desire to cooperate across the border, which takes shape in the project Ems-Dollard 2050 and facilitates the platform

Economy and Ecology in Balance. It is up to the competent authorities in both Germany and the Netherlands to balance the needs of economic use with those of nature for decision-making on management plans in the river system.

Despite these efforts, the Ems-Dollard region is still in the process of defining strategies for the implementation of the WFD and the BHD. The economic stakeholders, especially in Germany, are concerned that nature restoration measures hinder economic activities. The functioning of harbours and shipyards has been addressed in policy documents, such as the Masterplan Ems 2050. The deepening of the Ems, however, is one of the main causes for the current poor state of the ecosystem as well as the sediment problems.

Discussion: potential for and constraints on the introduction of a rights-based approach in the legal and governance arrangements of selected IRBDs

In the foregoing sections, insight was given into the characteristics and ecological needs of river systems, in particular those of the Scheldt and the Ems. The EU integrated river basin approach was scrutinized, as well as the particular institutional and governance arrangements within these IRBDs. This was done to specify the scope and focus of custodianship (i.e., to determine which river rights a custodian would seek to safeguard; examples were listed above) and the institutional environment in which a custodian is to operate. On the basis of this information, in this section the added value and feasibility of a rights-based approach in the legal and governance arrangements of these IRBDs and their overarching EU framework are discussed.

Precedents

Two recently adopted legal and policy initiatives exemplify the role of custodians in the rights-based river basin management spectrum. These are the Whanganui River in New Zealand and the Yarra River in Australia. The Whanganui River has been granted legal personhood through the Te Awa Tupua Act 2017, and the Yarra River has been granted ‘a voice’ through a custodian pursuant to the Yarra River Protection Act 2017. For the Whanganui River, the relevant custodian is the Te Pou Tupua, which is referred to as ‘the human face of the river’ and which has the competence to act on behalf of the river (O’Bryan, 2017, 2019 [this special issue]; see Article 18 of the Te Awa Tupua Act 2017). The interests of the Yarra River are defended by the Birrarung Council, the ‘voice’ of the river.

A major difference between the two custodians is that the Te Pou Tupua is the legal guardian, acting on behalf of the Whanganui River as a legal person, whereas the Birrarung Council cannot be considered the legal guardian of the Yarra River, as it does not have legislative or enforcement powers to act on behalf of the river (O’Bryan, 2017). Indeed, the Yarra itself is not considered a legal person (in contrast to the Whanganui). The Birrarung Council is a statutory body that provides advice to the government in developing strategies and plans to protect the health of the river. In contrast to the advisory role of the Birrarung Council, the Te Pou Tupua acts as a landowner on behalf of the river, and has ‘full capacity and all the powers reasonably necessary to achieve its purpose and perform and exercise its functions, powers and duties’ (Article 18(3), Te Awa Tupua Act 2017).

The Te Pou Tupua and the Birrarung Council also differ in size and membership. The former has just two members, one a representative of the government and the other of the indigenous *iwi* (tribe); the latter has 12 members, including representatives of indigenous groups, industry and environmental associations (Article 20, Te Awa Tupua Act 2017; and Article 29, Yarra River Protection Act). It is too early to draw empirical conclusions about the effectiveness of the respective legal frameworks underpinning the ‘voice’ of the Yarra River and the ‘human face’ of the Whanganui River. Although these two initiatives can serve as a source of inspiration for the introduction of rights-based approaches in river basins all over the world, the site-specificity of their circumstances and objectives should be kept in mind.

Would a rights-based approach be of added value in EU river basin management?

A first general question that arises is whether the introduction of a rights-based approach, inspired by the examples above, would be of added value to the current system of EU transboundary river basin management. Compared to many transboundary river basins in the world, the EU approach of integrated river basin management as developed in the WFD and the FD itself has been an important first step towards managing river systems in a comprehensive way. This has fostered and formalized the recognition of ecological needs and the need to improve and safeguard water quality and ecological potential. Additional legislation, such as the BHD, further aims to take the needs of river ecosystems into account as an integral part of river system management.

