

Editorial

Mutual Learning and Policy Transfer in Integrated Water Resources Management: A Research Agenda

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Abstract: Integrated water resources management (IWRM) has become a global paradigm for the governance of surface, coastal and groundwater. International bodies such as the European Union, the Global Water Partnership, and the United Nations have taken the lead to promote IWRM principles, while countries worldwide have undertaken reforms to implement these principles and to restructure their domestic or regional water governance arrangements. However, the international transfer of IWRM principles raises a number of theoretical, empirical and normative questions related to its causes, processes and outcomes. These questions will be explored in our Special Issue ‘Governing IWRM: Mutual Learning and Policy Transfer’. This editorial briefly introduces IWRM and links this governance paradigm to theoretical and empirical scholarship on policy transfer. We then summarise the aims and objectives of this Special Issue, provide an overview of the articles brought together here and offer avenues for future research.

Keywords: integrated water resources management; IWRM; policy transfer; water governance; Water Framework Directive; learning

1. Introduction

Integrated water resources management (IWRM) has become a global paradigm for the governance of surface, coastal and groundwaters. International bodies such as the European Union (EU), the Global Water Partnership and the United Nations (UN) have taken the lead to promote IWRM principles, while countries worldwide, both in the Global South and the Global North, have undertaken reforms to implement these principles and to restructure their domestic or regional water governance arrangements [1–3].

Although academic, political and professional communities have put forward a wide range of understandings of what IWRM could entail [4,5], a basin- or catchment-based management approach, the participation of stakeholders and the wider public, an equitable allocation of water resources, full-cost pricing as well as an integrated approach to the management of water are typically considered key elements [6,7].

The term integration lies at the heart of IWRM. It describes the consideration of functional, societal and institutional integration, i.e., attempts to bring and think together: first, watershed functions, for instance, the supply of water for domestic, industrial, and agricultural use, the protection of water resources for recreational purposes and for their role as an ecosystem for numerous species, the management of floods and droughts and many others; second, a variety of views held by water users, stakeholders, indigenous communities and other members of the public; and third, the cooperation and coordination of decision makers who operate at all political levels and govern a diversity of economic

sectors and policy fields. In doing so, IWRM aims to overcome patterns of fragmentation in terms of functions, societal interests and political institutions, which have resulted in water governance arrangements that were often described as ineffective, inefficient and illegitimate [7,8]. In other words, IWRM is supposed to respond to a wicked problem [9].

However, the international transfer of IWRM principles raises a number of theoretical, empirical and normative questions. These relate to the causes, processes and outcomes of policy transfer. This Special Issue explores these questions. With regard to *causes*, the contributions apply, criticise, extend or revise existing approaches to policy transfer in a water governance context, thereby asking why countries adopt IWRM principles and what mechanisms are in place to understand the adoption of these principles in regional or national contexts. When it comes to processes, articles in this Special Issue unpack the process of policy transfer and implementation and explore how IWRM principles travel across borders, levels and scales, between international organisations and the domestic sphere, between globally and domestically operating non-state actors and regional and national governments, but also between countries and national governments. Finally, this set of papers looks into the outcomes of IWRM policy transfer and asks what the impacts are of IWRM principles, once implemented, on domestic water governance, water quality and water supply and how effective IWRM is in addressing critical water issues in specific countries.

This article is organised as follows: Section 2 provides an up-to-date overview of IWRM, its origins, consolidation, and developments. We move on to discuss, in Section 3, the concept of policy transfer, together with adjacent schools of thought such as policy diffusion and policy translation, and their relevance for the IWRM literature. Section 4 then introduces this Special Issue; the final section concludes and explores avenues for future research.

