

بعد قَلْبِي

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EXPLORING THE POLITICS OF DRINKING WATER: AN ANALYSIS OF WATER APARTHEID IN THE WEST BANK AND WAYS OF "MAKING DO" OF PALESTINIAN COMMUNITIES

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Exploring the politics of drinking water: an analysis of water apartheid in the West Bank and ways of "making do" of Palestinian communities

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[SOON, WATER WILL FLOW]

In the shadow of olive trees, where hope and despair entwine, a Palestinian mother whispers to her child, “bahd qalil, water will be thine.”

Dry taps and dusty roads, echo with a silent cry, each “bahd qalil” a promise, underneath a parched sky.

Fields once lush, now barren, thirsty voices with empty buckets, an endless queue, “bahd qalil” they murmur, yearning for the morning dew.

Children’s laughter, a facade, playing games of water dreams, “bahd qalil” their chorus, in a land of broken streams.

An elder’s gaze, distant past, when rivers flowed free and clear, “bahd qalil,” his soft refrain, carrying the weight of years.

A farmer stands in his field of dust, once vibrant green, now turned to rust, “bahd qalil,” he tells his land, praying for water to kiss the sand.

A Palestinian boy hears his Israeli neighbors play, splashing in their pool all day, “bahd qalil,” he whispers still, waiting by the dry well’s chill.

A mother collects each precious drop, from a meager trickle that will not stop, “bahd qalil,” she tells her kin, hoping soon the flow will begin.

A baker kneads with trembling hands, rationing each precious drop, “bahd qalil,” he whispers low, as sweat and tears blend with dough.

The doctor sees the lines grow long, dehydration’s cruel sting, “bahd qalil,” she gently soothes, administering hope like a healing spring.

An activist stands before the crowd, her voice a beacon, clear and loud, “bahd qalil,” she declares with might, no longer waiting, they rise to fight.

But patience wears thin, hearts grow bold, “bahd qalil,” the activist cries, no longer waiting in silent hope, for justice, they will rise.

Cover illustration 1: “Bahd qalil” in Arabic, translating to “soon” in English. The poem captures the struggle and resilience of the Palestinian people in their quest for water, using the repeated phrase “bahd qalil” to symbolize hope and the promise of a better future.

[Source: cover illustration and poem by Dania Al Sknini, 20 July 2024.]

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Dania Al Sknini, July, 2024

[ABSTRACT-EN]

This master's dissertation investigates the politics of drinking water in the West Bank by analyzing the concept of water apartheid and examining how Palestinian communities respond to this. Central to this study is understanding apartheid through the lens of water.

Part 0 the literature review, comprises three chapters. It begins by describing apartheid as a system of racial segregation and oppression, originally established in South Africa, and its relevance to the Israeli-Palestinian conflict. This comparison highlights the institutionalized nature of Israeli policies towards Palestinians, which some scholars and international bodies argue meet the criteria for apartheid as defined by international law.

Following this, water apartheid is explored through key authors like Mark Zeitoun, Clemens Messerschmid, and Elisabeth Koek, who describe Israeli control over Palestinian water resources as a form of apartheid. They argue that this control systematically deprives Palestinians of adequate water supplies while ensuring abundant access for Israeli settlers.

The final chapter examines the academic discourse on hydropolitics through three main approaches: Neo-realism, Liberal Institutional, and the Neoliberal Cornucopian approach. This section highlights that water scarcity faced by Palestinians is not due to natural disasters or regional water crises but is, in fact, political. By examining the systemic inequalities and oppression faced by Palestinians, the significant implications on access to natural water resources can be understood in the next chapters.

Authors who have written about water apartheid each present their perspective on the definition of the term. Some definitions are reiterated or have similar meanings. In this thesis, all these definitions are categorized into three main definitions and utilized across the different chapters.

Part 1 examines the history of Israeli water politics, revealing how Israel has become a water superpower by nationalizing transboundary water resources, including the Jordan River and the aquifers. The Western Aquifer Basin, which extends beneath the West Bank, is particularly significant as it is the most productive and yields the highest-quality water in the area.

While Israeli, including settlers in the West Bank, enjoy unlimited access to water, Palestinians suffer from chronic shortages, especially during the summer. Some Palestinians in villages like Dura receive water below the recommended minimum set by the World Health Organization. This disparity is exacerbated by Mekorot, Israel's national water carrier, which controls about 85% of water resources in the West Bank. This unequal water distribution between Palestinians and Israelis in the West Bank aligns with the first definition of water apartheid.

Understanding Israel's historical approach to water management provides context for the current situation, power dynamics, and

military orders, laying the groundwork for a comprehensive analysis of the politics of drinking water.

Part 2 addresses the negative impacts of Mekorot's drilling and over-extraction of transboundary Palestinian water resources, including discriminatory practices such as smaller diameter pipes, reducing water flow and pressure. This control limits Palestinian communities from developing an independent water sector. This situation aligns with the second definition of water apartheid, which involves maintaining economic domination through the exploitation of natural resources.

The third definition of water apartheid is explored through the impact of the apartheid wall on access to transboundary water sources. Hydrostrategy reveals that one of the main drivers behind the wall is to control these resources. This is evidenced by cases like Falameya and Jayyus, where water wells have fallen on the wall's Israeli side, leaving Palestinians with limited access to water.

Part 3 investigates how different areas within the West Bank obtain water and explores the "making do" strategies of Palestinian communities. Through literature, interviews, and testimonies, this part illustrates the severe impact of water shortages. Some Palestinian residents have access to running water only every few days, while others in villages receive it only every few weeks. In Bedouin communities, many are not connected to the water network at all.

The main conclusion of this master's dissertation is that, while the water resources in the West Bank have the potential to meet the recent and future demand of the Palestinian population, the water crisis faced by Palestinian communities is primarily a result of political control and discriminatory practices by Israeli resource management. These practices lead to systemic water deprivation and inequality, favoring Israeli citizens and settlers in internationally considered illegal settlements in the West Bank. Thus, the issue is not the availability of water but the unequal distribution and access enforced by political means.

Keywords: Mekorot, resource control, water apartheid, water politics, West Bank

[ABSTRACT-ARB]

تبحث دراسة الماجستير هذه في سياسات مياه الشرب في الضفة الغربية من خلال تحليل مفهوم “فصل المياه العنصري وتأثيرها على المجتمعات الفلسطينية. يتألف هذا البحث

مقدمة: تتكون من ثلاثة فصول يبدأ بوصف الفصل العنصري كنظام فصل عنصري واضطهاد حيث نشأ هذا النظام في جنوب أفريقيا وكذلك الأمر في دولة اسرائيل بحكم الصراع القائم منذ وقت طويل بين الإسرئيليين والفلسطينيين حيث تقوم الحكومات الإسرائيلية المتعاقبة على معاقبة الفلسطينيين وحرمانهم من ابسط حقوقهم بهدف تهجيرهم وطردهم الى دول اخرى واستبدالهم بمهاجرين ومسطوطين يهود وبأساليب مختلفة تبدأ بالضغط العسكري والاعتقال التعسفي وتنتهي بمعانات الفلسطينيين الحياتية كحرمانهم من الموارد من بينها الموارد المائية وهذه الممارسات التعسفية تلتقي بمعايير الفصل العنصري كما القانون الدولي.

بعد ذلك، يتم استكشاف فصل المياه العنصري من خلال كتابات مؤلفين رئيسيين مثل مارك زيرتون، كليمينس ميشرشميد، وإلزابيث كويك، الذين يصفون السيطرة الإسرائيلية على الموارد المائية الفلسطينية كشكل من أشكال الفصل العنصري. يعتقد هؤلاء بأن هذه السيطرة تحرم الفلسطينيين بشكل منهجي من إمدادات المياه الكافية بينما تضمن الوصول الوفير للمستوطنين الإسرئيليين.

الفصل الأخير يناقش الخطاب الأكاديمي حول السياسات المائية من خلال ثلاثة نهج رئيسية: الواقعية الجديدة، المؤسساتية الليبرالية، ونهج الوفرة النيوليبرالية. يبرز هذا القسم أن ندرة المياه التي يواجهها الفلسطينيون ليست بسبب كوارث طبيعية أو أزمات مائية إقليمية بل هي سياسية. من خلال فحص الفوارق والاضطهاد النظامي الذي يواجهه الفلسطينيون، يمكن فهم الآثار الكبيرة على الوصول إلى الموارد المائية الطبيعية في الفصول القادمة المؤلفون الذين كتبوا عن فصل المياه العنصري يقدمون كل منهم وجهة نظره حول تعريف المصطلح. تتكرر بعض التعريفات أو تحمل معاني متشابهة. في هذه الأطروحة، يتم تصنيف جميع هذه التعريفات إلى ثلاثة تعريفات رئيسية وتستخدم عبر الاجزاء المختلفة

الجزء الأول: يستعرض تاريخ سياسات المياه للدولة الإسرائيلية، ويكشف كيف أصبحت دولة إسرائيل قوة عظمى في مجال المياه من خلال إستيلانها على الموارد المائية العابرة للحدود، بما في ذلك نهر الأردن والمياه الجوفية. يعتبر حوض المياه الجوفية الغربي، الذي يمتد تحت الضفة الغربية، ذا أهمية خاصة لأنه الأكثر إنتاجية ويقدم المياه عالية الجودة في المنطقة. حيث يتمتع الإسرئيليون، بما في ذلك المستوطنون في الضفة الغربية، بوصول غير محدود إلى المياه،بينما يعاني الفلسطينيون من نقص حاد ومزمن، خاصة في الصيف.وخاصة الفلسطينيين الذين يعيشون في القرى مثل قرية دورا حيث يحصل الفلسطينيون على مياه أقل من الحد الأدنى الموصى به من قبل منظمة الصحة العالمية. يتفاقم هذا التفاوت من قبل “ميكوروت”، شركة المياه الوطنية الإسرائيلية، التي تسيطر على حوالي 85٪ من الموارد المائية في الضفة الغربية. هذا التفاوت في المياه بين الفلسطينيين والإسرئيليين يتماشى مع التعريف الأول للفصل العنصري المائي

الجزء الثاني يتناول الآثار السلبية لسيطرة شركة “ميكوروت”على المورد المائية الفلسطينية واستخراجها المفرط لهذه الموارد بما في ذلك العابرة للحدود، حيث تقوم هذه الشركة بممارسات تمييزية ، مثل أنابيب ذات قطر أصغر، مما يقلل من تدفق المياه والضغط أثناء امداداتها الى المناطق الفلسطينية بينما تمد المستوطنات والمناطق الاسرائيلية المختلفة بكميات كبيره من المياه.

هذا التحكم والسيطرة في استخراج المياه ومنع الفلسطينيين من تطوير قطاع مياه مستقل. يتماشى هذا الوضع مع التعريف الثاني للفصل العنصري المائي، الذي ينطوي على الحفاظ على الهيمنة الاقتصادية من خلال استغلال الموارد الطبيعية.

التعريف الثالث للفصل العنصري المائي يستكشف من خلال تأثير “جدار الفصل” على الوصول إلى الموارد المائية العابرة للحدود. يكشف تحليل السياسات المائية أن أحد الدوافع الرئيسية وراء الجدار هو السيطرة على هذه الموارد. يتضح هذا من خلال حالات مثل فلامية وجيوس، حيث وقعت الأبار المائية على الجانب الإسرائيلي من الجدار، مما ترك الفلسطينيين بقدرة محدودة على الوصول إلى المياه ولفهم هذا الوضع الحالي لهذه السياسات العنصرية لا بد من لمحة تاريخية عن الأوضاع في ا

لمناطق الفلسطينية حيث بدأت من احتلال اسرائيلي للضفة الغربية وقطاع غزة منذ عام ١٩٦٧ طبقت عليها كافة القوانين العنصرية من خلال الضغط العسكري بكافة المجالات بما في ذلك الموارد المائية في الضفة الغربية

الجزء الثالث يحقق في كيفية حصول المناطق المختلفة في الضفة الغربية على المياه ويستكشف استراتيجيات “التكيف” للمجتمعات الفلسطينية. من خلال الأدبيات والمقابلات والشهادات، يوضح هذا الجزء التأثير الشديد لنقص المياه. على السكان الفلسطينيين حيث يحصلون على المياه الجارية فقط كل بضعة أيام، وكذلك يحصل آخرون في القرى على المياه كل بضعة أسابيع. في المجتمعات البدوية، العديد منهم ليسوا متصلين بشبكة المياه على الإطلاق. الخلاصة الرئيسية لهذه الأطروحة هي أن الموارد المائية في الضفة الغربية لديها القدرة على تلبية الطلب الحالي والمستقبلي للسكان الفلسطينيين، لكن أزمة المياه التي تواجهها المجتمعات الفلسطينية هي في المقام الأول نتيجة للسيطرة السياسية والعسكرية والممارسات التمييزية من قبل إدارة الموارد الإسرئيلية. تؤدي هذه الممارسات إلى حرمان الفلسطينيين من المياه وعدم المساواة مع المواطنين الإسرئيليين والمستوطنين في المستوطنات التي تعتبر غير قانونية دوليًا في الضفة الغربية. لذا، فإن القضية ليست في توفر المياه ولكن في التوزيع غير المتكافئ بين الطرفين والوصول المفروض بوسائل سياسية.

الكلمات المفتاحية: ميكوروت، السيطرة على الموارد، الفصل العنصري المائي، السياسات المائية، الضفة الغربية

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It wasn't an easy journey, but I am immensely proud to present this meaningful master's thesis as I work towards obtaining the academic degree of Master of Science in Engineering: Architecture.

To Palestine and every Palestinian who continue to suffer until this day.

[ABBREVIATIONS]

<i>Bundesanstalt für Geowissenschaften und Rohstoffe</i>	BGR
<i>Committee on the Elimination of Racial Discrimination</i>	CERD
<i>Declaration of Principles</i>	DOP
<i>Economic and Social Commission for West Asia</i>	ESCWA
<i>International Convention on the Elimination of All Forms of Racial Discrimination</i>	ICERD
<i>International Court of Justice</i>	ICJ
<i>Israeli Water Authority</i>	IWA
<i>million cubic meters</i>	MCM
<i>Non-Governmental Organization</i>	NGO
<i>National Water Carrier</i>	NWC
<i>Occupied Palestinian Territory</i>	OPT
<i>United Nations Office for the Coordination of Humanitarian Affairs</i>	OCHA
<i>Palestinian Authority</i>	PA
<i>Palestine Liberation Organization</i>	PLO
<i>Palestinian Water Authority</i>	PWA
<i>World Health Organization</i>	WHO

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[PREFACE: NAVIGATING THE WATERS OF MEMORY]

When I think of Palestine, I remember the stories my Jiddos (grandfathers) shared with me. Jiddo Nabeel (Jaffa, 1936) spoke of sneaking away from English classes during the British mandate, to dive into the cool embrace of the Mediterranean Sea off Jaffa's shores. My great-grandmother would detect his little escapade by playfully tasting the salt on his wrist.

Jiddo Mustaffa (Haifa, 1935) cherished memories of swimming in the serene pond of Sakhnin, where laughter echoed among the ripples. Both held a dream close to their hearts- to return to Palestine, to revisit the land that shaped their fondest memories. However, life had other plans, and that dream remained unfulfilled.

Growing up in Belgium as the eldest daughter of a Lebanese-Palestinian immigrant family, I often found myself standing between two different worlds, struggling to define my cultural identity. It wasn't until my second year of bachelor's studies that I first felt connected to my Palestinian roots. While working on a group paper under the guidance of Professor Johan Lagae about 'settler colonialism in Palestine-Israel,' my heritage wasn't just a distant concept anymore.

In the following years, I seized every opportunity to link my cultural history to my academic work. Academic research has been instrumental in helping me develop a deeper understanding of myself. Each piece of literature brought me closer to the land of my ancestors and the stories of my people. I have learned about Palestine in many ways through academic literature.

In this thesis, I invite you to embark on a journey with me, discovering apartheid through the lens of water in the West Bank, Palestine.

[RESEARCH CONTEXT, SOURCES & METHODOLOGY]

EXPLORING APARTHEID THROUGH THE LENS OF WATER IN THE WEST BANK

Every May, as temperatures rise, the struggle for water recommences for many Palestinians in the West Bank. Chronic water shortages dominate daily life, leading to constant worry and discussions about water availability.¹ Rana Khweirah, a 52-year-old resident of Nablus, illustrates this reality:

“..we live with a chronic water shortage that’s so bad, it’s become all we think about. We talk of nothing else and don’t care about anything but water: is there water, isn’t there water, the pressure in the faucet is low, the water’s about to get cut off, don’t turn the faucets on too much, check the water tanks, make sure there’s water in them, call the municipality.”²

This experience is shared by nearly three million Palestinians in the West Bank. Some residents have access to running water every few weeks, while others are not connected to the water network at all. Water is a fundamental resource essential for life, yet its distribution and access can become a source of conflict, especially in regions fraught with political tension.³

In the context of Palestine, water has become a pivotal element in the broader Israeli-Palestinian conflict, often described using the term water apartheid. This concept refers to the systematic and discriminatory control over water resources by Israeli authorities, and its national water company, Mekorot.⁴

This control leads to significant disparities in water access and quality. In the West Bank, Palestinians face shortages and restricted water access, starkly contrasting with the abundant water supply available to Israeli settlers in the same region.⁵

[RESEARCH OBJECTIVES]

The primary objective of this research is to understand apartheid in the West Bank through the lens of the water problem. By focusing on water, this research aims to concretely demonstrate the oppression and apartheid experienced by Palestinians. This involves analyzing how Israeli control over water resources perpetuates inequalities and impacts Palestinian society. It uses water as a tool of oppression and a weapon against these communities. Additionally, the study aims to understand the broader hydropolitical dynamics at play and to highlight the lived experiences of Palestinians, focusing on their strategies for coping with water scarcity. By doing so, this research seeks to contribute to the academic discourse on hydropolitics and provide a nuanced understanding of the role of water in the Israeli-Palestinian conflict.

[METHODOLOGY]

Given the complexity and sensitivity of the subject, my research strategy primarily involved a comprehensive review of academic literature, reports by international human rights organizations, and interviews with experts in the field. Initially, I had planned to travel to the West Bank to conduct field research and gather firsthand data. However, the ongoing conflict and safety concerns made this plan unfeasible. As a result, the research relied heavily on secondary sources such as:

- **B’Tselem**, the Israeli Information Center for Human Rights in the Occupied Territories, documents and reports on human rights violations committed by Israel. Their work includes short

documentaries and interviews that illustrate and visualize the lived experiences of people in the region.⁶ B’Tselem was used as an information source due to its provision of detailed documentation, supported by substantial evidence and scholarly research. Additionally, B’Tselem’s ability to explain information in an accessible manner, made complex issues more understandable. Screenshots of these documentaries are used throughout this thesis to support and visualize the narrative.

- **Visualizing Palestine** is a multidisciplinary independent non-profit organization that creates data-driven visual stories to describe the social, political, and economic conditions shaping Palestinians’ lives.⁷ Collaborating from locations including Palestine and North America, they provide straightforward and accessible visualizations that aid in presenting complex information throughout this research.

To enrich the research, key interviews were conducted with experts who provided valuable insights into the water situation in the West Bank. The details of these interviews are as follows:

- **Dr. Abdelrahman Al Tamimi:** Director General of the Palestinian Hydrology Group, the interview with Dr. Al Tamimi took place on May 3, 2024. This conversation allowed me to better understand the concepts of water apartheid and hydro-hegemony. Dr. Al Tamimi explained various terms and discussed the Oslo Accords, which enhanced my understanding of the broader hydropolitical dynamics involved.

- **Professor Emily McKee** from Northern Illinois University: although this was not a formal interview, the conversation (June 26, 2024) was instrumental in structuring my thesis. We discussed Michel Foucault’s concept of “making do” and the impact of the apartheid wall on Palestinians’ access to water. This discussion provided a critical theoretical framework for my analysis.

- **Mr. Ramez El Titi:** water and sanitation expert, working for the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in Nablus. He provided ongoing insights through conversations via WhatsApp, answering specific questions about the water situation in Nablus and neighboring villages. He sent various materials, including photos and documents. Two formal interviews with him were conducted on July 6, 2024. These interactions significantly deepened my understanding of the topic.

- **Toon Van Parys:** a law graduate. His dissertation with the central question “*Is Israel guilty of committing apartheid against the Palestinians?*”⁸ formed the basis of our discussion (July 17, 2024) on the issue of apartheid in the Israel-Palestine context. The conversation significantly deepened my understanding of the legal perspectives on the conflict. We explored the importance of non-academic sources, the different international perspectives on apartheid, and the complexities involved in applying the legal definition of apartheid to the Israel-Palestine situation.

All interviews, along with additional details and insights from the experts, are included in the appendix of this thesis.

As an architecture student, I approached the research with a focus on spatial analysis, utilizing maps and plans to understand the

geographical and infrastructural dimensions of the thesis. This perspective allowed for a detailed examination of how water distribution and access are spatially controlled and manipulated. Sources such as maps and geographical data were essential for my thesis in visualizing the disparities in water access and the impact of infrastructure like the apartheid wall on Palestinian communities.

The integration of diverse sources and perspectives was crucial in providing a nuanced understanding of water apartheid in the West Bank. By combining academic literature, human rights reports, expert interviews, and visual data, the research aimed to present a comprehensive analysis of the systemic inequalities and oppression faced by Palestinians. This multidisciplinary approach also highlighted the broader hydropolitical dynamics and offered potential pathways for equitable water management and cooperation.

[POSITIONING]

In undertaking this research, it was essential to reflect on my own position and background, which inevitably color my perspective on this case. My personal migration background contributes to a certain affinity and familiarity with Palestinian customs and cultures. Even though I was not born in Palestine, I feel deeply connected to the land. My father was born in a Palestinian refugee camp, and the stories from my grandfathers about their lives in Palestine have profoundly influenced my way of thinking. This personal connection to the Palestinian experience drives my research focus and approach.

The term water apartheid, also referred to as hydrological apartheid or hydro apartheid, has been highlighted by several international human rights organizations, including Al-Haq, Amnesty International and the Israeli B’Tselem, as well as various news articles by Al Jazeera.⁸

My initial exploration of the term water apartheid began with searching for authors who addressed this specific concept. Mark Zeitoun, Elisabeth Koek, and Clemens Messerschmid were among these few scholars who explicitly used this term, making their works central to my thesis.

This concept was first introduced by British author Fred Pearce in his 2006 book *‘When the Rivers Run Dry’* where he described the significant disparities in water access between Palestinians and Israelis in the West Bank. Pearce’s work brought attention to the systematic discrimination in water distribution, coining the term ‘hydrological apartheid.’⁹

This concept was further elaborated by Mark Zeitoun in his 2008 book *‘Power and Water in the Middle East,’* where he analyzed the political dynamics of water control, describing Israel’s prioritization of water resources for settlers over Palestinians.¹⁰ Zeitoun’s detailed analysis of the political dynamics of water control and hydro-hegemony provided a foundational framework for understanding the systemic inequalities faced by Palestinians.

Jean Glavany’s report (2011) for the French National Assembly described water as a weapon in the Israeli-Palestinian conflict, reinforcing the notion of water apartheid.¹¹

Elisabeth Koek provided a detailed legal framework, defining “three principal pillars of Israel’s water-apartheid” in her 2013 work for the Palestinian independent non-governmental human rights organization, Al Haq.¹²

Clemens Messerschmid further critiqued the myths of cooperation and scarcity in his 2014 article ‘Hydro-Apartheid and Water Access in Israel-Palestine: Challenging the Myths of Cooperation and Scarcity.’¹³ Messerschmid’s critique offered critical insights into the hydropolitical landscape.

Over time, the term water apartheid has been used to highlight the structural inequalities and discriminatory policies in water access within the Israeli-Palestinian conflict. This research builds on these foundational works to explore the lived experiences and coping strategies of Palestinians facing water scarcity.

In addition to these key authors, my research also draws on a diverse range of perspectives that will be elaborated in the next section of this thesis.

Additionally, I include insights from Israeli authors like Ariel and Shlomi Dinar. This broader inclusion allows for a nuanced exploration of the topic and provide valuable contributions to the broader hydro-political dynamics and offer a well-rounded understanding of the issue.

In my analysis, I do not include certain literature that did not directly address the political dimensions of water control or lacked empirical evidence related to the West Bank. This exclusion was necessary to maintain a focused and relevant discussion within the scope of this thesis. For instance, articles from sources like ‘the Jerusalem Post’ were not included because their narratives often align with state perspectives that may downplay or justify the disparities in water access. Such perspectives, while important to acknowledge, do not align with the critical, academical and empirical approach necessary for this research.

Furthermore, literature that primarily addresses technical aspects of water management without engaging with the political and social implications of water distribution is also excluded. Additionally, literature focusing on the topic of government policies in general was excluded due to limitations in time and scope of this thesis.

[STRUCTURE]

This master’s dissertation explores the politics of drinking water in the West Bank, focusing on the concept of water apartheid and how Palestinian communities respond to this. Central to this study is understanding apartheid through the lens of water. The study is structured into three main parts, each addressing specific aspects of the research question to contribute to an overall understanding of the political dimensions of water access and control in the West Bank.

Part 0, serves as a literature review and consists of three chapters aimed at establishing a foundational understanding of key concepts and theoretical frameworks relevant to the study.

The first chapter defines apartheid as a system of racial segregation and oppression and explores its relevance to the Israeli-Palestinian conflict, highlighting arguments by scholars and international human rights organizations that Israeli policies towards Palestinians meet the criteria of apartheid as defined by international law.

The second chapter introduces the concept of water apartheid, drawing on the perspectives of five key authors. These definitions are synthesized and utilized throughout the thesis to provide a understanding of water apartheid in the West Bank.

The final chapter in the literature review examines the academic discourse on hydropolitics through three main approaches: the neo-realist, the liberal institutional, and the neoliberal cornucopian approach.

Part 1 provides an in-depth examination of the historical development of Israeli water politics. It introduces Mekorot, Israel’s national water company, and the National Water Carrier, and addressing the first definition of water apartheid by focusing on the unequal distribution of water between Palestinians and Israelis in the West Bank.

Part 2 contains two chapters focusing on the direct and indirect impacts of Israeli water control on Palestinian communities. The first chapter explores the negative effects of Mekorot’s drilling and over-extraction of transboundary Palestinian water resources, including discriminatory practices. It examines the definition of water apartheid as the unlawful exploitation of natural resources and the destruction of wells and cisterns.

The second chapter investigates the impact of the apartheid wall on access to transboundary water sources, revealing how the wall’s construction is driven by a strategy to control these resources. Case studies such as Falamyra and Jayyus illustrate how Palestinian access to water wells has been severely limited. The construction of the apartheid wall, requiring Palestinians to walk long distances to receive water, aligns with another definition of apartheid.

Part 3 explores the “making do” strategies employed by Palestinian communities in response to water scarcity and control. It investigates how various areas within the West Bank obtain water, highlighting the differences in access and availability.

[NOTES]

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[10] Mark Zeitoun, *Power and Water in the Middle East: The Hidden Politics of the Palestinian-Israeli Water Conflict* (London: I.B.Tauris, 2008), 15.

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[13] Clemens Messerschmid, “Hydro-Apartheid and Water Access in Israel-Palestine: Challenging the Myths of Cooperation and Scarcity,” in *Decolonizing Palestinian Political Economy: De-development and Beyond*, ed. Mandy Turner and Omar Shweiki (London: Palgrave Macmillan, 2014), 53-76.



< **MAP 1:** Overview of Israel, the Palestinian territories (West Bank and Gaza Strip), and the neighboring countries

In this thesis, the term 'West Bank' refers to the region that is part of the Occupied Palestinian Territories. When referring to 'Israel' or the 'State of Israel,' it indicates the State/Israeli territories. The term 'Palestinians' specifically denotes the inhabitants of the West Bank within the context of this study.

[Created by Dania Al Sknini, based on: Google Earth, 2024.]

PART 0: INTRODUCTION TO DIVERSE TERMINOLOGIES

CHAPTER 1: APARTHEID: TWO REALITIES, ONE TERRITORY

During the research phase of this thesis, various terms spanning from water scarcity to hydro-apartheid were encountered. According to Mirumachi, the term 'hydropolitics' is frequently used to refer to this entire body of literature¹⁴

This thesis focuses on the water situation in the Occupied Territories of the West Bank, a critical aspect of the Israeli-Palestinian conflict. The terms 'hydro-apartheid' and 'hydro-hegemony' have been used to describe the disparities in water access and control between Israelis and Palestinians. By examining the water problem in the West Bank, this research aims to concretely demonstrate the oppression and apartheid experienced by Palestinians.

This introduction sets the stage for the exploration of water politics in the West Bank. It begins by defining apartheid and water apartheid, then examines the academic discourse on hydropolitics through three distinct approaches: neo-realist, liberal institutional and Neoliberal Cornucopian approach.

The following literature review does not aim to provide a comprehensive overview of existing literature due to limitations in time and scope. Instead, it highlights the academic debate and focuses on important works relevant to this thesis.

The term 'apartheid' initially described a regime in South Africa characterized by racial domination established by a white settler minority¹⁵

Although the apartheid regime in South Africa ended in the mid-1990s, the concept's relevance extends beyond its original context

and has been used to describe similar systems of systematic oppression and segregation in different settings. For example, the situation in the occupied Palestinian territory has been compared to apartheid due to what Dugard and Reynolds describe as an "*institutionalized and oppressive system of Israeli domination and oppression over Palestinians as a group.*"¹⁶

This comparison raises important questions about the application of the apartheid framework in different geopolitical settings.

[CURRENT LEGAL FRAMEWORK OF APARTHEID]

Over the last decades, the world codified 'apartheid' as a crime that any country can commit.¹⁷ To determine if there's an apartheid regime, the comparison isn't made to South Africa, instead focus is placed on international law. According to academic scholars and international law standards, this involves examining Article II of the Apartheid Convention and Article 7, paragraph 2(h) of the Rome Statute.¹⁸

The Apartheid Convention Article II defines the crime of apartheid/prohibition as:

*"inhuman acts committed for the purpose of establishing and maintaining domination by one racial group of persons over any other racial group of persons and systematically oppressing them."*¹⁹

Article 7, paragraph 2(h) of the Rome Statute defines apartheid as:

"[Inhumane acts] committed in the context of an institutionalized regime of systematic oppression and domination by one racial

*group over any other racial group or groups and committed with the intention of maintaining that regime."*²⁰

'Racial groups' in international law include national, religious, ethnic and other groups.²¹

[CRITERIA FOR APARTHEID]

Not all systemic discrimination meets the criteria of apartheid. What makes an apartheid regime unique is that it intentionally revolves around domination and oppression of certain groups. This domination must be integral to the regime, constituting an inherent aspect present across all facets of its structure, rather than isolated into a singular area. The crime of apartheid is unequivocally prohibited without exceptions, representing one of the most severe international crimes.²²

It is essential to note that not all inhumane acts need to be present for an accusation of apartheid to be valid. The 'inhumane acts' constituting apartheid, as outlined in both the Apartheid Convention and the Rome Statute, are listed in **Appendix 1**.

Instead, the key lies in meeting three fundamental criteria, as formulated based on the research conducted by Dugard and Reynolds:²³

[1] Commitment of one or more inhumane acts on a widespread basis.²⁴

[2] Establishment of a context marked by an institutionalized regime of systematic oppression and domination.²⁵

[3] Demonstration of an intention to perpetuate the system of domination by one group over another.²⁶

The commission of these acts cannot be isolated, one-time acts; they must be part of a widespread or systematic attack on a particular group. Such actions must unfold within the context of a regime characterized by systematic oppression and domination by one group dominating another. Furthermore, there must exist an intention behind these acts to maintain the established regime, although this intention doesn't have to be the only or even main intention.²⁷

[APARTHEID IN THE PALESTINIAN TERRITORIES]

According to Amnesty International, the concept of apartheid in Palestine offers a framework to understand how systematic oppression manifests in political systems globally.²⁸

The discussion with law graduate, Toon Van Parys in **Appendix 2** highlights the importance of incorporating non-academic sources, such as Amnesty International, in legal research. Furthermore, Van Parys noted in this discussion that while the term apartheid is frequently used regarding Israel and Palestine, it has not yet been formally recognized by international courts.

Richard Falk, UN Special Rapporteur on the Situation of Human Rights in the Occupied Palestinian Territories, along with authors John Dugard and John Reynolds, emphasize the significant controversy and complexity involved when applying the term apartheid to Israel and Palestine. This makes formal recognition by international courts challenging.²⁹

To further understand this complexity, Toon Van Parys explained in the discussion (Appendix 2):

"Apartheid is too controversial. Currently, no international court has recognized that there is apartheid because it is an extremely controversial topic. Israel and Palestine are already very conflictual, and adding apartheid, one of the greatest crimes a state can commit, is not possible. We are still a few steps too early for that. Or [a few steps] too late."

At the time of writing, the International Court of Justice [ICJ] declared on July 19, 2024, that "*the State of Israel's continued presence in the Occupied Palestinian Territory is unlawful [...] the State of Israel is under an obligation to bring to an end its unlawful presence in the Occupied Palestinian Territory as rapidly as possible.*"³⁰

The ICJ referenced Article 3 of the 'International Convention on the Elimination of All Forms of Racial Discrimination' (ICERD), which condemns racial segregation and apartheid.³¹ In its analysis, the ICJ noted in:

- **Paragraph 224:** "*A number of participants have argued that Israel's policies and practices in the Occupied Palestinian Territory amount to segregation or apartheid, in breach of Article 3 of CERD.*"³²

- **Paragraph 229:** "*Israel's legislation and measures impose and serve to maintain a near-complete separation in the West Bank and East Jerusalem between the settler and Palestinian communities. For this reason, the Court considers that Israel's legislation and measures constitute a breach of Article 3 of CERD.*"³³

Article 3 of ICERD declared: "*States Parties particularly condemn racial segregation and apartheid and undertake to prevent, prohibit and eradicate all practices of this nature in territories under their jurisdiction.*"³⁴

The ICJ emphasized the illegality of Israel's prolonged occupation, highlighting violations of international law and human rights but stopped short of labeling the situation as apartheid. This was likely to achieve a broader consensus among the judges. Although the ICJ's findings suggest apartheid, it was not definitively concluded.³⁵

However, in recent years, various academics and UN rapporteurs, such as Francesca Albanese, the United Nations Special Rapporteur on the human rights situation in the OPT, have accused Israel of apartheid.³⁶ For example, the UN 'Economic and Social Commission for West Asia' (ESCWA) in 2017, Human Rights Watch in 2021, and Amnesty International in 2022 have published similar reports, as did UN Special Rapporteur Michael Lynk. These conclusions have been supported by numerous NGOs and scholars.³⁷

In his dissertation, Toon van Parys states that:

*"In less than two years, three authoritative institutions have accused Israel from committing apartheid against Palestinians. Already in 2019, eight Palestinian NGO's submitted a joint report to the UN Committee on the Elimination of Racial Discrimination [...] Soon, other regional NGO's followed, just like some (although still little) scholars."*³⁸

[TERRITORIAL DIVISION]

The division of Palestinian territories and the different levels of control exercised over these regions illustrate the fragmented and oppressive nature of the occupation.³⁹ Officially referred to as the 'Declaration of Principles on Interim Self-Government Arrangements' (DOP), the 1993 Oslo Accords between Israel and the 'Palestine Liberation Organization' (PLO) were the result of extensive negotiations in the aftermath of the Madrid Conference. They were followed in 1995 by the Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip, or Oslo II.⁴⁰

The Oslo Accords, divided the West Bank into 3 areas, as shown on **MAP 2**:

- **Area A:** This includes Palestinian cities and makes up 18% of the West Bank. It is technically under Palestinian control; however, in practice, the Israeli military regularly conducts demolitions, raids, and arrests within this area.⁴¹
- **Area B:** This covers 22% of the West Bank and is under shared control. The Israeli military handles security for both Israelis and Palestinians, while the Palestinian Authority manages civil affairs for Palestinians.⁴²
- **Area C:** This is the largest area, covering 60% of the West Bank, and is fully under Israeli (military) control.⁴³

Since 1967, the Israeli government has illegally settled over 465 400 settlers in West Bank colonies in area C (**MAP 3**).⁴⁴ These settlements are considered illegal under international law because they are built on occupied territory, violating the Fourth Geneva Convention, which prohibits the transfer of an occupying power's civilian population into the territory it occupies.⁴⁵

> **MAP 2:** The administrative division of the West Bank (Area A, B & C).

[Created by Dania Al Sknini, based on:

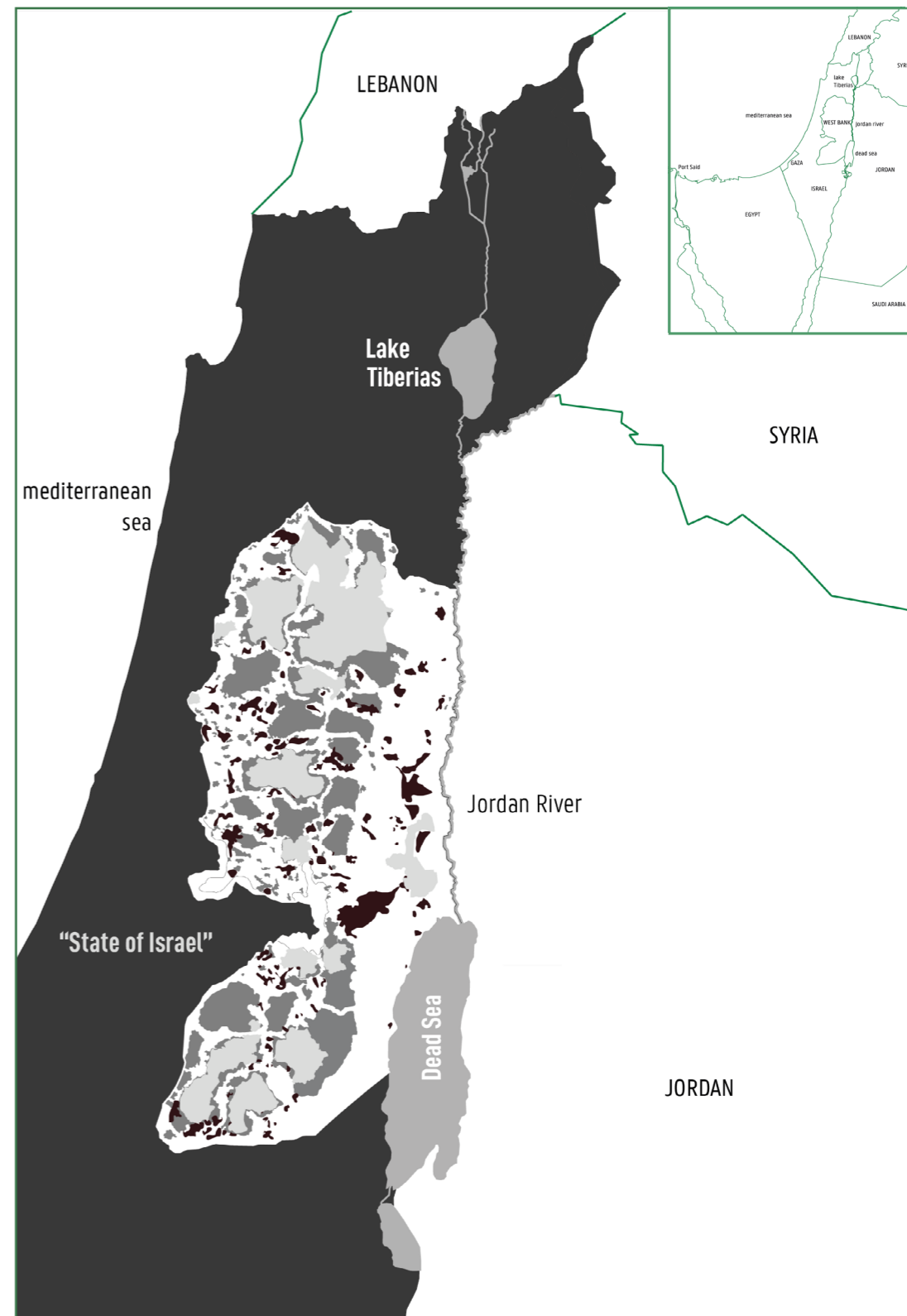
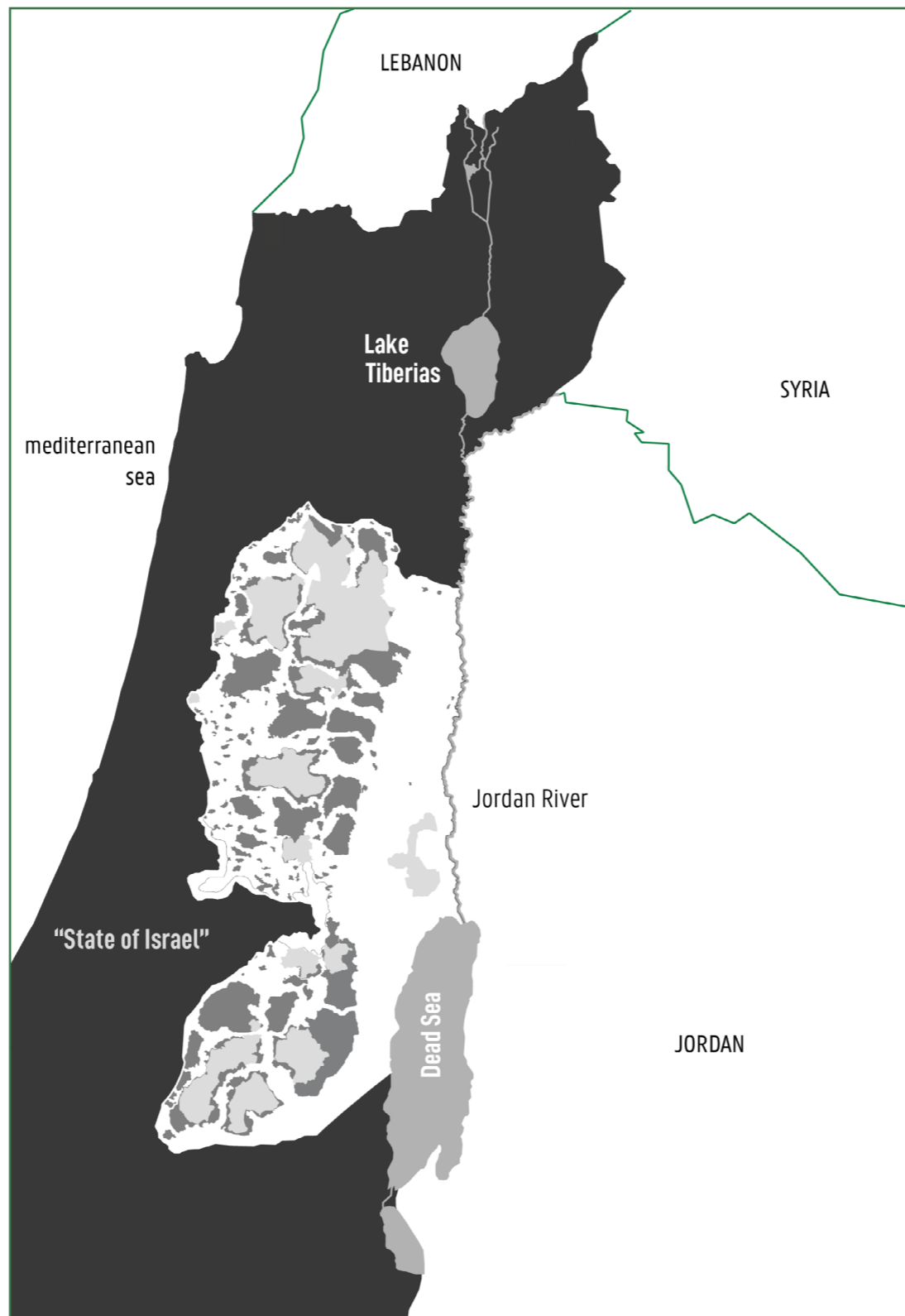
"What are Area A, Area B, and Area C in the West Bank?" Anera, accessed July 30, 2024, <https://www.anera.org/what-are-area-a-area-b-and-area-c-in-the-west-bank/>.

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Erika Weinthal and Jeannie Sowers, "Targeting Infrastructure and Livelihoods in the West Bank and Gaza," *International Affairs* 95, no. 2 (March 2019): 326, <https://academic.oup.com/ia/article/95/2/319/5315699?login=false>.

Legend:

- Area A: Palestinian control
- Area B: shared control
- Area C: Israeli (military) control



^ **MAP 3:** The administrative division of the West Bank (Area A, B & C) with Israeli Settlements municipality area [Created by Dania Al Sknini, based on:

"The West Bank: Settlements and the Separation Barrier," B'Tselem, November, 2014, https://www.btselem.org/download/201411_btselem_map_of_wb_eng.pdf.]

Legend:

- Israeli Settlement Municipality Area
- Area A: Palestinian control
- Area B: shared control
- Area C: Israeli (military) control

Human rights attorney and Associate Professor at Rutgers, Noura Erakat, asserts that settlers enjoy superior privileges compared to Palestinians. She identifies two key reasons for this: Firstly, under the racial classification system embedded within Israeli law, settlers are considered as *“Jewish nationals”* entitling them preferential treatment in terms of land allocation policies, security measures, guaranteed access to water resources, and other entitlements. Secondly, most settlers have Israeli citizenship, which gives them voting rights and social benefits.⁴⁶

According to various human organizations, including Amnesty International and Human Rights Watch, supported by scholars, Israel's system of apartheid in Palestine is evident through several key arguments. The primary argument is that there are two different legal systems based on ethnicity in the occupied territories. Jewish nationals and Israeli citizens fall under Israeli civil law and are subject to trial in civilian courts. Meanwhile, Palestinians face military law and are charged in military courts.⁴⁷

Another argument is that settlers benefit from a well-developed highway infrastructure and unrestricted movement, while Palestinians face over 600 checkpoints and severe travel restrictions. The apartheid wall further isolates Palestinians limiting their freedom of movement and separating them from their families and livelihoods.⁴⁸

[COUNTER-ARGUMENTS AND CRITIQUES]

When examining these key themes, drawing parallels to an apartheid-like system becomes almost inevitable. Some advocates of Israeli policies, such as Robbie Sabel, contend that labeling Israel as an apartheid state is misguided and anti-Semitic. In his article ‘The Campaign to Delegitimize Israel with the False Charge of Apartheid,’ Sabel argues that *“Israel is a multi-racial and multi-colored society.”*⁴⁹

He attempts to dismantle the apartheid accusations against Israel, asserting that such claims are not only inaccurate but also unfairly target Israel in a manner that other nations with similar structures are not subjected to.⁵⁰

Firstly, Sabel argues that establishing a nation on Jewish principles is not necessarily racist, since many nations are founded on Islamic or Christian values without facing similar criticism.⁵¹

While this argument holds some validity, it assumes that Israel should not be criticized simply because other nations are not. This overlooks the fact that countries worldwide are frequently criticized for exclusionary practices. For example, Myanmar has been widely criticized by the international community for its treatment of the Rohingya Muslims.⁵² Similarly, France has encountered significant backlash for its bans on religious symbols, including the hijab.⁵³ The notion that Israel is uniquely targeted for exclusionary ideologies is inaccurate and does not acknowledge the broader international context.

Moreover, the founding principle of Zionism is based on the belief that Jewish people possess an inherent right to historic Palestine, which often overlooks the thousands of years Palestinians have lived on the land. Sabel does not address this issue, instead relying on potentially contested religious connections to the land.

Sabel also highlights the disparity in the treatment of Palestinians in the Occupied Territories compared to the settlers living nearby. He claims that since the West Bank is not under the sovereignty of a state, it is the international norm for it to be under military administration.⁵⁴ Furthermore, he argues that if Israel were to apply its internal (civic) law to Palestinians living in Area C, there would be international backlash, so Israel faces criticism regardless of its actions.⁵⁵

This perspective is misguided, as Sabel does not acknowledge Israel's ongoing neglect of its responsibilities under international humanitarian law as an occupying power.

Sabel's assertion that the occupation is temporary does not fully consider the historical context and the deeply entrenched nature of the settlements. The state of Israel was established with the intention of being predominantly Jewish in its sociopolitical structure and ethnic composition. To achieve this objective, Israel has instituted policies and practices that exhibit the characteristics of an apartheid regime, thereby violating international law, according to reports by human rights organizations and many authors and scholars.⁵⁶

The fragmentation of Palestinian society and the dispossession of their lands are key pillars of Israel's system to maintain domination and control. This system encompasses more than just these aspects. The unequal structure of nationality and status, restrictions on freedom of movement, use of military rule, denial of the right to political participation or the right to peaceful protest, and separation of families all contribute to the complex system of oppression observed today.

[NOTES]

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[50] Ibid.

[51] Ibid.

[52] Naved Bakali, “Islamophobia in Myanmar: The Rohingya Genocide and the ‘War on Terror,’” *Race & Class* 62, no. 4 (2021): 53-71. <https://doi.org/10.1177/0306396820977753>.

[53] Aala Abdelgadir and Vasiliki Fouka, “Political Secularism and Muslim Integration in the West: Assessing the Effects of the French Headscarf Ban,” *American Political Science Review* 114, no. 3 (May 12, 2020): 707-723. doi:10.1017/S0003055420000106.

[54] Sabel, “The Campaign to Delegitimize Israel with the False Charge of Apartheid,” 18-31.

[55] Ibid.

[56] Human rights organizations such as B'Tselem, Amnesty International, and Human Rights Watch have accused the Israeli government of apartheid.

CHAPTER 2: PERSPECTIVES ON WATER APARTHEID IN THE WEST BANK

With a solid understanding of apartheid, the focus can now shift to the concept of 'water apartheid'. The water situation in the Occupied Territories of the West Bank is a critical aspect of the Israeli-Palestinian conflict. The terms 'hydro-apartheid' and 'hydro-hegemony' have been used to describe the disparities in water access and control between Israelis and Palestinians. Although these terms are sometimes used interchangeably, they each have different meanings and implications.

Fred Pearce is a British author and journalist who specializes in environmental issues, and has written extensively on topics related to water resources, climate change, and sustainable development. Pearce was one of the first to use the term "hydrological apartheid" in the West Bank in his 2006 book 'When the Rivers Run Dry: Journeys Into the Heart of the World's Water Crisis'. He describes a situation in which Palestinians use less water per capita than Israelis, highlighting how Palestinians often have to pay more for their limited water supply, with some using as little as a quarter of the water available to Israelis, impacting their daily lives and health. He makes his point clear in one sentence: "*This is hydrological apartheid.*"⁵⁷

Mark Zeitoun further expanded on Pearce's concept in his 2008 book '*Power and Water in the Middle East: The Hidden Politics of the Palestinian-Israeli Water Conflict*' defining the water infrastructure network that prioritizes and restricts the use of water drawn from Palestine to Israeli settlers as a form of "*hydrological apartheid.*"⁵⁸

Professor Mark Zeitoun serves as the Professor of Water Diplomacy at the Graduate Institute of Geneva and is Director General of the Geneva Water Hub. He has led numerous research projects and water supply initiatives and mediated water-related negotiations across Western Asia and Africa. His academic work focuses on international transboundary water conflict and cooperation, the impact of armed

conflicts on water services, and the connections between water, conflict, and health. He has also advised various humanitarian and development organizations and contributed to multiple books and academic journals.⁵⁹

In his book, Zeitoun illustrates how water infrastructure in the West Bank has been strategically designed to favor Israeli settlers while depriving Palestinian communities of essential water supplies. According to Zeitoun, this deprivation not only impacts daily life but also undermines agricultural activities, contributing to the economic and social marginalization of Palestinian villages like Madama, calling it: "*Hydrological Apartheid in Madama.*"⁶⁰

Zeitoun presents evidence of the systematic sabotage and contamination of Palestinian water sources by settlers, along with restrictive policies imposed by Israeli authorities that prevent the development of Palestinian water infrastructure.⁶¹ This will be discussed in depth in the case study about Madama in Part 3.

By examining specific instances of water resource management and the resulting inequities, Zeitoun reveals how hydrological apartheid operates as part of a broader hegemonic apparatus. This apparatus not only controls physical resources but also manipulates political and economic power to maintain dominance over Palestinian territories. Therefore, hydrological apartheid, as Zeitoun defines it, is not merely a matter of unequal water distribution but a manifestation of entrenched political domination and socio-economic control.⁶²

The Foreign Affairs Committee of the French National Assembly released a comprehensive report on 13 December 2011, examining the geopolitics of water. Authored by Socialist MNA **Jean Glavany**, this 320-page document delves into international water conflicts, focusing on the Aral Sea Basin between Kazakhstan and Uzbekistan,

and the Jordan River Basin, which involves Israel, Lebanon, Syria, Jordan, and the West Bank.⁶³ The report states:

*"And the fact is that water in the Middle East has become more than a resource: it is now a weapon. To understand the nature of this 'weapon' serving the 'new apartheid', it should be noted, for example, that the 450,000 Israeli settlers in the West Bank use more water than the 2.3 million Palestinians."*⁶⁴

This portrayal of Israeli-Palestinian water issues sparked controversy, particularly a section titled "*Water, Revealing a New Apartheid in the Middle East*." This part accuses Israel of an apartheid-like policy in the West Bank, highlighting significant disparities in water allocation between Jewish settlers and Palestinians. It criticizes Israel for obstructing Palestinian water resource development and sealing their wells and cisterns, despite Israel's adherence to the Oslo Accords regarding water resources.⁶⁵

The report emphasizes the symbolic and practical importance of water in the Israeli-Palestinian conflict, noting that water has become a weapon in this context. The Jordan River Basin conflict is characterized by Israel's control over water resources, which the report argues reinforces a form of apartheid, as exemplified by the disproportionate water usage by Israeli settlers compared to Palestinians. The report identifies multiple manifestations of this water conflict:⁶⁶

- **Priority during droughts:** Israeli settlers receive priority access to water during droughts, contravening international law.

- **Wall and access control:** the separation wall allows Israel to control access to underground water sources, preventing Palestinians from drawing water in the buffer zone, and ensuring water flow westwards.

