

Water and 'imperfect peace' in the Euphrates–Tigris river basin

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Transboundary water politics in the Euphrates–Tigris (ET) basin has long developed in tandem with the various political confrontations that have taken place among Iraq, Syria and Turkey. However, since the invasion of Iraq in 2003 and the beginnings of domestic unrest in Syria in 2011, transboundary water relations have been pursued within the context of an unstable international security environment, particularly with the emergence of non-state armed groups who have used water as a weapon against their opponents.¹ At the same time, however, cooperative mechanisms have also been initiated by riparian politicians, diplomats and water line ministries as well as informal and external actors. This article sets out to examine the various emerging actors and mechanisms operating in this context, arguing that their coexistence in the basin demonstrates a case of 'imperfect peace'. The concept of 'imperfect peace' is used to acknowledge the fact that relations can be reinforced through peaceful interactions, negotiations, agreements, treaties and diplomacy at multiple levels, even in conditions that do not amount to war, but where violence is present.²

With a specific focus on the ET river basin, the main objective of this article is to address policy-relevant research questions, such as how various actors and mechanisms operate within and influence transboundary water relations under the conditions of 'imperfect peace', and what kind of joint security mechanisms the riparian states should create to cope with violent non-state actors who control water and infrastructure. In reflecting on these questions, the article will analyse the strategic role that water plays in environmental peacebuilding and reflect on possible ways to improve the protection of water during and after armed conflicts.

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¹ Marwa Daoudy, 'Water weaponization in the Syrian conflict: strategies of domination and cooperation', *International Affairs* 96: 5, Sept. 2020, pp. 1347–66.

² Francisco A. Muñoz, 'Imperfect peace', in Wolfgang Dietrich, Josefina Echavarría and Norbert Koppensteiner, eds, *Schlüsseltexte der Friedensforschung/Key texts of peace studies/Textos claves de la investigación* (Vienna: LIT, 2006), pp. 241–81.

The concept of 'imperfect peace' in the context of environmental peacebuilding

The concept of 'imperfect peace' has underlain multiple definitions of peace and conflict throughout history.³ In this sense, 'imperfect peace' perceives peace 'as a process, an unfinished road'.⁴ Muñoz situates 'imperfect peace' somewhere between Johan Galtung's concept of positive peace (the absence of structural violence and the prevalence of social justice in a society) and negative peace (simply the absence of war).⁵ Accordingly, Muñoz conceptualizes an understanding of 'imperfect peace' in which small-scale peaceful interactions and regulations, including negotiations, agreements, treaties, diplomacy, NGO initiatives and so on, are acknowledged at multiple levels. These peaceful interactions and regulations can be found, according to Muñoz, even 'in those moments classified as "violent", between wars and aggressions'.⁶ Every small step made towards establishing a peaceful environment and helping humans fulfil their basic needs, even in a conflictive environment, is accepted as an example of 'imperfect peace' in action, even if these small steps do not radically transform the conflictive nature of the relations between the actors.⁷

This concept has been used, for example, to examine the role of civil society organizations in conflict transformation in the province of Idlib in northern Syria. Over the course of the Syrian civil war, civil society organizations have addressed the basic needs of communities amid continuing violence; contributed to occasional ceasefires; and mobilized communities to obtain shelters via early warning systems.⁸ All of these activities can be considered peaceful actions in a conflictive environment, even if they do not necessarily culminate in the peaceful resolution of the conflict. The concept is particularly pertinent to the case of water and peace in the ET basin. The social and political complexities of the region have prevented riparian states from reaching final and binding agreements over water sharing here. Nevertheless, peaceful interactions and regulations have continued to take place and emerge, with the involvement of multiple actors and governance mechanisms over water, despite various conflicts in the region inhibiting more peaceful relations between states.

Environmental peacebuilding focuses on the relationship between peace and the environment, emphasizing the fact that conflicting actors are inclined towards cooperation over transboundary natural resources, owing to their common vested interests in these resources and the cross-boundary nature of environmental challenges.⁹ In fact, the literature on environmental peacebuilding focuses strongly

³ Muñoz, 'Imperfect peace'.

⁴ Muñoz, 'Imperfect peace', p. 259.

⁵ Johan Galtung, 'Violence, peace, and peace research', *Journal of Peace Research* 6: 3, 1969, pp. 167–91.

⁶ Muñoz, 'Imperfect peace', p. 258.

⁷ Cedric de Coning, 'Adaptive peacebuilding', *International Affairs* 94: 2, March 2018, pp. 301–18.

⁸ Viviane Schönbachler, *The role of civil society in civilian protection and conflict transformation during armed conflict: the case study of Idlib (Syria)*, master's thesis, Interuniversity Institute of Social Development and Peace, Castellon, Spain, 2016.

⁹ Ken Conca and Geoffrey D. Dabelko, *Environmental peacemaking* (Washington DC: Woodrow Wilson Center Press; Baltimore and London: Johns Hopkins University Press, 2002); Philippe Le Billon and Rosaleen V.

on the role of natural resources in facilitating cooperation between conflicting actors, rather than perceiving it as a source of conflict itself, unlike earlier work in the field of environmental security.¹⁰

Environmental peacebuilding is predominantly conceptualized through liberal and sociological perspectives. The liberal perspective is marked by a focus on interdependency, rational choice theory, the cross-boundary nature of environmental issues and their role in setting the scene for cooperation between formerly conflicting parties and strengthening cross-boundary societal linkages.¹¹ More specifically, a liberal perspective, when applied to environmental peacebuilding, underlines that cooperation over natural resources during or after a conflict may result in a 'spill-over' effect, referring to the possible expansion of initial cooperation over natural resources into other policy domains.¹² For instance, cooperation over transboundary waters (in Europe and Asia) and transboundary protected areas (in Africa, the Middle East and Asia) is considered one of the first steps towards wider regional cooperation, paving the way for peaceful relationships to emerge between once-warring parties.¹³ This strand of literature perceives states as rational actors that choose to cooperate over cross-boundary environmental issues.¹⁴ This perception is based on the assumption that states calculate the costs and benefits of their potential cooperative actions and realize that solving cross-boundary environmental issues will eventually benefit all parties.¹⁵ The sociological perspective, on the other hand, emphasizes the possibility that environmental challenges or natural disasters may trigger a sense of solidarity and empathy between conflicting actors, leading them to build understanding and trust, which may over time transform once tense or violent relationships into peaceful ones.¹⁶ For example, the earthquakes that rocked Turkey and Greece in 1999 were instrumental in lowering tension in diplomatic relations between the two states, and also nurtured feelings of solidarity and empathy between the Turkish and Greek populations.¹⁷

Duffy, 'Conflict ecologies: connecting political ecology and peace and conflict studies', *Journal of Political Ecology* 25: 1, 2018, pp. 239–60; Tobias Ide, 'Does environmental peacemaking between states work? Insights on cooperative environmental agreements and reconciliation in international rivalries', *Journal of Peace Research* 55: 3, 2018, pp. 351–65.

