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Draft: Why Water Scarcity in the Jordan River Basin Provides an Incentive for Peace

I. Introduction

One of the most important crises humanity will face in the next century is the rapid depletion of clean, potable water. Only 3 percent of the water on Earth is fresh, and 2.5 percent of this is unavailable, locked away in glaciers, ice caps, and underground. It is up to countries, governments, and global organizations to divide the .5 percent left of freshwater between all people. Unfortunately, global issues such as climate change, national and international conflicts, poor water management and governance, and abuse of power threaten to accelerate the already rapid depletion of the non-renewable resource. For instance, the World Health Organization predicts that by 2025, about half of the world's population will live in a water-stressed area. To say that water is essential for life would be an understatement. Without water, very few organisms would be able to survive. Therefore, this rapid depletion of water will affect every aspect of everyday life. Without water, a food shortage is almost guaranteed. National and multinational conflicts are likely to occur, as well as an increase in violence within borders. National security will be threatened. For these reasons and more, the issue of water scarcity is becoming increasingly important to address. However, due to political inaction and the general public's lack of knowledge, it is not a problem currently on the forefront. Since it has not yet really affected certain developed countries like the United States, this adds to the absence of concern amongst a larger pool of actors who could potentially affect a good amount of change.

This paper will use the Grey and Sadoff definition of water scarcity as the availability of an acceptable quantity and quality of water for health, livelihoods, ecosystems and production, coupled with an acceptable level of water-related risks to people, environments and economies¹. Lack of freshwater is not only a problem that will be exponentially exacerbated by climate change, but one that could be potentially disastrous at the societal and political levels. According to the most recent annual risk report of the World Economic Forum, climate action failure is the largest global risk in terms of potential impact, after infectious diseases. Western Asia, also commonly referred to as the Middle East, is a region that has been struggling with water scarcity for years. An analysis by the World Resources Institute found that 14 out of the 33 countries that will face extremely high water stress by the year 2040 are in the Middle East². The World Bank Group believes that “changes in water availability and variability can induce migration and ignite civil conflict. Food price spikes caused by droughts can inflame latent conflicts and drive migration.” In the globalized world, these shocks cannot be isolated, and therefore states must think not just of themselves but their allies and neighbors.

Climate change will certainly necessitate adaptive strategies for water management. Rising temperatures as well as changing precipitation patterns, a decrease of an already limited annual rainfall in the case of the Middle East, will require a collective response. One that, hopefully, will not lead to violence and sustained human suffering. The MENA region has been hesitant and sometimes unwilling to implement sustainable water practices, which, if left too long, could lead to irreversible damage and political unrest.³ The water scarcity in the region

¹ Grey, David, and Claudia W. Sadoff. "Sink or swim? Water security for growth and development." *Water policy* 9, no. 6 (2007): 545-571.

² Maddocks, Andrew, Robert Samuel Young, and Paul Reig. 2015. "Ranking The World'S Most Water-Stressed Countries In 2040". World Resources Institute. <https://www.wri.org/blog/2015/08/ranking-world-s-most-water-stressed-countries-2040>.

³ Stuckenberg, MPS, Major David J, and Anthony L. Contento, Ph.D. "Water Scarcity: The Most Understated Global Security Risk". *Harvard National Security Journal*, 2018, <https://harvardnsj.org/2018/05/water-scarcity-the-most-understated-global-security-risk/>.

could lead to increased tensions between the riparians of the Jordan River: Jordan, Israel, Palestine, Lebanon, and Syria. Although it could easily lead to conflict, and even war, water could also potentially be used to unify these countries, if addressed properly. In fact, although water scarcity has been a factor in several conflicts, it has not been *the* factor. This is mainly due to the acute severity of the water scarcity; even if a single party were able to gain control over all water resources in the area, it would still face a scarcity issue. So although there is potential for conflict, there is a much bigger incentive for peace and cooperation. The Middle East, however, is a notoriously unstable region that has seen a lot of conflict and violence, often within single countries. The Israel-Palestine conflict alone has a vast literature and history, and any negotiation is extremely difficult to achieve. Israel's relations with the other riparian countries are rather tense as well, which is simply not a rare situation in the Middle East.