- **Destruction of Palestinian wells:** spontaneously dug Palestinian wells in the West Bank are systematically destroyed by the Israeli army.

- **Infrastructure development obstruction:** The division of the West Bank into zones A, B, and C impedes the development of effective water infrastructure for Palestinians. Most Palestinians live in zones A and B, but necessary infrastructure often lies in zone C, where construction is rarely authorized by the Israeli administration.

- **Palestinian Water projects blocked:** the Joint Water Committee, formed under the Oslo II Accords, often delays or denies Palestinian water projects, with approvals taking considerable time and requiring further administrative authorizations for zone C.

- **Resource appropriation:** the appropriation of water resources by Israeli settlements and the route of the separation wall further exacerbate the water conflict.

- **Overexploitation:** maintaining Economic Domination Through Exploitation of Natural resources.

The report concludes that equitable water sharing will remain unattainable without a political settlement on land sharing, as

Israel's control over water resources is deeply intertwined with broader geopolitical issues.

Building on these foundations, **Elisabeth Koek**, a Legal Researcher for the Palestinian human rights organization Al-Haq, provides a detailed explanation of the term water apartheid defining it through "*three principal pillars of Israel's water-apartheid.*"

Koek identifies three principal pillars of Israel's water apartheid:

- **Identification of Two Distinct Groups:** the first pillar involves the differentiation between Palestinians and Jewish-Israelis, establishing a racial basis for policies that favor Israelis. This division creates a system where Jewish-Israelis have privileged access to water resources, while Palestinians are deprived of their basic rights.⁶⁸

- **Segregation and Geographic Demarcation:** the second pillar consists of policies and practices that segregate the population into different geographical areas. This segregation ensures uninterrupted and abundant water supply for Jewish-Israelis, while Palestinians face severe restrictions, inhibiting their development and quality of life.⁶⁹

- **Security Pretext for Inhuman Acts:** the third pillar is the use of security as a justification for inhuman acts against Palestinians. Israel's security laws, policies, and practices established since 1967 support aggressive settlement expansion and the reallocation of water resources, consolidating exclusive control and perpetuating a discriminatory water regime.⁷⁰

Koek's analysis shows how these pillars interconnect to form an integrated system of domination where Israel maintains control over Palestinian water resources under the guise of security. This system not only perpetuates inequality but also aims to fragment Palestinian territories and undermine their sovereignty. Koek argues that these policies amount to water apartheid, constituting part of a broader mechanism of oppression, colonization and water apartheid.⁷¹

Additionally, Koek highlights that the lack of water supply to Bedouin communities in the Negev due to Israel's non-recognition of these communities, the decreased access to water for Palestinian farmers in the north of Israel, and the lack of water supply to Palestinian communities in Israel proper further support the analysis of Israel's water apartheid.

She also points out that Israel has exerted considerable military and political efforts to gain, maintain, and consolidate exclusive access to Palestinian water resources, to appropriate water resources for the sole benefit of Israelis, including settlers, and to paralyze Palestinian water infrastructure development in the OPT. These efforts are aimed at forcibly transferring Palestinian communities and underpin "*the three principal pillars of Israel's water-apartheid.*"⁷²

[HYDRO-HEGEMONY]

Michelle Rudolph and Rachel Kurian highlight the term 'hydro-hegemony,' describing it as "*power-related tactics and strategies used by stronger states in transboundary water disputes that prioritize their access to water and compel weaker entities to submit*

to these conditions.” This power imbalance significantly impacts water governance and, consequently, the water and human security of vulnerable populations.⁷³

The framework of hydro-hegemony has been developed further over the last decade and used to analyze transboundary water conflicts, particularly concerning shared water resources in different contexts. Mark Zeitoun has further conceptualized it and developed a framework which allows researchers to “*examine the dynamics of hegemony operational at the river basin level.*”⁷⁴

Zetoun describes Israel's control over the water sector in the occupied Palestinian territories as a prime example of hydro-hegemony. He argues that Israel exercises hydro-hegemony through a combination of ‘coercive hard power’ (destroying water infrastructure, ‘softer bargaining power’ (through post-Oslo Accords structures, and ‘ideational discursive power’ (promoting water myths accepted by international donors.⁷⁵

He argues that what appears to be cooperation is actually a strategic use of soft power by Israel to maintain its dominant position, while Palestine remains a weaker actor subjected to the realities imposed by Israel. Zeitoun concludes that Israeli hydro-hegemony, despite its social and ecological costs, is likely to persist. He emphasizes the importance of genuine cooperation for sustainable and equitable water management, suggesting the need for new discursive strategies to challenge the prevailing hydro-strategic discourse.⁷⁶

Clemens Messerschmid is a hydrogeologist and water expert with experience in the Israel-Palestine region. He holds an PhD in hydrogeology and has worked in the field of water resource management for over two decades. Messerschmid has conducted numerous studies and projects focused on the water issues faced by Palestinians, particularly in the context of the Israeli-Palestinian conflict.

His work often highlights the political manipulation of water resources and critiques the existing frameworks of water cooperation, advocating for equitable and sustainable water management solutions.⁷⁷

Messerschmid argues in his article ‘Hydro-Apartheid and Water Access in Israel-Palestine: Challenging the Myths of Cooperation and Scarcity’ that the concept of hydro-apartheid in the Israel-Palestine context is a critical framework for understanding the unequal access to water between Israelis and Palestinians. He asserts that the notion of hydro-apartheid reveals the stark asymmetry in power relations and the systematic discrimination in water distribution that Palestinians face. The chapter outlines the historical and ongoing mechanisms that Israel uses to dominate and control water resources, thereby depriving Palestinians of their rightful share.⁷⁸

Although in his title clearly uses the term “hydro-apartheid,” Clemens Messerschmid's work employs the terms ‘hydro-hegemony’ and ‘hydro-apartheid’ interchangeably. This interchangeable use highlights the intertwined nature of these concepts in understanding the water politics in the Israel-Palestine context.

Messerschmid draws on Mark Zeitoun's concept of hydro-hegemony to describe the mechanisms of control and dominance that Israel exercises over water resources. According to Messerschmid, Israel maintains a firm grip on water resources by employing these forms of power, systematically depriving Palestinians of equitable access. Despite the detailed exploration of hydro-hegemony, the term “hydro-apartheid” is equally central to Messerschmid's argument. Messerschmid also highlights “hydro-apartheid,” which emphasizes the institutionalized segregation and discrimination in water distribution, reflecting the broader socio-political and economic disparities between Israelis and Palestinians.⁷⁹

By using both terms, Messerschmid critiques the multifaceted nature of water control in the region. “Hydro-hegemony” provides a framework for understanding the strategic and operational aspects of water dominance, while “hydro-apartheid” conveys the lived reality of exclusion and deprivation experienced by Palestinians. This dual terminology underscores the complexity of the issue, highlighting both the mechanisms of control and their devastating impacts on Palestinian society.

[INTERCHANGEABILITY]

After analyzing the works of key authors, it becomes clear that while Messerschmid and Zeitoun occasionally use ‘hydro-apartheid’ and ‘hydro-hegemony’ interchangeably to some extent, each term brings a specific focus. The following definitions are made based on their work:

- **Hydro-apartheid:** highlights the visible and tangible discrimination in water access between Israelis and Palestinians. The term focuses on the segregation and discriminatory practices in water access and management. It emphasizes the ethical and human rights implications of water distribution disparities. It refers to a system of water management and distribution that enforces and perpetuates significant inequalities between different groups, typically based on ethnicity or nationality. In the Israel-Palestine context, ‘hydro-apartheid’ highlights the systematic and institutionalized discrimination Palestinians face and in accessing water resources. The concept underscores the apartheid-like conditions where Palestinians are subject to strict controls and limited access to water, while Israeli settlers and citizens enjoy relatively abundant water supplies. Hydro-apartheid focuses on the stark disparity in water allocation and the oppressive policies that sustain this inequity.

- **Hydro-hegemony:** explains the underlying power dynamics and the multifaceted strategies Israel uses to maintain dominance over water resources. Provides a broader framework, including discriminatory practices and the strategic and ideological methods of maintaining and justifying water control. As conceptualized by Mark Zeitoun, involves the domination over water resources by a more powerful entity. This domination is achieved through a combination of coercive power, bargaining power, and ideational power. In the context of Israel and Palestine, Israel exercises hydro-hegemony by controlling the water resources and infrastructure, often through military and bureaucratic means. This control is further legitimized and perpetuated through diplomatic agreements and international narratives that portray the situation as cooperative and technically managed rather than politically and militarily imposed.

For example, Zeitoun's analysis of the Joint Water Committee (JWC, established after the Oslo Accords, serves as an example of hydro-hegemony. Despite being framed as a cooperative venture, the JWC reinforces Israel's control over water resources through bureaucratic and diplomatic means. Messerschmid's detailed descriptions of water access disparities and the impact on Palestinian communities align with hydro-apartheid, illustrating the immediate and lived realities of water inequality.

Understanding the nuances between these terms can be challenging. In an interview, included in **Appendix 3** with **Dr. Abdelrahman Al Tamimi**, Director General of the Palestinian Hydrology Group, he clarified the distinctions:

“Hydro-hegemony involves comprehensive control over everything, including water resources, regulation, pricing, and distribution. It's a political term of control.” He defined water apartheid as the *“unfair distribution of water between Israelis and Palestinians, specifically in the West Bank.”*

While Messerschmid and Zeitoun do not always explicitly differentiate between hydro-apartheid and hydro-hegemony, their combined use of these terms provides a comprehensive critique of water politics in Israel-Palestine. By examining both concepts, this thesis gains a deeper understanding of the mechanisms of control and the resulting inequalities in water access, challenging the prevailing myths of cooperation and scarcity. To fully grasp the dynamics at play, it is essential to consider both the systemic discrimination inherent in hydro-apartheid and the strategic, multi-level dominance described by hydro-hegemony.

[NOTES]

- [57] Pearce, *When the Rivers Run Dry*, 187.
- [58] Zeitoun, *Power and water in the Middle East*, 17.
- [59] “Mark Zeitoun,” Geneva Graduate Institute, accessed July 22, 2024, <https://www.graduateinstitute.ch/faculty/mark-zeitoun>.
- [60] Zeitoun, *Power and water in the Middle East*, 15-16.
- [61] Ibid.
- [62] Ibid.
- [63] Glavany, “Rapport d'information sur “La géopolitique de l'eau,” 117.
- [64] Ibid.
- [65] Ibid.
- [66] Ibid.
- [67] Elisabeth Koek, “Water for One People Only,” 90.
- [68] Ibid.
- [69] Ibid.
- [70] Ibid.
- [71] Ibid.
- [72] Ibid.
- [73] Michelle Rudolph and Rachel Kurian, “Hydro-Hegemony, Water Governance, and Water Security: Palestinians under Israeli Occupation in the Jordan Valley, West Bank,” *Water Alternatives* 15, no. 1 (2022): 73. <https://www.water-alternatives.org/index.php/alldoc/articles/vol15/v15issue1/654-a15-1-5/> file.
- [74] Mark Zeitoun and Jeroen Warner, “Hydro-hegemony – a framework for analysis of trans-boundary water conflicts,” *Water Policy* 8 (2006): 435. https://ueaeprints.uea.ac.uk/id/eprint/29466/1/ZeitounWarner_-_HydroHegemony_%28as_published%29.pdf.
- [75] Zeitoun, *Power and water in the Middle East*, 26-30.
- [76] Ibid.
- [77] “2nd International Conference: Water: Value and Rights, Occupied Palestinian Territory: Keynote Speakers,” Palestinian Water Authority, accessed July 21, 2024. <https://palast.ps/sites/default/files/inline-files/Keynote2.pdf>.
- [78] Messerschmid, “Hydro-Apartheid and Water Access in Israel-Palestine,” 53-67.
- [79] Ibid.

> **Illustration 2:** Diagram of authors and their perspectives on water apartheid.

[Created by Dania Al Sknini, based on the literature of chapter 2.]

Illustration 2 summarizes the perspectives of various authors on the concept of water apartheid, each offering unique definitions. Some of these definitions overlap or share similar meanings. In this thesis, these definitions are employed throughout the chapters and categorized into three main definitions:

[1] 'Inequitable Water Distribution between Palestinians and Israelis in the West Bank'

Location in thesis: Part 1, Chapter 4, 'Israel's Nationalized Water Management.'

This definition addresses the systematic inequity in water distribution, favoring Israeli settlers over Palestinians in the West Bank. It highlights significant disparities in access and availability of water resources between the two groups.

[2] 'Exploitation and Resource Control'

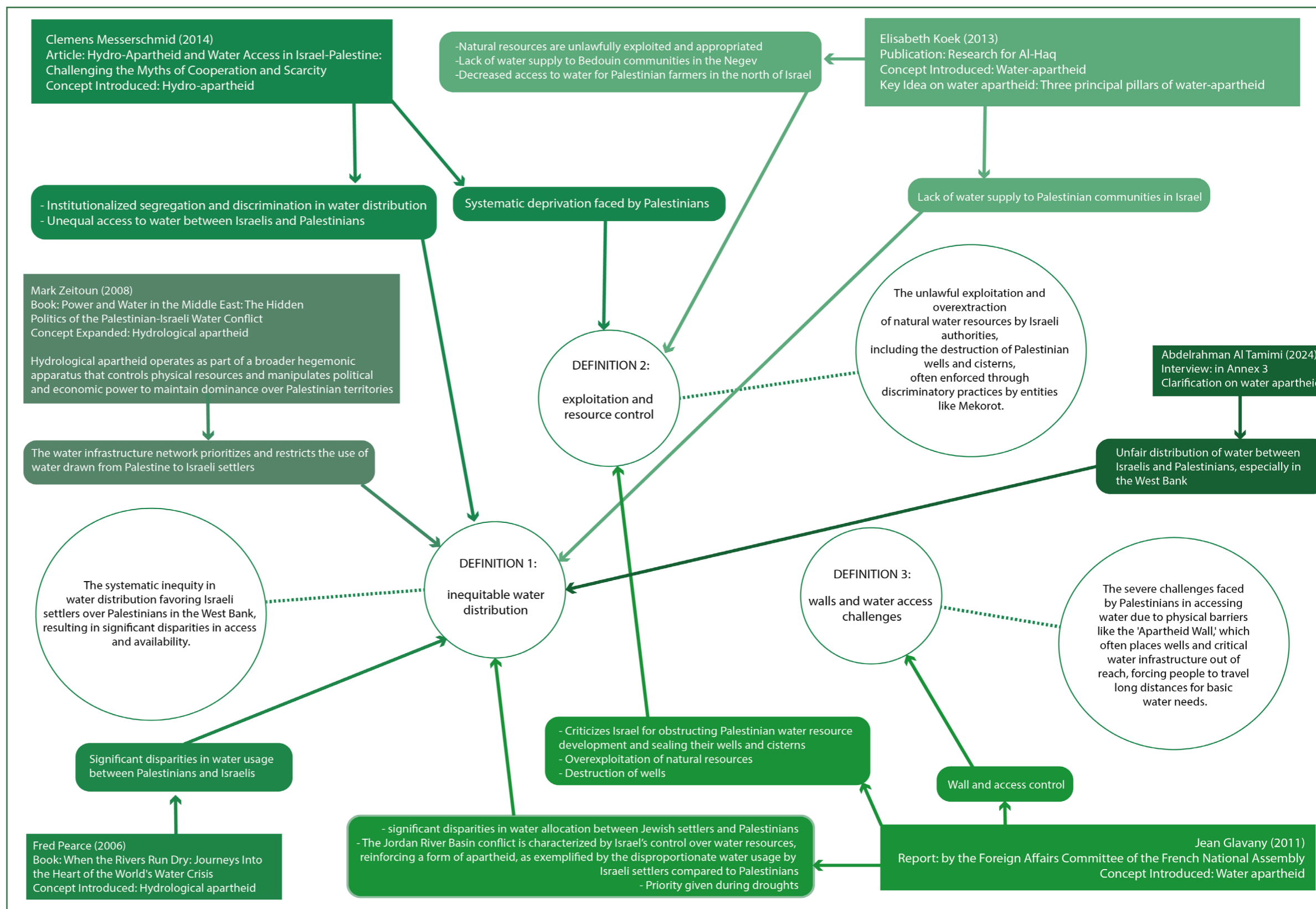
Location in thesis: Part 2, Chapter 5, 'Maintaining Economic Domination Through Exploitation of Natural Resources.'

This perspective focuses on the unlawful exploitation and overextraction of natural water resources by Israeli authorities. It includes practices such as the destruction of Palestinian wells and cisterns, enforced through discriminatory measures by entities like Mekorot.

[3] 'Barriers and Access Challenges'

Location in thesis: Part 2, Chapter 6, 'The Impact of the apartheid wall on Water Access.'

This definition discusses the severe challenges Palestinians face in accessing water due to physical barriers, such as the apartheid wall. These barriers often place wells and critical water infrastructure out of reach, forcing Palestinians to travel long distances for basic water needs.



CHAPTER 3: THE ACADEMIC DISCOURSE ON HYDRO-POLITICS

The structure of this literature review on 'the academic discourse on hydro-politics' follows two bodies of work: the master dissertation of Esmée van Weenen, which discusses four main approaches to 'transboundary water management' and cites relevant academics for each approach, and the book by Kinga Szálkai and Máté Szalai, which examines approaches attributed to different schools of thought within 'international relations' (IR).

When the Israeli military occupied the West Bank in 1967, they took control of the transboundary water resources and infrastructure, primarily including the Jordan River and the mountain aquifer. The interaction concerning these water resources between Israel and the Occupied Palestinian Territories (OPT) is partially regulated by the Oslo II Accords of 1995. However, the practical implementation of this agreement has entrenched Israeli control over Palestinian water access, resulting in a distribution that neither meets the needs of the Palestinian people nor constitutes a fair allocation of shared water resources.⁸⁰

Kinga Szálkai and Máté Szalai have significantly contributed to the discourse on shared waters with their book, 'theorizing transboundary waters in international relations. Their work bundles various water-related research, examining them through the lens of three approaches originating from various disciplines and schools.⁸¹

These approaches are the:

- [1.] Neo-realist approach
- [2.] Liberal institutional approach
- [3.] Neoliberal Cornucopian approach

In this thesis, the approaches outlined by Kinga Szálkai and Máté Szalai will be utilized to analyze transboundary waters, as these

approaches within recognized schools of thought in IR, it allows for a more structured and systematic analysis.

However, this literature review will demonstrate the contributions of various scholars, focusing on examining the original works of the academics referenced by Esmée van Weenen and adding additional perspectives. This ensures a deeper exploration of these authors and their impact on the discourse in hydro-politics.

[1. NEO-REALIST APPROACH]

One possible way to describe the first approach is through the neo-realist framework, also known as the '(neo-Malthusian conflict approach'. According to Kinga Szálkai and Máté Szalai, the neo-realist approach is linked to transboundary waters by positing that resources, including water, are limited and become even more scarce with population growth and environmental changes.⁸⁶ The scarcity, according to this theory, is likely to escalate into conflicts or "water wars" as described by Israeli scholars, Ariel and Shlomi Dinar, reflecting the ideas in Malthus' original theory.⁸⁷

The limited availability of water resources not only poses a risk of conflict due to scarcity but also highlights the vulnerability of states through their interdependence on shared water bodies. Water is a critical strategic resource vital for the security and survival of nations. Consequently, states theoretically seek complete and exclusive control over their water resources. However, this control is not feasible with transboundary waters, necessitating interaction and cooperation among states to ensure water security and supply. From the neo-realist perspective, this scenario is likely to foster competition for water, prompting unilateral actions by states to protect their resources and interests, thereby perpetuating ongoing tensions. Thus, the theory suggests a significant potential for conflict among states that share transboundary waters.⁸⁸

This argument primarily relies on the ideas of Malthusian concepts of conflict. Thomas Malthus (1798), a notable figure in the field of political economy, believed that resource scarcity and environmental changes can lead to (international conflicts between states over natural resources.⁸⁹

The concerns voiced by Malthus have continued to attract a following, with politicians and international organizations embracing the idea. Former UN Secretaries-General Kofi Annan and Ban Ki Moon have both expressed concerns for water-related wars.⁹⁰

Kofi Annan (2001, as cited in Dinar and Dinar) claimed that fierce "competition for freshwater may well become a source of conflict and wars in the future."⁹¹

A few years later, Ban Ki Moon (2007, as cited in Dinar and Dinar) claimed that the "consequences for humanity are grave. Water scarcity threatens economic and social gains and is a potential fuel for wars and conflict."⁹²

In his article 'Water, Security, Conflict, and Cooperation', Shlomi Dinar argues that competition for river water resources may escalate into conflict or even war between states.⁹³

Similarly, Nils Petter Gleditsch explores the potential for conflict over scarce resources, emphasizing the neo-realist perspective that scarcity can lead to water wars.⁹⁴

Mark Zeitoun points out the lack of empirical evidence supporting this theory, saying, "even for those states still formally at war with each other, as Israel and Lebanon, there is not likely to be a 'water war' in the future."⁹⁵

Zeitoun has provided additional clarification on the reasons for the absence of wars over water. He highlights the economic and strategic value of water, which is considered less valuable than oil or natural gas. The concept of 'virtual water' and the power imbalances between the states or entities are according to him also involved. He explains that the majority of the (agricultural) water available to a state is typically used for food production. Its economic value is dependent on the value of the food it produces. Meanwhile, the economic value of oil and natural gas is significantly higher due to their strategic importance, calling as "they can fuel a war machine, unlike water."⁹⁶

Professor Tony Allan introduced the concept of 'virtual water' in 1996, which refers to the water used to produce imported food, such as wheat. This virtual water often exceeds local water supplies, like the Nile's flow in Egypt. By importing food, countries can access this 'politically stress-free' water, avoiding contentious disputes with neighbors and supplementing inadequate local resources.⁹⁷

This strategy has enabled Middle Eastern governments to manage water shortages and maintain stability without escalating regional tensions, especially during periods of low grain prices. Despite the benefits, regional political complexities often hinder the adoption of coordinated water management policies.⁹⁸

According to Mark Zeitoun,, power imbalances among states or entities mean that significantly weaker states are aware of their subordinate position within their regional context, which in turn reduces the chances of water conflicts turning into water wars. Zeitoun (2008, as cited in van Weenen) notes that "infinitely weaker states 'know their place' in their regional neighborhood."⁹⁹

Application to water apartheid: The unequal distribution of water resources in the West Bank is a prime example of how resource scarcity can lead to systemic conflict and control. Israel's strategic control over water resources ensures its dominance and security, reflecting the neo-realist perspective of states seeking to secure vital resources.

Critique and empirical evidence: Mark Zeitoun critiques the idea of "water wars" by highlighting the lack of empirical evidence for such conflicts. Instead, he argues that power imbalances and economic considerations often prevent conflicts from escalating into wars. This critique supports the concept of water apartheid, where systemic inequalities are maintained through sustained domination rather than direct conflict.

[THE MYTHS OF THE TERM 'WATER SCARCITY']

Water scarcity is a significant reality for Palestinians in the West Bank. However, it's crucial to acknowledge that it is politically- "induced", and it would be misleading to portray it as a natural pre-condition. As will be discussed in more detail, water scarcity is used by the Israeli government to securitize the issue of sharing water with the Palestinians, aiming to legitimize denying Palestinians access to adequate amounts of water.¹⁰⁰

In 1969, Levi Eshkol, former Prime Minister of Israel, declared:

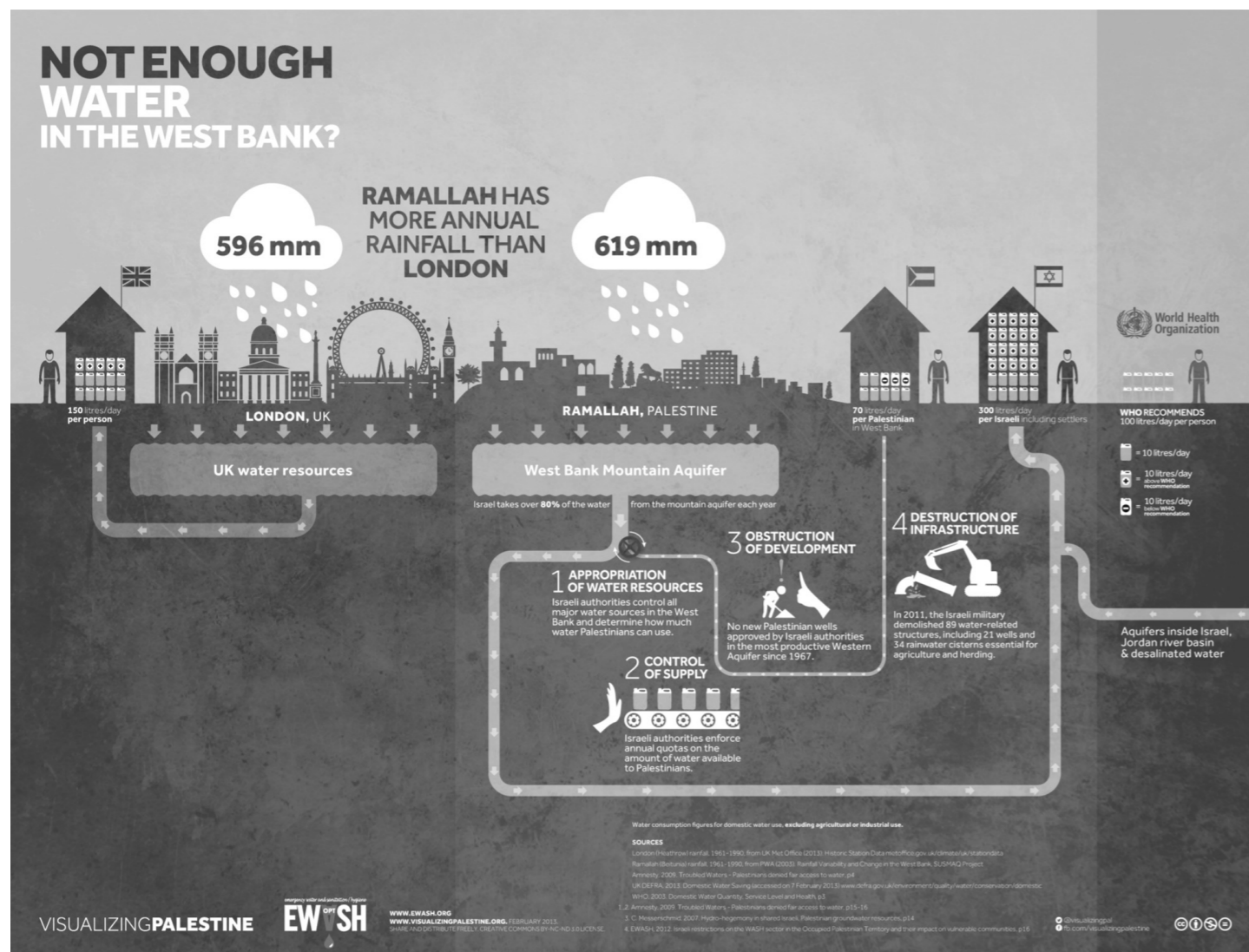
*It was only after the Zionists 'made the desert bloom' that they " [the Palestinians] became interested in taking it from us."*¹⁰¹

This statement perpetuates the myth that Palestinians only showed interest in the land after Israeli efforts transformed it.

v Illustration 3: Not enough water in the West Bank?

This illustration shows that Ramallah, Palestine, receives more annual rainfall than London. Despite this, Palestinians have limited water access due to Israeli control over water resources, leading to significant disparities in daily water usage.

[Source: "Not Enough Water in the West Bank?" Visualizing Palestine, March 2013, <https://visualizingpalestine.org/visual/west-bank-water/>]



Similarly, in 1970, Shimon Peres, then Israeli Minister of Information, stated:

*The country " [Palestine] was mostly an empty desert, with only a few islands of Arab settlement; and Israel's cultivable land today was indeed redeemed from swamp and wilderness."*¹⁰²

This statement reflects a long-standing narrative that frames the country Israel as the developer of barren lands, thereby justifying the control over these lands and their resources.

However, the truth is that Palestine has always been rich in water resources and the area receives significant rainfall.¹⁰³ The Israeli government has perpetuated this myth of water scarcity, presenting itself as the nation that has made "the desert bloom". Aseil Abu-Baker, a researcher and expert in Middle Eastern water politics, elaborates on how this myth is used by the Israeli government to hide its exclusive and unlawful control over Palestinian water resources in the OPT, particularly in the West Bank.¹⁰⁴

After the Six-Day War in 1967, when Israel took control of the West Bank, including East Jerusalem, and the Gaza Strip, scholars like Messerschmid widely agree that one of the main reasons for this occupation was to gain control over the region's ground and surface water resources. Since then, the Israeli government has implemented various discriminatory policies and practices, such as military orders, an unfair water-sharing agreement, and a permit system. These measures have been instrumental in establishing and sustaining a comprehensive system of control over water resources, effectively denying Palestinians their sovereign rights over these vital resources.¹⁰⁵

In 'Water Security for Palestinians and Israelis,' Ward, Learmont, and Ruckstuhl challenge the conventional discourse on water scarcity by asking, "How much water does an economy or society truly require?" Rather than focusing on arbitrary thresholds for per capita water availability per year, they argue that the critical issue is how a nation utilizes its water resources. For example, an economy experiencing rapid urbanization and industrialization might face water scarcity despite abundant resources if most of its water is allocated to agriculture. This scarcity is not inherent but rather a result of past decisions. In their analysis, they refrain from transcending this definition of scarcity.¹⁰⁶

In his paper, 'What price cooperation? Hydro-hegemony in shared Israeli- Palestinian groundwater resources,' Messerschmid contends:

*"Nobody would claim that the lands of historical Palestine, which now contain both Israel and the occupied Palestinian Territories, are water-rich. Yet, if any area in the Arab Middle East is blessed with sufficient rainfall, it is the West Bank (along with Lebanon and some areas of Yemen)."*¹⁰⁷

This perspective is further supported by Emily McKee, Professor of Anthropology at Northern Illinois University, who states:

*"This region's scarcity of fresh water is often raised as a key factor in the Israeli-Palestinian conflict and, indeed, Israel and Palestine are typically referred to as arid and semi-arid drylands [...] However, a closer look at water and its role in Palestinian-Israeli relations shows that neither the designation of scarcity nor the grouping of Israel, Jordan, and Palestine into the same condition of scarcity can be easily taken for granted."*¹⁰⁸

McKee highlights significant differences in annual rainfall across the country. Her research indicates that southern Israel, receives minimal rainfall, averaging around 20 mm per year whereas the West Bank mountains and Galilee receive much higher rainfall, nearly 800 mm annually. Emily McKee points out that Ramallah, Palestine, receives more annual rainfall than London, a city well-known for its frequent rain.¹⁰⁹

This is also depicted in illustration 3 by Visualizing Palestine, where the rainfall data is the most important aspect to consider. Furthermore McKee (2022) argues that "scarcity is neither fixed nor objective. This region is more arid than many places on the planet, but water scarcity is shaped by inequitable distribution, the domination of water by some at the expense of others."¹¹⁰

While the term of water scarcity in the West Bank suggests a natural and inevitable lack of resources, it is essential to recognize the political dimensions of this issue. The Israeli government's control over Palestinian water resources exemplifies a politically induced scarcity rather than a genuine natural deficiency. Historical statements by Israeli leaders have perpetuated myths about the land and water resources, framing Israel as the developer of barren lands and justifying control over these resources. However, evidence shows that Palestine has significant water resources, and the region receives substantial rainfall, contradicting the scarcity term.

[2. LIBERAL INSTITUTIONAL APPROACH]

The second approach, and one that is arguably the most relevant in academic literature, according to Szálkai, Szalai and Esmée van Weenen, is the liberal institutional approach, also known as 'neoliberal institutionalism' or 'Neoliberalism' approach.¹¹¹ This approach focuses on the role of (international institutions and their capacity to increase to stability among states within the international system. Much like the Neo-realist approach, liberal institutionalists acknowledge that interactions over shared water resources can lead to conflicts between countries sharing these water boundaries. However, they contend that establishing effective institutions can facilitate cooperative management of shared water resources.¹¹²

For example, Jean Axelrad Cahan asserts that there is a broad consensus on the importance of institutions that oversee entire river basins and can continue their operations during periods of political or economic instability.¹¹³

Furthermore, in the same volume, Neda A. Zawahri argues that interstate commissions should be giving more responsibility and capabilities for managing shared water resources Both authors emphasize the significance of international agreements in addressing conflicts over transboundary water resources.¹¹⁴

Aaron Wolf (2001, as cited in Esmée van Weenen has argued that despite the inherent difficulties, treaties "are not only the best representation of local needs and settings, but they also carry the highest priority in international law."¹¹⁵

In 2009, Wolf explores water cooperation among riparian states from a different perspective, posing the critical question of why countries sharing a basin collaborate on water issues, even when they do not cooperate on other matters. He contends that water is inherently conflictual and that existing theories have not adequately explained instances of water-related cooperation.¹¹⁶

However, Zeitoun and Warner contend that these perspectives ignore the reality that treaties emerge from negotiations between parties with often unequal power. They suggest that the more powerful party typically holds a stronger position during these negotiations, enabling them to shape the treaty in ways that reinforce the existing advantageous conditions. Once the treaty is in place, it can then be used as leverage over the weaker party.¹¹⁷

Application to water apartheid: This approach can be linked to water apartheid by examining how treaties and international agreements, such as the Oslo Accords, ostensibly promote cooperation but in

practice reinforce Israeli control over water resources. The liberal institutional approach highlights how these institutions can perpetuate existing power imbalances rather than resolving them.

[3. NEOLIBERAL CORNUCOPIAN APPROACH]

The “Environmental Peacebuilding theory,” in words of van Weenen offers a contrasting perspective to the Neo-realist approach. According to van Weenen, it “*focusses on the ways in which the environment (including increasing water scarcity can foster peace instead of resulting in wars.*”¹¹⁸

The Neoliberal Cornucopian approach acknowledges the political, economic, environmental, and geographical interdependencies in transboundary water relations can lead to conflict. However, it argues that these interdependencies more often drive states towards cooperation to find common solutions, as the benefits of cooperation outweigh those of unilateral actions. Armed water conflicts are unpredictable and costly for all parties, making cooperation a more cost-effective and beneficial strategy.¹¹⁹

Cornucopians believe that even with scarce and finite water resources, careful management can foster cooperation rather than conflict. They identify various approaches to reduce tensions and enhance cooperation over transboundary waters. For example, the theory of environmental peacebuilding suggests that the shared use of transboundary waters can facilitate broader cooperation between states, countering the neo-realist approach that scarcity inevitably leads to conflict.¹²⁰

According to Van Weenen, the theory is based on two main ideas. First, the environment can serve as a unifying element that fosters peace between conflicting parties by transcending individual interests and promoting a shared collective identity. Second, conflicts over scarce resources like water can be effectively resolved through joint management, aligning with the liberal institutionalist approach that emphasizes cooperation and shared governance.¹²¹

Clemens Messerschmid, however challenges the Neoliberal Cornucopian approach. He asserts that in the context of transboundary water distribution between Israel and Palestine, the discourse of climate change is used to divert attention from the fundamentally political nature of the issue. This approach, he argues, uses environmental concerns to justify maintaining the current situation rather than addressing and resolving the underlying conflict.¹²²

To further this discussion, the concept of “green colonialism” has become important in recent years (**illustration 4**). This term refers to a range of policies and actions where “green discourses” are used to uphold colonial structures and worsen the loss of land and rights among Indigenous communities. Such practices often marginalize Indigenous people in conservation and renewable energy projects. Additionally, greenwashing efforts can use environmental protection as an justification for land grabbing and displacing local populations.¹²³

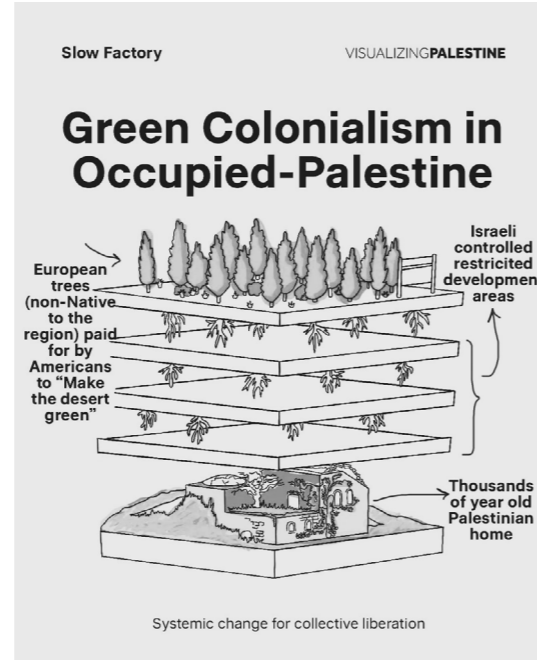
In her dissertation ‘Israel: Greenwashing Colonialism and Apartheid,’ Ghada Sasa applies green colonialism as a theoretical framework to describe Israeli policy, defined as the “*use of environmental policy to*

advance a colonial agenda.”¹²⁴

In the poster by Visualizing Palestine, it is stated that Green “*colonialism describes how some organizations, policies, or programs harm the land and rights of indigenous peoples in the name of environmental protection or climate change mitigation, reinforcing colonial legacies.* [...] *In Palestine, Israel uses parks, nature reserves, forests and agriculture to conceal the ruins of depopulated Palestinian villages, appropriate land, and curtail Palestinian access and development.*”¹²⁵

Messerschmid contends that the environmental narrative propagated by the Israeli government serves to maintain the status quo rather than resolve conflicts. He believes these water ‘myths’ lead to misguided donor interventions. He argues that Palestinians should engage in a public opinion and should challenge the “*myths of scarcity*” and “*cooperation while revealing the reality of Israel’s hydro-apartheid.*”¹²⁶

Application to water apartheid: By linking these points, it becomes clear that water apartheid in Israel and Palestine is not just an environmental issue but a deeply political one. The theories and concepts discussed highlight how environmental narratives can be used to maintain unequal power dynamics and control over water resources, perpetuating the marginalization and discrimination of Palestinians. The concept of “green colonialism” can be employed to critique how environmental policies are used to advance colonial agendas, using environmental protection as a façade to reinforce colonial legacies and control over Palestinian resources.



^ **Illustration 4:** Green Colonialism in Occupied-Palestine

This illustration by Visualizing Palestine and Slow Factory highlights “green colonialism” in Occupied Palestine, showing how environmental policies like planting non-native trees and creating restricted areas displace Palestinians, conceal their homes’ ruins, and limit their access to land, reinforcing colonial legacies.

[Source: “Green Colonialism” Visualizing Palestine, January, 2022, <https://visualizingpalestine.org/visual/green-colonialism/>.]

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< Illustration 5: The Jordan River

[Edited by Dania Al Sknini, source:

United Nations Economic and Social Commission for Western Asia (UN-ESCWA) and Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), "Inventory of Shared Water Resources in Western Asia," (June 20, 2013): 170. https://www.unescwa.org/sites/default/files/pubs/pdf/e_escwa_sdpd_13_inventory_e.pdf]

PART 1: SHARED LAND, DIVIDED WATERS: ISRAELI WATER SECURITY

PART 1: SHARED LAND, DIVIDED WATERS: ISRAELI WATER SECURITY

CHAPTER 4: ISRAEL'S NATIONALIZED WATER MANAGEMENT

The story of water in the land that once called Palestine is as Ward, Learmont, and Ruckstuhl describe, *“the story of two peoples who, a hundred years ago, set out from the same common point, from the same natural endowment, the same technology, the same level of economic development, the same level of water services – and who faced the same risks of drought and flood and insecurity.”*¹²⁷

Today, the differences between these two groups are most noticeable when looking at the question of water.¹²⁸

The Israeli government has nearly achieved complete water security for its citizens. Israelis in the sovereign area and those living in West Bank settlements benefit from an abundant supply of water for household use, public consumption, and agriculture, even in the desert regions. As noted by Ward, Learmont, and Ruckstuhl in their book *‘Water Security for Palestinians and Israelis,’* the nation has achieved complete water autonomy, controlling all their water resources across the country.¹²⁹

Water is available for (almost) all human and economic needs, with over 247 liters of water per person per day in 2020.¹³⁰

Israelis have achieved efficiency in water production and utilization, to the extent that they now export their expertise and technology globally. The authors emphasize that *“every precious drop of natural water is valued, used and reused.”*¹³¹

Desalination plants along the Mediterranean convert seawater into fresh water. This water is then stored and distributed as required throughout the country via a national pipeline network. As Ward,

Learmont, and Ruckstuhl explain, *“one network carries drinking water to households; another carries clean recycled wastewater for farmers to grow food and produce for a rich export trade and to green the environment.”*¹³²

Due to its innovative water management, Israel has earned the title of *“water superpower,”* according to B’Tselem and the authors Ward, Ruckstuhl, and Learmont. This in stark contrast with its *“arid neighbours.”* as described by the authors.¹³³

Within the same land, neighboring the sovereignty area, are two territories where the Palestinians experiencing some of the most notable conditions concerning water. Water infrastructure in the West Bank is often poor. The average amount of water flowing out of the tap in the West Bank is about 82.4 liters per person per day in 2020, compared to the Israelis’ 247 liters (**illustration 6**).

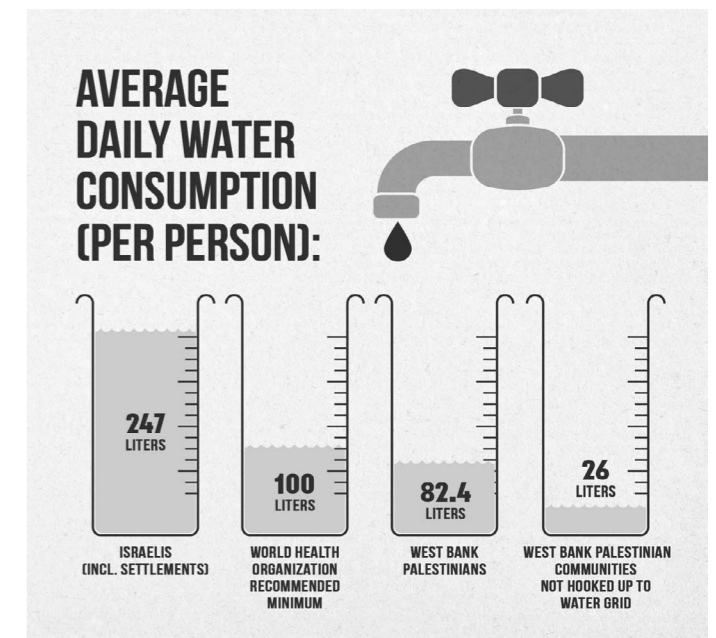
According to the World Health Organization (WHO), a minimum of 100 liters per person per day is recommended to meet basic human needs. Palestinians in some villages such as Dura and Yatta in Area C (**MAP 4**) frequently have access to no more than 26 liters of water per day on average.¹³⁴

Palestinian residents in these towns consider themselves as fortunate if they receive tap water once every month or two, due to the corrosion of their water systems from prolonged disuse. Consequently, numerous households have resorted to disconnecting their water supply and harvesting water from the roadways instead.

With limited access to water, most Palestinians rely on their more ‘powerful neighbour’, to purchase water, as the Israeli government controls around 85% of water resources in the West Bank.¹³⁵

The exact figures for average daily water consumption per person vary. The numbers mentioned earlier are from B’Tselem, which sourced its data from the Israel Water Authority for Israeli usage and the Palestinian Central Bureau of Statistics for Palestinian usage. However, authors Ward, Learmont, and Ruckstuhl present different figures, citing as low as 65 liters per day for Palestinians in the West Bank and 25 liters per day for Palestinians in Area C regions, such as Bedouin communities. They report Israeli consumption at 263 liters per day.¹³⁶ Even though the authors use slightly different figures, the disparities in water usage remain the same: Israelis have access to more water than Palestinians.

This chapter explores the background of the unequal water distribution between Palestinians and Israelis in the West Bank, aligning with the first definition of water apartheid. It examines Israeli water security and its nationalized water management before delving into the dynamics of water apartheid in the West Bank in Part 2. Understanding Israel’s historical approach to water management provides context for the current situation. It reveals power dynamics, military orders, resource allocation disparities, and highlights various infrastructure developments. This sequential approach lays the groundwork for analyzing the politics of drinking water in the country.



^ Illustration 6: Average daily water consumption (per person/day)

[source: “Parched: Israel’s policy of water deprivation in the West Bank,” B’Tselem, May, 2023, https://www.btselem.org/publications/202305_parched.]

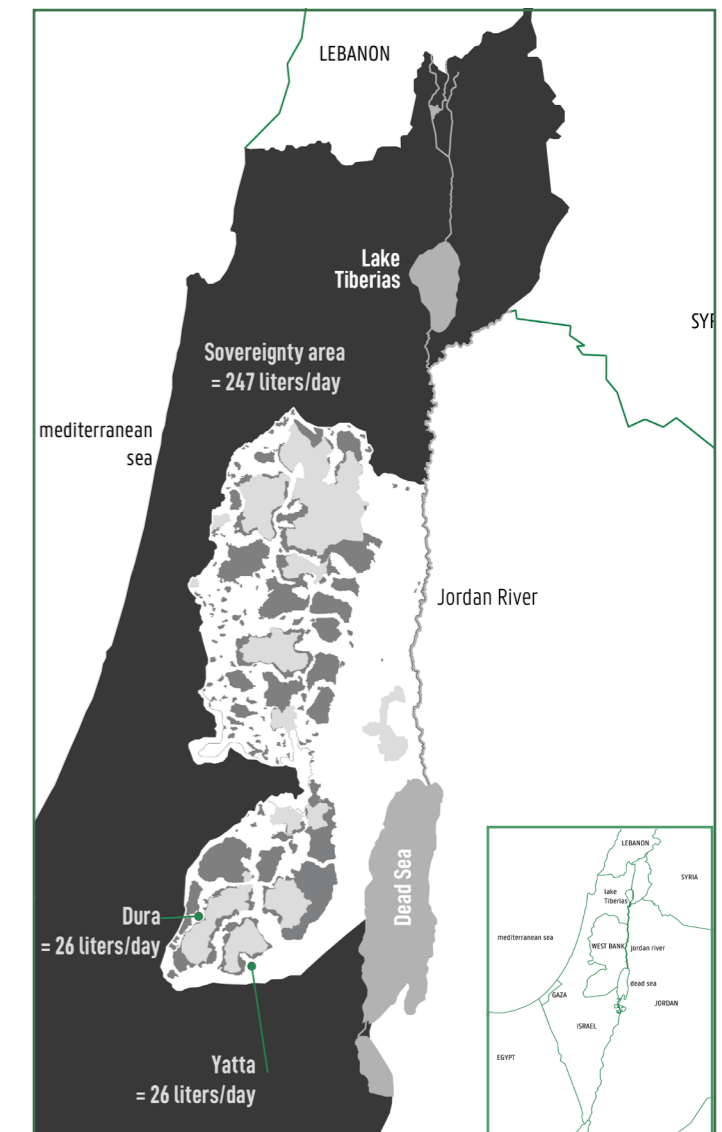
> MAP 4: Average daily water consumption per person, per region.

[Created by Dania Al Sknini, based on the info of B’Tselem

Source: “Parched: Israel’s policy of water deprivation in the West Bank,” B’Tselem, May, 2023, https://www.btselem.org/publications/202305_parched.]

Legend:

- Israeli Settlements = 247 liters/day
- Area A = 82,4 liters/day
- Area B = 82,4 liters/day
- Area C (Bedouin villages)= 26 liters/day



[EARLY NATIONALIZATION]

In Israel, water has been considered a national asset since the early days of migrations in the nineteenth century, reflecting the high value of “*Water belongs to the nation*” as noted by Ward, Learmont, and Ruckstuhl.¹³⁷

Following the establishment of the state in 1948, there was a swift move towards the nationalization of water resources, driven by the belief that centralized governance would better manage the scarce and invaluable resource, thus ensuring what the authors describe as “*wise government [...] rather than by a myriad of users.*”¹³⁸ This approach was formalized through a series of laws enacted in the early years of independence, which brought water management into public ownership.

In 1955, Israel enacted its first legal regulations on groundwater sources, which was at the time the primary water source. Experience from other countries had already demonstrated that allowing farmers, industries, and households to oversee the development and management of groundwater resulted in competitive over-extraction. This escalated with the introduction of ‘tube wells’ and ‘powerful electric pumps’, allowing the owners of wells to drill deeper and extract larger amounts of water.¹³⁹ Under the 1955 law, a permit was required for any groundwater development, quotas were assigned, and all extraction had to be measured and controlled.¹⁴⁰

Furthermore, the occupation in the West Bank gave the Israeli military the “*opportunity to freely formulate its policies towards the use and exploitation of water resources*” as well as to reorganize water governance to its benefit, all under the authority of military law.¹⁴¹ In 1967 and 1968, Israeli authorities enacted several Military Orders, including Military Order No. 92, which granted the Israeli Military Area Commander the authority to take over all water resources and regulate their availability in the West Bank and Gaza.¹⁴²

Following this, Military Order No. 158 came into effect quickly. This order established a permit system that prohibited and criminalized any development within the Palestinian water sector, including wells, springs, pipes, reservoirs, and household cisterns, unless an official permit was obtained from the Military Commanders.¹⁴³

Emily McKee's article in 2022 states this broad scope of Israel's water governance as: “*Within the State of Israel, all water, [which include the West Bank], whether falling from the sky, flowing in streams or lakes, or existing in aquifers, is legally public [Israeli] property, to be managed by the [Israeli] state for “the needs of its residents and the development of the country.”*¹⁴⁴

Additionally, Jan Selby, a scholar specializing in environmental politics, notes in his 2013 work that Israel granted itself the authority to “*approve, revoke or amend [any water license] without justification.*”¹⁴⁵

These military orders marked a crucial moment by declaring water to be property of the nation and extinguishing all private rights. They are still in effect in the West Bank, which still remains under the occupation.

Israel's approach to nationalizing water resources was particularly innovative due to its effectiveness. The idea that water is a national asset was a common belief. Numerous countries have laws mandating state ownership and regulation of water resources, a practice with historical roots in the Middle East. In Israel, on the other hand, there were several differences, according to Ward, Learmont and Ruckstuhl.¹⁴⁶

- The first notable difference was that unlike in most countries where existing laws, property rights, and practices obscured the situation, Israel had certain advantages compared to other nations with long legal histories. The state of Israel could start with a new state instead of having to contend with established property laws and customs that often complicate resource management. This opportunity enabled the country to enact new water regulations with the broad support of the Jewish community, who shared a spirit of collective ownership stemming from their experience establishing settlements in the region. This widespread support fostered respect for the law and promoted adherence to it.¹⁴⁷

- Another difference from the laws governing communal ownership of water resources in other countries was the comprehensive control exercised over all types of water resources. This included not only surface water but also groundwater, traditional sources such as rainwater, and unconventional sources like wastewater. The Israeli administration demonstrated remarkable effectiveness in implementing these regulations.¹⁴⁸

- A final, important difference was that Israel combined establishing centralized control with an infrastructure plan that essentially provided the state with ideal capacity to implement that control. Due to the nationalization of water, the state of Israel successfully centralized its water management system, allowing for strategic planning, investment, and comprehensive oversight of the water cycle.¹⁴⁹

As Uri Shani former head of the Israel Water Authority (IWA) (2013, cited in Ward, Learmont and Ruckstuhl) stated that:

*“We govern the whole cycle of water, from the first drop to final use.”*¹⁵⁰

This highlights the control and oversight the Israeli state maintains over its water resources, ensuring efficient management.

The state manages its water resources through a centralized national water company called Mekorot and a infrastructure network centered around the National Water Carrier. Water access is available to all Israelis, with pricing being the only limitation, and standardized water tariff schedules are implemented nationwide for both households and businesses.¹⁵¹

The concept of water as a vital national asset is deeply rooted in Israeli social beliefs. This collective mindset fosters a culture of water saving and reinforces the notion that water is a symbol of Israel's development and accomplishments. According to Ward, Learmont and Ruckstuhl, “*water is, in many ways, a source of national pride and – it must be admitted – water is seen by Israelis as an indication of superiority over other nations which, facing the same*

*water constraints, have failed to achieve the same measure of water security.”*¹⁵²

Israeli Professor in environmental sciences, Arnon Soffer (2001, cited in Ward, Learmont, and Ruckstuhl), further reinforces this perspective of national pride by stating:

*“With water, collective ownership is one of the reasons why we are able to be a villa in a surrounding jungle.”*¹⁵³

At the level of political economy, the Israeli government has made a social agreement regarding water. The public has consented to surrender control and ownership of water resources to the state in exchange of high-quality services. Israelis have agreed to empower the government to manage water, set prices, and allocate water in return for water security.¹⁵⁴

The Israel Water Authority (IWA) was established in 2007, this institution traces its origins to the 1959 Water Law, which created a Water Commission led by a water commissioner tasked with overseeing all water-related activities in Israel.¹⁵⁵

However, one major flaw with this arrangement soon emerged. The Commission was placed under the political jurisdiction of first the Ministry of Agriculture, which naturally directed water investments and supplies toward agriculture. Later, it came under the Ministry of Infrastructure, which focused on engineering and water supply aspects. Eventually, the Israeli government decided to reform the Water Commission to enhance its autonomy, allowing it to operate with a long-term perspective independent of sectoral interests.¹⁵⁶

Consequently, the Water Law was revised, and the Commission was reconstituted as the autonomous Israel Water Authority. This new agency was tasked with water-related management, planning and regulation of the entire water sector, including drinking water and sanitation, wastewater treatment, and irrigation. It was granted full authority to operate without political interference. Additionally, other existing regulatory bodies within the water and sanitation sectors were integrated into the IWA.¹⁵⁷

However, Mekorot, the National company, wields significant power over water supply and sanitation services in the West Bank. Mekorot is responsible for water supply and sanitation services across nearly the entire country, owned by the Israeli government. Mekorot's role includes supplying water and treating wastewater, effectively controlling the practical aspects of water management on a national scale. In contrast, the Palestinian Territories' water resources are legally designated as public property intended to be managed by the Palestinian Water Authority (PWA). Yet, in practice, the control and supervision of water in these areas are carried out by Mekorot.¹⁵⁸ This will be further discussed in the following part of this thesis.

