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Water diplomacy paths – An approach to recognise water diplomacy actions in shared waters

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ABSTRACT

Water diplomacy is gaining increasing attention among both researchers and policy-makers. The interest is understandable, given that the concept brings together themes such as shifting geopolitics, new types of diplomacy and increasing water scarcity. Yet, there is no common definition for water diplomacy and actual water diplomacy actions typically vary across multiple tracks and scales.

In this article, we seek to contribute to the practice of water diplomacy by introducing a step-wise Water Diplomacy Paths approach for analysing different water diplomacy contexts and related water diplomacy actions. To facilitate this, we recognise five key aspects for water diplomacy (Political; Preventive; Integrative; Cooperative; Technical) and propose a general definition for water diplomacy. We also discuss the possible distinctions between the related concepts of water diplomacy and transboundary water cooperation. The use of the Water Diplomacy Paths approach is demonstrated with brief case studies focusing on Central Asia, the Mekong Region, and the Finnish-Russian water cooperation. The work builds on an extensive literature review and comparative analysis of water diplomacy approaches as well as on a series of workshops and interviews among selected water diplomacy actors, including career diplomats.

The suggested Water Diplomacy Paths approach envisions possible ways forward through four main steps: 1) identification of key themes and related actors; 2) analysis of the current state, 3) recognition of (undesired) drivers and related scenarios; and 4) identification of possible water diplomacy actions. We see that the approach has potential to support water diplomacy processes with the help of the distinction it makes between water- and diplomacy-focused activities as well as its consideration of tensions and related actions. Such characteristics also emphasise the complementarity that water diplomacy actions have with more traditional transboundary water cooperation arrangements. We argue that water diplomacy as a concept and as a practical approach provides an example of the future of foreign policy and diplomacy, where the use of shared waters is likely to be of increasing importance.

1. Introduction

Tackling climate change and increasing scarcity of natural resources is the sustainability challenge of our time (e.g. Conca and Dabelko, 2002; Gleeson et al., 2020; IPCC, 2019; Kummu et al., 2016; Raleigh and Kniveton, 2012; Rockström et al., 2009). While these global challenges amplify the need for international and regional collaboration, we are also witnessing an increasing disregard of international agreements as well as an enhanced role of geopolitics (Eilstrup-Sangiovanni and Hofmann, 2020; Haass, 2019). Together, these changes emphasise the need for new types of diplomacy to address the increasingly complex foreign policy relations, including their link to climate change and resources such as energy, food and water (e.g. Constantinou et al., 2016; Council of the European Union, 2018, Council of the European Union, 2020; European Union, 2016; Vinogradov and Wouters, 2020).

Water is arguably the most crucial natural resource for society, and also a resource that crosses country borders in a manner that is relatively easy to measure. This makes its use and allocation often political, and has led to the establishment of various transboundary water cooperation arrangements particularly in the river basins shared by several countries (e.g. Altingoz et al., 2018; McCracken and Wolf, 2019; UNECE, 2011). Transboundary water cooperation builds on the potential of joint benefits, and has a strong institutional basis building on two global transboundary water conventions (UN, 1997; UNECE, 1992), a set of regional

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agreements as well as a number of guidelines and policy documents (e.g. Altingoz et al., 2018; Rieu-Clarke et al., 2012; UNECE, 2015a). Also, the UN Sustainable Development Goals (SDGs) emphasise the importance of transboundary cooperation (United Nations, 2015), and there is a strong body of literature on the functioning of joint bodies such as River Basin Organisations (Kittikhoun and Staubli, 2018; Schmeier et al., 2016). Yet, despite all positive implications of transboundary cooperation, it is not always able to prevent tensions between riparian countries and may even sustain them (Allouche, 2020; Cascão and Zeitoun, 2010; Molle et al., 2009; Vij et al., 2020a; 2020b; Warner, 2006; Zeitoun and Mirumachi, 2008).

Water diplomacy is an emerging concept to address the political nature of transboundary cooperation and to link water with broader regional cooperation, geopolitics and foreign policy[1]. The argument is that diplomacy –as an established process for a country to communicate and collaborate with as well as influence foreign governments and peoples across multiple diplomacy tracks (Diamond and McDonald, 1996; Marks and Freeman, 2019)– can provide additional means to tackle water-related tensions and facilitate collaboration between countries sharing joint water bodies. Water diplomacy is considered in both policy arenas (e.g. Council of the European Union, 2018; GGRETA Project, 2016; Molnar et al., 2017; Pangare, 2014; Pohl, 2014) and by the academic community (e.g. Grech-Madin et al., 2018; Islam and Susskind, 2013; Klimes et al., 2019; Molnar et al., 2017; Vij et al., 2020b). Some important conceptual contributions include the Multi-track Water Diplomacy Framework (Huntjens et al., 2016; Yasuda et al., 2018), the Water Diplomacy Framework (Islam and Susskind, 2013) as well as initiatives linking water and peace (Blue Peace, 2020; Huntjens and de Man, 2017; SIWI, 2020).

The main water diplomacy actors typically consist of riparian country governments and related intergovernmental organisations such as river basin commissions, often coupled with other actors across multiple diplomacy tracks (e.g. Diamond and McDonald, 1996; Huntjens et al., 2016; Pangare, 2014). Several documents also imply the engagement of so-called third-party actors such as external countries, networks or organisations in the water diplomacy processes (Beardsley et al., 2006; Dixon, 1996; van Genderen and Rood, 2011; Häkkinen, 2020; Leb et al., 2018; Lehti and Lepomäki, 2017). These actors can build trust and facilitate water diplomacy related processes through e.g., joint capacity- and knowledge-building, network activities, facilitation and mediation. For example, the European Union and its different member states have plans towards such a role in varying diplomacy and peace mediation contexts (Karjalainen, 2020; Niemann et al., 2018).

Despite the increasing interest, water diplomacy still lacks a commonly agreed definition. The concepts of water diplomacy and transboundary water cooperation are at times even used interchangeably, although water diplomacy studies typically focus more on conflict prevention and diplomatic engagement (GGRETA Project, 2016; Grech-Madin et al., 2018; Huntjens et al., 2016; Islam and Susskind, 2013; Molnar et al., 2017; Schmeier, 2018; Yildiz et al., 2016). The literature remains sparse in regard to practical guidance on actual water diplomacy actions as well. The existing guidance builds primarily on context-specific examples (e.g. Al-Saidi and Hefny, 2018; Barua, 2018; Kattelus et al., 2015; Koff et al., 2020) or on the activities of transboundary water cooperation and management (e.g. Kittikhoun and Staubli, 2018; Pohl, 2014; Salmoral et al., 2019) – which cover only partly the actual water diplomacy actions. The literature also tends to focus on positive development that would stem from enhanced cooperation, rather than the potential challenges but also new openings resulting from escalating tensions. Time-wise, the literature tends to focus on current activities and/or relatively short-term developments, although the consideration of longer-term aspects is also important given the implications that for example climate change and increasing resource scarcities is estimated to have in several shared basins.

Considering these research and policy gaps, this study seeks to contribute to the practice of water diplomacy through the following main research question: What kind of approach can help to analyse differing water diplomacy contexts and to recognise potential water diplomacy actions that enhance collaboration and prevent future water-related tensions? Related to this, we also ask what are the key aspects of water diplomacy, and how does the concept of water diplomacy help to complement the more thoroughly studied concept of transboundary water cooperation. In order to answer these questions, we first present the methodological basis of our study (Section 2) and review the existing literature to recognise key aspects of water diplomacy as well as to provide a general definition for water diplomacy (Section 3). We then introduce a Water Diplomacy Paths approach (Section 4), and demonstrate its use with desk-based case studies on Central Asian shared waters, the Mekong River Basin, and Finnish-Russian water cooperation (Section 5 + detailed Central Asian case in Annex B). Finally, we discuss the broader implications of our study (Section 6) and provide some concluding thoughts (Section 7).