Other parts of the world are dealing with water scarcity and/or having to negotiate water rights of a shared river basin. Kenya shares the Nile River with about ten other countries, and the path to civil cooperation might be helpful to look at for the Jordan River riparians. South Africa has largely avoided conflict over the rights and usage of their shared water resources, even with their long history of apartheid and racism.

II. Literature Review

There has been research done on whether or not water scarcity will inevitably lead to conflict, and the results go both ways. Most literature agrees that water insecurity by itself rarely leads to conflict, however this is largely overlooked since most International Relations literature is heavily focused on war and interstate violent conflict.⁴ Still, there remains a considerable

⁴ McMahon, Patrice C. "COOPERATION RULES: INSIGHTS ON WATER AND CONFLICT FROM INTERNATIONAL RELATIONS." In *Water Security in the Middle East: Essays in Scientific and Social Cooperation*, edited by Cahan Jean Axelrad, 19-38. London, UK; New York, NY, USA: Anthem Press, 2017. Accessed April 21, 2021. <http://www.jstor.org/stable/j.ctt1jktqmk.7>.

amount of international relations scholarship that assumes problems with water insecurity can and will lead to violence and ultimately result in interstate war. Because there has yet to be a conflict that is undeniably centered around water, it is difficult to quantify the role it plays, and it would be nearly impossible to list conflicts in which water plays at least a small role. However, it is often in the background of other more central issues such as politics or territorial disputes.⁵ To be sure, it is complicated to isolate every element of international conflicts and interstate issues, and at the same time it is necessary to analyze them in their broader contexts of globalization and the current situation wherever the conflict is taking place.

Global water politics is a very complicated and large literature, and contains scholars from various disciplines each focusing on specific features of water-related research, like geography, natural resources, public health, environment, and the like. Unlike research focused on water wars, the broader literature of global water politics looks at a larger number of regions and countries, not just centering attention around the Middle East. As will be discussed later in case studies of other regions, there are multiple actors contributing to the handling of water management issues. It is not simply at the state level, and how individual nations compete or cooperate over water, but subnational and outside influences that affect the position a state takes.⁶ When it comes to war, though, states will only go that far in order to advance their interests when possible, and whether or not they do is mostly determined by their power capabilities and when it can be calculated that gains will be greater than losses. The power is generally taken to mean military might. States generally do not go to war unless the potential

⁵ Stetter, Stephan, Eva Herschinger, Thomas Teichler, and Mathias Albert. "Conflicts about water: Securitizations in a global context." *Cooperation and Conflict* 46, no. 4 (2011): 441-459.

⁶ McMahon, Patrice C. "COOPERATION RULES: INSIGHTS ON WATER AND CONFLICT FROM INTERNATIONAL RELATIONS." In *Water Security in the Middle East: Essays in Scientific and Social Cooperation*, edited by Cahan Jean Axelrad, 19-38. London, UK; New York, NY, USA: Anthem Press, 2017. Accessed April 21, 2021. <http://www.jstor.org/stable/j.ctt1jktqmk.7>.

rewards are substantial and the difference in power is relatively small.⁷ Power differences in the Middle East, and many other regions of the world, are considerably large, as well as military capabilities, and are significant enough to render cooperation the far more rational option.

Globalization will also increase interdependence among states, further incentivizing the need for cooperation. Non-state actors like regional and international organizations will aid in the process. Current literature agrees on the fact that in the 21st century, war is just more costly than most benefits that it could provide, and thus, if the rise of interdependence is promoting peace, it stands that this would be true, also, for natural resource based conflicts.⁸ Water is also too vital to human life to risk potentially losing any amount of access to the resource. And, actually, since World War II, interstate war has been declining, and while civil and intrastate wars saw an increase between the 1960s and 1990s, they have also declined in number, as has the worldwide rate of death from civil and intrastate war.⁹ Of course, the twenty-first century has revealed new forms of violence that require a reevaluation of security that includes looking at nonmilitary factors that can threaten ways of life. Compounded with the urgency of the climate change crisis, water will most certainly remain a key topic in international relations studies.

