

# **PROMOTING WATER COOPERATION IN THE WANA REGION:**

Widening the base for water diplomacy





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Cover image: Tributary to Lesser Zab River, outside Mawat, Kurdistan Region, Iraq.  
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# 1. Water Diplomacy and its Application

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Against compelling evidence on climate change impacts, it is now broadly accepted that water is a scarce resource that requires careful management. Insofar as it is vulnerable to the ‘tragedy of the commons’,<sup>1</sup> such management generally needs to take the form of legal regulation. This is even more important, albeit more complex, when a water body is shared between countries. There are around 270 rivers and lakes that either cross or demarcate an international border, as well as an indeterminate number of aquifers.<sup>2</sup>

Approximately 40 per cent of the world’s population lives in river and lake basins that comprise two or more countries, and perhaps even more significantly, over 90 per cent lives in countries that share basins. The existing 276 transboundary lake and river basins cover nearly one half of the Earth’s land surface and account for an estimated 60 per cent of global freshwater flow. A total of 148 States include territory within such basins, and 21 countries lie entirely within them. In addition, about 2 billion people worldwide depend on groundwater, which includes approximately 300 transboundary aquifer systems.

Source: UN Water

In terms of international regulation, the Helsinki Rules on the Uses of the Waters of International Rivers (1966) establish principles on the equitable utilisation of shared watercourses, including the importance of avoiding substantial injury to co-riparian states. In 1992, the Convention on the Protection and Use of Transboundary Watercourses and International Lakes was opened for signature. In 1997, the United Nations General Assembly adopted the Convention on the Law of the Non-Navigational Uses of International Watercourses. The treaty, however, came into force in 2014 and has only been ratified by 36 states, greatly limiting its potential in terms of global water governance.<sup>3</sup>

Unsurprisingly then, the principal form of water sharing agreements are bi-lateral and, although less common, multi-lateral. To date there are over 3,600 such agreements, including the Lesotho Highlands Water Project Treaty (1986), the Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin (1995), and the Indus Water Treaty (1960).<sup>4</sup>

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<sup>1</sup> A term coined by economist W F Lloyd in 1833, the Tragedy of the Commons is an economic theory positing that individuals will use a shared or unregulated resource for their own self interest and contrary to the common interest, ultimately leading to that resource’s depletion.

<sup>2</sup> UN Water ‘Transboundary Waters: UN-Water Thematic Paper Sharing Benefits, Sharing Responsibilities (2008)

<sup>3</sup> Convention on the Law of the Non-navigational Uses of International Watercourses (1997); Adopted by the General Assembly 21 May 1997, entered into force on 17 August 2014. See further General Assembly resolution 51/229, annex, Official Records of the General Assembly, Fifty-first Session, Supplement No. 49 (A/51/49). See generally, Declaration of the United Nations Conference on the Human Environment (1972), Declarations and Resolutions of the United Nations Water Conference (1977), Dublin Statement from the International Conference on Water and the Environment (1992), and the Second World Water Forum’s Ministerial Declaration (2000).

<sup>4</sup> *ibid* UN Water (n 2).

## 1.1 The riparian partners of the Nile River Basin: How water drives both conflict and cooperation

A showcase example of the importance and complexity of shared-water cooperation is the Nile River, which flows through 11 countries.<sup>5</sup> The Nile River Basin (NRB) has a long history of political conflict, largely fueled by power asymmetry between riparian states.<sup>6</sup> Egypt, the most downstream riparian, relies on the Nile as its main source of freshwater. The river represents 97 percent of all renewable water in Egypt, and it is the capital's only fresh water source.<sup>7</sup> This dependency is exacerbated by Egypt's long-standing water-scarcity, and the importance of agriculture to its economy (agriculture accounts 14.5 percent of GVA and 28 percent of the labour force in 2014).<sup>8</sup> It is hence not surprising that Egypt is prone to domestic water conflict.

Despite its vulnerable geographical positioning, Egypt has used its military and economic power to establish itself as the “unchallenged ‘hydro-hegemon’ of the basin”.<sup>9</sup> It has used such power to block most attempts at water infrastructure development in upstream countries. For example when Ethiopia made public plans to construct dams on the Blue Nile, the largest tributary of the Nile, Sadat threatened military intervention.<sup>10</sup>

This status quo, however, is coming under increased pressure. In upper riparian countries, population growth, climate change impacts and the increasing importance of water for agriculture, manufacturing and electricity generation, means that the Nile is becoming a more sought-after asset.<sup>11</sup> Ethiopia, in particular, with its soaring growth rates, is becoming a powerful player, as evidenced by its Tana Beles Dam and recently announced Grand Ethiopian Renaissance Dam which, when completed, will constitute the largest hydro-electricity plant in Africa.<sup>12</sup> There is also a new riparian state — The Republic of South Sudan — to negotiate with, whose future political influence is still unfolding.

If these trends continue and upper riparian countries demand a more equitable water allocation, it is most likely that Egypt will be negatively impacted, raising both the possibility of conflict and the scope for diplomatic negotiation. Indeed, carefully planned water cooperation over the Nile has win-win potential. Strategies to exploit Ethiopia's hydroelectric capability, Sudan's agricultural potential, and Egypt's production strength could have synergistic benefits for all in terms of increased trade and productivity.

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<sup>5</sup> The Nile is shared by 11 countries: Tanzania, Uganda, Rwanda, Burundi, the Democratic Republic of Congo, Kenya, Ethiopia, Eritrea, South Sudan, Sudan and Egypt.