[INTRODUCING MEKOROT: ISRAEL'S NATIONAL WATER COMPANY]

Mekorot was founded on 15 February 1937 by water engineer Simcha Blass, Pinchas Sapir, who would later serve as Minister of Finance (1963-1968). and Levi Eshkol also known as one of the founding fathers of the State of Israel. Eshkol served as Israel's third prime minister from 1963 to 1969, guiding the nation through the 1967 Six-

Day War. In addition to his political leadership, he played a significant role in the development of Israel's water infrastructure, contributing to the founding of Mekorot, the national water company.¹⁵⁹ Mekorot, has managed most of the water infrastructure in the West Bank after assuming control from the military administration in 1982.¹⁶⁰

The Ministry of Defense, under the leadership of Ariel Sharon, sold the entire water infrastructure of the West Bank to the semiprivate entity Mekorot for a nominal fee of one shekel (0.25 euro). This transition transformed what was previously under military control into the property of a state-owned company.¹⁶¹

According to James Fergusson's 2023 book, the British journalist and foreign correspondent notes that Israelis often associate Mekorot with Zionism itself, attributing to it a unique and revered status as a water utility. Many Israelis view Mekorot as being on a sacred mission, directly associated with a holy endeavor.¹⁶²

Fergusson elaborates that the founders of Mekorot conceived of the company in this light and deliberately sought to reinforce this notion through its name. He shares a legend about the naming process: “a board member found a verse in the Book of Psalms [Psalms 93:4] that says ‘*the voice [Mekolot] of God is greater than water*’, but accidentally transcribed Mekolot as Mekorot. The mistake was allowed to stand, because Mekorot serendipitously means ‘sources’: a good name for a water company.”¹⁶³

In today's Israel, it holds responsibility for various aspects of water management, including water infrastructure development, bulk water supply, desalination and wastewater treatment. Furthermore, Mekorot has expanded its reach globally through international partnerships aimed at developing water resources and supply in countries like India, Cyprus, Uganda and Argentina.¹⁶⁴

In recent years, there has been notable protest against Mekorot, particularly documented in Spanish articles and websites under the banner of “*Apartheid Del Agua Mekorot.*” This protest has been primarily international, although B'Tselem, the Israel-based human rights organization, has also criticized Mekorot's role in the occupied territories. Despite this, the impact of such protests within Israel itself has been relatively limited.

Numerous international organizations have addressed Mekorot's involvement, with a 2013 report from the research center ‘Mi Marviha?’ (Who Profits?) identifying Mekorot as “*the Israeli government's executive arm in the OPT for water issues,*” highlighting its significant role in the Israeli occupation.¹⁶⁵ The report outlines several key manifestations of Mekorot's involvement:

Firstly, according to the research center, Mekorot's dominance in the Palestinian water market is underscored by its control over nearly half of the domestic water consumed in the West Bank, positioning it as the largest single water supplier in the OPT. Under the Oslo Accords, Mekorot has the authority to control up to 85% of the Mountain Aquifer's water, further solidifying its control over Palestinian water sources. This control extends to supplying water to Israeli settlements and military bases in the OPT, with seventy percent of water allocated to settlements in the Jordan Valley sourced from Mekorot drillings.¹⁶⁶

Furthermore, the report argues that that Mekorot's provision of water to settlements significantly surpasses that to Palestinian communities, exacerbating the water crisis in the West Bank. The company further compounds this disparity by restricting water supplies to Palestinians, particularly during dry summer months, while maintaining discriminatory pricing policies that charge Palestinians higher rates than Israelis.¹⁶⁷

Moreover, the research contends that Mekorot's extensive pumping activities have depleted water quantity in Palestinian springs and wells, jeopardizing the water supply for both Palestinians and Israelis. Despite these implications, Mekorot's operations disregard the Green Line, (which will be discussed in Part) treating Israel and the OPT as a single territory and omitting Palestinian communities from its maps, further perpetuating its control over the region's water resources.¹⁶⁸

Overall, aligning with the report's findings, Mekorot's efforts in developing and maintaining the water infrastructure strengthen Israeli control over the West Bank, prioritize settlers, and overlook the needs and presence of the local Palestinian population. This perspective is also supported by numerous scholars, including Messerschmid, as detailed in the following part.

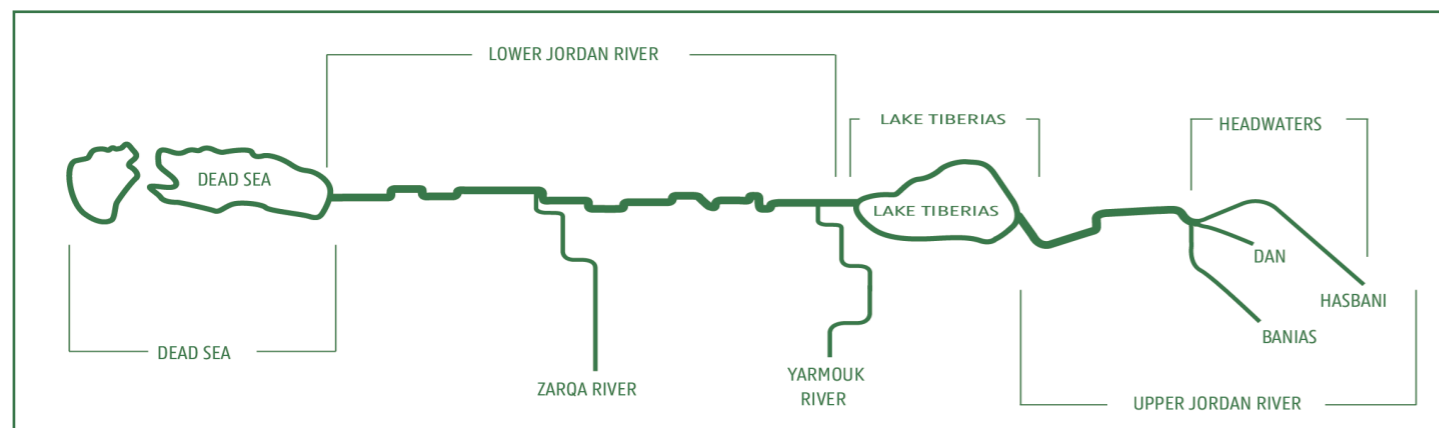
[THE ROLE OF THE NATIONAL WATER CARRIER]

Long before Israel became a state, leaders in British Mandatory Palestine prioritized securing water resources in the region. They developed strategies to divert water from the Jordan River to the Mediterranean coastal plain to support irrigation and provide drinking water. To implement this vision, the national water company Mekorot, established in 1937, made this its largest water project. Today, the Israeli government primarily utilizes the Jordan River in the Upper Jordan area (illustration 7) and Lake Tiberias (also known as the Sea of Galilee), which is the only freshwater reservoir in the Jordan River basin (MAP 5).¹⁶⁹

v **Illustration 7:** Schematic drawing of the Jordan-Yarmouk River system with the upper Jordan area.

[Edited by Dania Al Sknini, source:

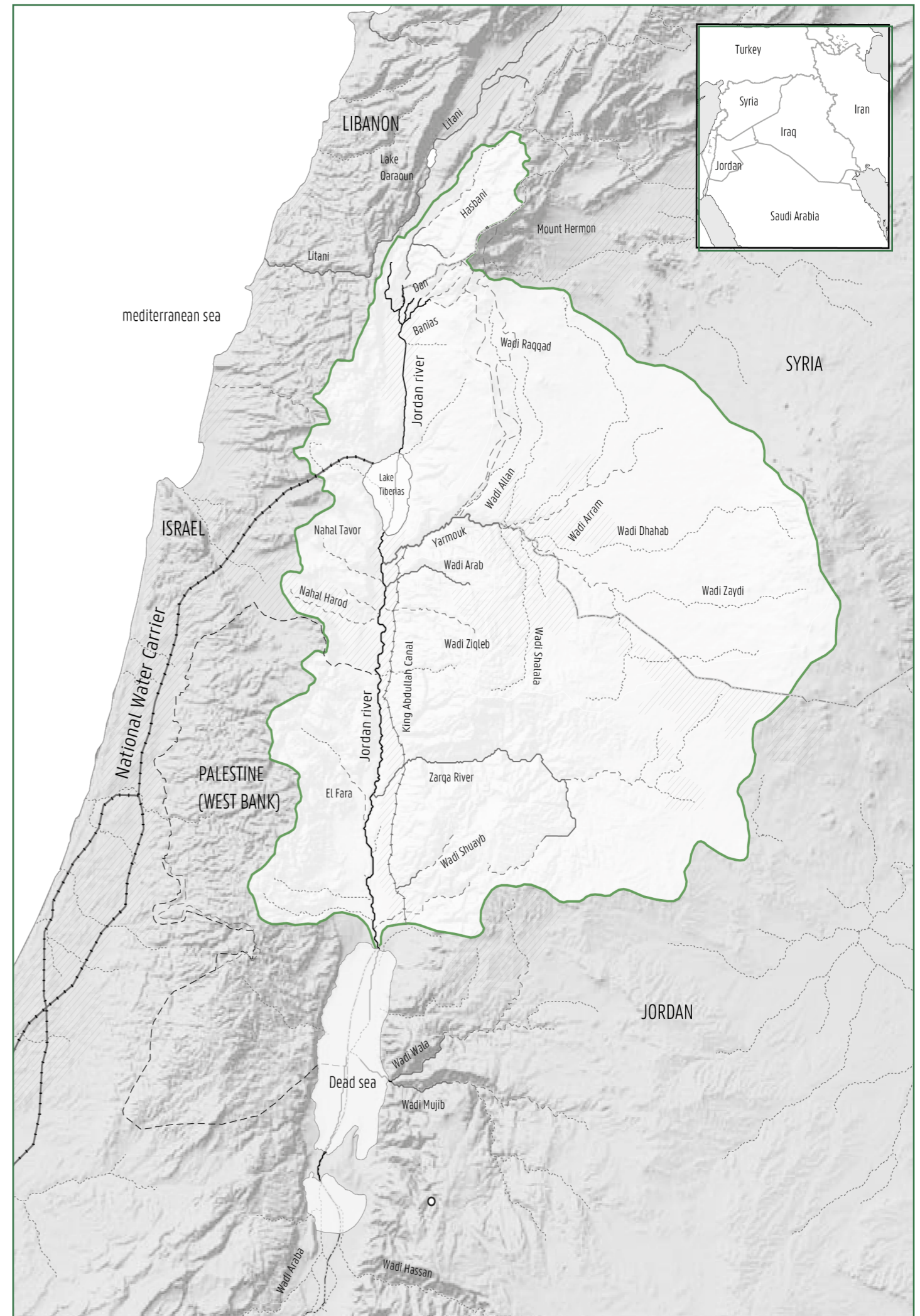
United Nations Economic and Social Commission for Western Asia (UN-ESCWA) and Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), "Inventory of Shared Water Resources in Western Asia," (June 20, 2013): 177. https://www.unescwa.org/sites/default/files/pubs/pdf/e_escwa_sdpd_13_inventory_e.pdf]



> **MAP 5:** Location of the Jordan River Basin.

[Edited by Dania Al Sknini, source:

United Nations Economic and Social Commission for Western Asia (UN-ESCWA) and Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), "Inventory of Shared Water Resources in Western Asia," (June 20, 2013): 173. https://www.unescwa.org/sites/default/files/pubs/pdf/e_escwa_sdpd_13_inventory_e.pdf]



Israel's early water planners confronted significant challenges in managing the nation's scarce and geographically concentrated water resources. The primary water source, Lake Tiberias, was located in the far north, yet water was needed throughout the country, especially along the coast and in the desert south where the new Israeli state aimed to develop towns and agriculture.¹⁷⁰

Complicating matters further, most water resources, including the Mountain Aquifer (MAP 6a), were located on the Palestinian side, with the aquifer even extending beneath the West Bank.¹⁷¹ This includes the Western Aquifer Basin (MAP 6b), the most productive water basin in Israel and Palestine, which yields the highest-quality water in the area.¹⁷²

According to the research report of the ESCWA and BGR with data from 1970 to 2008 (illustration 8a), Mekorot annually pumped an average of 368.7 million cubic meters (MCM) from the Western Aquifer Basin, which accounted for 94% of the total abstractions from the aquifer basin. Additionally, Mekorot benefits from exclusive access to several large springs, contributing an average annual discharge of 43.9 MCM, thereby increasing the total average yield from the aquifer basin in Israel to 412.6 MCM.¹⁷³

Between 1995 and 2011, the annual average Palestinian abstraction from wells was 23.7 MCM, surpassing the value outlined in the Oslo II agreement by 1.7 MCM per year, or 8% (illustration 8b). Palestinian abstractions, on average, constitute approximately 6% of the total abstractions from the Western Aquifer Basin.¹⁷⁴

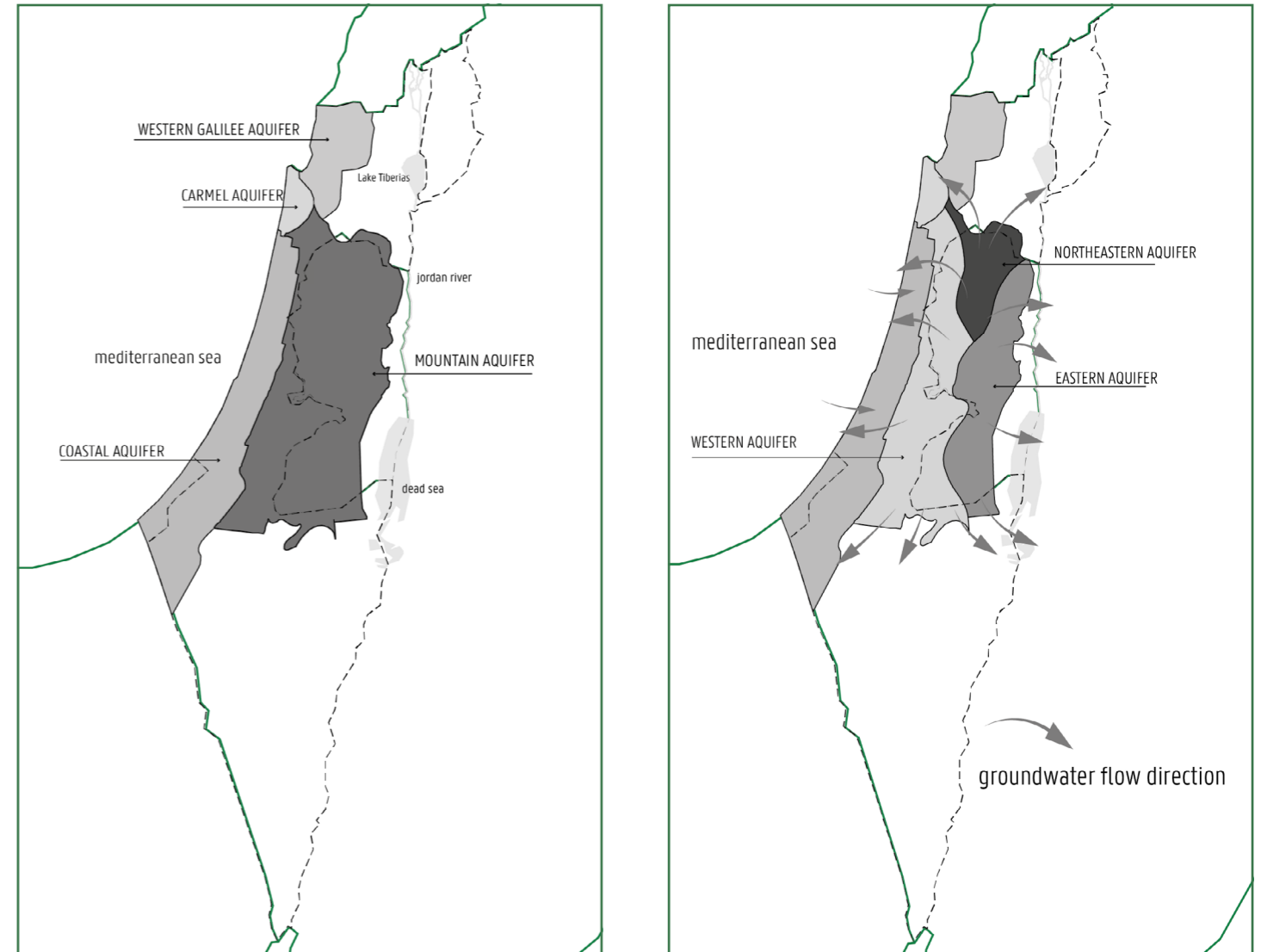
> MAP 6a and 6b: Groundwater aquifers with the groundwater flow direction.

[Created by Dania Al Sknini, based on:

"Water Resources in Israel," Fanack Water, June 5, 2023, <https://water.fanack.com/israel/water-resources-in-israel/>.

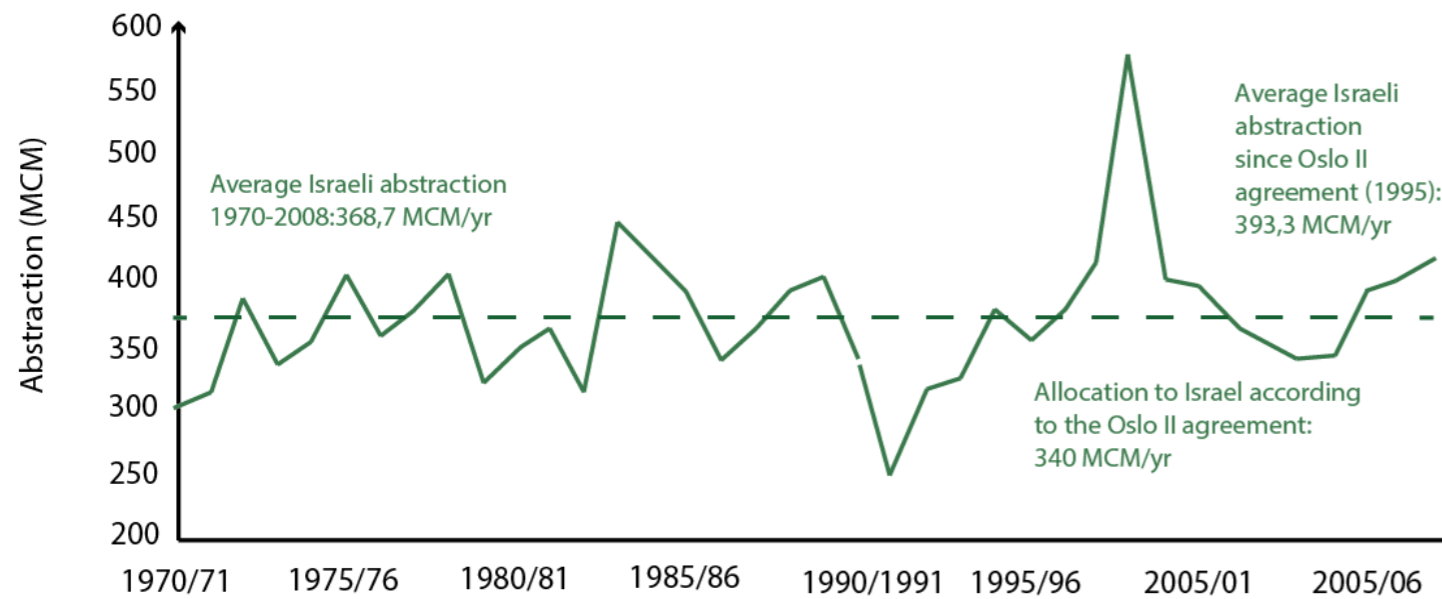
Ziad Mimi, "Management of Shared Aquifer Systems: a Case Study," *Arabian Journal for Science and Engineering* (December, 2005): 87, https://www.researchgate.net/publication/228668936_Management_of_Shared_Aquifer_Systems_a_Case_Study.

Lara El-Jazairi, "The Occupied Palestinian Territory: Challenges to Progressive Realisation," in *The Human Right to Water: Theory, Practice and Prospects* ed. Malcolm Langford and Anna F. S. Russell (Toronto: Cambridge University Press, 2017), 431.



v Illustration 8a: Israeli abstractions from wells in the Western Aquifer Basin (1970-2008).

[Source: United Nations Economic and Social Commission for Western Asia (UN-ESCWA) and Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), "Inventory of Shared Water Resources in Western Asia," (June 20, 2013): 474. https://www.unescwa.org/sites/default/files/pubs/pdf/e_escwa_sdpd_13_inventory_e.pdf]



v Illustration 8b: Palestinian abstractions from wells from the Western Aquifer Basin (1995-2011).

[Source: United Nations Economic and Social Commission for Western Asia (UN-ESCWA) and Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), "Inventory of Shared Water Resources in Western Asia," (June 20, 2013): 473. https://www.unescwa.org/sites/default/files/pubs/pdf/e_escwa_sdpd_13_inventory_e.pdf]



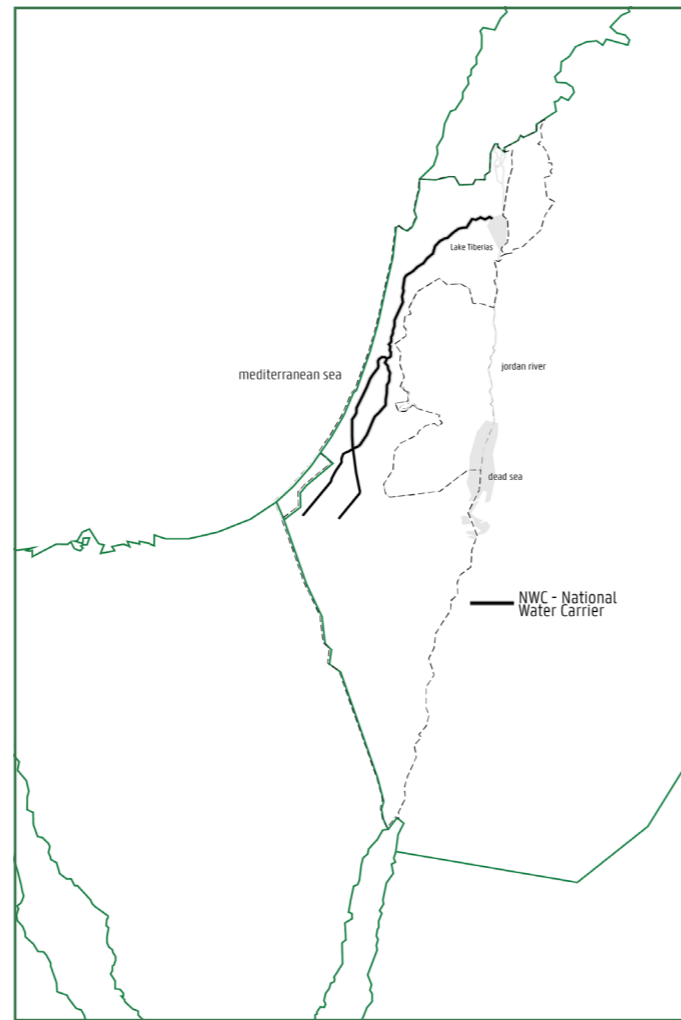
To address the issue of water resource management, the Israeli government undertook the nationalization of all its controlled water resources. This initiative required to manage water in an integrated manner, aligning distribution with demand and government policies. To achieve this, the National Water Carrier (NWC) was constructed (MAP 8). By 1964, the NWC was operational, linking all major water resources, including the waters from Lake Tiberias and the Mountain Aquifers, to various points throughout the country.¹⁷⁵

The NWC enabled the storage of water until needed, allowing for its efficient distribution. The system was further enhanced with the development of additional conveyance infrastructure, extending its reach to all corners of Israel. Recently, the NWC was expanded by an additional 100 kilometers with a 2–2.5-meter diameter pipeline to transport water from five coastal desalination plants (MAP 9).¹⁷⁶

In response to criticism over the depletion of Lake Tiberias, Mekorot initiated the construction of a second pipeline in 2019 to pump water back into the lake, ensuring its replenishment. This extensive network, excluding Eilat, now transports 95 percent of Israel's natural and desalinated water from various sources to regional providers who supply water for domestic, industrial, and agricultural use.¹⁷⁷

The management of water distribution through Israel's extensive network of 12,000 kilometers of transmission pipelines is centrally controlled from ten main command centers across the nation, resulting in minimal losses of about 3 percent. This robust infrastructure underpins Israel's strategic and efficient handling of its water resources. With national ownership of these resources, the government can formulate and execute a coherent strategy for water allocation.¹⁷⁸

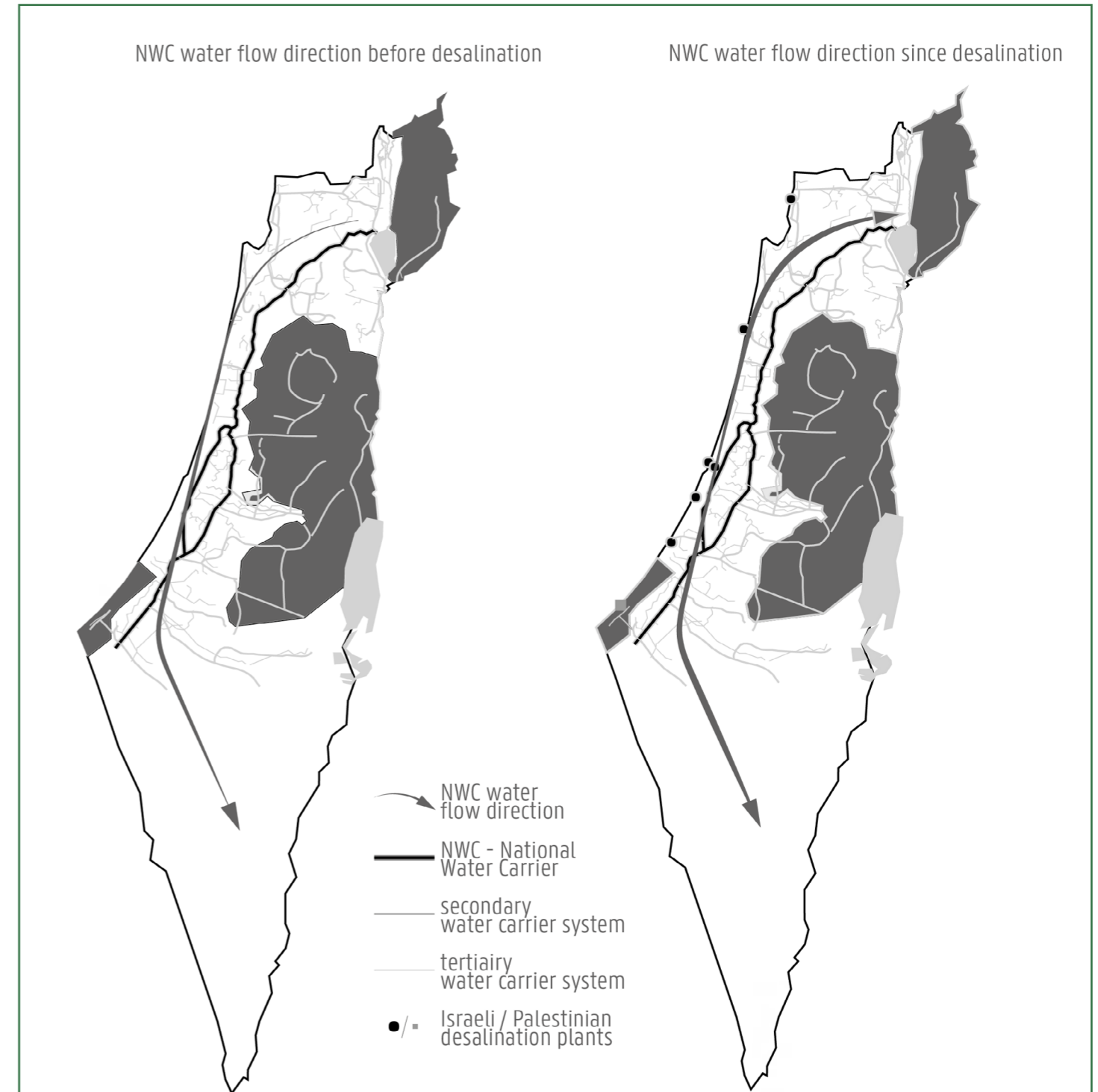
The infrastructure allows for the dynamic storage, release, and dispatch of water across Israel and Israeli settlements, depending on hydrological conditions and demand. This flexibility has also enabled the integration of treated wastewater and desalinated water into the overall water management system. In contrast, the Palestinian water pipelines are outdated, leading to significant losses, with up to one-third of the available and purchased water being wasted.¹⁷⁹



^ MAP 8: The National Water Carrier.

[Created by Dania Al Sknini, based on:

Seth M. Siegel, *Let There Be Water: Israel's Solution for a Water-Starved World* (New York, Thomas Dunne Books, 2015), 262.]



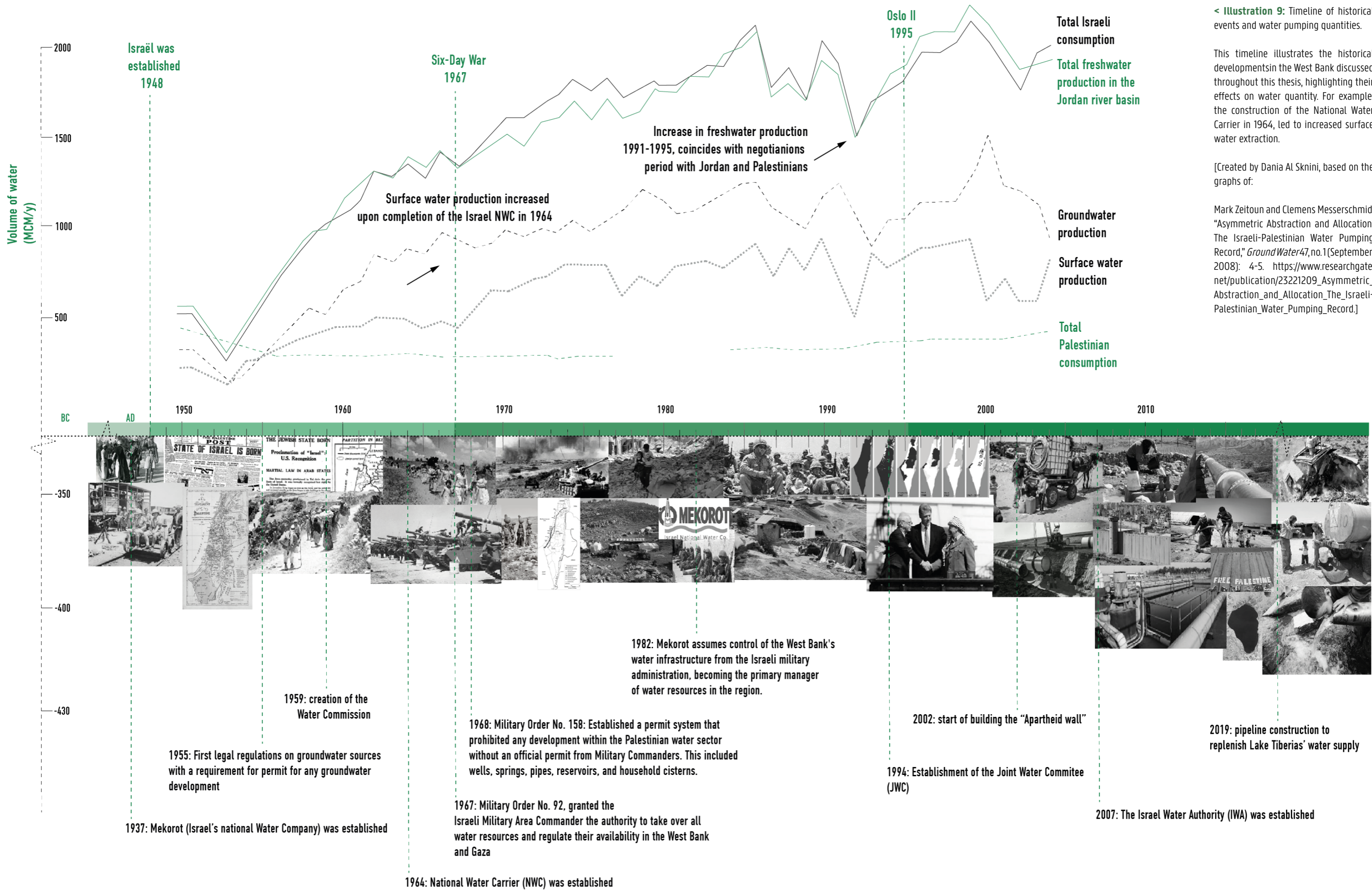
^ MAP 9: Water flow direction.

Historically, the primary water flow in Israel has been from the north to the south. Sources such as Lake Tiberias and the mountains of the Golan Heights have been crucial water supplies for Israel, with water primarily distributed through the National Water Carrier (NWC). However, with the growing importance of desalination and the decreasing availability of renewable water in Lake Tiberias, the dynamics of water distribution are shifting. Water is now being directed both to the north and the south from the coastal regions where desalination plants are located. This shift not only supports broader water distribution but also includes efforts to pump desalinated water back into Lake Tiberias, ensuring its replenishment.

[Created by Dania Al Sknini, based on:

"Water Resources in Israel," *Fanack Water*, June 5, 2023, <https://water.fanack.com/israel/water-infrastructure-in-israel/>.

Seth M. Siegel, *Let There Be Water: Israel's Solution for a Water-Starved World* (New York, Thomas Dunne Books, 2015), 262.]



< Illustration 9: Timeline of historical events and water pumping quantities.

This timeline illustrates the historical developments in the West Bank discussed throughout this thesis, highlighting their effects on water quantity. For example; the construction of the National Water Carrier in 1964, led to increased surface water extraction.

[Created by Dania Al Sknini, based on the graphs of:

Mark Zeitoun and Clemens Messerschmid, "Asymmetric Abstraction and Allocation: The Israeli-Palestinian Water Pumping Record," *GroundWater* 47, no.1 (September, 2008): 4-5. https://www.researchgate.net/publication/23221209_Asymmetric_Abstraction_and_Allocation_The_Israeli-Palestinian_Water_Pumping_Record.]

1937: Mekorot (Israel's national Water Company) was established

1955: First legal regulations on groundwater sources with a requirement for permit for any groundwater development

1959: creation of the Water Commission

1964: National Water Carrier (NWC) was established

1967: Military Order No. 92, granted the Israeli Military Area Commander the authority to take over all water resources and regulate their availability in the West Bank and Gaza

1968: Military Order No. 158: Established a permit system that prohibited any development within the Palestinian water sector without an official permit from Military Commanders. This included wells, springs, pipes, reservoirs, and household cisterns.

1982: Mekorot assumes control of the West Bank's water infrastructure from the Israeli military administration, becoming the primary manager of water resources in the region.

1994: Establishment of the Joint Water Committee (JWC)

2002: start of building the "Apartheid wall"

2007: The Israel Water Authority (IWA) was established

2019: pipeline construction to replenish Lake Tiberias' water supply

[NOTES]

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[130] Hareuveni, "Parched Israel's Policy of Water Deprivation in the West Bank," 6.

[131] Ward, Ruckstuhl, and Learmont, *Water Security for Palestinians and Israelis*, 2.

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[133] Ibid.

[134] Hareuveni, "Parched Israel's Policy of Water Deprivation in the West Bank," 6-7.

[135] Ward, Ruckstuhl, and Learmont, *Water Security for Palestinians and Israelis*, 2.

[136] Ibid, 2, 69.

[137] Ibid, 15.

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[155] Ibid, 16-17.

[156] Ibid.

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[158] Rudolph and Kurian, "Hydro-Hegemony, Water Governance, and Water Security," 74.

[159] Seth M. Siegel, *Let There Be Water: Israel's Solution for a Water-Starved World* (New York, Thomas Dunne Books, 2015), 262.

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[161] Charlotte Silver, "Israel's water miracle that wasn't," *Al Jazeera*, March, 30, 2014, <https://www.aljazeera.com/opinions/2014/3/30/israels-water-miracle-that-wasnt>.

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[170] Ward, Ruckstuhl, and Learmont, *Water Security for Palestinians and Israelis*, 17.

[171] Ibid, 3.

[172] United Nations Economic and Social Commission for Western Asia (UN-ESCWA) and Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), "Inventory of Shared Water Resources in Western Asia," 462.

[173] Ibid, 17.

[174] Ibid, 17.

[175] Ward, Ruckstuhl, and Learmont, *Water Security for Palestinians and Israelis*, 17-18.

[176] Ibid.

[177] Ibid.

[178] Ibid.

[179] United Nations Economic and Social Commission for Western Asia (UN-ESCWA) and Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), "Inventory of Shared Water Resources in Western Asia," 200.

> Illustration 10: Deconstruction of houses and water infrastructure.

[Edited by Dania Al Sknini, source: received from photographer Wahaj Bani Moufleh, Appendix 11.]

PART 2: UNDERSTANDING APARTHEID THROUGH THE LENS OF WATER

PART 2: UNDERSTANDING APARTHEID THROUGH THE LENS OF WATER

CHAPTER 5: MAINTAINING ECONOMIC DOMINATION THROUGH EXPLOITATION OF A NATURAL RESOURCE

As mentioned in the previous chapter, military control of water resources in the Occupied Territories was transferred to Mekorot in 1982. Under then Defense Minister Ariel Sharon, the Civil Administration signed a formal agreement with the Israeli water company, placing all water sources and facilities in the West Bank under Mekorot's authority. Through this agreement, Mekorot gained dominance over much of the water extraction, distribution, and infrastructure. Palestinian towns and villages in this area were increasingly connected to the Israeli national water network. According to Harald Frederiksen, former head of the World Bank's Water Resources Unit, this connection was facilitated to support the expansion of Israeli settlements and to export water from these areas to Israel.¹⁸⁰

Throughout history, the battle for water (both ground and surface water) has been directly linked to land control. Before the Nakba, which refers to the 1948 Palestinian mass displacement and dispossession during the Arab-Israeli war, records indicate that water usage between the "Jewish-Zionist settlers and Palestinians" in the words of Messerschmid, was approximately the same. The groups utilized around 350 million cubic meters (mcm) and 353 mcm, respectively. Given the insufficient roads and infrastructure, remote Jewish settlements relied heavily on nearby water sources to operate and expand as agricultural production units. This access facilitated their ability to dominate larger expanses of land across the plains of inhabited Palestine. Therefore, access to water was integral to land control, as it enabled communities to maintain, develop, and expand through effective irrigation.¹⁸¹

In a 2020 interview with the Institute for Palestine Studies titled 'Denying Life: The Annexation of Palestinian Water,' Professor Abdelrahman Tamimi explains how Israeli agricultural settlements in the West Bank are expanding. He notes that since 1967, Israelis have been setting up agricultural settlements mainly in the Jordan Valley. However, as the Israeli government finds it challenging to attract more settlers to move to the West Bank, it has started to build agricultural settlements in the mountains as well. Tamimi points out that one Israeli farmer can control a vast area of land, so the Israeli government does not need a large number of settlers living there. This expansion is occurring both in the mountains and the Jordan Valley. He also warns that Israel is using Palestinian groundwater to help these settlements grow.¹⁸²

The forced displacement and expulsion of Palestinians, along with the confiscation of most of their irrigable land, have inflicted a severe blow to their water usage, from which they still suffer today.¹⁸³ Alwyn Rouyer, an academic and expert in Middle Eastern politics, particularly known for his work on water politics in the region, argues that it is impossible to establish new Israeli settlements in these areas without controlling the water resources. Water is crucial for the success of Israeli colonization, with illegal settlements strategically positioned along the groundwater boundary and near the Jordan River.¹⁸⁴ Control and supervision are necessary to secure water reserves, as can be concluded from maps that show the water infrastructure. The Israeli water pipes clearly serve the settlements next to the Jordan river (illustration 11).

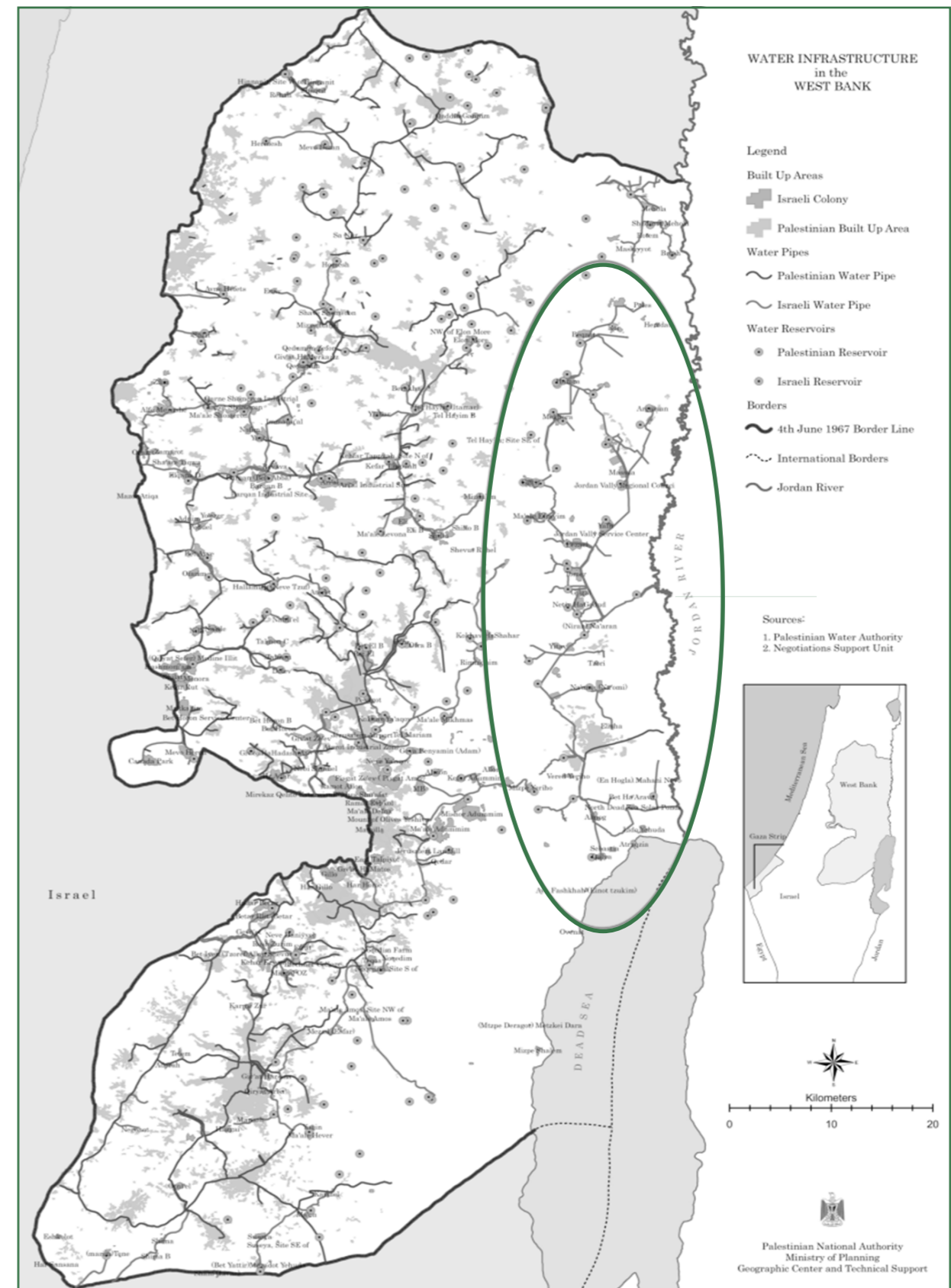


Illustration 11: Water infrastructure in the West Bank.

This map illustrates the water infrastructure in the West Bank, highlighting the strategic placement of Israeli water pipelines adjacent to the Jordan River. These predominantly serve Israeli settlements located near this vital water resource, underscoring the significant control exerted over water access in the region. The map also shows the broader distribution of Palestinian water pipelines, demonstrating the disparities in water infrastructure and access between Israeli settlements and Palestinian communities.

[Source: Palestinian National Authority, Ministry of Planning, retrieved from: Heather Elaydi, "Access Through Power: Assessing Mechanisms of Access for Settler-Farmer Agriculture in the Jordan Valley," (Master's thesis, University of East Anglia, Master of Arts, 2013), 33. https://www.researchgate.net/figure/Map-of-Freshwater-Infrastructure-in-the-West-Bank-Red-lines-within-green-oval_fig3_260518373.]

This chapter will focus on the water apartheid situation in the West Bank, beginning with an examination of Mekorot's discriminatory practices. It will then address the overexploitation of transboundary natural resources, aligning with the second definition of water apartheid. Finally, it will discuss the impact of the apartheid wall on water access, which aligns with the third definition established in the introductory chapter.

[MEKOROT'S DISCRIMINATORY PRACTICES]

The Israeli government controls Palestinian water aquifers and transboundary water resources, orienting them towards the use of the Israeli state-owned water company, Mekorot. Using discriminatory water allocation as a tool of racial oppression and domination, Mekorot allocates 90 percent of exploited Palestinian water for exclusive Israeli use and less than ten per cent for Palestinian use.¹⁸⁵ To prioritize service to Israeli settlers, Mekorot imposes restrictions on water supplies to Palestinian communities, especially during the dry summer months. This often results in reduced or temporarily cut-off water supplies for Palestinian areas, while nearby Israeli settlers continue to receive an unrestricted water supply. Approximately 230,000 Israeli settlers in the West Bank (excluding East Jerusalem) have access to a continuous water supply year-round.¹⁸⁶

The integrated water supply network in the West Bank, which includes both Israeli settlements and Palestinian towns and villages, discriminates significantly between the two groups.¹⁸⁷

- **Pipe Sizes and Water Pressure:** the pipes serving Palestinian communities have a smaller diameter (2 inches, or 50.8 mm), leading to reduced water flow and pressure compared to the adequately sized pipes (8-12 inches, or 203-305 mm) used in Israeli settlements.¹⁸⁸

- **Approval Rates for Water Projects:** Palestinian applications for water projects have significantly lower approval rates compared to Israeli projects. For instance, approval rates for Palestinian wells range between 30-66%, whereas Israeli projects enjoy a 100% approval rate for similar initiatives.¹⁸⁹ Moreover, Palestinian infrastructure development, by the PWA is heavily regulated and often obstructed by requirements for approval from the Joint Water Committee (JWC) and additional permissions from Israeli authorities. This results in significant delays and often refusal of essential water projects for Palestinians.¹⁹⁰ This will be discussed in the following section about the Joint Water Committee.

- **flow reducers (unit-rolls)** are sometimes installed in Palestinian pipelines, making them less effective and more susceptible to pollution (**illustration 12**). According to Messerschmid, "these reducers are a disk with a small hole in the middle. A single one of these very effective instruments can turn a whole network of large-diameter pipes into an ineffective source of low-pressure supply, which will be particularly receptive to pollution."¹⁹¹

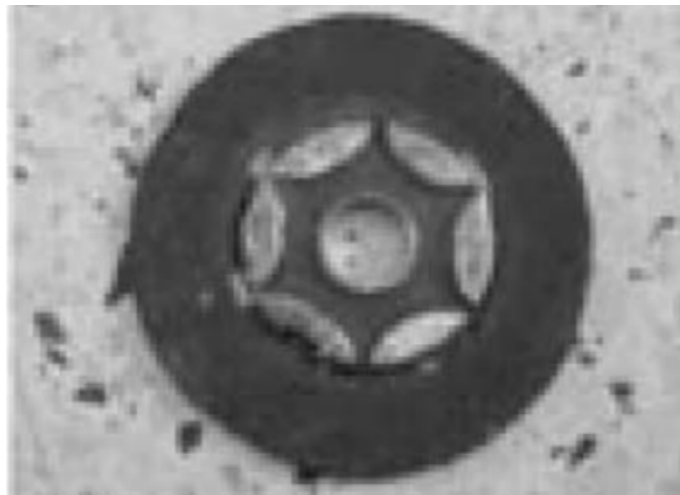
- **Joint reservoirs (illustration 13)** shared by Palestinians and settlers, are often designed with outlets for Palestinians positioned at higher altitudes, causing these outlets to run dry during the summer months.¹⁹²

- **Over-extraction and drying up the wells:** Mekorot's extensive drilling practices have severely impacted Palestinian farmers, drying

up their wells and limiting water access. Farmer Amjad from Falamyra (2022, as cited in Ward et al.), illustrates this issue:

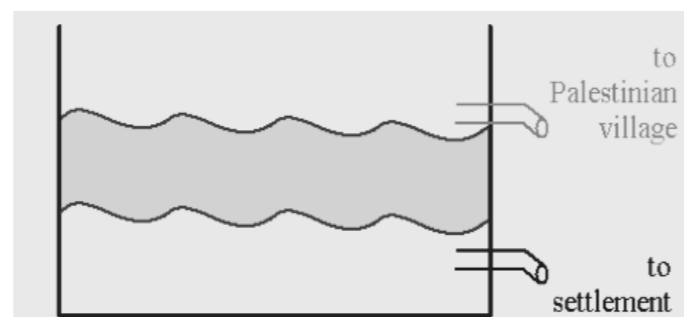
*"We used to have five licensed wells, each producing 70-80 cubic meters per hour, but then, Israel [Mekorot] drilled 600 wells along the Green Line, and all our wells went dry. We [the farmers] apply for permission to deepen them, but it takes years. No one has ever succeeded."*¹⁹³

This example highlights the direct effects of Mekorot's policies, where over-extraction along the Green Line has not only reduced the water supply for Palestinian farmers but has also made it nearly impossible for them to maintain their agricultural livelihoods. This aligns with the



^ **Illustration 12:** Flow reducers used by Mekorot Palestinian supply lines.

[Source: Clemens Messerschmid, "What price cooperation? Hydro-hegemony in shared Israeli/Palestinian groundwater resources," (January, 2007): 5. https://www.researchgate.net/publication/228422435_What_price_cooperation-Hydro-Hegemony_in_shared_IsraeliPalestinian_groundwater_resources.]



^ **Illustration 13:** Joint water reservoir for Palestinians and settlers.

[Source: Clemens Messerschmid, "What price cooperation? Hydro-hegemony in shared Israeli/Palestinian groundwater resources," (January, 2007): 5. https://www.researchgate.net/publication/228422435_What_price_cooperation-Hydro-Hegemony_in_shared_IsraeliPalestinian_groundwater_resources.]

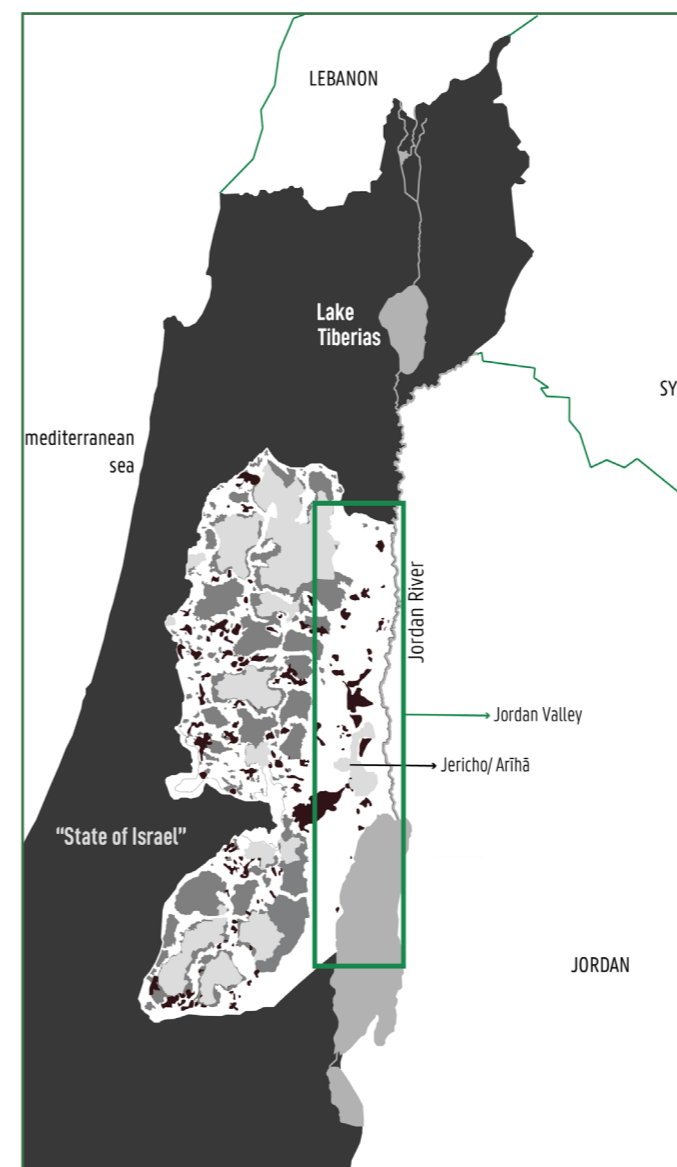
broader trend of water apartheid, as Mekorot prioritizes water access for Israeli settlements while denying it to Palestinian communities.

[THE IMPACT OF OVER-EXTRACTION IN THE JORDAN VALLEY]

The over-extraction by Mekorot in the Occupied Palestinian Territories has lowered the Mountain Aquifer's (with the highest-quality water) current yield and future reserves, causing damage to the water supply quality for Palestinians. This excessive extraction has also led to a significant decrease in water quantities in Palestinian springs in the Jordan Valley.¹⁹⁴

This over-extraction aligns with the second definition of water apartheid, where the systemic denial of access to essential water resources exacerbates social and economic disparities, reinforcing the dominance of the occupying power. Moreover, the over-extraction dries up Palestinian wells and cisterns, further deepening the water scarcity crisis faced by these communities.

