



The political context of change in transboundary freshwater agreements

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ABSTRACT

While academics have argued that most interactions between states over shared water resources demonstrate a tendency for cooperation rather than conflict, they have also identified treaties and agreements as the best examples of continued cooperation. However, treaties and agreements may also be a cause for conflict, especially when they are deemed to be unfair and unjust. Moreover, increasing burdens from climate change such as changing climate patterns and higher variability in precipitation combined with changing water demand from population growth and economic development generate a pressure to reform existing treaties and agreements. This article, adopting initial steps of comparative historical analysis, investigates the role of the political context in driving amendments and replacements in transboundary freshwater agreements.

1. Introduction

Most freshwater resource systems cross jurisdictional borders with 263 transboundary lakes or rivers and 300 transboundary aquifers worldwide. 145 countries have territory in transboundary basins, and 30 more lie entirely within a transboundary basin (UNECE/UNESCO 2015). The shared nature of these resources leads to tension over water allocation, water quality, and hydropower. Resolving these issues sees riparian countries enter into freshwater agreements outlining the management of such resources. However, even though, since 1948, 295 agreements over transboundary water have been signed (UNECE/UNESCO 2015), in 2020 only 24 countries reported that all their transboundary basins were covered by an agreement (UN-Water 2021). Moreover, having an agreement is not sufficient to ensure cooperation and decrease conflict; an agreement could be unfair, not implemented, or not comprehensive (Zeitoun and Mirumachi, 2008). In these cases, successful cooperation would therefore benefit from amendments and improvements in the design of such agreements. For the purpose of this article, we understand “transboundary water” as freshwater resources in the form of rivers or lakes that are shared by at least two countries. This differs from “international water” as we understand this as seawater beyond the territorial sea of any country.

Current research is starting to analyse why treaties change, focusing on the design of a treaty and the number of players involved as two

potential reasons for change (De Bruyne et al., 2020). However, this research has overlooked the role of political context when considering why and how transboundary freshwater agreements change, as well as how they adapt to new environmental and social conditions. Academically, this article contributes to the literature of water politics by exploring the reasons and dynamics behind transboundary freshwater agreement changes, moving past treaty design and exploring the plausible role of political context. This paper looks at changes to transboundary freshwater agreements, wherein changes refer to amendments or replacements to existing treaties, and asks what role, if any, political context may play in influencing these changes. It is important to note that treaty change may in itself influence political context, however for the purpose of this paper we are interested in political context which causes treaty change.

This paper first discusses the current debates in the literature on this topic. Second, it explains the methodology underpinning this project. Third, it establishes a conceptual framework to analyse the data collected. Finally, it discusses the findings and future research directions opened by this work.

2. Cooperation, change, and political context

Dinar et al. (2019) find that there is limited support for the idea that singular transboundary treaties increase cooperation and decrease

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tensions between riparian states. However, they find that when there is a series of successive treaties between a set of countries these treaties succeed in significantly increasing cooperation. These findings may be interpreted as showing that renegotiated and successive treaties are able to address problems present in earlier treaties. Thus, discovering the reasons why treaties are amended and/or renegotiated is important. Currently the literature has explored two factors promoting and influencing such changes – the number of players involved in a treaty and the design of a treaty.

The number of riparian states in a basin may play a role in whether treaties change or not although the direction of such an impact is ambiguous. On the one hand, the more riparian states in a basin, the lower the cost of a joint operation. On the other hand, higher transaction costs of negotiating a multilateral treaty means that multilateral trans-boundary water treaties are rare. More interests have to be considered and thus negotiation becomes more challenging. Giordano et al. (2014) found that only 13% of the world's multilateral basins have treaties involving all riparian states while Dinar et al. (2019) discovered that the high transaction cost of negotiating a basin-wide treaty leads to a decrease in the number of issues included in the treaty. In light of this, some scholars have explored reducing the transaction costs of basin-wide negotiations through a higher degree of institutionalization, such as a river basin organization (Martin, 1992; Verdier, 2008).

The design of a treaty can also impact its potential to change or be renegotiated, a factor that De Bruyne et al. (2020) gives significant weight to. Research has found that treaties that include conflict resolution mechanisms, often in tandem with bilateral treaties, tend to be more stable and enduring while the absence of conflict resolution mechanisms is associated with gradual change. Simultaneously, abrupt change was found to be triggered by the inclusion of a duration clause. However, treaties may be renegotiated for reasons outside of their structure. As treaties are political agreements between states, the political context seems important to understand why treaties are amended or renegotiated.

2.1. Political contexts

We claim that the political context around treaty amendments affects the nature of the changes to such agreements and must therefore be systematically investigated in future scholarly work.

2.1.1. Defining politics and contexts

Elementarily, politics involves “a struggle over scarce resources, and power is the means through which this struggle is conducted” (Heywood 2002). Heywood's broad conceptualization of politics, which centres around the “activities through which people make, preserve and amend the general rules under which they live”, points to under-explored link between general politics and agreements relating to water resources. In emphasizing the role of politics in creating, maintaining, and transforming the set of rules and institutions that govern society, this definition of politics is our motivational starting point. We begin by considering how political context and its effect on those who hold power (in Heywood's framework, this includes elected officials and political parties, as well as actions of citizens and social groups in influencing political decision making) is important in shaping freshwater treaties. Below, we discuss influential theorizations on what broadly constructs the “political,” and outline the extent to which we draw on them in our conceptualization of political context.

First, we consider the arguments presented by Hay (2007), who characterizes politics as a “struggle for power and resources within and between societies, social groups and individuals,” and Lasswell's (1936) enumeration of politics as “who gets what, when, and how.” Hay's (2007) work aids our goal of systemizing political contexts' influence on treaty amendments by bringing into focus the complex nature of the in which economic, social, political, and cultural power can be exercised or contested by involved actors during (re)negotiations. Critically, we

incorporate insights on how structural balance of power shifts over time can come into play as actors negotiate and revise treaty provisions in competing for “scarce” freshwater resources. Though a struggle for power and resources does underpin political decisions, we depart from Hay's account by considering in equal measure the struggle over resources by cooperation and compromise.

This leads to our second theoretical consideration: Lasswell's (1936) theorization of the distribution of values and resources that are at stake in negotiations, which is related to the idea that politics is “the authoritative allocation of values,” such as resources, benefits, and obligations (Bryson 2003). By examining the extant distribution of values and underlying stakes facing involved actors, we can understand the incentives for the “when, and how” of amendments, i.e., extent to which actors expend effort to influence allocation, and consequently, how their efforts shape any renegotiation and revision, which is the “who gets what.”

Alternatively, Mouffe's (2005) agonistic perspective (2005) defines politics as “the struggle for the constitution of the political.” According to Mouffe, politics is not just about making and enforcing rules, but also about creating a space for groups to engage in debates and negotiations over their conflicting interests and values. The emphasis here is on the ways in which political identities and subjectivities are constructed through contestation and conflict. In the context of treaty changes, this definition could address the construction and mobilization of political identities around freshwater resource sharing. We can then trace how, for instance, pressures generated by mobilized identities can further shape the odds of renegotiation and revision of provisions.

Similarly, Leftwich (2004) comments on the “contested processes through which collective decisions are made and implemented.” Actors may use a variety of strategies to gain power and influence over decision-making processes, including lobbying, media campaigns, and building coalitions with other actors. The strength of these perspectives lies in their emphasis on the process of decision-making, and on the factors that shape those processes, rather than how the decision itself came to be. However, we restrict our attention away from a key focal point in these schools of thought: their emphasis on the *creation* and *dissemination* of norms and values that shape social behaviour. This is because are interested in the *effects* of such constructed pressures on the stakes and structural positions of involved actors, and not the *causes* that went into their making.