<sup>6</sup> A Earle et al, *Transboundary Water Management and the Climate Change Debate* (Earthscan Studies in Water Resource Management) Routledge 2015.

<sup>7</sup> E Khalifa 'Safe Wastewater Use in Agriculture in Egypt' [http://www.ais.unwater.org/ais/pluginfile.php/356/mod\\_page/content/114/Egypt%20FAO-Essam\\_3.pdf](http://www.ais.unwater.org/ais/pluginfile.php/356/mod_page/content/114/Egypt%20FAO-Essam_3.pdf) (2 December 2016).

<sup>8</sup> UN dataset, available at <http://data.un.org/CountryProfile.aspx?crName=egypt>

<sup>9</sup> M Zeitoun, 'Hydro-hegemony: A Framework for Analysis of Trans-boundary Water Conflicts, *Water Policy*, Vol. 8, No. 5 (2006), 435–460.

<sup>10</sup> J Starr 'Water Wars', *Foreign Policy* 1991, (82), 17-36.

<sup>11</sup> *ibid* (n 7).

<sup>12</sup> The dam is estimated to provide power for the 83 percent of the population currently lacking access to electricity.

The difficulty of forging such arrangements is observable in the NRB's fraught history. The Nile Basin Initiative (NBI) attempted to bring together 10 countries "[t]o achieve sustainable socio-economic development through the equitable utilization of, and benefit from, the common Nile Basin water resources".<sup>13</sup> However, the move to a permanent basin commission has been marred by political disputes for almost a decade.<sup>14</sup>

Another example is the Euphrates River, which flows through Turkey, Syria and Iraq. While all countries benefit from the river, Turkey — the upper-most riparian — is less dependent due to its relative abundance of alternate surface water resources. The potential implications of Turkey's position of control are significant. Some experts estimate that Turkey could divert 40 percent and 55-90 percent of the water enjoyed by Syria and Iraq respectively.<sup>15</sup> Indeed, dam construction has placed significant strain on Turkey's relationships with both countries, and with good reason.<sup>16</sup> In 1990, Turkey's diversion of water from the river caused power shortages, water shortages, and crop failure in neighboring states.<sup>17</sup> Similar tensions have arisen between Syria and Iraq; in

It is important to highlight that transboundary rivers have the greatest potential to drive conflict, and thus hold more scope for diplomacy. In the case of a river, an upstream neighbour can exploit or pollute a resource to the detriment of a downstream neighbour without any reciprocal ramifications. The zero-sum nature of this relationship means that the bargaining power of an upper riparian is much higher, making conflict more likely and diplomacy more challenging.

1975 Syria diverted water from the river to fill the al-Thawra Reservoir, reducing the flow into Iraq and prompting it to mobilise its armed forces.<sup>18</sup> While the conflict was averted, the potential for future conflict remains. The conflict in Syria represents a flashpoint in this regard. As long as the conflict continues, the Euphrates can be exploited as a war tactic; if the conflict is resolved, the scope of reconstruction necessary will increase Syria's dependence on the water source, and thus the potential for conflict.

## 1.2 The evolution of water diplomacy

The above examples demonstrate that competition over shared water resources has the potential to cause conflict, but also that where there is scope for cooperation, this can facilitate mutually beneficial solutions and protect water resources from exploitation. From this discourse, a new conflict-

Water diplomacy holds that water cooperation can bring countries together to manage their jointly-held resources, building trust and preventing future conflict.

<sup>13</sup> Nile Basin Initiative; see further [www.nilebasin.org](http://www.nilebasin.org). (23 November 2016).

<sup>14</sup> *ibid* (n 7).

<sup>15</sup> H A Amery 'The Litani River of Lebanon' *Geographical Review*, Vol 83, Issue 3 (1993) 229

<sup>16</sup> J Kolars and WA Mitchell *The Euphrates River and the Southeast Anatolia Development Project* (1991) SIU Press.

<sup>17</sup> See further J Jongerden 'Dams and Politics in Turkey: Utilizing Water, Developing Conflict', *Middle East Policy*, Vol XVII(1) 2010.

<sup>18</sup> *ibid* (n 15). Likewise, Iran is constructing a dam (named the Daryan Dam) on the Sirwan River in Kermanshah Province, one of the tributaries of the Tigris river. Expected to be completed in 2018, the dam is predicted to reduce the water flows of the Sirwan River by up to 60 percent, affecting hundreds of thousands of people in the Sulaymaniyah and Halabjah Governorates of Iraq.

mitigation and peacebuilding model has evolved: water diplomacy. The theory is that negotiation and cooperation over shared water resources can ‘spill over’ to affect more important and/or challenging political issues between states, and thus the fulfilment of wider peace objectives. The notion of water diplomacy relies on two key assumptions. First, in the context of increasing scarcity, competition for water resources can drive conflict between states, and second, that water cooperation can give rise to mutually beneficial solutions.<sup>19</sup>

Water can catalyse and lubricate the peace process ... and soften the transition to regional cooperation.<sup>20</sup>

Water diplomacy is particularly attractive in the WANA region where water scarcity is high and diplomatic relations are often complicated and have profound implications for development and security. This has led to several initiatives geared towards regional approaches to water cooperation. The Blue Peace initiative,<sup>21</sup> for example, looks to harness water resources for peace and socio-economic development and enable more effective political negotiation and efficient water management.