Probably important to note, however obvious it might seem, is that scientific consensus or consensus within academic communities, do not necessarily lead to political consensus. Science hardly has everything figured out, that is to say, there are many instances in which there is a lot of scientific uncertainty surrounding an issue. Science and politics, also, are not two separate entities running on parallel lines. Rather, they each often borrow ideas and philosophies from each other while becoming increasingly interdependent. And, of course, neither are exempt

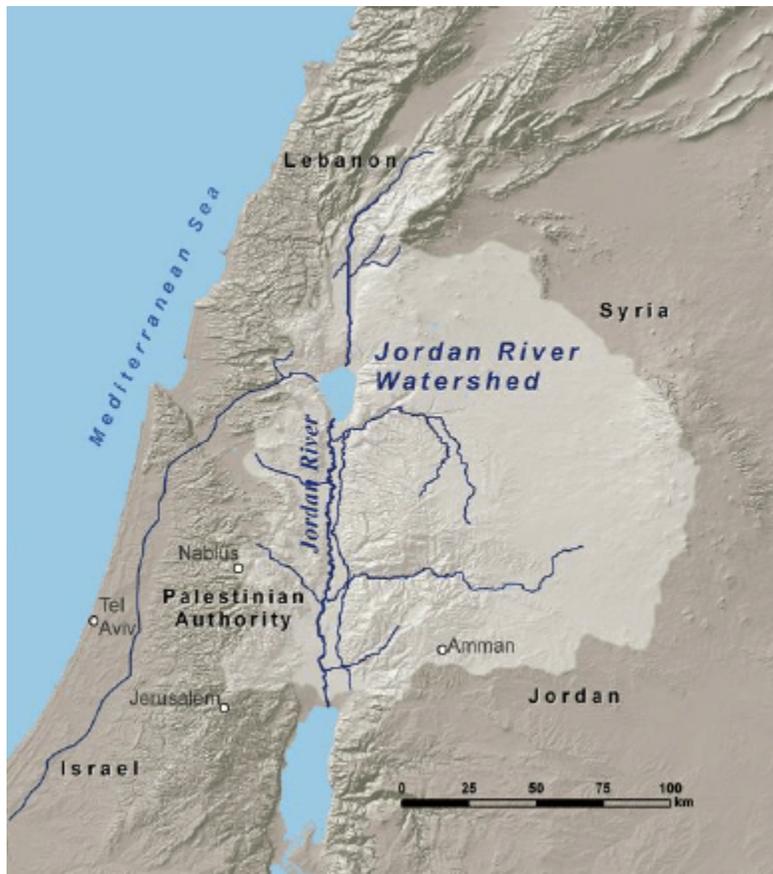
⁷ Gilpin, Robert. *War and change in world politics*. Cambridge University Press, 1981.

⁸ Barnett, Jon. "Destabilizing the environment-conflict thesis." *Review of international studies* (2000): 271-288.

⁹ McMahon, Patrice C. "COOPERATION RULES: INSIGHTS ON WATER AND CONFLICT FROM INTERNATIONAL RELATIONS." In *Water Security in the Middle East: Essays in Scientific and Social Cooperation*, edited by Cahan Jean Axelrad, 19-38. London, UK; New York, NY, USA: Anthem Press, 2017. Accessed April 21, 2021. <http://www.jstor.org/stable/j.ctt1jktqmk.7>.

from bias and outside influences. This is simple enough to accept from politicians, but it is important to remember scientists can also be influenced by their own cultural, social, and even political surroundings.

III. The Jordan River Basin



Source: ESRI Data & Maps, 2006.