We restrict our scope for political context to events and social or physical conditions at the structural level that are explicitly orchestrated by or acted upon by *political* agents, such as civil society members, governments, and international non-governmental organizations. This allows us to differentiate between events that are political, versus those that only have the potential to be political. For example, imagine a scenario in which state A suffers from agricultural power shortages which can be eased by increasing hydroelectric production from a shared river basin. Here, the developmental pressure itself is not considered political. However, in the event of protests by farmers causing pressure on state A's government to pursue increased hydroelectric production via treaty amendments, we consider the electric shortage and associated public pressure to be an example of political context.

Freshwater treaties are signed, amended, and replaced within the context of politics surrounding involved parties. However, the question remains, whether political context *always* weighs heavily on the amendment or replacement of treaties, and when so, what kinds of political context are relevant to treaty change. We have identified the following categories of political contexts relevant to treaty change, which are explained in this section. These categories were developed through the review of the political contexts surrounding treaty changes, both in and out of the bounds of freshwater treaties.

2.1.2. Interstate politics, power asymmetry and geopolitical conflict

The first category of politics concerning treaty change are

interactions between states with regards to power and conflict. The balance of power between riparian countries plays a significant role in their management of their shared water resources. There are several definitions for the concept of power in political theory literature. In the context of transboundary freshwater systems, power can be seen through the lens of hydro-hegemony which refers to control or dominance over transboundary water. This concept developed within the critical hydropolitics literature, which emphasise the importance of considering power – especially power asymmetries – among riparian countries to understand how water resources are allocated amongst riparian countries (Zeitoun and Mirumachi, 2008; Daoudy, 2009; Dinar, 2009; Cascao and Zeitoun, 2010; Zeitoun, Mirumachi and Warner, 2011). This framework goes beyond considering merely the riparian position of the country – upstream, midstream, or downstream – but also considers the exploitation capacity of the different riparian countries, as well as their power (Zeitoun and Warner, 2006). With power, Zeitoun and Warner (2006) adopt Lukes' frame of three dimensions of power, and analyse therefore military/economic power (the hard power), bargaining power (soft power), and discursive power (soft power). They argue that by considering power, we can explain why downstream countries can be able to use most water resources within a basin, as in the case of Egypt on the Nile (before the current changes in power relations between Egypt and Ethiopia), or as in the case of Israel on the Jordan River. Menga : 411) (2016) attempts to reconceptualise hydro-hegemony defining it as: “the success of a basin riparian in imposing a discourse, preserving its interests and impeding changes to a convenient status-quo.” Power asymmetry through the existence of a hydro-hegemon may create or block opportunities for the change of treaties depending on the motivations of the hegemon (Menga, 2016). Consequently, a shift in power can lead to an alteration of a past treaty as a country that now has the upper hand may push for something previously unattainable or a country that finds they have lost power finally concedes to the conditions of another. For the scope of this article, hydro-hegemony helps in understanding why agreements may be amended or change: this would be due to a change in power relations between countries, which would allow for a reallocation of water amongst the parties.

2.1.3. Domestic politics and pressures, regime change, and agreements

However, treaty renegotiation or amendment can also be triggered by a change in the domestic politics or regime of a state (Milner and Rosendorff, 1997). Buisseret and Bernhardt (2018) conclude that negotiations both before and after domestic elections are impacted by the election's potential or subsequent outcomes. At the same time negotiations may also influence elections. Outside the realm of freshwater treaty negotiations, recent examples of electoral motivations for change come from the UK and the US (Buisseret and Bernhardt, 2018). In 2015, the UK's conservative government made Brexit a core election issue and their subsequent electoral success mandated steps to remove the UK from the European Union ((Hobolt, 2016; Bulmer and Quaglia, 2018; Williams, 2018). In Donald Trump's campaign for the 2016 US election, he promised to change the American position in multiple international agreements, in particular, the renegotiation of the North American Free Trade Agreement (NAFTA), as well as removing the US from the Paris Climate Accord. Both of these were acted upon during his tenure (Buisseret and Bernhardt, 2018; Flores-Macías and Sánchez-Talanquer, 2019). Within the realm of freshwater treaties, Sudan's first independent government in 1956 was no longer pro-Egypt, and the Sudanese government was resistant to Nile unity and building the High Aswan Dam. Prime Minister Abdullah Khalil orchestrated a coup against his own government, and the 1959 Nile Waters Agreement was signed between Sudan and Egypt (Abdalla, 1971). Similarly, changes in domestic politics or regimes may also lead to other amendments or renegotiations of transboundary freshwater treaties (Hussein and Grandi 2017; Hussein and Grandi, 2015).

2.1.4. State succession, demarcation, and decolonization

A third context for the renegotiation or amendment of a treaty is a new state or a change in borders. When a former colony or protectorate becomes independent, all of the treaties signed on behalf of the state by their previous ruler are usually reconsidered by the new leadership (O'Connell, 1967; Craven, 2007). The Vienna Convention on the Succession of States in Respect of Treaties (1978, art. 16) ruled that a newly independent state is not “bound to maintain in force, or to become a party to, any treaty by reason only of the fact that at the date of the succession of States the treaty was in force.” Moreover, the legal doctrine of *rebus sic stantibus* outlines that where a fundamental change of circumstances has occurred, a party may withdraw from or terminate the treaty (Ferede and Abebe, 2014). One example of this in freshwater treaties can be seen on the Zambezi river, where the 1963 agreement between Northern Rhodesia (Zambia) and Southern Rhodesia (Zimbabwe), two British colonies, was replaced by the 1987 agreement when the countries were independent and no longer run by white settlers (Phiri, 2006).

These three categories of political context show why treaties may be renegotiated or amended. While there are overlaps between the categories, they are distinct and allow further insight to treaty succession, which will be applied to freshwater treaties in this paper.

3. Methodology and conceptual framework

In this section, we outline the research methods adopted in this article. We first explain what we consider political context, and how we categorize different instances of this broad concept.

At a rudimentary level, all political events within and between riparian states could be counted as political context; it is especially difficult to ascertain which ones are of *causal* relevance to treaty amendments. This exploratory article makes preliminary contributions to this by using qualitative evidence on if and how political context affects treaty changes. We follow guidelines around theory development rooted in grounded theory research. In essence, we employ inductive analysis of systematically gathered freshwater treaty amendments to create our conceptual framework (see Charmaz, 2006; Strauss and Corbin, 1998). We conceptualize political context as comprising three broad dimensions as follows:

1. **State succession and demarcation:** This type of political change directly impacts governance, both domestically and on the international front. When new countries are created or gain independence the number of riparian states with vested interests fluctuates. In addition, the new governments of these countries may have differing feelings about transboundary water governance to their predecessors. We therefore hypothesize a higher likelihood of amendment; for instance, an amendment that adds new signatories, or one that re-negotiates terms because of bargaining involving an updated set of involved countries.
2. **Interstate politics:** Evolving interstate relations between sovereign entities that are pre-existing treaty signatories are expected to have effects on treaty amendments in two ways. First, when relations improve relative to previous time periods, we expect cooperative amendments or ones that build on existing treaties. Second, when relations deteriorate, we expect two channels: either amendments that clearly demarcate transboundary resource management to alleviate conflict; or potential withdrawals and replacements to reflect the state of international relations. Expectations are mediated by preexisting as well as shifting power relations between riparian countries in terms of ‘relative control’ over freshwater resources.
3. **Domestic politics and pressures:** Certain kinds of domestic politics within sovereign signatories, for example resource nationalism, impact the approach governments are expected to take when negotiating transboundary resources. Similarly, domestic conflict may impose constraints and demands on the way national governments

deal with international politics. It is also possible that sub-state actors can pressure national governments in ways that then influence treaty change. The direction of this effect is ambiguous, depending on the context, it may either lower the likelihood of amendment/replacement or make it more likely.

