

Social Justice and Water Policy in an Era of Climate Change:  
A case study of Israel/Palestine water relations

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### **Abstract**

This paper is a product of concerns for social justice for Palestinians, particularly in their needs and rights to freshwater in Israel/Palestine. This must be approached in relation to colonialism and water rights, as these cannot be divorced from social justice. First, the existing freshwater resources in Israel/Palestine need to be examined, along with how they might change in the future. This will create an understanding as to where water is located and how climate change might influence water resources in the future. Next, examining how geopolitical struggles have been formed is important to showing the differences between the Israelis and Palestinians, particularly in the colonial past of Israel/Palestine. These geopolitical struggles, seen as a type of colonialism, can be examined through existing water policies and water usage. Finally, with this colonial present in Israel, it is important to attempt to look at all sides fairly. Even with these struggles over territory, whether or not Israelis and Palestinians can come to a peaceful solution regarding Palestinian independence, the human right to and the need for water must be considered. Therefore, the ways of thinking about solutions need to be examined to protect these rights and needs. This kind of analysis can then be applied to other conflicts over freshwater – a matter of importance in the era of climate change.

## Table of Contents

<b>1</b>	<b>Introduction</b> .....	5
1.1	Water and Water in Israel/Palestine.....	5
1.2	Terms Used.....	6
1.3	What’s at Stake?.....	7
<b>2</b>	<b>Climate Change and Existing Freshwater Resources in Israel/Palestine</b> .....	8
2.1	Climate Change.....	8
2.2	Surface Water Resources.....	10
2.3	Ground Water Resources.....	13
2.3.1	Western Groundwater Resources.....	13
2.3.2	Gaza Strip Groundwater Resources.....	14
2.4	Shortfall in the Future.....	14
<b>3</b>	<b>Present-day Colonialism and Water Policy</b> .....	15
3.1	Historical Divisions of the Land.....	16
3.2	Settlement Colonialism.....	19
3.3	Water Policies and Management in Israel/Palestine.....	27
3.4	Water ‘Apartheid’ and Discrimination.....	33
<b>4</b>	<b>Just Decision-Making Involving Freshwater</b> .....	42
4.1	Water as a Human Right.....	42
4.2	Water Justice.....	45
4.3	As Access to Water Becomes More Limited.....	47
4.4	Types of Solutions .....	49
<b>5</b>	<b>Conclusion</b> .....	50
5.1	Questions that Remain.....	50
5.2	Research vs. Policy.....	51
5.3	Israel and Palestine as a Case-Study.....	51
	<b>Figures</b> .....	53
	<b>Bibliography</b> .....	60

## 1 Introduction

### 1.1 Water and Water in Israel/Palestine

As Earth and its inhabitants begin to experience climate change and growing population pressures it has been said that the next wars will be over freshwater resources.<sup>1</sup> In many places where freshwater is scarce, conflicts have already been taking place, although not necessarily over water. However, in areas where freshwater resources are scarce, geopolitical conflicts between nations and ethnic groups may become more contentious. Nowhere is this more the case than in Israel/Palestine. Although the main problems stem from issues of religion, ethnocracy, territory and refugees, water can be a factor. In the formation of Mandate Palestine by the British, one of the goals was to provide the future Jewish State with an economic potential in Palestine, and thus water for irrigation of agriculture.<sup>2</sup> The Zionist goal for forming Eretz-Israel<sup>3</sup> was to return to the land, thereby forming an agricultural state out of the desert. Yet before the formation of modern Israel, Arab peoples, many of whom rejected the idea of a Jewish State, already occupied the land mostly as farmers, so they had been using these water resources. Since the foundation of the two separate Jewish and Arab states in 1947 by United Nations Partition Resolution No. 181, Arabs, including the Palestinians, have fought wars over territory and

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<sup>1</sup> W. Barnaby, “Do nations go to war over water?” *Nature* 458, no. 7236 (2009): 282.

<sup>2</sup> Gideon Biger, “The Boundaries of Israel—Palestine Past, Present, and Future: A Critical Geographical View,” *Israel Studies* 13, no. 1 (2008): 72; Hussein A. Amery and Aaron T. Wolf (eds.), *Water in the Middle East: A Geography of Peace* (Austin, TX: University of Texas Press, 2000): 65.

<sup>3</sup> Eretz-Israel is a Biblical name for the territory roughly corresponding to the area encompassed by the Southern Levant, bordering the Mediterranean, and encompassing modern day Israel/Palestine, Jordan and the southern part of Lebanon. The belief that the area is a God-given homeland of the Jewish people is based on the narrative of the Torah, especially the books of Genesis and Exodus, as well as the Prophets. According to the Book of Genesis, God promised the land to the descendants of Abraham through his son Isaac and to the Israelites, descendants of Jacob, Abraham's grandson. A literal reading of the text suggests that the land promise is (or was at one time) one of the Biblical covenants between God and the Israelites.

boundaries. This, then, could be the starting point to future armed conflicts over freshwater resources.

## **1.2 Terms Used**

Due to the issue of territorial boundaries, I will discuss here the terms I will use in describing certain areas of what used to be Mandate Palestine under the British. The Palestinian National Authority currently governs parts of the West Bank and has been given control of the Gaza Strip as of 2005. Israeli military authorities govern the rest of the West Bank. The United Nations and international legal bodies often refer to these areas as the Occupied Palestinian Territories. The term is often used interchangeably with the term occupied territories, although this term is also applied to the Golan Heights, which is internationally recognized as part of Syria and not claimed by the Palestinians. The confusion stems from the fact that all these territories were captured by Israel during the 1967 Six-Day War and are treated by the UN as territory occupied by Israel. The Israeli government typically calls the combined West Bank and Gaza Strip, “Yesha” (Judea-Samaria-Gaza), “administered territories”, “territories of undetermined permanent status”, “1967 territories”, and simply “the territories.” Separately, the West Bank is Yash (Judea and Samaria) and Gaza Strip, the Katif Strip.

Language is important when talking about a group of people that has long been subjugated and continues to be so. Specific definitions can lend credence to a cause, especially when dealing with a group of people that has been denied justice for so long by a state, Israel (and the United States), that ignores the calls of the United Nations and much of the rest of the world to come to an agreement on boundaries. Although Palestinians have long held territory in this region of the world, their boundaries were never set until the twentieth century under the British with the formation of Mandate Palestine. However, the land has never fully been in the

control of the Palestinians during the modern era, as Britain decided to establish a Jewish national homeland in Palestine with the Balfour Declaration of November 2, 1917. The Palestinians are a nation without a state.

When talking about the area as a whole, what used to be Mandate Palestine, I will refer to it as Israel/Palestine. I use the term Occupied Palestinian Territories, also shortened as the OPT, for the areas that are home to Palestinians without Israeli citizenship, which is made up of the West Bank and the Gaza Strip. When talking about these areas independently, I will say the West Bank or the Gaza Strip. For the rest of the former Mandate Palestine, home to Israeli citizens who are not in illegal settlements, I will call this area Israel.

### **1.3 What's at Stake?**

This paper is a product of concerns for social justice for Palestinians, particularly in their needs and rights to freshwater in Israel/Palestine. This must be approached in relation to colonialism and water rights, as these cannot be divorced from social justice. First, the existing freshwater resources in Israel/Palestine need to be examined, along with how they might change in the future. This will create an understanding as to where water is located geographically, and how climate change might influence future resource availability in these areas. Next, examining how geopolitical struggles have shaped the present situation is important in order to understand differential access to water between Israelis and Palestinians. These geopolitical struggles, seen as a type of colonialism, can be examined through existing water policies and water usage. Finally, in the context of this colonial present, to use Derek Gregory's words, in Israel, it is important to keep in mind the ways in which to look at all sides fairly. Even with these struggles over territory, whether or not Israelis and Palestinians can come to a peaceful solution, it is

important to remember the human right to and need for water. Therefore, ways of thinking about solutions need to be examined.

## **2 Climate Change and Existing Freshwater Resources in Israel/Palestine**

### **2.1 Climate Change**

While the northern and coastal regions of Israel/Palestine show Mediterranean climate characterized by hot and dry summers and cool rainy winters, the southern and eastern areas of Israel/Palestine are characterized by an arid climate. Over the past fifty years, water has been seen as increasingly scarce in Israel/Palestine, whereas prior to the 1950s, it was seen as abundant. Recharge rates to aquifers and rivers have not been able to keep up with increasing domestic, industrial and agricultural water use. Water scarcity is likely to become more of a point of contention in the future as climate change and population pressures strain an already fully utilized water supply. This is important as it relates to who then has a say in formulating water policy in Israel/Palestine.

According to Evans, there is difficulty in formulating climate change predictions for the Middle East because of high natural inter-annual variability in both temperature and precipitation.<sup>4</sup> In addition, there are uncertainties in climate predictions due to imperfect knowledge, especially in knowing future rate of human-made emissions, how these will change the atmospheric concentrations of greenhouse gases, and the response of climate to these changed conditions. Despite all of this, most climate models predict that Israel/Palestine will experience less rainfall and warmer temperatures as the twenty-first century progresses. By 2050, temperatures in the Middle East are expected to increase by 1.4 degrees Celsius, and 2.54

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<sup>4</sup> Jason P Evans, "21<sup>st</sup> century climate change in the Middle East," *Climatic Change* 92, no. 3-4 (2009): 418.

degrees over the later part of the century, leading to an increase of nearly four degrees Celsius by 2100.<sup>5</sup>

In addition, Evans found that precipitation in these climate model predictions will decrease by approximately 15 mm halfway through this century, and 30-50 mm by its end. These estimates and how they differ across Israel/Palestine and the region can be seen in Figure 1.<sup>6</sup> However, these numbers are only estimates. Other reports, such as the Intergovernmental Panel on Climate Change's *The Regional Impacts of Climate Change: An Assessment of Vulnerability* call for a 1-2 degree Celsius change by 2030-50 with a slight increase in precipitation.<sup>7</sup> These numbers from the IPCC are for the entirety of Middle East and Arid Asia. Evans found that precipitation changed dramatically across the region, with major increases in the Arabian Peninsula, while decreases were extreme across Turkey. As Figure 1 demonstrates, the changes in precipitation are dramatically different across the region, while decidedly decreasing in Israel/Palestine.<sup>8</sup> Also, in agreement with Evans, Ragab and Prudhomme state that rainfall in Israel/Palestine is expected to decrease by 20-25% of the mean by 2050 according to the HadCM2 model.<sup>9</sup> For Israel/Palestine, then, precipitation is expected to decrease as temperature increases – not a good combination for a geographic location already struggling with water.

This increase in temperature paired with decreases in precipitation will put greater stress on soil moisture. In an arid climate, soil moisture is already strained and replenished only

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<sup>5</sup> Evans, "21<sup>st</sup> century," 425.

<sup>6</sup> Ibid., 427, see Figure 1 for the map illustration on page 53.

<sup>7</sup> O. Pilifosova, B. Alijani and U.N. Safriel, "Middle East and Arid Asia," edited by Habiba Gitay and Ian R. Noble, in *The Regional Impacts of Climate Change: An Assessment of Vulnerability*, edited by Robert T. Watson, Marufu C. Zinyowera, and Richard H. Moss (Cambridge, UK: Cambridge University Press, 1998), 231-252

<sup>8</sup> Evans, "21<sup>st</sup> century," 427.

<sup>9</sup> Ragab Ragab and Christel Prudhomme, "Climate Change and Water Resources Management in Arid and Semi-arid Regions: Prospective and Challenges for the 21st Century," *Biosystems Engineering* 81, no. 1 (2002): 17.

through heavy amounts of irrigation. Evaporation will rise with an increase in temperature, leading to a need for more irrigation. Increases in air temperature, along with a 10% reduction in precipitation, may cause a 40 - 70% drop in mean annual river runoff, affecting agriculture and water supplies.<sup>10</sup> Countries that rely heavily on groundwater and desalination are exceeding the renewable freshwater rate, according to the IPCC. If this is already the case, major changes need to be made to better deal with problems that will be faced in the future.

Ragab and Prudhomme examined the Near East, ranging from Morocco and North Africa in the west to Pakistan in the east, which covers 14% of the world. According to them, this area contains 10% of the world's population, but only 2% of its total renewable water resources.<sup>11</sup> The internal renewable water resources per inhabitant in this region are among the lowest in the world. Therefore, reducing water used by agriculture would help substantially by freeing water for human consumption, with the IPCC suggesting a 30% reduction in agricultural water use.<sup>12</sup> Many of these sources agree that water authorities should re-examine engineering designs, operations, and policies of water management systems. There is a need for the timely flow of information from the scientific community to water management and the public in order to better deal with future problems.<sup>13</sup> It is of the highest importance to realize that future conditions will not be the same as past conditions, especially since current water infrastructures are based on past assumptions of water availability, and that future water sources will likely be more limited than at present.

## **2.2 Surface Water Resources**

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<sup>10</sup> Ragab and Prudhomme, "Climate Change," 3.

<sup>11</sup> Ibid., 13.

<sup>12</sup> Pilifosova, et al., "Middle East."

<sup>13</sup> Ragab and Prudhomme, "Climate Change," 7. Pilifosova, et al., "Middle East." Evans, "21<sup>st</sup> Century," 418.