The Jordan Valley (**MAP 10**) spans approximately 30% of the West Bank, reaching from the 1949 armistice line in the north to the Dead Sea in the south, and extending from the Jordan River in the east to the western boundaries. Nearly 90% of the Jordan Valley is classified as Area C.¹⁹⁵ The remaining land, categorized as Areas A and B, consists



of enclaves of Palestinian communities, including the city of Jericho (Arīhā in Arabic).¹⁹⁶

In 2016, the Jordan Valley was home to an estimated 65,000 Palestinians, with the majority residing in Jericho city. Additionally, approximately 10,000 Palestinians inhabited over 20 communities situated in Area C, including small Bedouin and shepherding communities. Furthermore, there were approximately 11,000 Israeli settlers residing in settlements and outposts spread across the Jordan Valley.¹⁹⁷

This Valley is well-suited for irrigated agriculture benefiting from fertile soil, abundant groundwater resources, sunlight, and heat. Described by the 'MA'AN Development Center' as a "giant greenhouse," it holds the potential to enhance food security, alleviate poverty, and drive economic growth, all of which are essential for ensuring the sustainability and viability of Palestinian independence.¹⁹⁸

However, the limitations imposed by the Israeli Civil Administration on land and water resource development have had significant consequences for the livelihoods of Palestinians. Since 1967, Palestinians in the Jordan Valley have been deprived of access to the Jordan River and have primarily depended on groundwater from the Eastern Aquifer. This groundwater is obtained from springs and wells, with some owned privately. In Jericho city, for instance, the municipality distributes water sourced from the nearby Ein As-Sultan Spring.¹⁹⁹

Mekorot pumps much of the water in the Jordan Valley (**illustrations 14 and 15**) and distributes it to the 37 Israeli settlements in the area. This activity has led to the drying up of nearby Palestinian wells and springs due to Israel's extensive drilling, using electric pumps.²⁰⁰

It is important to note that Mekorot connected all the settlements built in the West Bank to the Israeli water network, utilizing water from desalination plants from the Mediterranean Sea. However, with the exception of the Jordan Valley. Israeli settlements here receive water from the aquifers, pumped by Mekorot.²⁰¹

< **Map 10:** Location of the Jordan Valley including the city of the city of Jericho (Arīhā in Arabic)

[Created by Dania Al Sknini, based on:

Source: "The Jordan Valley," B'Tselem, accessed August 10, 2024, https://www.btselem.org/topic/jordan_valley.]

The last **illustration 16**, shows a man walking through the main and empty spring of Al Auja. Before 1967, the spring flowed so strongly that the Jordanians planned to use it for electricity. It has, however, dried up due to Mekorot's actions of drilling wells close to the spring.²⁰²

Despite international law prohibiting Israel from exploiting the resources of the valley, some Palestinian villages like Fasayil, Al-Auja, and Aqbat Jaber also receive water through a pipeline network supplied by Israel's national water company, Mekorot. The West Bank Water Department, operating under the Palestinian Water Authority (PWA), purchases this water from Mekorot due to the depletion of their own water springs.²⁰³

Mekorot's control over water resources not only affects the living standards of Palestinians but also limits economic development opportunities. Since the Palestinian economy heavily relies on agriculture and small-scale industry, this limitation on economic growth restricts the OPT's ability to enhance its autonomy. As a result, this obstructs the creation of a viable Palestinian state.²⁰⁴

These discriminatory material actions were accompanied by the use of ideational power in the form of supportive narratives and discourses that endorsed Israeli control over the region. For instance, proponents of Jewish nationalism argued that historic Palestine was the Jewish homeland and that Jewish settlers were entitled to water as to develop the desert territories, citing the Old Testament and the Tanakh where water had symbolic value as a sign of God's grace.²⁰⁵

> **Illustration 16** Dry spring in Al Auja

[Source: B'Tselem, "Liquid Assets," May 11, 2011, short documentary, 0:40, <https://www.youtube.com/watch?v=PH6nonMkkoM>.]

> **Illustration 14** Mekorot's well in the Jordan Valley.

[Source: B'Tselem, "Liquid Assets," May 11, 2011, short documentary, 0:31, <https://www.youtube.com/watch?v=PH6nonMkkoM>.]



↑ **Illustration 15:** Mekorot's facility in the Jordan Valley. The canal (right in the picture) does not belong to Mekorot.

[Source: Michelle Rudolph, "Water Governance under Occupation: A Contemporary Analysis of the Water Insecurities of Palestinians in the Jordan Valley, West Bank," (Working Paper no. 655, Institute of Social Studies, 2020), 31. <https://repub.eur.nl/pub/124925/wp655.pdf>.]



[THE OSLO ACCORDS AND THE JOINT WATER COMMITTEE: COOPERATION OR CONTROL?]

"Oslo starts with capital O and ends with a small o and since 25 years we are running between two zeros, we got nothing [out of the Oslo Accords]."

- Interview with professor Abdelrahman Tamimi, 2024 (Appendix 3).

Officially referred to as the Declaration of Principles on Interim Self-Government Arrangements (DOP), the 1993 Oslo Accords between Israel and the Palestine Liberation Organization (PLO) were the result of extensive negotiations. These negotiations began after the Madrid Conference, which took place in 1991. The Oslo Accords were followed in 1995 by the Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip, or Oslo II, which addresses the topic of water in Article 40 of the Protocol on Civil Affairs.²⁰⁶

The Oslo Accords intended to last only five years, after which a permanent agreement would be signed. This has not yet been realized. The Interim Agreement did not ensure fair distribution of shared water sources, maintaining a system where Israelis had access to water on demand, while Palestinians were restricted to predetermined allocations. The agreement stated that any increase in Palestinian water consumption had to come from new sources. The agreement does not address the Jordan River Basin system, as this topic was deferred to future permanent agreement negotiations that never occurred, leaving Palestinians without access to this shared water source to this day. The agreement specified that the Mountain Aquifer was to be managed with "equitable utilization of joint water resources" a principle that has not been adhered to.²⁰⁷

In the West Bank, this agreement is widely seen as a turning point that shifted responsibility for the Palestinian water sector to the Palestinian Authority. Yet in practice the interim agreement did not change the scope of Israeli control. In accordance with the Interim Agreement, the parties established in 1994 the Joint Water Committee (JWC), which comprises an equal number of representatives from Israel and the Palestinian Authority. It is charged with overseeing and regulating water resources in the West Bank, excluding Gaza and the Jordan River.²⁰⁸

The JWC's responsibilities include granting permits, drilling wells, and extracting water. Hailed as a success story for Israeli-Palestinian cooperation, the committee's work had limited impact. While it was set up to make all decisions in consensus, it lacks a mechanism to settle disputes. This has allowed Israel to veto Palestinian requests to drill new wells and obtain the additional water resources stipulated in the agreement.²⁰⁹

Jan Selby examines the operations of the Joint Water Committee (JWC) and concludes that the JWC serves not only as a mechanism for Israel to limit and control Palestinian demands but also as a means to advance Israel's territorial and settlement interests in the West Bank. This includes securing formal approval from the Palestinian Authority (PA) for expanding settlement infrastructure. Selby notes that Israel often leverages its position within the JWC to delay or deny Palestinian

water project proposals unless the PA consents to water projects that benefit Israeli settlements. Additionally, by requiring Palestinian agreement on issues related to water infrastructure, Israel effectively gains PA endorsement for developments that support the expansion and sustainability of Israeli settlements, thereby reinforcing its control over critical resources and territories.²¹⁰

Decisions made by the Committee, which require consensus, have effectively given Israel the power to veto proposals from the PA. Conversely, Palestinians do not possess equivalent veto power over matters within Israel's side of the Green Line, even when these pertain to shared water resources.²¹¹

In 2017, the procedure was altered to allow Palestinians to install water infrastructure without the Committee's approval, but Israel retained the ability to develop separate water systems for settlements without PA consent, exacerbating inequalities as Mekorot maintains control over water supplies.²¹²

As Jan Selby pointed out, while Palestinians now have the autonomy to install pipelines, they do not have access to additional water without Israeli approval.²¹³ According to Selby (2003, as cited in Koek), this has enabled "*Israel to pursue its colonial and apartheid water policies without having any direct contact with the Palestinian users.*"²¹⁴ As a result, the JWC has been criticized as a means of "dressing up domination as cooperation," in the words of Selby.²¹⁵

[DISCRIMINATION AND DESTRUCTION OF WATER INFRASTRUCTURE IN THE JORDAN VALLEY]

Following the Oslo Accords, the West Bank was segmented into three administrative areas. Notably, the majority of the Jordan Valley, which includes the most fertile lands within the Palestinian section of the basin, came under Israeli control and administration. This region contains significant underground water reservoirs; however, the Israeli government prohibits any infrastructure work, including water development, in this area.²¹⁶

To maintain Israeli-Jewish national domination over water resources, the Israeli "Defence" Forces (IDF) has the ability and the authority to destroy developments of any sort, which it routinely does. As for Area A, most of the land is urban area and cannot be used for agriculture as the population density does not allow for that.²¹⁷

The western banks of the Jordan River have been designated as "Firing zone", also known as "closed military areas" (MAP 11). Consequently, Palestinian efforts to propose and implement water development and maintenance projects often face significant delays, sometimes extending over several years, or are completely denied.²¹⁸

As explained in Part 1, it raises questions that Israel operates as a national management authority and that the Joint Water Committee (JWC) was established as a national entity, while the land itself is divided. This division, particularly in the West Bank, challenges the legitimacy of water management at the national level. Fred Pearce describes this situation as a form of "hydrological apartheid," where control over water resources is strongly linked to territorial control, resulting in restrictions and unfair water distribution.

Following the Oslo Accords, there was a common belief that the water problem had been resolved with the establishment of the Palestinian Water Authority. However, this authority is ultimately controlled by Israeli authorities and lacks the power to initiate new water projects. It can only distribute water when permitted by Israel. By 'liberating' Palestinians in resource distribution, Israel disguises the reality that

> MAP 11: Division of the West Bank with Israeli Settlement municipality area and the military areas.

[Created by Dania Al Sknini, based on:

source: "West Bank Firing Zones," United Nations Office for the Coordination of Humanitarian Affairs occupied Palestinian territory (August, 2012), https://www.ochaopt.org/sites/default/files/ocha_opt_firing_zone_map_august_2012_english.pdf.]

Legend:

-  Israeli Settlement Municipality Area
-  Area A: Palestinian control
-  Area B: shared control
-  Area C: Israeli (military) control
-  Military Areas

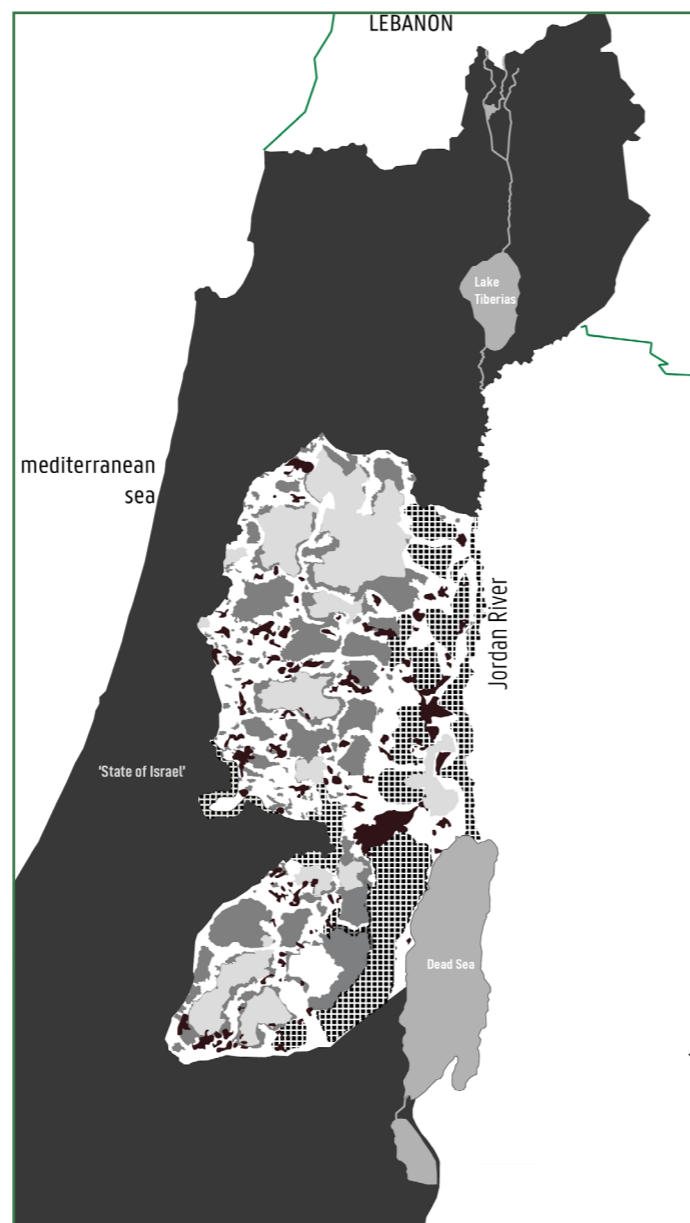
it has the ultimate control. Additionally, Israeli authorities persist in promoting the myth of water scarcity, either by blaming the Middle East's geographical landscape or, more recently, to climate change.²¹⁹

According to the article of Sharoze Khan, these explanations, "are mere scapegoats to hide a politically-induced scarcity of water, which continues to permeate the livelihoods of Palestinians in the West Bank."²²⁰

For communities not linked to major pipelines established before the occupation, water is supplied by tankers, potentially accounting for up to half of a family's monthly expenses. In contrast, the "average settler family" only allocates 0.9 percent of its monthly budget to water.²²¹

To understand the actual water consumption in these communities, it is useful to examine a particular case study from 2008 as detailed by Shahroze Khan.

The Ro'i settlement (MAP 12) in the Jordan Valley had a per capita water allocation of 431 litres for household use, while the nearby Beka'ot settlement had an allocation of 403 litres. These settlements



are situated next to Al-Hadidiya, a Bedouin community (illustration 17), which had been established for decades. Before the occupation, Al-Hadidiya relied on wells for their water needs. However, the IDF destroyed most of these wells and homes, labeling them as illegal, which led to the community being deprived of this essential resource. Despite being near a significant Mekorot pumping station in Beka'ot, Al-Hadidiya now relies on external water sources.²²²

The average water allocation in Al-Hadidiya was just 20 litres per capita, merely 5 percent of the allocation in the nearby settlements. This case is not an outlier but rather indicative of a broader trend throughout the Jordan Valley.²²³

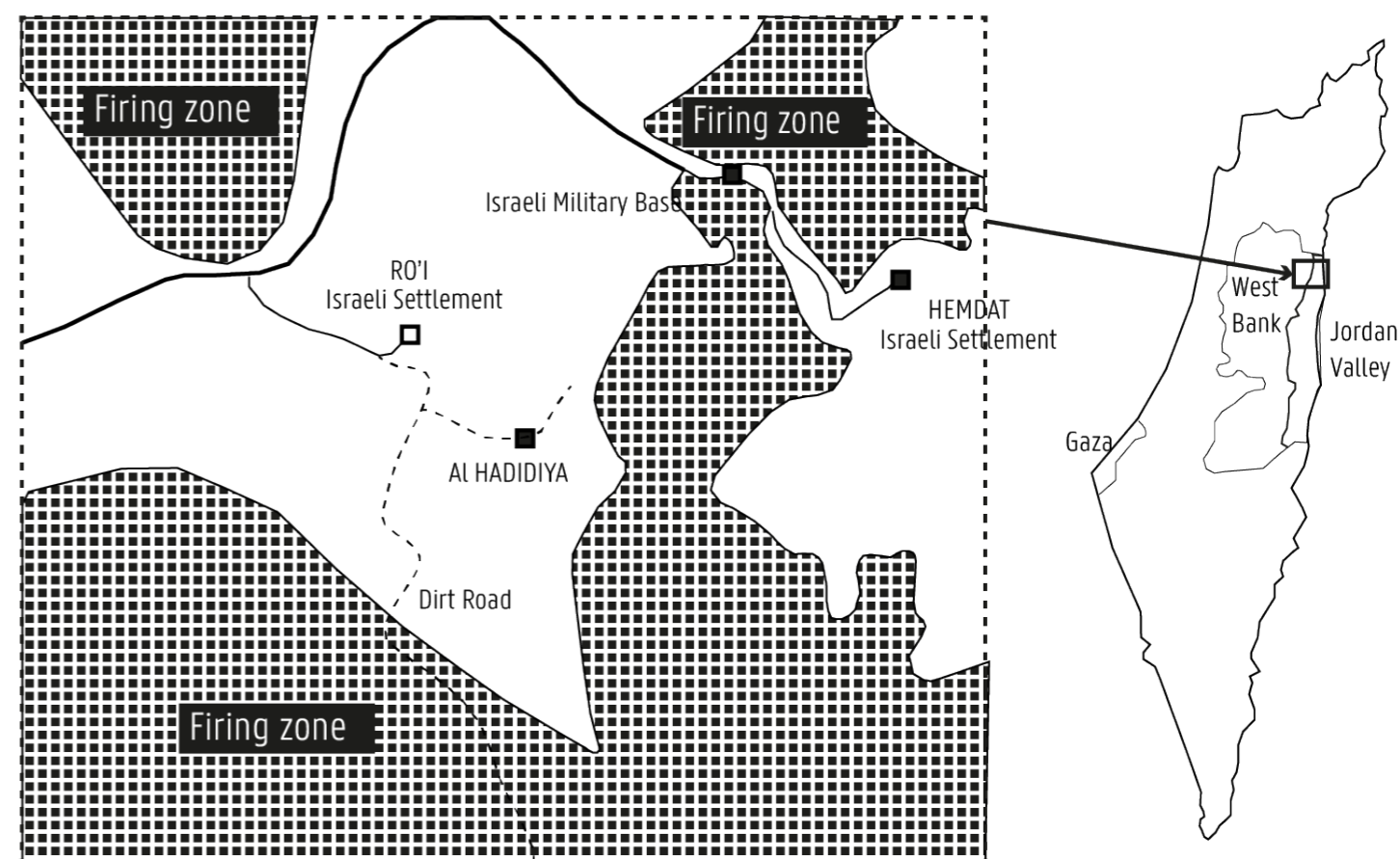
Practices like these indicate an apartheid situation where neighboring communities receive vastly different treatment based on ethnicity, violating international laws on apartheid and basic human rights. Furthermore, the situation of water inequality is worsening as Israel persists in demolishing water infrastructure to support its settlement activities in the West Bank.

Messerschmid describes this as "Israel's system of exclusive control and strict separation of standards for the two populations in other words, a system of jointly operated hydro-apartheid."²²⁴

v MAP 12: Location of Al-Hadidiya.

[Created by Dania Al Sknini, based on:

source: Adrian Guerin, "Jordan Valley. Ethnic Cleansing and Harassment of Palestinian Farmers," (June 25, 2020), <https://orientxxi.info/magazine/jordan-valley-ethnic-cleansing-and-harassment-of-palestinian-farmers>, 3986.]



ב-21.6.11 הרס המינהל האזרחי 8 מבנים
בכפר אל-חדידייה בבקעת הירדן.
36 פלסטינים נותרו ללא בית, בהם 15 קטינים.

On 21 June '11, the Civil Administration demolished 8 homes
in al-Hadidiya, the Jordan Valley.
36 Palestinians, including 15 minors, were left homeless.



Demolition in al-Hadidiya 21.6.2011 הרסה באל-חדידייה 21.6.2011
Filmed by: 'Atef Abu a-Rub. צילום: עאטף אבו א-רחב.
Field researcher תחקירן שטח



^ **Illustration 17:** Demolishing of homes in Al Hadidiya in the Jordan Valley.

[Source: B'Tselem, "Demolition of homes in al Hadidiya, Jordan Valley," March 13, 2012, video, 0:00- 1:33, <https://www.youtube.com/watch?v=PH6nonMkkoM>.]

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CHAPTER 6: THE IMPACT OF THE APARTHEID WALL ON WATER ACCESS

[THE CONSTRUCTION AND IMPACT OF THE APARTHEID WALL]

"The Wall," alternately referred to as the "separation fence," "the fence," "the apartheid wall", or "Al-Jidar" by Palestinians (MAP 13), consists of eight to twelve-meters-high pre-cast concrete panels in certain segments, complemented by sections of barbed wire and electrified fencing.²²⁵ This barrier is augmented by trenches, patrol roads manned by the Israeli "Defense" Forces (IDF), watchtowers, and electronic surveillance zones which have obstructed Palestinian access to water resources, services, and facilities. These elements collectively represent a costly and intricate endeavor aimed at physically segregating Palestinians from Israelis. Additionally, it has significantly disrupted the daily lives of Palestinians, including separating families and communities who can no longer easily visit one another.²²⁶

The construction of 'the Wall' in the West Bank has had both direct and indirect impacts on Palestinian water resources, affecting both surface and groundwater sources. Over the past fifteen years, the apartheid wall has caused destruction to Palestinian farmland and encroached upon water supplies, including the Western Aquifer, the largest aquifer in the West Bank. This situation has forced many Palestinians to relocate from areas where they have lived and worked for decades, in search of better access to water, land, and job opportunities.²²⁷

According to 'The Applied Research Institute Jerusalem' (ARIJ), over eighty Palestinian villages and communities, comprising hundreds of thousands of Palestinians, are impacted by this Wall.²²⁸

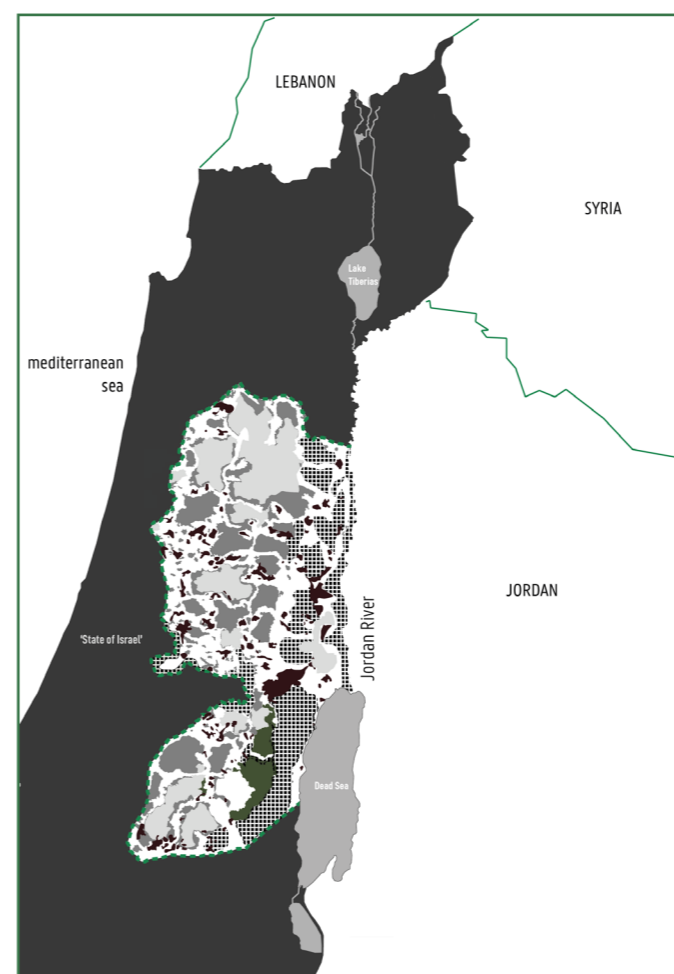
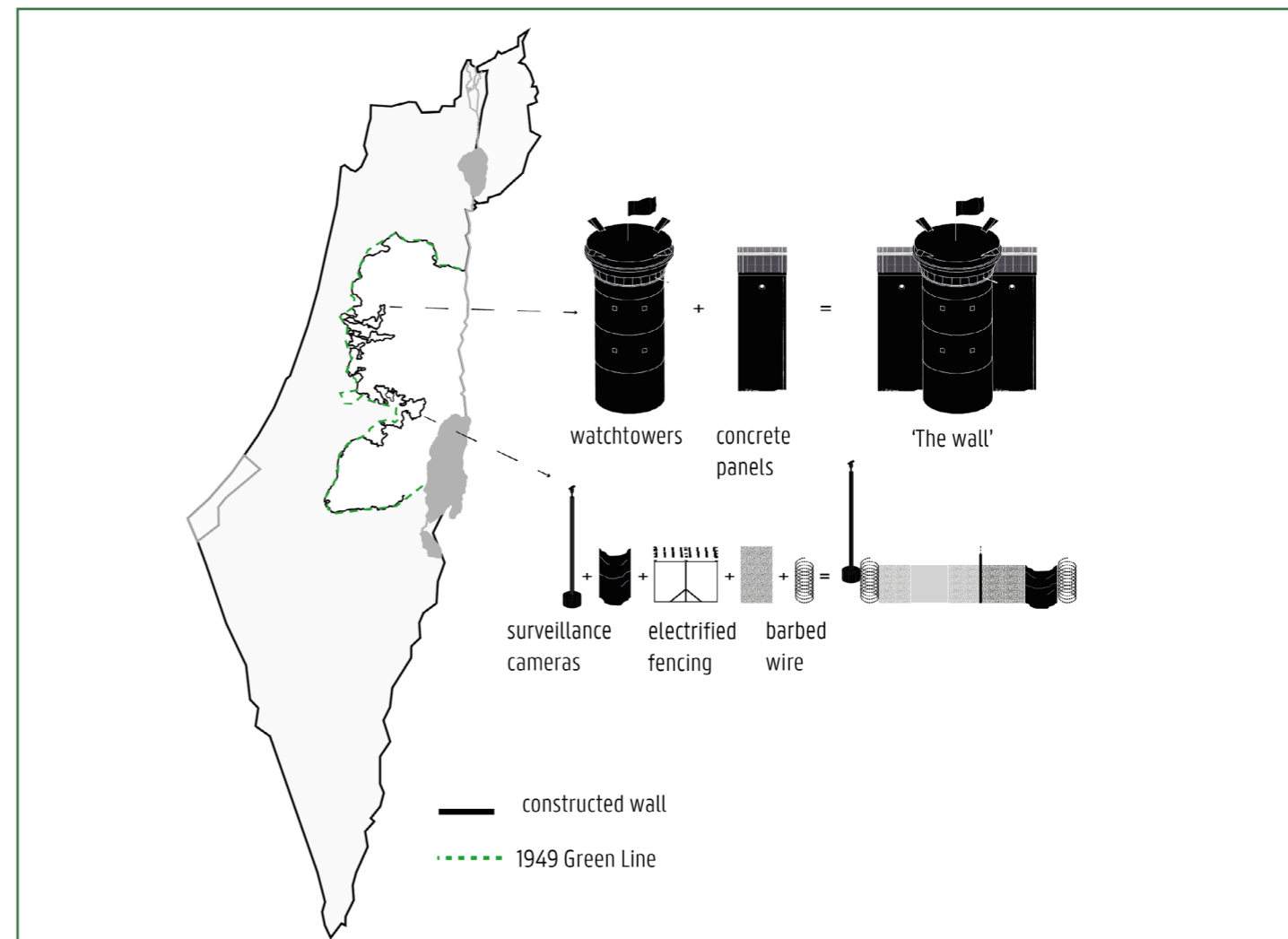
The designation of areas as closed military zones, nature reserves, and "settler-only" roads has resulted in significant portions of the West Bank becoming inaccessible to Palestinians or experiencing severe

restrictions on movement within these areas (MAP 14). Due to this situation, Palestinians have to travel long distances to reach water sources. Movement obstacles, such as roadblocks and checkpoints, have also impeded the ability of water tankers to reach certain areas, compelling them to take lengthy detours. These detours often incur higher costs in terms of time and fuel, rendering them financially unsustainable for many Palestinians.²²⁹

The Green Line, also known as the Armistice Border, was established in 1949, dividing historic Palestine into 'The State of Israel' and the 'West Bank'.²³⁰

The zone between 'the Wall' and 'the green line' is called 'closed zone' or 'military zone.' Leaving or entering the military zone requires an access permit, which is hard for Palestinian communities to obtain. The opening and closing of the gates are tightly controlled, and Palestinians frequently face humiliation and abuse by the IDF.²³¹

It is important to note that this 'military zone' includes some of the most fertile land in the West Bank, particularly the Jordan Valley, which is rich in natural water resources.



Map 13: Location of the "wall" with the green line.

[map created by Dania Al Sknini, based on:

source: Mohammed Haddad, "Palestine and Israel: Mapping an annexation," (June 26, 2020), <https://www.aljazeera.com/news/2020/6/26/palestine-and-israel-mapping-an-annexation>.

Source elements of the wall: Federico Lepre, "occupying space,"(Master's thesis, University of Strathclyde, Master in Law, 2015), 13.]

Map 14: Map showing military areas and nature reserves.

[map created by Dania Al Sknini, based on:

source: "West Bank: Oslo Agreement & Barrier Projection," OCHA, (February 20, 2005), <https://www.ochaopt.org/content/settlement-expansion-around-israeli-declared-nature-reserve>

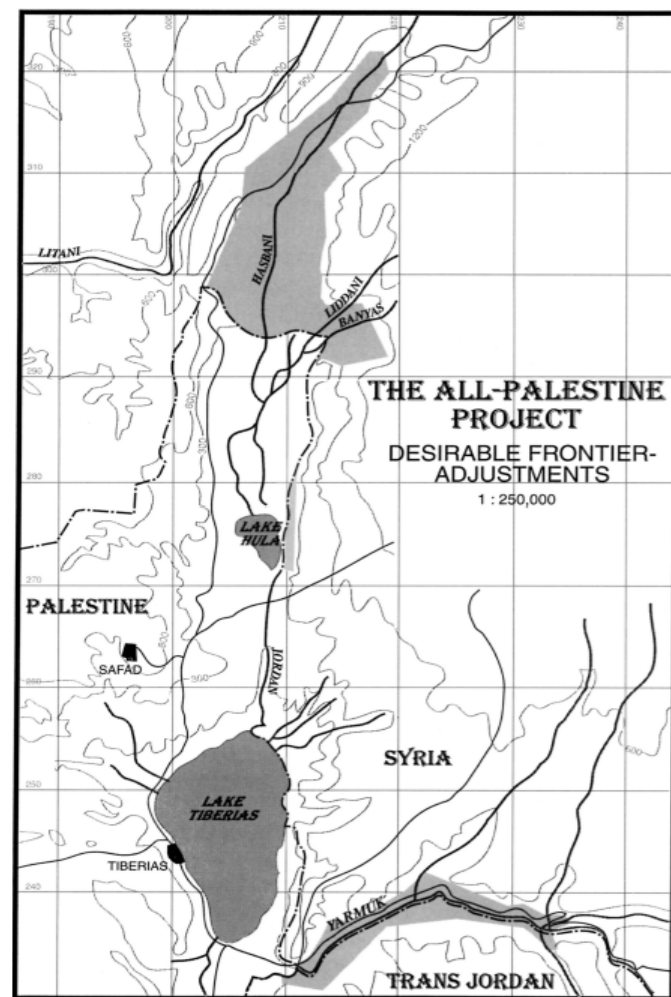
Legend:

- Israeli Settlement Municipality Area
- Area A: Palestinian control
- Area B: shared control
- Area C: Israeli (military) control
- Military Areas
- Green areas/nature reserves - Israeli control
- 48' Green line

[HYDROSTRATEGY AND ISRAELI CONCERNS]

Even before the establishment of the State of Israel in 1948, various studies and strategic plans emphasized the critical importance of water resources in the region. One such study was conducted by Walter Clay Lowdermilk, who in 1944 published 'Palestine: Land of Promise.' Lowdermilk argued that proper water management could support millions of refugees in addition to the existing population of Arabs and Jews in Palestine. He advocated for a regional water management approach similar to the Tennessee Valley Authority (TVA) in the United States, which was known for its comprehensive development of water resources, flood control, and electricity generation in the Tennessee River Valley. Lowdermilk suggested that a similar model could be applied to the Jordan River Basin to develop irrigation systems, improve agricultural productivity, and generate hydropower through a canal from the Mediterranean to the Dead Sea.¹³²

In line with this, a study by Mekorot, the national water company, in 1944, suggested frontier adjustments that would enhance the effectiveness of water resource development in Palestine (illustration 18). This included proposals to shift borders to incorporate key water sources, although these suggestions were never formally adopted in political decisions.¹³³



This focus on water resources was later used in the concept of "hydrostrategy," defined by Aaron Wolf, a Professor of Geography at Oregon State University who specializes in Water Resources Policy and Conflict Resolution in Middle East Geopolitics. Hydrostrategy highlights how control over water-rich territories has been a critical factor in Israeli strategic decision-making.²³⁴

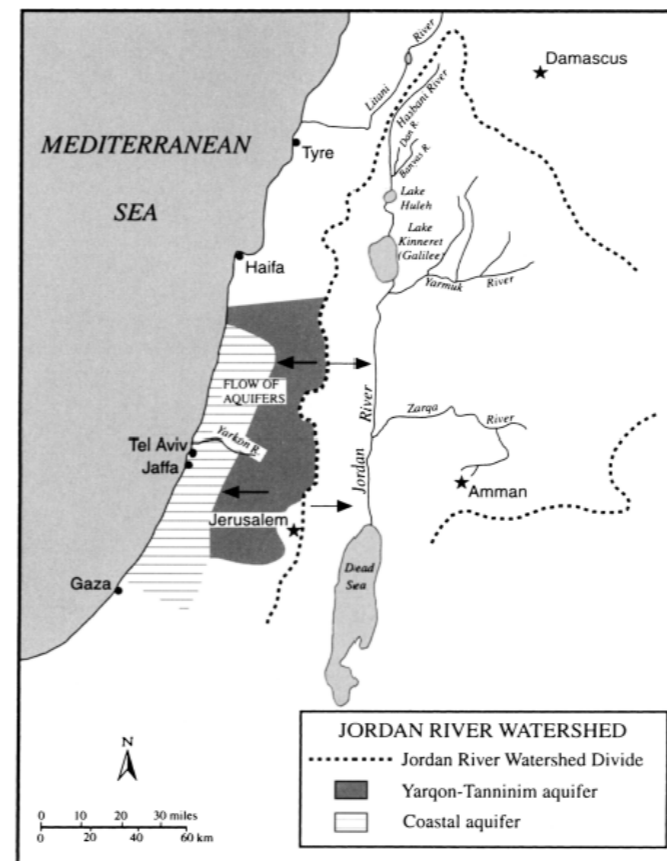
For instance, the Western Aquifer Basin, one of the most productive water sources in the West Bank, has been central to Israeli policies, with significant efforts to retain control over these areas to secure essential water supplies. This strategic importance of water is further demonstrated by Israel's actions during and after conflicts, where the retention of territories like the Golan Heights and parts of the West Bank was heavily influenced by the need to secure access to vital water resources.²³⁵

Wolf illustrates this concept with maps (MAP 19-24), he prepared based on the work of former Israeli Water Commissioner Menachem Cantor for the first Camp David negotiations. These maps indicate which areas the Israeli government should retain to maintain control over critical water resources. In the West Bank, this involves the prime water-rich areas of the Western Aquifer, where Palestinian development has been restricted since 1967, and over which the apartheid wall runs today.²³⁶

< Illustration 18: The 'All-Palestine Project'

This map shows the border adjustments proposed in the 1944 Mekorot study to enhance water management in Palestine. Key adjustments include extending borders upstream to encompass the Hasbani, Dan, and Banias headwaters, shifting the border east of Lake Huleh to allow for a conduit, and incorporating 80 square kilometers of Transjordan along the Yarmuk River for irrigation and hydroelectric projects.

[Source: Amery, Hussein and Aaron Wolf, *Water in the Middle East: A Geography of Peace*. (Austin: University of Texas Press, 2000): 77.]

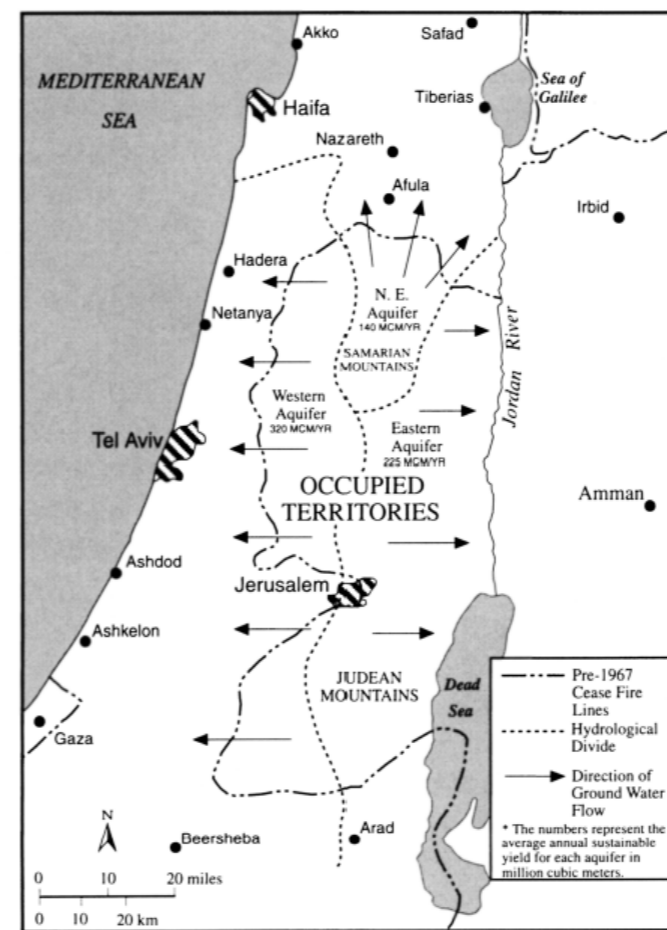


< illustration 19: "Jordan river Watershed."

Wolf begins by highlighting the location of the Yarqon-Tannim Aquifer (Mountain Aquifer), the region's most productive source of high-quality water.

A watershed is an area of land where all the water drains into a common water body, like a river or lake. It acts like a funnel, collecting water from rain and snow, and channeling it into streams and rivers. Watersheds are important for managing water resources and can impact everything downstream.

[Source: Ibid, 65.]



< Illustration 20: Groundwater flow direction.

Furthermore he shows the occupied territories, focusing on the aquifers and groundwater flow within the region. The arrows on the map indicate the direction of groundwater flow from the aquifers, which are crucial for water supply in the area.

[Source: Ibid, 98.]



^ Illustration 21: "International borders 1948-1967."

This map shows the international borders before the 1967 Arab-Israeli War, along with key water diversions, such as the Litani and Arab diversions. It illustrates how borders and water resources were managed before the war, highlighting critical water sources like the Jordan River and its tributaries. The dotted lines indicate the watersheds, emphasizing the regions where water flow and availability influenced border decisions.

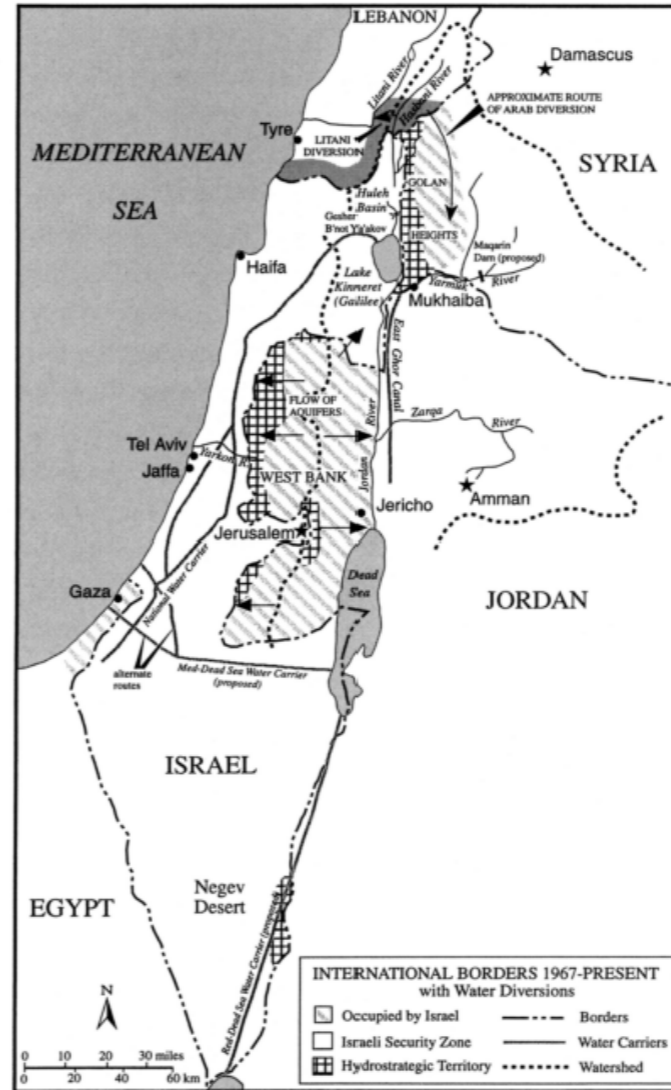
[Source: Ibid, 86.]



^ Illustration 22: "International borders 1967-present."

Building on the previous illustration, this version presents the territorial changes following the 1967 war, including Israeli-occupied areas. Key water diversions remain in focus, but the context shifts to reflect expanded Israeli control. The hashed areas represent security zones, overlapping with vital water-rich regions, underscoring their importance to Israel's water security strategy.

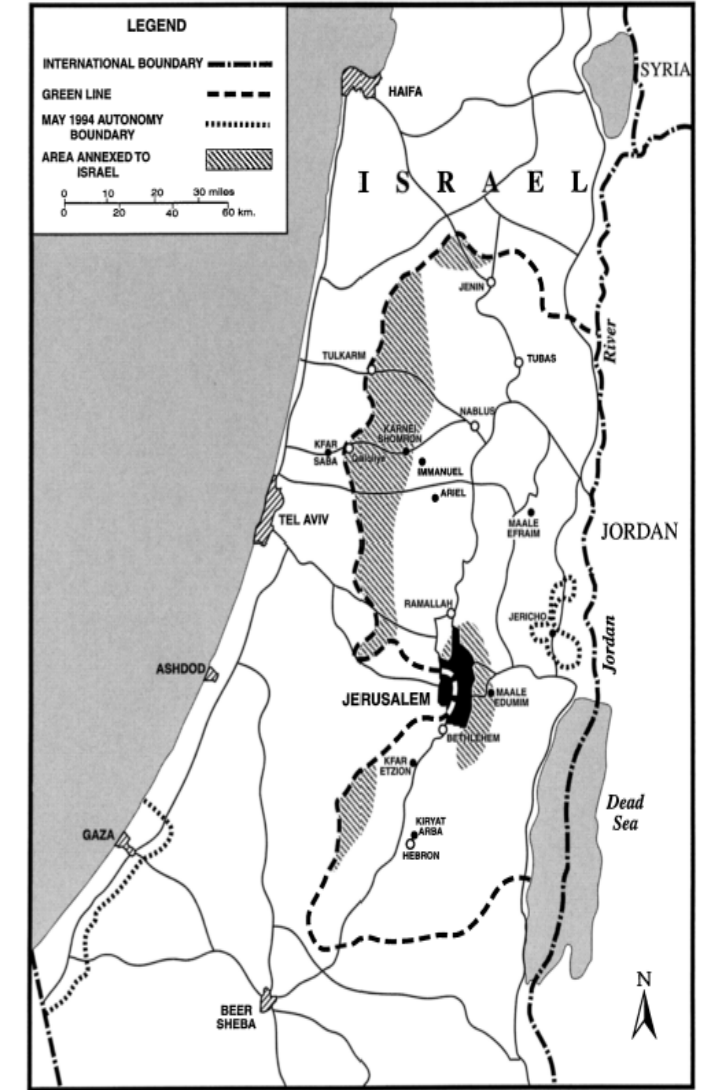
[Source: Ibid, 91.]



^ Illustration 23: "International borders 1967- present."

Here, the focus is on the current borders and security zones, particularly those in Israeli-occupied areas critical for water resources. This depiction includes hydrostrategic territories, areas deemed essential for securing water supplies. The security zones highlighted reinforce the influence of water resource control on Israel's territorial policies.

[Source: Ibid, 99.]



^ Illustration 24: "Potential annexation."

Wolf illustrates the potential annexation of West Bank territory by Israel, aiming to protect the Western Mountain Aquifer, as defined by Cantor. This underscores the strategic importance of this aquifer in Israel's territorial considerations.

[Source: Ibid, 65.]

The significance of controlling these water-rich areas is further highlighted by General (Reserves) Raphael Eitan, who in 1990, while serving as the Minister of Agriculture of Israel, issued a full-page advertisement in the Jerusalem Post expressing "Israel's claims and concerns." Raphael Eitan (1990, as cited in Hillel Shuval) declared that: "because of the water issue alone, Israel can never give up the physical control of any of the occupied territories since they are absolutely essential for the preservation of the country's vital water resources."²³⁷

He cited both the risk of the diversion and over-extraction of water vital to Israel and the danger of environmental pollution of the Mountain aquifer.²³⁸

The following points illustrate "Israel's Claims and Concerns" relevant to this chapter, in the words of Raphael Eitan:

[1.] Historical Riparian Rights: "Israel [the Israeli government] claims that it has legitimate historical riparian rights to most of the flow of the Mountain Aquifer, based on the principle of International Law of prior use of the Mountain Aquifer", with significant portions of this aquifer naturally flowing into Israeli territory and having been fully developed and utilized for approximately 60 years.²³⁹ Riparian rights refer to the rights of landowners whose property is adjacent to a natural watercourse, such as a river, stream, or aquifer, to make reasonable use of the water.²⁴⁰

[2.] Concerns Over Palestinian Autonomy: the Israeli government is concerned that if Palestinians gain autonomy or independence in any part or all of the Israeli-occupied West Bank, they may demand full rights to the water from the shared Yarkon-Tannanin Aquifer (also known as the Mountain Aquifer). This aquifer gets about 80-90% of its water from rainfall in the West Bank. This concern is further intensified by Palestinian intentions to allow large numbers of the Palestinian diaspora to resettle in any newly independent state that might be formed.²⁴¹

[3.] Risk of Overpumping: the government claims that an unregulated rise in pumping from the aquifer in the West Bank, could severely diminish Israel's primary source of high-quality drinking water. This could cut Israel's utilization of the aquifer by some 300 million cubic meters per year, potentially cutting off drinking water supplies for about 3,000,000 people and posing a serious threat to Israel's viability.²⁴²

Professor Abdelrahman Tamimi further explains this in the 2020 interview with the Institute for Palestine Studies titled 'Denying Life: The Annexation of Palestinian Water,' Tamimi delves into the historical context:

"In 1991, during the Madrid Conference, Rafael Eitan, then Minister of Agriculture in Israel, underscored the significance of retaining control over the mountainous regions of the West Bank. In an official advertisement in the Jerusalem Post, he argued that these areas serve as recharge zones for 300 wells along the Green Line in Israel. Eitan warned that granting authority to the Palestinians over these mountainous regions could jeopardize the functioning of these wells, which lie within the discharge area. Therefore, he proposed shifting the Green Line eastward by six to eight kilometers to maintain

*control over the entire discharge area within Israeli territory. Later, in 1995, while serving as the Minister of Defence of Israel, Eitan published a map known as the 'Separation Map' or 'Two Nations Map'. This map suggested moving the Green Line even further eastward, by 12 kilometres. Notably, the proposed path of the wall in Eitan's map overlapped with that drawn by Hagai Mordechai, marking a significant alignment between the wall's trajectory and Israel's strategic interests"*²⁴³

Tamimi further argues that the primary objective behind the construction of the wall was to control water resources, stating:

*"The main driver behind the construction of the wall was to control water. The apartheid wall is a crucial component of Israel's water strategy."*²⁴⁴

According to professor Tamimi, the underlying philosophy is to annex most of the water resources in the 'Jenin, Tulkarem, and Qalqilya area' over a period of ten years. As a result, irrigated agriculture in these regions, particularly in the mountainous areas, would cease to exist. Two significant irrigation areas, namely 'Jenin, Tulkarem, and Qalqilya,' as well as 'the Jordan Valley,' are directly impacted:

*"Here, the wall has annexed the majority of productive groundwater wells, leading to the collapse of irrigated agriculture in these regions."*²⁴⁵

The analysis of Aaron Wolf's maps, based on Menachem Cantor's work, especially **illustrations 23 and 24**, along with insights from Professor Abdelrahman Tamimi, underscores the strategic significance of the regions of Jenin, Tulkarem, and Qalqilya in the Israeli government's hydrostrategy. The Western Aquifer Basin, lying beneath these areas, is the most productive water source in the West Bank, and its control is vital for the Israeli government's access to essential water resources. The concentration of high-yield wells in this region, as illustrated by Messerschmid (**MAP 15**), further highlights the strategic importance of these areas.

The Israeli military's expansion of the separation wall beyond the Green Line in this region appears to be a deliberate move to secure these critical water resources. By annexing the most productive groundwater wells and displacing Palestinian access to these waters, the Israeli government's actions have not only contributed to the collapse of irrigated agriculture in these areas but also reflect a broader strategy of resource control.

This conclusion reinforces the notion that hydrostrategy is one of the key drivers of Israeli territorial policies, with profound consequences for Palestinian livelihoods and the prospects for peace in the region. These actions, which prioritize control over water resources, can be seen as part of a broader system of water apartheid, where access to essential water supplies is unequally distributed and systematically restricted, further entrenching the disparities between Israeli and Palestinian communities.

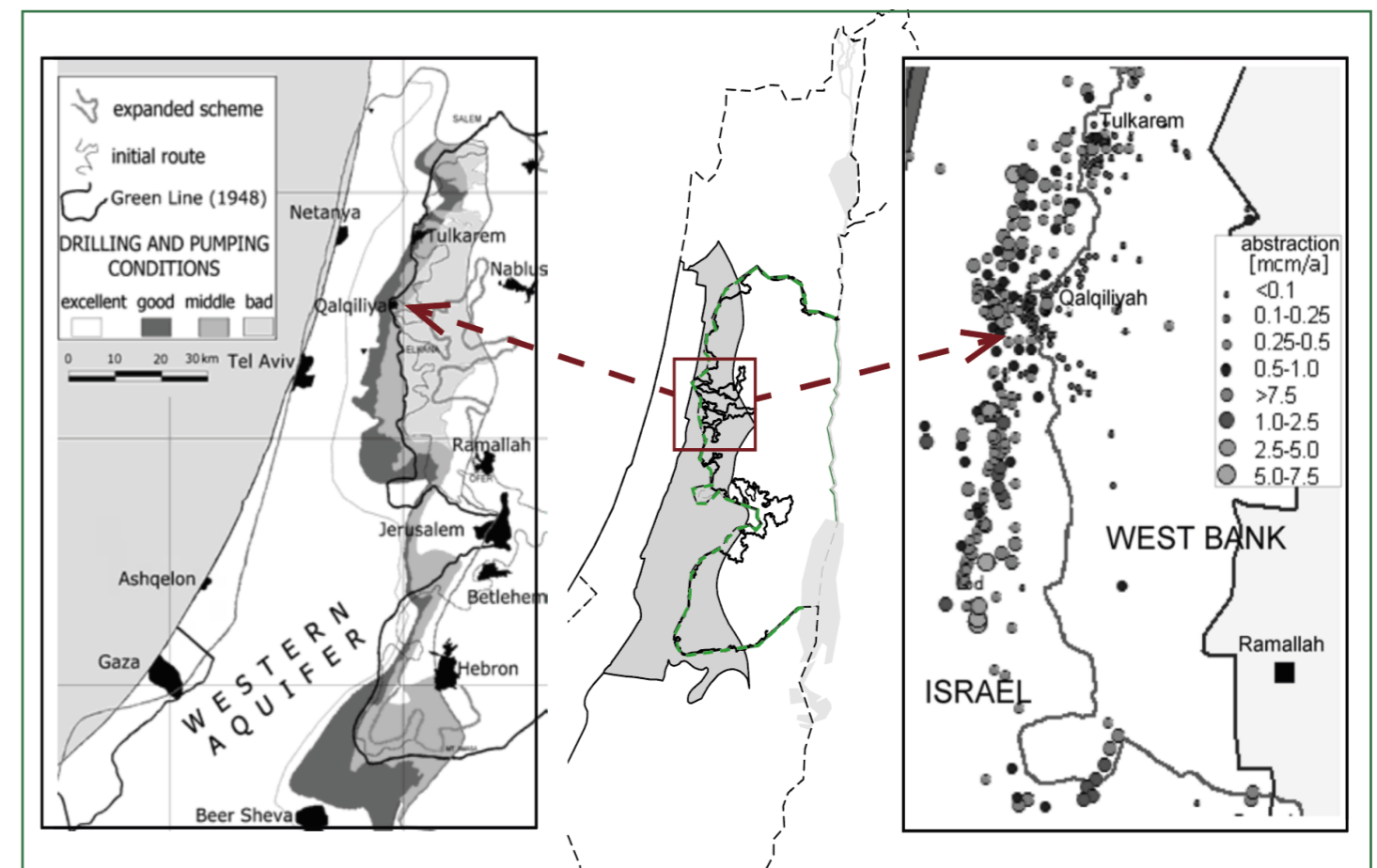
MAP 15: Annexation of the Jenin, Tulkarem, and Qalqilya region above the mountain aquifer.