It is not a coincidence that most of the greatest and biggest cities in the world are on a river. Rivers have histories, and cultural and physical significance in human societies, and thus the effective management of rivers and the resources therein has been the goal of societies and nations since the beginning. Many tactics have been invented to achieve this goal, such as river basin organizations (RBOs), market mechanisms to rationalize the economics of allocation, and legislation to ensure regulation. Importantly, though, is that rivers are best managed as a basin

unit, and any action done in one area of the basin has effects in another.¹⁰ This can be easily complicated by the fact that most rivers cross political boundaries, and intersect or form borders between the users. Even when a river basin is entirely in one nation, disagreements can still arise between conflicting groups who argue for different legislations or ways of management. The point is, no matter what, rivers will cause tensions among the societies they connect. Though it has been heavily agreed upon that cooperation is always the more likely outcome of water scarcity, the Middle East still produces uncertainty, because of its historical instability and volatile interstate relations, compounded with the fact that it is the region suffering the most from lack of water.

The Jordan River originates from the Anti-Lebanon and Mount Hermon mountain ranges and discharges into the Dead Sea, covering a distance of 223km (139 miles) north to south. Three other rivers feed into it: the Hasbani in Lebanon, the Baniyas in Syria, and the Dan, which runs through Syria and Israel. The river sources are fed by groundwater and runoff, however flow rates and annual discharge have decreased dramatically in the last several decades due to infrastructure and diversion schemes. Additionally, the water quality in the Lower Jordan River is quite poor.¹¹ Palestine and Syria have no access to the river, however Syria has built several dams in the Yarmouk River sub-basin, and uses about 450 million cubic metres annually of surface and groundwater resources, mainly for agricultural purposes. Israel is the largest user of water from the Jordan River basin, and overall the Jordan River has an estimated total irrigated area of 100,000- 150,000 hectares of which around 30% is located in Israel, Jordan and Syria, 5% in Palestine and 2% in Lebanon.¹²

¹⁰ Sadoff, Claudia W., and David Grey. "Beyond the river: the benefits of cooperation on international rivers." *Water policy* 4, no. 5 (2002): 389-403.

¹¹ https://waterinventory.org/surface_water/jordan-river-basin

¹² *Ibid*

Division of the Jordan River began with colonial partitioning of the Ottoman Empire, when the French had control over Syria and Lebanon in the North, and the British over Palestine in the South.¹³ Negotiations over surface water resources quickly arose once independent states emerged. In fact, the so-called Six Day War in June 1967 could be argued to have roots in disputes over water. Of course, it could also easily be argued that the two world powers that emerged after the Second World War, the United States and the Soviet Union, were looking to expand their power at every possibility, and exploiting the hostility between the new state of Israel and the Arab world was a very big opportunity. The United States supplied arms to Israel and also promised to come to its aid, should the Arabs attack. This was during a time of severe strain on the Egyptian-American relationship, and the Soviet Union had a rapidly growing influence in Egypt, even supplying them with arms.¹⁴

Since the end of the 1967 war, Israel has occupied the West Bank and the Gaza Strip and issued military orders concerning water, but since they never annexed either territory, Israeli water laws did not extend there.¹⁵ Despite Israeli occupation treating water in the territories as an Israeli public good, Israel has not interfered with local Palestinian water management, apart from a cap on the volume of water extracted from springs and wells.

In terms of river basin closure, according to Falkenmark and Molden, “Committed outflows from a sub-basin include flows required to meet downstream allocations to meet societal needs, to dilute pollution, to meet environmental flow needs including sustenance of estuarine and coastal ecosystems, flushing sediments and controlling saline intrusion.”¹⁶ A basin

¹³ Brooks, David, and Julie Trottier. "Confronting water in an Israeli–Palestinian peace agreement." *Journal of Hydrology* 382, no. 1-4 (2010): 103-114.

¹⁴ Gat, Moshe. "The great powers and the water dispute in the Middle East: A prelude to the six day war." *Middle Eastern Studies* 41, no. 6 (2005): 911-935.

¹⁵ Brooks, David, and Julie Trottier. "Confronting water in an Israeli–Palestinian peace agreement." *Journal of Hydrology* 382, no. 1-4 (2010): 103-114.