Surface water is that which flows permanently in rivers or wadis, as flood flows, and from springs or seasonal lakes. Surface water is of minor importance, as much of it is seasonal, and there is less of it than groundwater. The primary surface water resource in Israel/Palestine is the Jordan River. In 1964, the National Water Carrier (NWC) was completed, diverting the Jordan River to the Sea of Galilee for Israeli uses. It splits along the way to bring water to urban and agricultural areas, ending in the agricultural developments of the Negev Desert. A map of the National Water Carrier and regional systems stemming from the NWC can be seen in Figure 2.<sup>14</sup> However, there are other regulations for the Jordan River Basin, as it borders Syria, Lebanon, Jordan and Palestine. For example, although never ratified, the Johnston Plan of 1956 allocated use of the Jordan River basin between Israel, Jordan and Syria. Israel and Jordan, with Palestine falling under Jordan's allocation, follow this plan in return for American financing of major water development projects.<sup>15</sup> However, the Jordanians and Palestinians claim that Israel pumps more than their allocation as set out under the Johnston Plan. The flow of the Jordan has been greatly reduced with the development of the NWC, as seen by the water level of the Dead Sea decreasing at the rate of one meter per year.<sup>16</sup> The end of the Jordan River has been reduced to a trickle, and has even dried up during the summer months, due to a number of causes.<sup>17</sup>

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<sup>14</sup> Amery and Wolf, *Water in the Middle East*, 30; see Figure 2 for the map of the National Water Carrier on page 54.

<sup>15</sup> Karen Assaf, Nader al Khatib, Elisha Kally, and Hillel Shuval, *A Proposal for the Development of a Regional Water Master Plan* (Jerusalem: Israel/Palestine Center for Research and Information, 1993), 8.

<sup>16</sup> EWASH Advocacy Task Force, "Water Resources in the West Bank," *Emergency Water and Sanitation-Hygiene Group*. <http://www.ewash.org/files/library/2> Fact sheet- Water Resources In the West Bank.pdf.

<sup>17</sup> Assaf, et al., *A Proposal*, 9. Assaf, et al., explain that the Jordan River is reduced to a trickle mainly due to the diversion of water by Israel through the National Water Carrier. On top of the diversion, droughts or high temperatures during the summer months cause enough evaporation that the flow is reduced significantly enough that water runs in a trickle or dries

Along with being one of the major rivers in the western part of the Middle East, the Jordan is the only river Palestinians on the West Bank have access to, although Israel controls that access.<sup>18</sup>

Water is collected from the roofs of buildings in the winter season and stored in cisterns below ground, typically for domestic purposes. This form of water collection is the major domestic source for those who do not have access to reliable water supplies. During the winter rainy season, there are a few seasonal wadis and lakes, although according to Zahra, the surface water systems of Israel/Palestine have not been studied in detail by scholars because groundwater is more prevalent.<sup>19</sup> Rainfall is typically from October to May and ranges from 100 mm/yr to 700mm/yr depending upon location.<sup>20</sup> This lack of precipitation in the summer can be problematic when trying to collect rainfall for domestic use, when other water source may be unavailable or unaffordable.

Wadi Gaza (Bessor), which starts in Israel and flows to the Mediterranean, is a matter of dispute between Israelis and Palestinians in the Gaza Strip. Originating in the Negev Desert, it is diverted by Israelis to reservoirs for artificial recharge and irrigation so only a little water reaches the Gaza Strip.<sup>21</sup> There are fewer surface water resources in the Gaza Strip compared to the West Bank, and those that exist are already highly contested between Israelis and Palestinians. Overall, surface water from the Jordan River is typically controlled by Israel and transported through the

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up. This occurs more often during the summer months, the dry season, than during winter rains.

<sup>18</sup> Bader Ali Ahmad Abu Zahra, "Water crisis in Palestine," *Desalination* 136, no. 1-3 (2001): 96.

<sup>19</sup> Ibid.

<sup>20</sup> Amjad Aliawi, "Management and conflict aspects of waters between Palestine and Israel," *Journal of Law and Conflict Resolution* 1, no. 4 (2009): 088.

<sup>21</sup> Elmusa, Sharif S, *Negotiating Water: Israel and the Palestinians* (Washington, D.C.: Institute for Palestinian Studies, 1996), 8. Aliawi, "Management and conflict," 091.

National Water Carrier for Israeli agricultural use. Palestinians use springs and smaller wadis in the West Bank, but such water is easily polluted and thus unreliable.

## 2.3 Groundwater Resources

Groundwater is the main water resource for Palestinians in the Occupied Palestinian Territories. There is one major aquifer system in the West Bank region made up of several basins and one aquifer in the coastal area of Israel/Palestine that runs under the Gaza Strip. The total natural recharge of the aquifer basins is 986 mcm/y (million cubic meters per year).<sup>22</sup> However, it is hard to know current water demands and usage, as it is difficult to get records from Israel's Water Department.<sup>23</sup>

### 2.3.1 Western Groundwater Resources

The Mountain Aquifer, composed of three separate basins, typically flows from the West Bank into Israel. These three parts are the Eastern, Northeastern and Western basins, sometimes called aquifers as well, and are named based on the direction they flow, as seen in Figure 3.<sup>24</sup> The Western basin is the largest of the three, with seventy-eight percent of its recharge area falling in the Occupied Territories of the West Bank.<sup>25</sup> A larger percentage of the Northeastern basin is also recharged from within the West Bank than from within Israel, and both of these basins are tapped by both Israel and the West Bank.<sup>26</sup> Essentially the entire Eastern basin flows

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<sup>22</sup> D.J.H Phillips, Shaddad Attili, Stephen McCaffrey, and John S. Murray, "Factors Relating to the Equitable Distribution of Water in Israel and Palestine," from *2nd Israeli-Palestinian International Conference on Water for Life in the Middle East: Antalya, Turkey, 10-14 October 2004*, (Jerusalem: Israel-Palestine Center for Research and Information. <http://nad-plo.org/userfiles/file/Reports/factors.pdf>): 15.

<sup>23</sup> Assaf, et al., *A Proposal*, 125.

<sup>24</sup> Jan Selby, *Water, power and politics in the Middle East: the other Israeli-Palestinian conflict* (London: Tauris, 2003): 24. See Figure 3 for a map for an illustration of the Aquifer system on page 55.

<sup>25</sup> Phillips, et al., "Factors Relating to the Equitable Distribution," 27. Zahra, "Water Crisis," 94.

<sup>26</sup> Elmusa, *Negotiating Water*, 7.

under the West Bank, so it is typically not considered a transboundary water source. Therefore, according to Zahra, about ninety percent of the recharge area for the Mountain Aquifer system falls under the West Bank.<sup>27</sup> These aquifers flow naturally to springs, wadis, and Israelis and Palestinians drill wells. This aquifer system discharges 600-660 mcm/y, with West Bank Palestinians using about 115-123 mcm/y, the rest being used by Israelis both within West Bank settlements and in Israel.<sup>28</sup> As a whole, the Mountain Aquifer system is thought to be nearing renewable capacity, especially as some shallower wells and aquifer-fed springs have dried up or gone brackish.<sup>29</sup> In addition, there is a non-renewable fossil aquifer in the Negev desert in Israel, thought to be suitable for irrigation only, that may hold upwards of 70 billion cubic meters (bcm).<sup>30</sup>

### **2.3.2 Gaza Strip Groundwater Resources**

The Gaza Aquifer is part of the Coastal Aquifer, so it is a shared system with Israel. It is being over-pumped by 35 mcm/y more than the natural rate of replenishment.<sup>31</sup> As it is being pumped above the recharge rate, the water quality has deteriorated rapidly, becoming brackish.<sup>32</sup> Israel has been trying to divert some water from the Israel National Water Carrier and constructing a plan to desalinate water at one refugee camp.

### **2.4 Shortfall in the Future**

With the goal of increasing Jewish immigration to the area, Zionists stated from the early 1900s to 1940s that Israel/Palestine was abundant in water and could be turned into the land of milk and honey. However, after 1948 and the formation of the state of Israel, the language of

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<sup>27</sup> Zahra, "Water Crisis," 94.

<sup>28</sup> Ibid.; Phillips, et al., "Factors Relating to the Equitable Distribution," 15.

<sup>29</sup> Aliewi, "Management and conflict," 093. Ragab and Prudhomme, "Climate Change," 30.

<sup>30</sup> Elmusa, *Negotiating Water*, 7.

<sup>31</sup> Assaf, et al., *A Proposal*, 32.

<sup>32</sup> Zahra, "Water Crisis," 97.

scarcity came into play.<sup>33</sup> Critics argue that the language of water scarcity is an interested discourse and is not just about what resources actually exist. This discourse of scarcity is one that promotes state control of the resource; in fact, it is through the language of scarcity that the young state of Israel legitimized its control over water in Israel/Palestine. As Alatout claims, the Israeli state wanted control over water resources both to promote centralization of the area behind the new government but to also formalize control of a resource that was, and continues to be, important for the expanding population of the region.<sup>34</sup> Water estimates from the Israeli government changed from 3,000 mcm/y in the early 1940s to less than 1850 mcm/y by the early 1950s. Scarcity is built on presuppositions, but also on facts, a subject brought up again in Section 3.3. A German-sponsored study of water supply and demand found massive gaps between demand and availability, up to a difference of 3.4 billion cubic meters per year by 2040.<sup>35</sup> This shows that there will be a major shortfall in water in Israel and the Occupied Palestinian Territories before the middle of this century. This could lead to a major geopolitical crisis as water becomes scarcer and even more valuable.

### **3 Present-day Colonialism and Water Policy**

Water policies often favor those with power, especially in areas where territory is disputed or occupied, as is the case in Israel/Palestine. In addition, those who control the land are the ones who also have power over the water resources located on the surface and under it. As Selby states, the “Israeli-Palestinian water conflict...can only be adequately explained when

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<sup>33</sup> Samer Alatout, “‘States’ of scarcity: water, space, and identity politics in Israel, 1948-59,” *Environment and Planning D: Society & Space* 26, no. 6 (2008): 959-982.

<sup>34</sup> *Ibid.*, 960. Alatout goes more in-depth on how scarcity or abundance is constructed by the Israeli government and Zionists in order to form specific kinds of policies and support structures for Israel.

<sup>35</sup> Zahra, “Water Crisis,” 97.

considered within the context of broader structures and relations.”<sup>36</sup> There is a pre-history that needs to be remembered when discussing current levels of water access between Israelis and Palestinians, as claims for allocation between the two relate to the history of the territory. Therefore, in order to show the differences between Israeli and Palestinian water use, the historical divisions of territory need to be discussed. The territory has changed over time, typically unfavorably to the Palestinians, especially since the First World War.

### **3.1 Historical Divisions of the Land**

The Ottoman Empire, one of the largest and longest lasting empires in history, controlled Israel/Palestine until the end of World War I. This region was known as Philistines and the term appeared on official maps and documents, but did not have any identifiable area. According to Biger, the boundaries of the area were difficult to understand and were quite different from the modern political definition of Israel/Palestine.<sup>37</sup> During WWI, the Ottomans were driven from much of the region by the British Empire, with considerable help from the local Arab population through the Arab Revolt. Sir Henry McMahon of Britain convinced Husayn ibn 'Ali to lead an Arab revolt against the Ottoman Empire and, if they did so, the British government would support the establishment of an independent Arab state in the Arab provinces of the Ottoman Empire, including Palestine. The British occupied and set up a military administration across former Ottoman Syria. The land remained under British military administration for the remainder of the war, and beyond. The British sought to legitimize their continued control of the region and did so by obtaining a mandate from the League of Nations in June 1922.

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<sup>36</sup> Jan Selby, *Water, power and politics in the Middle East: the other Israeli-Palestinian conflict* (London: Tauris, 2003): 7.

<sup>37</sup> Biger, “Boundaries of Israel,” 69.

British control, compared to the length of time of Ottoman rule, was relatively short. However, during this time, British negotiations set the boundaries of the current geographical limits of Israel/Palestine. The Eastern boundary was created in 1906, separating Sinai and the provinces of what would be British Palestine.<sup>38</sup> Through their negotiations with the French, the British negotiated the northern boundary of Israel/Palestine with Lebanon and Syria. Trans-Jordan, given to the Arabs as a British Protectorate for their help in defeating the Ottomans during WWI, established the eastern boundary of Israel/Palestine at the Jordan River. However, this was not what the Arabs had been promised from the British. They were not given full independence, nor given control of Israel/Palestine, which was made into a British Mandate, becoming a symbol of broken promises. It is through the work of Britain that the modern territorial entity of Israel/Palestine came to be, and it is the modern geographical definition that is still used.<sup>39</sup>

The first Zionists began entering this area in the 1880s and at that time began buying land in what became Mandate Palestine. Zionism is a form of Jewish nationalism and culture that supports a Jewish nation state in a territory they defined as the Land of Israel. The Zionist Organization, created in 1897, had the role of “establishing a Jewish State in Eretz-Israel.”<sup>40</sup> The 1917 Balfour Declaration gave British support for a Jewish home in Palestine, but also stated that such a home was not to prejudice the civil and religious rights of existing non-Jewish communities. Nor did it say that Britain would form a Jewish State, only a home.<sup>41</sup> Reacting to this arrangement with the Jewish community, Palestinians and Arabs argued that the British had

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<sup>38</sup> Biger, “Boundaries of Israel,” 70.