While we enumerate these dimensions separately, we emphasise that these are not necessarily isolated from one another, and it is often the case that there are multiple, interacting dimensions of political context that are salient to treaty amendments. For example, it can be argued that two dimensions of Interstate politics and State succession and demarcation, are not mutually exclusive. If this is the case, even with our goal of presenting a loosely structured framework to better understand changes to treaties, such “non-exclusivity” departs from best practices in qualitative analysis. However, we contend that State succession and demarcation merits its own dimension on two accounts, even though it is easy to construe how domestic and international pressures overlap with this dimension.

First, the nature of succession or demarcation of new countries is unique in that it is a shock event that creates *new* sovereign entities, each with vastly (if not completely) *new* considerations of their interests over resources and power. Importantly, such considerations for post-event sovereign actors are likely to be *discontinuously* different from previous domestic or interstate factors at play, as compared to that of pre-event sovereign actors. This ties into our second justification for considering it a separate dimension: in defining Interstate politics and Domestic politics and pressures, we require continuity in terms of invested sovereign actors (signatories). This allays concerns over conceptual weakness stemming from non-exclusivity.

Thus, in noting that our dimensions are not strictly compartmentalized, we imply that whereas we identify a key dimension, we also make note of secondary dimensions. This simply reflects the nature of all politics: it is rarely the case that events occur in isolation from each other. This additionally implies that dimensions and outcomes can influence each other: therefore, we also note the non-monocausal direction of these interactions. The interplay is captured in Fig. 1 where political context is composed of the three separate dimensions within the circle, all of which can be inter-linked (indicated through dashed lines). In the subsequent section highlighting cases with relevant political context, although we primarily ‘classify’ the amendment into one dimension, we also make note of any other conceptual dimension that is applicable.

We relied on two sources for a comprehensive list of freshwater treaties: (1) International Freshwater Treaties Database maintained by the Program in Water Conflict Management and Transformation at Oregon State University (hereafter, Treaties Database), and (2) List of treaties that changed by amendment or replacement in De Bruyne et al.

(2020), excluding brackish waterbodies. We then systematically evaluated each amendment to the treaties listed in the latter source and cross-referenced them with the Treaties Database to determine changes in areas of focus between original treaties and amended versions. Our list of amended treaties was compiled from these sources between April and August 2021. Finally, we conducted secondary source research to understand important political events in ten years immediately preceding and following the amendments, ultimately exploring linkages.

and determining whether amendments were observed as a direct or indirect consequence of such events. This allowed us to code, in the first instance, all treaty amendments into ones affected by political context – using narrow contextual buckets – and those that were not, and subsequently further code those affected by political context into the dimensions outlined previously. The secondary examination of events, narrow contextual classifications, and final broader coding into dimensions was done between August and December 2021. All coding was manually implemented individually by the team of authors, which brought diverse positionality in terms of research training, gender, race, age. Additionally, individual classifications were cross-checked for validation, to further minimize bias that may arise from manual coding. Our approach thus follows constant comparative analysis within a grounded theory research design (Charmaz, 2006). Fig. 2.

In its current state, the article adopts initial steps of comparative historical analysis (similar in nature to Capoccia and Ziblatt, 2010). A natural hurdle in this process is tracing the causal chain linking contextual events to amendments. Yet, this method is most suitable for the question at hand for two reasons. First, extant literature has not focused on the role of political context in water treaty amendments. We thus make exploratory contributions by defining various kinds of context and how they may have an impact. Second, we seek to show instances where context comes into play and where it does not. The goal is to demonstrate that there is sufficient cause to take this line of work deeper in future work, perhaps within the sub-categories of politics outlined above.

In some instances, the plausible relationship between political context and changes to treaties is clear, whereas in others, there is a more indirect relationship that is hypothesized. We also find – as shown in Annex 1 – cases where no political context appeared relevant, thus counteracting our theory. With these considerations in mind, rather than relying on robust causal inference research designs, we present exploratory findings.

4. The political contexts of transboundary freshwater treaties

In this section, we present examples of a correlation between political context and subsequent treaty amendment. These examples represent the treaties reviewed in the database that were determined to have

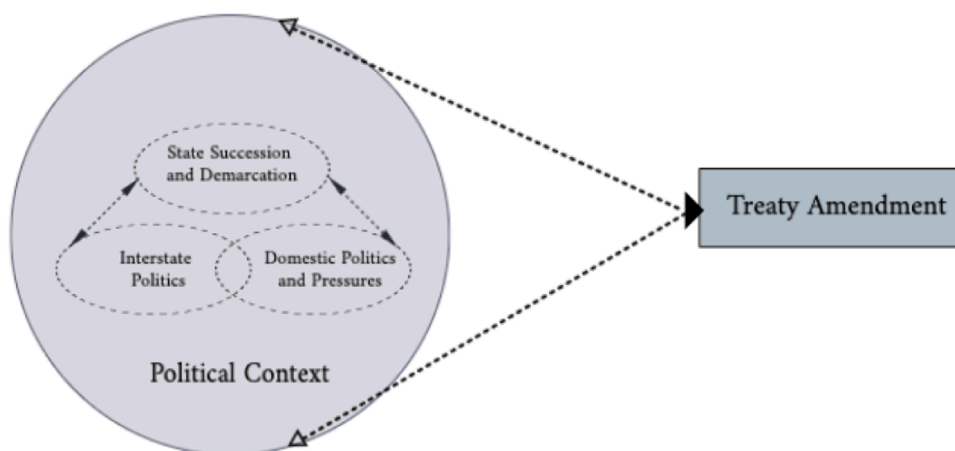


Fig. 1. From Context to Amendment.

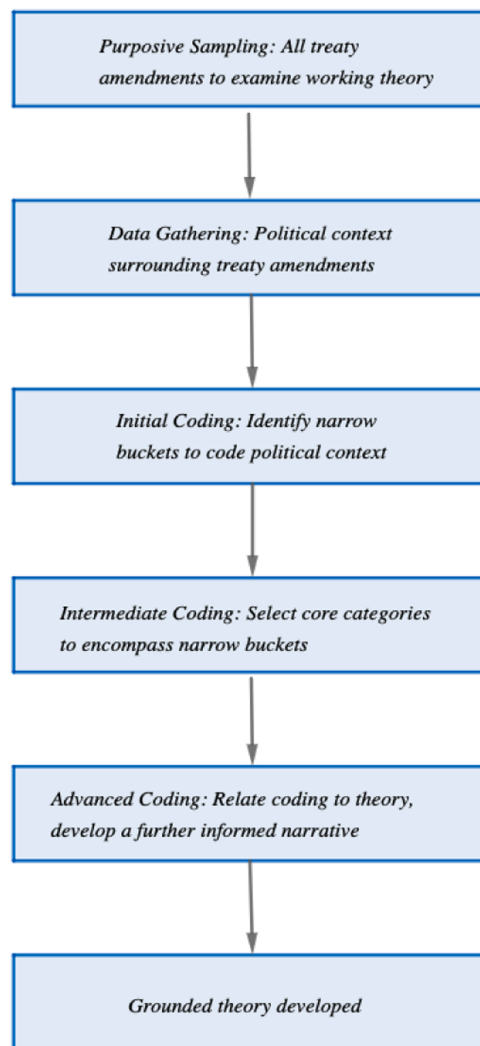


Fig. 2. Research Process.

some relevant political context to their renegotiation or amendment. For each treaty, we have given a broad overview of the events that we have concluded or hypothesized to have led to treaty change. In many cases, this is as much detail as was available about the historical context of the treaty. Treaties not presented in this list of examples either did not appear to have political context influencing their change, or there was not enough information to make a hypothesis or draw a conclusion. The treaties are presented in our three separate dimensions that make up our conceptualization of political context: (1) state succession and demarcation, (2) interstate politics, and (3) domestic politics and pressures. In each case, we have chosen to best categorize the treaty based on the event which has most relevance to the change of the treaty though the treaties may have relevant events which fall in other categories. Each of these dimensions may be of standalone importance or may affect treaty amendments interactively with another dimension – wherever this is the case we make note of the secondary dimension. All treaties and amendments referred to are detailed (by basin) in Annex 1. The relevance of the political context in these treaties shows the importance of considering political context in treaty change.