Nonetheless, the observed flaws and ineffectiveness of the current system and the ecological state of river systems after almost two decades of integrated river basin management, noted above, require and justify a next step in development. Drawing inspiration from developments in other parts of the world (Hutchison, 2014; O’Bryan, 2017, 2019), considering the introduction of a rights-based regime can be such a next step. Although this would most likely require fundamental systemic and attitudinal changes and thus pose major challenges to current actors in river basin management, the introduction of such a regime could also be seen as a potential progression in the line of development in the EU environmental/water policy domain of the last decades.

How and where to implement river rights?

Assuming that a rights-based approach can be of added value, a next question is at which level of governance such an approach could best be implemented; would this be at the EU, international river basin (bilateral or multilateral), domestic, or regional level? Domestic and regional do not seem to be the proper levels, at least not in case of transboundary river systems, mainly because that would not respect the high degree of connectivity within such systems (see above). Given the potential differences between ecological needs and other characteristics of transboundary river systems, which are relevant to formulate specific river rights, the EU level also does not seem to be the proper level to *substantively* implement river rights, although this level could provide a general framework to promote uniformity and coherence in approaches across the EU. Indeed, the international river basin level seems to be most apt, as at this level specific circumstances can best be taken into account

by relevant actors in their specific river conventions. These conventions (treaties) could be a legal basis for granting legal personhood and the accompanying river rights to river systems, as well as for the implementation of custodianship.

Nonetheless, implementing a rights-based approach would require a complete substantive overhaul of current legal and governance arrangements and would depend on the willingness and perseverance of member states sharing transboundary river basins. Although the current provisions of the WFD and FD do not prohibit member states' adopting a rights-based approach for their shared IRBDs, the adoption of more compelling (overarching) provisions thereto in those directives seems unfeasible, especially considering the laborious process of formulating those provisions in the first place (European Commission, 1997; Suykens, 2018b). This becomes even less feasible because such amendments to EU legislation require unanimous voting in the Council, as they will touch on quantitative management of water resources and/or affect the control over the physical territories of member states (Article 192(2), Treaty on the Functioning of the European Union). Still, the current situation does create momentum for structural reconsideration of these notorious weak spots in EU water legislation in future evaluations (Hey, 2009; Priest et al., 2016; Suykens, 2018b; Van Rijswick et al., 2010).

Thus, implementing rights-based approaches in the legal and governance arrangements for IRBDs would ultimately be within the discretionary powers of the relevant member states. In other words, member states that share an IRBD can decide and determine themselves whether such an approach is desirable and achievable. For virtually all river basins for which river conventions have been concluded this will require substantial and fundamental amendments of these arrangements. Reaching agreement thereon is likely to be more complicated in IRBDs with many conflicting interests, especially when these are socio-economic in nature. This is clearly the case in both the Scheldt and the Ems, where inland harbours (Antwerp, Eemshaven, Delfzijl and Emden) and a shipyard (Papenburg) are not only of great economic importance but also essential for regional employment (IMP, 2016; SGD, 2009). This will increase the pressure on member states to reach agreement on ecologically meaningful arrangements and measures that are mutually beneficial for ecology and economy (e.g., the innovation project on dredged mud; ED2050, 2017), or at least do not inadmissibly disadvantage either one.

Who would be the custodian?

A last question to address here is which entities are most eligible to be granted custodianship to safeguard the rights of specific river systems. Above, the international river basin level was deemed the best suited to legally embed river rights. Likewise, the most appropriate entity to entrust with custodianship would be an organization operating at the level of the international river basins. The member states sharing an IRBD could establish such an organization and decide on its tasks and competences in their river conventions (or other types of agreements). Indeed, for many transboundary river systems in the EU (e.g., Rhine, Meuse, Scheldt, Danube) international river commissions have been established on the basis of such conventions; yet, for a number of IRBDs, including the Ems, no such organization exists (Van Rijswick et al., 2010). The organizations that have been established on the basis of river conventions or

agreements alike vary in structure, role and competences, as well as in the perceived effectiveness of their performance (Nollkaemper & de Villeneuve, 2007).