2. Materials and methods

This article applies a mixed methods approach that consists of the following main research methods: i) a structured literature review of relevant academic literature, reports and policy documents; ii) a set of semi-structured expert interviews (in total 25 interviews with 21 interviewees from 10 different organisations in 2018–20); and iii) a series of four group discussions and four workshops among Finnish water diplomacy actors, including experts from water sector, peace mediation as well as foreign policy and diplomacy (Annex A). Additional research methods included participatory observation in selected water diplomacy processes and meetings (see Annex A) as well as a benchmark study of existing major water diplomacy initiatives and actors from the Netherlands, Sweden, Switzerland and Germany (Salminen et al., 2020).

The key method for conceptual discussion on water diplomacy (Section 3) was the literature review, complemented by the relevant findings from the interviews and workshops. The literature was analytically reviewed to identify definitions and descriptions of water diplomacy and related concepts such as transboundary water cooperation or hydro-diplomacy. The identified descriptions were then compared and analysed to recognise the most common conceptual elucidations as well as their differences. This led to the categorisation of five typical aspects for water diplomacy (Section 3) as well as comparison between the related concepts of water diplomacy and transboundary water cooperation (Section 3.1). In addition to the literature, the categorisation presented in Section 3 benefited from the analytical framings related to adaptive governance, peace research, and multi-track diplomacy (e.g. Cleaver and Whaley, 2018; Diamond and McDonald, 1996; Ide, 2018).

The development of the Water Diplomacy Paths approach (Section 4) benefited particularly from the expert interviews and workshops (Annex A), and utilised the findings from the benchmark study and the participatory observation. The approach also made use of existing water diplomacy literature, particularly those focusing on water-related conflicts and possible ways forward for water diplomacy and transboundary water cooperation (e.g. Farinosi et al., 2018; Huntjens et al., 2016; Islam and Susskind, 2013; Mirumachi, 2010; Pohl, 2014; Zeitoun et al., 2020b). Given the future-orientation of the approach, literature related to futures research and scenarios was important as well (e.g. Cairns et al., 2016; Mahmoud et al., 2009; Maier et al., 2016). The earlier version of the approach was developed as a tool for an external third-party facilitator in two reports done for the Finnish Ministry for

[1] The increasing interest towards water diplomacy is visible through a simple Google Scholar search for term "water diplomacy", which provided 99 results for 2005–09, 344 results for 2010–14, and 882 results for 2015–19. There are also at least three recent special issues on the concept, with the first one published in Journal of Hydrology (Klimes et al., 2019).

Foreign Affairs (Salminen et al., 2019a; Salminen et al., 2020). The approach has therefore a linkage to Finnish experience on transboundary water cooperation and water diplomacy (Honkonen and Lipponen, 2018; Kotkasaari, 2008; Ministry of Agriculture and Forestry, 2018).

Finally, the three descriptive case studies that demonstrate the use of the suggested approach build on the interviews and workshops as well as relevant literature on the study areas (see Section 5). The case studies also benefit from the authors' prior experience on transboundary water cooperation and water diplomacy in the three areas (see references in Section 5).

3. Context: Recognising key aspects of water diplomacy

Water diplomacy is a blurry affair. The concept has no standard definition, but it is defined in policy documents and scientific publications in several ways depending on the context as well as the authors' perspective (e.g. Council of the European Union, 2018; Honkonen and Lipponen, 2018; Huntjens and de Man, 2017; Islam and Madani, 2017; Islam and Susskind, 2013; Klimes et al., 2019; Milman and Gerlak, 2020; Molnar et al., 2017; Mumme, 2020; Pangare, 2014; Pohl, 2014; Salminen et al., 2019b; Vij et al., 2020b; Water Diplomacy Consortium, 2013; Wilder et al., 2020; Xie et al., 2018; Zeitoun et al., 2020a). Also, the very term used varies, with "hydrodiplomacy" and "blue diplomacy" also emerging from literature (Klimes et al., 2019; Pangare, 2014; Pohl, 2014; Salman, 2015; Vlachos, 1996): we consider them here synonymous for water diplomacy.

The diversity of definitions is understandable, given the variety of water diplomacy contexts and the number of theoretical frameworks related to shared waters and their governance. Yet, noting the increasing calls to include water diplomacy as a part of foreign policy –perhaps most prominently by the European Union and its member states (Council of the European Union, 2018)– such conceptual ambiguity may hinder both the recognition and implementation of water diplomacy actions. The close connection and overlaps that water diplomacy has with transboundary water cooperation may create additional confusion, particularly among actors coming outside water field.

We discuss next key aspects that we found to be most regularly highlighted –separately or together– in relation to water diplomacy. There are altogether five such aspects that we refer to with following one-word terms that seek to describe their main characteristics: Political; Preventive; Integrative; Cooperative; and Technical (Table 1)[2]. The categorisation provides a simple but relatively comprehensive view on key aspects of water diplomacy and related approaches. Related to this, we also discuss the differences that water diplomacy and transboundary water cooperation have as two distinct but complementary concepts (Section 3.1). For we see that clarifying the differences between the two concepts can help to recognise water diplomacy actions that complement existing cooperative activities. Table 3 in Section 3.1 therefore summarises suggested differences between transboundary water cooperation and water diplomacy related to their physical basis, key governance attributes (legal basis; actors & structures; processes) as well as their main assumptions and aims.

All five aspects consider water diplomacy as a process that (in comparison with other sub-types of diplomacy) sees *shared waters* as a subject of political consideration with the help of *diplomatic methods*. This also lays the normative foundation for water diplomacy, as the concept values the existence of diplomatic relations, interaction and trust between parties (while acknowledging their differing interests and positions) and –consistent with the key principles of transboundary water cooperation (UN, 1997; UNECE, 1992)– sees reasonable and equitable use of shared waters as something to seek for.

The first one of the five aspects, which we here refer to as "Political aspect", sees water diplomacy as a process of inherently political interactions that occur among stakeholders with different, often conflicting interests, positions, and agenda. The aspect thus links closely to politics and power relations between –and also within– the riparian states. This viewpoint seems so evident that it is often not explicitly mentioned in different definitions, but rather seen as an overarching theme and, indeed, a reason for water diplomacy. Water diplomacy is here seen as a part of the broader political milieu, considering political goals that extend beyond basin boundaries (Hocking et al., 2012; Islam and Susskind, 2018; Molnar et al., 2017; Sadoff and Grey, 2002; Varady et al., 2014; Zeitoun and Mirumachi, 2008). While the broader political context therefore greatly influences water diplomacy, the relation works also other way round, with water diplomacy potentially facilitating regional interaction (van Genderen and Rood, 2011; Keskinen et al., 2014). This aspect links with processes typical, for example, for foreign policy, regional cooperation and critical hydro-politics (Table 1). (see e.g. Islam and Susskind, 2013; Pohl, 2014; Schmeier and Shubber, 2018; UNEP, 2016; Varady et al., 2014; Vij et al., 2020a, 2020b; Zeitoun and Mirumachi, 2008; Zeitoun and Warner, 2006).

The second aspect, "Preventive", views water diplomacy as an approach for peace mediation as well as conflict prevention and mitigation. In this way, the aspect includes both preventive (in terms of preventing future conflicts) and restorative elements (in terms of reconciliation and reduction of existing tensions). A large number of research papers primarily consider water as a form of preventive diplomacy, linking it to the promotion of regional stability and peace. These two are – together with reasonable and equitable water use– typically considered as the normative foundation of water diplomacy (e.g., Blue Peace, 2020; Carmi et al., 2019; Schmeier, 2018; Yildiz et al., 2016). This also means that Preventive aspect makes often use of

Table 1
Five key aspects of water diplomacy, together with examples of related key approaches and mechanisms. For details and references, see the text in this section.