2. Integrated Water Resources Management: Origins, Consolidation, and Developments

Soon after IWRM began to influence the global discourse about water governance and management, countries have shifted the emphasis of their approaches to managing water resources away from what has variously been called the ‘hydraulic’ or ‘engineering management’ paradigm, characterized by single-use water management agendas and major infrastructure projects, towards more integrated, plan-led, river basin scale, participatory forms that often eschew large-scale technical solutions to water management problems [10,11]

However, IWRM is far from a united approach, with different conceptualisations evident on a global scale: its popularity with policymakers no doubt stemming from its conceptual flexibility and hence the capacity to fit different water management contexts [4,7,12]. In this respect, IWRM can be understood as a management philosophy, a set of guiding principles, a process, but also as an almost certified benchmark of how good water management institutions and practices are supposed to look like [8]. These differing and often divergent understandings reflect the evolution of IWRM over many decades, so that now it is prioritised by the UN Sustainable Development Goals (under SDG 6 for access to clean water and sanitation) as the primary approach for meeting sustainability targets for global water security [13,14].

To an extent, water management practice has exhibited elements of an integrated river basin based approach for centuries [10,12]. In the 20th century, a landmark event in the development of modern IWRM was the establishment of the Tennessee Valley Authority in the United States (US) in 1933 [15]. Created by the US federal government as a means of stimulating economic development, the Authority adopted a technocratic mode of river basin management incorporating an “engineering ethos” linked to “scientific knowledge and systematic rational planning” [10] (p. 487). A series of dams on the Tennessee River were employed in an integrated way to provide electricity generation, irrigation for agriculture and other benefits such as flood control, thereby contributing to increased economic activity in the basin [15]. This model was copied extensively by other US states and also served as a blueprint for supporting US overseas development policy in the post war period [16]. During the 1950s and 1960s, the model proved attractive for developing nations as it constituted a fast track approach

to modernising economies, with river basin authorities established in many countries in the Global South [17]. Expansion of the model globally was also supported by international development agencies, including the World Bank [18]. By the 1970s, concerns over the ‘engineering’ paradigm started to emerge, due to its technocratic nature and its basis in rational, scientific modes of management that took little account of environmental impacts or even social need [17]. Limited transparency and public accountability in project decision making was also highlighted, with World Bank projects coming under particular scrutiny [19]. As environmental issues became more significant amongst policy makers globally in the 1970s and 1980s, new thinking emerged around integrated water management.

While the precise origins of IWRM are diffuse, one of the first attempts to develop its core principles can be traced back to the UN’s Mar del Plata conference in 1977 [20]. Here, the conference recognised the importance of considering environmental and social concerns in river basin planning plus incorporating public participation into decision-making. This paradigm shift was given added impetus by the growing sustainable development agenda in the 1980s and early 1990s, particularly the publication of the influential UN-sponsored Brundtland Commission report [21]. In parallel to preparations for the UN Conference on Environment and Development in Rio de Janeiro 1992, the International Conference on Water and the Environment in Dublin established the principled basis of IWRM [22]. While the river basin was still identified as the critical scale of management, other aspects such as public participation were prioritised. In the intervening period, IWRM principles have spread globally, supported by international transfer agents [23] such as the Global Water Partnership, the Organisation for Economic Co-operation and Development, and the UN Educational, Scientific and Cultural Organization [7,24]. The EU has become a key actor as well, promoting IWRM principles amongst its member states via the Water Framework Directive (WFD) [25] as well as, through the EU Water Initiative, in other countries worldwide [26]. According to the UN [27] almost all countries now implement some form of IWRM.

The global transfer of IWRM has increasingly led to differences in how IWRM is conceptualised [5], with interpretations encompassing key principles, management processes and implementing institutions. Such a transfer of practice has led to the emergence of multiple models and examples of IWRM [1]. In contrast to the technocratic, engineering-based paradigm of the post-war era, the Dublin Principles maintain that freshwater is an essential resource which is “finite and vulnerable”, that water management decisions should be participatory and engage multiple actors including women while stressing the economic value of water resources [22]. IWRM principles have been expanded to encompass pre-existing river basin planning, through the development of guidance by the Global Water Partnership and other international actors. Such guidance also provides indicative advice on establishing IWRM planning processes [28], which typically involve sequential but also adaptive stages from initial characterisation of water resources to plan development and implementation, and monitoring as a basis for iterative revision of plan objectives. IWRM also informs the establishment of specific institutions, primarily river basin or catchment authorities, to steer such planning processes. The WFD, for example, legally requires the establishment of dedicated river basin districts and participatory mechanisms, plus coordinating institutions for transnational rivers, to support planning processes [29,30].