At the same time, there are several agreements pertaining to large-scale basins in the WANA region. In most cases, however, such agreements do not include all basin countries, and often favor the most powerful riparian. Moreover, progress towards sustainable water management between countries has been sluggish.<sup>22</sup> Recent research suggests that transboundary water management agreements have not fully delivered vis-à-vis expectations, particularly in terms of contributing to socioeconomic development.<sup>23</sup> The explanation for the gap between expectations and reality is multifaceted. In some cases, agreements have been thwarted by new and unexpected challenges to the water-sharing relationship (the conflict in Syria is a prime example). In others, the agreement fails to define a mutually beneficial arrangement, but exists as a toolset to guide riparian partners on rights and duties as enshrined in international standards.

Whatever combination of explanations is correct, it appears that existing agreements and relevant jurisprudence have been unable to resolve long-standing disputes or better conserve scarce water resources.<sup>24</sup> This has brought the effectiveness of regional bilateral water cooperation into the spotlight.

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<sup>19</sup> J Selby ‘The Geopolitics of Water in the Middle East: fantasies and realities’ *Third World Quarterly*, Vol. 26, No. 2, 2005, 330.

<sup>20</sup> D Hillel *Rivers of Eden – The Struggle for Water and the Quest for Peace in the Middle East*, Oxford, Oxford University Press (1994) 283.

<sup>21</sup> *The Blue Peace: Rethinking Middle East Water*, Strategic Foresight Group, 2011.

<sup>22</sup> Earl (n7) 9.

<sup>23</sup> *id.*

<sup>24</sup> See further RM Fathallah ‘Water Disputes In The Middle East: An International Law Analysis Of The Israel: Jordan Peace Accord’, *J. Land Use & Envtl. L.* Vol. 12:1.

## 2. The Premise of Water Diplomacy in the WANA Region

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Given the growing water scarcity and the peace deficits in the region, plus the competing imperatives on development funding, it is important to examine how such efforts might be made more impactful. Specifically, how might a better alignment between expectations, action and impact be facilitated?

The work of Professor Jan Selby provides an interesting entry point to this discussion. He questions the extent to which water cooperation can act as a catalysing force for broader cooperation or peacebuilding. At the core of his argument is that the geopolitical importance of water in the Middle East has been overstated. More simply: water is not significant enough to drive interstate war, therefore it is not significant enough to forge peace.<sup>25</sup>

Selby argues that water is not the key determinant of growth in the modern Middle Eastern development.<sup>26</sup> And while water is important to agriculture, this sector's structural significance to the region's economies is in steep decline. This is evidenced by both agriculture's decreasing contribution to GDP and labour force participation rates (see table 1 below).

Country	GDP agriculture		Employment agriculture <sup>27</sup>	
	1990	2010	2000	2010
Palestine		6.6	13.7	11.8
Israel			2.2	1.6
KSA	5.7	2.4	6.1	
Oman	2.6	1.4		5.2
Lebanon	7.1	4.3		
Iran	12.8	6.9		19.2
Jordan	7.7	3.4	4.9	2
Morocco	17.2	14.4	5.1	40.2
Syria	29.8		32.9	15.2
Turkey	18.1	9.5	36	22.4
Algeria	8.9	13.1		
Tunisia	17.7	8.2	7.2	17.6
Sudan	40.6	24.6		
Mauritius	29.6	21.7		
Egypt	19.4	14	29.6	28.2
Yemen	24.4			24.7

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<sup>25</sup> Selby (n 19) 331.

<sup>26</sup> *ibid* 335-337.

<sup>27</sup> Drawn from World Bank data sets.

Globalisation and innovation will further drive these trends. As states are increasingly able to address water insecurity with desalination and wastewater recycling, the management of transboundary water will become less of an imperative. Middle East water scholar, Professor Tony Allan, agrees. He emphasises, however, that while agriculture may be declining in the Middle East, the real game-changer is the rise of *virtual* water.

Virtual water is the very substantial volume of water embedded in water-intensive commodities such as grain. About 1,000 tonnes of water are required to produce a tonne of wheat. When an economy imports a tonne of wheat it is in effect importing 1,000 tonnes of water. The Middle East and North Africa region was importing annually about 40 million tonnes of grain and flour by the end of the 1990s. About 40 billion tonnes of water would be required to produce this volume of grain. Such a volume reflects about 20% of the region's annual water use and is equivalent to the water used each year by Egypt in its agricultural sector.<sup>28</sup>

Allan argues that the international trade in water-intensive imported commodities is so effective that shortages barely register on citizens and politicians. Moreover, “[w]ith political stress over water being so easily managed at the level of the whole economy, it should not be surprising that there has been so little armed conflict over water”.<sup>29</sup>

Selby also questions the extent to which water cooperation has caused ‘trickle down’ peace dividends. Extensive (albeit negative) water cooperation between Israel and the Palestinian authority has never resulted in peace talks; if anything, the inequity in the agreements have driven further animosity. Likewise, India and Pakistan have cooperated in relation to the Indus since 1960, but such ties have not been able to prevent intermittent military conflict between them. Other water agreements have tended to follow, rather than lead, more institutionalised cooperation; key examples include the Israel-Turkey and Saudi Arabia-UAE water agreements.<sup>30</sup>

These arguments — together with the water scarcity inherent in the region and its thirst for more peaceful relations between states — present a strong case for revisiting natural resource cooperation as a precept in both development assistance and diplomacy. This analysis should begin by examining the nexus between natural resource deficits, conflict and neighborhood principles in the Middle East context.