4.1. State succession and demarcation

4.1.1. The Aral Sea

The Aral Sea is a large freshwater sea in Central Asia which borders Uzbekistan and Kazakhstan and has been shrinking since the 1960s due

to diversion. The two countries signed a treaty on the sea in 1992 however this was amended just a year later. The 1993 amendment on the Joint Management and Utilization of the Aral Sea region built upon the 1992 treaty, emphasising the need to improve the environment and ensure the social and economic development of the region. The political context of this amendment was the dissolution of the Soviet Union and the subsequent inheritance of the socioeconomic and ecological crisis in the Aral Sea region by the newly independent states of Central Asia.

4.1.2. The Meuse River

Before draining into the North Sea, the Meuse River flows through France, Belgium, and the Netherlands. A treaty governing the river was signed between the Netherlands and Belgium in 1961 (*Exchange of Notes*, 1961) however the later modification of borders and the new demarcation prompted a desire for amendment. The river had been rectified for navigation purposes and this had inadvertently left some Dutch land on the Belgian side of the river and some Belgian land on the Dutch side of the river. The alienation of these regions saw them deteriorate into lawless areas where illegal parties and activities were conducted. A desire to rectify these sections of land was the political context that prompted the amendment of the 1961 treaty. In 2016, the two countries signed an amendment to exchange land on either side of the river and this was ratified in 2018.

4.1.3. The Zambezi River

The Zambezi River is a 3540 km river flowing through the states of Angola, Zambia, Namibia, Botswana, Zimbabwe, and Mozambique. At the start of the twentieth century these states were all colonial states governed by the British. However, during the latter half of the century these states one by one gained independence and with this was a shift in power from white British settlers to Indigenous people. This shift to individual and particular governance by each state, rather than all being run by the British, in turn affected relations between themselves. In 1963, an agreement was signed between the governments of Northern Rhodesia (Zambia) and Southern Rhodesia (Zimbabwe), both countries that were significantly controlled by white British settlers. (Mlambo, 2014; Phiri, 2006). In 1987, this agreement was replaced. The political context of this replacement is closely tied to the fact that both Zambia and Zimbabwe were no longer ruled by white settlers (Phiri, 2006) and with their new founded freedom wished to renegotiate this treaty on their own terms. Similarly, in 1969, an agreement on the Zambezi River was signed between Portugal and South Africa which was then replaced by the 1984 Agreement between the governments of Portugal, Mozambique and South Africa. This replacement was prompted by the fundamentally different environment of Southern Africa in 1984 following Mozambique's independence from Portugal in 1975. The 1984 agreement thus included Mozambique in its signatories, however it still retained Portugal, showing significant post-colonial control and influence.

The amended and renegotiated treaties governing the Zambezi river, the Meuse river, and the Aral sea show that border change and decolonization can have an impact on if freshwater treaties are changed. In the case of the Zambezi river and the Aral sea, post-colonial governments faced changes of context and power that required changes in the management, and thus the treaties, of freshwater treaties. In the case of the Meuse river, improvements in navigation for the river created border problems, and borders were thus adjusted, requiring the change of the treaties. Border change was also relevant in the case of the Aral sea, as after the break-up of the Soviet Union, borders existed where there had been none before. These examples show that this category of political context can be highly relevant for freshwater treaties.

4.2. Interstate politics

4.2.1. The Komati (Incomati) River

4.2.1.1. (*Secondary dimension: state succession and demarcation*). The Komati River flows through South Africa, Swaziland, and Mozambique. The first agreement over the Komati River was signed in 1964 between Portugal (representing Mozambique) and South Africa. The political context behind the following amendments and replacements of this treaty was estranged relations between riparian countries. At the time of the treaty, Swaziland, still under the control of the UK, acceded to part 1 of the agreement. However, new political ideologies of these countries, following Swaziland's independence in 1967 and Mozambique's independence in 1975, meant South Africa, Swaziland, and Mozambique were unable to come to an agreement until a tripartite meeting in 1982 (Slinger et al., 2010). This meeting resulted in the signing of a tripartite agreement in 1983 which built on and amended the original treaty. Swaziland was heavily influenced by capitalist South African political economy (Daniel and Vilane, 1986) but also bordered and relied on socialist Mozambique (Bischoff, 1986). During apartheid, political relations between South Africa and Mozambique hindered an agreement between the countries. However, following heavy domestic and international pressure on South Africa which caused the dismantling of apartheid in the early 1990s, the three countries entered a new period of improving relations between 1991 and 2002. These improved relations led to the 2002 Tripartite Interim Agreement between the Republic of Mozambique, the Republic of South Africa and the Kingdom of Swaziland for Co-Operation on the Protection and Sustainable Utilisation of the Water Resources of the Incomati and Maputo Watercourses (Slinger et al., 2010). It may be possible that the amendment was also influenced by power imbalances, as South Africa heavily influences the economy and politics of Swaziland (Domson-Lindsay, 2014).

4.2.2. The Kosi River

4.2.2.1. (*Secondary dimension: domestic politics and pressures*). The Kosi River originates in Tibet and flows through Nepal and India before joining the Ganges River. The political context of relevance is international tensions caused by domestic problems that emerged after the initial agreement. The original agreement over the Kosi River was a hydropower project agreement signed in 1954 between the Government of Nepal and the Government of India (referred to as the Union) for the construction of a barrage and the associated infrastructure. The Indian government wanted to construct the barrage in Nepal for flood control, irrigation, erosion control, and hydropower generation. However, the Nepalese people, whose land would be submerged and who would receive no compensation under the existing agreement, were understandably not so keen. Additionally, the Nepalese people thought the benefits of the barrage skewed towards the Indian side. Following this opposition by Nepal, and the ensuing tension between the two countries (Rai et al., 2019), the agreement was updated in 1966 after a Nepalese government request. India, as the regional hegemon and significant power over Nepal, could have disregarded Nepal's concerns. However, the text of the amended treaty reads: "and the Union, with a view of maintaining friendship and good relations subsisting between Nepal and India, has agreed to the revision of Agreement," explicitly stating at least a partial motivation arising from international dynamics and the Nepalese peoples' wishes. Thus, the amendment evolved from the need to resolve the political problems and tensions ensuing from the initial treaty.

4.2.3. The (Lower) mekong

The Mekong River originates in the Tibetan Plateau before flowing through Myanmar, Laos, Thailand, Cambodia, and Vietnam. The original treaty over the lower Mekong was signed by Laos, Cambodia,

Thailand, and Vietnam in 1957 to establish the Committee for Coordination of Investigations of the Lower Mekong Basin. Cambodia supported the agreement in order to demonstrate non-alignment with the US while Thailand was motivated by its desire for closer relations with Laos and Cambodia which it hoped would help prevent the rise of communist regimes (Ratner, 2003). This Committee was sponsored by the United Nations office in Bangkok as well as the Economic Commission for Asia and the Far East, known today as ESCAP (Jacobs, 1995). In addition, the US became the largest non-basin state donor to the Committee as a result of its desire to oppose communism in the region. However, the early 1970s brought regional political tensions and instability, with Pathet Lao taking over Laos in 1970 and the Sihanouk regime in Cambodia being ousted. This was all on top of the Vietnam war which had begun in 1955 and continued until 1975. These political events caused member states to struggle to fund the Committee and subsequently Cambodia became unable to participate in it. Without Cambodia's participation, the Committee was legally unable to proceed with development and so came to a grinding stop. In light of this political context, representatives from the remaining countries met and signed the 1978 Declaration Concerning the Interim Committee for Coordination of Investigation of the Lower Mekong, amending the 1957 treaty (Jacobs, 1995). In 1995, following the improved political situation of the region, the return of Cambodia to Mekong activities, and the improvement of relations between Vietnam and the US, the Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin was signed. This agreement created the Mekong River Commission which replaced the original treaty (Ratner, 2003).