Despite its popularity, IWRM is not without criticism: primarily that it is still argued to be a top-down, technocratic approach that is often unsuited to the social needs, economic capabilities and technical capacities of countries in the Global South [12,31]. One recent response from the academic and policy communities has been to champion other, less technocratic, management modes such as the water-energy-food nexus that specifically seek to move beyond IWRM in offering more flexibility in policy responses [1]. That said, there is a need to develop the water-energy-food nexus as a genuine form of governance before it can replace IWRM. In addition, the prioritisation of IWRM as the main implementing approach for achieving SDG 6 up to 2030 will ensure that it remains paradigmatically significant in the coming decade.

3. Policy Transfer and the Governance of Water Resources

Policymakers have always drawn lessons from other political contexts as a basis for comparison, learning and potential transfer of ideas. Given that national policy makers tend to face similar challenges in designing public policy, it therefore becomes attractive to examine policy approaches in other countries [32]. Despite a long history of transnational lesson drawing, such processes have accelerated under globalisation thereby “creating new opportunities for learning from the policy experiences of others” [33] (p. 78). This, however, raises several questions about the nature of lesson drawing; most notably, why does it occur, what are the underlying processes, and what are the outcomes? Public policy and international relations scholars have given much attention to these questions, resulting in a broad body of literature around the concepts of diffusion, lesson drawing and policy transfer and, more recently, notions of policy translation, mobilities and mutations. Questions of causation, process and outcomes also have specific implications for studying the global transfer of IWRM-but are as yet not well developed.

In explaining government policy innovations, scholars have long since examined the origins of such innovations. Originally, debates emerged in the United States in the 1960s arguing that two main features are evident: internal determinants such as political or economic factors within a jurisdiction, but also diffusion or spread of innovations operating inter-governmentally between political contexts [34] (p. 308). Subsequent studies focused more on the rationales of individual policy makers for what Rose [32,35] called lesson drawing. Political dissatisfaction is argued to be the primary motivation to learn: when pressured for responses to issues policy makers can either look to their own experiences or, when such options are exhausted, look for new ideas elsewhere [32] (p. 2). Lesson drawing is then understood as the process by which policy makers deliberately examine policy lessons elsewhere in order to understand how learning can occur: “Lessons can be sought by searching across time and/or across space; the choice depends upon a subjective definition of proximity, epistemic communities linking experts together, functional interdependence between governments, and the authority of intergovernmental institutions. The process of lesson-drawing starts with scanning programmes in effect elsewhere, and ends with the prospective evaluation of what would happen if a programme already in effect elsewhere were transferred here in future.” [35] (p. 3).

The notion of such learning as a rational act by policy makers was carried forward by authors such as Dolowitz and Marsh [36–38] through their notion of policy transfer. Ostensibly, this is a neutral term to describe the transposition and implementation of policies in new political contexts, whereby various transfer mechanisms are conceivable. However, it can well be linked to Rose’s concept of lesson drawing and its underlying notion of learning. Dolowitz and Marsh identified three types of policy transfer: voluntary, directly coercive, and indirectly coercive. The above-mentioned process of updating one’s beliefs in the face of pressing issues and taking solutions off the shelf from somewhere else is then best described by the notion of voluntary policy transfer [36,37]. Most commonly, voluntary transfer was argued to occur where policy makers become dissatisfied with existing policy performance (i.e., Rose’s notion of ‘political dissatisfaction’). However, the authors were well aware of the fact that the result of lesson drawing, the transfer of policy, may also occur in settings where attempts to search proactively for solutions to policy problems are largely absent. This is when coercive policy transfer kicks in, which is imposed upon directly by external actors or indirectly through external processes. Practically, the lines between coercive and voluntary transfer are often blurred.