Water diplomacy aspects	Examples of related key approaches, frameworks and mechanisms
POLITICAL: Inherently political process that goes far beyond water per se; part of wider diplomatic setting and geopolitics	The most strongly political track: critical hydropolitics; geopolitics; foreign policy; regional cooperation
PREVENTIVE: Peace mediation and conflict prevention	Preventive diplomacy; peace mediation and peace building; conflict resolution
INTEGRATIVE: Connecting multiple forms and levels of institutions and stakeholders and the different types of knowledge	Multi-track Diplomacy; Integrative Diplomacy; Integrated Water Resources Management; knowledge co-production
COOPERATIVE: Cooperation and good governance to promote reasonable and equitable water use	Cooperative arrangements; benefit-sharing approaches; international agreements on shared waters; sustainability
TECHNICAL: providing an information basis for the diplomacy about water, related resources and the environment	The most strongly technical track: Information on hydrology, water quantity, quality and timing; knowledge production and products such as hydrological models and impact assessments.

[2] The five aspects bring together elements from several existing documents. For example, four purposes of water diplomacy suggested by (Molnar et al., 2017) are largely similar with the first four of our water diplomacy aspects, while the three characteristics recognised by (Grech-Madin et al., 2018) can be linked to the first three aspects presented. The two main aspects –so-called technical and political tracks– recognised for water diplomacy (e.g. Klimes et al., 2019) are directly included in the five aspects. Among more policy-oriented documents, the three general themes that (Council of the European Union, 2018) uses for water diplomacy outcomes are part of the suggested aspects as well. More process-oriented approaches (e.g. Huntjens et al., 2016; Islam and Susskind, 2013) recognise the actual diplomatic action situations and the connection to broader diplomatic settings, emphasising Political, Preventive, and Integrative aspects of the diplomacy.

relevant tools and mechanisms of peace mediation and conflict resolution (Abdi and Mason, 2019; e.g. Carmi et al., 2019; Conca and Dabelko, 2002; De Bruyne and Fischhendler, 2013; GGRETA Project, 2016; Mason and Blank, 2013; Phillips et al., 2006; Yildiz et al., 2016; Zyck and Muggah, 2012). Conflict prevention and peace mediation activities[3] can thus create enabling conditions for water diplomacy and other types of preventive diplomacy, and vice versa: water diplomacy may enhance conflict prevention and peace mediation (Pohl, 2014; Zyck and Muggah, 2012).

The third aspect, "Integrative", builds on the notion that several publications describe contemporary water diplomacy as a process comprising of many stakeholders across multiple societal and thematic sectors in both formal and informal settings (Diamond and McDonald, 1996; Huntjens et al., 2016; Yasuda et al., 2018). Water diplomacy goes therefore beyond the conventional regional treaties and transboundary cooperation mechanisms between riparian country governments, involving also other actors and themes. This aspect sees water diplomacy as a multi-disciplinary concept that is located at the intersection of science, policy, and practice (Klimes et al., 2019), assuming participation from all these domains. The Integrative aspect emphasises this crosscutting and connecting nature of water diplomacy, and therefore links to integrated approaches related to both water and diplomacy, including for example Integrated Water Resources Management (IWRM), water-energy-food security nexus, multi-track diplomacy, integrative diplomacy and, more generally, knowledge co-production (Grech-Madin et al., 2018; Hocking et al., 2012; Huntjens and de Man, 2017; Islam and Madani, 2017; Keskinen et al., 2016; Milman and Gerlak, 2020; Norström et al., 2020; Stepanova et al., 2020).

The fourth aspect, "Cooperative" sees water diplomacy as a process that promotes and relies on mutual cooperation and the idea of shared benefits, bringing it thus close to the common definitions for transboundary water cooperation. Water cooperation can be seen as an operative end-product of the process of water diplomacy, with the very aim of the cooperation defined by the diplomatic process. This aspect makes use of concepts such as benefit-sharing, cooperation continuum and general water governance frameworks (Bréthaut and Pflieger, 2020; Dore et al., 2012; Furlong, 2006; GGRETA Project, 2016; Molnar et al., 2017; OECD, 2015; Sadoff and Grey, 2002; Sadoff and Grey, 2005; UNECE, 2015a; UNECE, 2015b; Varady et al., 2014; Wolf, 1998). The international agreements on transboundary waters (UN, 1997; UNECE, 1992) link closely to the Cooperative aspect as well, including their key principles related to the duty to cooperate, the use of transboundary waters in reasonable and equitable manner, and the principle of not causing significant harm. Ideally, this aspect therefore recognises the value of cooperation, willingness to cooperate, and communication between key actors as a means to promote sustainable and socially just use of shared waters. Yet, water cooperation may not result from mutual agreement but also from coercion. This, in turn, indicates that cooperation is not always able to prevent tensions, but can actually sustain them (Allouche, 2020; Cascão and Zeitoun, 2010; Koff et al., 2020; Zeitoun et al., 2020b), exposing the fundamental linkage that cooperation has with the political setting.

The fifth aspect, "Technical" is based on the recognition of the so-called technical track (contrasting with the other, so-called political track) of water diplomacy that focuses on water as a resource and as a physical substance that generates the hydrological cycle. Water availability, allocation and use, and the related monitoring, management, and knowledge production processes are therefore in the core of this aspect (Klimes and Yaari, 2019; Klimes et al., 2019; Yasuda et al., 2018). The aspect thus provides an information basis for shared waters and their role for national and regional development, including both current and future developments as well as trends related particularly to water use and climate change (Huntjens et al., 2016; Klimes and Yaari, 2019; Kummu et al., 2016; Yasuda et al., 2018). This aspect has a particularly strong link to knowledge production as well as related knowledge products, such as hydrological models and impact assessments (Hocking et al., 2012; Käkönen and Hirsch, 2009; Kittikhoun and Staubli, 2018; Klimes and Yaari, 2019; Klimes et al., 2019; The Royal Society, 2010). Despite its name, the Technical aspect is not unpolitical (Allouche et al., 2015; Ide and Detges, 2018; Käkönen and Hirsch, 2009; Keskinen et al., 2014; Klimes and Yaari, 2019; Klimes et al., 2019). Knowledge can generally be considered as a political asset, and thus control over knowledge, and its production may be used as ideational tactics in hydro-politics (Zeitoun and Warner, 2006; Zeitoun and Mirumachi, 2008), linking the Technical and Political aspects of water diplomacy elementary together.

We suggest that together these aspects can help to better understand the broad concept of water diplomacy, as they bring together the key dimensions from the current water diplomacy literature. Out of the five aspects, the Political and Technical aspects cross-cut the entire concept: while the Technical aspect emphasises the role of water and related knowledge production processes as a subject of the diplomacy, the Political aspect emphasises the inherently political nature of the interaction between the water diplomacy actors. The three other aspects –Integrative, Preventive, and Cooperative– can then be seen as characterisations of the key motivations and mechanisms of water diplomacy (Fig. 1). In practice, the five aspects are typically all present in water diplomacy contexts, but with different emphases that may also change over time. Similarly, the different parties engaged in a water diplomacy process may have differing expectations –and also expertise– regarding the five aspects.