<sup>39</sup> Ibid., 73.

<sup>40</sup> Ibid., 75.

<sup>41</sup> Ian Gregory, *The Colonial Present* (Malden, MA: Blackwell Publishing, 2004), 80. Oren Yiftachel, *Ethnocracy: Land and Identity Politics in Israel/Palestine* (Philadelphia: University of Pennsylvania Press, 2006), 55.

promised Palestine to them, a contradiction Britain attempted to solve by granting independence to Trans-Jordan. Both Jewish and Palestinian independence movements clashed with the British throughout the 1930s and 1940s.<sup>42</sup> The British eventually concluded that a partitioning of Mandate Palestine into two separate states would be the best solution, using the Peel Commission's plan of 1937, which was to give the Zionist Jews twenty percent of the territory, shown in Figure 4.<sup>43</sup> Again, as with the events after WWI, the partition was seen as a move to give Palestinian land to people who were not there, just as the British had not given Arabs their independent state and the land of Israel/Palestine.

These partitioning plans were put on hold with the start of World War II. At the war's conclusion, Zionists and Jewish supporters alike called for the formation of a Jewish State. Resolution number 181 came before the United Nation General Assembly, granting Jews, who only made up about 35% of the population, 55-56% of Mandate Palestine.<sup>44</sup> Many Arabs and Palestinians saw these partitioning plans as unjust, since they took away their territory, homes and homeland. They rejected the 1937 Peel Plan, and as UN Resolution 181 was even more unequal in its partition of the area, they rejected it as well. So, although this Resolution would have granted Palestinians with the first opportunity in centuries to have their own independent state, due to the inequities of the UN Resolution, war broke out soon after it passed in the General Assembly on November 29, 1947. Figure 5 shows the difference in land area from the partitioning in Resolution 181 and the actual land area after the 1948 war. Compared to Figure 4, Figure 5 again shows a stark contrast in the land partitioned to the Israelis by the British

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<sup>42</sup> R. Reuveny, "Fundamentalist colonialism: the geopolitics of Israeli-Palestinian conflict," *Political Geography* 22, no. 4 (2003): 354.

<sup>43</sup> Gregory, *Colonial Present*, 82. Please see Figure 4 on page 56, for a map from Gregory

<sup>44</sup> *Ibid.*, 86. Yiftachel, *Ethnocracy*, 58. Please see Figure 5 on page 57, for a map from Gregory

compared to how much they were given by the United Nations and subsequently how much more they took by force.

The first war fought by the Government of Israel against its Arab and Palestinian neighbors, known as the War of Independence by the Israelis, and “The Catastrophe” or “The Disaster” by Palestinians. At the conclusion of the war, Israel controlled 78% of the land, with the West Bank and Gaza Strip held by Jordan and Egypt respectively, again, shown in Figure 5.<sup>45</sup> Between 4,200 to 5,800 square kilometers of private Palestinian land was confiscated and transferred to public or Jewish ownership, and Palestinian Arabs remaining in Israel lost 40-60% of their lands.<sup>46</sup> In 1967, after the Six-Day War, also known as “The Setback” in Arabic, the West Bank and Gaza Strip were fully under the control of Israel, along with the Golan Heights from Syria, and the Sinai Peninsula, which has since been returned to Egypt. This means that since 1967, Israel has effectively had control of all the land granted to the Palestinians by UN Resolution 181. More recently, in 2005, Israel withdrew from the Gaza Strip and destroyed all Jewish civic settlements there, with complete administrative authority transferred to the Palestinian Authority.<sup>47</sup> However, as will be shown in section 3.4 (on page 33), the water resources of the Gaza Strip are still affected as they share a boundary with Israel.

### **3.2 Settlement Colonialism**

In recent years Israel has allowed the Palestinian Authority some control of the West Bank and full control of the Gaza Strip. However, Israel still controls all the land, sea and air access to the latter, and the United States still considers it an occupied territory on the CIA World Factbook. Gaza and the West Bank are both intensely monitored and militarized zones,

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<sup>45</sup> Gregory, *Colonial Present*, 86. Yiftachel, *Ethnocracy*, 58.

<sup>46</sup> *Ibid.*, 137.

<sup>47</sup> Biger, “Boundaries of Israel,” 91.

where the Israeli Defense Forces decide who and what gets to come and go, so although parts are self governed, these can be considered “open-air” prisons. Those with colonial power write the history of the territory, so it is important to remember that the Israelis, when considering policies such as territory and land, subjugate the Palestinian people by formulating strategies that are repressive toward them. Also, the time of Zionist expansion into the area of present-day Israel/Palestine occurred at same time that the largest imperial projects of Europe and the US were firmly in place. Consequently, the Jewish colonial project often represents what has taken place, and continues to take place, around the world.

The modern colonial project in Israel/Palestine began with the Zionist movement in the late 1800s. It was the Zionist dream that constructed Israel/Palestine as a space empty of its native Arab population. Jews, according to Zionism, needed to reclaim the ‘wilderness.’ Thousands of Jews immigrated to this territory, dispossessing Palestinian farmers, and forming settlements in order to create security and sovereignty over the land. Such a Jewish State was seen as part of Europe against Asia, and Europe against barbarianism.<sup>48</sup> Prior to World War II, Jews in Mandate Palestine saw themselves as stopping the forces of destruction and battling the forces of the desert. As Gregory says, the Zionists did not see any injustice in removing Palestinians from the land because they were not seen as putting the land to good use.<sup>49</sup> Even before Peel’s Commission finished its partition plan, Jews started building outside of the area they were to be given, forming “tower and stockade” settlements. One settler said that “An area from which civilization had departed 2,000 years before was being reclaimed” through the

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<sup>48</sup> Gregory, *Colonial Present*, 79.

<sup>49</sup> *Ibid.*, 81.

construction of these settlements.<sup>50</sup> This was the colonial background of civilization versus barbarianism, and waste versus development, that would fuel future settlements.

As established in the previous section, due to the war in 1948, the Israeli government took over three-quarters of the land area of Israel/Palestine, and they had to find ways to dispossess the Palestinians from the land. The Israeli government created a legal system to restrict Arab land ownership. Between 1948 and 1950, Israeli Defense Forces (IDF) also destroyed 400 Palestinian villages and built 160 Jewish ones. The Palestinians who fled during the war were denied the right to return to their towns and repossess their property, which was then appropriated by the state.<sup>51</sup> Palestinians lost the names to their towns as well, as Hebrew replaced Arabic.

Yiftachel continues in the same train of thought as Gregory regarding a colonial present, though he includes a mix of religion and ethnic background to the colonial project. Yiftachel identifies three main political and historical forces that have shaped the politics and territory of the Israeli government: a) the formation of a (colonial) settler society, b) the mobilizing power of ethnonationalism, and c) the ethnic logic of capital. In effect, he is calling the Israeli government both a colonial project and an ethnocracy. As part (a), the Israeli government, even prior to 1948 under Zionist organizations, exercised a deliberate strategy of immigration and settlement that aimed, and continues to aim, at altering the country's ethnic structure. Part (b) is evidenced even in Gregory where the Palestinians and Arabs were viewed through an Oriental lens, which considers Jews to be 'us' and the Arabs and Palestinians as 'them' and therefore different.<sup>52</sup> In addition, using ethnonationalism is involved with institutionalized and politicized religion, as

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<sup>50</sup> Gregory, *Colonial Present*, 82.

<sup>51</sup> Ibid., 88. Yiftachel, *Ethnocracy*, 137.

<sup>52</sup> Gregory, *Colonial Present*, 86. Yiftachel, *Ethnocracy*, 58.

was done in Israel by the Israeli government. Also, following part (c), Jewish immigrants are given privileged niches in the labor market, while indigenous peoples, in this case the Palestinians, are marginalized from the centers of economic power and excluded from access to capital or mobility within the market.<sup>53</sup> This became even more the case after the war in 1967.

Palestinians who did not flee and stayed in Israel became Israeli citizens but often faced discriminatory policies.<sup>54</sup> Within Israel, Jewish immigration is privileged over Palestinian return. The formation of the Green Line separated Israel from the West Bank, giving some Palestinians Israeli citizenship, while not to others.<sup>55</sup> As Yiftachel notes, “Israel never sought to achieve equal citizenship between Palestinian Arabs and Jews, nor did it seek the consent of its Arab citizens for the forceful ideological imposition of a Jewish state.”<sup>56</sup> At the same time, Palestinians who hold Israeli citizenship in Israel proper are held subject to Jewish laws and traditions through the state.<sup>57</sup> They are subject to laws that are of a different religion than their background. In this way, Israel formed a colony and made Israeli Palestinians second-class citizens in what was supposed to be the nation of Palestine according to Resolution 181. This is the process of settler colonialism.

The Israeli government took control of all Palestinian territories after the war in 1967, with the IDF governing the Occupied Palestinian Territories. In September of the same year, the State endorsed Israeli “settlement” of the West Bank. However, transfer of any part of civilian population into territory that is occupied is forbidden under Article 49 of Fourth Geneva Convention relative to the Protection of Civilian Persons in Time of War. Not only that, the UN

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<sup>53</sup> Yiftachel, *Ethnocracy*, 12, 13, 16 for the entire paragraph.

<sup>54</sup> Elmusa, *Negotiating Water*, 15.

<sup>55</sup> David Newman, “The geopolitics of peacemaking in Israel-Palestine.” *Political Geography*, 21, no. 5 (2002): 637.

<sup>56</sup> Yiftachel, *Ethnocracy*, 93.

<sup>57</sup> *Ibid.*, 3.

Security Council passed Resolution 242, which required Israeli forces to withdraw from territories occupied by the recent conflict, calling for the Palestinians' right to peace with secure and recognized boundaries.<sup>58</sup> However, because the Palestinian territories had never been a sovereign territory, as the Arabs and Palestinians had rejected the partitioning of Israel/Palestine, Israel was claiming to be an “administrator” not an occupier. Also, without the hundreds of thousands of Israeli settlers moving into the OPT, the IDF would be a foreign army ruling a foreign population.<sup>59</sup>

These Jewish settlements in Palestine grew quickly. “Since 1967, there has been a continuous process of settlement colonization throughout the West Bank, Golan Heights and the Gaza Strip, reaching its peak of activity in the early 1980's under the right wing Likud governments.”<sup>60</sup> Settlement colonialism took the form of a grid by first forming military bases and then creating civilian settlements, and by 1977 there were 16 illegal settlements in Gaza and 36 in the West Bank.<sup>61</sup> Land was confiscated by the IDF for security reasons and then transferred to settlers.<sup>62</sup> The settlement has been occurring primarily in the West Bank with many settlements constructed in the Occupied Palestinian Territories near Tel Aviv and Jerusalem, especially in 1980s under the Likud government, with a population of 129,000 Israelis in illegal settlements by 1984.<sup>63</sup> The Oslo process did not contain prohibitions on Israeli building of settlements. This is evidenced by the fact that between 1992 and 2001, the Jewish population in East Jerusalem grew from 141,000 to 170,000 and the population in illegal settlements in West

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<sup>58</sup> Gregory, *Colonial Present*, 89.

<sup>59</sup> *Ibid.*, 91.

<sup>60</sup> David Newman, “Shared spaces—separate spaces: the Israel-Palestine peace process,” *GeoJournal* 39, no. 4 (1996): 369.

<sup>61</sup> Gregory, *Colonial Present*, 91.

<sup>62</sup> Reuveny, “Fundamentalist colonialism,” 356.

<sup>63</sup> Yiftachel, *Ethnocracy*, 64-65.

Bank and Gaza rising from 110,000 to 214,000. These settlements also included more area to allow for growth; in total about 42% of the West Bank is under the control of illegal settlements.<sup>64</sup> According to Biger, there are more than 550,000 Israeli Jews in illegal settlements, even after the destruction of Jewish settlements in the Gaza Strip in 2005.<sup>65</sup> As Yiftachel and Gregory show, the settlements are part of the Israeli government's process of colonization. However, although part of settler colonialism as a whole, these settlements are more of a political strategy for undermining Palestinian governance, and run contrary to UN Resolutions. As stated by Israeli Prime Minister Begin during the expansion of settlements in the early 1980s, Israel wanted to make settlements around and in between the Arabs so that they could not have an autonomous state. Gregory contends that the Israeli government has been looking to have "Jewish sovereignty alone" in all of Israel/Palestine.<sup>66</sup>

The West Bank and Gaza economies are fused with that of Israel in a dependent and exploitative relationship,<sup>67</sup> according to Gregory, forming the third part of Yiftachel's ethnocracy; the ethnic logic of capital. The Palestinian population, both in Israel and the Occupied Territories, is a source of both cheap labor pools and export markets for Israeli commodities. Like many other colonial projects before it, the Israeli government taxes the occupied to fund the occupation. At the same time, Palestinians are constrained by travel permits and identity papers, Palestinian nationalism is criminalized, and freedoms of expression and association are denied.<sup>68</sup> Resistance is met by curfews, border closures, and house demolitions. After the uprising of Palestinians in 1987, many Palestinians were held in arbitrary arrests, were

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<sup>64</sup> Gregory, *Colonial Present*, 99.

<sup>65</sup> Biger, "Boundaries of Israel," 91.

<sup>66</sup> Gregory, *Colonial Present*, 93.

<sup>67</sup> *Ibid.*, 90.