4.2.4. The Rhine River

The Rhine River flows through Switzerland, Lichtenstein, Austria, Germany, France, and the Netherlands. The political context of the relevant agreement was the expansion of the European Economic Community (EEC). The original 1963 agreement over the river was signed to prevent the further pollution of the Rhine River as well as to improve its water quality. This was then amended in 1976 to add the EEC as a signatory to the treaty. At this time, the EEC was growing its membership and increasing the powers of its parliament (Amato et al., 2019) as well as developing its first policy on the environment and developing laws about pollution (Amato et al., 2019). It is likely that the EEC's growing power and its investment in environmental protection prompted it to join as a signatory to the treaty and thus invoke the amendment of the treaty.

4.2.5. The Sauer/our River

The Sauer River flows through Belgium, Luxembourg, and Germany, and is fed into by the Our river, a 78 km long left-hand tributary. The original treaty for the Luxembourg-Germany power plant on the Sauer River was signed in 1950, five years after the end of World War II. This treaty called for the construction of a hydropower plant in Luxembourg with the resulting power being shared between the two countries. The treaty was amended eight years later in 1958, moving the works onto the Our River, allowing for more storage, and updating how the power would be shared. This treaty allocated more energy to Germany. The political context of this amendment is likely related to changes in Germany's demands for power due to international considerations about West Germany's heavy industry. In 1950, when the treaty was initially signed, West Germany was under Western occupation and its heavy industries were being dismantled. In 1955, the military occupation of West Germany ended, and it joined NATO following the US, the UK, and France realising the value of West Germany's heavy industry as an ally in the Cold War. This independence saw Germany rapidly begin to develop its industry and economy (Herbert and Fowkes, 2019). The decision by the US, UK, and France to reverse course and encourage the development of West German heavy industry raised the demand for power in West Germany, likely prompting the amendment of the treaty to ensure Germany received energy from the project.

4.2.6. The Senegal River

The Senegal River flows through Mali, Mauritania, and Senegal as well as having tributaries in Guinea. The 1968 Convention on the river added to the original 1963 Bamako treaty (Mbengue, 2014) by creating the *Organisation des États Riverains du Sénégal* (OERS) which had expansive responsibilities. However, soon after this the region faced drought and extreme inter-annual variability which resulted in the several riparian states reconsidering the organization (Dumas et al., 2010). In 1972, following the declaration of the Senegal as an international river with commitments to cooperative resource development, the countries of the region established the *Organisation pour la Mise en Valeur du Fleuve Sénégal* (OMVS) (Vick, 2006). However, far from developing the river, OMVS's initial dams caused widespread environmental issues, social problems, and international conflicts creating a need for it to restructure. Driven by the political context of the 1997 United Nations Watercourse Convention, which laid out a framework governing international watercourses, the 2002 Water Charter updated the OMVS in line with international water law. In addition, it incorporated community involvement, sustainable development, and universalism to the OMVS. The charter functioned both as a treaty and as a governing constitution for the organization, dictating that previous agreements be interpreted in the spirit of the Charter (Mbengue, 2014). Following this, Guinea re-joined the organization (Vick, 2006). The focus on sustainable development and community engagement indirectly referenced the environmental and social damages caused by the original infrastructure from governing bodies (Vick, 2006).

4.2.7. The Tumbes River

The Tumbes River flows through Ecuador and Peru and strategic cooperation over this river is important for economic development in both countries. The Peru-Ecuador Development Puyango-Tumbes treaty, originally signed in 1971, was amended in 1982 to take into consideration such economic development interests. Both countries understood the economic benefit of joint efforts at water management and the undertaking of developmental projects. Consequently, the language of the treaty is cooperative and the preamble maintains that the two countries are “resolved to strengthen even further the ties of friendship and good-neighbourliness uniting their peoples, and to promote improvement of the social and economic conditions of those peoples” (Agreement, 1982). The amendment outlines the specifics of basin developments, urging priority of the structural implementation of projects and funding considerations. Just prior to the amendment, in 1981, Ecuador and Peru engaged in the Paquisha War, which saw military clashes over the control of three watch posts not far from the Tumbes area (Simmons, 1999). Despite this history of conflict, the two nations came together to promote strategic economic development, showing a motivation to amend the treaty for the purpose of positive interstate relations.

4.2.8. The Yarmouk river

Before joining the Jordan River, the Yarmouk River runs through Jordan, Syria, and Israel. Agreements around the river thus sit firmly within the political relationships between these three countries. As Syria and Israel have no diplomatic relations, the treaties over the Yarmouk River are all bilateral agreements between Jordan and Syria, and Jordan and Israel. The original 1953 treaty between Jordan and Syria planned the construction of a dam at Maqarin as well as other infrastructure, however the dam was never built. After the six days war in 1967, which allowed Israel to gain more control on the Yarmouk Basin by occupying the Syrian Golan Heights, Jordan and Syria amended the 1953 bilateral treaty in 1987, aiming to work together to develop the Wahda Dam and clarify the allocation of water from the Yarmouk to Syria, and collaborating to produce hydropower for Jordan (Hussein, 2017; Zeitoun et al., 2019).

The cases in this category show the relevance of interstate politics in the change of freshwater treaties. From the context of interstate conflict

on the Yarmouk River where the six day war caused Jordan and Syria to work together to manage the river, to the Komati River where improved relations between South Africa and Mozambique led to a new treaty, to the Kosi River where India, the hegemon, acquiesced to Nepal's requests in order to maintain good relations and friendship, to the Tumbes river where a desire to improve interstate relations following a conflict led to cooperation over an amendment, to the Vietnam war that impacted the power relations in the Mekong basin, and the expansion of the ECC and the European politics in the Rhine River case and the role of the 1997 UN Water Convention in the Senegal River case show the role of super-national conventions in shaping principles in agreements, these cases add depth in the context of interstate politics to the argument that political context is relevant in changing freshwater treaties.

4.3. Domestic politics and pressures

4.3.1. The Columbia River

The Columbia River rises in Canada before flowing through the Northwest US and emptying into the Pacific. Like the St. Lawrence Seaway, the Columbia River Basin treaty amendment was heavily influenced by American and Canadian domestic interests. During the late 1950's and early 1960 's, the US was working on its hydraulic infrastructure project as part of its New Deal following the Great Depression. Although, the US had already built dams on the lower Columbia, these dams did not maximise power production potential or provide full flood protection. American planners realised that what was therefore needed were upstream dams in Canadian territory which would allow for water releases to be timed for optimal power generation. Evidently, these dams could only be accomplished through trans-boundary cooperation with Canada. In Canada, British Columbia (BC) Premier W.A.C. Bennett had a goal to develop a ‘two rivers policy.’ This policy meant developing the two main BC rivers, the Columbia and the Pearce, to spur economic development in the province. The original treaty between the two countries, signed in 1961, encompassed both the US's desire for upstream dams and Bennett's plan for the two rivers. On top of this treaty, Bennett also created a government owned power entity so that he could begin economic development in the region. However, BC struggled to obtain funding for its dams and public support for the project was low as the power produced by the dams would be surplus. Thus, Bennett pushed for an amendment. The amendment ensured that the excess power produced by the dams would be sold to the US and with money from the power sales, Bennett was able to fulfil the development of his two rivers policy. The amended treaty was an opportunity for BC to begin hydroelectric power generation and development as well as to gain income from selling power. As of September 2021, the treaty is currently being discussed for amendment or replacement by the US and the BC government (Cosens 2012; Nathan, 2009; Stanley 2012).