The five aspects help us also to suggest a general definition for water diplomacy, building on earlier definitions: water diplomacy is a dynamic process of inherently political interaction (*Political aspect*) across multiple diplomacy tracks and sectors in both formal and informal settings (*Integrative*), with an aim to prevent and resolve tensions and conflicts (*Preventive*) through the use of diplomatic tools and cooperation mechanisms (*Cooperative*) as well as knowledge on shared waters and related resources (*Technical*). Or more concisely: water diplomacy is a dynamic,

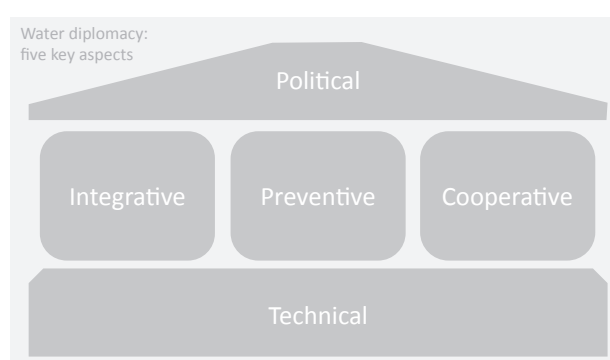

Fig. 1. The five water diplomacy aspects and their main relations. While Technical aspect can be seen to provide the underlying foundation and Political aspect the overarching theme for water diplomacy, the Integrative, Preventive, and Cooperative aspects are seen to describe the main characteristics of the actual water diplomacy process. The aspects are complementary and all of them are typically present in different water diplomacy contexts, but with differing emphases.

[3] Conflict prevention typically includes preventive actions in forms of humanitarian development cooperation or operations to improve government administration (Zyck and Muggah, 2012). There is also a conceptual difference between peace mediation, peace keeping and peace building, with peace mediation –the focus of this article– emphasising the achievement of resolution to end the existing political disputes and related conflicts. Peace keeping aims to maintain the state of non-violence, while peace building is then about establishing the conditions for sustainable, long-term peace (Bercovitch and Kadayifci; 2002; Boutros-Ghali, 1992; Papagianni, 2010).

politically-oriented process that aims to prevent, mitigate, and resolve water-related tensions in shared waters by making simultaneous use of diplomatic tools, water-related know-how and cooperation mechanisms across multiple diplomacy tracks.

3.1. Transboundary water cooperation vs. water diplomacy

Water diplomacy and transboundary water cooperation are closely connected but separate concepts. Yet, literature often considers the two concepts in an undefined manner and even interchangeably – mainly because both concepts are used in multitude of ways and address largely similar settings related to the interactions in shared waters.

We argue that clarifying the key differences between transboundary water cooperation and water diplomacy can help to advance both concepts and –importantly– to recognise practical water diplomacy actions that complement existing cooperative activities (Section 4). As a result, Table 3 presents our view on the key differences between transboundary water cooperation and water diplomacy across categories related to their physical basis, main governance attributes (legal basis, actors & structures, processes) as well as main assumptions and aims.

While the different characteristics in the table are described to be clearly distinct, they are naturally closely connected and typically also enable each other. For example, an intergovernmental river basin commission is typically established through a broader diplomacy

Table 2
Summary of the key results for three demonstrative case studies along the four steps of Water Diplomacy Paths approach, with Step 3 focusing on undesired drivers and related scenarios. For explanation and references, see text and Annex B.

	Central Asia	Mekong	Finnish-Russian water cooperation
Step 1: Key themes (top-3)	- Diplomatic and economic relations + the region's important geopolitical location - Agricultural development and its intensive water use - Hydropower development and its downstream impacts	- Geopolitical relations and their linkages to established and emerging institutions - Hydropower production and regional energy cooperation + related investments - Food security and livelihoods dependent on fisheries and agriculture	- The complex relationship between EU-Finland and Russia - Hydropower operation and its role in flood protection - Climate change impacts
Key actors (top-3)	- Governments and relevant ministries in the five countries - Regional organisations and networks - International actors, such as China, Russia, EU, US, and World Bank	- Governments and relevant ministries in six countries - Regional organisations and networks, most importantly the Mekong River Commission (MRC) and the Lancang-Mekong Cooperation Mechanism (LMCM) - Non-governmental actors, including (energy) companies and related investors + civil society organisations	- Relevant ministries in Russia and Finland - Sub-national government agencies - Energy companies operating hydropower in both countries
Step 2: Current state	Tumultuous and complex political situation, both within and between the riparian states. Despite the economic and social importance of Amu Darya and Syr Darya rivers, existing water cooperation remains limited and regional water treaties are not properly implemented. State-centric interactions and unilateral water governance actions, with weak civil society involvement.	Dynamic institutional setting, with two regional water-related organisations (MRC + LMCM's LMWRCC) that aim for increasing cooperation. MRC with a longer history and a clear agreement, but only four lower Mekong countries as members and partly sidelined from the hydropower planning. On-going hydropower development likely to cause remarkable negative impacts to downstream food security and livelihoods.	Long history that has led from conflict to cooperation. Nowadays well-functioning, practical cooperation through well-established institutions but, notably, without a separate secretariat. Strong engagement by private sector, most importantly the energy companies operating the hydropower dams. Interactions over shared waters largely non-politicised, despite other tensions between Russia and EU-Finland.
Step 3: Undesired drivers & scenarios	Undesired water-related drivers: Intensive water use continues due to the insufficient development of agricultural and energy sectors. Major hydropower projects in upstream countries causing negative downstream impacts to agriculture. → Undesired water-related scenario: increasing tensions between upstream and downstream countries on the use and development of shared waters Undesired political drivers Lack of regional and international agreements hinders cooperation. Differing interests from foreign powers influence the countries' bilateral relations. → Undesired political scenario: break-up in the diplomatic relationship between two or more countries.	Undesired water-related drivers Intensive hydropower development causing negative impacts particularly for Cambodia and Vietnam. Fisheries decline due to overfishing and hydropower impacts undermines food security and livelihoods. → Undesired water-related scenario: radical reduction in fisheries leading to tensions between the countries regarding the impacts of Mekong hydropower development Undesired political drivers China's dominant role both bilaterally and regionally reduces the regional cohesion and lead to new alliances. MRC sidelined and under-resourced, reducing the dialogue between lower Mekong countries. → Undesired political scenario: lack of functioning cooperation mechanism between the countries lead to increasingly unilateral decisions	Undesired water-related drivers: water The impacts from climate change and increasing environmental concerns challenge hydropower operation on both sides. Climate change alters flows, causing difficulties for estimating the compensations. → Undesired water-related scenario: mutually agreed Vuoksi discharge rule from 1989 become outdated, challenging the very core of water cooperation Undesired political drivers Cooling relations between EU and Russia politicise transboundary issues, hindering water cooperation. Growing global disrespect towards multilateral agreements weaken the statutory basis of cooperation. → Undesired political scenario: increasing disregard of the agreed mechanisms for cooperation
Step 4: Water diplo-macy actions	Examples of possible water-focused actions Enhancing access to hydrological and meteorological data; joint monitoring and analysis. Establishing a joint organisation for natural disaster forecasting and relief. Examples of possible diplomacy-focused actions Strengthening or establishing a trusted organisation for regional cooperation between the riparian states. Revitalising regional treaties, with sufficient resources secured for their implementation.	Examples of possible water-focused actions Establishing a joint agreement on water cooperation among all six countries e.g. within the institutional setting of the LCMC. Strengthening information sharing and joint planning regarding water development, most importantly hydropower and its impacts. Examples of possible diplomacy-focused actions Strengthening the common multilateral framework for regional cooperation, with emphasis on energy, food, water and trade. Strengthening cooperation across multiple diplomacy tracks, including science diplomacy and private sector engagement.	Examples of possible water-focused actions Agreeing on more adaptive management framework that take into account the changing flow conditions due to climate change. Potential re-negotiation of the compensations related to flows and/or hydropower operations. Examples of possible diplomacy-focused actions Mitigating tensions between the EU and Russia, with Finland as a potential mediator. A forward-looking trust-building process that makes use of e.g. serious games and joint conflict resolution exercises to facilitate collaboration.

Table 3
Simplified key differences between transboundary water cooperation and water diplomacy across three different characteristics.