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<sup>28</sup> T Allan ‘Avoiding war over natural resources’

1998 <https://www.icrc.org/eng/resources/documents/misc/57jpl4.htm> (10 December 2016).

<sup>29</sup> Selby (n 19).

<sup>30</sup> Another key argument against the efficacy of water diplomacy examines how instances of supposed water diplomacy in action play out against the theory. Selby refutes the oft-cited example of European post-war cooperation around coal and steel as showcasing the potential natural resource diplomacy. Here, the object of cooperation (coal and steel) were by no means ‘low lying fruit’, but important sources of German militarism, and the process was shepherded at the highest political levels. (Water diplomacy theory posits that water, as a less politically potent subject of cooperation, is an easier entry point that may pave the way towards most complex diplomatic agreements). The Jordan-Israel ‘picnic table summits’ that preceded the 1994 Peace Treaty likewise were top-led. Moreover, the discussions involved wide ranging issues of mutual concern, including water, but also industrial, tourism and health; J Selby (working paper, notes on file with author), Selby (n 19) 342.

## 3. A More Nuanced Understanding of Water Diplomacy Potential in the WANA region

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### 3.1 Competition for natural resources as a driver of conflict

The linkages between natural resources, conflict and their political importance lie at the centre of discussions on natural resource diplomacy. If Selby's argument is correct, it is indeed fortunate that a very small proportion of the region's oil and gas reserves are transboundary. If they were, it is likely that there would be significantly higher conflict over such resources. A case in point is the Gulf War (1990-1991), which was sparked by Kuwait's 'slant drilling' in the al-Rumaila oilfield lying below the Iraq-Kuwait border. Indeed, the more causal issue was that Kuwait's pumping was driving down the international oil price, thus compromising Iraq's economic security. However, Iraq's willingness to invade, the acquiescence of neighboring states, and the military intervention of a US-led coalition under a UN Security Council mandate, was historic.<sup>31</sup> In short, pressure on Iraq's main source of income (in this case a natural resource) was sufficient to drive its invasion of Kuwait, and the importance of this resource on world markets was sufficient to internationalise the conflict. This supports the idea that competition over natural resources can drive inter-state conflict, provided that they are of sufficient economic importance. It would be misleading however, to classify this conflict as one stemming from conflict over a shared resource; in this case the transboundary nature of the oil reserve was a convenient entry-point rather than a driver.

The response of the OECD economies was swift, so threatened were their interests. They deployed their military might, or gave it their financial support, when there was a threat to the secure flow of cheap Middle East oil.<sup>32</sup>

### 3.2 Conflict between water-scarce states not driven by scarcity

Another important insight can be gleaned from the (earlier) Iran-Iraq war (1980-1988). This conflict, again, had many complex drivers, but its flashpoint was access to and control over the Shatt al-Arab waterway. For Iraq, the importance of the waterway cannot be understated; it is Iraq's entry path to the Persian Gulf and without access to it, the country is landlocked. Competition for control of the waterway can be traced back as far as the seventeenth century, when the Ottoman Empire and Persia vied for power in the region. In 1937, Iran and Iraq agreed a treaty that gave them equal access to the waterway. However, in 1969 Iran reneged and refused to pay shipping duties to Iraq. A period of tension followed, during which each country attempted to undermine the other's sovereignty, for example, by fomenting unrest amongst their respective Kurdish

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<sup>31</sup> On 29 November the UN Security Council passed resolution 678, which gave Iraq until 15 January 1991 to withdraw its forces. Should Iraq fail to do this, resolution 678 authorised member states to use 'all necessary means' to re-store Kuwaiti sovereignty. See further A Siodlak 'Chronic Conflict in Iraq Part 2: Invasion of Kuwait and 1990 Gulf War' <[wanainstitute.org/sites/default/files/fact\\_sheets/Iraq-part-2.pdf](http://wanainstitute.org/sites/default/files/fact_sheets/Iraq-part-2.pdf)> (2 December 2016).

<sup>32</sup> Allan (n 29).

populations. In 1975, the two countries signed the Algiers Agreement, whereby Iraq conceded control of the Shatt al-Arab waterway in return for Iran ending its support for the Iraqi Kurdish insurgency. The Algiers Agreement was embarrassing for the Ba'athist regime in Iraq, which saw not only the waterway but also Khuzestan province in south-west Iran as its rightful territory. Khuzestan is oil-rich and the majority of the population speak Arabic. Hence, when Saddam Hussein came to power in 1979, he sought to take control of these areas, seeking to elevate Iraq to the status of 'regional hegemon'. The war ended when both parties agreed to UN Security Council Resolution 598, which called for an immediate ceasefire and return to the pre-war boundaries.<sup>33</sup>

The lesson is that scarcity should not be considered as the only driver of water conflict; in this case despite both states being water scarce, the flashpoint was the market access that a shared water-source provided. A similar principle can be gleaned from the Six Day War between Israel and its Arab neighbours. While tensions between the parties had been escalating over several years (including interruptions to Israel's water supply, as discussed below), it was Egyptian President Nasser's May 1967 declaration that the Straits of Tiran were closed to Israeli shipping, that propelled animosity into full-scale conflict. Calling Nasser's declaration an 'act of war,' Israel launched a pre-emptive strike: Operation Focus. The conflict resulted in the Israeli Defence Force assuming control of the West Bank, Gaza, Sinai Peninsula and the Golan Heights.<sup>34</sup> This demonstrates again, therefore, how the access provided by waterways can be more politically potent than the absolute value provided by water as a factor of production or scarcity in and of itself.<sup>35</sup>