<sup>68</sup> *Ibid.*

beaten, had their property vandalized, and food convoys blocked by Israelis.<sup>69</sup> Only after many decades of colonialism by the Israelis were the Palestinians finally recognized as a legitimate party to international negotiations with the start of the Oslo discussions in the early 1990s between the Palestinian Liberation Organization and the Israeli Government.

However, even after the Oslo Accords, highways have been built just for Israeli use, furthering their control of the Occupied Palestinian Territory. All of the settlements in Area C, as set out by the Oslo Accords, remained under full Israeli control, while new bypass roads were speedily constructed, at great expense, to prevent the settlers from having to travel through Palestinian controlled Areas A and B.<sup>70</sup> Areas A, B and C also were made in non-contiguous sections, making rule by the Palestinian Authority more difficult. By 2000, Israel was still in full control of 60% of Gaza and the West Bank, according to Gregory, and had confiscated 49% of the land of West Bank, according to Reuveny.<sup>71</sup> Besides the formation of the settlements, the Israeli government is now building a wall to separate the West Bank from Israel. However, Israeli settlements and Palestinian areas alike are between this wall and the Green Line. There are multiple enclaves of Palestinian villages and towns that are and will be on the Israeli side of the border as the wall is built, as seen in Figure 6.<sup>72</sup> Many Palestinians will be separated from their own people, especially around Jerusalem. In effect, the Israeli government is attempting to gain more access to land within the Green Line – again, continuing their colonization. While the Palestinians have been resident for generations, the Israelis are perceived as political colonizers to be equated with other colonizer movements whose settlements have to be removed as part of a

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<sup>69</sup> Gregory, *Colonial Present*, 94.

<sup>70</sup> Newman, “Shared spaces,” 369.

<sup>71</sup> Gregory, *Colonial Present*, 101; Reuveny, “Fundamentalist colonialism,” 359.

<sup>72</sup> Yiftachel, *Ethnocracy*, 81, see Figure 6 for a map of the wall on page 58.

postcolonial peace agreement.<sup>73</sup> The accords have only intensified the colonialism, and the Palestinians have yet to be able to get a state of their own, as many of them wish.

Even though they have been granted more rights for rule, the West Bank is still effectively under Israeli control.<sup>74</sup> Similar to other decolonization and independence movements before it, the Palestinians have tried to gain autonomy from the Israeli occupation. Known to the Palestinians as the intifadas, the uprisings typically result in some bloodshed. The intifadas began in 1987, with another in 2003-4, in which 2,764 Palestinians and 902 Israelis died.<sup>75</sup> By marginalizing the secular Palestinian Authority, Israel has fanned the fire of religious radicalism with Islam – if Palestinians have nothing else in life, some feel they can die for what believe in, which to these suicide bombers is a free and independent Palestine. Although they can rebel against being occupied, Palestinians are not supposed to harm civilians under the Fourth Geneva Convention, and therefore should not be using this form of terrorism.<sup>76</sup> At the same time, civilians are supposed to be allowed to resist military occupation, but here, even some of the boycotts are seen as acts of “terrorism.”<sup>77</sup>

Overall, the Israeli government’s treatment of Palestinians is that of a colonial project and an ethnocracy. By fighting for their rights and delegitimizing Israeli claims to the land, Palestinians hope that this system of repression and violence will disappear, as it has in other colonial projects.<sup>78</sup> Coercion is necessary — and the growing boycott, divestment and sanctions movement is one of the most powerful, nonviolent, legitimate and proven tools of coercion that

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<sup>73</sup> Newman, “Shared spaces,” 370.

<sup>74</sup> Selby, *Water, power and politics*, 100.

<sup>75</sup> Yiftachel, *Ethnocracy*, 77.

<sup>76</sup> Gregory, *Colonial Present*, 106.

<sup>77</sup> *Ibid.*, 93.

<sup>78</sup> Ali Abuminah, “Israeli Jews and the one-state solution,” *The Electronic Intifada* (November 10, 2009): <http://electronicintifada.net/content/israeli-jews-and-one-state-solution/8528>.

Palestinians possess, and Israel is not invulnerable to pressure. The Israeli colonial project has led to a system of dispossession of the Palestinian people. Although the Palestinian population has grown 6-fold since 1948, the land under its control has halved; in fact, Arabs make up 16% of the population, but own only 3.5% of the land area.<sup>79</sup> The Palestinian people have been separated from control and ownership of land and need to have access to it again in order for equality and stability to return to Israel/Palestine. As summarized succinctly by Selby, “colonization continued through territorial colonization through settlement-building, land confiscation and bypass road construction, economic absorption of the West Bank and Gaza economies into the Israeli one, and the creation of a dual institutional and legal system that applied different laws to Palestinians and Israeli settlers with a preference to Israelis.”<sup>80</sup>

### 3.3 Water Policies and Management in Israel/Palestine

One way that this colonial present is evident is in the water policies enforced by the Israeli government. After World War I, when negotiating the borders for present day Israel/Palestine, “the British activities were done to provide the future Jewish State with an economic potential in Palestine, thus giving Palestine the Jordan River, the Sea of Galilee, and Lake Hula” (Palestine in this context is present-day Israel/ Palestine), providing what would become the State of Israel with the water needed for irrigated modern agricultural land.<sup>81</sup> Water was and is necessary for economic development. A study by Lowdermilk in 1944, entitled “Palestine, Land of Promise,” for instance, used “development” to justify Jewish claims to regional water resources.<sup>82</sup> Water is a valuable resource, especially since it is presented as scarce.

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<sup>79</sup> Yiftachel, *Ethnocracy*, 143.

<sup>80</sup> Selby, *Water, power and politics*, 76.

<sup>81</sup> Biger, “Boundaries of Israel,” 72.

<sup>82</sup> John A. Allan, “Hydro-Peace in the Middle East: Why no Water Wars?: A Case Study of the Jordan River Basin,” *SAIS Review* 22 no. 2 (2002): 265; Alatout, “‘States’ of scarcity,” 969.

In fact, some have argued that Israeli territorial grabs on the West Bank today may be over water.

Looking back again to Samer Alatout, the construction of scarcity as a ‘fact’ also was a process that legitimized the new state, a new spatial framework (a contiguous national space), and a new form of subjectivity as essential (that of the citizen).<sup>83</sup> Creating the notion that water was scarce legitimizes Israeli state control because it appears necessary to properly “manage” the resource centrally instead of individually. Water engineers in Israel in the 1950s, just after the 1948 war and formation of Israel, discovered that previous water estimates were far too high.<sup>84</sup> Palestinians living in Israel lost much of their access to water, as water was placed under Israeli government control (excluding the West Bank and Gaza, as at that time those were under the control of Jordan and Egypt, respectively).<sup>85</sup> Previously, the people had privately owned water, either in cooperatives or individually, but after the Israeli government takeover of all water resources, water was centralized by the state.<sup>86</sup>

The Jordan River became a major point of contention between the new Israeli state and Arabs after the 1948 War. In the early 1950s, the National Water Carrier project was begun by the Israelis to bring water from the Jordan to Israel, all the way to those living in the Negev desert. Israel felt that if they started taking more water, any water-sharing agreements would allocate water resources based on the amount consumed, instead of estimates of water

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<sup>83</sup> Alatout, “‘States’ of scarcity,” 960-1.

<sup>84</sup> *Ibid.*, 969.

<sup>85</sup> Elmusa, *Negotiating Water*, 16.

<sup>86</sup> Alatout, “‘States’ of Scarcity,” 962; Elmusa, *Negotiating Water*, 16; Eran Feitelson, and Marwan Haddad, eds., *Management of Shared Groundwater Resources: The Israeli-Palestinian Case with an International Perspective* (Boston: Kluwer Academic Publishers, 2001), 262.

availability.<sup>87</sup> Arabs and Palestinians strongly opposed this as it went against the riparian rights to the Jordan River. The Arab states wanted water to stay in the Jordan Basin so as to meet basin needs first. Israel would not stop construction, even with a UN Security Council order to do so; only with an American threat of freezing aid did Israel stop and come to the negotiation table.<sup>88</sup> It is important to note that an envoy from the United States led these discussions and that Israel only heeded a direct threat from the U.S. but not from the UN. This continues to happen today, with the U.S. leading negotiations between Israelis and Arab Palestinians and Israel not heeding UN Resolutions. These geopolitical influences are important to recognize for solving future issues and formulating new negotiations.

These disagreements over the Jordan River led to the so-called Johnston Plan in the 1950s, stemming from negotiations led by Eric Johnston of the United States. Although never formally ratified by its states, Israel and Jordan have followed it in order to keep receiving development aid from the U.S.<sup>89</sup> The final Johnston Plan called for equitable water allocations and regional cooperation, and was negotiated from the three plans brought to the table, one each from Israel, the Arabs and the U.S. The Cotton (Israel) plan based water allocations and rights on the nation-state, whereas the original U.S. plan was to for all states to be politically cooperative and followed the natural course of the Jordan. The Arab plan built its water allocation hierarchy off of the percentage of recharge area of each state to the Jordan.<sup>90</sup> Israel claimed putting water to the most efficient use should be the major principle of distribution of the Jordan basins water

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<sup>87</sup> Allan, "Hydro-Peace," 265.

<sup>88</sup> Samer Alatout, "Hydro-Imaginarities and the Construction of the Political Geography of the Jordan River: The Johnston Mission, 1954-56," in *Environmental Imaginaries of the Middle East and North Africa*, edited by Diana K. Davis and Edmund Burke III (Athens, OH: Ohio University Press, 2011): 220.

<sup>89</sup> Karen Assaf, et al., *A Proposal*.

<sup>90</sup> Alatout, "Hydro-Imaginarities," 231.

resources, as they felt they were accomplishing but not the Arab nations. In all, the Israelis were trying to legitimate the nation-state as the category in water sharing, not that of the region or of a nation, thereby keeping Palestinians from the negotiations as they were not their own state.<sup>91</sup> The Palestinian perspective was fully excluded from the Johnston plan, and as a people they were grouped under the Jordanian allotment.<sup>92</sup> Seeing the nation-state as the only category for allotment excludes the Palestinians from all water negotiations, as they are a nation without a state. This is one policy of Israel that excludes the Palestinians, not only from negotiations over water allocation, but also from their water rights.

The war in 1967 left Israel in control of the upper Jordan Basin as well as the West Bank aquifers, though water was neither the trigger of the war, nor the main goal, according to Allan and Selby.<sup>93</sup> With control of the headwaters, the Israeli government now controlled all water flow to the National Water Carrier and most of the waters of the Jordan River, as seen in Figure 2. Accordingly, Israel now controls all Palestinian access to water and West Bank Palestinians are denied water access in the Jordan basin.<sup>94</sup> Israel gained 100% control of Palestinian water rights to the Jordan River through their occupancy of the West Bank,<sup>95</sup> and according to Jordanians and Palestinians, Israel pumps more than their allocation under the Johnston Plan.<sup>96</sup> Israel says that Jordan's allotment should include the Palestinians through the Johnston Plan, as

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<sup>91</sup> Alatout, "Hydro-Imaginations," 231; Selby, *Water, power and politics*, 49.

<sup>92</sup> Ibid., 236; Assaf, et al., *A Proposal*.

<sup>93</sup> Allan, "Hydro-Peace," 263.

<sup>94</sup> Abdallah Abu-Eid, "Water as a human right: The Palestinian occupied territories as an example," *International Journal of Water Resources Development* 23, no. 2 (2007): 300; Elmusa, *Negotiating Water*, 21; EWASH, "Water Resources in the West Bank."

<sup>95</sup> Aliewi, "Management and conflict," 088.

<sup>96</sup> Assaf, et al., *A Proposal*.

the West Bank was part of Jordan at that time.<sup>97</sup> Palestinians claim a right to 180 mcm/y of the water of the Jordan River, and many water experts agree with that assessment.<sup>98</sup>

During this time, the water infrastructure network was under the powers of the Israeli government, with appointment and administration given as military orders by the Military Governor, and under him a Water Officer who had full control over water-related matters in the West Bank.<sup>99</sup> Mekorot, the semi-Israeli state owned water company, built the water supply network from the 1980s onwards after a plan formed by the Likud-controlled Israeli Government, to ensure that Israeli settlers received sufficient water supplies to make settlement in the Occupied Territories attractive.<sup>100</sup> Water policies were mainly controlled through a series of military orders from 1967 to the early 1990s.<sup>101</sup> After some time, West Bank Palestinians were given the responsibility of maintaining distribution lines, collecting water data, and billing the Palestinian community through the West Bank Water Department. However, they were not allowed to create new lines or more infrastructure without the permission of the military authority, and had to turn their water data over to the Israelis.<sup>102</sup> In addition, the Department had no access to distribution lines going to Israeli settlements, and was thus simply an interface between the military government and the Palestinian population, “enabling the Israeli state to continue its colonial policies without contact with Palestinian users.”<sup>103</sup> Palestinians in the West

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<sup>97</sup> Alatout, “Hydro-Imaginations,” 237.

<sup>98</sup> Ibid.

<sup>99</sup> Selby, *Water, power and politics*, 49.

<sup>100</sup> Ibid., 83.

<sup>101</sup> EWASH, “Water Resources in the West Bank;” Elmusa, *Negotiating Water*, 7; Selby, *Water, power and politics*, 79. Mark Zeitoun, *Power and Water in the Middle East: The Hidden Politics of the Palestinian-Israeli Water Conflict* (New York: I.B. Tauris, 2008): 69.