4.3.2. The Ganges River

4.3.2.1. (*Secondary dimension: Interstate politics*). The Ganges River is a 2525 km river that flows through India and Bangladesh. Amendments to treaties about the river sit on the backdrop of a change in regime in Bangladesh. Bangladesh gained formal independence in 1972 and this facilitated an agreement between India and Bangladesh over the Ganges River and the Farakka Barrage in 1977 to regulate water distribution from the barrage. The Farakka Barrage (which was constructed in 1975 by India) diverts water from one of the most populated basins in the world to the Bhagirathi-Hoogly River system, affecting water provision in India and Bangladesh. Following the 1977 agreement, Bangladesh contended that it did not receive its fair share of water during dry seasons and claimed it flooded when India released water during the monsoons. These tensions meant that the 1977 agreement expired without being renewed in 1982. With India's position as an upstream regional hegemon and tense relations between the two countries, there

was no resolution to the water sharing issue, even with Bangladesh's lobbying in the UN and SAARC. However, in 1996, the formation of a new government in Bangladesh under Prime Minister Sheikh Hasina and her India-positive foreign policy approach, led to a thawing in bilateral relations, resulting in leaders from both nations signing a 30 year Ganges Water Sharing Treaty in 1996 (Chakma, 2012; Rahman et al., 2019; Pandey, 2012).

4.3.3. The Guadiana River

The Guadiana River forms a significant part of the Spain-Portugal border. The political context of agreements over this basin was domestic pressure due to environmental crises. The original treaty, covering several shared basins including the Guadiana River, was signed in 1968, and an addition was made in 1976 concerning hydropower relating only to the Rio Miño basin. The 1998 amendment to this treaty updated information sharing and environment protection clauses, shifting focus to hydraulic management rather than hydropower and guaranteeing flows based on reasonable equitable use principles (Martinez, 2003).

By the 1980 s after the signing of the original agreement, dozens of dams had been built both in Spain and Portugal; agricultural and industrial usage had caused pollution concerns; water abstraction for irrigation had severely reduced the flows arriving to the border; and flow regime was highly irregular (Escartin, 2003; Bukowski, 2011). Against this background, there were two main events of importance: first, the 1993 dry year crisis, which exacerbated tensions regarding upstream-downstream usage, and second, the circulation of a draft National Spanish Water Plan for public consultation. The circulated draft was badly received by the Portuguese public who consequently bore sensitivity to water-related issues with Spain, increasing pressure on the government. This pushed Portuguese opinion into leaning towards the belief that the new Spanish water planning could lead to a blocking of Portugal's own water policy (Escartin, 2003). The consequent political pressure to renegotiate for the 1998 amendment was complicated by a serious drought that had been affecting Spain for several years but which had now spread into Portugal (see Escartin, 2003). Therefore, in this case, environmental crises created the domestic pressure for a change in treaty which was then exacerbated by the drought and the Spanish Water Plan, resulting in the signing of the 1998 amendment.

4.3.4. The Nile River

4.3.4.1. (Secondary dimension: State succession and demarcation). The Nile River, one of the longest rivers in the world, flows through 11 countries before emptying into the Mediterranean Sea. The political context for Egypt and Sudan's agreements over the river was a change in the Sudanese regime. The 1959 agreement between Egypt and Sudan was a replacement of the 1929 colonial treaty that divided the Nile waters between independent Egypt and the British colony of Sudan. During this period Egypt had begun an agricultural revolution to spur development and was consequently significantly more powerful than its Sudanese neighbour. To accomplish its agricultural shift from flood to irrigated agriculture, Egypt sought to build the High Aswan Dam (Daly, 1998). However, as the reservoir behind this dam would back into Sudanese territory, Egypt needed to seek a new agreement on water allocations from the Nile. Fortunately for Egypt, by 1951, Sudan had nearly exhausted its water allocation from the 1929 agreement, and so itself needed a solution. Despite motivation on both sides, negotiations throughout the 1950 's were fruitless as Sudan drove hard bargains for its right to the river and eventually violated and rejected the 1929 agreement. Since the 1929 agreement, Sudan had gained independence in 1956 and its new government was no longer pro-Egyptian and pro-Nile unity unlike its colonial predecessors. Sudan's subsequent resistance in negotiations worsened relations between the two countries and the ensuing tension and political problems cried out for Sudan to make amends to improve relations with Egypt. Prime Minister Abdullah

Khalil, fearing he was losing influence among his own party, orchestrated a coup against his own government on November 17, 1958 (Abdalla, 1971), placing control of the country in a military government. Declaring the country to be in chaos, the new government resolved to solve all economic and political problems that the country was facing, most importantly the problem of Egypt, as obtaining the support of this powerful neighbour was necessary for Sudanese stability. The new Prime Minister General Ibrahim Abbud announced that the dam would be built and the two countries came to an agreement within a month (Abdalla, 1971).

4.3.5. The North American Great Lakes

The Great Lakes are a series of large and interconnected lakes on the US-Canada border. The political context of this freshwater body was a difference in domestic policy over climate change. The original US-Canada Great Lakes Water Quality Agreement was signed in 1972 and 1978. It was then amended in 1983 and 1987 before being completely replaced in 2012. It was largely amended in environmental contexts, but there is some degree of relevant political context. The 1983 amendment happened in the context of the deceleration of the Love Canal in New York as a federal disaster area by US President Carter, which consequently led to a renewed focus on phosphorus pollution (Fyrefield 2012). Similarly, the 1987 amendment happened amidst concerns of pollution, including from rural and urban runoff and airborne toxic pollutants. In 1986, the governors of the Great Lakes states signed a Great Lakes Toxic Substances Control Agreement, joined by provinces in additional memorandum due to multiple sources of pollution in the lake. The ninth annex in the 2012 amendment revealed the two countries' growing alignment on climate change through them jointly discussing the impacts of climate change. This amendment may have been added following years of discussions in the political US arena about climate change. In 2001, President Bush refused to join the Kyoto Protocol. This is believed to have played a part in Canada leaving the Kyoto Protocol in 2011, as if China and the US, the two biggest emitters of fossil fuels, were not a part of the protocol, it would not work. In 2008, President Obama was elected and in 2012, he was re-elected. He approached climate change in quite a different way than President Bush and his position brought him closer to Canada's in terms of climate change. It is possible that this change in domestic politics in the US led to the climate change sections in the 2012 agreement. Thus this suggests that a change in domestic politics and governance prompted an amendment to a trans-boundary treaty thus indicating the relevance of political context.

4.3.6. St. Lawrence Seaway

The St. Lawrence Seaway is a system of channels, canals, and locks that allows passage between the Atlantic Ocean and the North American Great Lakes for ocean-going ships. Starting with the initial treaty of intent in 1932 and ending with exchanged notes in the 1950' s for the order of approval for joint construction, there was a string of agreements and subsequent adjustments over the building of this seaway, all of which were significantly influenced by the domestic, political context of Canada and the US. The 1932 treaty was originally rejected for ratification by the US Senate and following attempts were opposed by Canadian interests. Similarly, the 1941 executive agreement between President Roosevelt and Prime Minister Mackenzie King failed to be ratified by the US Senate, largely as a result of the interests of the Atlantic and Gulf Coast harbours as well as the existing internal waterways and railroads. Eventually, Canada decided to advance unilaterally to construct the seaway due to a need for hydropower. This decision spurred US interest to have a share in the project, and subsequently the US Congress and President Eisenhower approved the Wiley-Dondero Seaway Act in 1954 and construction on the Seaway finally began (Kottman, 1975; McFarlane, 2014). Pressure from domestic interests in the United States along with pressure for domestic power in Canada were the political context that influenced the many amendments of agreements for the St. Lawrence Seaway.