### 3.3 Scope for water diplomacy in the case of a single-owned water resource

The Lebanese civil war provides a final point of departure in the water diplomacy debate. This was a complex conflict with multiple participants, making the causal factors difficult to discern. There are clear instances, however, where fights over control and access to strategic routes were pivotal.<sup>36</sup> In March 1978, Israeli troops entered south Lebanon and occupied territory on the Litani River. This acted as the precursor to the South Lebanon war that was effectively fought between Israeli and Palestinian troops.<sup>37</sup> The 1989 Ta'if Agreement brought the civil war to an end, but Hezbollah — the Iranian backed militia — was exempted from disarmament due to Israel's continued presence in South Lebanon. Meanwhile, Israel continued an occupying presence in Southern Lebanon until 2000.

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<sup>33</sup> see generally A Siodlak 'Chronic Conflict in Iraq Part I: The Iran-Iraq War' <[wanainstitute.org/sites/default/files/fact\\_sheets/Iraq\\_part\\_1.pdf](http://wanainstitute.org/sites/default/files/fact_sheets/Iraq_part_1.pdf)> (2 December 2016).

<sup>34</sup> Tensions had lingered between Israel and Palestine post-1949, and the Arab states competed amongst themselves to champion the Palestinian cause. The newly formed Palestinian Liberation Organisation (PLO) took advantage of this support and began launching attacks on Israel from neighbouring states, including from the Jordanian occupied West Bank. When Israel retaliated with airstrikes, relations with the PLO's host states soured. See further A Siodlak '1967 Arab-Israeli War and Resolution 242' [http://wanainstitute.org/en/fact\\_sheet/1967-arab-israeli-war-and-resolution-242](http://wanainstitute.org/en/fact_sheet/1967-arab-israeli-war-and-resolution-242) (3 December 2016).

<sup>35</sup> For discussion of the legal aspects see AE Danseyar 'Legal Status of the Gulf of Aqaba and the Strait of Tiran: From Customary International Law to the 1979 Egyptian-Israeli Peace Treaty', *Boston College International and Comparative Law Review*, Vol 5 Issue 1, 1982.

<sup>36</sup> T Badran, 'Lebanon's Militia Wars' in B. Rubin (ed), *Lebanon: Liberation, Conflict, and Crisis* (2009) 36-37.

<sup>37</sup> This particular set of events was triggered by the attempted assassination of Israel's ambassador to Britain in June 1982.

Some scholars suggest that this occupation, although it was driven by security imperatives, may also have had hydrological overtones. The stress on Israel's aquifers is well known. Indeed, occupying the Karaoun Dam (which Israel did between 1982-1985) and exploiting the security zone's sub-surface springs, aquifers, and rivers would relieve Israel's water shortage problem.<sup>38</sup> Diverting water from the Litani would also address the salinity problem growing in the Sea of Galilee, which supplies the majority of Israel's drinking water (the Litani is a fresh water source; it has a salinity of only 20 parts per million compared to the Sea of Galilee's 250-350 parts per million).<sup>39</sup> Israel's interests in the Litani River can be traced back to the pre-statehood era — the idea of diverting some of the Litani's water into the Hasbani River (a tributary of the river Jordan) being first raised in 1905.<sup>40</sup> In 1941, Ben-Gurion suggested to a 1941 international commission on the question of Palestine that the Litani be included in the borders of the future Jewish state. Some estimate that if such a diversion was realized today, Israel would benefit from up to 800 additional million cubic meters (around 40 percent of its current annual water consumption).<sup>41</sup>

The principal takeaway is that the Litani, which once sat only four kilometers from the Israeli border, might become a contested resource, should Israel wish, or have the opportunity, to exploit it. But might it also be viewed as a site for future diplomacy efforts, despite it is not being a shared or transboundary resource? The Litani is certainly important to Lebanon. Boasting an average flow of 920million cubic meters annually, it irrigates south Lebanon's agricultural sector and is the source of 25 percent of Lebanon's electricity.<sup>42</sup> But Lebanon is a water-rich country, and agriculture accounts for only a small percentage of its GDP and labour force. Its potential probably serves Israeli interests more, and hence could become a strong bargaining point, if the political or economic conditions were right.

Another example of unexploited water diplomacy potential resting in a singularly-owned water resource, is where such water has not only a utility value, but also historic or symbolic significance. Israel's Lake Tiberias (also known as the Sea of Galilee) provides a case in point. This lake sits in northern Israel but part of its perimeter marks the Syrian-Israeli border; moreover, several sources of the lake sit inside Syrian territory. On 17 January 1964 the Arab League diverted water away from Lake Tiberias in retaliation to Israel's 'National Water Carrier' that channelled water from the Sea of Galilee. In response, in 1965 Israel launched attacks on the diversion leading to conflict at the Israel-Syria border.<sup>43</sup> As discussed above, these events played into the regional tensions that culminated in the Six Day War (1967), and Israel's capturing and occupation of Golan Heights.

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<sup>38</sup> A Baalbaki and F Mahfouz 'The Agriculture Sector in Lebanon: Major Changes During the Civil War' (1985), (in Arabic).

<sup>39</sup> T Naff and RC Matson *Water in the Middle East: Conflict or Cooperation* Westview Press (1984) 65.