¹⁰ See Thomas Homer-Dixon, *Environment, scarcity, and violence* (Princeton: Princeton University Press, 1999), for a discussion on how natural resources are perceived as a source of conflict.

¹¹ Ken Conca and Jennifer Wallace, 'Environment and peacebuilding in war-torn societies: lessons from the UN Environment Programme's experience with postconflict assessment', *Global Governance* 15: 4, Oct.–Dec. 2009, p. 489.

¹² Conca and Dabelko, *Environmental peacemaking*.

¹³ Ashok Swain, 'Water and post-conflict peacebuilding', *Hydrological Sciences Journal* 61: 7, 2016, pp. 1313–22; Karina Barquet, Päivi Lujala and Jan Ketil Rød, 'Transboundary conservation and militarized interstate disputes', *Political Geography* 42, Sept. 2014, pp. 1–11.

¹⁴ Conca and Dabelko, *Environmental peacemaking*.

¹⁵ Florian Krampe, 'Toward sustainable peace: a new research agenda for post-conflict natural resource management', *Global Environmental Politics* 17: 4, 2017, pp. 1–8.

¹⁶ Tobias Ide, Vakur Sumer and Larissa M. Aldehoff, 'Environmental peacebuilding in the Middle East', in Ashok Swain and Joakhim Ojendal, eds, *Routledge handbook of environmental conflict and peacebuilding* (New York: Routledge, 2018), pp. 175–87; Tobias Ide and Jürgen Scheffran, 'On climate, conflict and cumulation: suggestions for integrative cumulation of knowledge in the research on climate change and violent conflict', *Global Change, Peace and Security* 26: 3, 2014, pp. 263–79; Tobias Ide, 'Space, discourse and environmental peacebuilding', *Third World Quarterly* 38: 3, 2017, pp. 544–62.

¹⁷ James Ker-Lindsay, 'Greek–Turkish rapprochement: the impact of "disaster diplomacy"?', *Cambridge Review of International Affairs* 14: 1, 2000, pp. 215–32.

Environmental peacebuilding has been frequently discussed in the context of the vital role of water in promoting peacebuilding activities in post-conflict settings. Troell and Weinthal point to the ways in which ‘water resources play a critical role in post-conflict recovery and peacebuilding: restoring livelihoods, supporting economic recovery, and facilitating reconciliation’.¹⁸ Swain highlights similar points, and proposes ‘legal reforms and building of sound water institutions; careful planning of water use to achieve sustainable food security; and cooperative involvement of international, national and local stakeholders in the planning and managing of water resources’ in post-conflict settings.¹⁹

Other related studies focus on the role of water in peacebuilding processes in the Middle East. Initial works in this strand of literature were based on the relationship between water and conflict; they predicted water wars in the Jordan, Nile and ET basins in the foreseeable future, and identified water as one of the key contributory factors in the Arab–Israeli wars of 1948, 1967 and 1973.²⁰ In response to such analyses, scholars including Aaron T. Wolf and Steve Lonergan have argued that water is not the main source of conflict in the Middle East—and indeed, that water wars between states in the Middle East (or in the wider world) are unlikely to occur, given that there are historically more factors urging cooperation than conflict over water from the viewpoint of states, for which such wars would be strategically irrational, hydrographically ineffective and economically unsustainable.²¹

The London Water Research Group, meanwhile, characterizes transboundary water relations in the ET basin as a series of neutral interactions, in which levels of cooperation and conflict remain between low and moderate. Zeitoun and Mirumachi consider neutral transboundary water interactions as being characterized by low cooperation and low conflict, minimal information exchange and limited technical commissions or meetings. They also consider joint pollution management, joint infrastructure development, benefit-sharing based on agreements and the creation of river basin organizations as examples of neutral interactions under conditions of low conflict and moderate cooperation.²² These elements can easily be found in the transboundary water interactions around the ET basin (and other contested river basins, such as those of the Jordan and the Nile);

¹⁸ Jessica Troell and Erika Weinthal, ‘Shoring up peace: water and post-conflict peacebuilding’, in Erika Weinthal, Jessica Troell and Mikiyasu Nakayama, eds, *Water and post-conflict peacebuilding* (London: Earthscan, 2014), p. 4; Finn Stepputat, ‘Pragmatic peace in emerging landscapes’, *International Affairs* 94: 2, March 2018, pp. 399–416.

¹⁹ Swain, ‘Water and post-conflict peacebuilding’, p. 1319. See also Carl Bruch, Carroll Muffett and Sandra S. Nichols, ‘Natural resources and post-conflict governance: building a sustainable peace’, in Carl Bruch, Carroll Muffett and Sandra S. Nichols, eds, *Governance, natural resources and post-conflict peacebuilding* (London: Earthscan, 2019), pp. 1–31.

²⁰ Homer-Dixon, *Environment, scarcity, and violence*. See also Joyce R. Starr, ‘Water wars’, *Foreign Policy*, no. 82, Spring 1991, pp. 17–36; Miriam R. Lowi, ‘Bridging the divide: transboundary resource disputes and the case of West Bank water’, *International Security* 18: 1, 1993, pp. 113–38.

²¹ Aaron T. Wolf, ‘Conflict and cooperation along international waterways’, *Water Policy* 1: 2, 1998, pp. 251–65; Steve Lonergan, ‘Water resources and conflict: examples from the Middle East’, in Nils Peter Gleditsch, ed., *Conflict and the environment* (Dordrecht: Springer, 1997), pp. 375–84.