Subsequent scholarship expanded the range of transfer mechanisms beyond degrees of coerciveness as suggested by Dolowitz and Marsh, studying in more detail what transfer processes operate between jurisdictions. In particular, diffusion studies displayed an interest in the processes by which governments adopt policy innovations from each other [34,39]. Critical diffusion mechanisms identified in the spread of policy innovations between jurisdictions are “learning, imitation, normative pressure, competition, and coercion” [34] (p. 310). Diffusion studies expanded rapidly in the 1970s and 1980s encompassing inter-state processes of innovation spread [40], but primarily intra-state research within the USA [41]. Diffusion also became a popular research agenda amongst international relations

scholars seeking to understand how ideas, norms and policies spread through transnational state interdependency, influencing a now expansive literature [42].

Richard Rose consequently developed an influential analytical framework for policymakers to follow when appraising such policy and its transfer [32]. Dolowitz and Marsh [36] (p. 344) built upon these arguments to conceptualise policy transfer as “a process in which knowledge about policies, administrative arrangements, and institutions in one time and/or place is used in the development of policies, administrative arrangements, and institutions in another time and/or place”. Policy transfer research then expanded throughout the early 2000s to encompass processes at multiple scales and the involvement of multiple actors [43]. For example, EU policy transfer has been studied as a mechanism for national policy convergence via a Europeanisation lens [44]. Such studies have subsequently diverged to include related concepts such as policy assemblages, mobilities and mutations, whereby scholars are interested in how policies are modified or reconstructed under these transfer processes [45]. While more ontologically critical in nature, these arguments connect into broader debates amongst geographers around how globalisation has shaped and increasingly shapes the transfer of ideas extra-territorially [43]. Meanwhile, other scholars have become interested in how such learning processes determine specific outcomes through the translation of policy ideas as they travel between contexts [46].

Studies have also considered the outcomes of such learning determinants and processes. For diffusion scholars the outcome is policy innovation, although different forms are evident [34]. While lesson-drawing research is more focused on the rationales for policy learning and the process by which it occurs, Rose does also provide insight into its outcomes, primarily in the form of policy evaluation and decision making, either in a negative or positive sense, around adoption [32,35]. His analysis also provides five categories of positive lesson drawing: copying, emulation, hybridization, synthesis, and inspiration [35] (pp. 132–134). As Dolowitz and Marsh [36,37] describe, copying equates to complete transfer without adjustment whereas emulation, hybridisation and synthesis entail different degrees of combining existing policy with imported innovations. Inspiration is considered the weakest form of transfer since it involves policymakers merely drawing ideas from elsewhere as a stimulus for action. Policy assemblages, meanwhile, understand the outcomes of transfer processes in terms of the constitution of diverse policy objects in specific political contexts [47]. Translation is, in contrast, concerned with how ideas ‘travel’ and modify in the process of transfer [46].

To an extent, these policy learning concepts and theoretical perspectives have been applied to water policy, although their use for explaining the growth of IWRM globally is limited mainly to the question of how. Primarily, studies have employed a policy transfer perspective to examine specific examples of trans-jurisdictional learning around water policy [48]. In one example, Michaels and de Loë [49] show how water management institutions were transferred into Canadian states from Australia and the USA, citing bio-physical factors as critical to lesson drawing. These arguments are extended by Swainson and de Loë [50] in demonstrating how bio-physical, socio-economic, political and cultural factors influence policy transfer in Australian water governance. In specifically addressing IWRM, Benson et al. [51] take a more normative stance when comparatively examining how cross-national learning and policy transfer could potentially enhance public participation processes within EU river basin management planning, by exploring contextual constraints in both importing and importer jurisdictions. Adding another perspective, Mukhtarov [46] utilises policy translation to provide insight into how IWRM ideas were initially adopted by Turkey. More recently, Fritsch et al. [26] explain how the EU has transferred its water policy to different regions globally, via transnational partnership networks in the form of the EU Water Initiative.