<sup>102</sup> Zahra, “Water Crisis,” 94; Hillel Shual and Hassan Dweik (eds.), *Water Resources in the Middle East: Israel-Palestinian Water Issues - From Conflict to Cooperation* (New York: Springer, 2007): 44. Zeitoun, *Power and Water*, 69.

<sup>103</sup> Selby, *Water, power and politics*, 107.

Bank Water Department were unable to analyze the data collected by Palestinian water technicians either, as the data was handed over to the Israeli government, leaving them in the dark as to just how different the allocation was between Israelis and Palestinians.<sup>104</sup>

Current agreements have favored Israeli water access by neglecting Palestinian water rights to the Jordan.<sup>105</sup> In the first Oslo Accords of 1993, the issues of water scarcity were downplayed in favor of dealing with territory and refugee disputes.<sup>106</sup> However, the most important piece of water policy to stem out of the peace negotiations has been the Joint Water Committee (JWC) from the Oslo II Accords from 1995. The goal of the JWC is to develop, maintain and operate water resources in the West Bank. With Israeli control of permits for water development projects through the Israeli Civil Administration, and Israeli veto power over any water development projects in the West Bank through the Joint Water Committee, not much water development and infrastructure has been developed since 1967.<sup>107</sup> In addition, military orders in place since the 1967 war remain in effect after Oslo II; therefore, the Water Officer of the Civil Administration still has ultimate decision making authority and could veto a JWC proposal.<sup>108</sup> Palestinians are allowed veto power as well, but as the JWC only oversees water development in the West Bank and not all of Israel/Palestine, the veto power is not the same between the two entities.

Along with the JWC, the Palestinian Water Authority was created and given control of the West Bank Water Department. However, the Department's oversight has not changed; it still oversees maintenance and billing of Palestinian municipalities, but does not own the

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<sup>104</sup> Selby, *Water, power and politics*, 109.

<sup>105</sup> Aliewi, "Management and conflict," 095.

<sup>106</sup> Allan, "Hydro-Peace," 268.

<sup>107</sup> EWASH, "Water Resources in the West Bank;" Aliewi, "Management and conflict," 096.

<sup>108</sup> Selby, *Water, power and politics*, 114.

infrastructure. Almost the only thing it changed was that instead of the Israeli Civil Administration being in charge of the Department's debts and costs, these have been transferred to the Palestinian Authority.<sup>109</sup> Also, on every water infrastructure improvement plan in the West Bank, there needs to be agreement from both the Israeli Water Commissioner and Palestinian Water Authority, slowing down the development of water infrastructure.<sup>110</sup> Despite the breakdown of the peace process, and the Oslo Agreements to some extent, the JWC is still operating. Most water access and infrastructure is still controlled by the Israeli State via the Joint Water Committee, even with the formation of the Palestinian Authority in the Oslo Accords from the early 1990s. An analysis of how the JWC is a discriminatory entity, favoring the Israelis, is given in the next section.

### **3.4 Water 'Apartheid' and Discrimination**

As presented above, the colonial movements of Israel and the corresponding water policies have formed water discrimination and what some have called 'water apartheid' in the Occupied Palestinian Territories.<sup>111</sup> Since Israel did not have control of the West Bank or Gaza Strip until the end of the war in 1967, the analysis of water 'apartheid' and discrimination will begin after that point. However, Elmusa makes a point to note that Mekorot and institutions within Israel have led to discriminatory water allocations against Palestinian Israelis over Israelis, although he does not provide specific evidence.<sup>112</sup> These discriminatory practices are much more evident in the Occupied Palestinian Territories. Immediately after the 1967 war, the Israeli Defense Forces destroyed 140 Palestinian water pumps along the Jordan Valley and made

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<sup>109</sup> Selby, *Water, power and politics*, 107-8.

<sup>110</sup> Feitelson and Haddad, *Management of Shared Groundwater Resources*, 476.

<sup>111</sup> Barak Ravid, "French parliament report accuses Israel of water 'apartheid' in West Bank," *Haaretz* January 17, 2012. <http://www.haaretz.com/print-edition/news/french-parliament-report-accuses-israel-of-water-apartheid-in-west-bank-1.407685>

<sup>112</sup> Elmusa, *Negotiating Water*, 16.

the area a military zone, thereby effectively ending Palestinian use and access to the Jordan River.<sup>113</sup> Also, the Israeli Defense Forces were in charge of governing the West Bank, and commanded their authority through a series of Military Orders, several of them on water policies. The first one to mention water was Military Order No. 92, which called water a strategic resource.<sup>114</sup> Others thereafter gave Israelis the power to issue permits for drilling wells and fixing pumping quotas, and gave infrastructure control to Mekorot.<sup>115</sup> Although Palestinians were subject to Military Orders, Israelis in the West Bank were not.<sup>116</sup> Also, by limiting water access through stringent quotas, the Israelis were in effect limiting Palestinian economic development. The Palestinian people are an agrarian society and require water for the production of crops. Even industrial development requires water, and without access to enough of it, there is no way for Palestinians to grow economically.

Water infrastructure has been part of this discrimination. From 1967 to the Oslo Agreements in the 1990s, the Israeli government maintained control of the water infrastructure in the West Bank, mostly through the use of Mekorot. In the 1980s, this Israeli-run water company supplied infrastructure development in Israel/Palestine.<sup>117</sup> The Israelis worked to create a single water supply network within the West Bank for better control over who received resources. These water supply networks were shut off for Palestinians, especially during the dry summer months, but never for Israeli settlers.<sup>118</sup> According to Selby, the creation of an adequate water supply for the Israeli settlement population was formed in an effort to encourage relocation from

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<sup>113</sup> Shuval and Dweik, *Water Resources*, 44.

<sup>114</sup> *Ibid.*

<sup>115</sup> Elmusa, *Negotiating Water*, 16; Zeitoun, *Power and Water*, 69; Shuval and Dweik, *Water Resources*, 44.

<sup>116</sup> Selby, *Water, power and politics*, 79.

<sup>117</sup> *Ibid.*, 83.

<sup>118</sup> *Ibid.*, 82; Shuval and Dweik, *Water Resources*, 46; Zeitoun, *Power and Water*, 52.

Israeli to the Occupied Palestinian Territories.<sup>119</sup> The development of the infrastructure was itself one of discrimination, as seen through pipe sizes. Even though Mekorot owned wells supplying both Israelis and Palestinians in the West Bank, the pipes leading from these wells to Palestinian communities and Israeli settlements were of different sizes. Ones leading to Israeli settlements are typically sixteen inches in diameter, while pipes leading to Palestinian communities are only two to twelve inches.<sup>120</sup> In addition, by only allowing Palestinians to develop water resources through approval from the Civil Administration, many of the projects submitted by Palestinians did not move forward. In fact, no permits for drilling wells in the Western basin have been given since 1967.<sup>121</sup> Israelis also have the ability to drill deeper wells than Palestinians, which can leave shallower Palestinian wells dry.<sup>122</sup> Finally, Israeli settlers were paying one-third the cost of domestic water charged to Palestinians and received even larger subsidies for water used in agriculture, which shows discrimination in cost.<sup>123</sup>

The water gap is another way to see water ‘apartheid.’ Although numbers differ from source to source, the difference in consumption rates is from four to seven times more per capita by Israelis than Palestinians in Israel/Palestine, even by 2005.<sup>124</sup> Per capita water consumption has remained approximately the same for Palestinians since the 1980s while increasing for Israelis.<sup>125</sup> In 2003, Israelis consumed or were allocated 1,600 mcm/y whereas Palestinians in the Occupied Territories had 275 mcm/y (numbers do not include desalination and water

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<sup>119</sup> Selby, *Water, power and politics*, 83.

<sup>120</sup> Shuval and Dweik, *Water Resources*, 205; Selby, *Water, power and politics*, 86; EWASH, “Water Resources in the West Bank.”

<sup>121</sup> Aliewi, “Management and conflict,” 088; EWASH, “Water Resources in the West Bank.”

<sup>122</sup> Shuval and Dweik, *Water Resources*, 18; Ragab and Prudhomme, “Climate Change,” 30; Aliewi, “Management and conflict,” 093.

<sup>123</sup> Zeitoun, *Power and Water*, 70.

<sup>124</sup> Abu-Eid, “Water as a human right,” 298 is the 2005 figure; Aliewi, “Management and conflict,” 093; Elmusa, *Negotiating Water*, 28; Zeitoun, *Power and Water*, 14 and 135.

<sup>125</sup> Phillips, et al., “Factors Relating to the Equitable Distribution,” 3.

reclamation, only water from natural sources); the average consumption of Israelis is about 753 liters per person per day, while the average Palestinian consumption is about 260 liters per person per day.<sup>126</sup> Illegal settlements in the West Bank use 35 mcm/y from wells drilled inside the West Bank,<sup>127</sup> along with other water they take from the Mountain Aquifer through wells placed outside of the West Bank. The approximately 230,000 Israeli settlers on the West Bank consume about 27% of the West Bank water sources, while the 2.4 million Palestinians consume about 72% of these sources.<sup>128</sup> Very little water for the Israeli settlements comes from outside the Occupied Territories.<sup>129</sup>

In the Gaza Strip, even with the removal of Israeli settlements in 2005, the water allocation is very uneven. Maps from Hillel and Dweik and other sources show that the number of wells just outside the border of the Gaza Strip is very high.<sup>130</sup> Israelis are not worried about the interference of Palestinians in Gaza on the Coastal Aquifer or the Wadi Gaza because of water flow. The Gaza Strip is downstream in both cases, allowing Israelis to have fuller access to these sources, which harms Palestinian usage.<sup>131</sup> The Israelis use both sources for irrigation and reservoirs, leaving the Wadi Gaza nearly dry and the Coastal Aquifer brackish by the time it reaches Gaza Strip Palestinians.<sup>132</sup> Israelis express little concern for Palestinian use of the Coastal aquifer and the Wadi Gaza as neither are affected by them; it is only within Gaza that water quantity and quality become such issues.

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<sup>126</sup> Zeitoun, *Power and Water*, 14, 133 and 135.

<sup>127</sup> Aliewi, "Management and conflict," 088.

<sup>128</sup> Zeitoun, *Power and Water*, 55.

<sup>129</sup> Aliewi, "Management and conflict," 088.

<sup>130</sup> Shuval and Dweik, *Water Resources*, 20; Aliewi, "Management and conflict," 088.

<sup>131</sup> Zeitoun, *Power and Water*, 101.

<sup>132</sup> Aliewi, "Management and conflict," 091; Shuval and Dweik, *Water Resources*, 21.

Water access is an issue for many Palestinian households. Water, even from the Palestinian Water Authority (PWA), Mekorot and especially tanker trucks, is often unaffordable to Palestinians. On average, Palestinians pay about \$1.25 per one cubic meter of water, a high cost compared to their typical income,<sup>133</sup> with some households paying up to 40% of their income on clean water.<sup>134</sup> As it is an Occupied Territory, movement and access are often restricted, forcing Palestinians to travel long distances to get water and inflating the price for tanker water, usually ten-times as much as water typically costs.<sup>135</sup> When the water is shut off, Palestinians have to live without a water supply for days at a time.<sup>136</sup> Due to the unreliable nature of most wells and current infrastructure, according to Zeitoun, 42% of Palestinian water consumption comes from natural sources: springs and rain water.<sup>137</sup> However, these tend to be unreliable as well, as they dry up during the summer months, the peak time for water shortages and infrastructure shutdowns to occur.

Since the Oslo II Agreement in 1995, the same water policies have continued that were set in place in 1967. However, this time, they are being legitimized through the Palestinian Authority's support of the Joint Water Commission and by the separation of the West Bank into Areas A, B and C, giving Israel political legitimization for continued differences in water development between Israeli settlements and Palestinian villages in the West Bank. As seen in Figure 7, these areas are separated out in multiple sections, making governing harder for the Palestinian Authority.<sup>138</sup> Area C, covering 72% of the territory in the West Bank, is under Israeli control and in this area, Palestinians need not only the approval of the JWC, but also from the

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<sup>133</sup> Aliewi, "Management and conflict," 093.

<sup>134</sup> EWASH, "Water Resources in the West Bank."

<sup>135</sup> Ibid.

<sup>136</sup> Selby, *Water, power and politics*, 173.

<sup>137</sup> Zeitoun, *Power and Water*, 57.

<sup>138</sup> Selby, *Water, power and politics*, 99; see Figure 7 for a map of the Areas on page 59.