²² Mark Zeitoun and Naho Mirumachi, ‘Transboundary water interaction, I: reconsidering conflict and cooperation’, *International Environmental Agreements* 8: 4, 2008, pp. 297–316.

their existence, however, does not mean that water-related cooperation will be fully realized and extended into other policy domains.²³

Taking these studies as a starting-point, other scholars have recently sought to reassess the relationship between water and peace in the Middle East through a number of more theoretically/conceptually informed case-study analyses. Aggestam and Sundell-Eklund, for instance, provide a critical account of the promotion of technocratic approaches, aimed at desecuritizing and depoliticizing water, in the Middle East peace process, given that access to the resource has been highly politicized and securitized by both Israeli and Palestinian politicians.²⁴ Schilling and colleagues, and Aggestam and Strombom, have analysed the work of EcoPeace in providing a platform for Israeli, Palestinian and Jordanian activists to enhance cooperation in the region; this initiative has since evolved into the 'Good Water Neighbours' project, involving cross-border support of water supply and sanitation, and is characterized by a bottom-up approach represented by community-led activism.²⁵ Ide and colleagues, in their brief analysis of the relationship between Turkey, Syria and Iraq over the ET basin, have highlighted the existence of cooperative actions, even in the absence of successfully finalized treaties over transboundary water resources.²⁶ According to Ide's definition, 'environmental peacebuilding includes all forms of cooperation on environmental issues, which simultaneously aims at and de facto achieves the transformation of relations between hostile parties towards peaceful conflict resolution'.²⁷ This is the approach we have adopted in the formulation of the present study, as it enables us to investigate the various forms of cooperative actions, from local to international level, among the riparian states in the ET basin. We consider that the case of water relationships in the ET basin represents an instance of 'imperfect peace', and that by using this concept to consider water and its impact on peace in this context we can contribute to the growing literature of environmental peacebuilding. Our analysis will accordingly be grounded within this context while unpacking the evolution of actors and governance mechanisms in transboundary water politics.

An overview of the governance history of the Euphrates–Tigris river basin

Transboundary water relations in the ET basin are often marked by political confrontation and rivalry. However, a closer look into the case reveals that the basin has also hosted water governance mechanisms both championed and challenged

²³ Mark Zeitoun, Naho Mirumachi and Jeroen Warner, 'Transboundary water interaction, II: the influence of "soft" power', *International Environmental Agreements* 11: 2, 2011, pp. 159–78.

²⁴ Karin Aggestam and Anna Sundell-Eklund, 'Situating water in peacebuilding: revisiting the Middle East peace process', *Water International* 39: 1, 2014, pp. 10–22; Karin Aggestam, 'Desecuritisation of water and the technocratic turn in peacebuilding', *International Environmental Agreements* 15: 3, 2015, pp. 327–40.

²⁵ Janpeter Schilling, Sarah Louise Nash, Tobias Ide, Jurgen Scheffran, Rebecca Froese and Pina von Prondzinski, 'Resilience and environmental security: towards joint application in peacebuilding', *Global Change, Peace and Security* 29: 2, 2017, pp. 107–27; Karin Aggestam and Lisa Strombom, 'Peacebuilding in the Middle East', in Anders Jägerskog, Michael Schulz and Ashok Swain, eds, *Routledge handbook on Middle East security* (Abingdon: Routledge, 2019), pp. 141–53.

²⁶ Ide et al., 'Environmental peacebuilding in the Middle East'.

²⁷ Ide, 'Space, discourse and environmental peacebuilding', p. 545.

by the riparian states themselves; these mechanisms have predominantly shaped transboundary politics in the basin for the past century.

Water disputes over the ET basin began in the late 1960s, triggered by a series of competitive, uncoordinated and unilateral water development projects embarked upon by the riparian states; by the 1980s, the political linkages established between transboundary water issues and non-riparian security issues were exacerbating tensions arising from disagreements over water.²⁸ The first political crisis of this nature occurred in 1975, when Turkey began filling the Keban reservoir at the same time that Syria was completing the construction of the Tabqa dam.²⁹ The conflict of interest was exacerbated by a severe drought over the region, triggering a crisis that spring. Iraq accused Syria of reducing the river's flow to intolerable levels, while Syria blamed Turkey. The Iraqi government was not satisfied with the Syrian response, and the mounting frustration resulted in mutual threats that brought the parties to the brink of armed hostilities. A war over water was averted, thanks to Saudi Arabia's mediation, when Syria released additional quantities of water to Iraq. The main cause of this crisis, however, was the mounting political rivalry and tension between the two Ba'athist regimes in Baghdad and Damascus. In other words, it was not a water-sharing crisis *per se*, but rather the beginning of the use of water as a political lever in regard to unrelated issues.³⁰

At the same time, international donor agencies, specifically the United States Agency for International Development (USAID) and the World Bank, became quite influential actors in transboundary water allocations.³¹ Under pressure from those agencies, through an agreement signed with USAID in Ankara in 1966, Turkey, as the furthest upstream riparian state in the Euphrates region, promised to undertake all necessary measures in order to maintain a discharge of 350 cubic metres per second immediately downstream from the Keban dam, provided that the natural flow of the river was adequate to supply a discharge at that rate. This was confirmed orally to Syria and Iraq the same year. USAID was the acting donor for the Keban project, while the World Bank was the leading agency financing the Karakaya dam further downstream.³² Both agencies insisted that guaranteed flows be released by Turkey to downstream riparian states continuously while the dams were operating.

Analysis of transboundary water relations between pairs of countries (Turkey–Syria, Syria–Iraq, Iraq–Turkey) shows that political rivalries stemming from conflicting national positions within the context of the Cold War worked to prevent any fruitful cooperation from taking root. Turkey's NATO membership,

²⁸ Aysegül Kibaroglu and Waltina Scheumann, 'Evolution of transboundary politics in the Euphrates–Tigris river system: new perspectives and political challenges', *Global Governance* 19: 2, April–June 2013, pp. 279–307.

²⁹ This was the first large-scale dam built on the Turkish portion of the Euphrates river. See Aysegül Kibaroglu and Waltina Scheumann, 'Euphrates–Tigris rivers system: political rapprochement and transboundary water cooperation', in Aysegül Kibaroglu, Waltina Scheumann and Annika Kramer, eds, *Turkey's water policy, national frameworks and international cooperation* (Berlin: Springer, 2011), pp. 277–99.

³⁰ Kibaroglu and Scheumann, 'Euphrates–Tigris rivers system', p. 285.

³¹ Kamuran Gurun, *Akintiya kürek çekmek: bir büyükelcinin anıları* [Going against the tide: memoirs of an ambassador] (Istanbul: Milliyet Yayınları, 1994).