That said, our understanding of why IWRM policy norms are transferring between countries, how transfer is occurring and the types of transfer outcomes consequently is still evolving, thereby providing many research gaps. This Special Issue therefore significantly adds to this body of literature in addressing such questions, while creating new opportunities for future scholarly debate and research activities, which are discussed in the next two sections.

4. Contributions to This Special Issue

This Special Issue contains twelve articles related to the transfer of IWRM principles. The articles explore all three dimensions of transfer—causes, processes, outcomes—and offer a theoretically grounded, methodologically inspiring and geographically diverse engagement with IWRM policy transfer around the globe.

Six contributions to this Special Issue—by Demirbilek and Benson [52], Fritsch [53], Glavan et al. [54], Pellegrini et al. [55], Schröder [56], and Waylen et al. [57]—study the implementation of EU water policies; another one by Fidelis et al. [58] examines a setting directly and indirectly shaped by Brussels although no direct reference to the EU is being made. All six EU-centred contributions focus on the WFD whereby Glavan et al. [54] and Waylen et al. [57] analyse the Directive in conjunction with other EU water policies. A brief introduction into the WFD is therefore in order.

The WFD was adopted in 2000. Its overarching goal is to achieve a good water quality status for all coastal waters, surface waters and groundwater in Europe by 2027; this metric includes biological, chemical and geomorphological components for coastal and surface waters as well as chemical and quantitative components for groundwater. The Directive responds to the rather ineffective attempts to tackle water quality problems in the previous three decades via more than 20 water-related EU directives. This period was characterised by four major challenges: first, a vast majority of these policy initiatives took a sectoral (for instance, Nitrates Directive), user-focused (e.g., Bathing Water Directive) or otherwise exclusive (say, Dangerous Substances Directive) approach to the protection of water resources, resulting in a fragmented regulatory framework that ignored the cyclic nature of our aquatic environment. Second, these policies differed in ambition, resulting in contradictory water quality targets. Third, many European countries delegated environmental policy competencies to subnational jurisdictions the borders of which were often not in line with the ecological boundaries of water basins, implying a spatially fragmented approach to water planning and management. Finally, previous legislation had a technocratic, top-down tone that largely ignored the knowledge and views held by important stakeholders and the wider public; in other words, these policies ignored the social side of EU policy implementation [59]. The WFD, in contrast, promotes an integrated approach to water management that aims to bring together, in the sense of Lubell and Edelenbos [7], the diverse functions, societal interests, and institutional arrangements in the field of water. As a result, the WFD absorbed some earlier EU water directives entirely while others remained in place, but took subordinate, and auxiliary, roles in WFD management processes. Key elements of the Directive are, apart from the achievement of good water status, a six-year planning and management cycle for all water resources, the consultation of stakeholders and the wider public in water planning, the active involvement of selected key stakeholders in planning and management activities, as well as water management within ecological, rather than politico-legal, boundaries (but not beyond nation state borders). The Directive therefore represents the best embodiment of IWRM principles that Europe currently has on offer [60].

EU member states and associated countries, including candidate states, implement the WFD. However, the individual components of the Directive come with different degrees of legal obligation which is why the term implementation may have a variety of meanings here. To illustrate, the consultation of the wider public is a legal requirement whereas the active involvement of key stakeholders is more likely to have the status of a recommendation and falls short of being a legally binding and enforceable provision [61]. Likewise, there is no doubt that water managers are obliged to manage Europe's aquatic environment at ecological scales, i.e., introduce river basin management if not already present, whereas many economic instruments mentioned in the Directive have a much weaker legal status [62]. This has implications for the role of policy transfer in WFD research.