[Map in the middle created by Dania Al Sknini, based on:

source: Mohammed Haddad, "Palestine and Israel: Mapping an annexation," (June 26, 2020), <https://www.aljazeera.com/news/2020/6/26/palestine-and-israel-mapping-an-annexation>.

source left and right illustration:

Clemens Messerschmid, "Till the Last Drop: The Palestinian Water Crisis in the West Bank, Hydrogeology and Hydropolitics of a Regional Conflict," *The Alternative Information Center (AIC)* (July 8, 2007): 3, 6. <https://www.juragentium.org/topics/palestin/en/water.pdf>]



[LIVING IN THE SHADOW OF THE WALL: THE SITUATION IN JAYYUS AND FALAMYA]

In the Qalqilya region of the northern West Bank, the villages of Jayyus and Falamya depend significantly on irrigated agriculture for their livelihoods. The construction of the Wall in this region started towards the end of 2002, resulting in major impacts for both communities. In Jayyus, a substantial portion of land (approximately 70 to 90 percent), including numerous citrus and olive trees, along with six crucial groundwater wells and their associated water networks, now lies to the west of the Wall, as depicted in illustration 17.²⁴⁶

Similarly, in Falamya, villagers find themselves situated east of the Wall, while their primary groundwater well is situated to the west of the wall. Although these wells primarily serve agricultural purposes, the communities of Jayyus and Falamya also rely on them for household water needs. These wells are privately owned and managed by members of the respective communities.²⁴⁷

The Wall's restriction on access to water resources has severely affected these rural communities. The lack of access to water has significantly decreased consumption for domestic and personal uses.²⁴⁸

Jayyus shares a limited water supply with its neighboring village 'Azzun through a single well located between the two villages as seen on (illustration 25). However, this well provides less than half of Jayyus's essential water needs, resulting in water rationing in the summer months to about two hours per day. As a result, domestic water usage in Jayyus has decreased to 23 liters per person per day, which is significantly below the World Health Organization's recommended standard of 100 liters per person per day needed to meet all health needs.²⁴⁹

In Falamya, three of the village's five wells have been funded by the Government of France. The wells supply water not only to Falamya but also to neighboring villages. This is made possible by an extensive water network that was established as part of the French project. However, the construction of the Wall led to significant damage to this water network and locally built water pipes, leading to diplomatic discussions about the French-funded water pipes.²⁵⁰



^ Illustration 25: Overview of the villages Falamya and Jayyus

[Source: Mark Zeitoun, *Power and Water in the Middle East: The Hidden Politics of the Palestinian-Israeli Water Conflict* (London: I.B.Tauris, 2008), 95.]

Testimony of Mohammed Jabar, Head of Jayyus Village Council

"There are 4,000 people living in Jayyus and eighty per cent of the people in this area live from agriculture. Before 2002, the people's life was easy, the relations were good and there was social unity. They lived a very good life. After the Wall was built, their life changed to one of poverty. The Wall has been built on Jayyus's land; from the west it enters 4 km from the Green Line into Jayyus's land, from the southwest it enters 6 km into Jayyus's land. Now around 9,200 dunums (9,2 km²) of our land are located behind the Wall. This land was used for growing fruit and vegetables and was where water resources were located for agriculture. After the Wall, the people were separated from the water and their agricultural lands.

The Israelis [the military] don't allow the people to enter their land, except through a gate in the south and a gate in the north. These gates are operated according to a very fixed schedule, they open at 7:30 in the morning and close at 8:30 am; then they open again at 12:30 pm and close at 1:30 pm; then they open at 4:00 pm and close at 5:00 pm until the next day. Before 2002, everyone went to work on their land, but now eighty per cent of farmers cannot enter their land. This has created a lot of unemployment in Jayyus - around 75 per cent. There are around 670 families in Jayyus, but no more than 80 can work on their lands, and the rest are without work. They have to live with the help of others.

A large number of people, especially the young men have left for Sweden, Germany and Norway and many of them are in Jordan or the Gulf countries. There are no opportunities here for them at the present time without their land, without their water, and without being able to work in Israel. What can they do? They want to leave. This is our problem. Before the Wall we used to drink the water from our wells, the water was clean and did not need to be purified. Now we have to bring the water from Azzun well to Jayyus. The well in Azzun is located 250 metres from a site used by Israeli settlers to dump their toxic waste. In reality this water is polluted. The people that drink from this water suffer from many illnesses. There are high cancer rates and many people suffer from kidney stones. People also suffer from diseases related to the difficulty of their situation such as high blood pressure. Because of the wall, 250 families are living below the poverty line in Jayyus. A number of us have graduated from university, I am one of them, but the loss of our land and our water is the reason for our ill health and poverty. We asked the Israelis for permission to bring water from wells behind the Wall to Jayyus for drinking and domestic uses. Since 2002 we have been applying for a permit, but the Israelis refused. The international community should put pressure on the Israeli side because we are not allowed to drink from our own water on the other side of the wall, and the water we get from Azzun and other places is of poor quality. No person can bear what we have had to bear since the Israelis occupied our land. We have applied to the Palestinian Ministry to build a pipe to bring the water from the other side of the Wall, but the problem is still that the Israelis will not give us the permit. Everything is ready; we only wait for the permission."²⁵¹

Testimony of Rashid Abu Daher, farmer and resident of Falamya

"In 1993, France provided funding to build an artesian well in Falamya that would provide water to the villages of Falamya, Jayyus and Kafur Jammal. The well was to provide water for 1,400 dunums (1000 square meters) of land, on which between 4,000-5,000 people are dependent for their livelihood. The Israelis didn't like this project and began to work against it. However, we continued with this project, but when the well was near completion we saw that the well had been destroyed and had been filled with stones and wood and the pumps had been ruined. No one knows who was responsible for damaging this project, whether it was the Israeli military or the settlers.

The police came to investigate, but never determined who was responsible. Then the Wall came on 21 September 2002. The well is now located 20 metres on the other side of the Wall. The Israelis also destroyed over 700 metres of pipes when they built the Wall in this area. Now we need a permit to dig a new well, which we cannot get, even though we have tried many times. We also need a permit to bring a professional to fix this well, which has been denied. From the 1,400 dunums of land we have, we can only farm half because there is not enough water. The water comes from other wells in the area. All of us have suffered because of this. Many farmers have started to leave the land, because the quota of water we are allocated is not enough. Without water we cannot plant anything. In these three villages, 90 per cent of the population are farmers. Many left the villages to work illegally in Israel and were imprisoned. Before the Wall came we were our own bosses. For those who had a farm, this was his main income. I used to grow aubergines and tomatoes, and before 1948 many Jews would come and work on our land. Now it has become difficult to buy food or milk for our children and we cannot afford to send them to the university.

Before they destroyed this project we were independent; now we are forced to work for others, even though our land is next to us. Where else in the world would you be able to see your land and not enter it? If the Israelis would give me a permit, I would sell myself to get the well to work. There used to be a swimming pool in Falamya and people from the whole area used to come here to enjoy their time. Now our children don't know how to swim. Even the water we drink is from a very small agricultural well, and we need to purify the water with chlorine and filters. We are better off than Jayyus where they drink the water from the agricultural well directly. However, as the village gets bigger, this well is not enough to support us all. We haven't been given a permit to dig a well for 11-12 years."²⁵²

[NOTES]

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[233] Ibid.

[234] Aaron T. Wolf, *Hydropolitics Along the Jordan River* (Austin: United Nations University Press, 1995): 73.

[235] Ibid.

[236] Zeitoun, *Power and water in the Middle East*, 76.

[237] Hillel I. Shuval, "A proposal for an equitable resolution to the conflicts between the Israelis and the Palestinians over the shared water resources of the mountain aquifer," *Arab Studies Quarterly* 22, no. 2 (2000): 43. <https://www.jstor.org/stable/41858331>.

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[239] Ibid.

[240] "Riparian Rights," DLS Solicitors, accessed July 31, 2024, <https://dlsolicitors.com/define/riparian-rights/>.

[241] Hillel I. Shuval, "A proposal for an equitable resolution to the conflicts between the Israelis and the Palestinians over the shared water resources of the mountain aquifer," 43.

[242] Ibid.

[243] Abdelrahman Tamimi, "Denying Life: The Annexation of Palestinian Water," Institute of Palestinian studies, July 29, 2020, interview, <https://www.palestine-studies.org/en/node/1650408>.

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[248] Ibid.

[249] Ibid.

[250] Ibid.

[251] Ibid.

[252] Ibid.

< **Illustration 26:** Water infrastructure across the borders.
[Created by Dana Al Sknini, source background]

Lucas Lerchs and Matthias Lamberts, "intertwining productive landscapes, 'Ma'ajeen, Nablus' an urban design exploration into an emerging neighbourhood," (Master's thesis, KU Leuven, Master of science in Urbanism and Strategic Planning[2018], 10-11).



PART 3: WATER INFRASTRUCTURE ACROSS THE BORDERS

[AN INTRODUCTION TO MICHEL DE CERTEAU'S CONCEPT OF "MAKING DO"]

In his seminal work 'The Practice of Everyday Life' (1984), Michel de Certeau, a French philosopher, historian, and social theorist, introduces the concept of "making do" to explore how individuals navigate and adapt to constraints within their environments through creative and tactical practices.²⁵³ De Certeau's ideas provide a framework for understanding how marginalized or constrained communities exercise agency through everyday practices. In the context of the West Bank, the concept of "making do" can be applied to understand how Palestinian communities, constrained by political, social, and environmental challenges, devise innovative tactics to secure water.

The following key points summarize Michel de Certeau's concept of "making do" as presented in his seminal work, 'The Practice of Everyday Life':

1. Strategies vs. Tactics²⁵⁴:

- Strategies are the methods and operations used by institutions and structures of power to control and organize space and resources.
- Tactics are the ways individuals and groups operate within those structures to manipulate or adapt to the system in ways that serve their needs.

De Certeau's emphasizes the distinction between the systematic control exerted by powerful entities (strategies) and the everyday acts of adaptation and subversion by individuals (tactics).

2. "Bricolage" and everyday creativity²⁵⁵:

De Certeau highlights the concept of "bricolage," where individuals creatively use available resources in unexpected ways to meet their needs. This practice of "making do" refers to the transformation and repurposing of resources within one's immediate environment to fit specific needs.

3. Everyday practices and resistance²⁵⁶:

De Certeau argues that the mundane activities of daily life are not just routine but are also acts of silent resistance. Through everyday practices, individuals, particularly those living under restrictive conditions, exercise agency and subvert dominant systems without overt confrontation. This resourcefulness and improvisation serve as forms of resistance and adaptation.

This part will examine the various "making do" strategies utilized by Palestinians in the West Bank, focusing on three case studies: the village of Madama, connected to the water network of Mekorot; Nablus City, with its own water network; and the different methods by which Bedouins and farmers access water while not being connected to any water network, particularly in Masafer Yatta.

[NOTES]

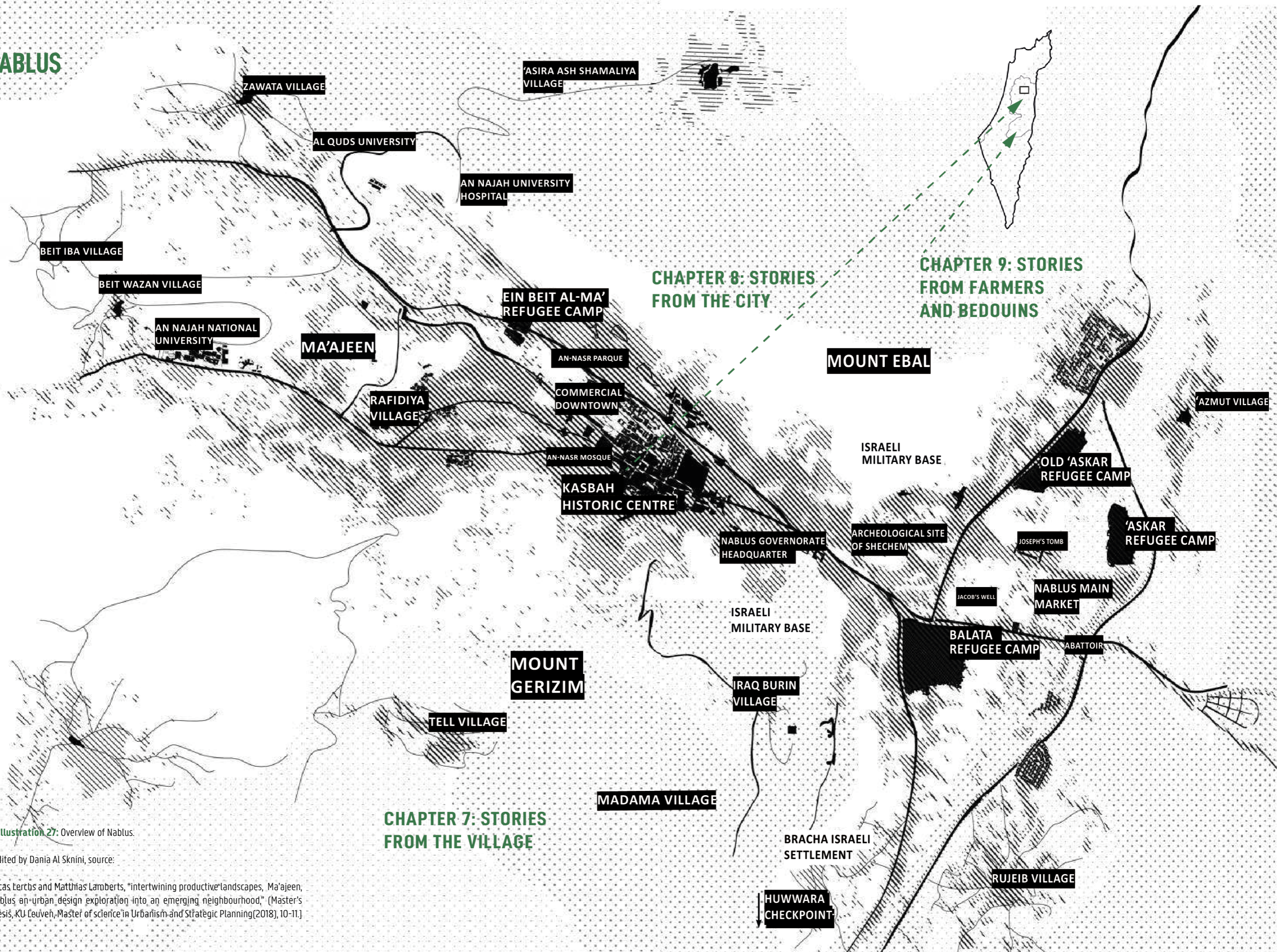
[253] Michel de Certeau, *The Practice of Everyday Life* (Berkeley: University of California Press, 1984), 47-48.

[254] Ibid, 51-52.

[255] Ibid, 12-14.

[256] Ibid, 27.

NABLUS



CHAPTER 8: STORIES FROM THE CITY

CHAPTER 9: STORIES FROM FARMERS AND BEDOUINS

CHAPTER 7: STORIES FROM THE VILLAGE

> **Illustration 27:** Overview of Nablus.

[Edited by Dania Al Sknini, source:

Lucas Terchs and Matthias Lamberts, "intertwining productive" landscapes, Ma'ajeen, Nablus an urban design exploration into an emerging neighbourhood," (Master's thesis, KU Leuven, Master of science in Urbanism and Strategic Planning(2018), 10-11.]



CHAPTER 7: STORIES FROM THE VILLAGE

> **Illustration 28:** Women carrying water in 'Sabil'.

[Edited by Dania Al-Skrini, source background:

Lucas Lerchs and Matthias Lamberts, "intertwining productive landscapes, Ma'ajeen, Nablus: an urban design exploration into an emerging neighbourhood," (Master's thesis, KU Leuven, Master of science in Urbanism and Strategic Planning(2018), 13-14.)

[MADAMA'S WATER CRISIS: POLLUTED SPRINGS, RADICAL SETTLERS, AND MEKOROT'S PIPELINES]

In 1945, the village of Madama in the sub-district of Nablus had a population of 290 Palestinians. Unlike those of many other villages, Madama's inhabitants were not displaced during the 1947-49 Nakba. Today, Madama is part of the West Bank, which has been under Israeli military occupation since 1967. By 2016, Madama's population had increased to 2,128.²⁵⁷

The village of Madama was established near the beginning of the Islamic Period on the foundations of a Roman settlement at the base of a hill and a fresh spring. The name Madama is of Canaanite origin, meaning "land with many springs."²⁵⁸

The history of this village illustrates the broader impact of constraints and failures on the lives of Palestinians, particularly regarding access to water resources.

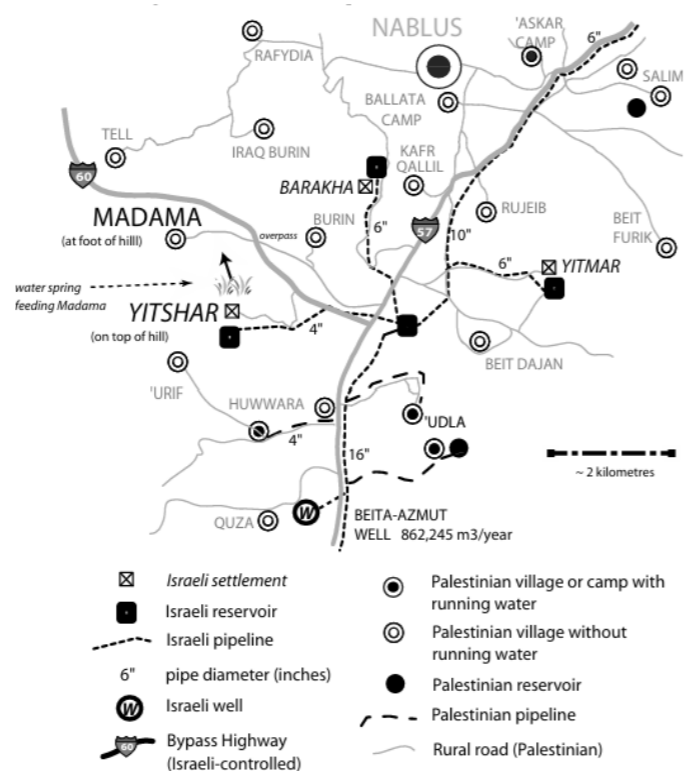
Mark Zeitoun documented Madama's situation in the Terzah (Al Fara'a) valley. Historically, a spring located twenty minutes' walk above the village had served as Madama's primary water source for centuries.²⁵⁹ **Illustration 29** created by Mark Zeitoun in 2008, shows the precise locations of springs and settlements. Although it depicts an outdated scenario, it offers a detailed overview of the situation.

Official online sources indicate that Madama was not connected to the water network. However, after contacting water expert Ramez El Titi from Nablus, who subsequently consulted local authorities, the Nablus municipality, and a consultant involved in water projects in Madama and the villages around it, we can confirm for the first time that Madama was connected to the Mekorot water network around 2012-2014 (see Appendix 4).

The updated **MAP 16** shows that all villages around Nablus are now connected to water networks, either through Mekorot (e.g., Madama), the Nablus Municipality (e.g., Kafr Qalil), or their own water resources (e.g., Beit Furik). Refugee camps and villages within the boundaries of the Nablus municipality (e.g., Rafidya village and Balata refugee camp) are already connected to the Nablus water system. The dotted water pipelines, as well as the water reservoirs were deleted from the map, since they are not accurate. The information provided is sourced from Appendix 4, provided by Ramez El Titi.

In 2022, a water network extension project was set up in the village of Madama (**illustration 30a and 30b**), to connect houses that were previously not linked to the existing network.

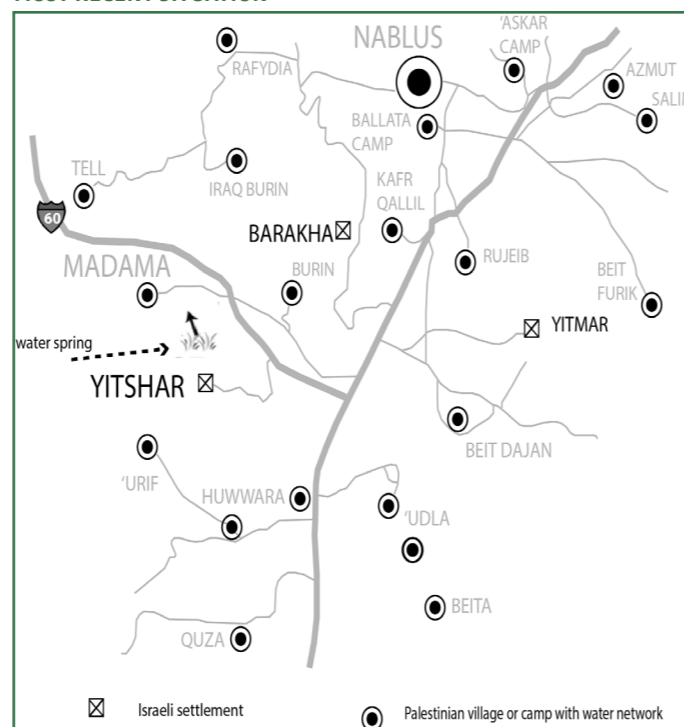
Further analysis of the timeline and connections of the surrounding villages in Zeitoun's map will be described in the following maps (**MAP 17-MAP 22**):



^ **Illustration 29:** Madama as documented by Mark Zeitoun.

[Source: Mark Zeitoun, *Power and Water in the Middle East: The Hidden Politics of the Palestinian-Israeli Water Conflict* (London: I.B.Tauris, 2008), 16.]

MOST RECENT SITUATION



^ **MAP 16:** Updated map of the villages connected to the water network around Madama.

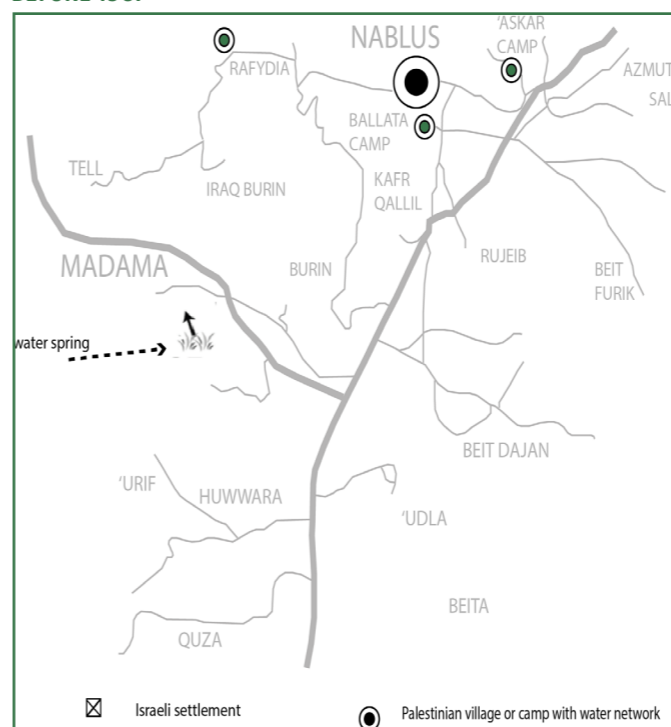
[created by Dania Al Sknini, based on the list from Ramez El Titi in Appendix 4]



^ **Illustration 30a and 30b:** Sign of the village of Madama with water network extension project.

[Source: Ramez El Titi, Appendix 4.]

BEFORE 1967

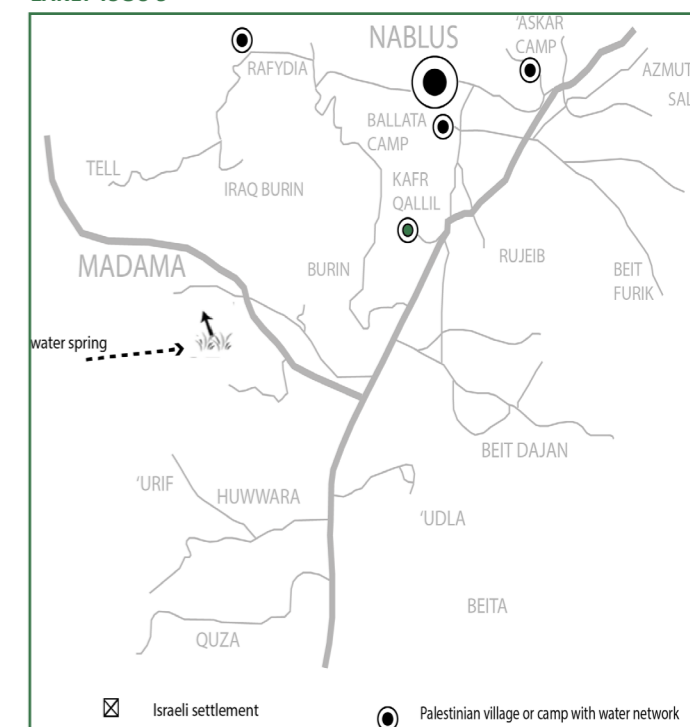


^ **MAP 17:** Before 1967, Rafydia, Balata, and 'Askar camp were connected to the water network of the Nablus Municipality.

Ibid.

<p>مجلس قروي مادما Madama Village Council</p>	<p>وزارة الحكم المحلي Ministry of Local Government</p>
<p>Financed by : Madama Village Council</p>	<p>تمويل : مجلس قروي مادما</p>
<p>Supervision : Pioneers Engineers and Architecture Key (PEAK)</p>	<p>إشراف : مكتب بيونير انجنيرز PEAK</p>
<p>Higher Supervision : Ministry of Local Government / General Directorate of Projects</p>	<p>الإشراف العالوي : وزارة الحكم المحلي / الإدارة العامة للمشاريع</p>
<p>Project : Extension & Upgrading of Madama Water Distribution Network - Phase 1</p>	<p>المشروع : توسعة وتطوير شبكة المياه في قرية مادما - المرحلة الاولى</p>
<p>Contractor Name : Musa Abu Hatab for General</p>	<p>اسم المقاول : مؤسسة موسى ابو حطب للمقاولات العامة</p>
<p>Contracting</p>	<p>مدة تنفيذ المشروع : 90 يوم تقويمي من 2022/5/20 إلى 2022/8/10</p>
<p>Project Duration : 90 Calendar Days from 20/2/2022 to 20/5/2022</p>	<p>من 2022/5/20 إلى 2022/8/10</p>

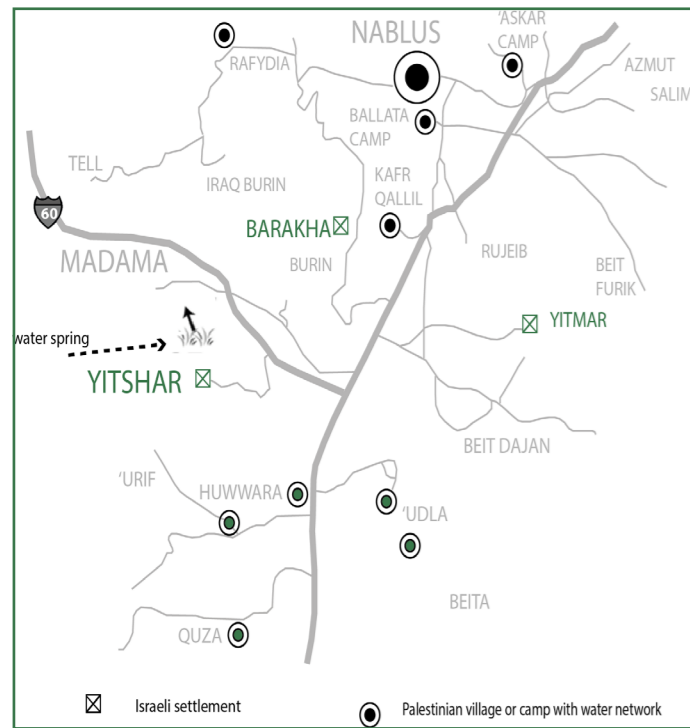
EARLY 1980'S



^ **MAP 18:** In the early 1980's, Kafr Qallil was connected to the water network of the Nablus Municipality.

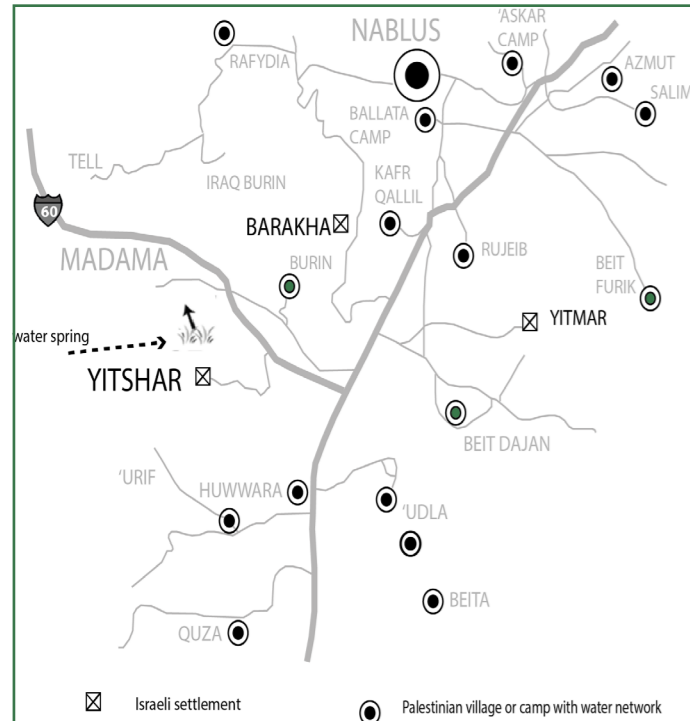
Ibid.

In 1987



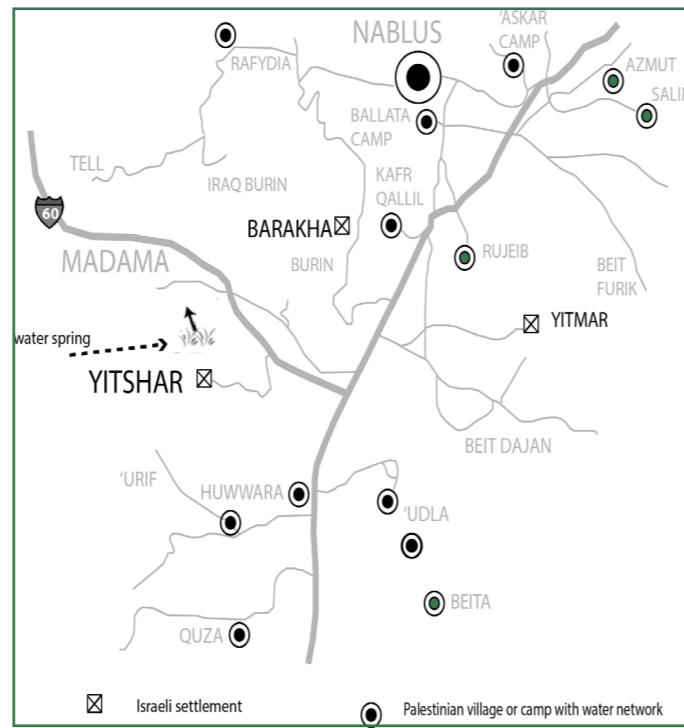
MAP 19: In 1987, the Palestinian villages Quza and Huwwara, as well as the Israeli settlements, were connected to the water network of Mekorot. 'Udla was connected in 1985 to Mekorot, but changed to the Rujeib well around 2008-2010 (owned by the PWA).

AROUND 2005-2010



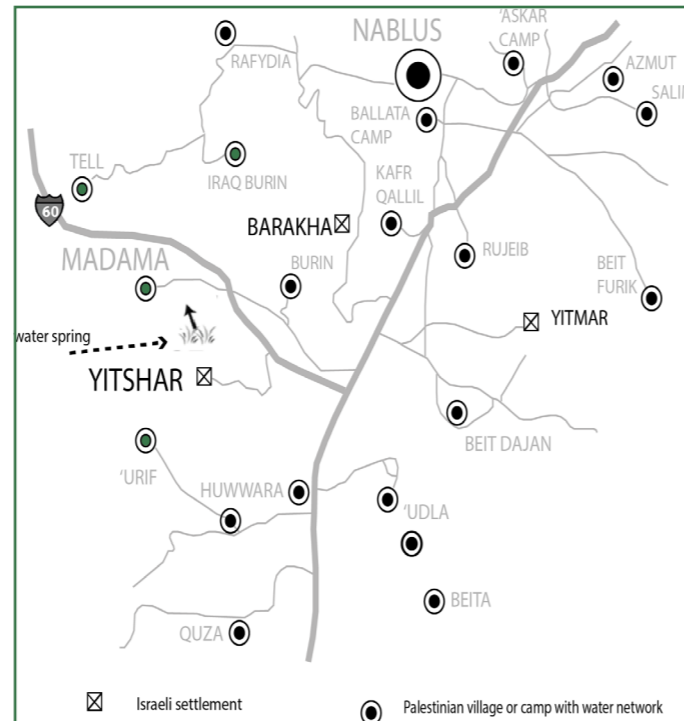
MAP 21: In 2005, the Palestinian village of Beit Dajan installed its own well and began receiving water from the Rujeib well, which is owned by the PWA. Around 2008-2010, the village of Beit Furik experienced a similar development. Once they face water shortage, they purchase water from private wells in Jordan Valley during the summer. In 2008, Burin was connected to the water network of Mekorot.

MID 1990'S



MAP 20: In the mid-1990's the Palestinian villages Salim, Azmut, Beita and Rujeib were connected to Mekorot, but changed to the Rujeib well around 2008-2010 (owned by the PWA).

AROUND 2012-2014



MAP 22: Around 2012-2014, Madama, Tell, Iraq Burin and 'Urif were connected to the water network of Mekorot.

[IMPACT OF SETTLER ACTIVITY]

In the 1920s, British authorities protected Madama's spring by constructing brickworks and directing the water through a pipe to a ground-level reservoir in the village center. Despite significant water infrastructure development in surrounding cities and settlements, Madama's water situation had deteriorated over the past century. Neither Jordanian, Israeli, nor Palestinian authorities had provided adequate basic water services. Climate changes and over-pumping from nearby deep Israeli wells had caused the spring, which once provided year-round water, to dry up every summer.²⁶⁰

The Yitshar settlement, established in 1983 on the hill above the spring, served as a settler outpost primarily inhabited by "American and European Orthodox Jewish religious Zionists", in words of Mark Zeitoun. They had occupied approximately 500 dunums (500,000 m²) of agricultural land from Madama. Over time, Yitshar evolved into a full settlement, home to more than 300 settler families. Like other nearby settlements, it was supplied with water from an Israeli well, Beita Azmut, located approximately ten kilometers away.²⁶¹

After the Yitshar settlement was founded, settlers frequently vandalized the pipes transporting water from the spring to Madama and dumped trash, including soiled diapers, into the spring. In 2000 alone, the pipes were destroyed three times, and settlers disrupted olive harvests by shooting the villagers' donkeys, confiscating their crops, and carrying away their harvest. According to Zeitoun, Yitshar settlers are known, "to be the most radical around, Yitshar settlers manifest their wrath primarily on the residents of the nearby villages."²⁶²

In 2003, the international NGO Oxfam-GB attempted to assist Madama's residents by reinforcing the spring with concrete, burying the pipes, and informing the local IDF authorities about the settlers' actions. Despite coordinating with the IDF's Civil Administration for two weeks and receiving assurances of protection, the settlers fired on Oxfam employees and disrupted the work by killing another one of the latter. The sabotage has occurred multiple times since then.²⁶³

[CURRENT WATER SITUATION]

The head of Madama's Village Council, Ayad Kamal wished to resign due to the numerous challenges the village faced. As the Palestinian Authority's representative, he was held responsible by his neighbors for various issues, including the arrest and torture of young men by the IDF for throwing rocks at cars on the nearby Israeli-settlers-only bypass Highway 60, attacks on farmers by Yitshar settlers, internal political conflicts, and the lack of basic services like water.²⁶⁴

Despite Madama receiving water from Mekorot since the network's construction around 2012-2014, residents often endure weeks without running water. This is due to Mekorot prioritizing settlers over local residents. As discussed earlier, this situation could be viewed as water apartheid, with the prioritization of one group over another.

In addition to these challenges, villagers also buy water through private water tankers at high prices of up to 15-25 NIS (6,25 Euro) per cubic meter of water. Moreover, Madama has 250 individual household rainwater harvesting cisterns (to collect rainwater) and

two springs. While one spring serves the population of drinking water through tankers, the other remains polluted and unused due to contamination by nearby Yitshar settlers.²⁶⁵

An effort by the Palestinian Water Authority (PWA), funded by USAID, to drill a well for the village of Madama was blocked by the Civil Administration. According to authors Ward, Learmont, and Ruckstuhl, the villagers of Madama feel they are being forced to "buy back their own water" at high prices. The villagers believe that neither the PWA nor the agreements established under the Oslo Accords have provided them with any significant benefits.²⁶⁶

This is also described by Mark Zeitoun as: "they are, in effect, paying for water from the settlers who have taken it from under their feet."²⁶⁷

Zeitoun further notes that villagers facing economic challenges resort to collecting water in the summer by using donkeys to carry jerry cans to ancient Roman rainwater cisterns near Iraq Burin, located beyond the settler bypass highway. Some elderly men have had their water containers emptied by Israeli soldiers as a punitive measure for using the settlers-only road. According to Zeitoun, the situation reflects a form of hydrological apartheid, where power imbalances result in unequal access to water resources.²⁶⁸

He suggests that the fundamental question of why villagers are prohibited from drilling their own well raises issues of power dynamics, with Israeli state dominance playing a significant role. Zeitoun argues that Madama's lack of clean water is not simply a result of circumstance but is part of a broader hegemonic apparatus, where Israeli state dominance over Palestinian-Israeli transboundary waters perpetuates disparities in access to resources.²⁶⁹

[NOTES]

[257] "The story of Madama," Visualizing Palestine, May, 2020, <https://today.visualizingpalestine.org/madama/>.

[258] The Applied Research Institute: Jerusalem (ARIJ), "Madama Village Profile," (2014): 5. http://vprofile.arij.org/nablus/pdfs/vprofile/Madama_vp_en.pdf.

[259] Zeitoun, *Power and water in the Middle East*, 17.

[260] Ibid.

[261] Ibid.

[262] Ibid.

[263] Ibid.

[264] Ibid.

[265] ARIJ, "Madama Village Profile," 15.

[266] Ward, Ruckstuhl, and Learmont, *Water Security for Palestinians and Israelis*, 225

[267] Zeitoun, *Power and water in the Middle East*, 18.

[268] Ibid.

[269] Ibid.

[THE ROLE OF WOMEN AND WATER IN THE VILLAGE]

يا واردة ع النبع
ما تسقيني من الجرة
و حياة عينك يا سمرة
ما بوخذ غيرك بالمرّة

"Oh, girl coming to fill water from the spring.

Why won't you quench my thirst with water from the jarrah?

I swear by your eyes, oh tanned one,

*I'll never be with anyone but you!"*²⁷⁰

Traditionally, it were the women who fetched the daily water supply for their families from nearby wells or springs. Mark Zeitoun states that: *"for centuries the village women would climb halfway up the hill to collect water from the spring, and take it back down the twenty-minute walk to the village."*²⁷¹ This task was often done in groups, accompanied by folk songs about their work. The 'jarrah' (الجرة), a traditional Palestinian clay pot, primarily used for water, was integral to rural Palestinian life (illustration 31). Smaller ones were for direct drinking, while larger ones were for transporting and storing water. Each community sourced its drinking water from specific springs known for their fresh, clean water.²⁷²

Testimonies from 'Water Stories: Older Women and Water Management Practices in Palestine' by Kholoud Al Ajarma, Ghadeer Arafah, and Jawida Mansour will guide the exploration back in time, discovering the special role women played in water management. In traditional village settings, women's responsibilities extended beyond mere collection, they encompassed conservation and allocation of water within their households and communities. This role was not just a daily chore but a deeply rooted cultural practice that symbolized their central role in sustaining life.²⁷³

Historically, obtaining water was a labor-intensive task that required significant physical effort and time. Women and girls in traditional village settings often had to travel long distances to reach water sources, such as springs. They would then carry the filled jars back home, often balancing them on their heads. This practice required not only physical strength but also considerable skill. This journey to the nearest spring would take hours, and returning home with the heavy jars was particularly challenging.²⁷⁴

The journey to collect water was also a communal activity, offering women opportunities to socialize and support each other. Despite the challenges, these trips were filled with a sense of camaraderie, as women would sing songs and share stories on their way to the spring, making the demanding task more bearable.²⁷⁵

Rawda (68) from the village 'Anin as cited in the article of Ajarma, Ghadeer Arafah, recalls: *"at the water spring we put our jars and containers in line; we did not have to physically stand in line; the jar saved our place. The rule was first come first served. Then we sat waiting our turn; we talked and discussed our daily matters. The water spring was the only place where we were allowed to sit and talk without being accused of not doing our job or duty. Being late was excused..."*²⁷⁶

In some instances, donkeys were used to aid in water transportation, reducing the physical burden on women. Donkeys made it easier to carry multiple jars at once, with each donkey capable of carrying four metal buckets, each 20 liters in size, which saved women from making multiple trips. However, not every family could afford donkeys, so many women still had to carry water manually.²⁷⁷

Once home, drinking water was stored in a large clay vessel called a "zeer, zir or zeir." On average, a family of five needed two zirs of water daily, all overseen by women. The zir was covered with a clay plate to keep out dust and insects. Water from the spring was filtered with a clean cloth to remove contaminants like straws or leeches. A metal cup, used by all household members, was often attached to the zir for drinking, with a second cup reserved for guests. The water in the zir was also used for cooking. For other purposes, such as cleaning and watering animals and plants, water was stored in metal barrels in the courtyard. Each family had at least two barrels, and more if the household had livestock.²⁷⁸

Women were responsible for determining how water was used and conserved within the household. This role was crucial, especially during periods of scarcity. They had to ensure that water was available for drinking, cooking, cleaning, and sometimes for small-scale agriculture. As Amina (82) said: *"We were very careful not to waste even a drop of clean water... Water was too precious and scarce to use even for cleaning and washing."*²⁷⁹

The advent of piped water systems in the villages brought significant changes. While it alleviated the physical burden of water collection, it also distanced women from their traditional roles as water guardians. With water now coming from taps, they no longer had to walk to the springs, but it also meant losing that daily connection with their neighbors and the land.²⁸⁰

Water in these communities was more than just a resource, it held significant cultural and social value. Women's narratives reveal a deep respect for water and a recognition of its central role in their lives and heritage. Amina (82) and Halima (105) as cited in the article of Ajarma, Ghadeer Arafah collectively observed, *"We consume much more water today than in the past. Younger generations do not know the difficulties we went through to collect water, which also made us appreciate every drop."*²⁸¹

The transition from traditional to modern water systems has been a double-edged sword. While it has reduced physical labor, it has also led to a disconnection from the cultural practices and communal bonds that were built around the daily task of water collection.²⁸²

In the past, water played an essential role in constructing women's social identity and capital, offering a degree of 'legitimate' freedom from their daily chores. While waiting for their turn at the spring, women built friendships, learned new skills, and enjoyed themselves. Palestinian women were also key players in water management and governance within their communities, performing this function effectively on a small but socially significant scale. As the water system changed, women were removed from water collection, altering their relationship and connection with water dramatically.²⁸³

Despite adapting to the new reality, housewives in refugee camps and rural Palestine, in particular, lost the 'legitimate' freedom that water collection provided to their grandmothers. Rural development agendas and policies often fail to consider how to replace the varied roles, functions, and social rituals that water gathering and conservation provided women; as a result, housewives and unemployed women are increasingly excluded from public life.²⁸⁴

Professor anthropology, Nefissa Naguib recounts a walk down the same path with two elders in the village of Musharafah, Um Husein and Um Fathi. Where she asked them about their past, collecting water:

Um Husein: "Do you remember how you or I would go down and save a place for the other?"

Um Fathi: "Yes, those were days filled with goodness."

U.H: "Even our little girls fetched water."

U.F: "Yes, they had nothing else to do. Today, they just want to go to school and then want more."

U.H: "We were happy. Always together, talking and singing. We never complained."

U.F: "Our minds were happy. Today our minds are worried. Before, there was a lot of work, fetching water, waiting for every drop. But it was good for the mind. We were outside, smelling the air. Our bodies were tired, but our minds were at ease. And everything is destiny."

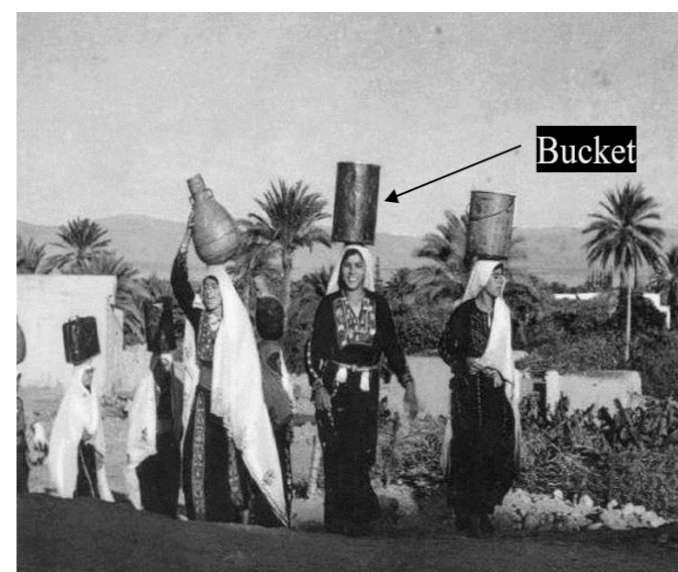
U.H: "Yes, you're right. Everything is destiny."

U.F: "After the jarrah was filled, we knew we were going home or to the taboun, to wash and then to the field to pick olives. Now, we don't know what happens to our children in Ramallah."

U.H: "It was safer before the intifadah."

U.F: "Everything is destiny."

*U.H: "You speak the truth."*²⁸⁵



[NOTES]

[270] "The Palestinian Clay Pot," Dar collective, accessed August 13, 2024, <https://darcollective.com/blogs/blog/the-palestinian-clay-pot>.

[271] Zeitoun, *Power and water in the Middle East*, 15.

[272] "The Palestinian Clay Pot," Dar collective, accessed August 13, 2024, <https://darcollective.com/blogs/blog/the-palestinian-clay-pot>.

[273] Kholoud Al Ajarma, Ghadeer Arafah, and Jawida Mansour, "Water Stories: Older Women and Water Management Practices in Palestine," *Centre for Mediterranean Integration of the United Nations Office for Project Services (UNOPS)*, (2022): 3-9. <https://www.research.ed.ac.uk/en/publications/water-stories-older-women-and-water-management-practices-in-pales>.

[274] Ibid.

[275] Ibid.

[276] Ibid.

[277] Ibid.

[278] Nefissa Naguib, *Women, Water and Memory: Recasting Lives in Palestine* (Leiden: Brill, 2009), 133-134.

[279] Al Ajarma, Arafah, and Mansour, "Water Stories," 5.

[280] Ibid, 3-9.

[281] Ibid.

[282] Ibid.

[283] Ibid.

[284] Ibid.

[285] Naguib, *Women, Water and Memory*, 15.

v Illustration 31: Palestinian women with the traditional 'Bucket' and 'Jarrah.'

[Source: Rami Atwan, "Jericho: Palestinian Women from Jericho in traditional garb carrying water," Palestine remembered, Februari 1, 2011, https://www.palestineremembered.com/GeoPoints/Jericho_525/Picture_73705.html.

Salam Awad "In pictures: Palestinian women and anti-colonial resistance in the 1930s," Middle East Eye, May 23, 2022, <https://www.middleeasteye.net/discover/palestine-women-anti-colonial-resistance-pictures.>

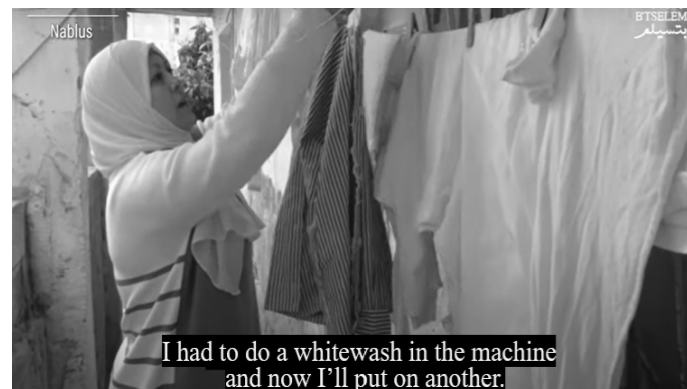


CHAPTER 8: STORIES FROM THE CITY

^ **Illustration 32:** The city of Nablus.

[Map created by Dania Al Sknini, based on: Mohammed Itair, Isam Shahrour, and Ihab Hijazi, "The Use of the Smart Technology for Creating an Inclusive Urban Public Space," *Smart Cities* 6, no. 5 (September 20, 2023): 2487. <https://www.mdpi.com/2624-6511/6/5/112>.

Source background:
Lucas Lerchs and Matthias Lamberts, "Intertwining productive landscapes, Ma'ajeen, Nablus an urban design exploration into an emerging neighbourhood," (Master's thesis, KU Leuven, Master of science in Urbanism and Strategic Planning(2018), 10-11.]



^ Illustration 33: Khulud in Nablus.

[Source: B'Tselem, "Parched: Israel's policy of water deprivation in the West Bank, May 3, 2023, short documentary, 2:15 to 2:58, <https://www.youtube.com/watch?v=zpvuPF06iPA&t=164s>.]

[FLOWING FORWARD: NABLUS' INDEPENDENT WATER NETWORK]

The city of Nablus, located in the West Bank, faces severe water issues despite being connected to its own water network. Residents of Nablus often experience days, sometimes even a couple of weeks, without running water, especially during the summer.²⁸⁶

These irregularities in water supply force residents to meticulously plan their daily activities around the times when water is available. To deepen our understanding, we delve into the story of Khulud from 'a-Dahiyah al- 'Ulya' in Nablus (Illustration 33).

In her interview with B'Tselem, Khulud explains that people schedule their cooking and washing activities according to their turn to receive tap water: "I don't do laundry during the week. I wait for water to arrive. Most of the time, the water comes on at night, after 10:00 P.M., and then I run the washing machine over and over for hours until I finish everything."²⁸⁷

When asked by the interviewer, "Did you know there are a lot of people living near us [the Israeli settlers] who don't have water tanks?" The interviewer adds, "They [the settlers] have running water all the time."

Khulud reacts with surprise, "Here?" she exclaims, before responding, "نياهم" (I envy them/they are lucky).²⁸⁸

Nablus City receives its water supply from the Nablus Municipality, with all housing units connected to the water network. In 2012, the city was supplied with approximately 9.2 million cubic meters of water annually, equating to an estimated 180 liters per capita per day. However, due to water losses, estimated at 37.9%, occurring at various stages including the main source, major transport lines, distribution network, and household levels, the actual consumption per capita is around 112 liters per day. This consumption rate aligns with the World Health Organization's minimum recommendation of 100 liters per capita per day.²⁸⁹

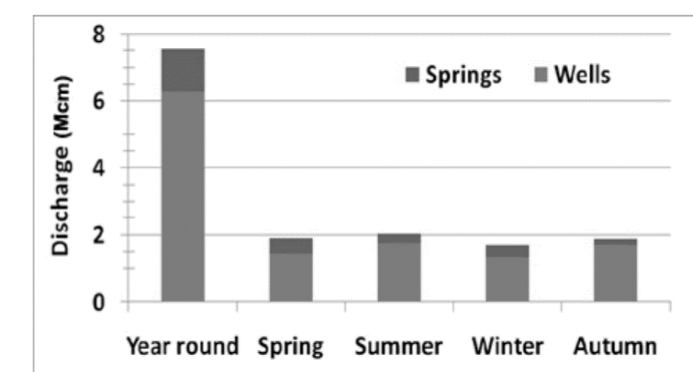
The kasbah (قَصَبَة) of Nablus, a historical center covering about three square kilometers, functions as a socio-spatial microcosm, meeting the everyday needs of its inhabitants. This area is the result of 2,000 years of city development, encompassing periods from the Hellenistic, Roman, Byzantine, Mamluk, and Ottoman eras.²⁹⁰

According to water expert Ramez El Titi (Appendix 5), the Nablus Municipality operates a modern water network connected to water wells and supplemented by natural springs within the city. In the kasbah (the old city), there are three main springs that supply water to the old city (MAP 23):

- Al- Qaryoun water spring
- Ras Al-Ein Water spring
- Ein Al- 'Asal water spring

However, El Titi notes that three additional springs and five wells used for drinking water are less significant for the old city because they are located outside its boundaries. The city's water infrastructure includes reservoirs that increased capacity from 19,522 cubic meters in 2013 (as reported by the Nablus Municipal Council)

to approximately 23,000 cubic meters. Despite this increase, average daily water consumption has remained at about 38,000 cubic meters since 2013, according to El Titi's expertise. Illustration 34, received from Ramez El Titi (Appendix 8) shows the water produced by the different wells owned by Nablus Municipality and the springs in the City of Nablus during various seasons in the year 2008.



^ Illustration 34: Seasonal water production from different wells and springs in the City of Nablus.

[Source: House of Water and Environment (HWE) and Nablus Municipality, "Protection of Nablus Springs," (2010). Received from Ramez El Titi, Appendix 8.]



Ein al-'Asal spring

Ras Al-Ein spring

Al-Qaryoun spring

-  **Streets**
-  **Water Distribution Network**
-  **2, 3, 4, 6 & 8" Water**

^ MAP 23: The three main springs that supply water.

[Created by Dania Al Sknini, based on: Shadia Touqan and Ali A. Hamid, *Nablus Enduring Heritage and Continuing Civilisation: The Revitalization Plan of the Old City* (Jerusalem: Welfare Association, 2011): 140.]

The water network serving the Old City relies consistently on the Al-Qaryoun spring as its primary water source for both supply and consumption. Nevertheless, it's worth noting that the Ras Al-Ein and Ein Al-'Asal water sources can serve the same purpose. Pipes connect these springs to the water distribution network in the Old City, enabling them to provide supplementary water supplies when needed. The spring water flows through a 50-meter pipe with an 8-inch diameter to reach the water reservoir at the Al-Qaryoun pumping station.²⁹¹

From there, water from Al-Qaryoun spring is pumped through the distribution network to various areas of the Old City. The reservoir consists of two tanks, established in 1935, each with a capacity of 300 cubic meters, totaling 600 cubic meters. Historical records from 1924 indicate that the Al-Qaryoun Spring produced 600 cubic meters of water.²⁹²

In general, water pumping and distribution in Nablus follows an intermittent schedule, with residents typically receiving water supplies twice weekly up to once each four days. The reason Khulud receives less water from the tap in the summer, according to Ramez El Titi (Appendix 5), stems from two main factors causing intermittent water supply in Nablus:

- **First, the technical reasons** (insufficient storage capacities, pressure in the pipes, etc.). Even though German Cooperation invested in developing the supply and distribution system, but still it needs more development.