Israeli Civil Administration to form new water infrastructure.<sup>139</sup> Palestinians are only allowed full political control of Area A; however, that control does not include water development, as they need permission from the JWC, or connections to infrastructure already developed in Area C of the West Bank, which remains under the IDF. Although Palestinian municipalities have been building their own water utilities when permitted by the JWC, the Palestinian water infrastructure does not provide enough water, so the Palestinian Authority has to buy water from Mekorot to sell to the municipalities.<sup>140</sup> According to EWASH, about 52% of the domestic water supply for Palestinians in the West Bank is purchased from the Israeli water company Mekorot.<sup>141</sup> The Palestinian Water Authority only has control over one-third of water consumption in the West Bank while Israelis control over one-quarter of all water consumed by Palestinians.<sup>142</sup>

Under Oslo II, the allocation of water resources in the West Bank that have been outlined are to remain in effect until final status negotiations. In this agreement, Palestinians are still denied access to water. For the Mountain Aquifer: In the Western basin, the recharge rate is estimated at 362 mcm/y, with Israel allocated 340 and Palestinians 22 mcm/y; in the Northeastern basin, the recharge rate is estimated at 145 mcm/y, with Israel allocated 103 and Palestinians 42 mcm/y; in the Eastern basin, the recharge rate is subject to controversy, but Israel has been allocated 40 and Palestinians 54 mcm/y.<sup>143</sup> Although the transfer of powers and responsibilities of water and sewage under Oslo II were to go to the Palestinian Authority, the ownership of the infrastructure was not discussed. This is problematic because much of the

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<sup>139</sup> Zeitoun, *Power and Water*, 64 and 100; EWASH, "Water Resources in the West Bank."

<sup>140</sup> Aliawi, "Management and conflict," 095; Feitelson and Haddad, *Management of Shared Groundwater Resources*, 111.

<sup>141</sup> EWASH, "Water Resources in the West Bank."

<sup>142</sup> Zeitoun, *Power and Water*, 54-6.

<sup>143</sup> *Ibid.*, 48.

infrastructure is in one network, owned by Mekorot,<sup>144</sup> so transferring bits to the Palestinian Water Authority would be costly and difficult.

In Article 40 of Oslo II, Israelis and Palestinians recognized the need of Palestinians to increase water supply by 70 - 80 mcm/y, but the agreement only set out to transfer 28.6 mcm/y. Of that amount, only the cost of transferring 9.7 mcm/y was the responsibility of the Israelis, with the rest falling to the Palestinian Authority. Although given access to drill in the Eastern Aquifer, the Palestinian Authority is held responsible again for the cost.<sup>145</sup> Palestinians do not have the financial resources to compete with Israeli infrastructure, thereby allowing Israelis to continue withdrawing more than their allocation. The Israelis recognized the Palestinian need for an additional 70 - 80 mcm/y of water, but by 2004, Palestinians still had not been allocated their amount set out by the Oslo II agreement,<sup>146</sup> with only 15 mcm/y developed to the point of supply.<sup>147</sup> In addition, Israelis are supposed to share water withdrawal data, though according to Selby, it is often not shared, and when it is, the Palestinians do not have the technical means for analysis.<sup>148</sup> This situation inhibits Palestinians from being able to use information about water use by Israelis to formulate their own policies and demand more equitable allocations.

In the early 2000s, the Israeli government began the construction of a wall to separate Israel proper from the West Bank. By mid-2005, 5,300 Palestinians were caught between wall and the Green Line, and by time the wall is completed, 280,000 Palestinians will be separated

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<sup>144</sup> Selby, *Water, power and politics*, 100.

<sup>145</sup> Amery and Wolf, *Water in the Middle East*, 60, 269; Selby, *Water, power and politics*, 112.

<sup>146</sup> Phillips, et al., "Factors Relating to the Equitable Distribution," 23.

<sup>147</sup> Karen Assaf, "Water as a human right: the understanding of water in Palestine," In *Water as a Human Right: The Understanding of Water in the Arab Countries of the Middle East*, edited by S. Klawitter (Berlin: Heinrich Böll Foundation, 2004), 151.

<sup>148</sup> Selby, *Water, power and politics*, 111.

from the rest of the West Bank.<sup>149</sup> The location of the wall separates Palestinians from other Palestinians and disconnects their water infrastructure;<sup>150</sup> for example, this wall isolates over 20 Palestinian groundwater wells and 17 springs near Bethlehem alone.<sup>151</sup> Some of the territory over the most important water resource in the OPT, the Western basin, is separated by the wall. The construction of the wall amounts to a de facto land annexation, and includes 35% of the replenishment to that basin and 12% of the West Bank territory, including some of the most fertile land in the West Bank.<sup>152</sup>

“[T]he West Bank’s water supply systems had become clear testimony to the Israeli state’s colonial and ‘apartheid’ ambitions – on the one hand facilitating the territorial integration of the West Bank into Israel and the creeping colonization of Palestinian land, whilst on the other hand ensuring that the Israeli settler population received a disproportionate share of water supplies.”<sup>153</sup> Separating Palestinians from water and controlling their access from within their own territories is considered by some as a form of ‘apartheid,’ and this, along with Israeli water use, is causing much discussion within the international community. The European Union (EU) and United Nations General Assembly have passed declarations and several resolutions directly connected to this current water crisis and separation wall. In a declaration from December 2011, the EU recognized that “thousands of Palestinians west of the fence are being cut off from essential services in the West Bank, Palestinians east of the fence will lose access to land and water resources.”<sup>154</sup> They saw the construction of a ‘security fence’ as worsening an already

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<sup>149</sup> Zeitoun, *Power and Water*, 95.

<sup>150</sup> *Ibid.*, 97.

<sup>151</sup> EWASH, “Water Resources in the West Bank.”

<sup>152</sup> Abu-Eid, “Water as a human right,” 298; Zeitoun, *Power and Water*, 96.

<sup>153</sup> Shuval and Dweik, *Water Resources*, 205.

<sup>154</sup> “EU raises pressure on Israel.” *The Electronic Intifada*. November 18, 2003.

[http://electronicintifada.net/content/eu-raises-pressure-israel/322#.Tsnlu\\_H7C2A](http://electronicintifada.net/content/eu-raises-pressure-israel/322#.Tsnlu_H7C2A).

terrible humanitarian and economic crisis. The EU states that it violates international law to construct it. The UN Resolution from November 2011 was in the same vein as the EU Declaration. The UN General Assembly “[e]xpress[ed] its concern about the widespread destruction caused by Israel, the occupying Power, to vital infrastructure, including water pipelines and sewage networks, in the Occupied Palestinian Territory, in particular in the Gaza Strip in the recent period, which, inter alia, pollutes the environment and negatively affects the water supply and other natural resources of the Palestinian people.”<sup>155</sup> The Resolution continued on about the separation wall, tying in to other Resolutions from 2004, stating, as the EU did later, that it violates international law and denies Palestinians their natural resources and causes economic and humanitarian hardships on the Palestinians.

The World Bank also recognizes the disproportionate water use of Israelis compared to Palestinians, putting the numbers at 240 cubic meters per person per year for Israelis, versus 75 cubic meters for West Bank Palestinians and 125 for Gazans.<sup>156</sup> It also acknowledged that West Bank Palestinians are forced to rely on water bought by Mekorot, even when this was written in 2009, about fourteen years after Oslo II. Some are below the humanitarian standard of ten to fifteen liters of water per person per day and in Gaza, water quality is extremely low, with only 5 - 10% clean enough to drink. The World Bank specifically lays the blame on the ineffectiveness of the JWC, along with failings in water resource management and chronic underinvestment. In Gaza, the continued Israeli economic blockade played a key role in preventing maintenance and

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<sup>155</sup> United Nations. General Assembly. *Permanent sovereignty of the Palestinian people in the Occupied Palestinian Territory, including East Jerusalem, and of the Arab population in the occupied Syrian Golan over their natural resources*. GA/11200. 66<sup>th</sup> General Assembly. 91<sup>st</sup> Meeting. December 22, 2011.

<sup>156</sup> Rory McCarthy, “Israelis get four-fifths of scarce West Bank water, says World Bank,” *The Guardian*, May 27, 2009. <http://www.guardian.co.uk/world/2009/may/27/israel-palestinian-water-dispute>

construction of sewage and water projects while in the West Bank, “Israeli military controls over the Palestinians were a factor, with Palestinians still waiting for approval on 143 water projects.”<sup>157</sup>

The Foreign Affairs Committee of the French Parliament published a report near the start of January 2012, “accusing Israel of implementing ‘apartheid’ policies in its allocation of water resources in the West Bank.”<sup>158</sup> More specifically, the Committee pointed to the facts that “some 450,000 Israeli settlers on the West Bank use more water than the 2.3 million Palestinians that live there... In times of drought, in contravention of international law, the settlers get priority for water.”<sup>159</sup> Besides destroying wells in the West Bank dug by Palestinians, the French report, written after a visit with Israeli officials in mid-May of 2011, also stated that Israel deliberately bombed reservoirs in the Gaza Strip in 2008-09. The report goes on to show that water is not fairly allocated in the West Bank and that Palestinians are not allowed access to the aquifers; therefore, Israel is, in effect, continuing a water occupation against the Palestinians.<sup>160</sup>

## **4 Just Decision-Making Involving Freshwater**

### **4.1 Water as a Human Right**

With these struggles over territory, it is important to remember the human element involved. These people, whether Palestinian or Israeli, each have a right to, and a need for, freshwater. Therefore, it is important that policy reflects equality and just decision making for all individuals. This is outlined in International Water Law, through international conventions, treaties and rulings, resolutions from the United Nations, the UN’s International Law Commission and the International Law Association (ILA). The major pieces of international

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<sup>157</sup> McCarthy, “Israelis get four-fifths.”

<sup>158</sup> Ravid, “French parliament.”

<sup>159</sup> Ibid.

<sup>160</sup> Ibid.

legislation are the Convention of Elimination of All Forms of Discrimination Against Women (1979), the Convention of the Rights of the Child (1989), Article IV of the Helsinki Rules (1966), the Stockholm Declaration (1972), the Seoul Rules on International Ground Waters (1986), and the Convention on the Law of the Non-Navigational Uses of International Watercourses (1997).

In the first two, CEDAW and CRC, the right to water is not an absolute, but both conventions said there should be no discrimination in the water supply between men and women, and stated that member states need to ensure the survival of a child to the maximum extent possible with a provision for clean drinking water.<sup>161</sup> This is important because it shows that there should not be any difference or discrimination between individual's access to clean drinking water. The Helsinki Rules, created by the ILA, states, "Each basin state is entitled, within its territory, to a reasonable and equitable share in the beneficial uses of the waters on an international drainage basin."<sup>162</sup> The Stockholm Declaration, by the UN, which focuses more on environmental protection, noted that water resources must be protected for future generations.<sup>163</sup> The Seoul Rules on International Ground Waters, by the ILA, was the first major set of rules on shared groundwater resources and calls for integrated management, sharing, and protection from harm.<sup>164</sup> The United National International Law Commission worked to connect the concept of equitable allocation with no appreciable harm in order to show that it is the obligation of one state to prevent environmental damage to the water resources of a neighboring state.<sup>165</sup> The

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<sup>161</sup> Amy Hardberger, "Life, Liberty, and the Pursuit of Water: Evaluating Water as a Human Right and the Duties and Obligations it Creates." *Northwestern University Journal of International Human Rights* 4, no. 2 (2005): 347; Abu-Eid, "Water as a human right," 294.

<sup>162</sup> Assaf, et al., *A Proposal*, 13.

<sup>163</sup> Abu-Eid, "Water as a human right," 291.

<sup>164</sup> Phillips, et al., "Factors Relating to the Equitable Distribution," 6.

<sup>165</sup> Assaf, et al., *A Proposal*, 13.

Convention on the Law of the Non-Navigational Uses of International Watercourses, by the UN, codified the Helsinki Rules and states three things that states are supposed to do with shared watercourses: equitable and reasonable utilization, prevention of the causing of significant harm through activities related to the watercourse, and provision of timely advance notice in new measures.<sup>166</sup>

This last one, the Convention on the Non-Navigational Uses, was the most important guiding principle to water as a right, not just as part of human rights, until 2010. In July of that year, the United Nations General Assembly passed a Resolution recognizing access to clean water and sanitation as a human right for all,<sup>167</sup> a right that Hardberger felt was important to be recognized in itself, not as part of the human right to life.<sup>168</sup> The General Assembly made it known that safe and clean drinking water and sanitation is a human right essential to the full enjoyment of life, expanding the Universal Declaration of Human Rights (UDHR) to include these rights. The passing of the resolution is recent enough that most papers on water law and the human right to water have not included it. Recognizing the human right to water gives access to freshwater more sway in future international treaties and negotiations. Unsurprisingly, Israel and its biggest supporter, the United States, abstained from voting on the resolution, which passed with none against.<sup>169</sup> Although these Conventions, Declarations, Rules, and Resolutions are

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<sup>166</sup> Zeitoun, *Power and Water*, 35; Phillips, et al., “Factors Relating to the Equitable Distribution,” 6; Shuval and Dweik, *Water Resources*, 10; Patricia Wouters, Sergei Vinogradov, and Bjørn-Oliver Magsig, “Water Security, Hydrosolidarity, and International Law: A River Runs Through It...” *Yearbook of International Environmental Law* 19, no. 1 (2009): 109.

<sup>167</sup> United Nations. General Assembly. *Resolution Recognizing Access to Clean Water, Sanitation as Human Right, by Recorded Vote of 122 in Favour, None against, 41 Abstentions*. GA/10967. 64<sup>th</sup> General Assembly. 108<sup>th</sup> Meeting. July 28, 2010. <http://www.un.org/News/Press/docs/2010/ga10967.doc.htm>

<sup>168</sup> Hardberger, “Life, Liberty, and the Pursuit of Water,” 340.