When it comes to causes and processes in WFD policy transfer, the transposition and application of legally binding IWRM principles in the Directive could easily be explained with reference to coercion, given that non-compliance may result in infringement procedures and hefty fines imposed by the European Court of Justice. For the sake of simplification, we hereby ignore the possibility that such principles were already in place in some member states when the WFD was adopted or that member

states were otherwise keen to introduce such principles anyway. After all, this is the line of reasoning implicit in almost all EU policy implementation studies: legal obligation coerces member states into compliance. In such cases, the completed transfer of EU policies is a rather uninspiring research topic: not the successful transfer deserves our attention, but its unexpected absence is a concern. Four schools of thought offer explanations here. Some argue, with reference to rational choice theory, that the benefits associated with non-implementation are greater than the costs related to an infringement procedure. Others detect a political will to implement, but observe a lack of resources to do so; this again is an argument compatible with rational choice theorising. Social constructivist thinkers, in contrast, refer to incompatibilities between EU policies and domestic practices, related either to policy ambitions or policy styles, and invoke fundamental normative and ideational differences to understand non-compliance. Finally, authors explore general patterns of behaviour when it comes to the degree to which countries fulfil international obligations [63–65]. Significantly, none of our Special Issue contributions explores this side of the coin. Instead, authors have examined the transfer of WFD principles when coercion is largely absent.

Established approaches to EU policy implementation are relatively toothless when it comes to understanding policy transfer in contexts with no or ambiguous legal-political pressure. The policy transfer literature—with competition, emulation, imitation, learning and so on—offers a much richer arsenal of mechanisms to assist here. However, it should be clear that the voluntary or quasi-voluntary character of these mechanisms suggests a much greater degree of diversity when it comes to transfer outcomes. After all, the causal chain between cause (coercion), process (transposition) and outcomes (harmonisation) is relatively straight-forward, despite the above-mentioned cases of non-compliance that are the exception rather than the rule, and the degree of diversity of outcomes tends to be small. Voluntary transfer instead, whatever the precise cause, is likely to be more unpredictable; an insight somewhat hidden in earlier works on policy transfer, yet which comes across much more prominently in studies utilising policy translations and similar frameworks [46].

The articles in this Special Issue explore these questions from different angles. Pellegrini et al. [55] analyse seven EU member states and their track record when it comes to implementing three IWRM principles: public participation, river basin management, and coordination and integration. The findings display a chequered pattern where different transfer mechanisms interact with ecological, political and societal contexts. Although the WFD triggered domestic reforms in line with IWRM principles, these reforms did not follow a common template and resulted in a variety of institutional arrangements and practices. This is not entirely surprising in light of the fact that the WFD is a framework directive which therefore provides considerable leeway to implementers, as the authors explain. On the other hand, attempts to inspire intra-European dialogue about best practices and mutual learning in the context of the Common Implementation Strategy could have suggested greater degrees of harmonisation than evidenced by Pellegrini et al. [55].

This then raises the question of knowledge exchange in IWRM, and the role that scientific inputs play in institution building, river basin planning, and implementation of measures. Looking into a range of water-related EU policy initiatives, including the WFD, Glavan et al. [54] investigate this topic. The authors identify areas of improvement, but also opportunities for a better integration of scientific findings in water management. Likewise, Nilsson et al. [66] stress the importance of better integrating scientific knowledge into environmental management decisions, here on basis of an ambitious quantitative analysis of sustainable fisheries in 34 nations. The analysis covers countries from all continents and is unrelated to the EU, which dominates the set of Special Issue papers so far. However, the findings chime well with Glavan et al. and others.