- **Second, the insufficient available water** especially in summertime where the demand is more than the supply of natural resources.

Although Nablus has its own water wells and springs, in some specific cases (to increase supply), The Nablus Municipality buys water from Mekorot.

In the introductory screenshots, Khulud is aware that her neighborhood, A-Dahiyah, is not included in the water distribution schedule that day. Residents of Nablus rely on a distribution schedule, which is announced daily on the municipality's Facebook page. This information is also shared on local news pages on social media. Additionally, residents can access the schedule through an application provided by the Nablus Municipality. However, internet connection is needed for this.

Illustration 35 displays a screenshot of the water distribution schedule for Sunday, May 25th 2024 posted on the municipality's Facebook page.

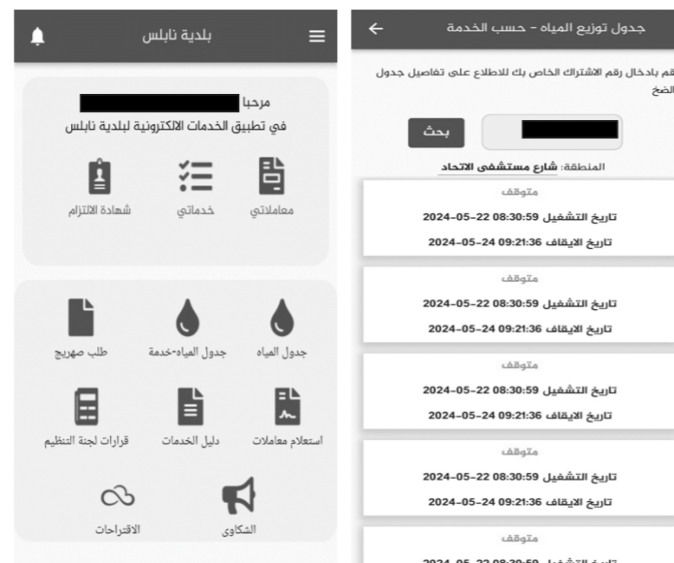
Residents can also control the status of water distribution using the municipality's application (**illustration 36**), which is widely utilized, according to El Titi. To do so, residents must have a water subscription in their name and insert their subscription number into the application. The application then displays whether water is currently being pumped to the resident's designated water zone.

In Nablus and other West Bank cities, residents often rely on additional rooftop water tanks (**illustration 37**) as a crucial part of their water supply system.²⁹³ These tanks, also called as "Black



^ **Illustration 35:** Water distribution schedule for the the City of Nablus.

[Source: Ramez El Titi, Appendix 5.]



^ **Illustration 36:** Municipality's application.

The screenshots indicates that water was supplied from May 22nd to May 24th, 2024, but then it has stopped.

[Source: Ramez EL Titi, Appendix 5.]

Forest" in words of professor Tamimi (**Appendix 3**), are periodically filled by water tankers and serve as the sole source of water for households when tap water is unavailable. According to Ramez El Titi (**Appendix 6**), "the rooftop water tanks are part of the distribution system. Customers install the roof tanks because the water supply is intermittent, and they need the water continuously."

El Titi further explained in Appendix 6 that Nablus, like other West Bank cities, is a hilly area with its main water resources located approximately 12 to 15 kilometers outside the city. Water is transmitted through main lines to the city's reservoirs and pumping stations, some of which are situated in low areas. As a result, water must be pumped into the distribution network uphill. However, this leads to low water pressure in the pipelines feeding rooftop tanks in houses located uphill. El Titi stated, "It is not possible to increase the pressure because this will cause damage to the pipes and fittings in the lower parts of the network."

He added that the rooftop tanks themselves contribute to pressure loss in the distribution lines. When the water supply is intermittent, the rooftop tanks are often nearly empty. When pumping resumes, the empty tanks in lower areas fill first, followed by those at higher elevations, until water finally reaches uphill locations. In some cases, the water does not reach the rooftop tanks of houses and high-rise buildings uphill due to low pressure. El Titi noted that, "customers install ground tanks with a pump to lift the water to the roof tanks" in these situations.

Furthermore, El Titi mentioned that in specific cases where pipe pressure is insufficient to raise water to rooftops in high-rise buildings, or when a long water cycle leaves customers without enough space on their roofs, residents resort to using ground tanks with a volume of 1-1.5 cubic meters. These ground tanks ensure that water can still be accessed and pumped to where it is needed.

Despite being targeted by the Israeli Army, some houses manage to protect these tanks, turning intact tanks into essential nodes in the water distribution system.²⁹⁴

Illustration 38 illustrates how this rooftop water tank system is connected, highlighting its critical role in Nablus's water management. The Nablus municipality supplies water to homes from wells and springs. However, to ensure a continuous water supply, a tanker truck periodically arrives to fill rooftop tanks, maintaining a steady water flow for households.

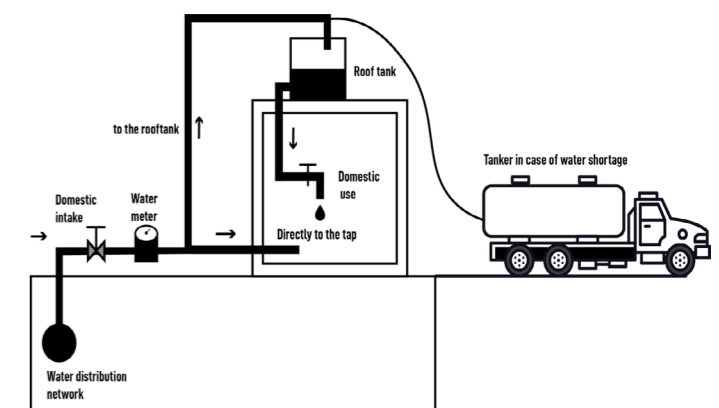
In addition to their utility, rooftop water tanks must adhere to quality standards. According to El Titi, water quality is one of the performance indicators for water supply service providers, as regulated by Palestinian laws. In Nablus, water is disinfected at the source, including wells and pumping stations, and reaches consumers disinfected. The Nablus Municipality, along with the Environmental Health Department of the Ministry of Health, performs regular water quality controls. Samples are taken from different locations, such as sources, the distribution network, and house taps, to test for total coliforms and fecal coliforms, which are indicators of water pollution. El Titi confirmed that "Legionella does not exist in Nablus water resources, which are groundwater and not surface water."

The rooftop tanks are made of high-density polyethylene (HDPE), which is proven safe for use. Traditionally, they were black, but recently, white tanks have become more common. In both cases, El Titi assured that "they are safe for use as roof tanks," emphasizing that "roof tanks are closed and not subject to air." In addition, the Nablus Municipality has a dedicated disinfection unit responsible for maintaining water quality and addressing any customer complaints.



^ **Illustration 37:** Rooftop water tank.

[Source: Mohammed Najib, "Palestine runs dry: 'Our water they steal and sell to us,'" Al Jazeera, July 15, 2021, <https://www.aljazeera.com/news/2021/7/15/water-war-palestinians-demand-more-water-access-from-israel/>]



^ **Illustration 38:** Rooftop water tank connection, filled by the water tanker if the roof tank is empty to have a continuous water supply.

[Created by Dania Al Sknini, source: Appendix 5.]

Besides purchasing water from tankers at a high cost, residents are sometimes forced to purchase bottled water and limit usage to essential needs only. In the past, the most (Israeli) brands were Ein Gedi, Eden, and Neviot. Recently there are large number of Palestinian bottled water brands like Jericho, Al Quds, Arwa, Murjan, and Riviera as seen in **illustration 39**.

Lama Aghbar, a resident from Nablus, describes the struggles with rooftop tanks filled by tankers:

"When you order a water container, it takes several days to arrive, and we couldn't find anyone who's willing to carry it up seven stories to the roof of our building and connect it to the fixed containers there. All the workers could do was put the container downstairs, connect it to the roof with a pipe, and then pump the water up. That is risky, too, because if the pipe jerks from the water pressure, it could knock one of the workers off the roof. While they were pumping the water into the container on the roof, I prayed to God that it would go well and that no-one would be injured. When it was over and we finally had a bit of water at home, my children celebrated. My daughter Majd, who is 19, filled up bottles and looked after them as if they were gold. [..]"

"I've done everything I can to cut down our water consumption. I reduced the water pressure in the faucets and in the toilets, and I brought containers to save water. I started calculating every drop of water. I really envy the people who live in the settlements and swim in swimming pools. They use as much water as they want and have a generous supply around the clock."²⁹⁵

Residents who can't afford water tankers have to wait until they receive tap water to fill as much as they can, storing water in bottles and pots (**illustration 40**).

It's worth noting that Nablus is relatively fortunate in terms of water supply, as it has its own springs and wells and is not fully dependent on Mekorot. In other cities like Hebron (Al-Khalil), Bethlehem, or even the village of Madama (as seen in chapter 7), the water cycle of Mekorot is much longer, with residents sometimes going weeks or even months without running water, as settlements receive priority. In **illustration 41**, Arij shares her story about how she goes to the fountains at the mosques to fill bottles with water for drinking and cooking, like many other Palestinians.

Across the old city of Nablus, "sabeel" (water fountains open to public use, dating back to different historic ages) are a common sight. Sabeels are connected to the different springs located in the Old City and were constructed in the past to serve the local population of the city. As of now, many of the sabeels are still functioning and are being utilized. Public drinking fountains (asbelah, singular: sabeel/sibil) are common fixtures in many major cities in the region. Nablus boasts twenty such Roman water fountains connected to various springs, primarily located in Ras Al-Ein. These asbelah are accessible for everyone in the neighborhood.²⁹⁶

Historical records indicate that water distribution in the Old City was once carried out by water vendors (saqa'een), who transported water from house to house in goatskin containers (qirab, singular qirba), filled from public water fountains (Sabeel). However, concerns

about water availability, efficient usage, and pollution prevention prompted the Nablus Municipality to initiate the construction of a water distribution network for the Old City in 1934.²⁹⁷



^ **Illustration 39:** Palestinian water bottles.

[Source: Ramez El Titi, Appendix 5]



^ **Illustration 40:** Water stored in pots.

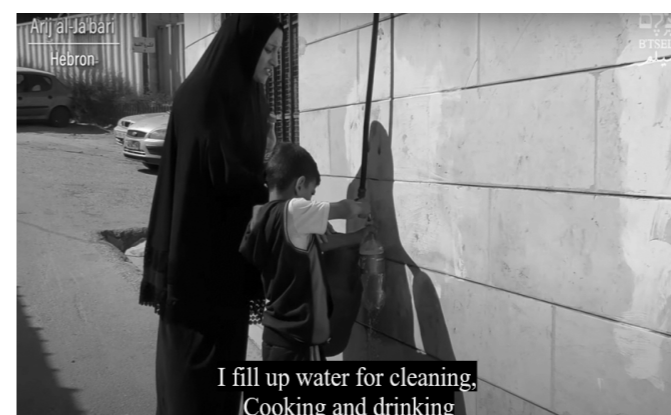
[Source: "180,000 residents of Nablus suffering acute water shortage since June," B'Tselem, September 13, 2017, https://www.btselem.org/water/20170913_acute_water_shortage_in_nablus.]



Arij, where are you going?



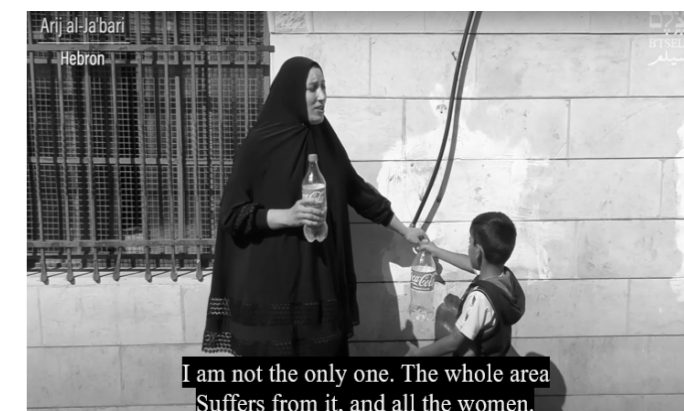
To fill up water at the mosque, like I always do



I fill up water for cleaning, Cooking and drinking



I fill it up for all our needs. Then I carry it and suffer



I am not the only one. The whole area Suffers from it, and all the women.

^ **Illustration 41:** Arij in the city of Hebron filling her water bottles at the fountain of the mosque.

[Source: B'Tselem, "Parched: Israel's policy of water deprivation in the West Bank, May 3, 2023, short documentary, 0:25 to 0:45, <https://www.youtube.com/watch?v=zpvuPF06iPAGt=164s>.]

[WATER AWARENESS PROGRAMS]

Water awareness programs have become increasingly crucial in addressing global water challenges, particularly in areas prone to water scarcity, such as Nablus. These programs aim to educate and empower communities to use water resources responsibly and sustainably. This section is written based on information from documents provided in **Appendix 6** by Ramez El Titi.

One notable example is the Water Supply and Sanitation Department (WSSD) in Nablus Municipality, Palestine, which has been actively promoting water conservation and awareness through various initiatives in collaboration with the German Technical Cooperation (GTZ).

The Nablus Municipality, with its diverse population and growing urbanization, faces significant challenges in water management. Limited water resources, coupled with increasing demand, necessitate efficient management and conservation strategies. Recognizing this need, the WSSD of Nablus Municipality has been proactive in implementing public awareness programs aimed at educating citizens about water conservation and encouraging responsible water usage.

The WSSD, with the support of GTZ, has launched several key initiatives to promote water awareness among the residents of Nablus. These initiatives are designed to target different segments of the population, from children to religious leaders, ensuring a broad reach and impact.

1. Summer Camps for Children

One of the flagship programs of the WSSD is the summer camps organized for children, such as the “Dew Droplets” camp (**Illustration 42**). These camps aim to instill water conservation values in young participants through engaging and educational activities. The camps include visits to local water facilities, where children learn about water sources, the importance of conservation, and the efforts made by WSSD to ensure safe drinking water supply.

The 2008 summer camp, for example, hosted 50 school children aged 13-16 at the Hemdy Mango Center in Nablus. The camp featured a mix of educational and creative activities, including theater performances, drawing competitions, and essays focusing on water conservation themes. The “Child to Child” concept was also emphasized, encouraging participants to share their newly acquired knowledge with peers and family members.

An evaluation conducted using the SPSS program showed a significant increase in awareness among participants and their families. The findings revealed that children were not only learning about water conservation but also actively disseminating this information within their communities.

2. Engagement with Religious Leaders

Recognizing the influence of religious leaders in shaping community attitudes, the WSSD organized workshops for Imams. These focused on integrating water conservation messages into the weekly Friday

speech, highlighting the importance of stewardship and responsibility in Islam regarding water resources.

In these speeches, provided in Appendix 6, the Imam for example highlighted that taking a shower uses less water than a bath, and while waiting for the hot water to come, residents can store the cold water in a bucket, which later can be used for cleaning. The initiative proved successful, with many Imams incorporating water conservation themes into their Friday speech and Friday prayers. This approach effectively reached a broader audience, leveraging religious teachings to reinforce the importance of sustainable water usage.

3. Mass Media Campaigns

Mass media has been a vital tool in WSSD's public awareness strategy. The department produced television spots, posters, and video clips to convey key messages about water conservation and the importance of paying water bills:

- **Television Spots:** Three television spots were created to raise public awareness about water conservation, promote timely bill payments, and encourage maintenance of water and sanitation facilities.

- **Documentary Film:** A 15-minute film was produced in both Arabic and English, detailing the significance of water resources, the challenges faced in Nablus, and practical ways to conserve water

- **Radio Dialogues and Interviews:** These platforms provided opportunities for WSSD officials to discuss water management issues and promote conservation efforts directly with the public.

4. Art and Culture Integration:

Art has been employed as a medium to communicate water conservation messages creatively and memorably. WSSD organized competitions where children created drawings and essays related to water themes, with the best artworks featured in calendars and posters distributed across the city.

This initiative not only raised awareness but also engaged children in artistic expression, making the message of water conservation more relatable and impactful.

5. Community Outreach Programs

Community involvement is a cornerstone of WSSD's water awareness efforts. The department has established signboards with water conservation messages at strategic locations throughout Nablus and distributed educational materials like car hangers, cloth bags, and notebooks, all emphasizing the importance of water conservation. These outreach efforts have helped maintain a continuous dialogue about water conservation in the community, ensuring the message reaches various audiences effectively.

The water awareness programs implemented by the WSSD of Nablus Municipality, in partnership with GTZ, serve as a model for effective community engagement in water conservation. By combining education, media outreach, and community involvement, these programs have successfully fostered a culture of awareness and

responsibility towards water resources. As global water challenges persist, such initiatives offer valuable insights into how communities can be mobilized to protect and conserve this vital resource.

[NOTES]

[286] Hareuveni, “Parched Israel's Policy of Water Deprivation in the West Bank,” 5.

[287] Ibid, 19.

[288] B'Tselem, “Parched: Israel's policy of water deprivation in the West Bank, May 3, 2023, short documentary, 2:15 to 2:58, <https://www.youtube.com/watch?v=zpvuPF06iPA&t=164s>.

[289] The Applied Research Institute: Jerusalem (ARIJ). “Nablus city Profile,” (2014): 17. http://vprofile.arij.org/nablus/pdfs/vprofile/Nablus%20city_vp_en.pdf.

[290] Abdalrahman M.G. Kittana and Bruno De Meulder, “Architecture as an agency of resilience in urban armed conflicts: The case of Nablus City/Palestine,” *International Journal of Architectural Research* 13, no. 3 (July 28, 2019): 700. <https://fada.birzeit.edu/bitstream/20.500.11889/8126/1/Architecture-as-an-agency-of-resilience-in-urban-armed-conflicts-The-case-of-Nablus-CityPalestineArchnetIJAR.pdf>.

[291] Shadia Touqan and Ali A. Hamid, *Nablus Enduring Heritage and Continuing Civilisation: The Revitalization Plan of the Old City* (Jerusalem: Welfare Association, 2011): 140-141.

[292] Ibid.

[293] Kittana and De Meulder, “Architecture as an agency of resilience in urban armed conflicts,” 709.

[294] Ibid.

[295] “180,000 residents of Nablus suffering acute water shortage since June,” B'Tselem, September 13, 2017, https://www.btselem.org/water/20170913_acute_water_shortage_in_nablus.

[296] Touqan and Hamid, *Nablus Enduring Heritage and Continuing Civilisation*, 63.

[297] Ibid, 141.

v Illustration 42: A summer camp for school kids to enhance the awareness of water and environmental issues organised by the Water Supply and Sanitation Department (WSSD) of Nablus Municipality supported by German Technical Cooperation (GTZ) in 2006.

Translation of the summer camp slogan : Water and Environmental Public Awareness Campaign.

[Source: Ramez El Titi, Appendix 6.]





CHAPTER 9: STORIES FROM FARMERS AND BEDOUINS

< **Illustration 43:** Bedouins receiving water from the tanker.

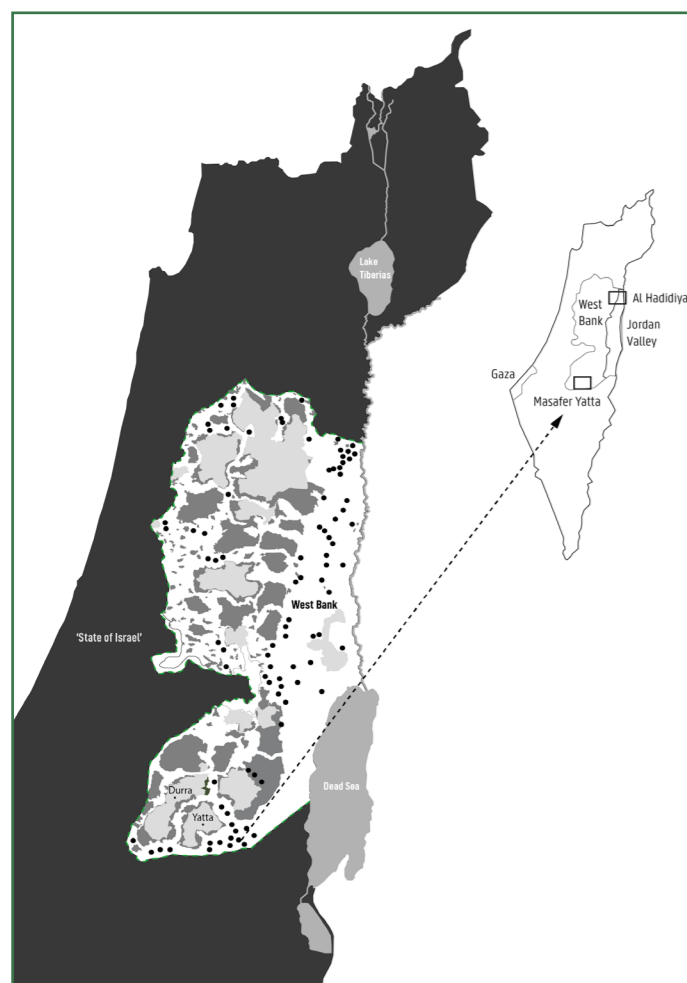
[Edited by Dania Al Sknini, source: "Water Crises," B'Tselem, accessed August 13, 2024, <https://www.btselem.org/topic/water>.]

[FORCED DISPLACEMENT: THE STRUGGLE FOR WATER IN MASAFAER YATTA]

In part two of this thesis, a photomontage showed how the Bedouin community of Al-Hadidiya in the Jordan Valley (Area C, North of the West Bank) was confronted with deconstruction. This chapter shifts focus to the lives of farmers and Bedouins in the southern West Bank (MAP 24), specifically in Masafer Yatta, a semi-desert region in the southern district of Hebron (Al-Khalil), focusing on their access to water while living in rural areas.

The South Hebron Hills, located in the southernmost part of the West Bank, includes the Palestinian towns of Yatta and Dura, along with nearby rural areas. This area is home to around 122 Palestinian communities, with a population of nearly 70,000. Additionally, about 8,500 settlers reside in settlements and unauthorized outposts connected to the Mount Hebron Regional Council. The Palestinian population in Masafer Yatta primarily consists of 'Bedouins and fellahin' (farmers or agricultural laborers). They maintain a traditional rural lifestyle, relying largely on agriculture and sheep herding for their livelihood. Some are refugees who were displaced from Israel in 1948, while others are the descendants of families that have resided in the area for hundreds of years.²⁹⁸

The Bedouin communities traditionally inhabit areas outside cities and villages, needing open spaces for livestock grazing. These regions are designated as Area C, where Israel retains full civil and military authority. This implies that the State of Israel is responsible for overseeing and regulating these Palestinian communities.²⁹⁹



[OPPOSITION AND DISPLACEMENT]

Consequently, the Israeli authorities, including the Civil Administration and the IDF, alongside settlers, often oppose the presence of Bedouins in these areas. This opposition manifests itself in efforts to displace the Bedouins, including land confiscations, home demolitions, and movement restrictions. The settlers have access to government-funded infrastructure and utilities such as water and electricity, as well as the continuous presence of the IDF for their protection. The Israeli government's hesitance to meet its responsibilities results in a lack of essential infrastructure for residents. Consequently, numerous Palestinian communities are driven to seek alternative solutions, often receiving assistance from local and international humanitarian organizations.³⁰⁰

Palestinian activist and journalist Basel Adra described in his article that especially during the summer, "Masafer Yatta sears from water apartheid."³⁰¹

In his article, Adra included interviews with local Bedouins, such as Omar Abu Jundiya from the village of Tuba, who shared his experience: *"In June, settlers came to our cistern, which is a few dozen meters from my home. I, my wife, and the children saw how they were setting up a tent over the cistern, and they prevented us from approaching. It is cruel, because everyone knows that these settlers are connected to the water network—a connection we can only dream of, with water that flows through a pipe straight into their house and providing water for their fields and sheep. But nevertheless, they come to our pit, draw water from it, and satiate their sheep. When their sheep were finished, they poured all the water on the ground and left. And we look at them, thirsty, with our sheep in the caves unable to come out."*³⁰²

[CHALLENGES IN ACCESSING WATER]

One of the most critical needs for the Bedouins is water, which is essential not only for their personal use but also for watering their livestock. Accessing water in Masafer Yatta presents significant challenges, compounded by the harsh, semi-desert environment and political constraints. Traditional sources of drinking water, such as cisterns and wells, are increasingly unreliable due to the region's arid conditions and the frequent demolitions carried out by Israeli authorities under the pretext of lacking proper permits. Without regular access to these sources, Bedouins are often forced to purchase

< Map 24: Showing the location of the Bedouin communities in area C.

[Created by Dania Al Sknini, based on:

source: "Humanitarian needs and response," UNRWA, accessed July 14, 2024, <https://www.ochaopt.org/atlas2019/wbthematic.html>.]

Legend:

- Bedouin and herding communities
- Area A: Palestinian control
- Area B: shared control
- Area C: Israeli (military) control

water from distant towns or tankers, significantly increasing their living expenses and the physical burden of transporting water. In many instances, Bedouin families have to travel long distances to buy water from suppliers who bring it in tanker trucks. This water is expensive, often consuming a significant portion of their limited income.³⁰⁵

The Israeli military has the authority to enforce regulations over Palestinians, including the demolition of water sources used by Palestinian shepherding communities in the South Hebron Hills and the Jordan Valley. According to B'Tselem the official excuse for the demolition is that these sources constitute "unapproved water use" or pollute water systems. However, B'Tselem contends that the actual aim is to displace Palestinians from their lands. They argue that these water sources supply only a few dozen cubic meters of water each and have no significant impact on either the Israeli or Palestinian water sectors. Nevertheless, for the isolated Palestinian communities that rely entirely on these water sources, their availability is crucial.³⁰⁴

Watering livestock is another crucial need for the Bedouins, directly tied to their traditional way of life and economic survival. The livestock rely on the same sources as the Bedouins do for their drinking water. However, given the large quantities needed, the difficulties are even more pronounced. The demolition of water infrastructure, such as wells and cisterns, severely impacts the ability to sustain herds. Constructing new water infrastructure involves significant legal and bureaucratic hurdles. Obtaining permits for wells and water pipes is an arduous process, frequently resulting in denial or significant delays. Consequently, many Bedouin communities resort to alternative means such as rainwater harvesting, which is unreliable and insufficient, especially during dry seasons. Testimonies provided to the human rights organization B'Tselem indicate that the Civil Administration frequently confiscates water tanks and other containers, citing that they are located in 'firing zones' designated for Israeli military exercises.³⁰⁵

The United Nations High Commissioner for Human Rights has noted that these demolitions and confiscations, along with forced evictions, create significant obstacles for vulnerable Palestinian communities in accessing water.³⁰⁶

One Bedouin father of eight from Mak-hul as cited in Rudolph and Kurian, described being repeatedly arrested by the Israeli military for unintentionally letting his sheep graze on restricted land. He explained, *"There are no borders. Only by experience you learn where you can't go."* He added that collecting water often takes several hours to a full day, and getting arrested can worsen the situation, leaving his family and animals without water. Another Bedouin herder from Humsa mentioned that his safety is at risk when grazing his goats in the mountains due to Israeli military training with live ammunition, which sometimes occurs without prior warning.³⁰⁷

Basel Adra highlights a stark example of water inequality in the West Bank, particularly in the village of Umm al-Kheir. This village is just a few meters away from the Carmel settlement, which was constructed on land privately owned by Palestinians. A thin fence separates the Carmel settlement's water-rich villas from the Bedouin village's shacks, where construction is prohibited and the army restricts access to the water network: *"The shepherds are forced to stay home out of*

*fear of dehydration," Adra noted. "Because we stay at home, we have to purchase feed for our flock, which is costly. We don't have enough water for ourselves, let alone for our animals and plants."*³⁰⁸

Thus, on the same hill, Israel creates two distinct categories of people: those who receive support to combat the climate crisis and those who are made to endure it without any resources.

[NOTES]

[298] "The South of Hebron Hills: soldiers testimonies 2010-2016," *Breaking the silence* (2019): 5. https://www.breakingthesilence.org.il/inside/wp-content/uploads/2019/08/BTS_SouthHillHebron_Booklet_ENG-2019.pdf.

[299] Federica Stagni, "As Wide as the Roots of the Olive Tree: Indigenous Communities of Masafer Yatta and their Eco-Resistance," *The open journal of sociopolitical studies* 17, no. 1 (March 15, 2024): 154. <http://siba-ese.unisalento.it/index.php/paco/article/view/28428>.

[300] Ibid, 150.

[301] Basel Adra, "In hottest summer ever, Masafer Yatta sears from water apartheid," *+972 Magazine*, August 13, 2023, <https://www.972mag.com/water-apartheid-heat-masafer-yatta/>.

[302] Ibid.

[303] Federica Stagni, "As Wide as the Roots of the Olive Tree," 154.

[304] Hareuveni, "Parched Israel's Policy of Water Deprivation in the West Bank," 17.

[305] Noga Kadman, "Acting the Landlord: Israel's Policy in Area C, the West Bank," *B'Tselem*, (June 2013): 21-22. https://www.btselem.org/download/201306_area_c_report_eng.pdf.

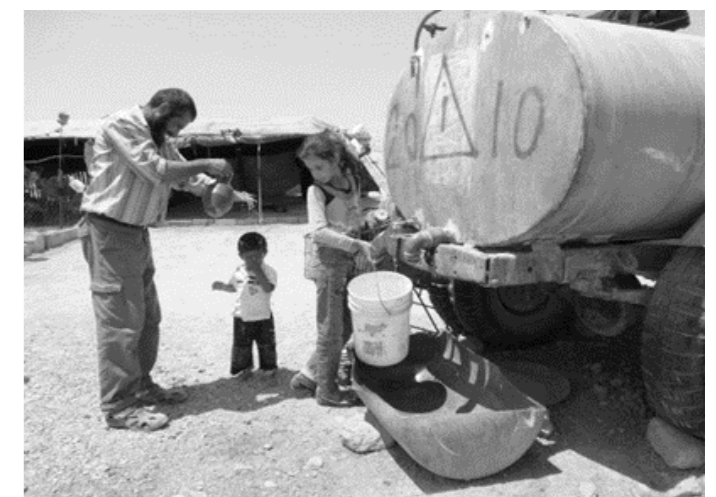
[306] Rudolph and Kurian, "Hydro-Hegemony, Water Governance, and Water Security," 87.

[307] Ibid.

[308] Basel Adra, "In hottest summer ever, Masafer Yatta sears from water apartheid."

v **Illustration 44:** Bedouins filling their buckets with water from the tanker.

[Source: "Water Crises," B'Tselem, accessed August 13, 2024, <https://www.btselem.org/topic/water/>.]



[WATER TACTICS IN PALESTINIAN COMMUNITIES: APPLYING MICHEL DE CERTEAU'S "MAKING DO"]

[THE VILLAGE OF MADAMA]

In the village of Madama, both historical and contemporary water management practices illustrate Michel de Certeau's concept of "making do," which refers to adapting and improvising with available resources.

Before the piped water network, the women of Madama would undertake long journeys to collect water from nearby springs and wells. They transported this water in clay pots called jarrah and stored it in clay vessels known as "zeer" for daily use. To ensure the water's purity, it was filtered through a clean cloth to remove contaminants, and the zeer was covered with a clay plate to keep out dust and insects. A metal cup, used by all household members, was often attached to the zeer for drinking. Additional water was stored in metal barrels for other purposes.

Since around 2012-2014, Madama has been connected to the Mekorot water network. However, residents often face intermittent water supply due to prioritization of settlers and infrastructure issues. In response, villagers purchase water from private tankers at high costs. Additionally, Madama has 250 individual household rainwater cisterns and continues to use a spring for drinking water via tankers.

De Certeau's concept of "making do" is evident in how Madama's residents handle their water supply. Despite the presence of modern infrastructure, their water management still involves a mix of traditional and new methods.

Comparing this with other Bedouin and rural communities that lack modern water networks, a broader application of de Certeau's ideas becomes apparent. In these areas, traditional methods of water collection and storage, such as cisterns and wells, remain essential.

[THE CITY OF NABLUS]

Nablus faces significant water challenges despite having its own independent water network. Residents often endure days or even weeks without running water, especially during the summer months, necessitating meticulous planning of daily activities around water availability. This situation exemplifies De Certeau's notion of tactics, where individuals develop ingenious methods to cope with the limitations set by more powerful entities.

The widespread use of rooftop water tanks in Nablus is a prime example of tactical innovation. These tanks, periodically filled by water tankers, are an essential part of the city's water supply system, serving as a reservoir during periods of intermittent municipal supply. This approach illustrates the community's ability to repurpose available resources, transforming a potential vulnerability into a strategic advantage. In cases where municipal water pressure is insufficient to fill rooftop tanks, residents employ additional ground tanks and pumps, showcasing their adaptability and technical ingenuity. This practice aligns with De Certeau's idea of "making do," where creative adaptation becomes a form of silent resistance against systemic constraints. By ensuring a continuous water supply through

their resourcefulness, the people of Nablus subvert the limitations imposed by the larger water management system without direct confrontation.

Furthermore, tactical innovation extends to storing water in pots, pans, and bottles, allowing residents to maximize their water resources when the supply is available. This method requires minimal resources and provides an immediate solution to scarcity, embodying the essence of De Certeau's concept of using available resources in unexpected ways to navigate constraints.

The decision to purchase bottled water to supplement the municipal supply is another example of tactical adaptation. This choice reflects an economic strategy, where individuals prioritize their needs and adjust their consumption patterns in response to scarcity. By opting for bottled water, residents create an alternative system that ensures reliable access to clean water, effectively subverting the limitations of their existing supply. These everyday practices highlight the agency of individuals and transform mundane activities into acts of resilience and resistance. The act of storing water in non-traditional containers, for instance, underscores the resourcefulness of the people of Nablus as they utilize everyday household items to extend their water supply. This aligns with De Certeau's emphasis on the power of mundane acts as sites of creativity and resistance.

Public awareness programs in Nablus play a crucial role in empowering residents to take control of their water usage. Initiatives like summer camps for children, workshops for religious leaders, and mass media campaigns aim to educate the community about water conservation and sustainable usage. These programs reflect the collective dimension of "making do," where shared knowledge and cooperation become powerful tools for addressing systemic challenges. By equipping individuals with information and tools, these programs foster a sense of ownership and responsibility over water consumption, embodying De Certeau's concept of agency. The focus on community engagement underscores the importance of empowering individuals to navigate constraints and assert their agency within the larger system.

The interplay of agency and constraint is vividly illustrated through the various water management strategies employed by Nablus residents. The municipal water network, with its infrastructure and policies, represents the strategic control exerted by institutions over resources and space. In contrast, the tactical responses of residents, such as using rooftop tanks, storing water in containers, buying bottled water, and participating in awareness programs, exemplify the creative tactics individuals employ to subvert and adapt to these strategies.

[MASAFER YATTA AND THE BEDOUIN COMMUNITIES]

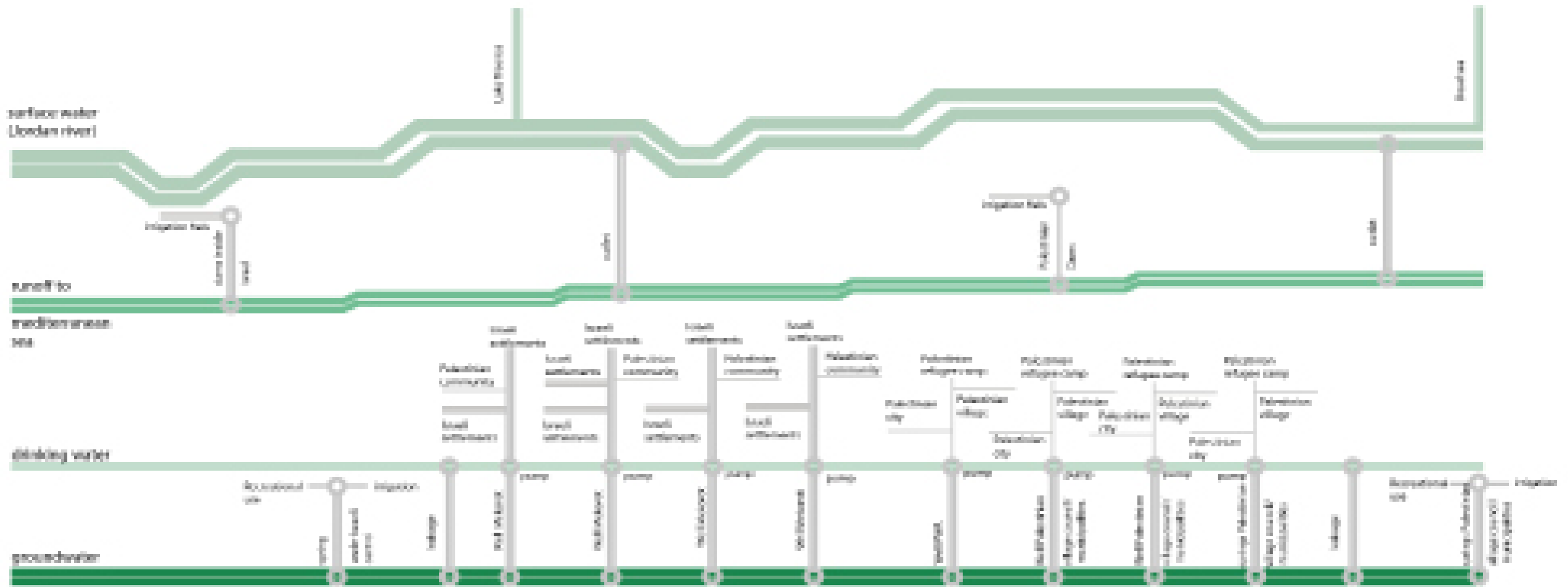
The situation in Masafer Yatta exemplifies how Palestinian Bedouin and farming communities engage in "making do" to navigate and resist the systemic oppression and marginalization imposed by Israeli authorities. The Bedouin communities in Masafer Yatta employ various creative strategies to access water, a critical resource for their survival and way of life. Despite the arid conditions, Bedouins resort to rainwater harvesting, collecting and storing water during the rainy season. This practice represents a form of "making do" as they

adapt to the lack of infrastructure and frequent demolitions of their water sources. Traditional cisterns and wells, though increasingly unreliable due to demolitions, are vital for storing water. Bedouins demonstrate resilience by maintaining and protecting these sources despite the challenges. When traditional water sources are destroyed, Bedouins purchase water from distant towns or rely on tanker trucks, demonstrating their ability to adapt and find alternative solutions despite economic burdens.

The Bedouins' struggle for water reflects their navigation of complex power dynamics, aligning with De Certeau's idea of "making do." Bedouins adapt to the restrictions imposed by Israeli authorities, such as movement limitations and demolitions, by finding ways to continue their agricultural and herding activities despite the constraints. The arduous process of obtaining permits for water infrastructure highlights the Bedouins' persistence in navigating bureaucratic power structures. They often face denials and delays but continue to seek legal avenues to secure their rights.

The daily lives of the Bedouin communities embody resistance and resilience, exemplifying De Certeau's concept of "making do." Bedouins often rely on community solidarity and mutual aid to cope with water scarcity. They share resources and support each other in times of need, reinforcing their collective resilience. Despite facing systematic marginalization, Bedouins maintain their traditional way of life and cultural identity. They resist assimilation and displacement by preserving their customs and practices.

The stark contrast between the water-rich settlements and the deprived Bedouin communities highlights the power dynamics and inequalities. The availability of water and infrastructure for settlers versus the deprivation faced by Bedouins underscores the structural inequalities and power imbalances perpetuated by Israeli authorities. The Bedouins' ability to "make do" with limited resources and adverse conditions demonstrates their resilience and determination to survive and thrive despite systemic oppression.



Legend:

- element of surface water
- element of runoff water
- element of drinking water
- element of groundwater
- node

Illustration 46: the diagram illustrates the flow and distribution of water resources within the West Bank, highlighting the connections between groundwater, drinking water, runoff water, and surface water systems, specifically within the context of their geographical and political landscape. The diagram is structured into several layers, each representing a distinct element of the water system:

Groundwater: the bottom layer represents the groundwater system, which plays a foundational role in the water infrastructure. Groundwater sources, including springs and wells, are depicted as continuous systems that supply water for various uses such as drinking, irrigation, and recreational activities. The extraction process typically follows this sequence: water is drawn from wells, pumped through the infrastructure, and then distributed as drinking water across the network.

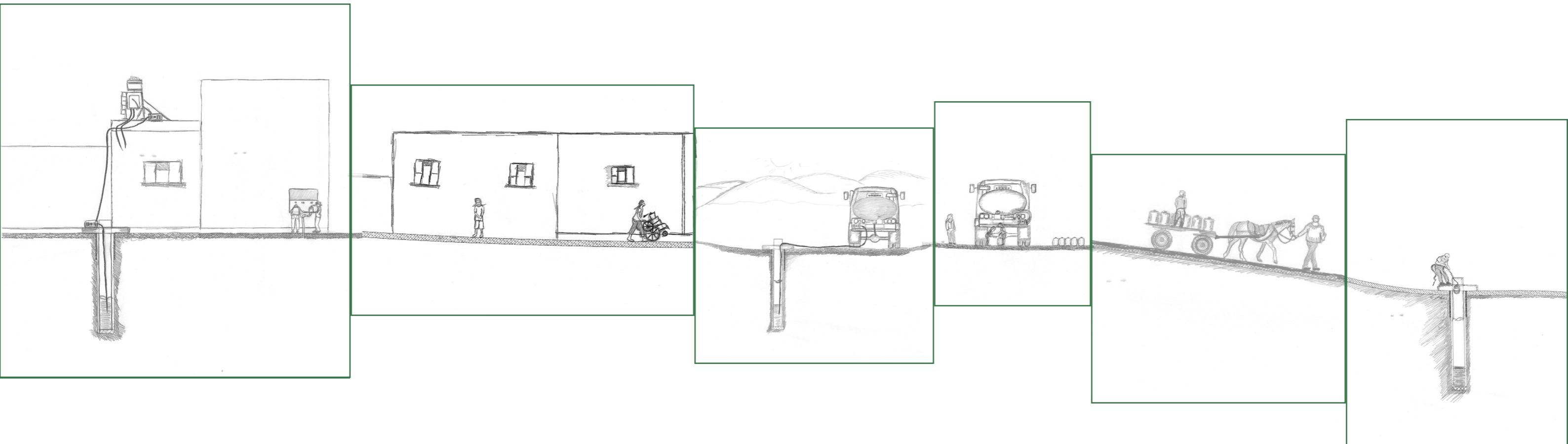
Drinking Water: the middle section of the diagram focuses on the distribution of drinking water, which is closely linked to the groundwater system. Drinking water is extracted from wells, controlled by both Mekorot (the Israeli national water company) and PWA or Palestinian village councils or municipalities. The distribution network supplies water across a range of communities, including Israeli settlements, Palestinian communities, refugee camps, cities, and villages. As discussed in earlier chapters, Mekorot pipelines are notably larger in diameter compared to those used by Palestinian municipalities, reflecting differences in infrastructure and water allocation. Pumps and pipelines are used to transport water across these regions.

Runoff Water: above the drinking water layer, the diagram shows the paths of runoff water, which primarily flows towards the Mediterranean Sea and the Jordan River. This runoff system is interconnected with various infrastructures, including irrigation channels, outlets, and dams.

Surface Water: the top layer represents surface water, such as Lake Tiberias (the Sea of Galilee) and the Dead Sea—both significant water bodies in the region.

Elements and Nodes: The diagram distinguishes between two main types of features: elements and nodes. Elements refer to the physical infrastructures, both visible and invisible, that facilitate single water flows within each system. These include irrigation channels, streams and valves. Nodes, on the other hand, act as crucial interfaces between different water systems, where water changes quality and transitions from one system to another. These nodes, which can range from springs and wells to infiltration zones and extraction points, also represent shifts in infrastructure.

[Created by Dania Al Sknini, inspired by Chiara Cavalieri and Fabio Vanin, *The Language of Water. De taal van het water* (Louvain-la-Neuve: LOCI, 2019), 118. Based on the information of Ramez El Titi in Appendix 7.]



^ **Illustration 47:** summary of accessing water in the West Bank.

In the West Bank, water is accessed in various ways depending on the locations and the resources available. On a smaller scale, water from wells is often used by tanker trucks, or by Bedouins and villagers who collect it directly. In some instances, rooftop tanks are connected to the wells, but this is relatively rare. In Bedouin villages, it is common to see children filling buckets from water tankers. These buckets are then transported by hand, by carriage, or using wheeled tools for short distances.

[Created by Dania Al Sknini, May 2024.]

[CONCLUSION]

A century ago, in the land once called Palestine, two groups faced the same challenges of drought and water scarcity, sharing equal natural resources and drilling technologies. Today, the differences between these two groups are most noticeable when looking at the question of water.

This thesis has examined the deep and complex dynamics of water politics in the West Bank, revealing how the Israeli-Palestinian conflict is mirrored in the management and distribution of water resources. Through the lens of water apartheid, the thesis has explored how Israeli policies have systematically deprived Palestinian communities of adequate access to water, ensuring that Israeli citizens, including settlers in the West Bank, enjoy near-total water security.

In Part 0, the foundation was laid by contextualizing apartheid, originally established in South Africa, and its relevance to the Israeli-Palestinian conflict. The analysis revealed that Israeli control over Palestinian water resources is not just a case of unequal access but is deeply intertwined with broader geopolitical strategies of domination. By employing concepts like hydro-hegemony, the thesis demonstrated how Israel's strategic use of power perpetuates this control under the guise of cooperation, further marginalizing Palestinian communities. The theoretical exploration concluded that water scarcity in the West Bank is not a natural phenomenon but a politically constructed issue, rooted in systemic inequalities.

Part 1 examined the divergent paths of Israelis and Palestinians in terms of water security. Israel has transformed itself into a "water superpower," achieving water security through the nationalization of resources and advanced management practices, while Palestinians in the West Bank suffer from severe water scarcity. The thesis has shown that water scarcity in the West Bank is a politically constructed issue rather than a natural inevitability. The Israeli government's securitization of water and the myth of natural scarcity have been used to justify restricting Palestinian access to water, exacerbating inequalities enforced by Israeli control over water management and distribution. The infrastructure supporting Israeli water security has further deepened this divide, leaving Palestinian communities with outdated and inefficient water systems that cannot meet their needs.

In Part 2, the focus shifted to the mechanisms through which Israeli control over West Bank water resources perpetuates economic domination and systemic inequality. The role of Israel's national water company, Mekorot, was critically examined, revealing how discriminatory practices, over-extraction of Palestinian water, and the strategic construction of the apartheid wall serve to reinforce Israeli dominance. The construction of the apartheid wall strategically isolates Palestinian communities from essential water resources, further entrenching control and dominance. The Joint Water Committee, formed under the Oslo Accords, intended to foster cooperation, instead perpetuates these inequalities, highlighting how water apartheid is embedded in a broader strategy of control and exploitation.

Part 3 explored the "making do" strategies of Palestinian communities as they navigate the severe constraints imposed by Israeli policies. In villages like Madama, residents have historically relied on traditional methods of water collection, and despite being connected to modern infrastructure, they continue to face water scarcity, forcing them to adapt creatively. In urban areas like Nablus, where residents frequently experience days without running water, they have adapted by relying on rooftop water tanks and meticulously planning daily activities around water availability. The situation in Masafer Yatta further illustrated the dire conditions faced by Bedouin communities, who must rely on rainwater harvesting and other traditional methods to survive in an environment where water is scarce and heavily controlled by the Israeli military. Throughout this part, the recurring theme is the ingenuity of Palestinian communities as they "make do" with limited resources. Despite systemic oppression and severe water deprivation, these communities continue to assert their agency, resist domination, and maintain their cultural identity. The stark contrast between the well-supported Israeli settlements and the resource-deprived Palestinian communities highlights the ongoing inequalities and power imbalances in the region.

The water crisis in the West Bank is not about the availability of resources but about the unequal distribution and access, enforced through political means. Addressing these systemic inequalities is crucial for ensuring justice, equity, and stability in the region.

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[FOREWORD]

During the early stages of my research, I encountered several challenges due to my limited background in international law and my unfamiliarity with the water situation in the West Bank. To overcome these obstacles, I attempted to contact several key organizations and individuals, including Mekorot, the Palestinian Water Authority, and various professionals identified through LinkedIn. However, many of my initial outreach efforts were unsuccessful, as numerous emails went unanswered.

In response to this limited engagement, I turned to my personal network to gather more information. Through my father's friend, Feras Al Attrash, who is Director General of the Control and Inspection Unit at the Ministry of Health in Palestine, whom I have known since childhood. I was introduced via email to Mr. Nadim Mulhem, former Head of the Water and Sanitation Programme at GIZ Palestine, and now Head of the Enhancing Water Resource Management Project in Lebanon. This connection facilitated further introductions to Professor Abdelrahman Tamimi (Director General of the Palestinian Hydrology group) and Mr. Ramez El Titi, a Water and Sanitation Expert, who works for the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in Nablus.

Additionally, through Mr. Al Attrash's network, I was introduced to Dr. Subhi Samhan, Director General for the Research and Laboratory Unit at the Palestinian Water Authority. Dr. Samhan provided me with a substantial collection of documents and research reports that significantly deepened my understanding of the water situation in the West Bank.

Through another family connection, I had the opportunity to speak with the Minister of Infrastructure of Palestine via WhatsApp. He connected me with Mohammad Al Hmaid, CEO of the Palestinian Water Sector Regulatory Council, whom he described as holding one of the highest positions in the water sector in the West Bank. However, by this stage of my research, I had already gathered sufficient information and chose not to pursue this path further.

The following documents provide records of important conversations and interviews that took place during the last months of my research process.

[APPENDIX 1: INHUMANE ACTS]

'Inhumane acts' in the:

1. Rome Statute of the International Criminal Court (ICC) - Article 7:
2. Apartheid Convention - Article II, adopted by the United Nations General Assembly in 1973:

Article 7

Crimes against humanity

1. For the purpose of this Statute, "crime against humanity" means any of the following acts when committed as part of a widespread or systematic attack directed against any civilian population, with knowledge of the attack:

- (a) Murder;
- (b) Extermination;
- (c) Enslavement;
- (d) Deportation or forcible transfer of population;
- (e) Imprisonment or other severe deprivation of physical liberty in violation of fundamental rules of international law;
- (f) Torture;
- (g) Rape, sexual slavery, enforced prostitution, forced pregnancy, enforced sterilization, or any other form of sexual violence of comparable gravity;
- (h) Persecution against any identifiable group or collectivity on political, racial, national, ethnic, cultural, religious, gender as defined in paragraph 3, or other grounds that are universally recognized as impermissible under international law, in connection with any act referred to in this paragraph or any crime within the jurisdiction of the Court;
- (i) Enforced disappearance of persons;
- (j) The crime of apartheid;
- (k) Other inhumane acts of a similar character intentionally causing great suffering, or serious injury to body or to mental or physical health.

2. For the purpose of paragraph 1:

- (a) "Attack directed against any civilian population" means a course of conduct involving the multiple commission of acts referred to in paragraph 1 against any civilian population, pursuant to or in furtherance of a State or organizational policy to commit such attack;
- (b) "Extermination" includes the intentional infliction of conditions of life, *inter alia* the deprivation of access to food and medicine, calculated to bring about the destruction of part of a population;
- (c) "Enslavement" means the exercise of any or all of the powers attaching to the right of ownership over a person and includes the exercise of such power in the course of trafficking in persons, in particular women and children;
- (d) "Deportation or forcible transfer of population" means forced displacement of the persons concerned by expulsion or other coercive acts from the area in which they are lawfully present, without grounds permitted under international law;
- (e) "Torture" means the intentional infliction of severe pain or suffering, whether physical or mental, upon a person in the custody or under the control of the accused; except that torture shall not include pain or suffering arising only from, inherent in or incidental to, lawful sanctions;

[NOTES]

[1] International Criminal Court, *Rome Statute of the International Criminal Court*, accessed August 6, 2024, [https://legal.un.org/icc/statute/english/rome_statute\(e\).pdf](https://legal.un.org/icc/statute/english/rome_statute(e).pdf).

[2] United Nations, *International Convention on the Suppression and Punishment of the Crime of Apartheid* (New York: United Nations, 1973), accessed August 6, 2024, <https://www.oas.org/dil/1973%20International%20Convention%20on%20the%20Suppression%20and%20Punishment%20of%20the%20Crime%20of%20Apartheid.pdf>.

Article II

For the purpose of the present Convention, the term "the crime of apartheid", which shall include similar policies and

practices of racial segregation and discrimination as practised in southern Africa, shall apply to the following inhuman acts committed for the purpose of establishing and maintaining domination by one racial group of persons over any other racial group of persons and systematically oppressing them:

- (a) Denial to a member or members of a racial group or groups of the right to life and liberty of person:
 - (i) By murder of members of a racial group or groups;
 - (ii) By the infliction upon the members of a racial group or groups of serious bodily or mental harm, by the infringement of their freedom or dignity, or by subjecting them to torture or to cruel, inhuman or degrading treatment or punishment;
 - (iii) By arbitrary arrest and illegal imprisonment of the members of a racial group or groups;
- (b) Deliberate imposition on a racial group or groups of living conditions calculated to cause its or their physical destruction in whole or in part;
- (c) Any legislative measures and other measures calculated to prevent a racial group or groups from participation in the political, social, economic and cultural life of the country and the deliberate creation of conditions preventing the full development of such a group or groups, in particular by denying to members of a racial group or groups basic human rights and freedoms, including the right to work, the right to form recognized trade unions, the right to education, the right to leave and to return to their country, the right to a nationality, the right to freedom of movement and residence, the right to freedom of opinion and expression, and the right to freedom of peaceful assembly and association;
- (d) Any measures, including legislative measures, designed to divide the population along racial lines by the creation of separate reserves and ghettos for the members of a racial group or groups, the prohibition of mixed marriages among members of various racial groups, the expropriation of landed property belonging to a racial group or groups or to members thereof;
- (e) Exploitation of the labour of the members of a racial group or groups, in particular by submitting them to forced labour;
- (f) Persecution of organizations and persons, by depriving them of fundamental rights and freedoms, because they oppose *apartheid*.