³² The second large-scale dam built on the Turkish portion of the Euphrates. See Kibaroglu and Scheumann, 'Euphrates–Tigris rivers system'.

on the one hand, and Syria's and Iraq's ties to the Soviet Union, on the other, did more than inhibit cooperation, aggravating existing disputes over water and moving them progressively up the agenda of outstanding contentions. Ironically, despite being united in their relations with the Soviet Union, Iraq and Syria were themselves also at loggerheads over water, among many other issues. Rivalry between the two states increased to such levels that on more than one occasion the use of the waters of the Euphrates brought Baghdad and Damascus to the brink of war. Turkish–Iraqi relations, on the other hand, though frequently marked by harsh rhetoric, were comparatively manageable—in part owing to the complementary nature of the two economies, with a significant volume of bilateral trade.³³

From the 1980s to the late 1990s, political tensions among this group of countries, particularly between Turkey and Syria, insinuated themselves into every aspect of their relationships and so, inevitably, the water issue moved into the realm of high politics. Bilateral relations between Turkey and Syria, in fact, had long been uneasy, owing to three entrenched bilateral security problems: border security, territorial claims and transboundary water issues. Despite official denials by Damascus, from the early 1980s onwards Turkey persistently claimed that Syria was providing substantial logistical and other support to non-state armed groups engaged in subversive activity against Turkey. Moreover, Syria never acknowledged the annexation of the province of Hatay by Turkey in 1939. While Turkey insisted during the 1980s that regional waters, namely the Euphrates, Tigris and Orontes, should be discussed jointly, Syria rejected any discussions over the waters of the last of these three rivers, which flowed through Hatay, so that any negotiation would have been tantamount to recognizing Turkey's sovereignty over the province.³⁴

Although the regional political environment was not conducive to water cooperation in the early 1980s, the growing exploitation of the Euphrates through the construction of the Atatürk Dam in Turkey led to fresh calls for cooperation. To this end, the Joint Technical Committee (JTC) was established in 1983 with the participation of all three riparian states. The task of the JTC was to lay down the methods and procedures that would lead to the definition of reasonable and adequate quantities of water for each country to draw from the Euphrates and Tigris.³⁵ However, despite meeting 16 times the JTC was unable to agree on any substantial resolution, leading to the suspension of negotiations in 1993. A careful examination of the records of these negotiations shows that non-water issues (or, more precisely, the overall pattern of relations among the three riparians) played

³³ Economic ties between Turkey and Iraq have historically been strong, and during the 1980s the revenue from Iraq's oil pipeline through Turkey was more than US\$1 billion per year. See İlhan Sagsen, 'Turkey–Iraqi relations on sectoral basis and water', *Ortadoğu Analiz* 3: 36, 2011, pp. 60–72.

³⁴ Meliha Benli Altunisik and Özlem Tur, 'From distant neighbors to partners? Changing Syrian–Turkish relations', *Security Dialogue* 37: 2, 2006, pp. 232–4.

³⁵ Aysegül Kibaroglu, *Building a regime for the waters of the Euphrates–Tigris river basin* (London, The Hague and New York: Kluwer Law International, 2002).

a decisive role in the growth of tension and disputes.³⁶ The use of transboundary rivers was only one factor in a complex web of relations and interactions.³⁷

Just as the JTC meetings were unable to make an effective contribution to the settlement of the regional water dispute, so the treaties signed in the late 1980s did not prove a useful means of managing the transboundary river system equitably. In 1987 and 1990, two bilateral accords—acknowledged by all the riparian states as constituting interim agreements—were signed following a number of high-level meetings of top officials in the region. The Turkish–Syrian Protocol on Economic Cooperation, concluded in 1987, was the first formal bilateral agreement reached on regional waters and was made possible by simultaneous negotiations on security matters. According to this protocol, Turkey agreed to provide Syria with a water flow of up to 500 cubic metres per second, or around 16 cubic kilometres per year, at the Turkish–Syrian border—this, in the hope of reaching an agreement with Damascus on security matters.³⁸ Three years later, the Syrian–Iraqi water accord of 1990 designated Syria’s share of the Euphrates waters as 42 per cent, the remaining 58 per cent to be allocated to Iraq as a fixed annual total proportion.³⁹

From the emergence of transboundary water disputes in the 1960s until the early 2000s, water relations among the riparian states were mostly handled at the diplomatic level through the exchange of curt diplomatic notes. When such diplomacy failed to ease tensions, meetings were held at the highest level. Throughout this period, it was, by and large, the riparian states that shaped transboundary water policy. However, external actors or third parties such as international aid and development agencies also played critical roles in providing financial support for construction of the first large-scale dams and also making the loans conditional upon releasing certain amounts of water from upstream (Turkey) to downstream (Syria and Iraq). Mutual interdependence among the riparian states was governed by the bilateral water protocols and the JTC, even though these mechanisms were unable to generate a comprehensive framework agreement for integrated, efficient and equitable water quality and quantity management in the basin.

The emergence of new actors in the ‘imperfect peace’ of the ET basin

Significant political changes have taken place in the ET basin since the early 2000s, bringing new actors and processes into the ‘imperfect peace’ in the area. The US invasion of Iraq in 2003 had drastic implications for water policy and management in the country, complicating the realm of transboundary water politics.

³⁶ The final communiqués of the 16 JTC meetings were reviewed with the permission of officials of the State Hydraulic Works and are on file with the authors.

³⁷ Waltina Scheumann, ‘Conflicts on the Euphrates: an analysis of water and non-water issues’, in Waltina Scheumann and Manuel Schiffler, eds, *Water in the Middle East* (Berlin: Springer, 1998), pp. 31–45.

³⁸ *Protocol on matters pertaining to economic cooperation between the Republic of Turkey and the Syrian Arab Republic*, United Nations Treaty Series 87/12171, 17 July 1987.

³⁹ Law no. 14 of 1990, ratifying the joint minutes concerning the provisional division of the waters of the Euphrates River, <https://www.informea.org/en/legislation/law-no-14-1990-ratifying-joint-minutes-concerning-provisional-division-waters-euphrates> (available in Arabic). (Unless otherwise noted at point of citation, all URLs cited in this article were accessible on 14 July 2020.)

Meanwhile, regime change in Iraq and a political *rapprochement* between Turkey and Syria in the first decade of the century provided a conducive environment for the flourishing of informal 'track-two' diplomacy initiatives—some of which continued to be active even after the start of the Syrian conflict in 2011. Notwithstanding the volatile political atmosphere in the region, water bureaucracy and diplomatic cadres managed to draft a series of protocols or memorandums of understanding (MoUs) in 2009 concerning water use and management, which in turn contributed to environmental peacebuilding. However, as the Syrian conflict expanded into a full-scale civil war, the basin witnessed increasing violence in which water and the related infrastructure were systematically used as a weapon by illegal non-state armed groups. The coexistence of these new actors and diplomatic processes, whether peaceful or violent, perpetuates the state of 'imperfect peace' in the ET basin.