All Simplified examples only	Transboundary Water Cooperation (TWC)	Water Diplomacy
PHYSICAL BASIS	Waterbody and its catchment, typically a shared river basin	Regional, based on country borders
LEGAL BASIS	Relatively clear and water-focused: UN Water Conventions and possible regional water agreements	Same as with TWC, plus relevant international treaties (e.g. Vienna Convention 1961) and norms + possible regional agreements
KEY GOVERNMENTAL ACTORS & STRUCTURES	Intergovernmental river basin commissions and water-related government agencies	Foreign ministries and regional (economic) cooperation organisations, with a link to TWC actors
KEY COOPERATIVE PROCESSES and THEIR FOCUS	Water use and allocation, including (joint) monitoring, data gathering, impact assessment & planning	Political and economic negotiations on (and beyond) shared waters; often with a close link to food and energy security and/or economic cooperation
MAIN ASSUMPTION	Willingness for cooperation (despite differences) under a given mandate; joint benefits from a shared waterbody	A compromise between cooperative and anti-cooperative interaction strategies, building on national interests and sovereignty
THE AIM	Interaction on shared waters as a facilitator for political goals, such as peace, development and security	

process, while negotiations on e.g. regional energy or food security issues build also on water-related information.

It is also important to note that both concepts link to the so-called technical and political tracks related to shared waters (Klimes et al., 2019), with cooperation typically focusing mainly on the technical track and diplomacy more on the political track. This means that transboundary water cooperation (while often technically oriented and building on established institutions) works under a politically defined mandate, and its processes take place in both formal and informal settings that also involve a varying degree of politically oriented decision-making. And vice versa: while water diplomacy is often inherently political and takes place across multiple diplomacy tracks, it is typically facilitated by technical track knowledge production processes as well as existing cooperative institutions. As a result, despite the differences between their characteristics, we suggest that the main aim of water cooperation and water diplomacy is ultimately the same, emphasising the complementarity of the two concepts.

4. Water diplomacy Paths approach

In this section, we propose a four-step approach called Water Diplomacy Paths (WDP) for analysing a given water diplomacy context and recognising potential water diplomacy actions. To provoke thinking and to complement existing transboundary water cooperation activities, the approach has an emphasis on both water-related and political tensions as well as related preventive and mitigative actions. This way the approach has a particularly close connection with Political and Preventive aspects of water diplomacy (Section 3).

Given that the approach aims to provide a general analytical framework, it can be a useful analysis tool for an external actor (e.g. a third-party facilitator) that seeks to understand better a certain water diplomacy context. Yet, we see that the approach could also be suitable for the actual water diplomacy actors (e.g., an intergovernmental organisation) as an additional, fresh way to view the potential tensions and related actions in a given water diplomacy context. In such situations, the joint application of the approach itself may even be seen as a water diplomacy action, and the way the approach is used can guide also the actors engaged in its implementation.

The four linear steps described in Fig. 2 as well as in the following sections aim to provide a clear structure for the analysis, with first two steps focusing on the analysis of the context and two latter steps helping to recognise possible tensions and related water diplomacy actions. Yet, the steps are indicative only, as in reality any process related to water diplomacy is likely to develop in an iterative, cyclical manner. The approach has a strong temporal dimension, and it seeks to consider both the historical trajectory and possible future paths forward. Such an emphasis seeks to help envision alternative future scenarios, moving beyond the potential present-day challenges. The long-term view is important also to remind the actors about the dynamic, evolving nature of the shared waterbody: while water allocation and management decisions are often based on current or even past flow regimes, changing climate is likely to alter both the quantity and timing of the flows.

4.1. Step 1: Identifying key water diplomacy themes and actors

The first step in the proposed approach is to identify the most relevant themes and related actors for the specific water diplomacy context. In addition to the use and development of shared water resource, typical themes to be considered include water-related sectors (e.g., agriculture and energy) as well as broader themes related to regional cooperation (e.g., trade, the environment, political relations). To ensure sufficient consideration of all relevant themes, the identification may be initiated by recognising first broad regional settings –such as biophysical, societal and institutional– and then identifying the key themes and actors for such settings (see example in Annex B).

To ensure a comprehensive deliberation of the key themes and actors, this step would ideally build on a facilitated stakeholder process that utilises established stakeholder identification and engagement methods such as knowledge mapping and social network analysis (Reed et al., 2009) to ensure a wide participation from different actors. In some situations, however, the actual actors and themes to be included –and excluded– from a given water diplomacy process may be defined by a given actor such as a River Basin Organisation as an established facilitator of the process: in such situations the key actors and themes may be based for example on the existing regional agreement related to shared waters.

4.2. Step 2: Analysing the current state

The second step aims to analyse the current state of the given water diplomacy context, building on the themes and actors recognised in Step 1. The analysis should preferably include also a consideration of the past trends, including those related to water use, infrastructure development and broader political relations between the riparian countries. Such historical trajectory deepens the understanding of the present situation and also helps to recognise alternative future paths in the following steps.

The suggested method for this step includes a comparative analysis and joint synthesis of existing studies in this specific context, as it is likely that there already exists relevant (but potentially conflicting) information among the actors. Such comparative analysis could be carried out for example through a joint technical working group with experts from all countries and other relevant parties, through an independent expert panel, or through a combination (e.g. Keskinen et al., 2012). The analysis can thus build on the process of joint fact finding (Islam and Susskind, 2018; McCreary et al., 2007), bringing together existing data as well as carrying out new studies when needed. The analysis should preferably be carried out in a facilitated process, where the parties can discuss and agree on the current baseline situation in the given context. This is important, given that knowledge –and different knowledge products such as models and impact assessment results– can become highly contested in transboundary settings (e.g. Käkönen and Hirsch,

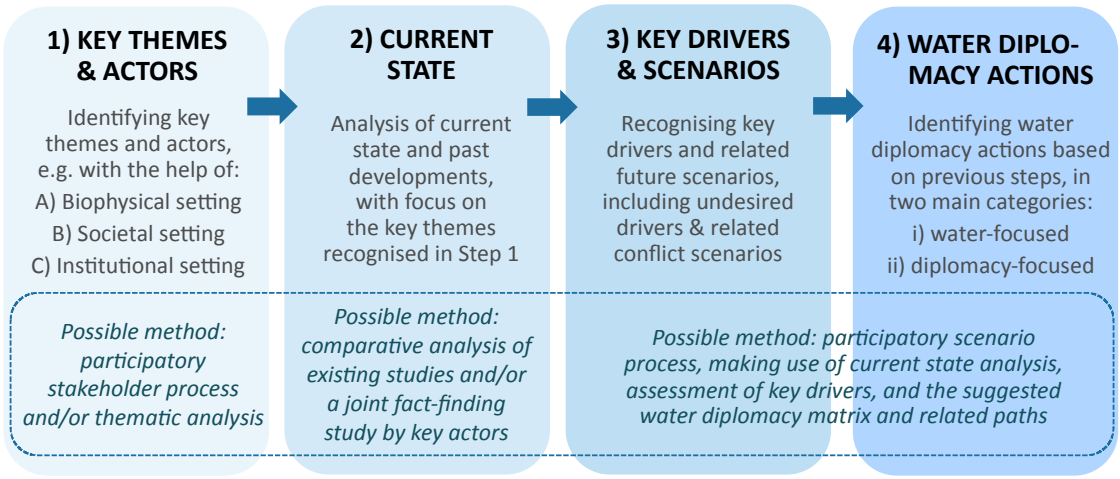

Fig. 2. Visualisation of the four main steps of Water Diplomacy Paths approach, showing the main content and possible methods for each step (for details, see text).

2009; Klimes and Yaari, 2019).

4.3. Step 3: Recognising key drivers and related future scenarios

The third step seeks first to recognise key drivers (e.g., biophysical, social, economic and/or political) that are likely to impact the current status within a given timeframe. After, the step envisions possible future scenarios on how water-related interactions could unfold in a given context, based on a set of assumptions on how current state may evolve due to key drivers and evolving relationships between the parties.