¹⁶ Falkenmark, Malin, and David Molden. "Wake up to realities of river basin closure." *International journal of water resources development* 24, no. 2 (2008): 201-215.

is closing when these requirements are not met for parts of the year, and closed when they are not met for the entire year. Still, if a closed basin is well-managed, it can continue to sustainably support agriculture, and other ecosystem services, but this is rarely the case once the basin goes past the point of closure and it is no longer possible for the river to meet its many demands. Exploitation continues even after this point, in many instances. There are two dimensions to water scarcity; water stress driven by demand, where the usage is larger than the availability, and water shortage due to the population, when too many people are dependent on water availability. Water shortage is more challenging, and makes it more difficult to manage basin closure.

IV. Agreements

Clearly water plays a role in the negotiations between these countries, but it is worth questioning just how important this role is, in terms of the political, economic, or other relationships between the Jordan River riparians. In the Middle East peace process water was critical in negotiation. There were conflicting plans for water use between Zionist-sponsored plans and Arab political entities. The Zionist organizations would have led to depleted levels in the Dead Sea, a plan that was at odds with Jordan's goal of exploiting the Jordan River. And, of course, it is difficult to separate the economics from the biggest issue of the area, stemming from the rejection of the principle of a state for Jewish immigrants.¹⁷ The United States became involved in 1953 in an attempt to quell increasing tensions and come up with a unified plan on the utilization of water resources. President Eisenhower sent over Eric Johnston, with what became the Revised Unified Plan, or the Johnston Plan, which made annual allocations from the surface water of both the Jordan River and the Yarmouk River.¹⁸

¹⁷ Haddadin, Munther J. "Water in the Middle East peace process." *Geographical Journal* 168, no. 4 (2002): 324-340.

¹⁸ *Ibid*

Regional political conflict has prevented a basin-wide agreement on water use, however there have been a few bilateral agreements attempting to encourage cooperation over water. In 1994, Jordan and Israel signed a Peace Treaty. Annex II of said treaty concerns water allocation and storage of the Jordan and Yarmouk Rivers and from Araba groundwaters. They also agreed to cooperate to try to alleviate water storage by developing existing and new water resources, and also cooperating on efforts to prevent and decrease water pollution.¹⁹ The Oslo II Accord of 1995, sometimes referred to as the Taba Agreement, was an instrumental agreement in the Israeli-Palestinian peace process. Article 40 states that Israel recognizes Palestinian water rights, only in the West Bank, and establishes the Joint Water Committee.²⁰ It is important to note that Palestinians are denied access to the Jordan River under this agreement. Agreements signed between Jordan and Syria in 1953 and 1987 also established a joint commission for implementation of provisions on the Wahdah Dam, the construction of which, along with 25 other dams in Syria, was addressed. Furthermore, use of the Yarmouk River was granted to both.²¹

Bilateral agreements, though, are rather flimsy and hardly promote region-wide cooperation, and could even be an obstacle to reaching a more inclusive solution.²² If one state allocates water to another, it could lead to disputes over the agreements made between Jordan and Israel, Jordan and Syria, or Israel and Palestine. Though it is a positive sign that there have been agreements reached, it is not sustainable in the long-run, as water scarcity will only intensify, leading to more pressure to either cooperate to find a solution, or even giving rise to conflict.

¹⁹ Israel-Jordan Peace Treaty

²⁰Peace Agreements & Related, Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip (Oslo II), 28 September 1995, available at: <https://www.refworld.org/docid/3de5ebbc0.html>

²¹ Syria and Jordan Agreements

²² Jägerskog, Anders. "Why states cooperate over shared water: The water negotiations in the Jordan River Basin." PhD diss., Linköping University Electronic Press, 2003.

The term 'hydrological interdependence' was coined by Elhance to explain increasing interdependence in international relations.²³ When the resources of a shared basin cross political boundaries the sovereignty, the territorial integrity, and the national security of the riparian states become a major concern, as the dynamics of the relationships become extremely vulnerable during times of increased water scarcity.²⁴ This interdependence in a water scarce river basin therefore makes the area susceptible to conflict, but also provides incentive for cooperation. It is necessary to observe these countries, the riparians of the Jordan River, in the context of their domestic politics and political ideologies.