US institutions in the 'imperfect peace' setting in Iraq after 2003

Following the invasion of Iraq, the US State Department, the US Army Corps of Engineers, USAID and a number of US research and education institutions played significant roles in the reformulation of water policy and management in Iraq, particularly in relation to reconstruction and development. In the south, rehabilitation of the Mesopotamian marshlands, and in the north, new water resources development projects such as dam-building, moved high up on the agenda. Also, with the aim of 'managing the waters of the Euphrates and Tigris to an optimum level', the relevant US institutions initiated studies to promulgate a strategic master plan for Iraqi waters.⁴⁰

The prevailing view adopted by US institutions was that planning and management in the ET basin required, along with water-flow data, the gathering of information concerning the operation of the upstream dams in Turkey and Syria. Yet during the early stages of the US occupation of Iraq (2003–2004), the country was destabilized and domestically insecure; in these chaotic circumstances, meeting political, social and economic targets for reconstruction, including those related to water resources management, was a highly challenging task. Moreover, there was no durable cooperative framework on which to build Iraq's relations with neighbouring states in the ET basin, where mutual distrust and uncertainty prevailed in bilateral and multilateral interstate relationships, and where there was no permanent institutional mechanism for ascertaining the rights and obligations of the riparians in respect of transboundary water management. Hence, the aspirations of US institutions could not be realized.⁴¹

The US occupation was followed by a vicious period of sectarian violence from 2004 to 2009 as Iraqi Shi'a and Sunni groups struggled for power in post-occupation Iraq. The fragile stability that emerged between 2009 and 2011 subsequently

⁴⁰ Aysegül Kibaroglu, 'The role of epistemic communities in offering new cooperation frameworks in the Euphrates–Tigris rivers system', *Journal of International Affairs* 61: 2, Spring–Summer 2008, pp. 183–98.

⁴¹ Kibaroglu, 'The role of epistemic communities', p. 190.

disintegrated when the United States pulled out its military forces. Even before the rise of the non-state illegal actors, some experts predicted that by 2015 Iraq would be about one-third short of its water needs owing to war, neglect, looting and other elements of the persistent chaos and instability.⁴² To date, the US institutions' design of and intervention in Iraqi water policies and practices have not produced any tangible results in respect of effective and equitable water management at either the national or the international level.

The role of track-two diplomacy as an integral component of 'imperfect peace'

Regime change in Iraq provided salient opportunities for Iraqi water professionals and scholars to interact more systematically with their colleagues in Syria and Turkey. As a result, 2005 saw the founding of the Euphrates–Tigris Initiative for Cooperation (ETIC), involving water professionals, former diplomats, technocrats and academics from Iraq, Syria and Turkey. The ETIC was crafted as a track-two diplomacy initiative to play a constructive role in transboundary water dialogue and scientific cooperation. Thus, even in the midst of conflicts in Iraq and Syria and the deterioration of bilateral political relations between any pair of the three riparian states, the ETIC managed to carry out research projects and training activities on non-contentious issues such as dam safety, river hydrology and geographic information systems.⁴³

That said, the general regional security environment has affected judgements as to the effectiveness of efforts such as those embarked upon by the ETIC. High levels of regional conflict and tension make it more difficult to promote ideas of cooperation both to official policy-makers and to the wider public. In the prevailing volatile conditions, the ETIC has been trying to detach collaborative activities from political conflicts, and in consequence, against all the odds, the region still hosts a web of cultural, social and economic interactions, while bilateral political relations are improving, particularly between Iraq and Turkey.

The ETIC and other informal science policy initiatives, such as the Collaborative Programme Euphrates and Tigris (CPET) and the Blue Peace Initiative, have been trying to seize such opportunities for cooperation to carry out water-based capacity-building and research activities in the region. The CPET was crafted as a five-year project (to run from 2013 to 2018) that aimed to assist the countries in the ET region, namely Turkey, Iran and Iraq, in making progressive steps towards improving water management through dialogue, trust-building, information exchange, analysis and the prioritization of regional investment. As Klimes and Yaari have stressed, even though political will was instrumental in launching the CPET, and some level of trust and shared understanding has been established

⁴² David P. Forsythe, 'Water and politics in the Tigris–Euphrates basin: hope for negative learning?', in Jean Axelrad Cahan, ed., *Water security in the Middle East: essays in scientific and social cooperation* (London: Anthem, 2017), pp. 167–85.

⁴³ Kibaroglu, 'The role of epistemic communities'; ETIC, 2019, <https://euphratestigrisinitiativeforcooperation.wordpress.com/>.

among the participating experts, challenges remain as to how to institutionalize trust and common ground in the formal processes as the CPET meetings have continued amid increased tensions between participating governments.⁴⁴

With the support of the Swiss Agency for Development and Cooperation in the dialogue between Iraq and Turkey, the Strategic Foresight Group, a Mumbai-based think-tank, organized a series of Blue Peace meetings in 2013 and 2014, with stakeholders deciding to focus on the Tigris as the situation in Syria did not allow any basin-wide cooperation incorporating the Euphrates. The delegations, composed of senior advisers to prime ministers, former cabinet ministers, members of parliament, officials of water ministries and water authorities, and experts from Iraq and Turkey, established a consensus on a plan of action to promote the exchange and calibration of data and standards pertaining to Tigris river flows.⁴⁵ Although this informal plan is yet to be fully implemented, subsequent technical meetings between Iraqi and Turkish water agencies have included that area of cooperation—data exchange and harmonization—in their formal discussions on the possibility of building joint dams on the border.

Water bureaucracy thrives in 'imperfect peace'

Transboundary water relations have never existed in a political vacuum. A serious political crisis between Turkey and Syria developed in October 1998, when high-ranking Turkish military officers and politicians in Ankara made public statements requesting that their counterparts in Damascus cease to support non-state armed groups responsible for subversive actions against Turkey, who had taken refuge in Syria. Ankara's coercive diplomacy, the political and military implications of which seemed to be acknowledged by Damascus, produced a framework security agreement, also known as the Adana Accord, signed on 20 October 1998 between the two states.