The key drivers and related scenarios defined in this step are therefore likely to include both positive (desired) and negative (undesired) views on future. Yet, given that water diplomacy builds on the premise of differing national interests, this step should include discussion on potential water-related tensions as well – even when such discussion is difficult and often avoided. We therefore suggest that this step also includes intentional consideration of undesired, negative drivers and related "conflict scenarios" (Step 3) – followed by a set of actions that can be used to prevent and mitigate such tensions (Step 4).

The suggested method for both third and fourth step is a participatory scenario process that creates alternative scenarios for the context. There is a plethora of scenario approaches available, including those already used in transboundary water contexts (e.g. Farinosi et al., 2018; Gorgoglione et al., 2019; Keskinen et al., 2015; MRC, 2011; Phillips et al., 2008; Warner and van Buuren, 2016). Scenario approaches can generally be divided into different categories such as exploratory and anticipatory (Mahmoud et al., 2009) or predictive, explorative and normative (Maier et al., 2016). The suggested Water Diplomacy Paths approach aims to make a simultaneous use of the key scenario types, with Step 3 focusing more on predictive and explorative scenarios (*What is likely to happen, given the current state and future developments and drivers?*) and Step 4 on anticipatory and normative scenarios (*How can we achieve together a specific, normative i.e., peaceful future and mitigate the tensions envisioned in Step 3?*).

4.4. Step 4: Identifying possible water diplomacy actions

The fourth step focuses on the identification of possible water diplomacy actions that build on the key drivers and future scenarios recognised from Step 3. The actions can thus strengthen the positive, mutually beneficial activities envisioned as well as to ease the possible water-related and/or political tensions recognised in Step 3. Given the varying aspects related to water diplomacy (Fig. 1), such actions should preferably cover both water-related knowledge-making processes and key diplomacy processes: this will better ensure that the recognised water diplomacy actions consider so-called technical and political tracks of water diplomacy (Klimes et al., 2019).

One way to consider both the technical and political tracks is to use a simple matrix to frame the discussion and link Step 3 with Step 4 (Fig. 3). The matrix considers the water diplomacy process through two main aspects focusing on: i) water and related knowledge production mechanisms; and ii) politics, differing national interests and related diplomacy processes. While these two aspects are strongly connected, we see that considering them also separately can help to recognise the full potential of different water diplomacy actions, including those that do no stem directly from water field and/or transboundary cooperation. Similarly, to complement more traditional cooperative mechanisms and to strengthen the motivation for water diplomacy actions, the matrix also considers undesired scenarios, where water-related and/or political drivers may lead to increasing tensions and even conflict (Step 3). The matrix includes two such "conflict paths", with the grey path on left in Fig. 3 called "politics to water", indicating a scenario where increasing political tensions between the countries affect also the use of shared waters. The grey conflict path on right is then called "water to politics", indicating an scenario where water-related drivers and related tensions (e.g., construction of an upstream dam and its impacts to downstream countries) in a shared water body lead to broader political tensions (Fig. 3).

After establishing these undesired scenarios, Step 4 views the matrix other way, focusing on water diplomacy actions that aim to prevent and mitigate the envisioned tensions, building on both existing and novel activities (Fig. 3). The focus is on two main sets of actions as well, with the more technical set of water diplomacy actions related to water know-how and cooperation mechanisms and institutions. Their aim is to reduce water-related tensions and to ensure that political processes have understanding of key water-related issues, consistent particularly with Technical, Cooperative and Integrative aspects of water diplomacy (Section 3). If there is already existing transboundary water cooperation mechanism, the recognised actions are likely to build on those activities. The other, more political set of water diplomacy actions in Fig. 3 consist then of broader, diplomacy-focused actions that aim to strengthen the political trust and interaction between the parties. The actions can thus make use of both existing and new diplomacy processes as well as peace mediation and conflict resolution activities. Such actions aim to reduce political tensions and to bring a stronger political understanding to water-focused processes, corresponding to Political, Integrative, and Preventive aspects of water diplomacy (Section 3).

The end result is thus a set of water diplomacy actions that aim to turn the undesired conflict paths envisioned in Step 3 into desired water diplomacy paths. Such paths seek simultaneously to strengthen the cooperation between the parties as well as to avoid and mitigate water-related conflicts through a set of joint actions. In this way, the

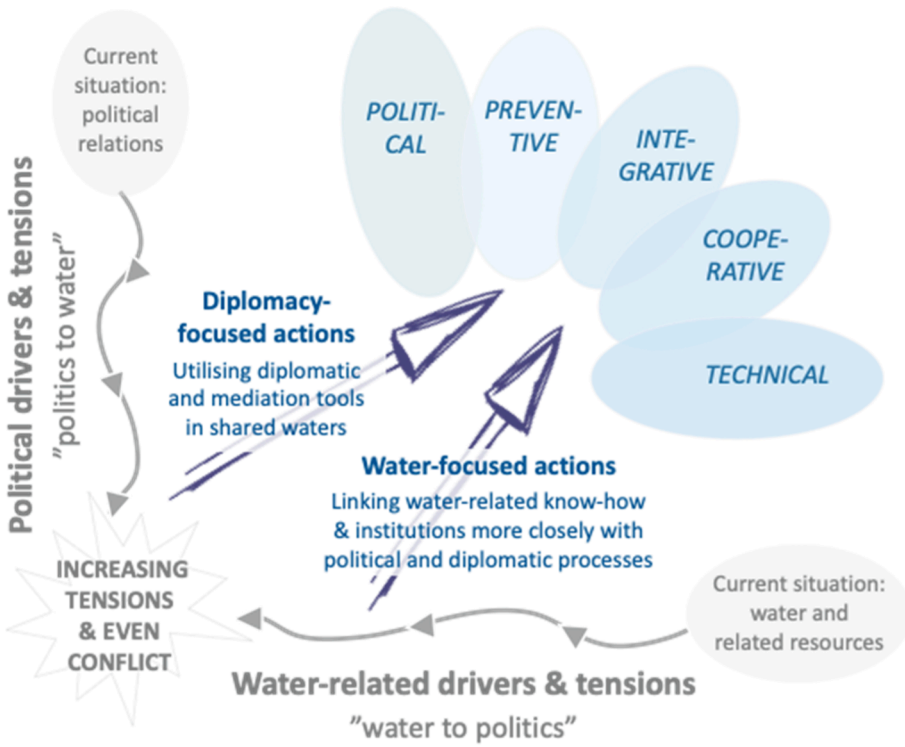

Fig. 3. A simplified matrix that can be used as a part of the Paths approach, indicating how both water-related and political drivers can lead from current situation to increasing tensions and even conflict (Step 3; in grey) and the recognition of water diplomacy actions that can reduce those tensions across five key water diplomacy aspects (Step 4; in blue). (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

recognised actions are also likely to have a linkage to one or several water diplomacy aspects described in Section 3. The actions recognised can then be compared with the existing activities in the studied water diplomacy context, providing a view on those activities that are important to maintain as well as on novel actions that could be initiated, either by external actors such as a third-party facilitator or the water diplomacy parties themselves.

5. Water diplomacy Paths approach: Three cases

Our aim is to provide a practical approach for analysing different water diplomacy contexts in a way that complements existing activities with its focus on water-related tensions and related actions that can be used to reduce those tensions. To demonstrate the potential use of the Water Diplomacy Paths approach, we next apply it briefly in three descriptive cases from transboundary settings related to Central Asia, the Mekong Region in Southeast Asia, and Finnish-Russian water cooperation. The three cases showcase the variety of possible water diplomacy contexts, from bilateral setting with several transboundary rivers (Finnish-Russian) to major transboundary river basin with several countries (Mekong) and a region with several shared waters (Central Asia).