[APPENDIX 2: VIDEO CALL WITH TOON VAN PARYS]

During my research in the online library of Ghent University, I came across the thesis of Toon Van Parys, titled '*Al naqba al abadiyya: On the eternal catastrophe of Israel's apartheid regime against the Palestinians*.' The central question of his work is: "*Is Israel guilty of committing apartheid against the Palestinians?*" Lacking a background in international law myself, I decided to approach the author with some questions. This led to an impromptu video call with Toon Van Parys the same day, conducted in Dutch. Although the conversation was not recorded, I took notes to provide a summary of our discussion.

Date: July 17, 2024

Platform communication: LinkedIn and Whatsapp videocall

Duration videocall: 37:09

Job: Law graduate

We discussed five key themes:

[1] The Importance of Non-Academic Sources in Legal Research, such as Amnesty International

[2] Whether the American Perspective, as represented by Dugard and Reynolds, differs from the European perspective on apartheid

[3] Using Article II of the Apartheid Convention and Article 7, paragraph 2(h) of the Rome Statute for defining apartheid: What is the current legal definition?

[4] How apartheid is applied or not applied to the Israel-Palestine situation by international courts, the UN, etc. What are the stances of various countries and their arguments?

[5] The difficulty in finding counterarguments to apartheid allegations. Besides Robbie Sabel's claim that "accusing Israel of apartheid is antisemitic," what other sources are there?

1. The Importance of Non-Academic Sources in Legal Research

During an insightful discussion with Toon Van Parys, the topic arose about the use of Amnesty International as a non-academic source. Although some may argue that such NGO reports do not meet the stringent standards of academic research, this viewpoint opens an important debate about the role of diverse sources in legal research.

Critics of using NGO reports like those from Amnesty International often argue that these sources do not adhere to the rigorous methodologies required in scientific research. However, legal studies are not always bound to the same empirical methods as natural sciences. As Toon Van Parys aptly stated, "*Law is not a pure science*" it is a discipline that often relies on interpretation and contextual analysis.

Toon Van Parys emphasized that although Amnesty International is not an academic source, it produces well-founded and reliable reports. Ignoring such sources can lead to a distorted view of reality, especially in complex and politically charged issues like Israel and Palestine. It is notable that an independent NGO, which often operates with stringent fact-checking and verification processes, is excluded from academic discussions. Utilizing a broad range of sources is crucial in legal research. Alongside academic articles and books, reports from international organizations like the United Nations and NGOs play a vital role. These reports often provide detailed insights and up-to-date data that may otherwise be inaccessible. It is essential to recognize that academics are not the only experts in their fields. Organizations like Amnesty International have years of experience and expertise in documenting human rights violations and analyzing international law. Their findings can be a valuable addition to academic literature, especially when dealing with sensitive and complex subjects.

Relying solely on academic sources can lead to a narrow and potentially biased representation of reality. Therefore, adopting a balanced approach in legal research is important. By integrating both academic and non-academic sources, a more comprehensive and nuanced understanding of the issue at hand can be achieved, contributing to a more robust and persuasive legal argument.

2. The American Perspective on Israel and Palestine

Toon Van Parys indicated that there is no significant difference between the American and European perspectives on the Israel-Palestine issue. He stated, "*I would not say there is a very large difference.*" This suggests that the analyses and interpretations of the situation in the occupied territories by American authors like Dugard and Reynolds largely align with those of European scholars.

Toon Van Parys highlighted the importance of using diverse sources to form a well-founded opinion, referencing his own thesis where he also cites a Norwegian professor. This diversity enhances the credibility and reliability of the findings, as these authors have no direct stake in the conflict, making their analyses likely less biased and more based on objective observations and facts. "*They have no stake in the conflict*," he noted,

indicating that their work is independent and not influenced by political or national interests. The fact that both American and European authors often reach similar conclusions suggests that fundamental human rights issues and legal arguments are universally recognized, regardless of regional differences in academic approaches.

3. The Legal Definition of Apartheid

In discussing the legal definition of apartheid, Toon Van Parys confirmed that using Article II of the Apartheid Convention and Article 7, paragraph 2(h) of the Rome Statute is indeed appropriate. He explained that the Palestinian state, or the former Palestinian Authority, has ratified these treaties. This means that the provisions of these treaties apply to the territory under their control.

Toon Van Parys also clarified that although Israel has not signed these treaties, it is still bound by the rules and obligations of international law applicable to occupied territories. This is because the Palestinian territories are considered occupied territory, and Israel, as the occupying power, is subject to international humanitarian law and human rights treaties in force in these areas.

Thus, if Israel engages in actions that meet the definition of apartheid as established in the Apartheid Convention and the Rome Statute, it can be held internationally accountable for these crimes. The international community, including organizations like the United Nations and the International Criminal Court, plays a crucial role in monitoring and enforcing these obligations.

4. Application of Apartheid to Israel-Palestine by International Courts and Organizations

Toon Van Parys noted that while the term apartheid is frequently used in discussions about Israel and Palestine, it has not yet been formally recognized by international courts. He stated, "*Apartheid is too controversial. Currently, no international court has recognized that there is apartheid because it is an extremely controversial topic. Israel and Palestine are already very conflictual, and adding apartheid, one of the greatest crimes a state can commit is not possible. We are still a few steps too early for that. Or [a few steps] too late.*"

International organizations and courts are cautious about labeling situations as apartheid due to the significant political and diplomatic implications. No international court has formally recognized apartheid in the context of Israel and Palestine so far. Toon Van Parys explained that the International Criminal Court (ICC) deals with individuals rather than states and has already issued arrest warrants against Israeli officials. "*Regarding whether this is actually the case or not, I argued this in my thesis, especially concerning the Palestinian territories... what is very good, and what you can refer to, is the fact that Amnesty International and Human Rights Watch have also stated this.*"

He also discussed the political landscape and the stances of various countries on Israel and Palestine. Many countries, such as the United States and some European nations, are often reluctant to openly criticize Israel due to political and strategic alliances. Toon Van Parys highlighted an example of double standards in international politics: "*In Israel, they say that Russians can be condemned. This is a complete stake-out because, the contrast cannot be bigger. But this is just a very hypocritical standpoint.*" This example of Ukraine and Russia underscores how political interests can influence the application of international laws and norms.

5. Challenges in Finding Counterarguments to Apartheid Allegations

During the discussion, Toon Van Parys noted that the argument that accusing Israel of apartheid is antisemitic is a common counterargument. I mentioned Robbie Sabel's claim that such accusations are antisemitic. Toon Van Parys pointed out that Robbie Sabel, an Israeli source, represents this viewpoint, but emphasized that this is not an independent source and should be viewed with skepticism.

Toon Van Parys also referenced Josep Borrell, the High Representative of the European Union for Foreign Affairs and Security Policy, who has made statements about antisemitism and criticism of Israel. This underscores that there is indeed a broader debate about the definition and scope of antisemitism, especially in relation to criticism of Israel. He noted that many member states have adopted a definition of antisemitism that quickly labels criticism of the state of Israel as antisemitic. Toon Van Parys argued that this is problematic because the distinction between hatred against Jews (antisemitism) and criticism of a state is fundamentally different. He illustrated this by saying that criticism of Iran does not automatically equate to Islamophobia, even though Iran is an Islamic state.

He pointed out that this broader definition of antisemitism has been pushed by certain interest groups but is not widely accepted by all international experts. An important point Toon Van Parys raised is the position of the UN Special Rapporteur on antisemitism. This rapporteur has clarified that the extended definition of antisemitism, as pushed by Israel, is not accepted. This stance provides a significant counterbalance to the broader definition that quickly labels criticism of Israel as antisemitic. Toon Van Parys recommended looking at the conclusion of his thesis, where he has elaborated on these issues. He has gathered sources and arguments that clarify the distinction between legitimate criticism of the state of Israel and antisemitism.

[APPENDIX 3: VIDEO CALL WITH DR. ABDELRAHMAN AL TAMIMI]

The Zoom meeting commenced with my introduction in Arabic. Dr. Al Tamimi immediately recognized my Lebanese accent and commented on it. I explained that my accent was influenced by my Lebanese grandmother, while my other grandparents, who were Palestinian, spoke with a Palestinian accent. Dr. Al Tamimi shared that he had been a visiting professor at the Catholic University of Louvain (KU Leuven) in Belgium. After this brief exchange, we transitioned to English to continue our conversation.

Date: 3 May 2024

Platform: ZOOM

Duration videocall: 19:59

Job: Director General of the Palestinian Hydrology group and visiting lecturer in many Arab, American and European universities.

Unfortunately, the internet connection was unstable during the call. My first question to Dr. Al Tamimi was about how water is distributed to different cities in the West Bank.

- He explained: *“Distributors implement a rotation system. For example, some areas receive water on Saturday and Sunday, while others on Monday and Tuesday. This rotation is why you’ll see rooftops in almost every Palestinian home filled with storage tanks. Since there isn’t a 24-hour running water supply, households receive water for two days, store it in tanks, and wait for the next round of distribution.”*

I responded by noting that this situation is common not only in Nablus but also in other places. I then asked about the source of water for the tankers that fill these storage tanks. Specifically, I asked about which springs supply this water.

- Al Tamimi clarified: *“There are three sources for Nablus city and its surrounding villages. The first source is the Nablus municipality, which operates groundwater wells and also has access to springs. Additionally, some water is supplied by the Israeli water company, Mekorot.”*

Dania: *“So the Palestinians buy it directly from Mekorot?”*

- *“Yes, exactly.”*

Curious about the origin of bottled water in Palestine, I mentioned a brand called Vivian, which claims to source its water from the Ain al-Bustan Spring. I asked: *“So in Nablus, there are lots of springs. And I was wondering, like, the water bottle brands, where do they come from? For example, I found one and it’s called Vivian. And they say it’s from Spring Ain al-Bustan.”*

- *“Yes, we have 13 brand names of bottled water. Most of them are imported from Turkey.”*

Dania: *“Ah, so not from Palestine?”*

- *“No, no, no. The only one from Palestine is Coligan, which is from Ain al-Sultan Spring in Jericho. And the operation is done by American company called Coligan.”*

Dania: *“Coligan, like this?”*

- *“Yes.”*

Dania: *“Okay, Coligan. It’s an American company not an Palestinian company?”*

- *“The water is Palestinian, but the company not.”*

Dania: *“But there isn’t any Palestinian company there?”*

- *“There are, there are three, four companies, but they use tap water, not spring water. The only one is in Kufr Zibad. Kufr Zibad is a village. There is a water company. They use ground water well. It’s is close to Tulkarem city. This is city in the north of Baraka.”*

[The internet connection started to fail from here again]

I then discussed my thesis with Dr. Al Tamimi, focusing on topics like water scarcity, the Joint Water Committee, and the difference between hydro-hegemony and water apartheid. I asked: *“Can you please explain to me what the difference between hydro-hegemony and water apartheid is?”*

- *“Hegemony is that you control everything. You control water, you control prices, you control distribution, and you put regulations. This is hegemony.”*

- *“Apartheid is only how to distribute water unfairly between Palestinians and Israelis. Okay. And actually apartheid, it is between Palestinians and Israelis who are living in West Bank. The hegemony is a political term of control, okay? But apartheid, it is a human rights term.”*

I also mentioned that I was writing about the Oslo Accords. Dr. Al Tamimi shared a poignant reflection:

- *“You know, Dania, Oslo starts with a capital ‘O’ and ends with a small ‘o’. For 25 years, we have been running between two zeros, we got nothing.”*

Furthermore, I told him that I had watched an Al Jazeera documentary in which he was interviewed and that I liked his use of the term “black forest” to describe the situation.

-He explained further: *“Yes, when you stand on Palestinian roofs, you see black tanks everywhere—that’s why I call it the ‘black forest.’”*

Dr. Al Tamimi then mentioned:

- *“You know, recently I published a book called ‘Water Under occupation’. I can send it to you as soft copy. It’s in Arabic, unfortunately. Okay. But you can translate it.”*

Dania: *“Thank you, that would be very interesting.”*

- *“And also you can see a lot of tables there about water quantity, water distribution and also agreement, water and negotiation. I’ll send it to you tomorrow. There is a lot of information and maps there. If you start writing chapter by chapter, send them to me. I will review and provide advice before sending them back to you.”*

I expressed my gratitude for his time and support.

- *“I’ll send you the material tomorrow. Today, I’m in the village tending to my small farm, but I’ll send everything to you tomorrow.”*

Dania: *“thank you so much.”*

- *“Good luck, Dania. Good luck. Bye-bye.”*

Note: Unfortunately, due to Dr. Al Tamimi’s busy schedule following our video call, I did not receive his published book or any additional documents. He informed Mr. Nadim that he had sent them to me, but it seems that they may not have reached me.

[APPENDIX 4: WATER EXPERT RAMEZ EL TITI : THE VILLAGE OF MADAMA]

In the course of my research, I maintained regular contact with Mr. Ramez El Titi, a water and sanitation expert, working for the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in Nablus, through WhatsApp and email. Our conversations, which occurred almost daily, covered a wide range of topics. Sometimes, our conversations ventured off-topic, such as when he shared his stories about being friends with Clemens Messerschmid or his working relationships with Mark Zeitoun. Due to privacy concerns, I will not include screenshots of our WhatsApp conversations, they will remain confidential between Mr. El Titi and myself.

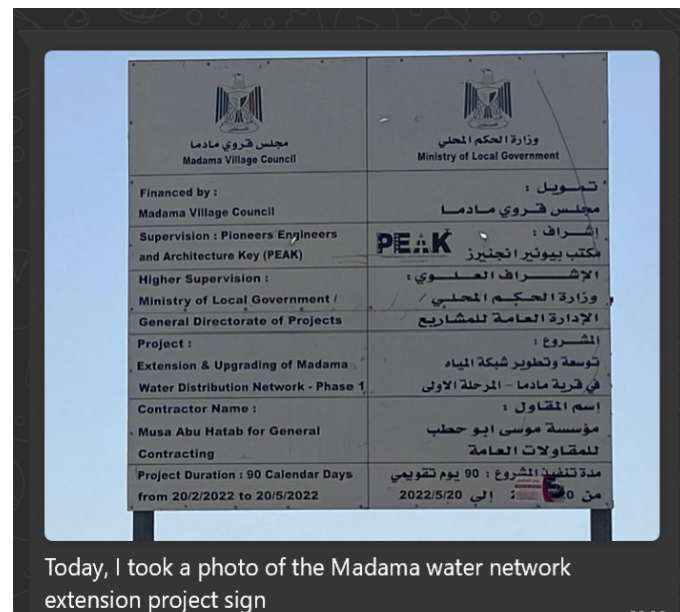
In one of our discussions regarding Madama and the map created by Mark Zeitoun in 2008, Mr. El Titi shared some critical insights. He expressed concerns about the accuracy of Zeitoun's map.

Mr. El Titi consulted local authorities, including the Nablus municipality and a consultant involved in water projects in Madama and surrounding villages to verify, so I could update the information. He provided a table listing each village initially presented by Zeitoun, demonstrating that these villages, contrary to Zeitoun's claims, did have established water networks. This information, received via email on July 15, 2024, was instrumental in updating the map originally created by Mark Zeitoun, who stated that Madama and other villages were not connected to the water network.

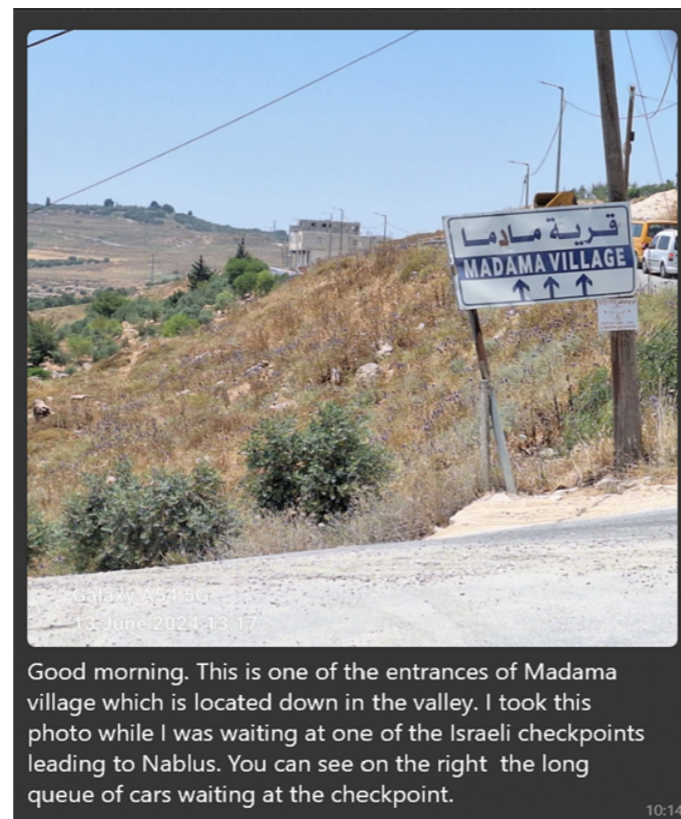
In addition to providing corrections, Mr. El Titi offered several recommendations and feedback for improving my updated map, this was received on 5th August 2024, via WhatsApp:

- " - Please delete the words (Azmut well). By the way Beita had its water network in 1996 from Mekorot.
- Beita is the dot south of 'Udla it is not where you located it.
- Azmut is not mentioned in the map, but it is the one to the left of Salim. A dot is there but the village name is not mentioned.
- What are the dotted lines? if they indicate water networks (Pal and Mekort). I believe they are not all accurate.
- I suggest deleting the reservoirs since they are not the only ones available or not accurate.
- Use the term "Palestinian village/ City" rather than "village" only because we have also Nablus which is a city."

Moreover, Mr. El Titi occasionally shared pictures with me to illustrate the situation, such as the ones he sent regarding Madama.



Today, I took a photo of the Madama water network extension project sign



Good morning. This is one of the entrances of Madama village which is located down in the valley. I took this photo while I was waiting at one of the Israeli checkpoints leading to Nablus. You can see on the right the long queue of cars waiting at the checkpoint.

No.	Village or community	The year when it has a water network	Water Source	Comments
1	Rafydya	Before 1967	Nablus Municipality	
2	Balata Camp	Before 1967	Nablus Municipality	
3	'Askar Camp	Before 1967	Nablus Municipality	
4	Beit Dajan	2005	Beit Dajan well + their share from Rujeeb well (owned by PWA) after it was dug between 2008 - 2010	Beit Furik & Beit Dajan have JSC for Water & WW for both communities.
5	Beit Furik	about 2008 - 2010	Same as Beit Dajan	They purchase water from private wells in Jordan Valley once they face shortage especially during Sumar.
6	Salim	Mid 1990's	Rujeeb Well	The source was Mekorot but changed to Rujeeb well about 2008 -2010
7	Azmut	Mid 1990's	Rujeeb Well	The source was Mekorot but changed to Rujeeb well about 2008 -2010
8	'Udla	1985	Rujeeb Well	The source was Mekorot but changed to Rujeeb well about 2008 -2010
9	Howwara	1987	Mekorot	
10	Urif*	Around 2012 -2014	Mekorot	The 4 villages of Urif, Einabous, Burin & Madama used to have their water from Nablus Municipality. Once the Audala Well (of Nablus Municipality) had a problem, it was decided to have their source from Mekorot
11	Einabous*	Around 2012-2014	Mekorot	Please see Urif
12	Burin*	2008	Mekorot	Please see Urif
13	Madama*	Around 2012 -2014	Mekorot	Please see Urif
14	Til	Around 2012 -2014	Mekorot	
15	Sarrah	Around 2012 -2014	Mekorot	
16	Iraq Burin	Around 2014	Nablus Municipality	
17	Rujeeb	Mid 1990's	Rujeeb Well	The source was Mekorot but changed to Rujeeb well about 2008 -2010
18	Kufr Qallil	Early 1980's	Nablus Municipality	
19	Quza	1987	Mekorot	
20	Beita	Mid 1990's	Mekorot	

^ Screenshots of received pictures via Whatsapp conversation on 5/07/2024 and 14/06/2024 from Ramez El Titi

Mr. El Titi described that in 2022, a water network extension project was set up in the village of Madama, to connect houses that were previously not linked to the existing network.

^ List received from Ramez El Titi on July 15, 2024, showing each village and their connection to the water network.

[APPENDIX 5: WATER EXPERT RAMEZ EL TITI: THE CITY OF NABLUS]

Date: May 19, 2024, and July 6, 2024

Platform: Teams Meeting

Job: water and sanitation expert, working for the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in Nablus.

On May 19, 2024, and July 6, 2024, two official video calls were conducted via Teams with Ramez El Titi. Due to connection issues, these interviews were not fully recorded.

The interview started with basic information and explanations on how the Nablus Municipality receives its water. El Titi explained that the Nablus Municipality operates a modern water network connected to water wells and is supplemented by natural springs within the city. In the Kasabah (the old city), there are three main springs that supply water:

- Al-Qaryoun Water Spring
- Ras Al-Ein Water Spring
- Ein AL-'Asal Water Spring

Additionally, the city utilizes three other water springs and five wells for drinking water. However, these sources are of less significance for the old city because they are located outside of it. The city is also equipped with water reservoirs that have increased their capacity from 19,522 cubic meters in 2013 (as per the document from the Nablus Municipal Council from 2013), which he says now is about 23,000 cubic meters, compared to the average daily consumption of 38,000 cubic meters since 2013.

An interesting side note told by Ramez El Titi is that *“Al-Qaryoun pumping station was a police station during the Ottoman rule of the city, and the reservoir itself was a detention room for prisoners.”*

In general, water pumping and distribution in Nablus’s City follow an intermittent schedule, with residents typically receiving water supplies twice weekly up to once each four days. I presented the picture series of Khulud from the introduction to the chapter on the city of Nablus and asked why Khulud receives less water from the tap during the summer.

According to water expert Ramez El Titi, the intermittent water supply in Nablus stems from two main factors:

- **Technical Reasons:** Insufficient storage capacities and pressure in the pipes. Even though German Cooperation invested in developing the supply and distribution system, it still needs more development.
- **Insufficient Available Water:** Especially in summertime, where the demand is more than the supply of natural resources.

El Titi also mentioned that although Nablus has its own water wells and springs, in some specific cases (to increase supply), the Nablus Municipality buys water from Mekorot.

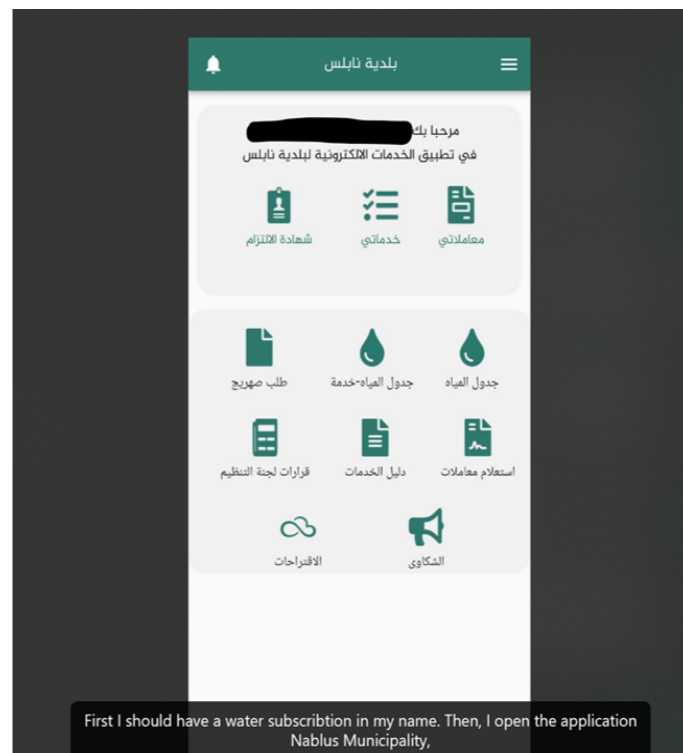
Dania: *“In the introductory screenshots Khulud is aware that her neighborhood, A-Dahiyah, is not included in the water distribution schedule that day. How do residents like her know when they can receive water?”*

El Titi explained that residents of Nablus rely on a distribution schedule, which is announced daily on the municipality’s Facebook page. This information is also shared on local news pages on Facebook. Additionally, residents can access the schedule through an application provided by the Nablus Municipality. El Titi shared the municipality’s Facebook page, where the announcements are visible.

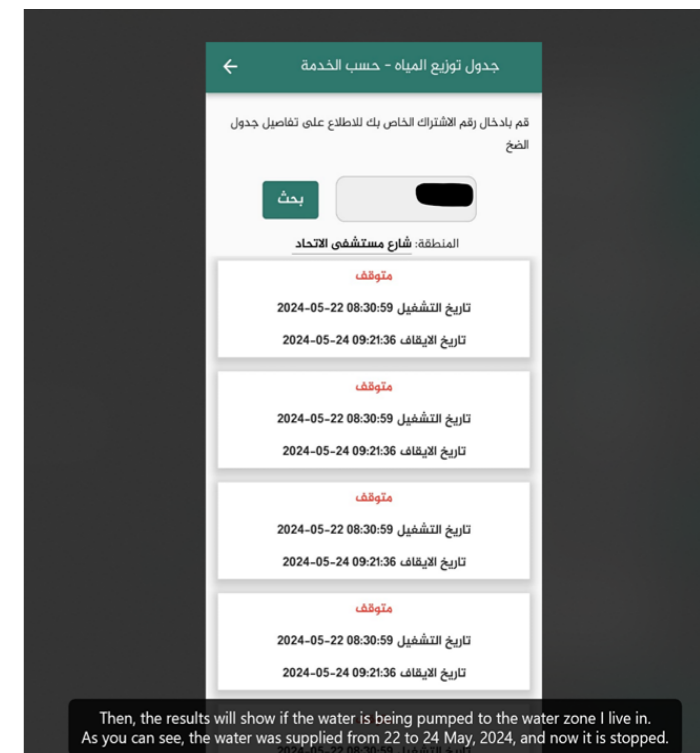


< Screenshot of the Municipality's Facebook page

Moreover, residents can also control the status of water distribution using the municipality’s application, which is widely utilized. To do so, residents must have a water subscription in their name and insert their subscription number into the application. The application then displays whether water is currently being pumped to the resident’s designated water zone. Ramez El Titi then sent me screenshots of the application he uses. The subscription numbers are hidden for privacy reasons.



First I should have a water subscription in my name. Then, I open the application Nablus Municipality,



Then, the results will show if the water is being pumped to the water zone I live in. As you can see, the water was supplied from 22 to 24 May, 2024, and now it is stopped.

^ Screenshot of the Municipality's app, received from Ramez El Titi via Whatsapp on May 19, 2024.

We then talked about the rooftop water tanks. Ramez El Titi stated, *“The rooftop water tanks are part of the distribution system. Customers install the roof tanks because the water supply is intermittent, and they need the water continuously.”* He also explained, *“In some specific cases, if the pressure in pipes is not enough to raise the water to the roof of high-rise buildings, or if the water cycle is too long for a customer who has not enough space at the roof, customers use a ground tank of 1-1.5 m³ volume.”*

Dania: "Why is the pressure in pipes sometimes insufficient to raise the water?"

El Titi elaborated, "Nablus city as other cities in West Bank is a hilly area. The main water resources are located some 12 to 15 KM outside the city and transmitted through main lines to the main reservoirs and pumping station inside the city; some of which are located in low areas and the water should be then pumped into the distribution network uphill. In this case, the pressure of the water in the distribution pipelines feeding the roof tanks of houses located uphill will be low and it is not possible to increase the pressure because this will cause damage to the pipes and fittings in the lower parts of the network. It should be mentioned here that the roof tanks themselves contribute to pressure loss in the distribution lines because since the water supply is intermittent, the roof tanks will be almost empty, and when pumping water in the distribution network, empty roof tanks in the lower areas will be filled first then the higher level ones and so on until water reaches the uphill. In some cases, the water does not reach the roof tanks of houses and high rise buildings at the uphill due to low pressure in the pipes and thus the customers install ground tanks with a pump to lift the water to the roof tanks."

I asked Ramez El Titi about the quality of the drinking water stored in rooftop tanks, considering that these tanks are exposed to the sun and often black in color. In Belgium, there are sometimes Legionella problems, so I was wondering whether these rooftop tanks are suitable for drinking or if they are meant only for washing.

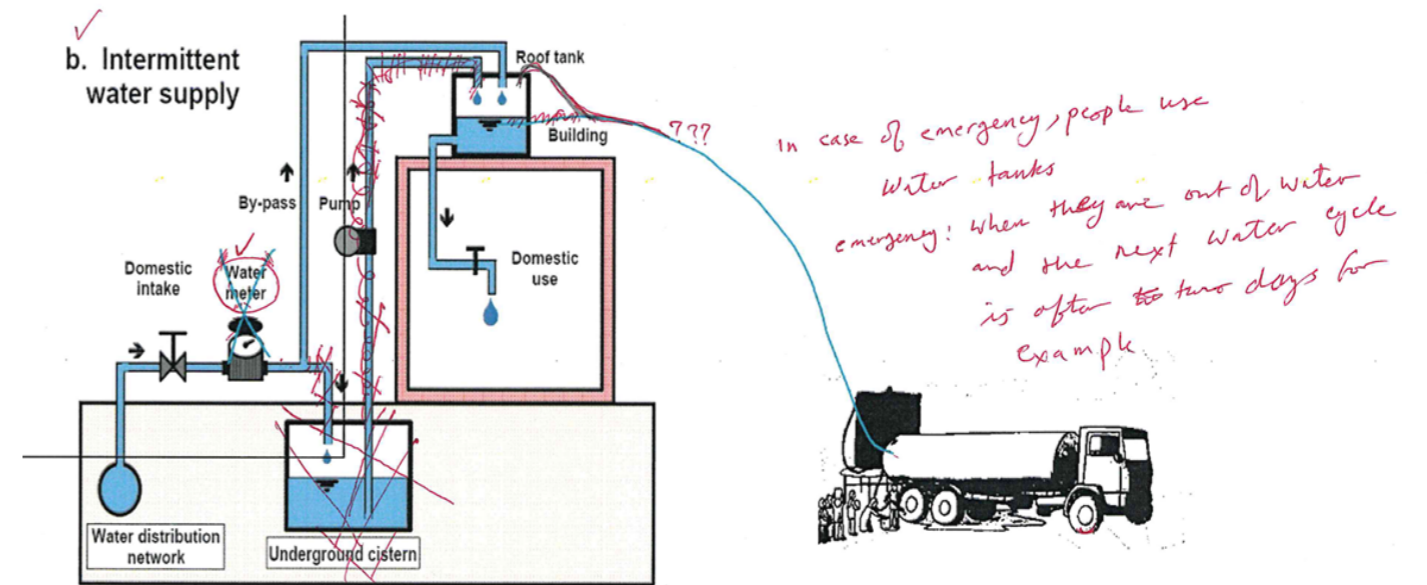
"Roof tanks are for all-purpose use. We use the water of the roof tanks for drinking, cooking, cleaning, etc. Water quality is one of the indicators of the performance of the water supply service providers as regulated by the laws in Palestine. In Nablus, the water is disinfected at the source (wells and pumping stations). It reaches the consumers disinfected. There is control over the water quality performed by the service provider itself (Nablus Municipality) and the Environmental Health Department of the Ministry of Health, where samples of water are taken from different locations at sources and from distribution networks and house taps for testing total coliforms and fecal coliforms, which are indicators of water pollution. Legionella does not exist in Nablus water resources, which are groundwater and not surface water. The roof tanks are made of High-Density Polyethylene (HDPE), which is proven safe for roof tanks. Traditionally, they were black, but recently, white-colored roof tanks are used. In both cases, they are safe for use as roof tanks. Roof tanks are closed and not subject to air. On the other hand, in Nablus Municipality, there is a disinfection unit responsible for the water quality and follows up on any complaints from the customers."

When asked about bottled water available in Nablus, El Titi stated that in the past, the most (Israeli) brands were Ein Gedi, Eden, and Neviot. Recently there are large number of Palestinian bottled water brands like Jericho, Al Quds, Arwa, Murjan, and Riviera.

After the call, Ramez El Titi collected the water bottles he could find and sent me a picture of these bottles via WhatsApp. Additionally El Titi corrected the intermittent water supply scheme I made, which led me to the correct scheme.



^ Palestinian water bottles, received from Ramez El Titi via Whatsapp on May 19, 2024.



^ Corrected water supply drawing, with note of El Titi: "In case of emergency, people use water tanks. Emergency: when they are out of water and the next water cycle is after two days for example."

[APPENDIX 6: WATER EXPERT RAMEZ EL TITI: PUBLIC AWARENESS IN NABLUS]

In the same interview with water expert Ramez El Titi on July 6, 2024, as documented in Appendix 5, we discussed the existence of public awareness programs in Nablus. On July 15, 2024, I received various materials related to these programs, including articles and children's coloring books used in the summer camps. Only the materials used in this thesis are provided in this Appendix.

Concerning the Public awareness about water rights, scarcity, wise use, etc. there were a lot of efforts done at national level by PWA and at local level by water service providers. International and local NGOs (e.g. PHG, Save the children, etc.) also contributed to the public awareness process.

The funding of the public awareness plans and campaigns was in general from international donors.

PA was practiced on different levels and categories:

- General public
- Households
- Schools

Different forms and materials of PA were used:

- Brochures and leaflets
- Billboards
- Radio and TV spots
- Kids Colouring books
- Kids fictions
- Short films
- Songs
- Kids Summer camps
- Fraidy speech

Examples of Nablus Municipality different materials and activities financed by the German Government through GIZ (GTZ at that time) are attached. Ayou may ask your parents to translate the Arabic texts.

I will send you other materials through a link because their size is big

^Mail received on July 15, 2024 with various documents.



< A summer camp for school kids to enhance the awareness of water and environmental issues organised by the Water Supply and Sanitation Department (WSSD) of Nablus Municipality supported by German Technical Cooperation (GTZ) in 2006.

translation of the summer camp slogan: 'Water and Environmental Public Awareness Campaign'



< School kids of Dew Drops Summer Camp visiting Ein Beit El Maa' Water Pumping Station.





^ Screenshots of the public awareness for Imams about water conservation measures to be addressed in the Friday's prayer speech. The images illustrate that taking a shower uses less water than a bath, that cold water can be stored in buckets while waiting for hot water, and that handwashing a car uses less water. Although there are many other images in the series, I only used the info of these three screenshots in my thesis.

^A calendar that shows activities carried out in the context of the public awareness plans of WSSD of Nablus Municipality.

[APPENDIX 6A: PUBLIC AWARENESS PROGRAMMES]

The following documents about the 'Public Awareness Programmes' recived from Ramez El Titi were used as well:

An article in Nablus Municipality newsletter in August 2006

In cooperation with the German Technical Cooperation (GTZ), the Water and Sanitation Department of Nablus Municipality organised a summer camp concentrating on water conservation issues

As part of its Awareness Programme that concentrates on water conservation and bill payment, the Water Supply and Sanitation Department (WSSD) of Nablus Municipality organised in cooperation with the German Technical Cooperation (GTZ) a summer camp under the slogan "With the Municipality, we protect Water". The summer camp started on July 15th and the camp activities took place for 3 weeks.

About 135 children of the age 8 -12 years participated in the camp where they experienced practical skills of water conservation and they visited several water resources and facilities. The participants became familiar with the WSSD and the efforts made by the Department to supply the citizens with adequate and safe potable water. The camp also concentrated on the contribution of the participants in the public awareness programme by applying "Child to child" concept and participation in non academic activities like writing assays and stories about water conservation, drawing and theater acting.

It worth to say that GTZ is cooperating with WSSD since 1993 and provides technical assistance aiming at improving the water supply and sanitation services provided by WSSD and raising technical and managerial capacities of the working staff in order to improve the overall water resources management of Nablus Municipality.

[APPENDIX 6B: PUBLIC AWARENESS PROGRAMMES]

An article in Nablus Municipality Newsletter in July 2006

Children participating in the "Dew Droplets" summer camp visited water pumping facilities in Nablus

The children participating in the "Dew Droplets" summer camp organized by Water Supply and Sanitation Department (WSSD) of Nablus Municipality in cooperation with the German Technical Cooperation (GTZ), visited on July30th different water sources and pumping stations in Nablus. The site visit was made to "Ein Dafna", " Ein Beit El-Ma" and "Ras Al-Ein" spring sites and pumping stations. The technical staff at these sites explained to the participants the importance of these water resources, the quantities of pumped water and the areas supplied with water through these facilities. After that the WSSD technical staff responded to the inquiries and questions raised by the participants about the mechanisms of water pumping, storage, disinfection and distribution. The participants recognised and admired the efforts exerted by the WSSD of Nablus Municipality to supply the citizens with adequate and safe drinking water.

The summer camp is part of a public awareness programme implemented by WSSD of Nablus Municipality and GTZ under the slogan " With the Municipality, We protect the Water".



Final Report Water Awareness Campaign

Submitted by WSSD

July- 2008 to January 2009

Final Report Water awareness campaign

Introduction

In the context of the activities of water awareness program implemented by WSSD in cooperation with the German-Palestinian cooperation program through German Agency for technical cooperation, WSSD has conducted several activities to achieve its aims in water conservation in the period between July 2008 to January 2009, the following section illustrate the performed activities in a.m period.

Performed Activities

1. Summer Camp

WSSD conducted a successful summer camp for children in Hemdy Mango Center in Nablus. This center is owned by the municipality and the space was provided as part of Nablus municipality contribution to this program. A two full time person from WSSD were responsible to manage this program. Sixteen full time facilitators were assigned to this program. The facilitators received training in Rammallah. WSSD announced about the summer camp through local TV stations. The selection of the children had been done by a team from Nablus Municipality. The summer camp took place for two weeks from 5-20 July 2008 and hosted 50 school children aged from 13-16 years.

During the summer camp the children were educated about the water shortage problem and were encouraged to conserve water in their homes and transmit this message to their friends and families.

At the end of the summer camp, a final ceremony (street theater show) was conducted on 24 July 2008. Families and people from the community were invited to attend the ceremony. The ceremony was a public event that conveyed water conservation messages and presented the work done by the children. The event included mainly stage play, songs, speeches, and other activities.

Evaluation of Summer Camp Results was carried out by a local consultant, 25-30 families of the participants were interviewed and asked to fill a questionnaire. The questionnaires were analysed to measure the impact of the summer camp using SPSS program. The results of evaluation shows that the summer camp raise to a large extent the awareness of the participants towards water scarcity and water conservation practices. In addition to that the results showed that many children conveyed the messages they learned to their families.

2. Bill board messages

The message of raising awareness towards water conservation was addressed through 6 billboard which located on vital sites of Nablus Municipality.

3. Posters

1000 copies of posters were produced which hold a message of water conservation. A number of these posters were already distributed to many institution and companies such as Al-Najah University, schools, Palestinian communication company and others.

4. Car Hangers

1000 car hangers were produced and distributed among the public. The hanger raised awareness towards water conservation and the method followed for car washing.

5. Ramadan Calendar

1000 Ramadan calendars were produced and distributed among the public at the beginning of Ramadan . The message on the calendar raised awareness towards water conservation.

6.Calendar 2009

3000 calendars of 2009 were printed and distributed to institutions and individuals. The calendar is under the title " kids & Water". The best 12 pictures for the kids during conducting the activities under the public awareness campaign since 2006 were selected to produce Calendar 2009. These pictures shows kids singing and

dancing for water, visiting water facilities discussion water conservations principal and others.

7. Printing 700 cloth bags

700 cloth bags were printed. The message on the bag is focus on the value of water and the significance to conserve it all the time. The bags will be distributed in our future activities in PA.

8. Printing 1000 students note book

Printing 1000 students Book Note. Inside the book Note different messages focus on water conservations are included. The Book Note will be distributed in our future activities in PA with kids .

9. Mass Media

In addition to the above activities WSDD has been disseminating its message through

1. Three television spots on raising awareness of the public about water conservation and on enhancing and encouraging the wiliness of people to pay their water bills and on prompting people to maintain and fix their own water and sanitary facilities.
2. Producing song as video clip and broadcasting on TV on specified and regular time. The songs is about water and it convey a message to public.
3. Documentary film about the importance of water, water resources in the city, the problem of water shortage and ways to conserve water consumption. The film duration is 15 minutes and produced in both languages Arabic and English.
4. Carried out TV interviews: interview with the Deputy of Nablus Municipality Mayor and Interview with WSSD manager focused on the problem of water shortage and ways to conserve water consumption.
5. Conduct Youth program to direct the youth toward solving the problem of water shortage
6. Conduct Children program direct the children toward water conservation.

Results and lessons learned

Through conducting a wide variety of activities , the skills of WSSD staff were improved in planning and implementing public awareness campaigns on water conservation. WSSD staff participated in all stages of this campaign, from the formative research to message development and material production.

Another major outcome for this campaign was increase the awareness of knowledge about water –saving techniques and the important of WSSD role in managing water resources and in providing the water services to the residents.

Through the workshop that was carried out for children it was noticed that the children were very active and could understand the information.

As has been mentioned before the results of evaluation of the summer camps show that the summer camp raise to a large extent the awareness of the participants towards water scarcity and water conservation practices. In addition to that the results showed that many children conveyed the messages they learned to their families.

WSSD Public Awareness Programme**Final Report****Submitted by Hanan Halaweh****Introduction**

This final report covers the activities performed by the consultant in the period between 15.9.2006 to 15.11.2006. In addition, the report summarizes the ongoing activities that will be followed up by the PR staff of WSSD.

In the context of the activities of water awareness program implemented by WSSD in cooperation with the German Agency for technical cooperation (GTZ), WSSD has conducted several activities to achieve its aims in promoting water conservation and enhancing water bill payment.

A) Activities carried out**1- Training Seminar/ religious leaders and Imams**

Raising awareness and changing attitudes to water through religion has proved very successful. As there is a great receptivity to religious message, the people accept it easily and they are open to the teachings. Islam can play an important role in changing people's attitudes to water and conservation issues.

WSSD organized a workshop and training seminar to religious leaders and Imam for two days on 2/10/2006 and 16/10/2006. The workshop was attended by approximately 50 employees from the Ministry of

Endowments and Religious Affairs. The workshop addressed several topics including information about water resources in Nablus, the problems the city is facing and the methods that could help to save water. At the end of the seminar printed materials were distributed to the participants. The printed materials contains information about water in general, the role of WSSD in managing water resources in Nablus, water conservation in Islam, demonstration of some techniques in water conservation.

2- Mass Media

In parallel to its targeted educational programmes, WSSD is disseminating its messages through:

1. Three television spots; and
2. Two posters on raising awareness of the public about water conservation and enhancing and encouraging the wiliness of people to pay their water bills.

B) Activities in progress**Calendar**

The best 12 children drawings were selected to produce a calendar for the year 2007. The drawings focus on messages on water conservations. These drawings produced by children participated in the previous activities conducted through PR activities such as the "Dew Drops" summer camp.

Signboards

The message of raising awareness towards water conservation will be also address through 4 signboards which will be located on vital sites of Nablus city.

C) Futures Activities

Brochure:

It is planned to produce a brochure about WSSD which will include introduction about the department, organization structure, field of specification and area cover by WSSD services, human resources, projects and programmes with the donors....etc.

Targeting School Children:

WSSD will cooperate with Ministry of Education who will participate in the implementation of PR activities. This activity was postponed because of the public employee strike. It is planned to conduct this activities in the next month.

Radio dialogue

The manager of WSSD, the PR staff and the GTZ project advisor will talk about the PR activities in a local radio and/or a local TV station.

D) Achievements

The WSSD public awareness Program in the elapsed period succeeded in achieving the following:

- 1) Activation of a public relation unit in WSSD and nominating one qualified employee (Miss Rania Haqash) to be involved in PR activities.

- 2) Sustainability of the PR activities. The consultant's contract ends by the mid of this month. However, PR activities will continue and will be managed and performed by WSSD staff.
- 3) Through conducting a wide variety of activities, the skills of WSSD staff is sharpened in planning and implementing public awareness campaigns on water conservation. WSSD staff participated in all stages of this campaign, from the formative research to message development and material production.
- 4) Another major outcome for this campaign was the increase of public knowledge about water-saving techniques and the important of WSSD role in managing water resources and in providing the water services to the residents.
- 5) After participating in the training seminars, many of the Imams and religious leaders integrated the messages received about water conservation into their sermons and Friday speeches. Women trained during the seminars in turn gave lessons in water conservation to other women at religion lessons carried out in homes and mosques.

[APPENDIX 7: WATER EXPERT RAMEZ EL TITI: INFRASTRUCTURE DIAGRAM]

The making of the water infrastructure diagrams (illustrations 45 and 46) on pages 116-118, showing the different strategies and tactics used by Palestinians in the West Bank was a multi-step process. Starting with an complex diagram (Figure A) that was created by myself from insights and knowledge gained from the literature review.

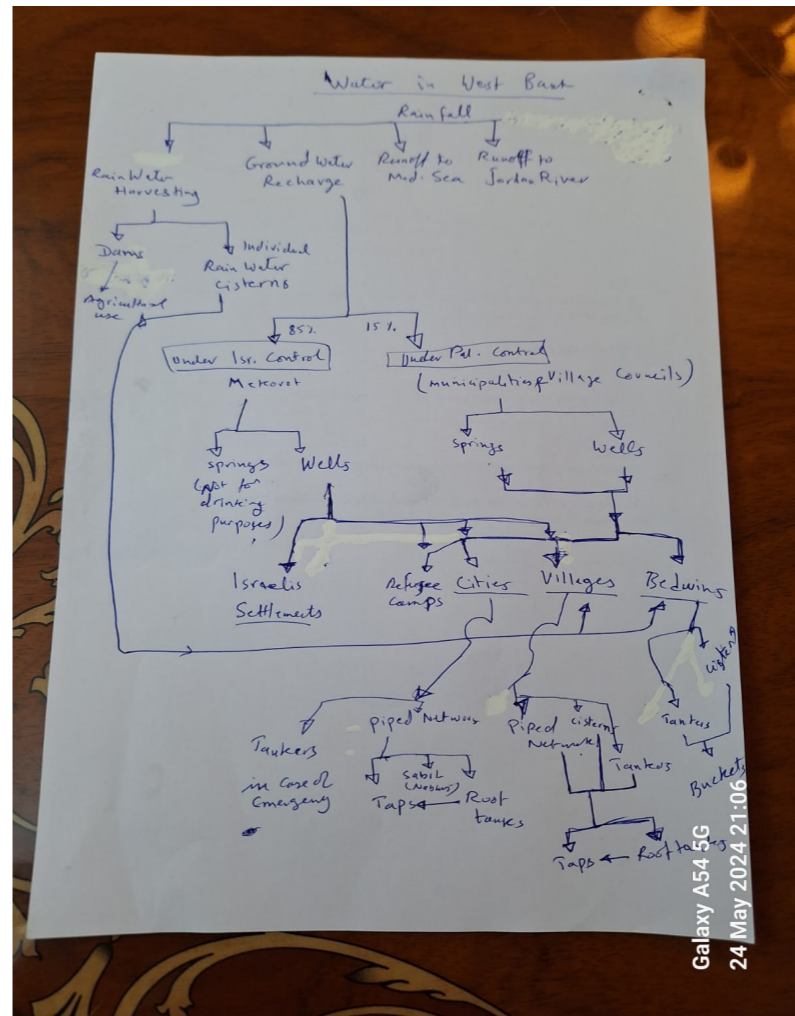
In collaboration with water expert Ramez El Titi on 24 May 2024, via WhatsApp, Figure B was developed with information he knew from his past work and expertise.

Figure C presents a refined version of this diagram. However, feedback from the first draft of the thesis indicated that the diagram appeared overly simplistic. As a result, the third version was redesigned to more clearly illustrate the infrastructure differences between Mekorot and the Palestinian municipalities and village councils, making the scale at which they operate immediately visible.

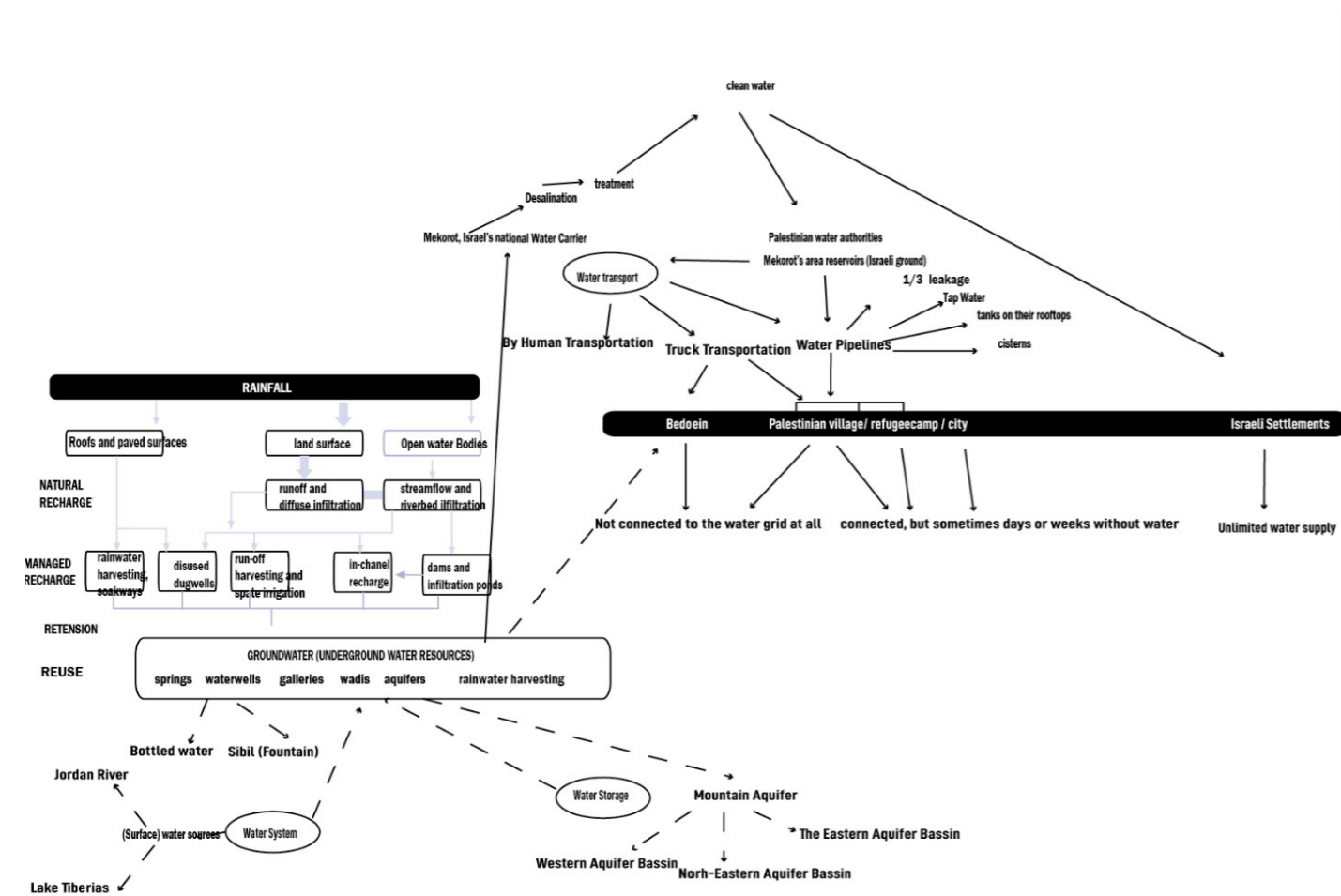
I asked the question via whatsapp "why is the spring of Mekorot not for drinking purposes?"

El Titi answered: "Actually they are not Mekorot springs. They are Palestinian springs but the Palestinians have no access to them. The Israeli settlers do not use them for drinking purposes because the already enjoying plenty amounts of tap water and on the other hand, the water quality of springs is not suitable for drinking. Settlers use these springs for recreational purposes. Maybe it is not so accurate to say Mekorot springs but just to highlight that Palestinians have no access to these springs."

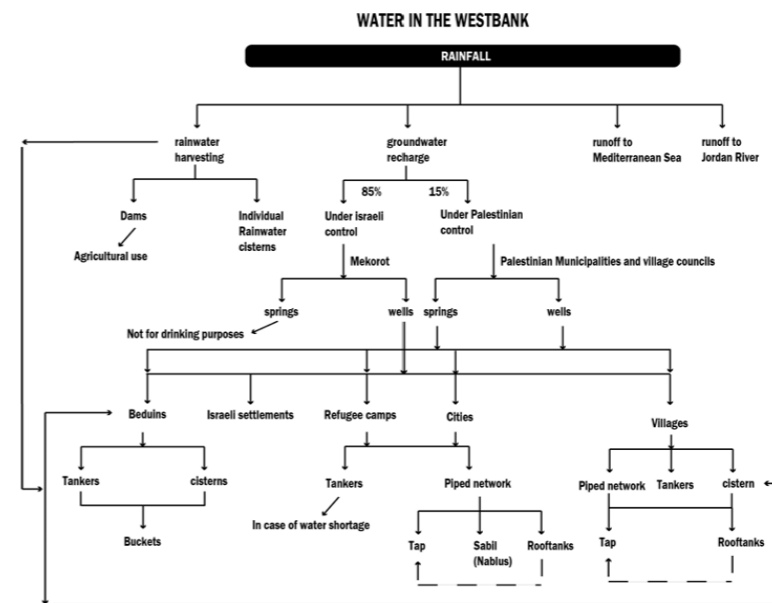
Ramez El Titi added that according to his knowlegde, there are three malfunctioning Palestinian Dams at Al-Far'a valley (near Nablus) at Al Ouja (near Jericho) and at Al-Rosh (near Hebron). In general, Israeli authorities rejects Palestinian requests to construct dams. The Israeli dams are inside Israel, not in the West Bank.