In the aftermath of the Adana Accord, as Troell and Weinthal have suggested, 'water resources played a critical role in post-conflict recovery and peacebuilding',⁴⁶ in the sense that Syria's complaints have much diminished with respect to the flow of waters from the Euphrates. Moreover, Turkey and Syria have come very close to building the 'Friendship Dam' on the Orontes, which would be not only another example of cooperative use of transboundary water resources, but also a de facto acknowledgement of Turkey's official boundaries (in respect of Hatay province) that the Syrian authorities have long declined to make.

Relations between Turkey and Syria improved considerably after the signing of the Adana Accord, and new and promising initiatives were undertaken on both sides. In the first decade of the 2000s, transboundary water politics seemed to evolve from a spirit of hostility to one of cooperation. The most decisive factor in

⁴⁴ Martina Klimes and Elizabeth A. Yaari, 'Water and security in the Middle East: opportunities and challenges for water diplomacy', in Jägerskog et al., *Routledge handbook on Middle East security*, pp. 234–51.

⁴⁵ SÜEN (Turkish Water Institute), technical experts meeting between Turkey and Iraq, 18–19 August 2016, <https://suen.gov.tr/Suen/en/catdry.aspx?val=281>.

⁴⁶ Troell and Weinthal, 'Shoring up peace', p. 4.

building these cooperative frameworks was political will expressed at the highest levels of decision-making. However, water agencies also had a role in bringing about this change. Cooperative initiatives related to transboundary waters were agreed through a series of bilateral MoUs on the protection of the environment, water quality management, water efficiency, drought management and flood protection, with a view to addressing the adverse effects of climate change.

In this context, Turkey and Iraq signed a protocol on water in 2009 covering issues including sharing hydrological and meteorological data; the efficient use and management of regional waters; appraisal of water resources that are under stress owing to increasing water use and climate change; harmonization of existing hydrological measurement facilities; modernization of existing irrigation systems; avoidance of losses in the domestic water sector; building up water supply and water treatment infrastructure in Iraq with the involvement of Turkish companies; and the joint investigation, planning and construction of flood control measures and drought management. The protocol demonstrates that both authorities sought good transboundary water governance rather than insisting on their respective water rights.

Turkey and Syria have signed four protocols concerning the waters of the Euphrates, Tigris and Orontes rivers. These protocols encompass issues such as the joint construction of a dam along the part of the border where the Orontes passes from Syria into Turkey, the use of water by Syria where the Tigris forms the border with Turkey, drought management, efficient water management, improved water quality management and protections for the environment. In contrast with the 1987 protocol, which concentrated on a sharing of the Euphrates waters, these MoUs emphasize the patterns and levels of water development, use and management, and deal particularly with drought management and environmental protection.

These bilateral MoUs, however, proved impossible to implement owing to regional instability and increased political tensions between the riparian states. Relations between Turkey and Iraq, though long marred by border security issues, have been less problematic than one might expect, with hardly any direct confrontations between Ankara and Baghdad. The US-led invasion of Iraq in 2003 deepened further the de facto division of Iraqi territory into three substates, populated by the Kurds in the north, the Shi'as in the south and the Sunnis in the middle, which has caused further instability in the country. Turkey's military operations in northern Iraq, where troops are stationed on the basis of a 'hot pursuit' border security agreement agreed upon between Ankara and Baghdad back in 1984, has added to tension that has also been exacerbated occasionally by water issues, especially in times of extended drought when the flow of waters from the Euphrates and Tigris slows down.

After years of deadlock in transboundary water relations as a consequence of uncertainties arising from the Syrian conflict, in 2014 Turkey and Iraq decided to reopen dialogue at the ministerial level on their transboundary water resources. This culminated in May that year in the signing of the minutes of the bilateral cooperation meeting between Turkey and Iraq, a document that encompassed the

principles, modalities and issues pertaining to bilateral water cooperation. As a follow-up, Turkish and Iraqi government officials, along with water professionals, have made sustained efforts to create new areas for water cooperation, such as joint technical studies on climate change, technical training programmes, and projects for building joint dams on the border between the two countries.⁴⁷

In early August 2019, Turkey and Iraq agreed to establish a water resources centre in Baghdad to address water issues in the region. Addressing a press conference in the Iraqi capital, the Turkish presidency's special representative to Iraq announced that the two countries had drafted an action plan on the subject. Furthermore, the Iraqi water resources minister stressed that Iraq was pleased with the Turkish president's 'constructive' attitude towards the country's water issues.⁴⁸ The main challenge, however, remains how to translate such general manifestations of political will into a tangible long-term agreement that will also take into consideration future water availability and demands across the region.

Although both Iraq and Turkey support intergovernmental cooperation on finding sound technical solutions to their future water needs and challenges, there remain issues of contention between the two, in particular the building of the Ilisu dam on the Turkish portion of the Tigris. Turkey completed the construction of the dam in 2018; however, upon the request of the Iraqi government, Ankara agreed to temporarily stop filling the reservoir behind the dam in June 2018 at a time of severe drought and water scarcity in Iraq that resulted in violent protests in Basra. At a later stage, the two countries reached an agreement establishing that Turkey would release certain amounts of water into the Tigris river while filling the reservoir. Nevertheless, Turkey's water development ventures continue to raise concerns in Iraq, while the former has called for increased water efficiency in downstream countries.⁴⁹ The Turkey–Iraq part of the picture demonstrates that under conditions of 'imperfect peace', riparian states can continue talks on their transboundary waters at a bilateral level when multilateral negotiations become difficult to pursue owing to political volatility. Even so, the Turkey–Iraq discussions have not seen either the adoption of joint strategies for responding to the actions of violent non-state actors or the creation of a basin-wide understanding for protecting transboundary water resources.

The Syrian civil war and the emergence of non-state actors challenging the 'imperfect peace' setting

There is an increasing tendency to use water resources and infrastructure as targets or weapons in armed conflicts.⁵⁰ In recent armed conflicts, states and non-state

⁴⁷ Aysegül Kibaroglu, 'State-of-the-art review of transboundary water governance in the Euphrates–Tigris river basin', *International Journal of Water Resources Development* 35: 1, 2019, pp. 4–29.

⁴⁸ AA Energy, 'Turkey, Iraq to set up water resources center', Anadolu Agency, 1 Aug. 2019, <https://www.aa.com.tr/en/energy/projects/turkey-iraq-to-set-up-water-resources-center/26217>.

⁴⁹ Martina Klimes, 'Water diplomacy and sustainable management in Mesopotamia', *ISPI Dossier* (Milan: Italian Institute for International Political Studies, 26 Feb. 2020), <https://www.ispionline.it/it/publicazione/water-diplomacy-and-sustainable-management-mesopotamia-25178>.