The results from the three case studies are based on our own past research in those regions (e.g. Altingoz et al., 2018; Haapala, 2013; Jalilov et al., 2016; Kattelus et al., 2015; Keskinen, 2008; Keskinen et al., 2014; Salminen et al., 2019b) as well as relevant literature (e.g. Abbasova et al., 2018; Altingoz et al., 2018; Biba, 2018; Devlaeminck and Huang, 2020; Dore et al., 2012; Gerlak and Haefner, 2017; Honkonen and Lipponen, 2018; Kittikhoun and Staubli, 2018; Korjonen-Kuusipuro, 2013; Kotkasaari, 2008; Lancang-Mekong Water Resources Cooperation, 2020; Middleton and Allouche, 2016; Mirimanova et al., 2018; Mirumachi, 2020; Molle et al., 2009; Räsänen, 2020; Russel, 2018; Suhardiman et al., 2012; Thu and Tinh, 2019).

Annex B provides a general introduction for all three case study areas, together with a detailed example from Central Asia with a focus on Amu Darya and Syr Darya Rivers and related Aral Sea Basin. Table 2 summarises the key results for the three case study areas, following the four steps of Water Diplomacy Paths approach presented in Section 4. To enhance clarity, only three most relevant themes and actors were recognised in Step 1, while Step 3 and Step 4 are structured according to the water diplomacy matrix presented in Fig. 3 with a focus on undesired drivers and related scenarios. For more detailed example on the use of the proposed approach, see the Central Asian case in Annex B.

The results presented in Table 2 show both similarities and differences between the case study areas. The analysis presented in Steps 1 and 2 showcase the key dynamics of the current water diplomacy contexts in three cases. Despite their differing geographical contexts, all cases have close link to the broader geopolitics in the region, emphasising how water diplomacy context typically reaches beyond water *per se*.

Steps 3 and 4 help then to understand how a set of undesired drivers related to water and politics may increase the tensions in the case study areas, and what kind of water diplomacy actions –both existing and novel, and related to both water and diplomacy– could help to ease them. The potential tensions related to hydropower and climate change are present in all three cases (Step 3), underlining the role that energy sector and related actors typically have in transboundary settings. Yet, their engagement in actual water cooperation processes remains often limited, providing one potential way forward for complementary water diplomacy actions. The possible diplomacy-related tensions differ between the cases, having links to the diversity of institutional settings in relation to both bilateral/regional cooperation and transboundary waters. It should be noted that the analysis of the three cases is very concise and simplified, and Annex B provides a more detailed example from Central Asia on the application of the Water Diplomacy Paths approach.

6. Discussion

6.1. Implications of the water diplomacy Paths approach

The Water Diplomacy Paths approach aims to provide a way to analyse a given water diplomacy context and to both motivate and recognise possible water diplomacy actions. We see that the strength of the approach is its step-wise structure as well as simultaneous consideration of water-related and political tensions and related preventive and mitigating water diplomacy actions. The recognised actions also aim to have a link to both technical, more water-focused track and political, more diplomacy-focused track related to water diplomacy. In this way, the approach seeks to make visible the key role that general diplomatic actions and actors –even when not directly water-related– may have in shared waters. We also see the future-orientation of the approach important, as it emphasises the need to consider longer-term developments and climate change implications. These benefits were evident also in our discussion with different water diplomacy actors, with career diplomats and other non-water experts seeing the approach particularly useful in clarifying the distinct but related actions on water cooperation and diplomacy as well as enhancing their interest and motivation to engage in water diplomacy processes (Salminen et al., 2019a; Salminen et al., 2020).

The recognised key drivers and scenarios (Step 3) as well as the related water diplomacy actions (Step 4) provide also a link to the five water diplomacy aspects defined in Section 3. While the water diplomacy actions identified as part of the approach are likely to cover all five aspects, we see that the approach is helpful to address particularly Political and Preventive aspects. We see that this is important for three reasons. First of all, the other three aspects (Integrative, Cooperative, Technical) are often well covered already by existing transboundary water cooperation activities that water diplomacy actions seek to complement. Secondly, the discussion about the political track is often more difficult to initiate due to the parties' differing interests and the issues with internal politics and sovereignty, and actions related to this track may therefore be more difficult to initiate. Thirdly, we suggest that the current water diplomacy activities could make better use of the experience that peace mediation and conflict resolution literature provides on preventive diplomacy actions.

The three demonstrative cases (Section 5 and Annex B) provide interesting points for consideration as well. The case results' emphases on e.g., energy security and regional trade indicate that the approach's focus on potential water-related and political tensions (Step 3) and required actions (Step 4) can help to complement the more dominant and largely technical water cooperation activities with actions that consider also the broader aspects of regional cooperation and foreign policy. This, in turn, can provide novel viewpoints for both the existing diplomatic relations and on-going water cooperation activities. The results also emphasise the importance of key water using sectors such as energy and food, given the critical role of both sectors for national security and development. The future-orientation can also be seen to help to contemplate the long-term developments in the areas, putting present-day tensions into a perspective and linking the actions to the future trajectories related to water scarcity and climate change. At the same time, the recognised actions do build largely on already existing cooperation activities, emphasising the close connection that water diplomacy has with transboundary cooperation.

Finally, while we do see that the characteristics described above entail novelty for our suggested approach, it does share also some similarities with other water diplomacy tools and approaches. For example, the Water Diplomacy Framework by (Islam and Susskind, 2013) considers scenario planning and joint fact finding as important methods, and views negotiation and mediation as a key for solving complex water conflicts. The Multi-Track Water Diplomacy Framework by (Huntjens et al., 2016), on the other hand, emphasises the importance of multiple tracks and time scales when thinking of past, current and future action situations related to water diplomacy. Finally, the recent book by (Zeitoun et al., 2020b) provides an interesting, critical view to water conflicts and discuss how transformative analysis may be used in situations with particularly significant power asymmetries. Such analysis may also include the mapping of alternative pathways, which –bit similarly to our suggested Steps 3 and 4– can lead from status quo either to degradation (through "destructive conflict" or "destructive cooperation") or to improvement with the help of reformist or transformative approaches (and through "constructive conflict" or "risk-taking cooperation") (Zeitoun et al., 2020a).

6.2. Water diplomacy connecting sustainability and security

Ultimately, the aim of water diplomacy is to prevent and mitigate water-related tensions with the help of cooperative mechanisms and water- and diplomacy-related actions. But do parties have genuine willingness for cooperation? It is evident that the actors' differing interests direct the ways of interaction in water diplomacy, and cooperation can take place only as far as the actors allow. This means that it is also important to consider what would be the motivation of, say, an upstream country and/or a regional hegemon to participate in the entire process, given it is likely to expose it to criticism towards its potentially contested actions. Or other way round: why a less powerful riparian country would want to engage in such a process, given it may just maintain the existing power imbalances? Both of these questions are valid, and ultimately at the core of diplomatic engagement. We see that the maintenance of diplomatic relations and the opportunities it brings to all parties should be considered valuable as such for water diplomacy – and our suggested approach seeks to strengthen that view by envisioning undesired future paths that would result from the lack of such relations. It also means that the benefits from cooperation are typically seen to be more significant than the benefits from water resources management alone, extending from water use to broader issues of economic cooperation, politics and security, and facilitating trade-offs beyond water sector. At the same time, the interaction can be considered as a means to build mutual understanding and trust between the parties both in relation to shared waters and more broadly.

This also indicates that water diplomacy –both as a concept and as practical approach– can facilitate the link between sustainability and security. While the maintenance of internal and external security remains the ultimate justification for the present-day states, the planetary-scale challenges such as climate change and water scarcity are connecting security increasingly to the global scale and to the use of natural resources (Keskinen et al., 2019; Ligtvoet et al., 2017; Schlag et al., 2015; World Economic Forum, 2017). Within this emerging international security agenda, water and related resources such as energy and food are gaining increasing attention. The related resource flows and value chains cross national boundaries, making their governance both intersectoral and transnational – and linking sustainability and (national) security tightly together.