For the success of the implementation of custodianship, it is essential that the custodian has a clear task and proper powers and competences to fulfil this task independently of other relevant institutions, and thus can influence relevant decision making and/or to enforce river rights (see above). For the Scheldt, the ISC would be the appropriate designated institution to grant custodianship to, as it is the entity that operates at the proper hydrological scale (the IRBD of the Scheldt) and has been instituted to maintain a basin-wide perspective. However, it can be questioned whether this commission in its current form has the proper tools to safeguard basin-wide coherence. It currently operates as an advisory platform with limited legal personality, and limited financial and human resources. It is a vehicle that mainly serves information exchange and discussions, as there is no follow-up mechanism to evaluate whether and how parties have implemented its advice. The Scheldt Treaty, in this respect, is drafted so as to maintain a maximum of sovereignty and a minimum of state engagement, and it does not grant the ISC a clear legal mandate. Coordination efforts do exist, for example with respect to monitoring and the adoption of a 'roof report' for the EU institutions, but the governance arrangement of the Scheldt can currently not be considered an integrated river basin regime (Suykens, 2018b), as at the end of the day, the governance of the Scheldt is the sum of the governance output of the respective national river basin districts (Nollkaemper & de Villeneuve, 2007). This is even more the case for the Ems, which lacks an integrated basin-wide legal framework and an institution that could speak on its behalf altogether.

For it be able to effectively execute its tasks and competences as a custodian, the position of the ISC should be strengthened, partly at the expense of the position of the relevant member states. It is questionable whether member states are willing to transfer powers to an external organization or commit themselves to a larger extent to follow the recommendations of such an organization, especially when this could interfere with their individual (socio-economic) interests. Another option is to establish a new organization as custodian of the Scheldt. This could solve an observed opportunity gap (Suykens, 2018b) and meet the need for more thoroughly developed cooperation across the relevant borders (Gilissen, 2009; Suykens 2018b; Van Rijswijk et al., 2010), but besides the issues mentioned, this would lead to the introduction of yet another player in an already complex web of institutions. Thus, feasibility seems rather limited.

Conclusions

In this article, opportunities for and barriers to the introduction of a rights-based approach in EU transboundary river basin management have been analyzed and further specified to the IRBDs of the Scheldt and the Ems. An overall conclusion is that the introduction of such an approach could be of added value as a next step in the development of integrated river basin management. It could help overcome institutional complexity and other difficulties and could be beneficial for water quality and ecological potential in transboundary river systems. However, the implementation of such an approach largely depends on the willingness and perseverance of the member states sharing IRBDs, as the river basin level is the proper level at

which river rights and custodianship are to be shaped. This also means that they should be willing to reconsider the relation between ecological needs and their individual socio-economic interests, as well as to grant a clear mandate and partly transfer responsibilities and powers to a competent authority operating at the IRBD level. In this respect, the Scheldt and the Ems – given the current circumstances, and particularly the existing major tension between ecological needs and economic interests – might not be the IRBDs best suited to experiment with as yet unconventional concepts such as river rights and custodianship. But at the same time, these very circumstances make the introduction of more unconventional approaches at least worth considering.

Notes

1. Although the analytical structure of this article can be applied to any type of (transboundary) river system, this article focuses on river systems in the EU, where IRBDs have been introduced as hydrological managerial units on the basis of the WFD's 'river basin approach'.
2. Key projects on which this article builds are 'STARFLOOD: Towards More Resilient Flood Risk Governance' (<https://www.starflood.eu>), 'Environmental Quality Standards' (<https://www.uu.nl/en/utrecht-centre-for-water-oceans-and-sustainability-law>), and 'Custodianship: Towards the Acknowledgement of the Natural Being of River Systems: A Case Study of the Ems-Dollard Estuary in Northwest Europe' (<https://www.uu.nl/en/utrecht-centre-for-water-oceans-and-sustainability-law>).
3. An even more elaborate analysis of the Ems is to be found at <https://www.uu.nl/en/utrecht-centre-for-water-oceans-and-sustainability-law>.

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