⁵⁰ Erika Weinthal and Jeannie Sowers, 'Targeting infrastructure and livelihoods in the West Bank and Gaza',

armed groups have destroyed and captured water installations on segments of the Euphrates both in Syrian and in Iraqi territory.⁵¹ In Syria, amid rising violence and instability, the paucity of regional coordination and poor security schemes along the rivers themselves have made it possible for violent non-state actors, above all the so-called Islamic State of Iraq and Syria (ISIS), to exploit water both as a resource and as a weapon. Not only have they destroyed water-related infrastructure, such as pipes, sanitation plants, bridges and cables connected to water installations, they have also used water as an instrument of violence, deliberately flooding towns, polluting bodies of water, and ruining local economies by disrupting electricity generation and agriculture, in both Iraq and Syria.⁵² At the time of writing, ISIS no longer controls any dams, but when it did, it used them to flood or parch downstream populations to pressure them into surrendering.⁵³

In Syria, in fact, nearly every party to the conflict has used water as a weapon. During the rise of ISIS in Iraq and Syria, governments and militaries used similar tactics in their fight against the group, closing the gates of dams and attacking water infrastructure under their control, thus causing further suffering to the surrounding populations. The Syrian government has been repeatedly accused of withholding water and reducing flows or closing dam gates as part of its fight against ISIS and other rebel groups, and of using the denial of potable water as a coercive tactic against many suburbs of Damascus thought to be sympathetic to the rebels.⁵⁴

ISIS may no longer pose a threat to water in the Middle East. However, there are other dangers in the region. After the defeat of ISIS, other non-state armed groups took over some dams in Syria, thereby gaining control of hydropower generation and the flow of water to the country's irrigated agricultural land.⁵⁵ If these groups were to gain access to more territory, they could adopt the tactics used by ISIS to make a weapon out of water.⁵⁶ Thus, in the foreseeable future, riparian states must be thoroughly prepared for and ready to respond to possible attacks on the region's water supply and development infrastructure. This threat should also alert riparian states to the need to establish regional security arrangements in order to preserve and protect their resources.

International Affairs 95: 2, March 2019, pp. 319–40.

⁵¹ Jeannie L. Sowers, Erika Weinthal and Neda Zawahri, 'Targeting environmental infrastructures, international law, and civilians in the new Middle Eastern wars', *Security Dialogue* 48: 5, 2017, pp. 410–19.

⁵² Ambika Vishwanath, 'The water wars waged by the Islamic state', *Stratfor*, 25 Nov. 2015, <https://www.stratfor.com/weekly/water-wars-waged-islamic-state>.

⁵³ Tobias von Lossow, *Water as weapon: IS on the Euphrates and Tigris* (Berlin: Stiftung Wissenschaft und Politik, 2016), https://www.swp-berlin.org/fileadmin/contents/products/comments/2016Co3_lsw.pdf.

⁵⁴ Tobias von Lossow, 'The rebirth of water as a weapon: IS in Syria and Iraq', *International Spectator* 51: 3, 2016, pp. 82–99.

⁵⁵ These groups include, among others, the Kurdish People's Protection Units (YPG) and Hay'at Tahrir al-Sham (a group affiliated with Al-Qaeda). See Strategic Foresight Group, 'The Middle East blue strike list', *Blue Peace Bulletin*, no. 3, 2019, pp. 1–13.

⁵⁶ Though some sources of information regarding violent non-state actors' control and use of water as a weapon may constitute unreliable scientific evidence owing to their possible subjectivity and unsystematic nature, a plethora of sources provide ample information on the increasing use of water as a weapon and direct or indirect targeting of water infrastructure by violent non-state actors in the region. See UN Human Rights Council, *Report of the Independent International Commission of Inquiry on Syrian Arab Republic*, A/HRC/31/68, 2016, p. 12, para. 82, <http://www.ohchr.org/Documents/HRBodies/HRCouncil/CoISyria/A-HRC-31-68.pdf>.

Joint security mechanisms to protect transboundary water resources

The Syrian civil war is pushing riparian states towards developing new water governance principles and practices in the midst of conflict and, at some point, a post-conflict situation. In the context of an 'imperfect peace', where peaceful interactions and violence go hand in hand, there is a pressing need for joint security mechanisms to be crafted to protect water resources and related infrastructure in the ET basin. These should include provision for the protection of particularly sensitive infrastructures, such as dams, which remain vulnerable targets—especially given that terrorist threats are very likely to persist in the region.⁵⁷ Extending the scope of existing water institutions, such as joint technical water committees or river basin organizations, may provide an effective mechanism for safeguarding transboundary waters and related infrastructure in the face of both international and internal armed conflicts and acts of terror. The only joint institution which has remained functional, albeit irregularly, in the ET basin, is the JTC—whose mandate consists of mainly technical exchanges over water development projects. This is not to say that the JTC should be considered a security apparatus or supplant the functions of relevant state bodies working on security measures. However, it can play an effective role as a dialogue mechanism for states to discuss protection measures and a forum to ensure political commitment to the protection of water supply, which could be formalized in a protocol. An illustrative example is provided by the Senegal River Basin Development Organization, formed by Mali, Mauritania, Guinea and Senegal for the Senegal river, which has functioned continuously despite periods of armed conflict and tensions between the participating countries and has acted as the primary channel of communication between those states, thereby gradually easing tensions.⁵⁸

State actors have their own predetermined sets of risk management principles, as well as investigation guidelines and mitigation measures, which are implemented domestically to safeguard infrastructure from threatened and actual violence. However, states could be more proactive and effective, both individually and in collaboration, when assessing threats to water infrastructure. For example, vulnerabilities in water infrastructure and water resources could be mapped out, using ideas such as 'vulnerability landscaping'; potential threats could be further grouped into physical and cyber attacks, and those requiring joint or coordinated action by states. Moreover, water infrastructure involves several interdependent sectors, including for example energy, and involves a range of different stakeholders (both private and public), all of which must be taken into account in

⁵⁷ Both official information and reports from the news agencies, albeit written from sharply diverging political perspectives, indicate that ISIS had gathered new strength and was resurgent across Iraq and Syria in 2019. See *Blue Peace Bulletin*, vol. 12, Dec. 2019, https://strategicforesight.com/publication_pdf/Revisiting%20Conflict%20Zones.pdf; Orla Guerin, 'ISIS in Iraq: militants "getting stronger again"', BBC News, 23 Dec. 2019, <https://www.bbc.com/news/world-middle-east-50850325>; Ali Murat Alhas, "'Daesh/ISIS still alive due to YPG/PKK': Turkey', Anadolu Agency, 1 Dec. 2019, <https://www.aa.com.tr/en/turkey/daesh-isis-still-alive-due-to-ypg-pkk-turkey/1660765>

⁵⁸ Strategic Foresight Group, 'Regional water protection framework', *Blue Peace Bulletin*, no. 6, 2019, pp. 1–14. https://strategicforesight.com/publication_pdf/REGIONAL%20WATER%20PROTECTION%20FRAMEWORK.pdf.

assessing risks and preparing response plans for different threat scenarios.⁵⁹ Indeed, assessments of threats to dams undertaken through joint mechanisms along these lines might be considered as confidence-building measures, and could be introduced as an integral part of environmental peacebuilding efforts in the ET basin.