The contributions by Schröder [56] and Waylen et al. [57] look at the degree of integration and coordination achieved through recent EU water legislation. Waylen et al. compare several European countries while Schröder presents an in-depth case study of five German states. Interestingly, the regulatory provisions of the WFD themselves did not appear to be a major factor to enhance coordination and integration, Schröder's study finds. Germany is a country

defined by high degrees of land use, with few areas characterised by a pristine natural environment. WFD implementation interacts, and sometimes potentially conflicts, with a range of other land use activities and policy goals. Hence, the achievement of the Directive's water quality goals calls for integrated and coordinated approaches to water management. Water officials in Germany recognise this necessity but to various degrees, resulting in a vast diversity of local-level attempts to achieve integration that have occurred relatively independently from the regulatory provisions found in the WFD [56].

This line of reasoning mirrors arguments presented by Fritsch [53]. The author analyses the adoption of more participatory forms of water management in England and Wales during the implementation of the WFD. Coercion was an unlikely explanation here because the respective provision in the legal text has no binding force. Carefully tracing the decision-making process that led to enhanced participation, Fritsch provides evidence for intra-organisational learning within the implementing agency that occurred in response to the ambitious and visionary water quality agenda set by the Directive. True, we observe IWRM policy transfer here, but the source of inspiration were not the WFD's public participation provisions, as one would have expected, but a wide range of domestic and international discourses, both academic and political, that were utilised in order to respond effectively to a perceived policy problem. Exploring two case studies in Canada and the US, Watson et al. [67] too stress the importance of problem perception as a key condition for the adoption of IWRM principles. However, here water managers responded directly to suboptimal conditions out there, not—as in Fritsch's case—to ecological goals in legal frameworks adopted by higher-order authorities.

Demirbilek and Benson focus primarily on transfer outcomes in their analysis of WFD implementation in Turkey [52]. Drawing upon pre-existing transfer outcome concepts, they analyse the extent to which legal requirements of the Directive have been implemented within the context of a declining EU accession process in this country. The authors conclude that, while the 'conditionality' of Turkey's accession has led to implementation of the main features of the Directive, a unique hybrid or 'assemblage' form of IWRM, that combines the EU approach with pre-existing water institutions, is now emerging. The analysis of hybridity in IWRM, along with de-Europeanisation in water governance, are therefore developed as research agendas.

Fidelis et al. [58] analyse the case of Ria de Aveiro in Portugal to discuss the potential of four more or less IWRM-compatible governance models, using the requirement of institutional reforms, the requirement of new practices, comprehensiveness, adaptability, focus and degree of collaboration as benchmarks.

Turning now to the remaining Special issue contributions set in a context outside Europe, the work presented by van der Voorn and Quist [68] links well to our previous discussion of IWRM policy transfer processes and their causes. This paper is original in two ways: it explores water management reforms in the Lower Mississippi River in the 19th century, showcasing the value of historical analysis for contemporary debates. On the other hand, the authors use the literature on socio-technical transitions to understand their case, a highly cited theoretical framework in transition management and the like, but somewhat neglected by the water policy transfer community. Likewise, the contribution of Leong and Mukhtarov [69] has a strong theoretical focus. The authors link more recent conceptual work on policy translation and policy analysis to understand IWRM in a Cambodian context. The authors find that, in particular, myths and stories can be important drivers with regards to mobilisation and policy making. Finally, Jensen and Nair [70] compare the cases of Singapore and Hong Kong with regards to the capacity of their integrated urban water management regimes to achieve water security in their jurisdictions.

5. Outlook and Avenues for Future Research

The contributions to this Special Issue have analysed the causes, processes and outcomes of IWRM policy transfer, and in doing so they have used a range of approaches, methodologies and perspectives. This final section will conclude by reflecting upon a few of the themes raised by these contributions

with the aim of proving suggestions for a research agenda to guide future scholarship. Our discussion is organised around four major themes: concepts, theory, causality, and methodology.