V. Cooperation

Other parts of the world have had to deal with water management and governance, and though it is challenging, it can help to serve the point that conflict is not inevitable. In the case of the Nile River basin, Kenya's foreign and domestic policies have been directly affected by water use in the Nile River, as one of its riparians. It has been a very slow and ambiguous journey, however. The Nile River basin is shared by ten countries, encompassing a population of around 160 million people, and of the ten countries only Kenya and Egypt are not among the least developed countries.²⁵ Stability is, of course, in the best interest of all countries. There was a 1929 Nile River agreement, which remains a contentious issue, that assigns a lot of power and control to Egypt, including the right to construction on the Nile without the consent of other riparian countries, and the entirety of the dry season flow. But in the more recent past decades there has been a shift towards cooperative multilateral diplomacy²⁶ and the pursuit of an

²³ Elhance, Arun P., *Hydropolitics in the 3rd World: Conflict and Cooperation in International River Basins* (Washington, DC: United States Institute of Peace Press, 1999), pp. 12–14.

²⁴ Jägerskog, Anders. "Why states cooperate over shared water: The water negotiations in the Jordan River Basin." PhD diss., Linköping University Electronic Press, 2003.

²⁵ Adar, Korwa G. "Kenya's Foreign Policy and geopolitical interests: The case of the Nile River Basin." *African Sociological Review/Revue Africaine de Sociologie* 11, no. 1 (2007).

²⁶ Ibid

international legal regime for the utilisation of the Nile River. An argument could be made that the end of the Cold War played into the shift from mutual distrust and self-interest, to countries deciding to look instead at the bigger picture and work for the greater good.

Cooperation over water governance in South Africa is thanks in part to the decentralization of their natural resource management. By doing so, power is spread over regional, national, and local levels, though the state still holds the bulk of the authority. However it brings a much wider array of actors to the forefront, including people who would be perhaps more affected by changes in governance, and promotes an environment that encourages active and educated participants.²⁷ South Africa has reformed its water sector through various frameworks and principles, and implementation. The country's constitution also places importance on the principle of cooperation, and South Africa has several regional initiatives tasked with managing transboundary waters and requires connections between national, provincial, and local government through mechanisms like information sharing.²⁸ This reform in its water sector was catalysed by two important reasons. One being the historical context of South Africa, the apartheid regime, which based access to natural resources on race, severely skewing allocation. The inequality and embarrassment of this era was sure to push the new democracy to establish equitable allocation of natural resources. Secondly was the issue of water scarcity. Water is characterized as a public good in South Africa but it will be a challenge to keep up with increasing demand due to urbanization and industrialization, and allocation will be most effectively resolved with ongoing deliberative processes. Like the other nations mentioned in this paper, South Africa shares river basins with neighboring countries, in this case, four

²⁷ Mirumachi, Naho, and E. Van Wyk. "Cooperation at different scales: challenges for local and international water resource governance in South Africa." *Geographical Journal* 176, no. 1 (2010): 25-38.

²⁸ Ibid

transboundary river basins with six neighboring countries.²⁹ There is a history of agreements with riparian neighbors, and bilateral and multilateral commissions. Importantly, the authority over the use of water in South Africa is spread out over many levels and actors, which has proven effective in conflict prevention and also in facilitating economic development.

In the Gulf and in North Africa, water is only a peripheral issue, while it is central to negotiations in the Middle East. Even so, its significance is often downplayed in favor of traditional and even symbolic issues on the agenda. Namely: peace, territorial boundaries, settlements, and refugees. Although water scarcity and the issue of the shared resource is economically significant, and would certainly be a strategic method of navigating peace processes, water policy is typically formulated based on public perceptions of water security, which are not exactly objective and completely transparent. That is to say, the severity and facts of the problem are often distorted by bias or intentionally manipulated.³⁰ Downplaying the severity is a deliberate move on the part of policymakers because politically it might be easier than actually confronting what certainly seems like an unmanageable issue.