<sup>40</sup> Amery (n 15).

<sup>41</sup> id. The commission recommended that seven-eighths of the river's waters be leased to Israel.

<sup>42</sup> Amery (n 15). 236 million cubic meters is diverted annually into the Awali River for hydroelectric generation to supply Beirut and other coastal areas. In fact, 35 percent of Lebanon's total production of electricity comes from the Litani waters directly or from the Markaba-Awali diversion.

<sup>43</sup> Siodlak (n 37).

For Israel, the Golan Heights occupation and UN buffer zone is a security imperative. It also has a hydro-security rationale; it blocks Syria's access to the border of the Lake and also prevents it from diverting sources of the Lake to meet its own water shortages. This is important; the lake is Israel's largest source of fresh water, supplying around a third of the nation's annual water requirement. The Sea also holds religious significance. It is the site where many believe that Jesus walked on water, Jesus's 'Sermon on the Mount' is believed to have been orated on the northwest shore of the Lake, and Tiberius (on the lake's west shoreline) is one of Israel's holiest cities.



Syria, on the other hand, has strong reasons (both legitimate and perhaps insidious) to regain its control over the Golan Heights. The country, even before the current conflict, has its own water crisis, and Syrian sources of water are now being blocked by the occupation. But perhaps most importantly, the Golan Heights has become a symbol of Israel's illegal and heavy-handed acts of domination in the region with impunity. As such, it represents one of Israel's only bargaining chips against a long rival with whom peace is vital to its long-term interests.

## 4. New Potential of Water Diplomacy in the WANA region

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The region has been free of armed conflict over water for more than three decades. There is no evidence that the next half century will be any different.<sup>44</sup>

A principal takeaway from the above discussion is that competition over natural resources can drive conflict, *provided* that they are sufficiently important. Whether water has such importance is situation specific — not a given. Sometimes water scarcity, in itself, is not important enough to generate conflict. In the conflicts between Iran-Iraq and Egypt-Israel, the issue was the market access provided by a water source, and in the later case, the water source was not even transboundary. Moreover, there are examples, such as the Kingdom of Saudi Arabia (KSA) where the country is highly water-scarce, but such scarcity it is not important enough to spark conflict as it has the resources to compensate through desalination or virtual water import (although the current low world oil price threatens this). In short, just because KSA is water poor and has transboundary water resources, it should not be assumed that this is a site for effective water diplomacy. At the same time, other cases with hidden water diplomacy potential, deserve more attention.

For countries such as Egypt, water is important because of its scarcity and link to agriculture — both of which have the potential to drive internal conflict. Likewise, depending on how the conflicts in Syria and Iraq play out, access to water from the Euphrates could be a conflict flashpoint if it is used as a war tactic, or simply due to its high utility value. In these contexts, there is a strong evidential basis for linking shared water and conflict, and hence for water diplomacy. It should be highlighted, however, that conflict in such instances need not be between immediate neighbors. In the example of the Nile, the case for diplomacy lies between Egypt and upstream neighbors such as Ethiopia or, now, South Sudan. The oft-use of ‘transboundary’ in the water diplomacy discourse should perhaps be used more judiciously, so as not to thwart engagement potential.

As a case in point, some of the best opportunities for water diplomacy might lie in resources that are not transboundary at all. This is particularly the case where options for diplomatic relations are both scant and highly important (such as in the case of Israel vis-à-vis its neighbors). The prime example is sub-state water cooperation diplomacy. Water supply — its reliability, quality and equitability — is a crucial site and cause of local conflicts throughout the region. In Egypt, the relative deprivation between the water ‘haves’ and ‘have nots’ has led the thirsty into the streets to protest on several occasions, while in the West Bank water stealing has caused friction between community members

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<sup>44</sup> Allan (n 29).

in an environment of uneven water distribution and scarcity.<sup>45</sup> Until inequalities in water, food and energy provision are comprehensively addressed it is likely that they will continue to fuel local-level conflict in the WANA region for years to come. If it is at the community level that water insecurity seems to have the most impact, the focus of attention might arguably shift to the propensity for water scarcity-driven conflicts within, rather than between, states.

In summary, in moving forward with water diplomacy efforts, a key lesson is that battles should be selected, and resources invested, carefully. It is important not to conflate water-scarcity or the existence of a transboundary water body, with water as a conflict flashpoint and hence as an entry point for diplomacy. The prerequisite for water diplomacy is the political importance of water and this can be a product of several things apart from scarcity itself.

The beginnings of an alternate framework for thinking about water diplomacy potential appears below. It draws upon a set of factors with a stronger evidential basis for driving water conflict water risk. While not sufficiently comprehensive nor tested, it does provide a starting point for further research in this area. For illustrative purposes, where might a country such as Jordan sit in such an analysis? The Kingdom is highly water scarce; demand outweighs supply with the result that groundwater aquifers are being used unsustainably. It has both transboundary and upstream neighbours. Jordan is not heavily dependent on agriculture in terms of GDP, although it is an important source of employment for low-income families. Moreover, as lacks oil or water it is highly dependent on food import markets. Jordan enjoys unmatched diplomatic relations among its Arab and non-Arab neighbours. Taken together, this makes Jordan a soft candidate for effective water diplomacy. Although water deprived, when analysed from a political economy perspective, Jordan has little incentive to forge better agreements around its shared water sources. Its most effective role might instead be to act as a diplomatic 'broker' around the Jordan river and Dead Sea negotiations. This situation may change over time. If the Jordan river dries up, or desalination technology becomes more accessible the incentive to engage in diplomatic relations around water will drop further; if the country becomes more dependent on the river, however, the reverse will be true. Taken together, these arguments seem to present a strong case that resources would best be invested, less in water diplomacy, and more in upgrading Jordan's water infrastructure, promoting a water-savvy culture, incentivising the adoption of more efficient forms of agriculture, and growing strategic markets such as manufacturing to better protect itself from the volatility of international commodities markets.