First, we encourage further conceptual work on IWRM and, more specifically, IWRM ideal types. Let us explain: the articles here have, in line with previous scholarship on the topic (see Fritsch and Benson [60] and other works in that special issue of the *International Journal of Water Governance*), stressed the diversity of IWRM implementation patterns. Pellegrini et al. [55], for example, examine the various embodiments of public participation and river basin management in seven European countries; for Leong and Mukhtarov [69], the juxtaposition of top-down, technocratic approaches and bottom-up, society-centred perspectives constitutes the point of departure of their research. We suggest systematising this line of thinking. IWRM is typically presented as consisting of principles such as participation, science-policy interfaces, management at hydrological scales, and the like. These principles are not uniform; they can come in various guises. One could say that these principles are variables that may take on different values. However, there is little research exploring whether some combinations of values are more likely to occur than others, i.e., whether the empirical reality out there is characterised by the presence of, say, three, five or seven ideal types of IWRM. We believe that such conceptual work will assist in going beyond plausible, but in their ambition somewhat limited, insights according to which IWRM implementation patterns are colourful and diverse. Instead, it may inspire empirical work examining under which ecological, political or societal conditions IWRM is likely to take on a specific shape.

Second, we suggest broadening our theoretical lenses when studying IWRM policy transfer. Contributions to this Special Issue provided exciting examples: van der Voorn and Quist [68] brought the widely cited, but within the IWRM community somewhat underutilised, scholarship on socio-technical transitions into play. Leong and Mukhtarov [69] link the literature on policy translation to narrative analysis. Fritsch [53] employs organisational theories to study the transfer of IWRM principles. In our mind, the IWRM literature is, at times, either under-theorised or operates within theoretical and disciplinary silos. Enhanced dialogue with related scholarly communities will be beneficial. This includes the literature on policy implementation (in Europe: Europeanisation), international relations scholarship including concepts such as norm transfer (in Europe: EU conditionality studies), social-constructivist and discursive-institutionalist work, and many others.

Third, research published in this Special Issue confirms that several mechanisms may simultaneously be at work during the transfer of IWRM principles [53,56]. In the hope to improve our understanding of causality here, we propose further studies into the interplay of mechanisms. Specifically, the question arises how mechanisms interact, whether they compete or reinforce each other, and what the implications are for transfer outcomes. Globally, a number of organisations engage in promoting IWRM principles, including the EU, the Global Water Partnership, the Organisation for Economic Co-operation and Development, the UN, and the World Bank. However, they utilise different mechanisms to do so, and studies exploring the interplay of these mechanisms in an IWRM context are still in great demand.

Finally, this Special Issue points to challenging methodological questions. Many studies of IWRM policy transfer take a methodological top-down approach: IWRM, or one of its components, is the idea, and authors then trace the pathway that this idea has taken from sender to recipient in order to establish causality. However, some works in this volume suggest that such a research design may result in premature conclusions. Fritsch [53] and Schröder [56], for example, observe the application of IWRM principles in their case study countries, but deny a major causal role of the WFD, the piece of legislation promoting such principles in the EU. Instead, they observe an internal learning process leading to the adoption and institutionalisation of IWRM principles. Plausibly, there is not necessarily a causal link between actor A demanding X and actor B doing X. It may well be that actor B had intrinsic reasons to do X anyway or that actor C demanded X as well—and that it was actor C rather than A who influenced B. In order to detect such a pattern, one would need to study the whole range of potential influences, and this calls for a research design following a bottom-up perspective [71] (p. 37).

In order to avoid conceptualising IWRM transfer agents as ‘a cause in search of an effect’ [72], students of IWRM policy transfer are therefore well advised to start and finish the analysis at the domestic level and treat specific globally operating actors as one of many potential sources. Decision makers are, after all, subject to a number of potential domestic, European, and international influences.

Whichever direction future studies will take, there are good reason to look forward to another wave of exciting scholarship on the international transfer of IWRM principles, particularly as this governance ‘paradigm’ assumes greater global significance for policy makers due to the UN’s SDG agenda.

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