4.3.7. Lake Victoria

Lake Victoria is one of the African Great Lakes and is bordered by Burundi, Kenya, Tanzania, Rwanda, and Uganda. The Convention Lake Victoria Fisheries Organization (LVFO) was originally signed in 1994 to govern the development of fisheries and aquaculture resources (LVFO website 2021). It was amended in 1999 and 2016. A study by Glaser et al. (2019) highlights how human displacement, due to internal civil conflict in riparian states, can lead to increased fisheries catch, which in turn can further feed conflict. This relationship between civil conflict and reported exponential growth of fishing activities seems potentially relevant in this region which has had a history of regional civil unrest (see report by SIDA 2004). This unrest could have sparked a growth in fisheries catch which in turn prompted LVFO treaty amendments to better regulate these freshwater resources (see Glaser et al., 2019). Secondly, LVFO was also amended in 2016 to include Burundi and Rwanda in addition to the original three signatories (Kenya, Tanzania, Uganda). Regional regime developments, particularly in Burundi, may have influenced this amendment. Burundi's President began his third term in 2015 following protests, violence, intimidation of judges, a failed coup, and allegations of a sham election (BBC News, 2015). By 2016, the EU suspended direct aid to Burundi and Burundi became the first country to formally leave the International Criminal Court (Reuters, 2016). These events may have incentivized Burundi to sign onto the Convention to obtain regime recognition and regional legitimacy with its neighbours.

The cases in this section show the heavy influence that either domestic pressure from residents of a country or the change of a regime can have on the amendment or replacement of freshwater treaties. In the cases of the Guadiana River, St. Lawrence seaway, and the Colombia River, domestic interests pushed governments to amend or replace treaties. In the case of the Ganges River, the Nile River, the North American Great Lakes, and Lake Victoria, a change in government regime meant that the people in power were more willing or interested in treaty change or amendment. As shown, the importance of domestic political influence on freshwater treaties is high.

5. Conclusion

Extensive research relating to freshwater treaties has considered whether they reduce the likelihood of conflict, as well as why such treaties change. Yet, this literature has so far not considered whether, how, and why, political context affects changes in freshwater agreements. In this article, we ask what the role of political context may be in influencing changes to agreements governing transboundary freshwater resources. We attempt to discern specific instances where the political context may have impacted amendments to transboundary freshwater treaties. To that end, we first explained what we consider political context, and how we categorize different instances of this concept. We then examined the specific political context in the ten years surrounding amendments to about 40 freshwater treaties (see Annex 1), ultimately collapsing cases where political context mattered into three broad dimensions, 1. State succession and demarcation, 2. International politics; and 3. Domestic politics.

State succession and demarcation appears as a relevant factor in periods of decolonization, wherein newly independent states sought to renegotiate terms. In fact, the amended and renegotiated treaties governing the Zambezi river, the Meuse river, and the Aral sea show that border change and decolonization can have an impact on if freshwater treaties are changed. In the case of the Zambezi river and the Aral sea, post-colonial governments faced changes of context and power that required changes in the management, and thus the treaties, of freshwater treaties. In the case of the Meuse river, improvements in navigation for the river created border problems, and borders were thus adjusted, requiring the change of the treaties. Border change was also relevant in the case of the Aral sea, as after the break-up of the Soviet Union, borders existed where there had been none before.

Under interstate politics, specific instances of relevant context include encouragement of heavy industry by political and military allies, direct war, and improved relations following ideological changes, among others. This emerges from the context of interstate conflict on the Komati River where improved relations between South Africa and Mozambique led to a new treaty, to the Kosi River where India, the hegemon, acquiesced to Nepal's requests in order to maintain good relations and friendship, to the Tumbes river where a desire to improve interstate relations following a conflict led to cooperation over an amendment, to the Vietnam war that impacted the power relations in the Mekong basin, and the expansion of the ECC and the European politics in the Rhine River case and the role of the 1997 UN Water Convention in the Senegal River case show the role of super-national conventions in shaping principles in agreements, these cases add depth in the context of interstate politics to the argument that political context is relevant in changing freshwater treaties.

Within the ambit of domestic politics and pressures, we identified relevant factors such as changes in domestic governments and pressure from public opinion. For instance, in the cases of the Guadiana River, St. Lawrence seaway, and the Colombia River, domestic interests pushed governments to amend or replace treaties. In the case of the Ganges River, the Nile River, the North American Great Lakes, and Lake Victoria, a change in government regime meant that the people in power were more willing or interested in treaty change or amendment.

This article contributes to the literature of hydropolitics by unpacking the concept of political context and showing how transboundary freshwater agreements and treaties change. The literature explains and identifies the drivers of agreements, emphasising the role of power (Zeitoun and Warner, 2006). While agreements cement and consolidate power relations amongst riparian countries, our article shows that changes in political context contribute to explain why change happens in such agreements. In fact, we find that political context often matters, and we unpack the concept of political context. These observations from this exploratory article present compelling reasons to pursue further related research. Our initial findings suggest that there exists sufficient variation in our outcome variable – amendment to freshwater transboundary agreements - given variation in our broad dependent variable – the role of political context. Yet, given the limitations of our research methodology, there are several lines of inquiry opened for future research. For instance, whereas we find that political context matters, we are currently unable to offer conclusive evidence for whether the reasons *differ* based on the type of political context. Moreover, while the political context matters in shaping agreements, future research could also investigate whether such amendments would improve or worsen such agreements. Consequently, we maintain that this under-researched area is one that deserves closer examination in future scholarship. Finally, future research should also investigate the "other spectrum" of our research, meaning how these very changes and amendments shape the political context.

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HH: Conceptualization, Methodology, Investigation, Writing – original draft, Supervision. **MP:** Methodology, Investigation, Writing – original draft, Visualisation. **TM:** Methodology, Investigation, Writing – original draft, Visualisation.

Declaration of Competing Interest

The authors report there are no competing interests to declare.

Data Availability

Annex 1.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at [doi:10.1016/j.envsci.2023.103572](https://doi.org/10.1016/j.envsci.2023.103572).