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<sup>45</sup> J Selby 'The Geopolitics of Water in Middle East: Fantasies and Realities' *Third World Quarterly*, 26(2) (2005), 330.

Alternate framework for conceptualizing water diplomacy potential <sup>46</sup>							
	2016 water risk	2040 water risk <sup>47</sup>	GDP from ag. 2010	Emp't in ag. 2010	Desal. potential	Import (GDP PPP)	Riparian neighbor threat level <sup>48</sup>
Palestine	4	5	6.6	6.6	Low	----	high
Israel	4	5	2.5%	2.2% <sup>49</sup>	high	31670.69	med
KSA	4	5	2.4	2.4	high	50283.97	low
Lebanon	4	5	4.3	4.3	Med	13117.25	low
Jordan	4	5	3.4	3.4	Low	10239.66	med
Morocco	3	4.5	14.4	14.4	Low	7360.86	med
Turkey	3	4.5	9.5	9.5	NA	18958.62	low
Algeria	5	4	13.1	13.1	Med	13822.57	med
Sudan	3	1.5	24.6	24.6	Med	3927.49	high
Egypt	3.5	1.5	14	14	Low	10249.96	high

<sup>46</sup> Unless otherwise stated, all data is drawn from World Bank datasets as at December 2016.

<sup>47</sup> Taken from the World Resources Institute data set, water risk is defined as areas with higher exposure to water-related risks and is an aggregated measure of all selected indicators from the Physical Quantity, Quality and Regulatory & Reputational Risk categories. See further < [wri.org/applications/maps/aqueduct-atlas/#x=51.37&y=26.29&s=ws!20!28!c&t=waterrisk&w=def&g=0&i=BWS-16!WSV-4!SV-2!HFO-4!DRO-4!STOR-8!GW-8!WRI-4!ECOS-2!MC-4!WCG-8!ECOV-2!&tr=ind-1!prj-1&l=5&b=terrain&m=group](http://wri.org/applications/maps/aqueduct-atlas/#x=51.37&y=26.29&s=ws!20!28!c&t=waterrisk&w=def&g=0&i=BWS-16!WSV-4!SV-2!HFO-4!DRO-4!STOR-8!GW-8!WRI-4!ECOS-2!MC-4!WCG-8!ECOV-2!&tr=ind-1!prj-1&l=5&b=terrain&m=group)> (9 December 2016).

<sup>48</sup> Author assessment.

<sup>49</sup> Israel data substituted from <http://mfa.gov.il/MFA/AboutIsrael/Economy/Pages/ECONOMY-%20Sectors%20of%20the%20Economy.aspx>

<http://www.tradingeconomics.com/israel/employment-in-agriculture-percent-of-total-employment-wb-data.html>

## 5. Conclusion: Towards More Effective Water Diplomacy

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The arguments put forward in this paper suggest that the political importance of water determines the scope for diplomatic efforts. At the same time, there may be opportunities for different forms of water management that are not envisaged under traditional understandings of transboundary cooperation. But water diplomacy (in its most traditional sense) being perhaps undeserving of the panacea-like status it has achieved is no reason to throw the baby out with the bathwater. It must be remembered that regardless of whether water cooperation is likely to lead to peace, modalities to promote water cooperation remain important.

The Middle East's water scarcity situation is an environmental imperative. Groundwater over extraction, desertification, droughts, floods and fresh water scarcity are among the imminent implications of climate change. In Iran, natural bodies of fresh water are drying up, and as a result, 45 million people are at risk of forced migration.<sup>50</sup> By contrast, rising sea levels threaten up to 40 million people in the Nile delta. The ensuing saltwater encroachment will destroy livelihoods by rendering the soil uncultivable.<sup>51</sup> Groundwater exploitation has also led to saltwater encroachment in Israel and Gaza. Experts say that aquifer salination will be irreversible by 2020; as Gaza relies entirely on groundwater for its fresh water supply, this part of the region will become unliveable.<sup>52</sup> Similar issues threaten Iraq and Yemen, where poor agricultural practices continue to drive water and food insecurity.

Users cannot be complacent about *any* water resource; they must be managed effectively and efficiently. It is also becoming increasingly accepted that policies should also take into account the interests of future generations. Environmental economists argue that to the extent that water resources are non-renewable, they should be treated as assets and not income or factors of production. States are ethically and economically obligated to pass on such assets (or an asset of equivalent value) to future generations if development is to be sustainable.<sup>53</sup> Examples would include deep aquifers that have negligible recharge rates, such as the Al Disi aquifer located on the Jordan-Saudi border. Such thinking should influence the manner that such resources are cooperatively managed.