This, in turn, emphasises the importance of systemic and adaptive approaches to understand the complexities included in such connections and the related actor networks as well as the dynamic, evolving nature of the resource flows and the actors' relations. This dynamism challenges the ways diplomacy is being practiced, emphasising a more diverse and adaptive forms of diplomatic actions. We therefore suggest that water diplomacy provides an example of the future of foreign policy, where the use of shared waters is likely to be of increasing importance for both bilateral and multilateral relations between the countries – and where diplomacy actions across sectors and themes and by a diversity of actors are increasingly a norm, rather than an exception (see e.g., Constantinou et al., 2016; Diamond and McDonald, 1996; Hocking et al., 2012).

6.3. Limitations and ways forward

There are naturally limitations in our work. First and foremost, any

categorisation is inevitably a simplification and able to only partially capture the multi-faceted reality related to shared waters and geopolitics. For the same reason, the different elements in our classifications are strongly complementary and partly overlapping, even when we have emphasised their distinct characteristics. We also do recognise that diplomatic processes are rarely linear, but evolve in dynamic, cyclical ways. While the four steps of the suggested Water Diplomacy Paths approach provide a structure for the analytical framework, they do not represent the actual water diplomacy processes. Similarly, the examples we provide are indicative only, and for example the participatory scenario process suggested for Steps 3 and 4 should preferably consist of several phases and in-depth background analyses, and make use of both forecasting and backcasting techniques to explore alternative future scenarios (instead of the simplified scenario building process that makes use of selected key drivers only).

We also acknowledge that the Paths approach's strong attention to undesired drivers and related potential conflicts can be problematic, as it can maintain or even escalate the tensions in the studied context. Yet, we argue that in order to consider and build motivation for all possible water diplomacy actions (including those not directly related to water), it is important to consider also the tensions, building on a structured and context-sensitive discussion of different options. This is important as existing water cooperation –even when based on formal agreements and technically functional– may not be able to solve the underlying political contradictions, or can even be destructive or used as a technical veil for an actors' political intentions (Allouche et al., 2015; Allouche et al., 2019; Ide and Detges, 2018; Käkönen and Hirsch, 2009; Zeitoun et al., 2020b). In some situations, the existing or emerging conflicts may even provide a more fruitful –and possibly transformative– way forward than mere cooperative arrangements (Zeitoun et al., 2020b).

The spatial and temporal scales of our study merit attention as well. While the focus is generally on shared waters, the three case studies as well as a majority of the literature used focuses on transboundary river basins shared by two or more countries. Other types of transboundary waters exist as well, including shared groundwaters and lakes as well as coastal waters and seas. In addition, water diplomacy as a process can be used within a country to mitigate tensions between for example ethnic groups or different water users. While the suggested approach considers water diplomacy as a long-term process, water diplomacy can also act as an acute, short-term dimension for longer-term cooperation, with an aim to solve particularly contested situations. The various temporal and spatial scales of water diplomacy would thus require further study.

Finally, despite the fact that we emphasise the importance of seeing beyond water and engaging non-water experts, this study is largely located within water governance tradition. As such, the study is similar to most other water diplomacy studies, and continues the tradition of water-related approaches –most prominently the IWRM and water-energy-food security nexus– that emphasise the need for integration views, but nevertheless do this from a sectoral viewpoint. More effort is therefore needed to ensure that other disciplines contribute to the theory of water diplomacy, and to engage practitioners such as diplomats as well as peace mediation and conflict resolution professionals into its conceptualisation and implementation[4].

7. Conclusions

This article has aimed to contribute to the practice of water diplomacy by suggesting a simple, step-wise approach called Water Diplomacy Paths to analyse different water diplomacy contexts through the recognition of potential water-related and political tensions as well as a related set of water diplomacy actions across both technical and political tracks (Klimes et al., 2019). To facilitate this, we recognised five key aspects for water diplomacy from the current literature, suggested a general definition for water diplomacy, and sought to clarify the key difference between the related concepts of water diplomacy and transboundary water cooperation (Section 3.1).

We also demonstrated the use of Water Diplomacy Paths approach with brief case studies in three different transboundary settings. Given its practical focus, the work builds on a set of interviews and workshops with water diplomacy actors, including career diplomats. We see such a practical link important due to the increasing emphasis that water diplomacy is gaining in foreign policy, as exemplified by the recent EU Council Conclusions on Water Diplomacy (Council of the European Union, 2018) and the on-going, difficult negotiation process between Ethiopia, Egypt and Sudan regarding the Grand Ethiopian Renaissance Dam (GERD) in the Nile River Basin (Cascão, 2021; Roussi, 2020; Wheeler et al., 2020).

We do reckon that the reality of water diplomacy is messy, multi-faceted, dynamic and context-dependent, and efforts to conceptualise and define it inevitably miss some viewpoints. Actors engaged in water diplomacy are diverse – and may not even consider themselves as water diplomacy actors. Similarly, the presence of existing or potential conflict between countries does not warrant (water) diplomacy, sometimes even vice versa. On the other hand, our analysis reminds that the linkage of water diplomacy and water cooperation is often reciprocal: while cooperation is needed for meaningful water diplomacy, political actions may be required to open cooperation deadlocks or to bring politics into the forefront when cooperation is, intentionally or not, hiding the underlying politics.

For these reasons, we argue that systematic categorisations of water diplomacy can clarify its role among the diverse and potentially contested actors. We suggest that discussion on possible tensions that the lack of water diplomacy can lead to can help to provide motivation for the actual water diplomacy actions. We provide one example of such approach, namely the Water Diplomacy Paths, which aims to establish a way to recognise the key interconnections, contradictions and complementarities within the conceptual space of water diplomacy. While building on existing water diplomacy approaches and related methods such as joint fact finding and scenario building, the Paths approach also seeks to provide novel views through its emphasis on water-related and political tensions and actions. In this way, the Paths approach also seeks to address the distinct but complementary role that water diplomacy actions can have for more conventional transboundary water cooperation arrangements (Section 3.1). By providing an analytical framework to understand a given water diplomacy process, the approach can also offer a third-party actor a possibility to find entry points to meaningfully engage in the process. Such understanding is important, given that there rarely is just one on-going water diplomacy process, but rather a multitude of simultaneous, partly connected processes across multiple tracks and scales.

The title of this article refers to water diplomacy as a set of paths: this aims to convey two messages. Firstly, water diplomacy is a continuous, long-term process between the parties sharing a water body. We thus see that water diplomacy resembles first and foremost a marathon, with several up-hills and downhills. Reaching a common goal requires consideration of changing environmental, economic, social and political dynamics as well as a jointly agreed set of activities. We do, however, reckon that water diplomacy may also require more intensive, rapid set of actions –spurts– that are needed to tackle a particularly problematic situation in a shared waterbody – potentially with the help of a trusted third-party facilitator. Secondly, the plural of paths indicates that there are always multiple ways forward in a given shared waters context, both in terms of potential tensions and the respective solutions. We therefore see that establishing a future-oriented process that brings together

[4] The key role that water sector play in the conceptual development of water diplomacy is visible e.g. in the Web of Science, where a majority of the 62 publications listed by July 2021 under the topic search "water diplomacy" publications link to the field of water resources (in total 33 publications), with just three publications linked to political science and four publications to international relations.

transboundary water cooperation and foreign policy can help to enhance the success of water diplomacy.

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CRediT authorship contribution statement

Marko Keskinen: Conceptualization, Methodology, Supervision. **Erik Salminen:** Conceptualization, Methodology, Investigation. **Juho Haapala:** Conceptualization, Methodology.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jhydrol.2021.126737.

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