<sup>169</sup> United Nations, *Resolution Recognizing Access to Clean Water, Sanitation as Human Right*.

customary and soft law,<sup>170</sup> and not set as hard laws for states to follow, each gives excellent guidelines for how freshwater resources are part of a human right, a human need. These are important to keep in mind when dealing with water allocations between Israel and Palestine, and should allow for more equitable and reasonable utilization.

#### 4.2 Water Justice

Although water for domestic use has been made a human right in the UDHR, the UN Resolution does not discuss how to allocate water between nations. It does not discuss the claims to resources, and which claims will give nations a greater right and allocation to water. In Israel/Palestine, these issues are of the greatest importance in the West Bank, over the Mountain aquifer system and the Jordan River. This is important as it focuses on the actual allocation of water and how it should be divided up based on all sectors of consumption and use, as well as past control of these sources.

The allocation principles include historic use, economic efficiency (willingness-to-pay), contribution (recharge), share (share of the area), and human rights.<sup>171</sup> The Prior Appropriation Doctrine gives the right to use resources acquired by appropriation, meaning that those with prior use have the right to use the resource first.<sup>172</sup> Israel stems its claim to the water within the West Bank from this doctrine, stating biblical evidence for their prior use. In addition, as Israelis consume more water currently and have a higher willingness to pay, they also claim the principle of efficiency. Israelis also fear that giving up any of their current utilization or power would lead to unlimited pumping by Palestinians, thereby harming Israeli citizens.<sup>173</sup> However, with the

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<sup>170</sup> Assaf, "Water as a human right," 155.

<sup>171</sup> Feitelson and Haddad, *Management of Shared Groundwater Resources*, 18.

<sup>172</sup> Amery and Wolf, *Water in the Middle East*, 205.

<sup>173</sup> Shuval and Dweik, *Water Resources*, 8.

principles of contribution, share and human rights, the Palestinian allocation should increase.<sup>174</sup>

These are the principles the Palestinian state uses when staking its claim for greater usage of the resources within the West Bank. These are important to note as the Palestinians currently receive far less than these principles would entail. Palestinians use 15% of the Mountain Aquifer system while Israelis use 85%, although 80% of the recharge rainfall falls over the West Bank, and most of the system lies under the West Bank territory.<sup>175</sup>

Water security is another aspect to water justice and rights, discussed in depth by Wouters, Vinogradov, and Magsig. Water security is based on seven different principles, stemming primarily from the Helsinki Rules and the UN Convention on the Law of the Non-Navigational Uses of International Watercourses. These principles are: meeting basic needs, securing food supply, protecting ecosystems, sharing water resources, managing risks, valuing water, and governing water wisely.<sup>176</sup> The basic needs of Palestinians are not being met, yet they are for Israelis, a point in favor of a higher allocation to Palestinians in terms of water security. However, neither Israelis nor Palestinians have been protecting the ecosystems, managing risks or governing their water wisely. These things need to be done jointly, and although the JWC is in place, it has been ineffective in meeting the needs of the Palestinians in the West Bank, let alone working to properly to protect the ecosystems, managing risks or governing water allocations to Israelis and Palestinians.

One of the first steps toward water justice would be for the Israelis to give the West Bank Palestinians more access to the Jordan River. Palestinians have historical use of the Jordan River's water; in addition, the West Bank helps to feed the river and has a border along it. Not

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<sup>174</sup> Elmusa, *Negotiating Water*, 32.

<sup>175</sup> Shual and Dweik, *Water Resources*, 7.

<sup>176</sup> Wouters, et al., "Water Security," 103.

only that, many in the international community affirm Palestinians rights to 180 mcm/y of the Jordan River.<sup>177</sup> In addition, Shuval and Dweik state that Israel's claim of prior use to water in the West Bank is very shaky, and as such, the Israelis should turn over the wells, and any water pumped from within the West Bank, to the Palestinian Water Authority.<sup>178</sup> Therefore, although not solving their water shortage completely, the transfer of rights to the Jordan River and the entire water infrastructure in the West Bank would help with the severe water shortages experienced by the Palestinians. The Israeli government, despite being pushed by the international community and a few of their own scientists, has not made water allocation equitable. Yet water allocations need to be more just, equitable and fair in the present for access and water security to be fair in the future in accordance with international laws.

#### **4.3 As Access to Water Becomes More Limited**

With the onset of climate change, water justice becomes even more crucial. Palestinians already experience water shortages, which are expected to become worse as summers warm and precipitation declines. With the policies that are currently in place, water rights of Palestinians are in the hands of Israelis. With the Oslo II accords, the Israelis decided final allocations will not be settled until the final status agreement, and until then, Oslo II's provisions will remain standing. As previously shown, those policies and provisions are not equitable or just, yet the international community sees water as a human right and water security as necessities. If these rights and securities were represented in the allocations of water in Israel/Palestine presently, this would bring about more equitable allocation and utilization in the future. These allocations need to be looked at through the lens of equitable apportionment and community of interest, and not be considered confrontational policies, as has been the case between Israel and Palestine over the

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<sup>177</sup> Alatout, "Hydro-Imaginarities," 237; Shuval and Dweik, *Water Resources*, 21.

<sup>178</sup> Shuval and Dweik, *Water Resources*, 13.

last few decades.<sup>179</sup> This means that every individual within Israel/Palestine should be afforded the same amount of water per year. The rights and needs of both Palestinians and Israelis have to be taken into account. Only by starting with an equal distribution and utilization sooner, rather than later and not waiting until final status negotiations, will these principles be carried through to the future.<sup>180</sup>

It is also important to focus on how water is used. In Israel, 70% of their crops are irrigated, while many Palestinians do not have access to water for irrigation.<sup>181</sup> At present, the demand for irrigation is higher than the supply.<sup>182</sup> In the future, the area will need to import more food staples in order to drive down the use of water for agriculture, as water will be needed for consumption and domestic uses.<sup>183</sup> However, water is also the basis for economic development. Without water, Palestinians will not be able to increase development of their nation, especially as they are historically an agricultural people and rely on this as the major sector of their economy.<sup>184</sup> Palestinians, in the future, will need more water, both for an expanding human population and for an expanding economy.

One of the major issues relating to the equitable allocation between Israel and Palestine is the fact that although the Palestinian people are a nation, they are not their own sovereign state; Palestine is an occupied territory. This affects the ways they are viewed by the international community. Within the United Nations, although often supported in their positions, they are only given the position of an Observer and are not an official member state.<sup>185</sup> Without having

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<sup>179</sup> Assaf, et al., *A Proposal*.

<sup>180</sup> Abu-Eid, "Water as a human right," 300.

<sup>181</sup> Ragab and Prudhomme, "Climate Change," 30.

<sup>182</sup> Assaf, "Water as a human right," 155.

<sup>183</sup> Allan, "Hydro-Peace," 265; Barnaby, "Do nations," 282.

<sup>184</sup> Assaf, et al., *A Proposal*.

<sup>185</sup> United Nations. *Permanent sovereignty of the Palestinian people*.

sovereignty, they are unable to participate in various treaties and conventions. They are also not able to hold Israel accountable for the transgressions done against them over the past sixty years. Without a more powerful say, whether as part of Israel or as a separate nation, the water rights of the Palestinians will continue to suffer. Therefore, for future water allocations, the peace negotiations need to be restarted, or at least allow water rights to come to the forefront now.

#### **4.4 Types of Solutions**

The formation of a Joint Water Committee is a step in the right direction in terms of formulating a joint management of the shared water resources in Israel/Palestine. As many of these water resources are shared, there is a definite need for cooperation. This may be a bit of a problem as Israelis and Palestinians have not had success in recent years in getting back to the negotiation table. It is imperative that they do so, soon, to protect these water sources for future use. The aquifers and springs in the West Bank are already become more saline,<sup>186</sup> so without better cooperation, there might be less freshwater in the future for both Israelis and Palestinians.

The methods for management vary, but because the water resources are between Israel and Palestine, joint or shared management should be used.<sup>187</sup> Joint management would have two separate Water Departments or ministries coming together under one committee overseeing all of Israel/Palestine, or as shared management, with all water controlled under one committee. In both cases, the committee would allow for complete and shared data between the two entities and provide the analysis necessary to set water policy. “The installation of a comprehensive monitoring network to provide the basis for coherent water resource management is a facet of all such systems in developing nations,” and such a monitoring system, shared by the management,

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<sup>186</sup> Zahra, “Water Crisis,” 97.

<sup>187</sup> Feitelson and Haddad, *Management of Shared Groundwater Resources*, 408.

would be needed.<sup>188</sup> Indeed, there are issues of sovereignty and trust in both of these scenarios. Cooperation has not been a strong point between Israel and Palestine, so joint or shared management would be difficult, especially as each wants to maintain, or receive, sovereignty. Yet, again, for the sake of the future of these resources, there needs to be integrated management, in some way or another.

## **5 Conclusion**

### **5.1 Questions that Remain**

The conflict between Israel and Palestine has grown contentious since the Oslo II Accords; the two parties have yet to come up with something as monumental as the Declaration of Principles, even though, as shown above, Oslo II has continued the Israeli ‘water apartheid.’ There are already problems of armed violence between the two without there being outright war since 1967. How do two peoples remain at the negotiating table rather than resorting to war? What policies would need to be in place to prevent war? Agreements will probably be disadvantageous for the Israelis, as they currently use a disproportionate amount of water. However, the major ideals would be to bring about, then maintain, the principles set out as part of rights to water, water security and water justice.

To formulate a just and fair solution, it is important to look at the past and present geopolitical issues in the region. For Israel/Palestine, that means approaching the problem in relation to colonialism and water rights, as these cannot be divorced from social justice. What is at stake when looking at geopolitical issues around water? What sorts of ideas need to be thought about when coming up with solutions? By looking at the past issues of territory and use of the area, the solutions and ways toward social justice can be found. In the case of Israel/Palestine,

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<sup>188</sup> Phillips, et al., “Factors Relating to the Equitable Distribution,” 9.

with settlement colonialism and ‘water apartheid’ being a large part of the Palestinian past, the fair and just solution would be equitable allocation and utilization. “For the Palestinians, an equitable resolution is necessary; for Israel, it is affordable. For the Palestinians, it would reverse a historical process of dispossession, and for Israel it would present an opportunity to deploy its superior economic and technological capabilities for resolving the water conflict and bolstering a peace it has for so long asserted it sought.”<sup>189</sup>

## **5.2 Research vs. Policy**

This paper has sought to explore the social justice implications to water rights and security. First, the existing freshwater resources in Israel/Palestine were examined, along with how these resources might change in the future. This creates an understanding as to where water is located geographically, and how climate change might influence the future. Next, these geopolitical struggles, seen as a type of colonialism, are represented through existing water policies and water usage. Throughout all else, especially when there are underlying conflicts, it is important to remember the human right and need to water, and solutions that go along with those rights and needs. Although examining Israel/Palestine as a case study, this paper is not trying to be prescriptive; it is trying to give an in-depth analysis into the formation of water policy and how that could change due to climate change and existing conflicts. It is not attempting to create policy, but only give an idea of research into the issue of climate change and freshwater resources. It is about bringing distributive justice as social justice into the discussion, as policy must take this important issue into account.

## **5.3 Israel and Palestine as a Case-Study**

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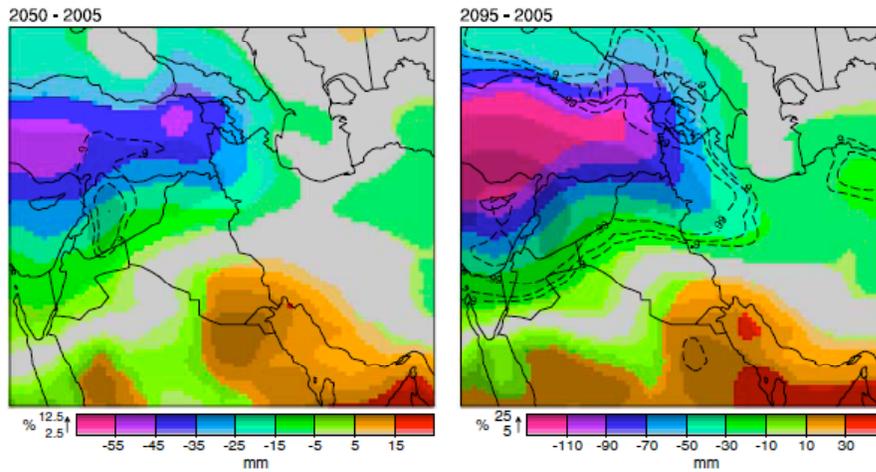
<sup>189</sup> Elmusa, *Negotiating Water*, 65.

As quoted from Wouters, “The availability of, and access to, freshwater resources by all might be one of the most important global security concerns of the twenty-first century.”<sup>190</sup> Israel/Palestine is not the only territory with contested freshwater resources, and as climate change begins to decrease the availability of water in areas that are already strained, the geopolitical conflicts in these territories could become inflamed as different groups with varying agendas vie for water resources. This case study can be used as an example for further studies. There is a need for analysis in any contentious situation, especially when freshwater and rights to water are involved. It is important to do analyses like this one out of a concern for social justice and the rights to freshwater across the globe in the era of climate change and water shortages.

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<sup>190</sup> Wouters, et al., “Water Security,” 113

## Figures



**Fig. 5** Change in precipitation. Hue shows the change in millimeter per year. Saturation/intensity shows the change as a percentage of the 2005 precipitation. *Dashed contours* show significance levels with increasing thickness indicating the 0.9, 0.95 and 0.99 levels respectively

Figure 1. From footnote 5: map of the change in precipitation, from Evans, page 427.