Water practitioners and policy-makers must also remain aware of sensitive balance that is currently preventing water from driving inter-state conflict. If one lesson from this paper

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<sup>50</sup> A Karami, 'Iran Becoming Uninhabitable, Says Former Agricultural Minister', (2013-07-09) Al-Monitor, <<http://iranpulse.al-monitor.com/index.php/2013/07/2353/iran-becoming-uninhabitable-says-former-agriculture-minister/>> at 14 November 2015

<sup>51</sup> Estimates vary between some 5 million up to over 40 million people. See IPCC The Regional Impacts of Climate Change: An Assessment of Vulnerabilities (1997); C McGrath, 'Nile Delta disappearing beneath the sea', Al-Jazeera, <<http://www.aljazeera.com/indepth/features/2014/01/nile-delta-disappearing-beneath-sea-201412913194844294.html>> at 16 November 2015.

<sup>52</sup> See a UNSCO special report from 2012, cited in IRIN News, 'OPT: Gaza's water could be undrinkable by 2016', (2012-08-30) <<http://www.irinnews.org/report/96209/opt-gaza-s-water-could-be-undrinkable-by-2016>> at 16 December 2015.

<sup>53</sup> P Collier The Plundered Planet: Why We Must - and How We Can - Manage Nature for Global Prosperity (2010).

is that water is currently not sufficiently geopolitically sensitive to make it a conflict flashpoint, a second is to understand and maintain the forces that are keeping it that way. Allan reiterates that there is a water-food-trade nexus which is of major strategic significance to the region. Since the 70s, he argues, virtual water import has ensured the economic stability of the region.<sup>54</sup> Moreover, its '[f]uture economic stability ... will depend on its capacity to sustain the trade in virtual water'.<sup>55</sup> But while virtual water may enable states to defer conflict in the short term, access to products on the international market is not a given; the state must have the purchasing power to do so and price shocks can compromise this. Virtual water might hence be a short-term answer, but one with serious destabilising potential.<sup>56</sup> If this is to be a key tool in how the region is to manage its water scarcity and avoid water conflicts, efforts must be invested into ensuring that water-scarce states have adequate purchasing power by way of growing economies and an adequate export base.

A final point is that if the region's environmental crisis is to be addressed — whether through diplomacy, virtual water import or technological innovation — an enabling environment needs to be created. Dohjoka et al argue that the feasibility of natural resource diplomacy depends on a rigorous, innovative and growing science community of practice to lead such processes — something that the Arab world is yet to host.<sup>57</sup> This can be observed in the number of peer-reviewed journal articles, patents and R&D spending that can be attributed to Arab states. Moreover, that the logic and donor palatability of water diplomacy has tended to overshadow this inconvenient truth.

Overcoming this bottleneck may be more difficult than it sounds. Some argue that the driver of this scientific void is a lack of political commitment and leadership: that scientific excellence is less of a priority for Arab governments than it should be.<sup>58</sup> Understanding why this is the case is important, albeit politically provocative.

It might be reasoned that the region's political side-lining of science shares the same drivers preventing the development of a robust knowledge and civil society sector. Although rarely discussed through a natural resources lens, governance structures in the region are typically authoritarian and maintain stability through an architecture and methods that vest control in a small and centralized power-base. One way this strategy manifests is in a restrictive legal and policy environment for civil society, and therefore a slow and weak development of its organs — including academia. In short, governments *in some countries* have prevented the evolution of a strong community of critical and

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<sup>54</sup> Hakimian support this: the virtual water solution “has played an effective role in softening and even deferring the political impact of water scarcity”. H Hakimian, ‘Water Scarcity and Food Imports: An Empirical Investigation of the ‘Virtual Water’ Hypothesis in the MENA Region’, 4; M Zeitoun and J Warner, ‘Hydro-hegemony – a framework for analysis of trans-boundary water conflicts’ *Water Policy*, 8 (2006).

<sup>55</sup> Allan (n 29).

<sup>56</sup> Other WANA states, especially in the Gulf, have pursued a ‘land grab’ strategy; securing rights to agricultural production in other countries. This strategy has, thus far, been relatively ineffective see: J Sowers. ‘Water, Energy and Human Insecurity in the Middle East’ *Middle East Report*, Spring (2015).

<sup>57</sup> Draft article, on file with author. See also N Dohjoka, ‘Seven Ideas for Science Diplomacy in the Middle East’, COMSATS Newsletter April-May 2016.

<sup>58</sup> See, for example, A Zahlan *Science, Development, and Sovereignty in the Arab World* (2012).

boundary-pushing thinkers, because this is inimical to the governance model that maintains the stability status quo.

Since the problem is one of governance, better laboratories, natural resources research and water science education are not a complete answer. This deficit might only be fully remedied when governments see a strong and influential knowledge sector to be congruent with their interests. Indeed, this might explain the significant and welcomed investments in science and R&D made by countries such as the Kingdom of Saudi Arabia, Kuwait and Qatar. Their ascent into global leadership in this field can best be understood as a political and resource imperative; these states need science-based solutions and to augment their standing and influence in the current domestic and geopolitical environment. The Hashemite Kingdom of Jordan, through the Royal Scientific Society, hosting the World Science Forum in 2017 is another welcome development in this regard.

Rather than lamenting the logic of natural resource diplomacy, a more constructive path forward might be to develop an evidence base supporting the notion that science and knowledge generation can be tools to augment government imperatives. Policy makers certainly care about economic growth and conflict avoidance and environmental resilience, thus it might be up to scientists to set out the link between water science, water preservation and water cooperation more explicitly. Only then might we see the necessary (albeit expensive) investments being made in R&D, universities, capacity building and knowledge start-ups needed to support more effective natural resources management, cooperation and diplomacy.



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