In large part, this is probably what has contributed to the sustained peace in the region, as it allows them to remain in the global trading system and gain access to virtual water. Basically, it is by lying, or understating, rather, the gravity of the situation that the nations suffering from the water scarce Jordan River are able to not completely shut down economically, as would be the case if they were to very publicly discuss their lack of water resources. No one wants to trade with someone who has nothing. Therefore, it provides more incentive for cooperation among states, because since they all share the same water resource, if one of them is perceived as being,

²⁹ Department of Water Affairs and Forestry

³⁰ Allan, J. Anthony. "Hydro-peace in the Middle East: Why no water wars?: A case study of the Jordan River Basin." SAIS review 22.2 (2002): 255-272.

essentially, out of water, it would stand to reason that the same goes for every other nation relying on the same source.

Surely, the states perceive these benefits, among the others that emerge from cooperation, and not solely from water management. Sadoff and Grey³¹ identify four basic benefits to cooperation; benefits to the river, benefits from the river, benefit of reduction costs because of the river, and benefits beyond the river. But tense political relations can lead to decision making that is in no one's best interest, that focus on self sufficiency rather than trade and integration. It also may lead to focus shifting from economic development to security concerns and financial resources to military preparedness.³² Just looking at the history of the area, and even leading up to present-day tensions that exist, another war or conflict is, unfortunately, not very hard to imagine.

Global discourse of river basins and river basin organizations are a key element in water governance and management. Discourse, in this context, is taken to mean "an ensemble of ideas, concepts and categories through which meaning is given to social and physical phenomena, and which is reproduced through an identifiable set of practices."³³ It is clear when analysing the discourse within the states or nations, it is not just solely water-related issues that contribute to the determination of water management decisions; strategic concerns and security considerations play a major role as well.³⁴ Decentralization has proven to be an effective measure in encouraging cooperation, like in South Africa. In Mexico, there are thirteen regional offices of the state water agency, from which basin authorities have been developed. Though some scholars

³¹ Sadoff, Claudia W., and David Grey. "Beyond the river: the benefits of cooperation on international rivers." *Water policy* 4, no. 5 (2002): 389-403.

³² Ibid

³³ Hajer, Maarten A. "The politics of environmental discourse: Ecological modernization and the policy process." (1995): 517-39.

³⁴ Jägerskog, Anders. "Functional water cooperation in the Jordan River basin: spillover or spillback for political security?." In *Facing global environmental change*, pp. 633-640. Springer, Berlin, Heidelberg, 2009.

think this is less about decentralizing power, because decisions on water policy are still mostly under federal control, and more about improving the efficiency and sustainability of their water control.³⁵ Although discourse around RBOs is promoted shaped mainly by transnational actors and policymakers, it is the actors at the national and subnational levels who take the ideas and configure them into legislation and the process of governance.

Historically, the discourse on water in Israel has been determined by ideologies, mostly Zionism, from the 1940s to the 1970s, when there was a strong emphasis on water allocation to agriculture.³⁶ Despite the shift in discourse towards more economic reasoning, the agricultural sector in Israel still wields an excessive amount of political power. For Palestinians, they believe that their water rights should be the starting point of any negotiations, as they have been continuously denied self-rule and the right to develop and manage their natural resources. This has roots in the Israel-Palestine conflict, obviously, as Palestinians have been the victims of oppression and inequality, and their tradition of farming, an integral part of their culture, has been repressed.

VI. Conflicts

Jordan has a steadily increasing demand for water, mostly due in part from the millions of refugees it has taken in since becoming a state in 1946, and these refugees are mainly from surrounding countries.³⁷ Water scarcity has been an indirect factor in tensions between Yemen and Syria, as well, according to a 2017 report by the Atlantic Council. Though water scarcity has not been identified as the sole, or a major, cause of the Syrian Civil War, it is undeniably linked

³⁵ Mukhtarov, Farhad, and Andrea K. Gerlak. "River basin organizations in the global water discourse: An exploration of agency and strategy." *Global Governance: A Review of Multilateralism and International Organizations* 19, no. 2 (2013): 307-326.