References

- Abdalla, I.H., 1971. The 1959 Nile waters agreement in sudanese-egyptian relations. *Middle East Stud.* 7 (3), 329–341.
- Amato, G., et al., 2019. *The History of the European Union*. London. Bloomsbury Publishing Plc, London.
- BBC News. (2015, December 22). Burundi security forces accused of violent repression. BBC News. (<https://www.bbc.co.uk/news/world-africa-35157517>).
- Bischoff, P.H., 1986. Swaziland: a small state in international relations. *Africa. Spectrum* 175–188.
- Buisseret, P., Bernhardt, D., 2018. Reelection and renegotiation: international agreements in the shadow of the polls. *Am. Political Sci. Rev.* 2018/09/10 edn 112 (4), 1016–1035.
- Bukowski, J.J., 2011. Sharing water on the Iberian Peninsula: a europeanisation approach to explaining transboundary cooperation. *Water Altern.* 4 (2).
- Bulmer, S., Quaglia, L., 2018. 'The politics and economics of Brexit'. *J. Eur. Public Policy* 25 (8), 1089–1098. <https://doi.org/10.1080/13501763.2018.1467957>.
- Capoccia, G., Ziblatt, D., 2010. "Hist. Turn. Democr. Stud.: A N. Res. Agenda Eur. Beyond" 931–968.
- Cascao, A.E., Zeitoun, M., 2010. 'Power, Hegemony and Critical Hydropolitics', in *Transboundary Water Management*, 1st edition., Routledge., Milton Park.
- Chakma, B., 2012. Bangladesh-India relations: Sheikh Hasina's India-positive policy approach. *RSIS Work. Pap. Ser. no. 252*.
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Sage.
- Craven, M., 2007. *The Decolonization of International Law: State Succession and the Law of Treaties*. Oxford University Press, Oxford.
- Daly, M.W. (ed.) (1998) *The Cambridge History of Egypt*. Cambridge: Cambridge University Press (The Cambridge History of Egypt). doi: 10.1017/CHOL9780521472111.
- Daniel, J., Vilane, J., 1986. Review of African Political Economy, 13. Political crisis, regional dilemma, Swaziland, pp. 54–67.
- Daoudy, M., 2009. Asymmetric power: negotiating water in the euphrates and tigris. *INER* 14 (2), 361–391. <https://doi.org/10.1163/157180609X432860>.
- De Bruyne, C., et al., 2020. Design and change in transboundary freshwater agreements. *Clim. Change* 321–341.
- Dinar, A., et al., 2019. Why are there so few basin-wide treaties? *Water Int.* 44 (4), 463–485. <https://doi.org/10.1080/02508060.2019.1617535>.
- Dinar, S., 2009. Power asymmetry and negotiations in international River Basins. *INER* 14 (2), 329–360. <https://doi.org/10.1163/157180609X432851>.
- Domson-Lindsay, A., 2014. South African–Swaziland relations. *South Afr. J. Int. Aff.* 21 (3), 391–411.
- Dumas, D., et al., 2010. Large dams and uncertainties: the case of the senegal river. *Soc. Nat. Resour.* 23 (11), 1108–1122.
- Escartin, C.M. (2003). *The Agreement Between Spain and Portugal for the Sustainable Development of the Shared River Basins*. IWRA.
- Ferede, W., Abebe, S., 2014. The Efficacy of Water Treaties in the Eastern Nile Basin, *Africa. Spectrum* 49 (1), 55–67.
- Flores-Macías, G.A. and Sánchez-Talanquer, M. (2019) 'The Political Economy of NAFTA/USMCA'. doi:10.1093/acrefore/9780190228637.013.1662.
- Glaser, S.M., Hendrix, C.S., Franck, B., Wedig, K., Kaufman, L., 2019. Armed conflict and fisheries in the Lake Victoria basin. *Ecol. Soc.* 24 (1).
- Herbert, U., Fowkes, B., 2019. *A history of twentieth-century Germany*. Oxford University Press (History of 20th-century Germany), New York, NY.
- Hobolt, S.B., 2016. The Brexit vote: a divided nation, a divided continent. *J. Eur. Public Policy* 23 (9), 1259–1277. <https://doi.org/10.1080/13501763.2016.1225785>.
- Hussein, H., 2017. Whose 'reality'? Discourses and hydropolitics along the Yarmouk River. *Contemp. Levant.* 2 (2), 103–115. <https://doi.org/10.1080/20581831.2017.1379493>.
- Hussein, H., Grandi, M., 2015. Contexts matter: A hydropolitical analysis of Blue Nile and Yarmouk River basins. *Social water studies in the Arab Region* 159, 159–176.
- Hussein, H., Grandi, M., 2017. Dynamic political contexts and power asymmetries: the cases of the Blue Nile and the Yarmouk Rivers. *Int. Environ. Agreem.* 17 (6), 795–814. <https://doi.org/10.1007/s10784-017-9364-y>.
- Jacobs, J.W., 1995. Mekong committee history and lessons for river basin development. *Geogr. J.* 161 (2), 135–148. <https://doi.org/10.2307/3059971>.
- Kottman, R.N. (1975) 'Herbert Hoover and the St. Lawrence Seaway Treaty of 1932', *New York History*, 56(3), pp. 314–346.
- Martin, L.L., 1992. Interests, power, and multilateralism. *Int. Organ.* 46 (4), 765–792. <https://doi.org/10.1017/S0020818300033245>.
- Martinez, J.M.S., 2003. The Spanish-Portuguese transboundary waters agreements: historic perspective. *Water Int.* 28 (3), 379–388.
- Mbengue, M.M., 2014. A model for African shared water resources. *Rev. Eur. Comp. Int. Environ. Law* 23, 59–66. <https://doi.org/10.1111/reel.12071>.
- Menga, F., 2016. Reconceptualizing hegemony: the circle of hydro-hegemony. *Water Policy* 18 (2), 401.
- Milner, H.V., Rosendorff, B.P., 1997. Democratic politics and international trade negotiations: elections and divided government as constraints on trade liberalization. *J. Confl. Resolut.* 41 (1), 117–146. <https://doi.org/10.1177/0022002797041001006>.
- Mlambo, A.S. (2014) *A history of Zimbabwe*. New York, NY: Cambridge University Press.
- Nathan, H. (2009) 'Building dams, constructing stories'.
- O'Connell, D.P. (1967) *State succession in municipal law and international law*. Cambridge: University Press (Cambridge studies in international and comparative law).
- Pandey, P., 2012. Revisiting the politics of the Ganga water dispute between India and Bangladesh. *India Q.* 68 (3), 267–281.
- Phiri, B.J. (2006) *A political history of Zambia: from colonial rule to the third republic, 1890–2001*. Trenton, NJ: Africa World Press.
- Rahman, K.S., et al., 2019. A critical review of the Ganges Water Sharing arrangement. *Water Policy* 21 (2), 259–276. <https://doi.org/10.2166/wp.2019.164>.
- Rai, S.P., Sharma, N., Wolf, A.T., 2019. Perceived risk of cooperation between India and Nepal on the Kosi River. *J. Water Resour. Plan. Manag.* 145 (9), 05019012.
- Ratner, B.D., 2003. The politics of regional governance in the Mekong River Basin. *Glob. Change, Peace Secur.* 15 (1), 59–76.
- Reuters. (2016, March 14). EU suspends direct aid to Burundi over political crisis. U.S. (<https://www.reuters.com/article/us-burundi-eu-idUSKCN0WG15R>).
- Simmons, B.A., 1999. Territorial disputes and their resolution: the case of Ecuador and Peru. *US Inst. Peace Vol.* 31 (No. 27).
- Slinger, J.H., Hilders, M., Juizo, D., 2010. The practice of transboundary decision-making on the Incomati River. *Ecol. Soc.* 15 (1), 1.
- Strauss, A.L., Corbin, J.M., 1998. *Basics of qualitative research*, second ed. SAGE, Thousand Oaks, CA.
- Verdier, D., 2008. Multilateralism, bilateralism, and exclusion in the nuclear proliferation regime. *Int. Organ.* 62 (3), 439–476.
- Vick, M., 2006. The Senegal River Basin: a legal régime. *Nat. Resour. J.* 46, 211–243.
- Williams, B., 2018. Brexit: the links between domestic and foreign policy. *Political Insight* 9 (2), 36–39. <https://doi.org/10.1177/2041905818779334>.
- Zeitoun, M., Warner, J., 2006. Hydro-hegemony—a framework for analysis of transboundary water conflicts. *Water policy* 8 (5), 435–460.
- Zeitoun, M., et al., 2019. The yarmouk tributary to the Jordan River I. *Water Altern.* 12, 1064–1094.
- Zeitoun, M., Mirumachi, N., 2008. Transboundary water interaction I. *Int. Environ. Agreem.* 8 (4), 297–316. <https://doi.org/10.1007/s10784-008-9083-5>.
- Zeitoun, M., Mirumachi, N., Warner, J.F., 2011. Transboundary water interaction II. *Int. Environ. Agreem.* 11 (2), 159–178. <https://doi.org/10.1007/s10784-010-9134-6>.