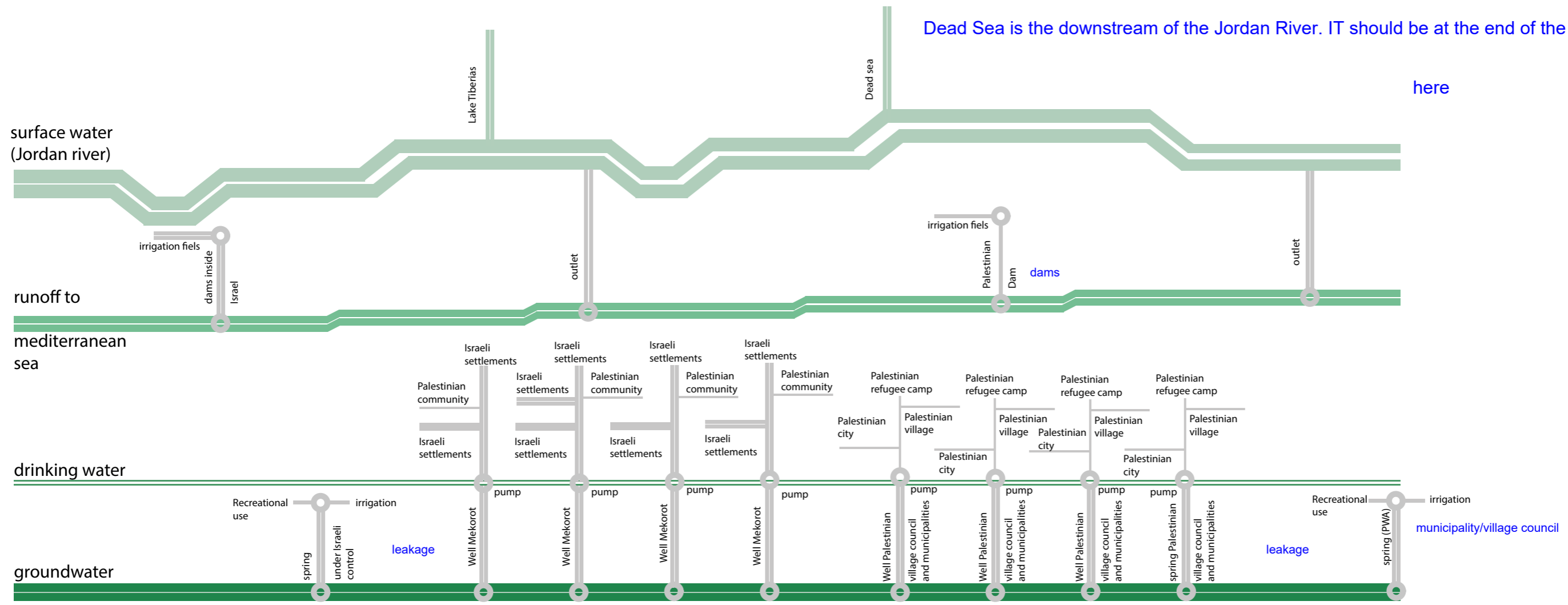
< Figure B: Diagram made in collaboration with water-expert Ramez El Titi.



^ Figure A: complex diagram by Dania Al Sknini with information gathered from the literature review and different readings online.




< Figure C: refined version.



PWA/ Palestinian Local authority instead of village council and municipalities


^ Moreover, El Titi corrected my diagram (illustration 46), which is based on illustration 45, inspired by: Chiara Cavalieri and Fabio Vanin, *The Language of Water. De taal van het water* (Louvain-la-Neuve: LOCI, 2019), 118.




Regarding the springs in the city of Nablus, Ramez El Titi provided the following documents. The first one is a 233 pages report, only the pages used are attached in this Appendix 8.


2010


House of Water and Environment

Protection of Nablus Springs





This project is supported by the German Technical Cooperation (GTZ).

CHAPTER TWO: NABLUS SPRINGS – A GENERAL BACKGROUND

2.1 Management of Nablus Springs

Management of Nablus springs is the responsibility of the Municipality of Nablus through its WSSD. This management role implies the following:

1. Distribution of spring water to the designated service zones and reservoirs.
2. Integrate the springs within the water resources of the city to achieve optimal utilization of spring water especially during winter time where surplus water amounts from springs are readily available.
3. Measuring spring productivity on daily basis.
4. Determine the allocated amounts of water to those who are entitled the rights in the springs' water.
5. Supervising water sampling and analysis to insure adequate water quality.
6. Take measures to prevent spring water pollution.
7. Propose and execute rehabilitation projects and activities for the springs and the corresponding pumping stations.

2.2 Importance of the springs to the City of Nablus

The major springs of the City of Nablus are of great importance due to the following reasons:

1. The springs complement the role of the groundwater wells for water supply (see Figure 6).
2. The springs represent a low cost source of water since they exist within the city boundaries unlike the groundwater wells.

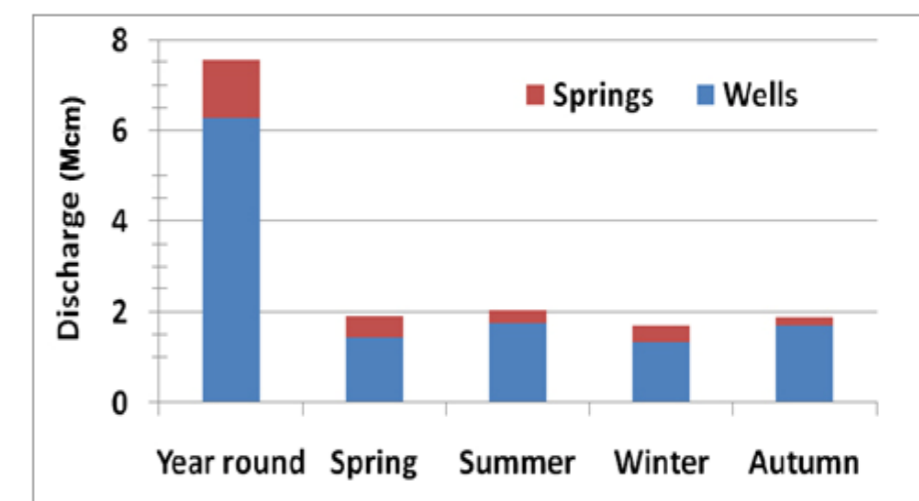


Figure 6. Water produced by the different wells and springs of the City of Nablus for the year 2008 for different seasons.

As we can see from Figure 6 springs' contribution to the total water produced for the year 2008 though is small compared to that from wells yet is considerable during winter ($\approx 21\%$) and

spring ($\approx 24\%$) seasons. As a simple yet indicative comparison, Table 2 summarizes the unit cost of water for different sources based only on the electricity consumption³. It is evident from Table 2 that the springs of Qaryoun, Ras Al-Ein, and Ein Al-Asal show low unit costs (0.04, 0.12, and 0.01 $\$/m^3$, respectively) compared to the wells of Audala, Badan, Faria, and Deir Sharaf-2a (0.27, 0.49, 0.12, and 0.29 $\$/m^3$, respectively).

Table 2. Unit water cost for the wells and selected springs based on electricity consumption and water production rates for the year 2008.

	Pumping (KW-hr)	Unit cost ($\$/m^3$)
Audala	2,480,436	0.27
Badan	6,782,500	0.49
Faria	1,312,750	0.12
Deir Sharaf-2a	2,649,608	0.29
Qaryoun	118,640	0.04
Ras Al-Ein	236,340	0.12
Ein Al-Asal	25,560	0.01

The water of Ein Dafna spring mixes with water coming from Audala Well and both supply water to different areas in the eastern part of the City of Nablus such as Khallet Al-Amoud, Kroum Ashour, Salaheddin street, Ksheke area, Khallet Al-Eman, Irak At-Tayeh Village, Askar Al-Balad Village, New Askar Camp, Old Askar Camp, Industrial area, Rujeeb housing, physician housing, Balata Camp, Balata Village, Jerusalem street, Faisal street, Kufr Qallel Village, Dahya area, and Ibin Rushd street.

The Qaryoun spring covers entirely the water demand in the Old City of Nablus. During winter time, the surplus is pumped to the New Reservoir pumping station.

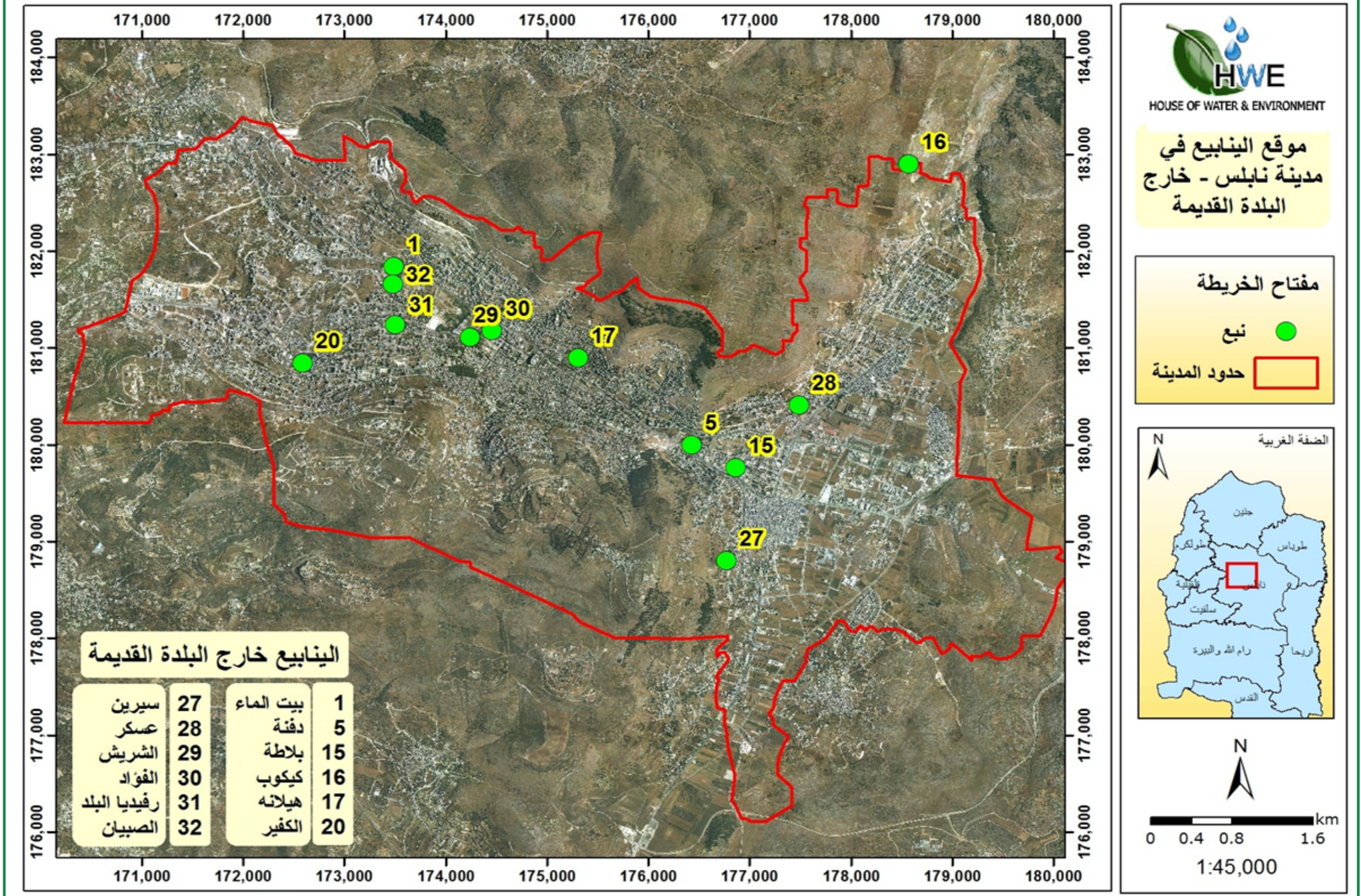
The water of Ein Al-Asal is pumped only to the Southern Reservoir. This reservoir supplies water to Al-Makhfeyya area, Fatayer area, 10th street, 24th street, Ta'awon Street, Till Street, As-Somara station, and New Nablus.

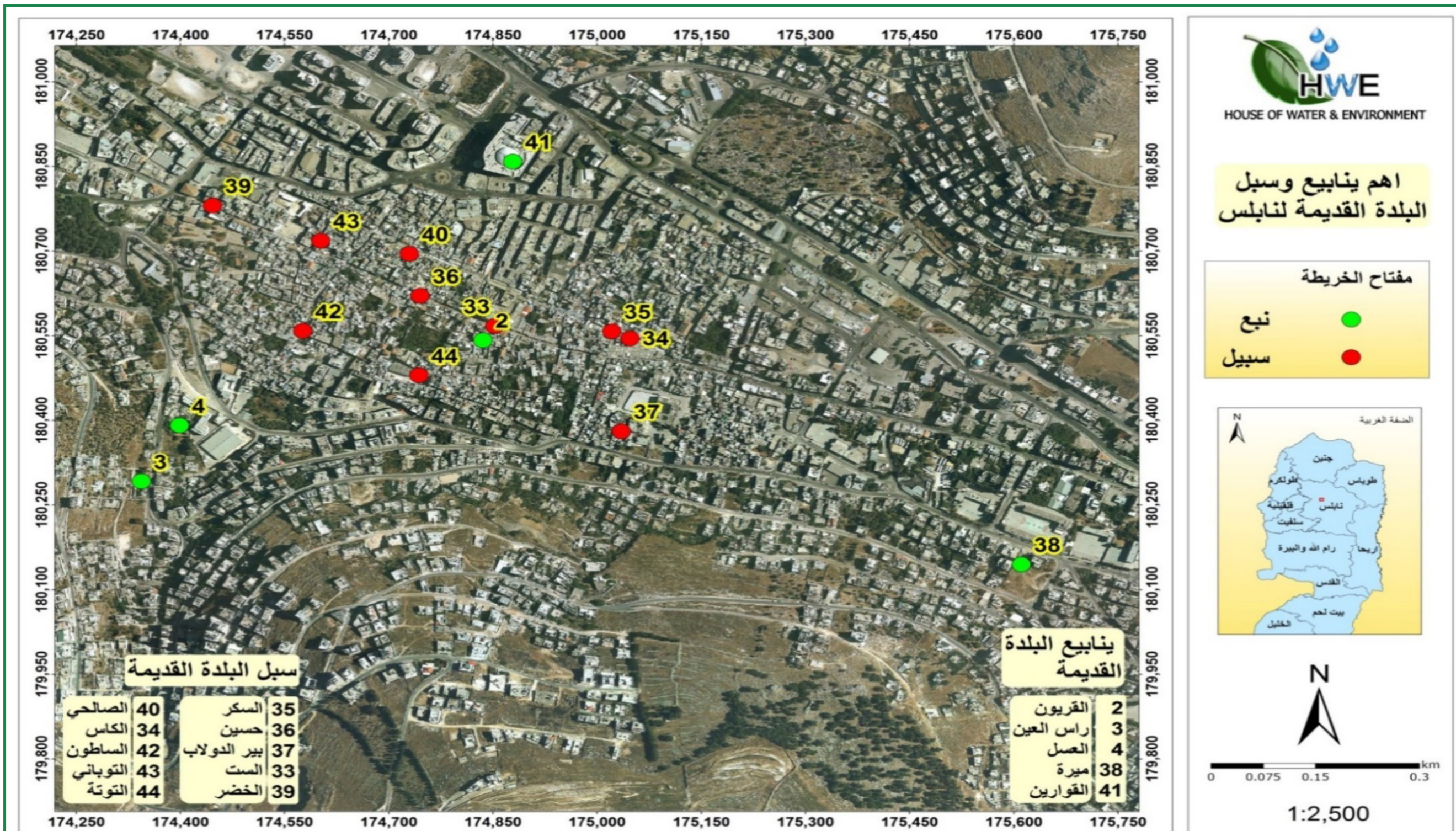
The Ras Al-Ein spring covers many areas in the southern part of the city including Basha street, Ras Al-Ein street, Al-Qesaria area, Abu Ubaida street, Mammoun street, Old An-Najah street, Mansheyya area, and portions of Tour street.

The water of Ein Beit El-Ma mixes with that of Deir Sharaf-2a well and both supply many northern and southern areas in the western part of the city including Asira street, Kamal Jumblat area, Maajeen area, Zawata Village, Ein Beit El-Ma Camp, Rafedia area, Al-Mraj street, Juneid Village, Engineering housing, Itihad Hospital area, Middle Blaiboos area, Abdelraheem Mahmoud street, Wadi At-Tuffah area, and Ain As-Subian area.

³ Data were obtained from the Financial Department of Nablus Municipality with the assumption that each KW-hr of electricity costs 0.55 NIS and that 1 US\$ equals 3.8 NIS

Springs outside the old city





Springs locations

2 Al Qaryon

3 Ras Al Ein

4 Al Asal

[APPENDIX 9: VIDEO CALL WITH PROFESSOR EMILY MCKEE]

Professor Emily McKee, from Northern Illinois University and author of numerous articles covering the water situation in the West Bank, has been a significant influence on my research. The first time I contacted her was on March 10, 2024, when I requested several of her articles. To my delight, I received the requested materials the following day. On June 26, 2024, we conducted a video call, which provided insights and guidance for my ongoing research. This video call was not recorded from my side, but notes were taken.

Date: June 26, 2024

Platform: Teams

Duration: +-45 minutes

Job Title: Associate Professor

During our conversation, we delved into several key themes central to my thesis. We began by discussing the definition and application of the term 'water apartheid'. She asked me how I would define water apartheid, emphasizing the importance of clearly articulating this term within the context of my research. We explored how different authors, such as Clemens Messerschmidt and Mark Zeitoun, have used related terms like 'hydro-hegemony' and 'hydro-apartheid.' The conversation highlighted the need for a critical assessment of these terms, focusing on what they contribute to understanding water distribution inequalities in my study.

The conversation also covered the methodology and structure of my thesis. She advised that I start by clearly explaining the concept of apartheid before delving into water apartheid. Additionally, she recommended incorporating a robust metatheoretical framework to justify my choice of terms and their application within the broader context of my research.

Another important topic was the exploration of "making do" strategies, a concept I had incorporated into my thesis. She introduced me to Michel de Certeau's work on everyday practices, particularly his use of the term "making do," and recommended that I explore this further to better understand its implications. She suggested reading de Certeau's book, especially chapter three, where he focuses on this concept.

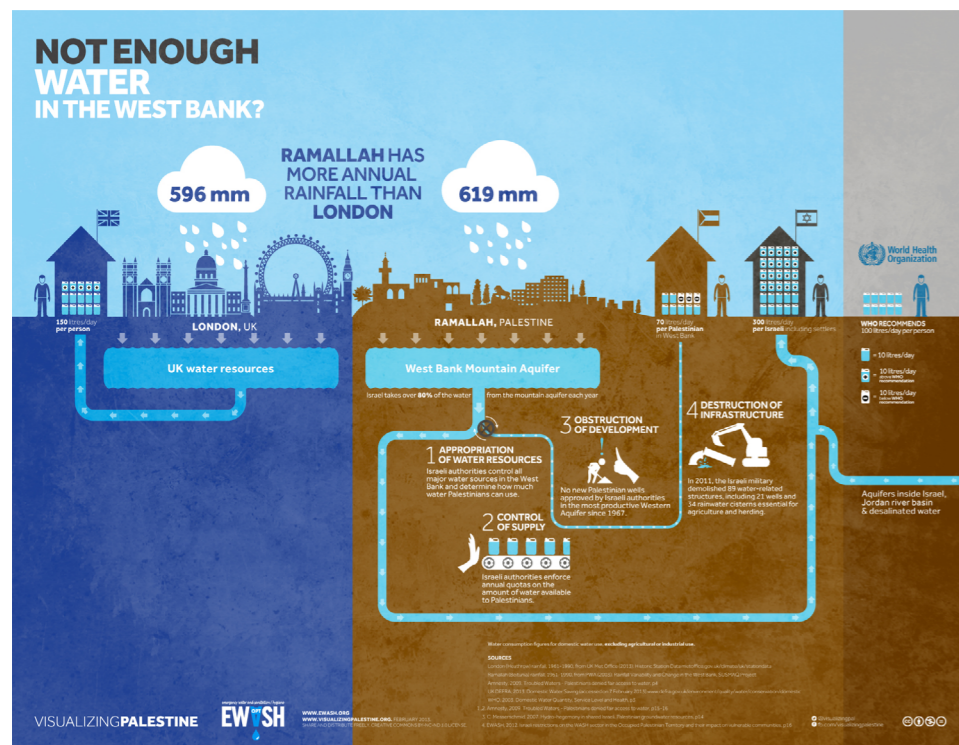
Towards the end of our conversation, we discussed citation practices and academic integrity. She provided guidance on proper citation practices, particularly when paraphrasing other authors. She advised that when in doubt, it is safer to use direct quotations to avoid any potential issues of plagiarism.

Lastly, we discussed the future implications of water scarcity, particularly regarding the potential depletion of the aquifer in Gaza and the broader West Bank. She pointed out that different narratives of water scarcity versus abundance are politically charged and might significantly impact future water access. She talked about, while desalination might reduce the demand on the Western aquifer in the future, the control over these resources remains a critical issue, especially if a two-state solution is implemented. It was noted that the strategic importance of water resources would likely ensure that control over the aquifer remains contentious.

Professor McKee recommended several organizations and resources that could be valuable for my research, including EcoPeace, WEDO, ARIJ, and the Palestinian Hydrology Association.

This conversation provided me with critical insights and guidance that were instrumental in developing my thesis. The discussion helped clarify key concepts, refine my methodology, and broaden the scope of my research to include comparative analyses.

• PART 0

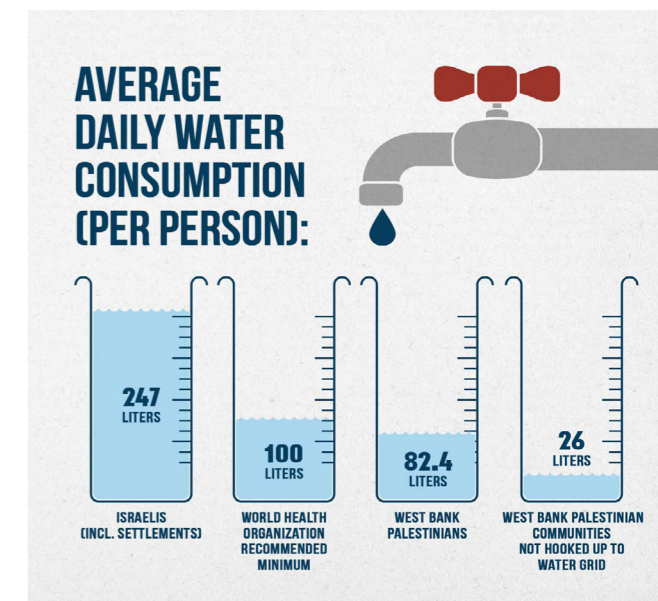


^ Source: "Not Enough Water in the West Bank?" Visualizing Palestine, March 2013, <https://visualizingpalestine.org/visual/west-bank-water/>.



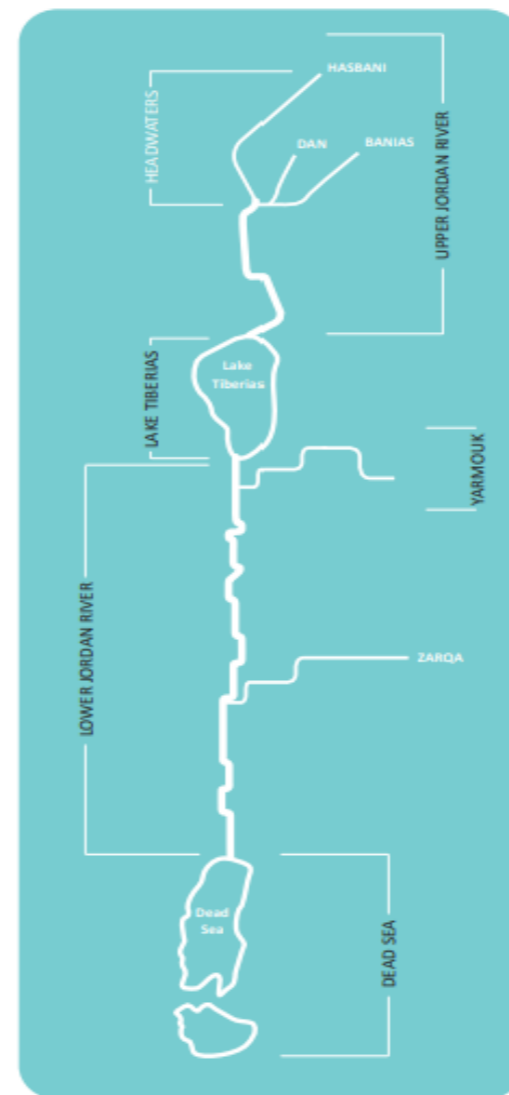
< Source: "Green Colonialism" Visualizing Palestine, January, 2022, <https://visualizingpalestine.org/visual/green-colonialism/>.

• PART 1



^ Used in illustration 5, source: United Nations Economic and Social Commission for Western Asia (UN-ESCWA) and Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), "Inventory of Shared Water Resources in Western Asia," (June 20, 2013): 170 https://www.unescwa.org/sites/default/files/pubs/pdf/e_escwa_sdpd_13_inventory_e.pdf.

^ Source: "Parched: Israel's policy of water deprivation in the West Bank," B'Tselem, May, 2023, https://www.btselem.org/publications/202305_parched.



< Used in illustration 7, source: United Nations Economic and Social Commission for Western Asia (UN-ESCWA) and Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), "Inventory of Shared Water Resources in Western Asia," (June 20, 2013): 177. https://www.unescwa.org/sites/default/files/pubs/pdf/e_escwa_sdpd_13_inventory_e.pdf.



Jordan River Basin

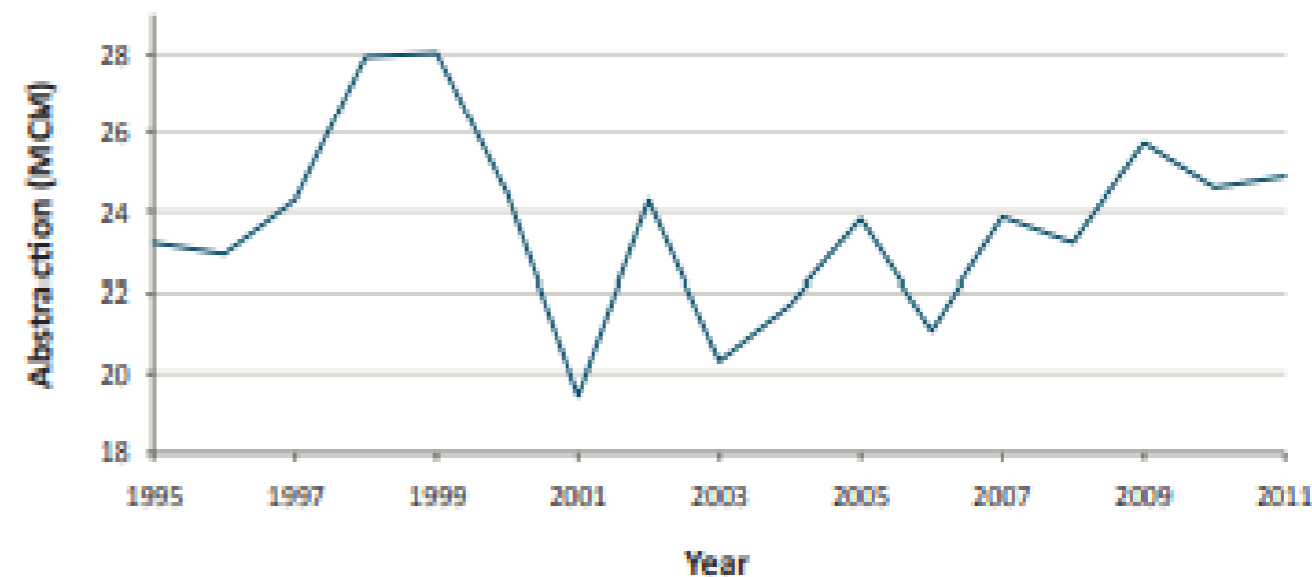
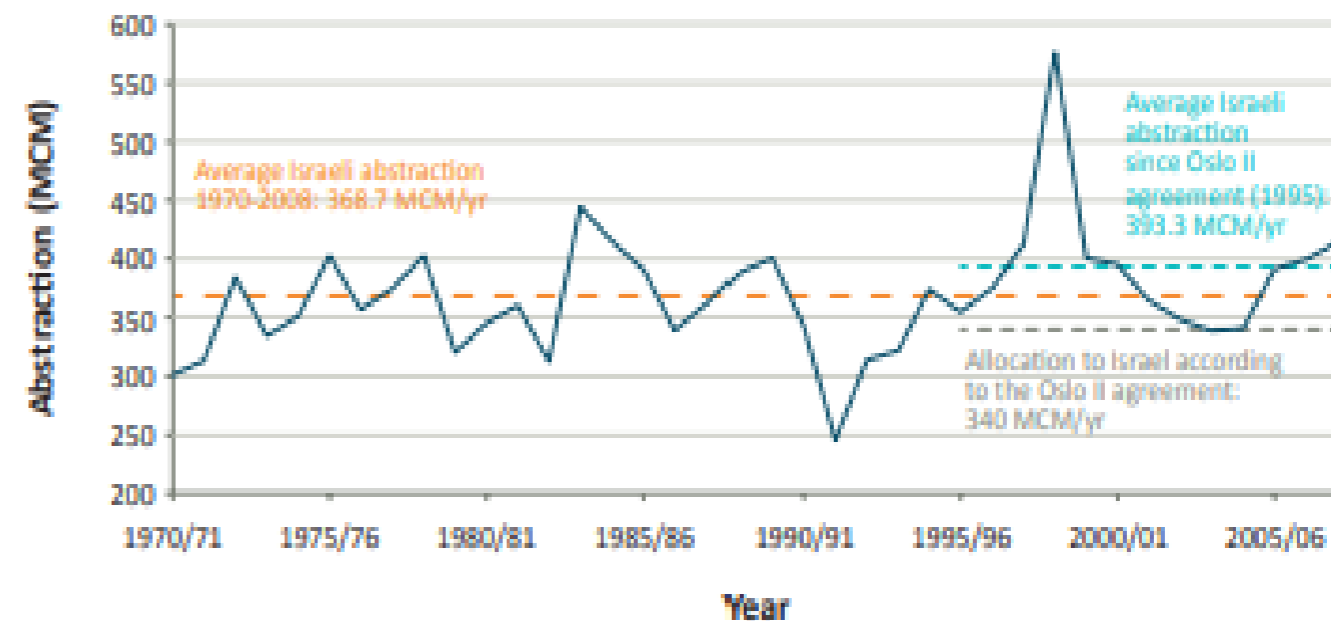
- International boundary
- - - Armistice Demarcation Line
- Capital
- Selected city, town
- ▭ Basin boundary
- ▭ Main shared sub-basin boundary
- ▨ Zone of agricultural development
- ~ River
- ~ Intermittent river, wadi
- Canal, irrigation tunnel
- Freshwater lake
- Spring
- x Mountain
- | Dam
- ▲ Monitoring station



Inventory of Shared Water Resources in Western Asia

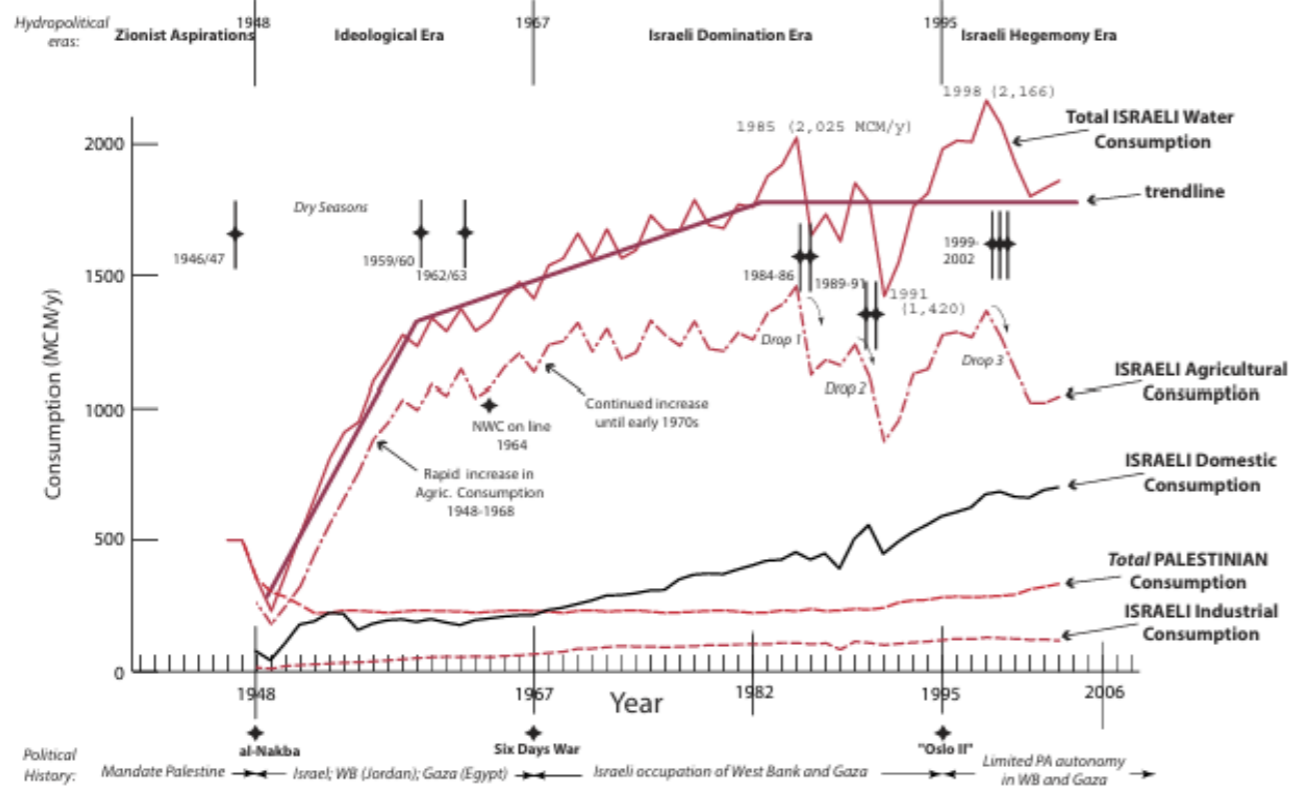
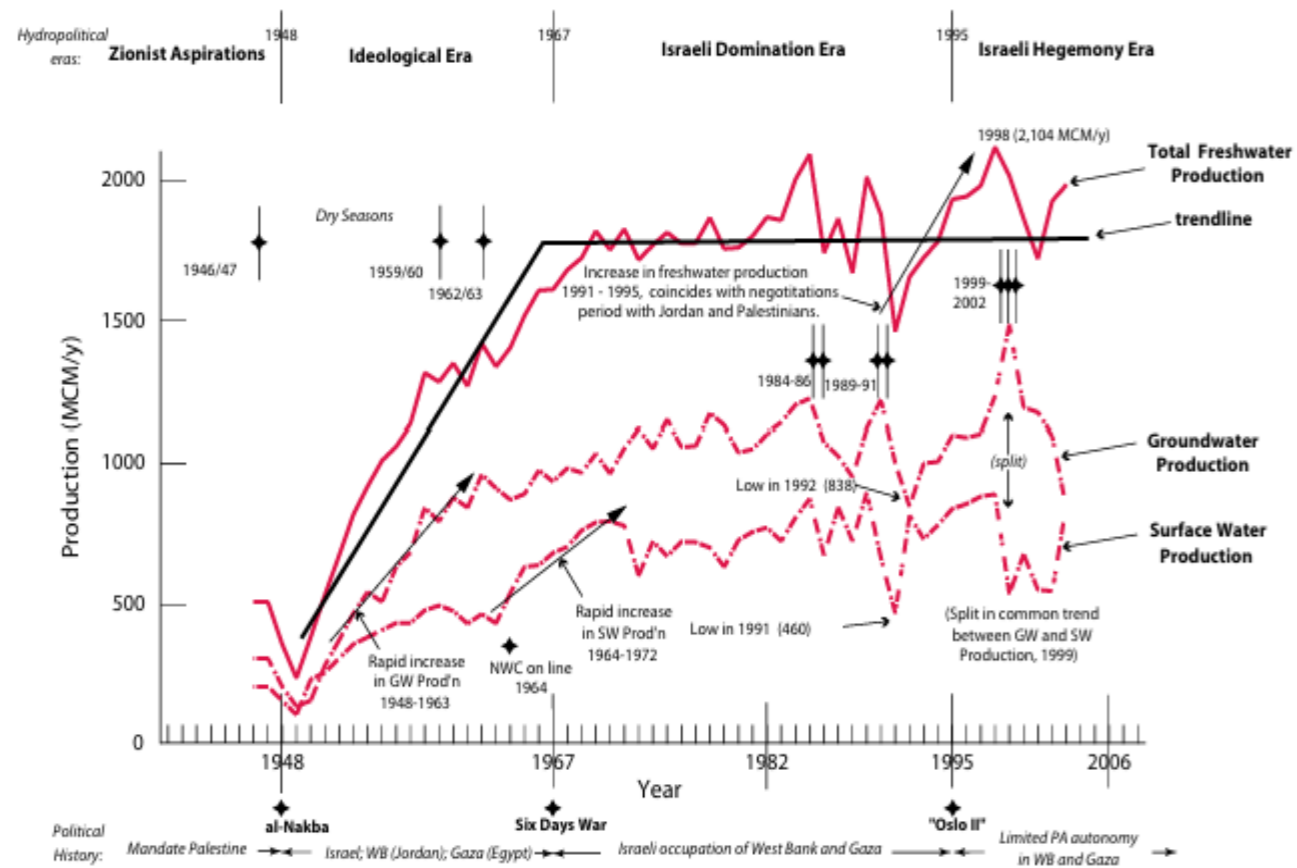
Disclaimer
The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

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^ Used in illustration 8a and 8b, source: United Nations Economic and Social Commission for Western Asia (UN-ESCWA) and Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), "Inventory of Shared Water Resources in Western Asia," (June 20, 2013): 473-474. https://www.unescwa.org/sites/default/files/pubs/pdf/e_escwa_sdpd_13_inventory_e.pdf.

< Used in MAP 5, source: United Nations Economic and Social Commission for Western Asia (UN-ESCWA) and Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), "Inventory of Shared Water Resources in Western Asia," (June 20, 2013): 173. https://www.unescwa.org/sites/default/files/pubs/pdf/e_escwa_sdpd_13_inventory_e.pdf.



• PART 2



^ Used in illustration 10: received from photographer Wahaj Bani Moufleh via Instagram. source: Wahaj Bani Moufleh, July 30, 2024.

^ Used in illustration 9, source: Mark Zeitoun and Clemens Messerschmid, "Asymmetric Abstraction and Allocation: The Israeli-Palestinian Water Pumping Record," *Ground Water* 47, no. 1 (September, 2008): 4-5. https://www.researchgate.net/publication/23221209_Asymmetric_Abstraction_and_Allocation_The_Israeli-Palestinian_Water_Pumping_Record.



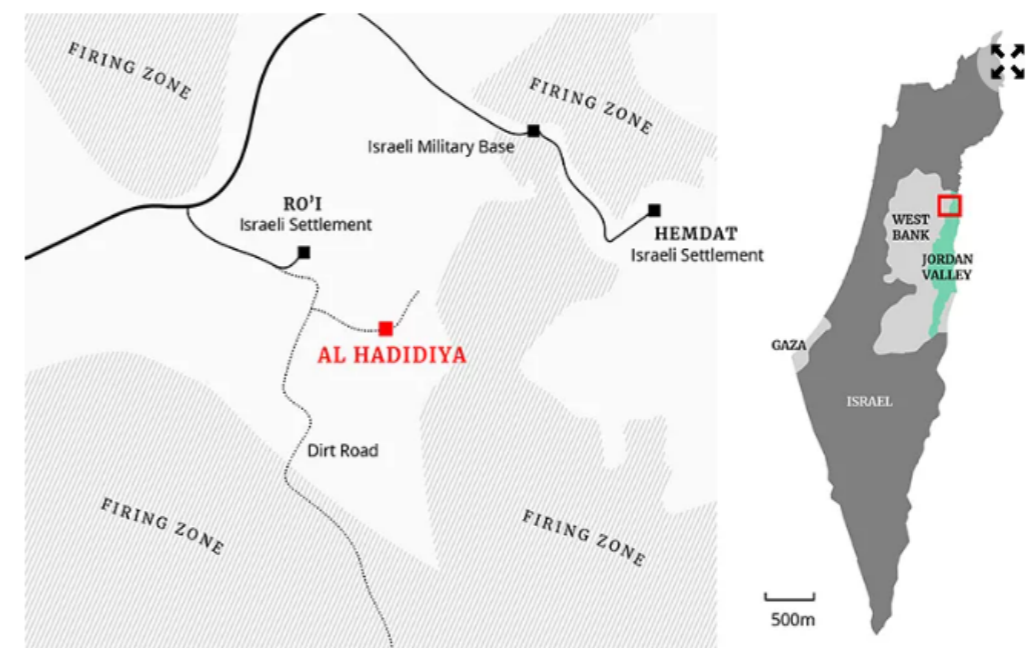
^ Source: B'Tselem, "Liquid Assets," May 11, 2011, short documentary, 0:40, <https://www.youtube.com/watch?v=PH6nonMkkoM>.



^ Source: Michelle Rudolph, "Water Governance under Occupation: A Contemporary Analysis of the Water Insecurities of Palestinians in the Jordan Valley, West Bank," (Working Paper no. 655, Institute of Social Studies, 2020), 31. <https://repub.eur.nl/pub/124925/wp655.pdf>.



^ Source: B'Tselem, "Liquid Assets," May 11, 2011, short documentary, 0:31, <https://www.youtube.com/watch?v=PH6nonMkkoM>.



^ Used in MAP 12, source: Adrian Guerin, "Jordan Valley. Ethnic Cleansing and Harassment of Palestinian Farmers," (June 25, 2020), <https://orientxxi.info/magazine/jordan-valley-ethnic-cleansing-and-harassment-of-palestinian-farmers>, 3986.

ב-21.6.11 הרס המינהל האזרחי 8 מבנים
 בכפר אל-חדידייה בבקעת הירדן.
 36 פלסטינים נותרו ללא בית, בהם 15 קטינים.

On 21 June '11, the Civil Administration demolished 8 homes
 in al-Hadidiya, the Jordan Valley.
 36 Palestinians, including 15 minors, were left homeless.

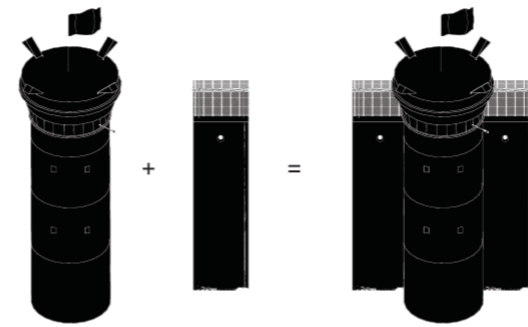


Demolition in al-Hadidiya 21.6.2011
 Filmed by: 'Atef Abu a-Rub,
 Field researcher

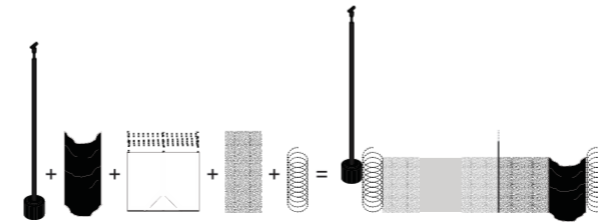
הרסה באל-חדידייה 21.6.2011
 צילום: עאטף אבו א-רוב,
 תחקירן שטח



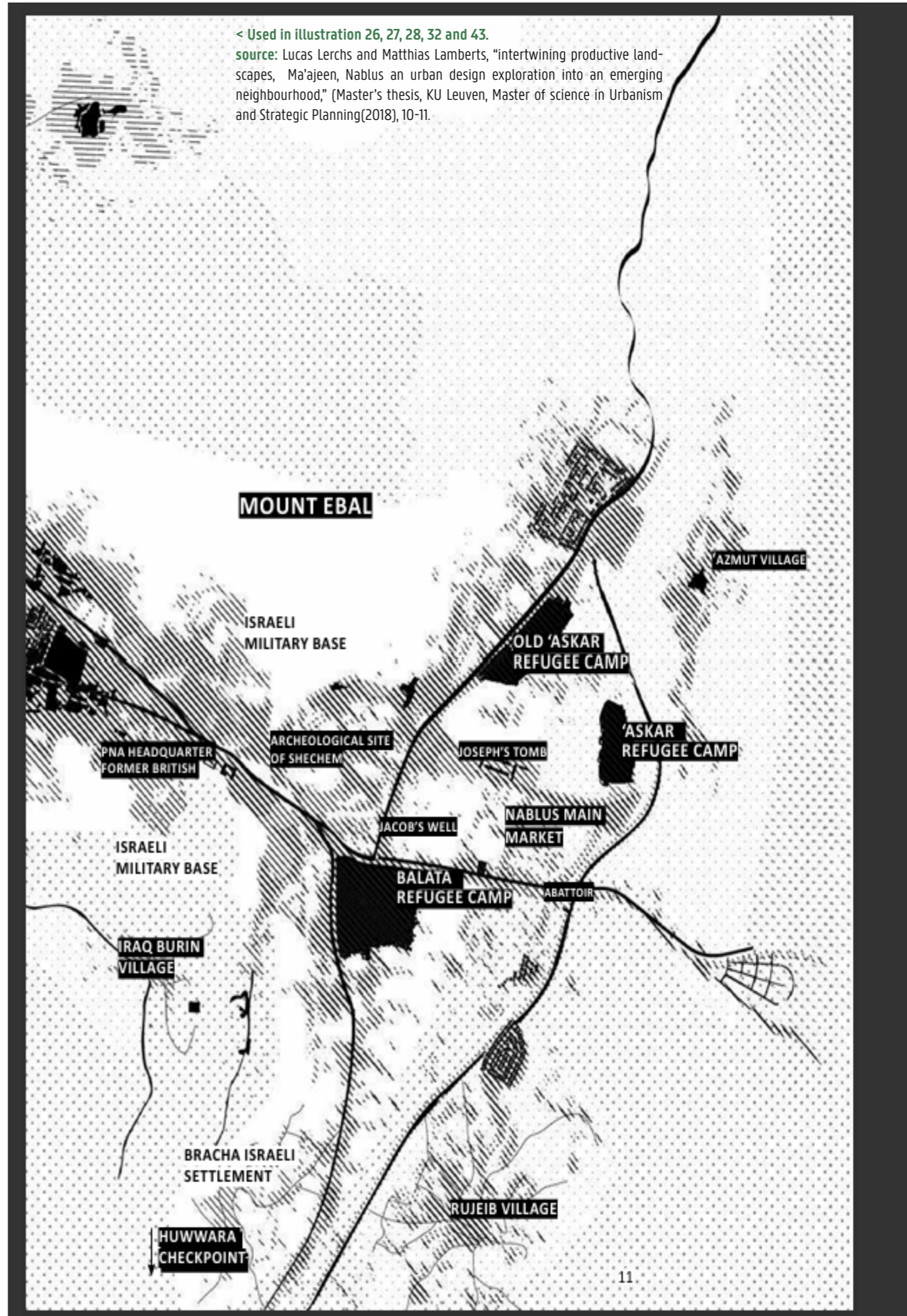
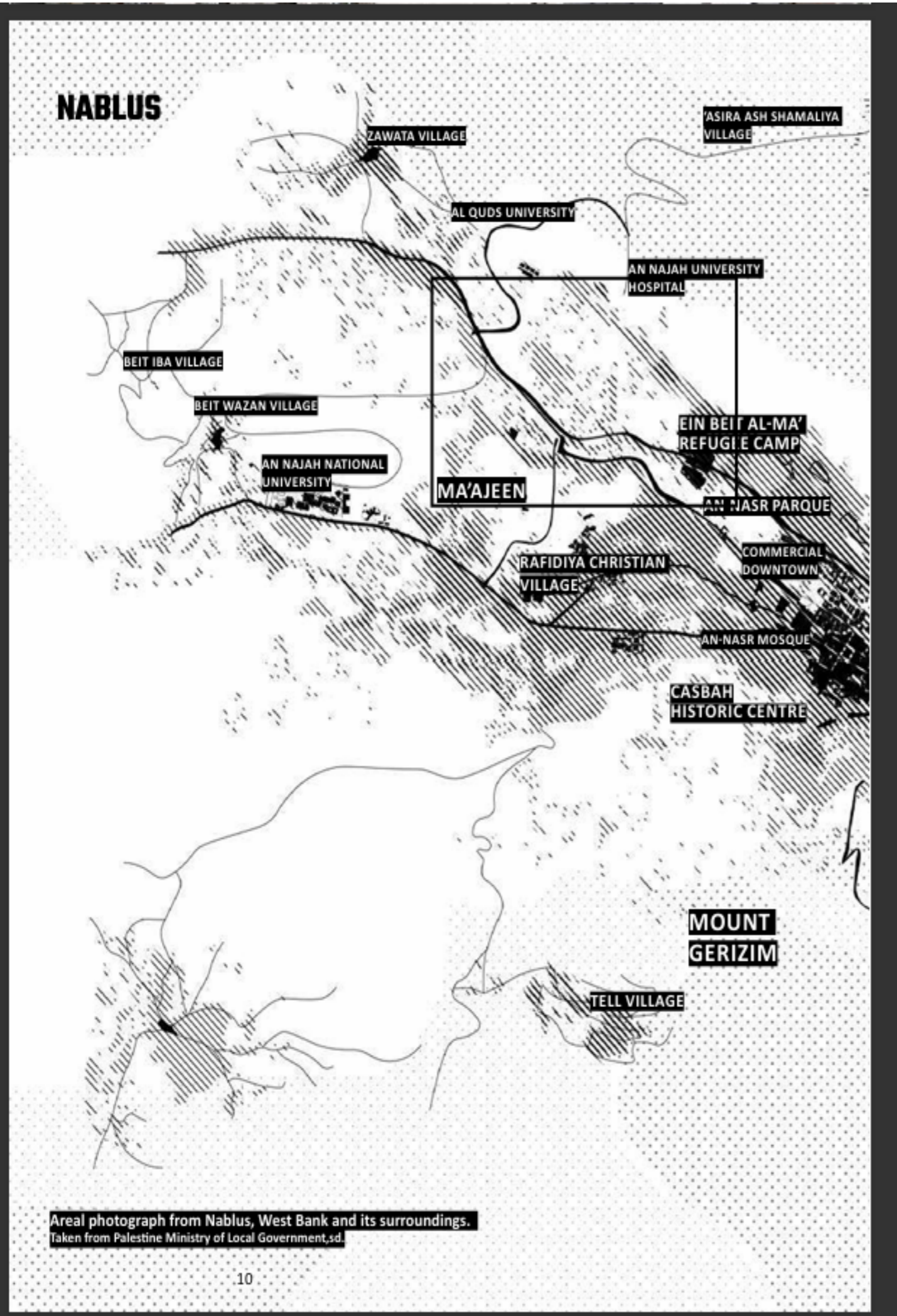
^ Source: B'Tselem, "Demolition of homes in al Hadidiya, Jordan Valley," March 13, 2012, video, 0:00- 1:33, <https://www.youtube.com/watch?v=PH6nonMkkoM>.



15



^ Used in MAP 13, source: Federico Lepre, "occupying space,"(Master's thesis, University of Strathclyde, Master in Law, 2015), 13.





^ Source: B'Tselem, "Parched: Israel's policy of water deprivation in the West Bank, May 3, 2023, short documentary, 2:15 to 2:58, <https://www.youtube.com/watch?v=zpvuPF06iPA&t=164s>.



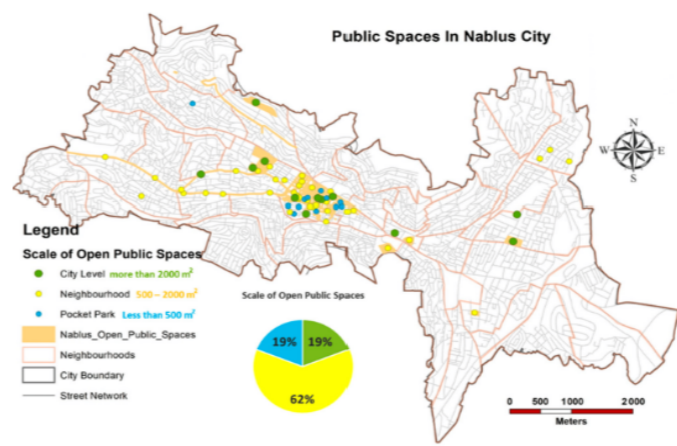
^ Used to create Map 23: source; Shadia Touqan and Ali A. Hamid, *Nablus Enduring Heritage and Continuing Civilisation: The Revitalization Plan of the Old City* (Jerusalem: Welfare Association, 2011): 140.]



^ Source: "Parched: Israel's policy of water deprivation in the West Bank, May 3, 2023, short documentary, 0:25 to 0:45, <https://www.youtube.com/watch?v=zpvuPF06iPA&t=164s>.



^ Source: Mohammed Najib, "Palestine runs dry: 'Our water they steal and sell to us,'" Al Jazeera, July 15, 2021, <https://www.aljazeera.com/news/2021/7/15/water-war-palestinians-demand-more-water-access-from-israel>.



^ Used to create Map 23 and illustration 32: source: Mohammed Itair, Isam Shahrour, and Ihab Hijazi, "The Use of the Smart Technology for Creating an Inclusive Urban Public Space," *Smart Cities* 6, no. 5 (September 20, 2023): 2487. <https://www.mdpi.com/2624-6511/6/5/112>.



^ Source: "Parched: Israel's policy of water deprivation in the West Bank, May 3, 2023, short documentary, 0:25 to 0:45, <https://www.youtube.com/watch?v=zpvuPF06iPA&t=164s>.