³⁶ Jägerskog, Anders. "Functional water cooperation in the Jordan River basin: spillover or spillback for political security?." In *Facing global environmental change*, pp. 633-640. Springer, Berlin, Heidelberg, 2009.

³⁷ Jaffery, Rabiya. 2020. "Water Security In Jordan Is Crucial To Maintaining Stability In The Country". Inter Press Service. <http://www.ipsnews.net/2020/10/water-security-jordan-crucial-maintaining-stability-country/>.

to the tensions. With so many people displaced, both Syrians themselves and Iraqi refugees displaced during the Iraq War, the lack of water was certainly an issue that permeated the conflict at every level. Different groups also controlled or weaponized water since the start of the conflict. In November 2012, rebel fighters captured the Tishrin hydroelectric dam and overran government forces. In December 2016, the Syrian government cut off the water supply to Damascus after targeting the Ein al-Fijeh water facility of Wadi Barada.³⁸ In March of 2017, the United Nations formally accused the Syrian government of deliberately bombing water facilities, and declared them war crimes.³⁹ There were also allegations that before the bombings, the water supply had been purposefully tainted with chlorine and other chemicals, also by the Syrian government. Regimes, and also extremist or opposition groups, will frequently use withholding water as a tactic of war when they are in such areas as the Middle East where water is as scarce as it is.

Yemen, like a lot of other developing countries, experienced a dramatic shift in demographics from rural and coastal areas to urban centers, while also having a huge uptick in population growth. With climate change and the perpetual war, the already scarce water resources are being depleted at an alarming rate. Not only because of the larger population, but because of the shift from sustainable farming practices to cash crop harvesting, which requires a much greater amount of water to sustain. Though oftentimes lost in the larger details of the conflict, water has had a very significant impact on the situation in Yemen, leading to fights over distribution, and instances of tribal conflict and increasing violence over the control and routing

³⁸ Suter, Margaret. 2017. "Running Out Of Water: Conflict And Water Scarcity In Yemen And Syria - Atlantic Council". *Atlantic Council*. <https://www.atlanticcouncil.org/blogs/menasource/running-out-of-water-conflict-and-water-scarcity-in-yemen-and-syria/>.

³⁹ <https://www.aljazeera.com/news/2017/3/14/un-syria-jets-deliberately-hit-damascus-water-supply>

of water.⁴⁰ Controlling water provision is an appealing leverage point, and so outside pressure is oftentimes required, or would play an important role, in finding a resolution.

I. Conclusion

Water is essential to all life, and therefore has always been a societal priority. The absence of water leaves people and states vulnerable and poor, so the ability to negotiate water resources, utilization, and generally manage it is imperative to a stable nation. The riparians of the Jordan River have been in debate over water rights since they all emerged as independent nations. Already being in the most water scarce region in the world, the political tensions and history of conflict do not aid the situation. However, there has yet to be a war broken out over water itself. Due to the severity of the problem, it makes the most sense for the countries to attempt to work together and find solutions to the lack of water. Regardless of how many parties have control of the water resources in the Jordan River, there is simply not enough water to satiate the millions of citizens, and refugees, in a time where climate change is becoming more and more noticeable and dangerous. There is also a lack of clear understanding on the true nature of the problem, as its significance and gravity is often misconstrued in order to stay in competition with the rest of the global trading world. Negotiations thus far have been bilateral in nature, which is not sustainable in the long term because it does not account for what could happen between nations outside of the agreement. A basin-wide agreement is the most advantageous route to take, and perhaps might be the most likely. Since war is costly, both financially, and in terms of human lives, cooperation is the most cost-effective plan of action, as

⁴⁰ Suter, Margaret. 2017. "Running Out Of Water: Conflict And Water Scarcity In Yemen And Syria - Atlantic Council". *Atlantic Council*. <https://www.atlanticcouncil.org/blogs/menasource/running-out-of-water-conflict-and-water-scarcity-in-yemen-and-syria/>.

there are so many more benefits. There is a very big opportunity for peace in the Jordan River Basin now, and hopefully policy makers realize this sooner rather than later.

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