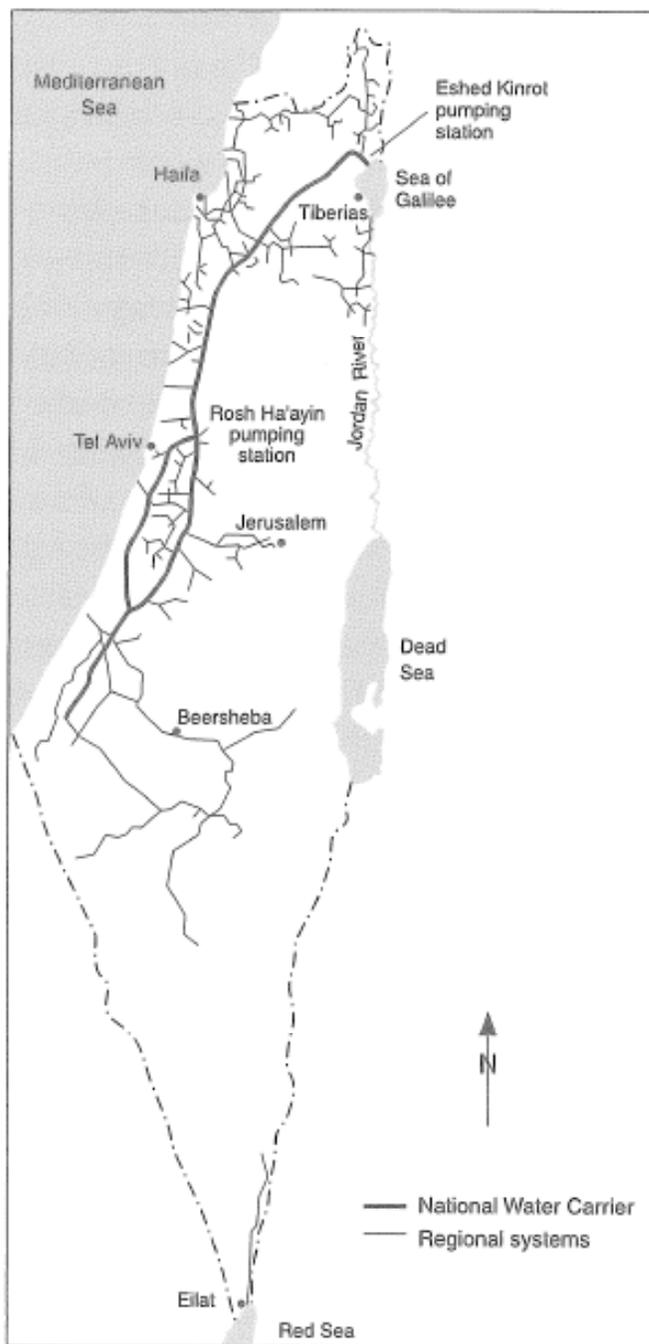


Figure 2. From footnote 13: map of the National Water Carrier, from Amery and Wolf, page 30.

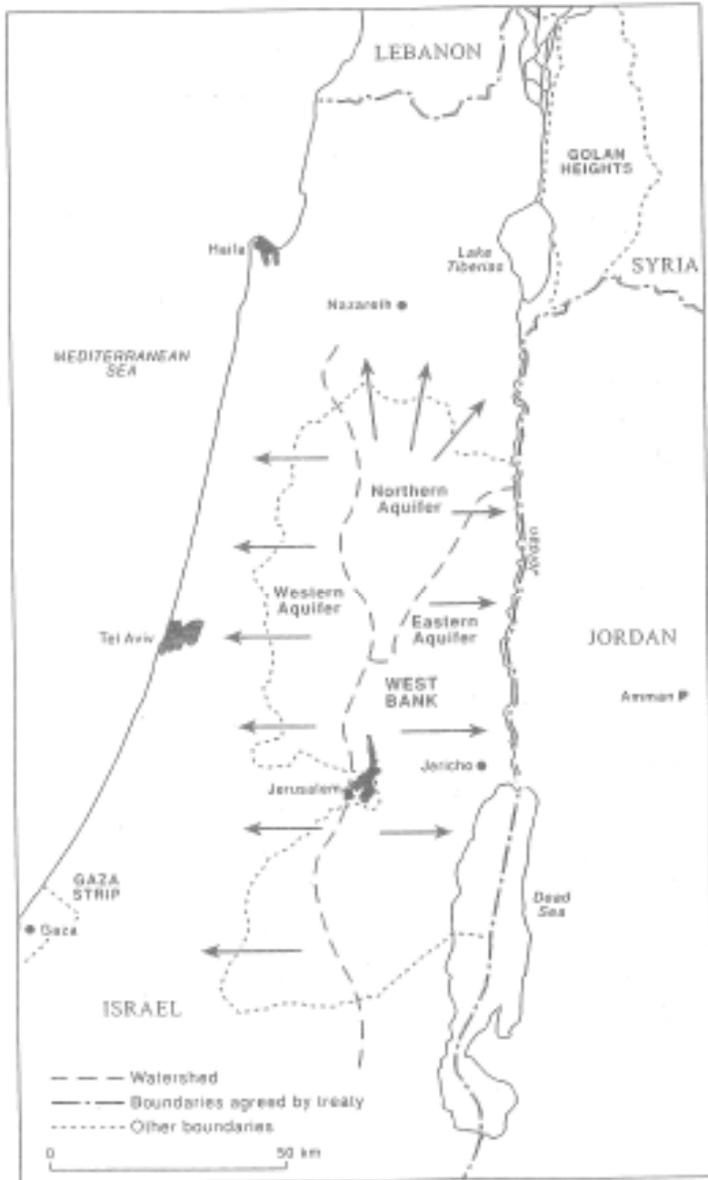


Figure 3. From footnote 23: Map of the Aquifer system in the West Bank, from Selby, page 24.



Figure 5.2 The Peel Commission's plan for the partition of Palestine, 1937

Figure 4. From footnote 40: map of Peel's plan, from Gregory, page 83.



Figure 5.4 Palestinian territories seized by Israel, 1948–9 (after PASSIA)

Figure 5. From footnote 41: map of United Nations plan for Partition, along with land seized during the 1948 War; from Gregory, page 87.

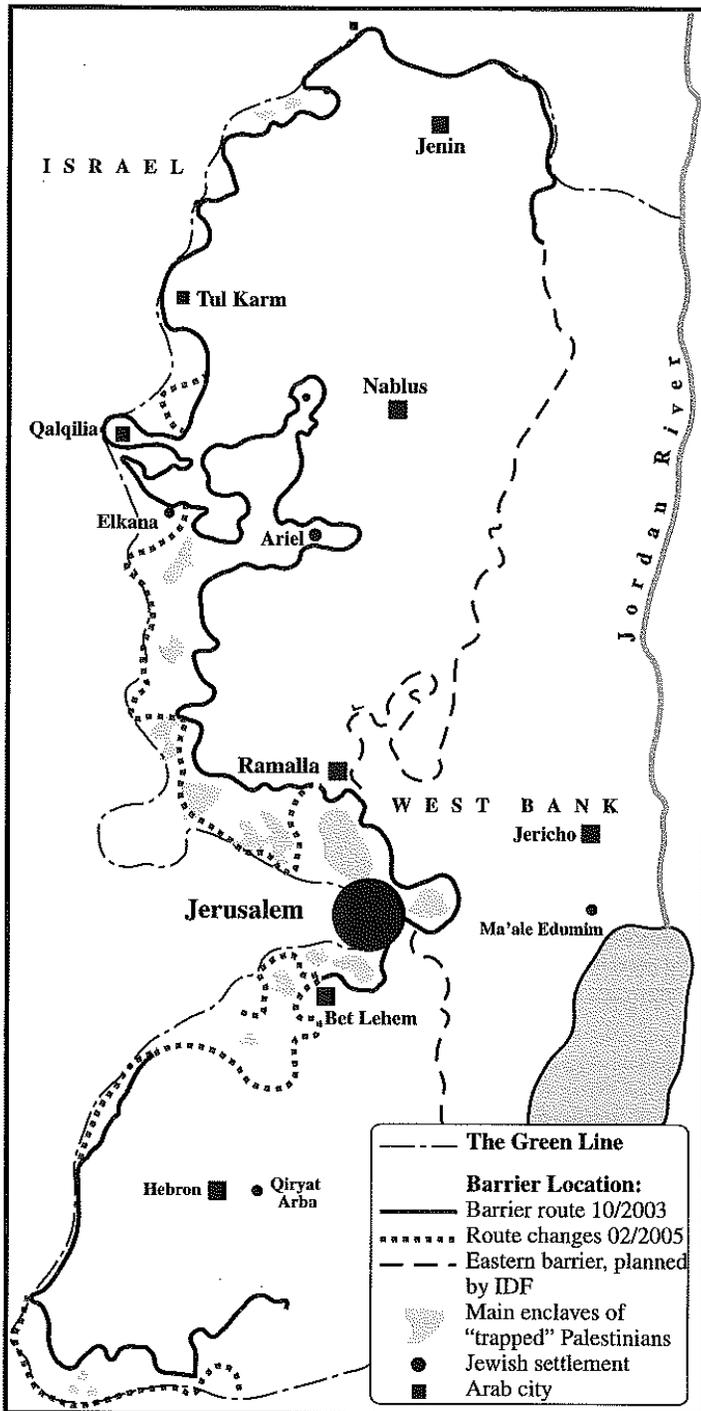


Figure 6. From footnote 71: map of the proposed barrier wall, from Yiftachel, page 81.

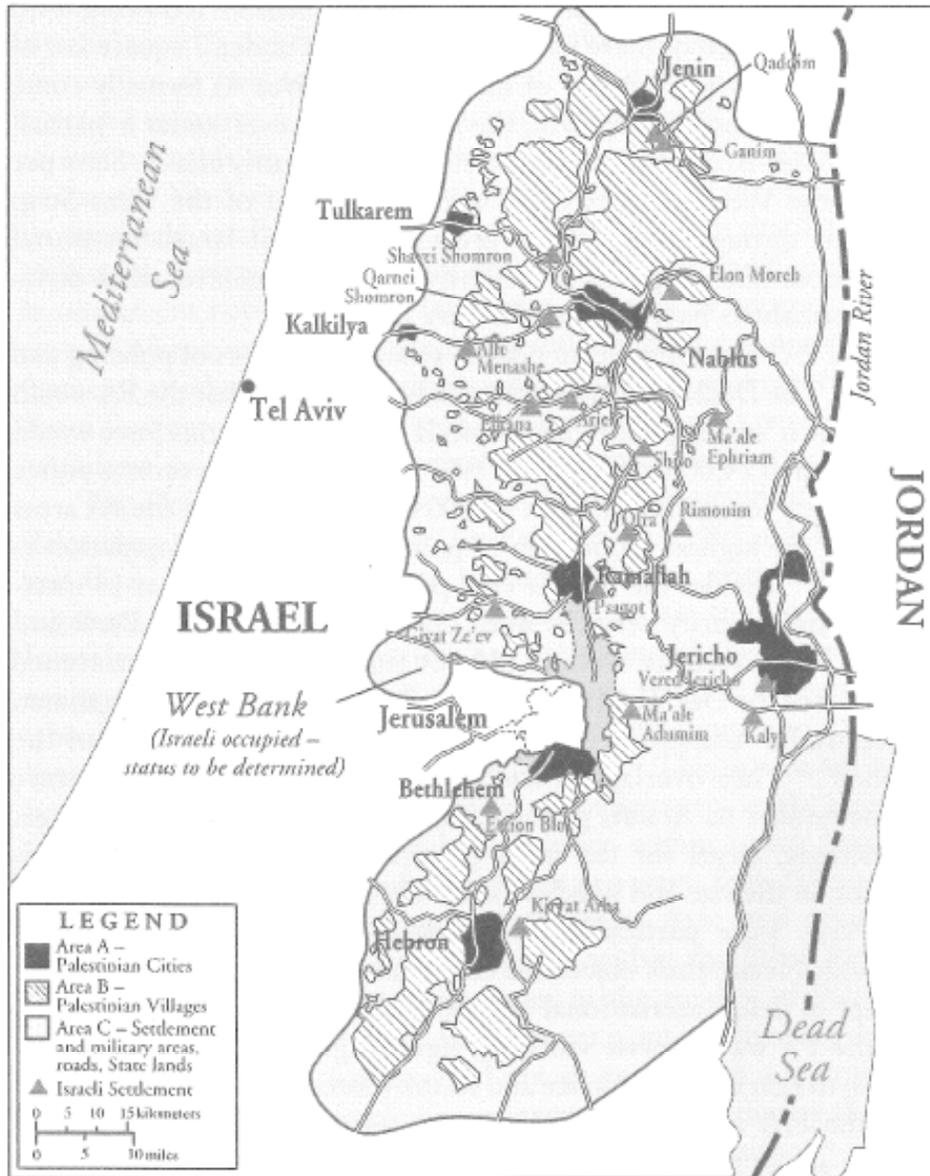


Figure 7. From footnote 138: map of Areas A, B and C from the Oslo Accords, from Selby, page 99.

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