Also, effective early warning systems would require a list of critical water-related infrastructure in the region.⁶⁰ Riparian states have the capability to collaborate in building a joint inventory of critical water infrastructure. Priorities could be established by distinguishing critical water infrastructure that merits a higher level of attention, or by identifying the vital points within a critical infrastructure system and designating them as ‘critical zones’.⁶¹ However, two complications are associated with such an endeavour. First, governments may find it intrusive for a joint mechanism to monitor facilities in their jurisdictions. Second, armed non-state actors could obtain such lists and use them to identify targets, which would defeat the very purpose for which those lists were created. In order for this approach to be effective in identifying and protecting vital infrastructure, then, it is important that the data gathered and lists prepared are handled with care—internally as well as internationally.⁶²

The joint security mechanisms that are recommended here denote riparian states’ shared vulnerability to water infrastructure against the attacks and illegal control of non-state armed groups. These mechanisms can regulate security interdependencies and foster cooperation around transboundary waters in the ET basin. They can also interact with other cooperative mechanisms such as the JTC in the ‘imperfect peace’ setting.

Conclusions

Our analysis shows that even in the absence of harmonious relations and political stability, various interactions among concerned actors have been achieved in the ET basin. Riparian states have maintained contact over the ET rivers at different levels by establishing and revitalizing joint governance mechanisms, such as the JTC, bilateral protocols and MoUs. In these processes, multiple actors—ranging from bureaucracies and heads of state to epistemic communities—have been focused on cooperative socio-economic development issues over divisive issues of water in the basin. Despite the lack of a comprehensive treaty on equitable water use, these efforts demonstrate the prevalence of a condition of ‘imperfect peace’ sustained by peaceful interactions and regulations amid major conflicts and wars.

In the context of environmental peacebuilding, the results of our analysis resonate with the work of Ide and Detges, who point out that there are far more

⁵⁹ Strategic Foresight Group, ‘Regional water protection framework’.

⁶⁰ For instance, Turkey’s newly adopted National Water Plan includes references to the safety and security of water resources and related infrastructure, and underlines the necessity of installing early warning systems in Turkey’s transboundary river basins. See Ministry of Agriculture and Forestry, *Ulusal Su Planı* [National Water Plan], 2019, <https://www.tarimorman.gov.tr/SYGM/Belgeler/NHYP%20DEN%C4%BoZ/ULUSAL%20SU%20PLANI.pdf>.

⁶¹ Strategic Foresight Group, ‘Regional water protection framework’.

⁶² Global High-Level Panel on Water and Peace, *A matter of survival: report*, 2017, <https://www.genevawaterhub.org/news/global-high-level-panel-water-and-peace-report-geneva-launch>.

examples of states cooperating with one another than conflicting with one another over shared river space.⁶³ Our analysis supplements such findings within the context of environmental peacebuilding literature by introducing the concept of 'imperfect peace' to provide a comprehensive account of the water–peace nexus in the ET basin. Scholars of environmental peacebuilding have strongly emphasized the role of natural resources as a means to ensure security, fulfil basic human needs, provide a socio-economic basis for the reconstruction of societies damaged by conflict through equitable natural resources management, and create a platform to increase trust between conflicting parties as the basis for establishing an enduring peace.⁶⁴ These works primarily focus on environmental peacebuilding activities in post-conflict settings between parties formerly involved in violent conflict.⁶⁵

By grounding our 'imperfect peace' case-study within the context of environmental peacebuilding, this article draws together the two literatures, focusing on the issues of conflict and cooperation over transboundary waters. On the one hand, by recognizing every small step of cooperation even in conditions of conflict, the concept of 'imperfect peace' enables us to recognize peaceful interactions between multiple actors in the ET basin. On the other, by occupying the space between positive and negative peace, the concept of 'imperfect peace' helps us to emphasize the role of environmental (water-related) cooperation in pioneering improved relations between conflicting parties, as noted in the environmental peacebuilding literature.

The concept of an 'imperfect peace' acknowledges the remedial nature of peaceful interactions, regulations and institutions, and considers these part of 'an unfinished road' that may eventually lead to major treaties and harmonious relations in the ET basin, while also highlighting that 'peace is imperfect because we always coexist with conflicts and violence'.⁶⁶ Thus, the conceptual discussion of 'imperfect peace' in relation to environmental peacebuilding reinforces the theoretical standing of environmental peacebuilding and demonstrates the concept's applicability to ongoing cases of conflict in which peaceful interactions and regulations over natural resources take place and in which cooperative actors and governance mechanisms can be identified even if these do not necessarily spill over into other policy domains.

⁶³ Tobias Ide and Adrien Detges, 'International water cooperation and environmental peacemaking', *Global Environmental Politics* 18: 4, Nov. 2018, pp. 63–84.

⁶⁴ Carl Bruch, David Jensen, Mikiyasu Nakayama and Jon Unruh, 'The changing nature of conflict, peacebuilding, and environmental cooperation', *Environmental Law Reporter* 49: 2 ('News and Analysis'), 2019, pp. 10134–54.

⁶⁵ Weinthal et al., eds, *Water and post-conflict peacebuilding*; Anais Dresse, Itay Fischhendler, Jonas Ostergaard Nielsen and Dimitrios Zikos, 'Environmental peacebuilding: towards a theoretical framework', *Cooperation and Conflict* 54: 1, 2019, pp. 99–119.

⁶⁶ Damian Suarez Bustamante, 'Transmodern warfare and transmodern peace: two forms of conflict transformation in the transmodern era', *Peace Research* 46: 1, 2014, p. 97.